

**THE KNOWLEDGE COMMONS IN VICTORIA AND SINGAPORE:
AN EXPLORATION OF COMMUNITY ROLES IN THE SHAPING OF
CULTURAL INSTITUTIONS**

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Thesis submitted in fulfilment
of the requirements for the degree of
Doctor of Philosophy

Faculty of Information Technology
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September 2008

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Dedication

This thesis is dedicated in loving memory to two people whose lives were beautiful,
but all too short:

Mum, who in love taught me the value of pursuing knowledge by encouraging every
big and small dream, and gave up so much to enable me to undertake my first
degree

and

Patricia, with whom I shared a precious friendship and enthusiasm for many
wonderful things including food, dogs, taxonomies and digital repositories.

Acknowledgements

I feel deeply indebted to many people who contributed to the completion of this thesis project, and I express appreciation to them all, even if not individually named below.

I owe most gratitude to my supervisors, Emeritus Professor Don Schauder and Dr Steve Wright of Monash University and Associate Professor Yin-Leng Theng of Nanyang Technological University, whom I respect as wonderful mentors. Don, your brilliance was equally matched by great kindness, and you never failed to believe that I could complete this journey. Steve, thank you for your continuous support and encouragement, for your fine example as a teacher, and for opening my mind to remarkable scholarship and thoughts. Yin-Leng, thank you for inspiring me with your deep wisdom, and for guiding both my fieldwork in Singapore and my journey as a PhD student. Special thanks go to Don, Steve, Yin-Leng and Cheryl Schauder for their patient assistance with editing and proofreading.

I would like to express gratitude to Emeritus Professor Marian Quartly of Monash University and Liza Dale-Hallet of Museum Victoria for their sound counsel especially in the early stage of my research; Professor Schubert Foo of Nanyang Technological University for his support of the fieldwork in Singapore and his generosity in sharing his experiences; and to Howard Rheingold, Michel Bauwens, Dr Mark Elliot and Emeritus Professor Hans-Erik Nissen for sharing valuable insights and resources over the years.

People from the following organisations were invaluable participants in the case study component of the thesis: Museum Victoria, the Women on Farms Gathering community, Hume Global Learning Village, Whitehorse Manningham Library, Upper Murray Regional Library, Monash University Library, Victorian Association of TAFE Libraries, Asian Civilisations Museum, National Library Board of Singapore, Jurong Regional Library, Marine Parade Community Library, Jurong West Library, Temasek Polytechnic Library and Nanyang Technological University Library.

Colleagues, mentors and friends at the Caulfield School of Information Technology and at the Centre for Community Networking Research (CCNR) helped me grow professionally. I am grateful to Dr Kirsty Williamson for being so interested in me as a person and a colleague, and to my supportive peers, Richard Zanner, Joanne Evans, Rattanan Nantiyakul, Samar Zutshi, Viranga Ratnaike, and Ambica Dattakumar. A special thank you goes to the following people for their professional support and friendship: Diana Sussman, Julie Austin, Allison Mitchell, Denyse Cove, Cornelia Lioulos, Akamon Kunkongkapun, Michelle Ketchen, Michael Leung, and Rafig Tjahjadi.

Friends from Melbourne, Singapore, Malaysia and Canada, for the sanity and encouragement they have brought me.

I am grateful to my family especially my siblings: their love, patience, ideals and laughter have been a source of inspiration. I am indebted to my husband Yong: his endurance for the past four years in love, hope, and faith has been a pillar of support for me. I am also thankful for the many smiles he has brought to my life.

Finally but not the least, to the Lord for graciously blessing me with all good things, including His strength and wisdom to overcome daily challenges.

Abstract

'The commons' is a concept originating from the traditional shared use of land, but which now often refers to any social asset, physical or abstract, that is shared. This research concerns one aspect of the commons, namely the knowledge commons.

The thesis explores community roles in developing and sustaining cultural institutions as key components of the knowledge commons. It focuses particularly on processes of participatory design, and on the capacity of digital technologies to support community engagement. The study takes place across the cultural contexts of the State of Victoria (Australia) and Singapore. The three key aims of the thesis are to explore in what ways and to what extent:

- I. The emerging concept of the knowledge commons relates to the role of cultural institutions as systems for the creation and sharing of sustainable knowledge resources by their communities.
- II. The notion of participative design may be applicable to the ongoing development of such systems as multi-stakeholder partnerships to meet community needs.
- III. Differences in national culture may affect the generality of such an analysis.

The research design employs literature analysis and multiple case studies as a basis for proposing new theorisations and an analytical tool to assist future action by cultural institutions and relevant communities. The main perspective used in framing the literature analysis and case studies is Giddens' structuration theory. Structuration sees the continuing interplay between social action and social structure as the means by which the cultural patternings known as institutions are recursively produced. A complementary perspective used is Hofstede's model of cultural dimensions. Other theorists from a range of disciplines provide perspectives on particular concepts or aspects, such as the commons and participatory design.

Five chapters are headed 'Foundations'. These seek to explicate key dimensions of the research, namely the knowledge commons, community knowledge, cultural institutions, participatory design, and the cultural contexts of Victoria and Singapore.

Four chapters are headed 'Case Study' and deal with individual cultural institutions, or clusters of institutions, which were the sites of exploratory enquiry (generally consisting of interviews and observation, but in the case of Museum Victoria also elements of action research). The cultural institutions covered by these chapters are Museum Victoria/Women on Farms Gathering, the Asian Civilisations Museum, Public Libraries in Victoria and Public Libraries in Singapore.

These insights are analysed to propose a series of related typologies. The coverage of these typologies includes resource characteristics, collective processes, and cultural dimensions. The typologies come together as components of an integrated, explanatory conceptual model concerning the relationships between the commons, cultural institutions, communities, collective processes (including the role of information and communication technologies) and participatory design within cultural institutions.

In the final chapter answers are formulated for the initiating research questions. Also the integrated model developed by the thesis is used as the basis for a proposed analytical tool to assist action towards enhanced community engagement in the development of cultural institutions. Use of the tool is illustrated by application to several examples of collective action encountered during the research.

Statement of originality

The work presented in this thesis contains no material that has been accepted for the award of any other degree or diploma in any university or other institution. I further certify, to the best of my knowledge, that this thesis contains no material previously published or written by another person except where acknowledged in the text.

The thesis is less than 100,000 words in length, exclusive of tables, figures, footnotes, bibliographies, glossary and appendices.

Natalie PANG
19 September 2008

Chapter 1 – Introduction

1.1 Scope of this chapter

The aim of this chapter is to introduce the motivation and exploratory domain, setting the scope of the research.

1.2 The exploratory domain and problem statement

The rise of participatory technologies in the contemporary media environment¹ has been argued to be the main driver for the rise of user-generated content and the production and exchange of knowledge in recent years. Such resources have been recognised to contribute to the knowledge commons; a realm of resources where cultural institutions often take up an implicit role as custodians, defenders, and stimulators. Little is known about how cultural institutions may harness participation from communities to contribute to the sustainability of the knowledge commons in the contemporary media environment, and the implications of such actions. There is also little research that systematically theorises how resources change in terms of their accessibility and availability together with the collective processes surrounding the collaborative production of resources in the knowledge commons. At the same time, few tools exist for practitioners in cultural institutions to make sense of their practices in terms of their potential impacts on communities and resource holdings.

1.3 Aims and Research Questions

This thesis has three inter-related aims. It seeks to explore in what ways and to what extent:

- I. The emerging concept of the 'knowledge commons' relates to the role of cultural institutions as systems for the creation and sharing of sustainable knowledge resources by their communities.
- II. The notion of participative design may be applicable to the ongoing development of such systems as multi-stakeholder partnerships to meet community needs.
- III. Differences in national culture may affect the generality of such an analysis.

The cultural institutions under consideration are public libraries and museums. Both scholarly and popular accounts of recent developments in such institutions attest to changes in work cultures and practices resulting from the utilisation of information and communication technologies, often enabling ease of stakeholder participation. The scale and nature of such changes suggest that in fact a critical threshold in the systems state is being experienced. The concepts of the knowledge commons and participatory design suggest explanations for the transformations that are occurring. The impacts of national culture are explored in the thesis through parallel consideration of Victoria and Singapore, societies which in many ways present strong contrasts.

The first aim uses the construct of the knowledge commons as a concept to refer to resources commonly held and maintained by cultural institutions for communities, and investigates the relevance of this concept for cultural institutions, highlighting current issues faced by cultural institutions. Within this context, the thesis

¹ Selected terms which are defined in the glossary section appear in this form, when they are mentioned in their context for the first time in the main body of the thesis.

investigates the effectiveness of participation, and whether a participatory design approach can assist cultural institutions to develop community-based knowledge commons. At the same time, it is imperative to also address the implications of such an approach for the development of the knowledge commons in cultural institutions. The final aim attempts to highlight cultural issues in the study. These aims can be encapsulated in four key study domains, which are explored in the next section.

From these domains and aims the following exploratory questions are derived:

1. What are the characteristics of knowledge resources in the commons in the contemporary media environment?
2. What collective processes are involved in, and how do they contribute to, the knowledge commons?
3. What is the role of cultural institutions?
4. What are the types of designed participation relevant for cultural institutions? What are the benefits and potential pitfalls, if any?
5. Will the different cultural contexts in which cultural institutions are situated affect the findings?

A multiple case study approach will be used to answer these questions, and will be elaborated in Chapter 2.

1.4 Exploring the scope: Four key study domains

Rapid innovations in technologies have changed the ways cultural institutions operate and communicate with communities. The many examples of changes in cultural institutions reflect a larger movement of cultural institutions away from traditional methods of services. Libraries all over the world are transforming their physical spaces, enlarging virtual spaces, and redesigning outreach services to their communities (Axtman, 2005; Elsevier, 2005).

In recent years, libraries have been moving towards the application of the 'learning commons', where support services, resources, spaces, and technologies are brought together in flexible spaces to facilitate learning. In this integrated framework of designing and redesigning services, libraries are also impacted by the arrival of Web 2.0, resulting in discussions of Library 2.0, which refers to the use of popular communication tools such as blogs, wikis and online groups to communicate with library clients and internal staff (Watson and Harper, 2006, p. 5; Leong, 2006, p. 8). As a result of these changes, a hybrid space, involving both physical and digital dimensions, has been created. The communities functioning within hybrid spaces are also changing at a rapid pace, as they adapt to new ways of communicating and constructing knowledge while still cognisant of what used to work for them.

More than ever, museums are repositioning themselves in their communities. Dale (2003) argued for the case of museums as agents of change in communities, facilitating alternative discourses and knowledge. As mainstream cultural institutions, museums have a significant role in 'creating public understanding and knowledge of the world' (Dale, 2003). Like libraries, the same communities served by museums are fragmented by differing ways of communicating and constructing knowledge – some still mindful of what used to work, some who are ahead of information and communication technological developments, while many others adapting old ways of working while adopting new technologies to achieve end goals.

These are only a few of the numerous examples of changes happening in cultural institutions, posing structural and agency challenges in their *interactions* with their communities. Others include:

- Transformations of spaces in libraries: developments in libraries towards the learning commons framework has seen structural changes in libraries, such as redesigns of architectural/interior designs, increase in collaborative spaces, and the integration of services such as technical support and language and learning support into one common space.
- Changing patterns of collections: inclusion of digital libraries and web resources (together with integrated searching of these resources) to complement existing library collections have presented both opportunities and threats for communities. Collections in museums are also constantly shaped by their communities – such as the inclusion of local stories in museum collections – hold many implications for collection management practices and technological adaptations.
- Development of new media types and storages such as DVDs, microfilm, networked servers hold many implications for preservation, integrated searching, and archiving for cultural institutions.
- Communities that are divided by literacy, technological competence, education, and the ways they produce and access public knowledge have resulted in paradigm shifts in user needs.
- Commercial enclosures around the production and access to public knowledge signify a need to reflect on the role of cultural institutions in facilitating such knowledge production, and as custodians of knowledge resources in the *commons* domain.

These structural and agency factors have many connotations, especially in the roles of cultural institutions and the delivery mechanisms of their services. This study is centred on resources in the commons domain that fall within the governance of cultural institutions. It must be noted that while some of these resources probably are already recognised as existent and are within the scope of cultural institutions, there are many other types of resources that are produced and sustained by communities and contested for their existence within the cultural institution.

The other reason for the focus on knowledge resources is obvious – the critical thresholds facing cultural institutions raise an urgency to address the way they interact and engage with communities in a holistic manner. One of the most significant interfaces by which cultural institutions interact with their communities is via the knowledge resources where the cultural institutions may act as custodian for, as facilitators to guide their production, or to make fair and equitable access to these resources possible. There is a need for a cross-disciplinary perspective in the contemporary media environment that both shapes and can be shaped by interactions between cultural institutions and their communities, with resources in the knowledge commons.

The interactions between cultural institutions, communities, and the knowledge commons make up their interdependent relationships. In the contemporary media environment where participation is a common characteristic, participatory design as a possibility and approach for cultural institutions is raised in the context of such interactions. The resulting scope of the study is an investigation of four interplaying domains, as in Figure 1.1.

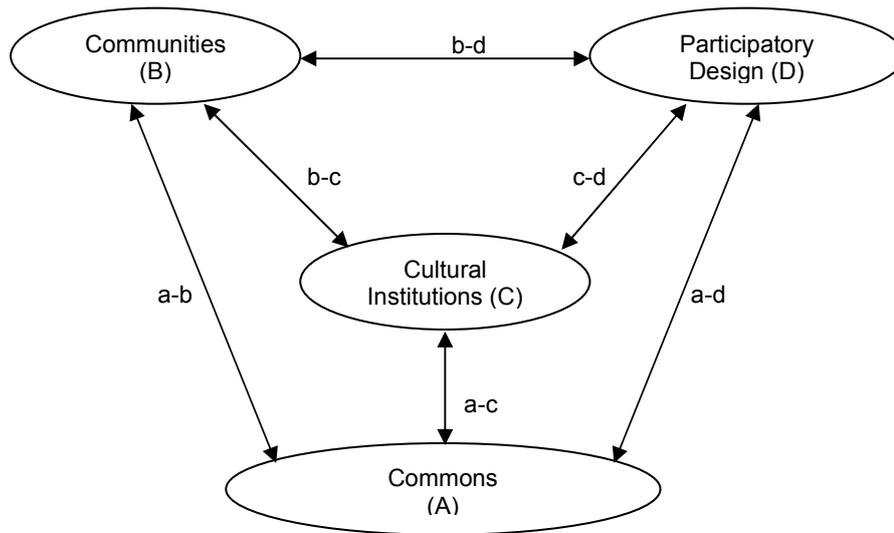


Figure 1.1: Interplay between study domains and their relationships.

These four interplaying domains are: communities, cultural institutions, the knowledge commons, and participatory design. Chapters 3 to 7 elaborate in detail the points of interest in these domains. The interplay between communities, cultural institutions, resources in the knowledge commons, and participatory design leads to the conceptualisation of relationships between these domains. The four conceptual domains specifically address and are related to one another in the following ways:

- Commons (A): refers to resources that are freely distributed, shared, and produced by communities.
- Communities (B): collective processes of communities that produce, use and sustain resources in the knowledge commons (A).
- Cultural institutions (C): an institutional space in which a certain degree of freedom can be exercised, away from market constraints, towards the production and sustainability of knowledge commons resources (C), engaging their communities (B) in the process.
- Design/Action (D): the function of participatory design and the explicit pursuit of action by cultural institutions (C) for the purpose of harnessing participation from their communities (B) in the context of producing, using and sustaining resources in the knowledge commons (A).

1.5 Preview of the research approach

The foundations chapters (Chapters 3-7) utilise current literature to build up points of interest concerning resources in the knowledge commons, collective processes involved, working roles of cultural institutions, and designed participation. These points of interest were further visited through the case studies (Chapters 8-11). The literature and findings from the case studies were important to provide an improved account of the research problem. This approach is borrowed from Popper (1963), who contended that the advance of knowledge is evolutionary and tentative theories should be subjected to rigorous attempts at falsification. While the literature provided tentative insights to the research problem, they were exposed to findings from the case studies in order to eliminate possible errors from these initial insights. As Popper (1963) argued, theories emerging from this process are more applicable to the original research problem and are more improved; although it does not mean that these theories will survive over time or imply that it is far from being refuted in the

future. The process is intended to allow investigation of the research problem to adopt adaptive characteristics so that emergent theories will evolve over time. As such, the eventual praxis should be viewed as evolutionary theories rather than conclusive ones. The influence of Popper's insights is elucidated in Figure 2.6 and discussed in the next chapter.

For the case studies, the semi-structured interview was employed as the main method. An interpretivist technique, this method had primary goals of understanding current practices of cultural institutions, their perceptions of knowledge commons resources, the ways they facilitate or invite participation from their communities in their activities and resources, and potential pitfalls and benefits of such participation. The method was also used with the goal of investigating cultural effects – and interviewees were asked to discuss how they perceive themselves similarly or differently with other cultural institutions. With these main goals in mind, the method was used to elicit information about cultural institutions and communities – as such key personnel and individuals who were recognised to possess insights on the main study themes were selected as interviewees.

By using the semi-structured interview, the researcher was able to explore new ideas and information from interviewees (Williamson, 2006) while keeping to the main study themes using an interview schedule as a guideline. An initial interview structure was derived, and continuously improved upon after a few interviews. One of the advantages of this approach is to allow flexibility in the initial concept and for different perspectives to emerge during an interview or between interviews. The preceding interviews also help to inform subsequent interviews. The method worked well, helping to put discussed examples in context by having interviewees talk about the roles of cultural institutions in facilitating participation from their communities and the acquisition, creation and sharing of resources in the knowledge commons. With this in perspective, interviewees found it relatively easy to talk about examples from the case studies in light of the issues arising from the thesis.

Most of the interviewees had clear understandings of the issue of participation and how it related directly to the sustainability of resources and the continual relevance of cultural institutions. As such they were often reflective of the issues and used their knowledge and experience freely to discuss about the emergent issues, benefits, and pitfalls. Although such discussions may digress from the originally planned interview schedule, they provided valuable inputs and allowed unexpected findings to emerge from the study. This serendipity in data collection was also encouraged by the grounded method of data analysis, where the transcripts were analysed and tagged iteratively with related domains for their associations.

The stories coming from the interviewees of how participation happened, or there was potential participation also helped contribute realistic accounts for nurturing favourable environments for participation. While the semi-structured interview was a research method in the study, this contribution also helped to realise its potential as a participatory design method in itself. Simply put, the method can be used to guide users and key personnel from cultural institutions to design new services or activities, or to gather feedback on existing ones.

1.6 Contributions

The findings of the project hope to produce the following contributions, mapped against the three inter-related aims stated in section 1.3:

Theory:

1. A better understanding of how participatory design principles are relevant, and enacted in the processes of creating and sharing public knowledge in cultural institutions. (Aim I)
2. A narrative of the knowledge commons in cultural institutions. (Aim I)
3. A reflection in research methodology: drawing findings to provide implications for participatory styles of inquiry in research design. (Aims I, II, III)

Practice:

1. Narratives of cultural institutions and their practices, including impacts on communities, the knowledge commons, and the ways they design participation. (Aims I, II, III)
2. A better understanding of how cultural effects may shape or be shaped by cultural institutions. (Aim III)

Chapter 2 – Methodology

2.1 Scope of this chapter

In order to achieve the broad aims set out in the research, an exploratory multiple-case study strategy was designed to better understand the points of interest raised by the study domains discussed in Chapter 1. The research strategy is first outlined, justifying the rationale behind the application of case study research. The framework of analysis is then explained, which leads to the development of the unit of analysis in the research. Differences and similarities between the multiple case studies are then highlighted in the discussion and explanation of research methods applied to different case studies. Types of data that were collected in the study and how they were analysed are also explained. These findings are validated through a triangulation method, which contributed to the credibility of insights to the exploratory domain.

2.2 Research strategy

Case study research designs can sometimes be misunderstood as overly ‘soft’ (De Vaus, 2001) – but with recent times case study research designs had been increasingly addressed systematically and argued for their value and ability to investigate the contexts in which research questions are being raised (De Vaus, 2001; Yin, 1994). Yin (2003, p. 13) defined a case study as ‘an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when boundaries between the phenomenon and context are not clearly evident’. In other words, case studies allow researchers to explore an issue or project in depth rather than in general, and can utilise a variety of data. Such data may include both qualitative and quantitative sources. The types of data collected in this study are informed by the strata of consciousness discussed by Giddens (1976): that is, *practical* and *discursive consciousness*. The justification for case study research designs was also earlier reinforced by Stake (1995), who proposed that case study designs are especially appropriate to explore and understand complexities of phenomena.

The aim of the research was to explore the role of participation in the knowledge commons and in this context, how such community roles shape cultural institutions. Within this exploratory domain there is a heavy dependence on the context of interactions between cultural institutions and their communities. While such contextual interactions are beyond the control of the researcher – and the need for control is in any case undesired, since the goal is to explore and understand such phenomena.

Perhaps one of the greatest criticisms of case studies as an appropriate research strategy lies in its basis for making generalisations. However, as Yin (2003, p. 10) argued, case studies are purposed to ‘expand and generalise theories and not to enumerate frequencies’. Eisenhardt and Graebner (2007) have reinforced this proposition, arguing for the potential of multiple case studies to contribute to theory building research. Benbasat, Goldstein and Mead (1987, p. 370) argued for the case research strategy being ‘well-suited to capturing the knowledge of practitioners and developing theories from it’. As the goal of the research is to build theoretical propositions within the suggested exploratory domain, and the fact that there are other variables which may influence interactions between cultural institutions and their communities (such as national identities, cultural backgrounds, and the

evolutionary nature of different types of cultural institutions), multiple case studies have been chosen.

The research framework is underlined by constructivist research philosophies. Through ethnographic observations, interviews, and experiments, constructivist research aims to present rich pictures of individual realities. The epistemology principle guiding constructivist research is subjective and interactive, thriving on the interdependencies of the researcher and subjects (Pickard and Dixon, 2004). As such, *hermeneutics*, requiring the interpretations of human actions and institutions, and empathetic interactions between researchers and subjects make up the key instruments of constructivist research.

Lincoln and Guba (1985, p. 296) argued that credibility in constructivist research is established 'by having (the findings) approved by the constructors of the multiple realities being studied'. This was achieved in the multiple case studies through longitudinal engagement with research participants, multiple semi-structured interviews with both stakeholders and identified 'gatekeepers' who possess insights to the issues involved in the case study, and using different sources of data to help validate the credibility of the findings. The use of gatekeeper interviewees is a significant strategy and will be further discussed in section 2.4.1. The semi-structured interviews used open-ended questions, with the aim of probing thoughts creatively from participants. At the same time, Dervin (1997) argued that the voice of the researcher should not be marginalised; and proposed the 'member checking' technique in order 'to check with the actors who are the subjects of (the research) focus how they interpret (the researchers') interpretations' (Dervin, 1997, p 31). This technique was adopted as a way of establishing credibility of the findings, and joint writing exercises were used to establish such checks in the study.

Against those who hold that researcher bias can pose a significant limitation to study, the constructivist epistemology rejects the proposition that objective results can be generated in certain ways of conducting research (Pickard and Dixon, 2004). Charmaz (1995) suggested that this limitation can be overcome by accepting results as the subjective knowledge of the researcher, and tracing such results to the raw data of the research, so that they are not merely a product of the 'observer's worldview, disciplinary assumptions, theoretical proclivities and research interests' (Charmaz, 1995, p 32).

The audit trail, which provides a means of ensuring that constructions can be seen to have emerged directly from the data, confirms the research findings and grounds them in the evidence. The heavy use of raw data in the analysis of the case study (quotes from interviews, joint writing exercises and publications) helps to ensure that findings are grounded in their evidence. In section 2.3.4, research activities are detailed in each case study to provide an account of such audit trails.

2.2.1 Case design

As a first step towards selecting case studies, several discussions were held with other researchers involved with cultural institutions. One of these discussions involved a professor from public history, who was working with Museum Victoria in collecting oral histories from a community of farm women and informed that the Museum was undertaking this task in a participatory manner; which was inspired by the community's strong sense of collective accountability for resources relating to their histories and current life and work as farm women. Upon further interviews and

discussions, it became clear that the nature of the interactions between the museum and the community offered an ideal case for the research.

This initial starting point provided a plausible way by which the exploratory multiple-case study could be designed. The case of Museum Victoria and the Women on Farms Gathering Community therefore became an exemplary case, by which a microscopic view of the interaction between a cultural institution and a community can be developed in the context of exploring community participation in the acquisition, development and sustainability of a community's collection of meaningful objects, stories and histories.

Thereafter, similar examples of such interactions were sought, although the cases differed in terms of cultural backgrounds and the depth of such perspectives. In later discussion, key differences between individual cases are explained. Although the case design started with an exemplary case, it should be noted that it is not the intention of the research to suggest which practices were better or worse, but rather to contribute to describing current practices situated in different cultural, technological and social contexts.

2.3 Framework of analysis

2.3.1 *The relevance of structuration theory*

Giddens offers the insight that:

The best and most interesting ideas in the social sciences (a) participate in fostering the climate of opinion and the social processes which give rise to them, (b) are in greater or lesser degree entwined with theories-in-use which help to constitute those processes and (c) are thus unlikely to be clearly distinct from considered reflection which lay actors may bring to bear in so far as they discursively articulate, or improve upon, theories-in-use (Giddens, 1984, p. 34).

In other words, meanings, actions, and structures are closely and continuously interdependent. The *recursive* characteristic of communities living and working together comes about through the interplay of actions and structures such as the contemporary media environment, changing designs of cultural institutions, the production and contest of knowledge as a public resource within cultural institutions and communities. These in turn offer structural and agency problems in addressing the interactions between cultural institutions and their communities. Together, these movements present a critical and opportune threshold for cultural institutions to address their transformations in the contemporary media environment.

Giddens argued that the central notion of *structuration* theory addresses how the conflict between the study of subjective and objective realities can be resolved:

If interpretive sociologies are founded, as it were, upon the imperialism of the subject, functionalism and structuralism propose the imperialism of the object. One of my principal ambitions in the formulation of structuration theory is to put an end to each of these empire-building endeavours (Giddens, 1984, p. 2).

Structuration theory views structure as 'both the medium and outcome of the reproduction of practices' (Giddens, 1979, p. 5). The cultural context of people living and working within social frameworks is generated and re-generated through the interplay of action and structure. Social structures both support and constrain the

endeavours of individuals, communities and societies. This is also referred to as the duality of structure (Giddens, 1984), which sees that the institutional properties of social systems are created by human actions, and in turn shape future actions. It recognises that 'man actively shapes the world he lives in at the same time as it shapes him' (Giddens, 1984).

Structuration theory is a key theoretical framework that this thesis adopts. In terms of research design, the two-way dialogical relationship between subjects and objects is conceptualised, rather than a supply-oriented examination, 'unidirectional technological relation' (Loyal, 2003, p. 32) between the subject and an object. Ratner (1997, p. 129) posits that qualitative methods have traditionally 'focused on personal experiences [and]...neglected its cultural organisation', and they need to be 'informed by a cultural perspective that sensitises them to the cultural origins, components, and consequences of experiences' (Ratner, 1997, p. 130).

In other words, the focus on culture and design called for a need to orientate the research methodology in the context of interplaying experiences between key actors, subjects, and objects in the study. Giddens (1984) argued that every generalisation or study involving an existing community or society 'constitutes a potential intervention within that society: and this leads through to the tasks and aims of sociology as critical theory' (Giddens, 1979, p. 245). This is an obligation, and not an option, as justified in a later publication:

But, given the significance of the 'double hermeneutic', matters are much more complex. The formulation of critical theory is not an option; theories and findings in the social sciences are likely to have practical (and political) consequences regardless of whether or not the sociological observer or policy-maker decides that they can be 'applied' to a given practical issue (Giddens, 1984, p. xxxv).

The implication of structuration theory for the researcher in terms of research design is the conception of utilising various types of knowledge: the unconscious, the practical consciousness, and the discursive consciousness. Unconscious knowledge consists largely of desires, or desired actions and system states. Practical consciousness, termed by Giddens as mutual knowledge:

Refers generically to taken-for-granted knowledge which actors presume others possess, if they are 'competent' members of society, and which is drawn upon to sustain communication in interaction. This includes 'tacit knowledge', in Polanyi's sense; mutual knowledge is 'configurative' in character. Even the most cursory verbal interchange presupposes, and draws upon, a diffuse stock of knowledge in the uptake of communicative intake. Mutual knowledge is 'background knowledge' in the sense that it is taken for granted, and mostly remains unarticulated; on the other hand, it is not part of the 'background' in the sense that it is constantly actualised, displayed, and modified by members of society in the course of their interaction (Giddens, 1976, p. 107).

Discursive consciousness refers to knowledge that is able to be articulated; which is knowledge made explicit. The distinctions in the knowledge of agents are maintained in this context, although Giddens (1979, p. 2) used mutual knowledge as the fundamental feature of structuration theory. This brings the focus on the researcher as an integral part of the research design of the study. Giddens argued for a methodological strategy which involves:

firing critical salvos into reality...and work within a sociological conception which would seem to me to suggest that some things are clearly noxious and other things are clearly desirable and that it isn't necessary to ground them in order to proclaim this to be so (Giddens quoted by Loyal, 2003, p. 35).

Insights from structuration theory have had significant influences on the way the research was designed – from using discursive knowledge (such as sourcing findings from the literature and other written documents) to gaining the unconscious and mutual knowledge of cultural institutions and communities (through embedding the researcher in action research, and semi-structured interviews). As such, different methods are adopted in various case studies, depending on the nature of interactions between cultural institutions and their communities and between communities.

Further benefits of this approach are illuminated by Ratner (1997)'s work. With his background in psychology, Ratner (1997) pointed out that research methodology often overlooks the social relationship between researchers and subjects, which is a crucial determinant of psychological performance of all actors in the research process. According to Ratner (1997), in research projects where social relationships between researchers and subjects exist, there is also greater support in the data collection and achieving desired outcomes of the project. Clearly one of the ways to establish this relationship is to utilise different types of knowledge: discursive knowledge such as secondary information sources and practical knowledge using semi-structured interviews.

The research design, where the researcher is positioned as an agent utilising the three strata of consciousness maintained by Giddens (1984), inevitably develops the social relationship Ratner (1997) argued for. As Ratner (1997) reasoned, this social relationship is necessary for obtaining psychological information from subjects; an outcome of trust by research subjects and the result of understanding subjects and their 'communicative and metacommunicative systems' (Ratner, 1997, p. 147). As Madjar and Walton (2001) argued, new and unexpected data can be found through such research approaches.

2.3.2 Conceptual construct

The relationship between action and structure is a fundamental component of structuration theory. Therefore, no study of communities can exist without the study of action - a part of production and reproduction in communities which ultimately make up culture. Action is an inevitable part of communities and upheld in structure, and at the same time are reflections of the very same binding structures. The study of participatory design as an interplaying domain functions as a structure and agent to guide engagements between cultural institutions and communities – leading to an improved praxis for cultural institutions.

As discussed in Chapter 1, the study involves the investigation of four interplaying domains: communities, cultural institutions, the knowledge commons, and participatory design. The figure reflecting the four interplaying domains is reiterated in Figure 2.1. The four conceptual domains specifically address and are related to one another in the following ways:

- Commons (A): refers to resources that are freely distributed, shared, and produced by communities. Are there observable properties of such resources in the context of interactions between cultural institutions and their communities?
- Communities (B): collective processes of communities that produce, use and sustain resources in the knowledge commons (A). What are the possible theoretical propositions of such collective processes in this context?

- Cultural institutions (C): an institutional space in which a certain degree of freedom can be exercised, away from market constraints, towards the production and sustainability of knowledge commons resources (C) in their communities (B).
- Design/Action (D): the function of participatory design and the explicit pursuit of action by cultural institutions (C) for the purpose of harnessing participation from their communities (B) in the context of producing, using and sustaining resources in the knowledge commons (A).

The research questions from each domain have been raised earlier in Chapter 1.

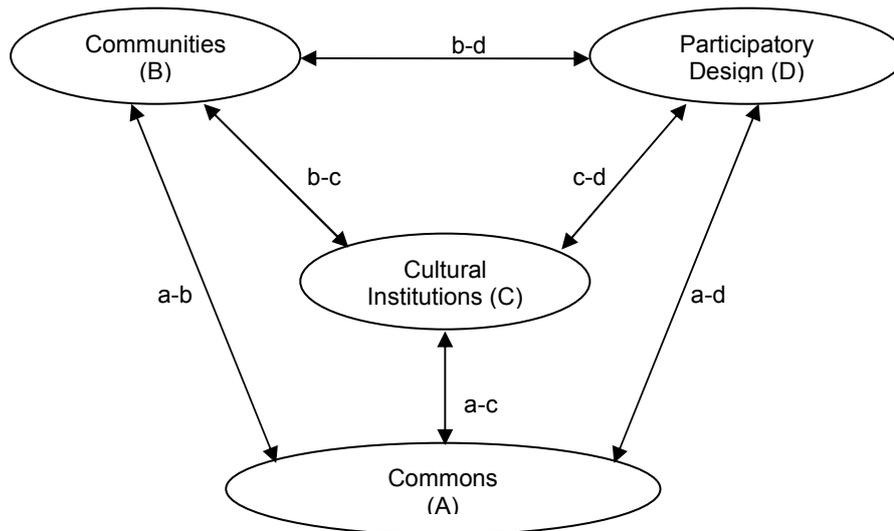


Figure 2.1: Interplay between study domains and their relationships.

2.3.3 Cultural institutions as primary units of analysis

One of the greatest challenges concerns the methodological aspects of the study. This challenge arises largely due to the double hermeneutic nature of the research, projecting a ‘two-way dialogical relationship’ (Giddens, 1984, p. xxxiii) between subjects in the study (points of interest raised in each study domain). The double hermeneutic identified by Giddens lies in the recursive relationship between two subjects, instead of a one-way, techno-centric and objective view of a subject and an object. As Giddens noted:

The point is that reflections on social processes (theories, and observations about them) continually enter into, become disentangled with and re-enter the universe of events that they describe. No such phenomenon exists in the world of inanimate nature, which is indifferent to whatever human beings might claim to know about it (Giddens, 1984, p. xxxiii).

This was also stated by Giddens in ‘The consequences of modernity’:

The discourse of sociology and the concepts, theories and findings of other social sciences continually ‘circulate in and out’ of what it is they are about. In doing so they reflexibly restructure their subject matter (Giddens, 1990, p. 43).

This double hermeneutic has several implications, most notably in the way generalisations can be made about human agents. Giddens (1984, p. xxxii) proposed that ‘the causal conditions involved in generalisations about human social conduct are inherently unstable in respect of the very knowledge (or beliefs) that actors have about the circumstances of their own action’. In the context of this study, generalisations that are made are also argued to constitute ‘a potential intervention’ (Giddens, 1979, p. 345) within the boundaries of the cultural institution in study.

Given this significance, cultural institutions are regarded as a primary unit of analysis. This fits in with the earlier discussion of multiple case designs, where the research strategy began with an exemplar case of Museum Victoria and the Women on Farms Gathering community. This set up will also assist with the analysis of the data, as subsequent discussions on data collection and analysis will show.

In addition to the primary unit (each cultural institution as a case study), the communities of each cultural institution arise as another unit of analysis embedded within each case. Three domains of interest – the knowledge commons, collective processes of communities and design practices by which participation from the communities are harnessed make up the key properties characterising these variables. While the types of data and inferences collected differed from case to case, these units comprise the key strands by which analysis of the data could be carried out, and help to set out conceptual relationships between main points of interest early in the research.

2.3.4 Selection of cases

Informed by the double hermeneutic perspective, two main types of analysis were used in the way case studies are selected. These two types of analysis were also stated by Lipset, Trow, and Coleman (2004, p. 119) as the following:

- (a) Description and explanation of the single case, to provide information concerning its present state, and the dynamics through which it continues as it does. This may be called a particularising analysis.
- (b) The development of empirical generalisations or theories of the single case, using it not to discover anything about it as a system but as an empirical basis either for generalisation or theory construction. This may be called a generalising analysis.

Because of the exploratory nature of the study, it was necessary that the exemplar case would allow a detailed, microscopic study of the issues around the key points of interest. This could be related to the first type of analysis Lipset et al (2004) discussed (particularising analysis). Findings from this pilot case would allow detailed observations to be made about the points of interest raised in the units of analysis, to be followed up by subsequent studies focusing on the second type of analysis (generalising analysis); while serving as a form of triangulation to the theory propositions.

How this triangulation works in the context of this research will be explored further in subsequent discussions exploring how findings are validated in the research. The remaining discussion will provide an account of the cases selected, together with their timelines, similarities and differences.

2.3.4.1 *Museum Victoria*

The case study of Museum Victoria and their interaction with the Women on Farms Gathering (WoFG) was unique in the sense that it began first as a community endeavour. The WoFG is a forum in which women from a rural background, whether themselves farmers or connected in other ways with farming, could build better understandings of their own lives and experiences, and convey these understandings to the wider (mostly urbanised) Australian population. Part of this endeavour envisaged a physical and virtual exhibition, focussing on artefacts and other objects to which meanings were or could be attached.

The first step in this case study was to negotiate with the Museum and members of the WoFG community on whether such a case study might be feasible, and how the researchers could position themselves to gain in-depth insights concerning the WoFG community. While discussions with the Museum went well, with the Museum welcoming the proposition of situating IT researchers in the context of changing contemporary media and communication devices, there were concerns voiced by members of the community about researchers from an 'IT background'. One participant (Pang and Schauder, 2007) wrote:

I don't mean to cast aspersions on IT researchers as such, but frequently there's a lack of sensitivity about the different needs in rural communities, and ways to get research 'out there' in a credible fashion.

The same participant also commented:

... I have a sense from the early discussions about this project that it needs to be women focussed and driven, and IT is not always friendly for many women in the communities of interest ...

Interestingly, it was later learnt that this same participant also distributes an e-bulletin to rural communities, in a simple format able to be readily accessed with minimal equipment. She recognised the irony of her commitment to that system alongside her scepticism about the involvement of IT researchers.

This 'us and them' tension was a manifestation of a key issue of participatory design, in the way 'users' are conceptualised. Later, interviews with the community reached a mutual agreement – a consensus that the study would involve the researcher by having her embedded within the working relationship between the Museum and the community to develop a digital collection.

Because the WoFG was a self-initiated 'grass-roots' endeavour, the community was viewed by the Museum as a particularly valued partner that provided unique experiential knowledge, instantiated both in objects and stories. The involvement of the Museum, as a cultural institution, was intentionally kept as an equal partnership ensuring appropriate engagement with the WoFG community. Such guiding principles were largely based on participatory action research philosophies that saw the community as a knowledgeable partner, the researchers as collaborators, with a primary goal to contribute to the betterment of the community in its context (Nyden, Figert, Shibley and Burrows, 1997; McKay and Marshall, 2001).

Over the course of a year and a half, the researcher developed the digital collection while carrying out interviews with identified individuals in the Museum, community, and other stakeholders in the project. The design and development of the digital collection was also practised with a participatory approach, to test the feasibility of

reflexive design practice. In the later development of the case study, the researcher played a significant role in organising and leading sessions training members of the community and curators of the Museum in using the digital collection, and was involved in internal discussions within the Museum assessing the impacts of the digital collection on internal work processes.

The scepticism coming from the community and MV in the initial discussions and interviews called for a research approach that would integrate the researcher within the dynamic interactions between the community and MV. It was necessary to move away from traditional research frameworks in a case study that was attempting to examine community roles in the knowledge commons and cultural institutions. This view echoed that of Reason and Bradbury, who have written of:

a growing unease with 'ivory tower' scholarship which increasingly is seen as a waste of intellectual and financial resources (Reason and Bradbury, 2006, p xxi).

With such guidelines from the research framework, and the sensitivities coming from the community and the museum supporting the need to involve them as participants, the case study included a participatory action research component manifesting in the development of an online collection.

What began as a simple digitisation project helping the community and MV to bring the WoFG collection together in a digital form grew into the development of an online portal to facilitate the participation of the community in enriching the collection and bridging gaps in the collection; such as missing information for many artefacts. This contributed towards a method of inquiry that was highly interactive and empathetic. At the same time, the study of the collection as resources in the knowledge commons in an intimate way (as the researcher was integrated in the interactions between the community and the museum) was made possible. Figure 2.2 shows a timeline of activities carried out in the case study.

The events that took place over the course of the case study reflect a combination of constructivist and participatory action research techniques. Reason and Bradbury (2006) argued that such approaches are common and complementary, given that there are significant overlaps between the two research approaches; especially towards inquiry and desired outcomes.

In this case study, the interdependencies between the researcher and the subjects guided by principles of constructivist research and enabled by the action research component also helped to overcome the 'us and them' tension and unease felt by members of the community in the pilot discussions of the study. This was explicitly expressed by many in the community towards the end of 2006 and the beginning of 2007, during the laboratory session and focus groups. An example of such feelings can be found in the following comment by Sue, a participant in the study who has also been a member of the community for more than ten years:

It's been an exciting journey – I can see how we can own this [the digital collection] and we have been transformed from being mere subjects to active and empowered participants... (notes taken on February 27, 2007)

Although the research approach required a prolonged engagement and commitment on the parts of everyone involved – the researcher, museum curators, and members of the community – the practices and outcomes that were generated were crucial in bringing about transformations in MV. By the time the project was concluded as a

case study, curators and collection managers were studying the project as an exemplar of contemporary approaches towards collection developments and community engagement. The commitment has been demonstrated by dedicating financial and human resources to work towards fulfilling higher potentials of the project.

Participants	February 2007	Activity
Museum curators (1), members of the Heritage Group (8)		Final laboratory session, this time focused on training and feedback
		Reflections and interpretations. Joint writing exercises resulting in a conference presentations and keynote address
Museum curators (3), members of the Heritage Group (8-10 for each session)		Two more laboratory sessions
Museum curators (2), members of the Heritage Group (8), collection managers (1), IT project managers (2)		Two more prototypes after feedback from interviews and laboratory sessions. More interviews with MV and Heritage Group
		Reflections and interpretations. Joint writing exercise resulting in a publication
Museum curators (2), members of the Heritage Group (8)		First laboratory session
Museum curators (2), IT project managers (2)		First prototype. Series of interviews with MV
Museum curators (1), members of the Heritage Group (4)		Interviews and requirements gathering
Museum curators (1), members of the Heritage Group (3), academic researchers (1)		Pilot interviews
	October 2005	

Figure 2.2: Research diary: MV-WoFG case study.

2.3.4.2 Asian Civilisations Museum

The second museum case study was the Asian Civilisations Museum (ACM) located in Singapore. Being an active member and having personal connections in the volunteer guiding network of the museum, the researcher was able to adopt an ethnographic approach complemented by semi-structured interviews with key stakeholders. This approach contributed towards providing the ‘voice’ of the researcher (Dervin, 1997, p. 31).

During the case study, semi-structured interviews lasting one to 1.5 hours were conducted with three identifiable groups of stakeholders in order to provide further credibility to the generalisations made from the first case study and at the same time contribute to triangulating the findings: (1) staff from the museum (curators and director), (2) voluntary guides of the museum, and (3) visitors/users of the museum. At other times the researcher made ethnographic observations during field visits and used written documents about the cultural institution. Figure 2.3 shows these groups and the research activities involved.

This study was different in the nature of the analysis. Unlike with Museum Victoria, there was no action research component or a longitudinal study. As such, the kinds of data that were gathered were significantly different. These differences will be explored in the next section.

Although the study of ACM was significantly smaller than the earlier museum case study in scope and length, it provided important insights on the case of a museum that had undergone design adaptations in the context of a contemporary media environment.

Museum staff		Volunteers		Users / Visitors
Semi-structured interviews	Field visits	Semi-structured interviews	Field visits	Semi-structured interviews

Figure 2.3: Research diary: Asian Civilisations Museum.

2.3.4.3 Public libraries in Victoria

Given the potential diversity between public libraries in Victoria, especially after the restructuring that took place in the mid nineties, three public libraries were selected as cases to examine the overall insights concerning public libraries in Victoria. The selection was made based on the profiles of the communities in which they were located. These cases were: (1) a regional public library service serving connected shires and towns on both sides of the border of Victoria and New South Wales; (2) a public library service in a learning centre in a relatively new community establishment; and (3) a library located in the suburban region of Melbourne serving multi-ethnic communities of differing ages, and economic status.

Secondary sources were also used to provide a deeper understanding of the semi-structured interviews carried out with librarians and other spokespersons of selected libraries. The gatekeepers interviewed included university librarians, politicians, community organisations, and consultants working with communities. Using this methodology, the study took approximately six months to complete, between November 2005 and April 2006. Figure 2.4 shows the research activities that took place.

Pilot gatekeeper	Libraries' cases		Gatekeepers
Semi-structured interview	Semi-structured interviews	Field visits	Semi-structured interviews

Figure 2.4: Research diary: Public libraries in Victoria.

Acknowledging the salient issues relevant to public libraries in Victoria, the researcher wanted to gain in-depth perspectives on the practical challenges facing public libraries in the context of interacting and harnessing participation from communities, and building resources for the knowledge commons in the contemporary media environment. Part of this motivation stemmed from the recognition that some of these challenges may have arisen from changes made during the earlier period of restructuring. Being an outsider to such events, the

researcher wanted to gain perspectives from a gatekeeper that had been part of the public library system in Victoria for many years. A pilot interview with a suitable gatekeeper was promptly arranged; with the results contributing significantly to the analysis of the case study.

Following this first interview, questions were refined and then used in interviews with libraries' spokespersons and other gatekeepers. The ethnographic technique used in this case study aims to extract ideas pertaining to the exploratory points of interest; this time coming from a different type of cultural institution.

2.3.4.4 *Public libraries in Singapore*

In searching for a comparative case study, the researcher began to examine the relevance of public libraries in Singapore and how they may be suitable for the points of interest raised in the thesis. As with the earlier study of public libraries in Victoria, three public libraries serving different demographic community profiles were selected. They were: (1) a regional library service serving multiple communities in the western suburbs of the nation, (2) a community library that was also integrated with a community centre and performing arts group, and (3) another community library serving generally middle class communities.

In addition, several interviews were carried out with two gatekeepers, a university librarian and a director of a tertiary library – both with significant experience and knowledge of working with using public libraries, three public library managers, and two management personnel from the National Library Board. Secondary sources also provided insights coming out of the interviews. The study took approximately eight months to complete: in the first two months from May to June 2006 semi-structured interviews with the two gatekeepers and a field visit to one public library were undertaken, in the next six months from June to November 2007 field visits and semi-structured interviews were made to the selected public libraries. Figure 2.5 shows the research activities undertaken during this time.

Gatekeepers		Libraries' cases		Gatekeepers
Semi-structured interviews	Field visits	Semi-structured interviews	Field visits	Semi-structured interviews

Figure 2.5: Research diary: Public libraries in Singapore.

2.4 Data collection and analysis

With multiple units of cultural institutions as unique analysis, there are certain complexities involved in the way analysis of the data can be conducted. As the aim is to seek commonalities and differences using multiple case studies, there is a need to characterise the units of analysis using the points of interest or properties relating to each. For example, it was necessary to note cultural elements and policy differences when examining each cultural institution as a primary unit; while at the same time, the properties of resources that were being created, used and shared would also contribute to making inferences towards both the communities and the cultural institution.

Table 2.1 summarises the types of observations and properties characterising the units of analysis in the case studies. This was useful in associating the points of interest arising in the key domains of the research (as reflected in each cell of Table 2.1), aiding the theoretical propositions made at the end of the research.

Kinds of data				
	Total system	Intermediate unit	Individuals	
<i>UNIT BEING CHARACTERISED</i>	<i>Annual reports, policies, issues historical data.</i>	<i>Usage reports, community issues, size of communities, community newspapers.</i>	<i>Interviews with stakeholders</i>	<i>Interviews with gatekeepers</i>
Cultural institution as a whole	Structural, cultural, and agency properties.	Types of practices, communication structure(s) and media technologies, types of knowledge resources (created, used, and/or shared).	Structural, cultural, operational, and agency properties.	Attributes relating to cultural institutions' engagement with communities.
Community	Behavioural properties.	Types of community endeavours, communication structure(s) and media technologies, types of knowledge resources (created, used, and/or shared), types/level of participation.	Level and types of participation in services and practices, values (by inference).	Attitudes, cultural issues, values, interests, behaviour, and other background perspectives.

Table 2.1: Types of data gathered, types of units, and resulting properties.

In drawing associations between the two units of analysis, relations should be read between the properties in each cell. These relationships are analysed for the purpose of encapsulating interactions between cultural institutions and their communities. For example, cultural properties in cultural institutions can be seen as determinants of behavioural properties noted in communities. However, this should be seen in a recursive manner; in the sense that such properties are at once shaped by, and shaping each other. Reading across the first row, the structural, cultural and agency properties of the cultural institution as a whole (from annual reports and historical data) can also be analysed for their associations with the insights from the intermediate units (such as the types of practices, communication structures and media technologies, types of knowledge resources) and the individual interviews. Again, this is a two-way dialogical relationship and not a unidirectional one.

This table serves as a guide in documenting findings for each case, and through multiple cases theoretical generalisations and propositions can thus be made.

2.4.1 Data collection

As seen from Table 2.1, three types of data were collected: semi-structured interviews with stakeholders from cultural institutions, semi-structured interviews with identified gatekeepers, and written documents such as ethnographic notes, annual reports and historical records. The conscious selection of interviews with stakeholders from cultural institutions and gatekeepers, which provided multiple

perspectives on points of interest, was guided by some of the principles for interpretive field research raised by Klein and Myers (1999).

As they noted, ‘the principle of multiple interpretations requires sensitivity to possible differences in interpretations among the participants as are typically expressed in multiple narratives or stories of the same sequence of events under study’ (p. 72). As stakeholders working in cultural institutions, interviewees were able to provide deep interpretations of the practices and relationships built by museums and libraries. Gatekeepers, on the other hand, were able to provide alternative views, adding to the range of interpretations in the thesis. In addition, the ‘principle of interaction between the researchers and the subjects’ argued by Klein and Myers (1999) ‘requires critical reflection on how the research materials (or data) were socially constructed through the interaction between the researchers and participants’ (p. 72). This principle acknowledged that the interpretations and findings from data are results of the interactions between researchers and participants, recognising participants are ‘just as much as the researcher...interpreters and analysts’ (p. 74).

The use of ‘gatekeepers’ in research had gained recent popularity (Campbell, Gray, Meletis, Abbott and Silver, 2006), and has been increasingly included in the designs of interpretivist and constructivist research (Williamson, Bannister, Makin, Johanson, Schauder and Sullivan, 2006). A term used traditionally by geographical researchers, it referred to ‘individuals important in constructing and operating the constraints of choice in access to key resources, such as housing’ (Johnston, 1994, p. 660). In the context of research, they are those who provide ‘opportunities to interact with others in the chosen research site’ (Kearns, 2000, p. 114), and are ‘those who provide – directly or indirectly – access to key resources needed to do research, be those resources logistical, human, institutional, or informational’ (Campbell et al, 2006, p. 98). As Campbell et al (2006) argued through a selection of accounts from researchers, gatekeepers are not only crucial to enrich data and insights; they are also instrumental in shaping the relationship between researchers and other interviewees.

These points had been experienced by the researcher. For example, interactions with Professor Marian Quartly, a public history academic in the early stages of the Museum Victoria case study helped the researcher to not only obtain salient insights on the relationships between the museum and their communities, they also helped to gain understandings on how to act in a way that would reduce the scepticism coming from the community on an ‘IT researcher’. In all of the case studies, gatekeeper interviews were critical in highlighting prevalent issues.

As primary sources of the data in the research, the interviews provided a mechanism by which insights could be gained. These insights were: interactions between cultural institutions and their communities, the properties of resources in the knowledge commons, different types of collective processes from communities, and the ways by which participation from communities was designed by cultural institutions. These interviews also enabled interviewees to express cultural sentiments, thoughts and perspectives freely, which may not have been possible to be expressed in a group setting due to perceived allocative power of certain stakeholders or perceived sensitivities associated with certain issues.

Table 2.2 provides the details of the interviews held for each of the four case studies. Semi-structured interviews with stakeholders were first conducted for each case study, followed by interviews with individual gatekeepers. All interviews with stakeholders took place in their work spaces, and usually followed up by site visits at each of the cultural institution. Most interviews were audio-taped with permission;

and where permission was not given, shorthand notes were taken. All interview data were fully transcribed.

In addition to the semi-structured interviews, written documents including researcher field notes were used. These documents provided the means to explore, over time, the practices and services (both the new and the old), the ways the contemporary media environment was involved in such practices and services, historical and cultural backgrounds of each case study, the types of community endeavours, and reactions from cultural institutions over time.

2.4.2 Data analysis

Analysis of the data was undertaken using the basic principle underlying constructivist grounded theory (Charmaz, 2003, p. 273), where the researcher as the viewer, analyses the data and creates the findings through 'interaction with the viewed'.

Identifying broader themes and specific categories emerging from the data is a typical method of analysing qualitative data (Huberman and Miles 2002), and a typical approach used by grounded theorists such as Glaser and Strauss (1967) and Charmaz (2003). Six key steps governed the analysis of the data in the study:

1. Transcribed data were produced in printed form.
2. The data was read through, and notes were made about tentative themes (with definitions) which appeared to be emerging. This was further compared with themes found through a digital analysis of keywords in the transcripts and notes.
3. The tentative themes were then compared and related to the broader conceptual map introduced in Figure 2.1.
4. Passages of data were labelled with categories and linked to one of the themes so that identically labelled or categorised data could be retrieved as needed. Further themes (broader than categories) were identified and defined as necessary. As with themes, categories were given a short title and a definition if needed. Categories that were initially broad were sometimes sub-divided to be more precise as the analysis progressed.
5. Categories were conceptually organised, meaning that thought was given to the similarities, differences and relationships among the categories.
6. Final themes were developed in preparation for documenting the research findings, which provided an enriched picture of the study.

A sample of the analysed transcripts marked with codes and themes can be found in appendix A of the thesis.

2.5 Validation of the Findings

The concept of validity for research that uses qualitative data has been addressed critically in the past few years. Flick (2007, p. 16) suggested that research involving qualitative data has seen a 'reformulation' of traditional criteria used to address validity and reliability to ensure greater quality in research findings. In the context of the multiple case study approach adopted here, triangulation is a major component of ensuring greater validity and credibility. Denzin (1970) proposed that triangulation can occur in several ways, and multiple triangulation methods can be utilised at different stages in the research process. According to Flick (2007, p. 41):

Triangulation includes researchers taking different perspectives on an issue under study or more generally in answering research questions. These perspectives can be substantiated by using several methods and/or in several theoretical approaches. Both are or should be linked. Furthermore, it refers to combining different sorts of data against the background of the theoretical perspectives that are applied to the data. As far as possible, these perspectives should be treated and applied on an equal footing and in an equally consequent way. At the same time, triangulation (of different methods or data sorts) should allow a principal surplus of knowledge. For example, triangulation should produce knowledge at different levels, which means they go beyond the knowledge made possible by one approach and thus contribute to promoting quality in research.

Although triangulation has often been cited as a major strength in ensuring the validity, its contribution towards validity has often been critiqued (Fielding and Fielding, 1986). At the heart of such critique is the concept of validity as it applies to qualitative research. As Glaser and Strauss argued, there are:

doubts as to the applicability of the canons of quantitative research as criteria for judging the credibility of substantive theory based on qualitative research (Glaser and Strauss, 1965, p. 5).

In this research, triangulation, especially with methods triangulation (see section 2.5.2) is not used with the purpose of establishing accuracy; but rather with the purpose of adding multiple dimensions to theoretical propositions. In this manner, validity is not viewed as a measure of accuracy but rather a technique of adding depth to the findings.

This principle is also underlined by the interpretivist research philosophy adopted in the research. ‘Interpretivism’ is an umbrella term for a number of different paradigms one of which is ‘constructivism’. In constructivist research, ‘there is no unique “real world” that pre-exists and is independent of human mental activity and human symbolic language (Bruner, 1986, p. 95). Knowledge and truth are created by people, and there are often multiple, conflicting constructions of reality. Supporters of interpretivist/constructivist qualitative research argue that it allows greater flexibility and therefore results in the discovery of new insights (Sutton, 1997) and that ‘it can produce new and unexpected data, evidence we did not know was there’ (Madjar and Walton 2001, p. 41). This approach is also consistent with principles of falsification – which asserts that a theory may prove to be scientific only if an observation could be made to contradict it (Popper, 1963, p. 33). Figure 2.6 shows how this principle is asserted in the research.

Beginning with the exploratory domain, trial propositions are made to the points of interest raised within the exploratory domain. Through further triangulations of data, methods, and investigators, errors are eliminated and at the same time, multiple perspectives are added to the trial theoretical propositions to the exploratory domain. This eventually leads to an improved overall concept, a cumulated theory built from such propositions.

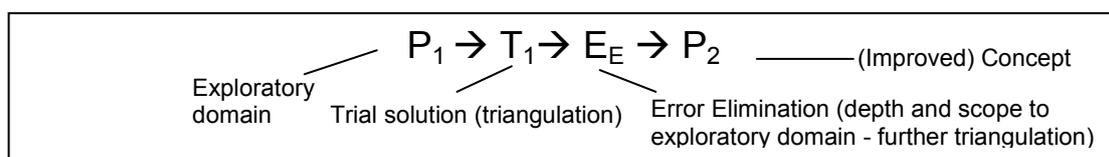


Figure 2.6: Validating research findings.

2.5.1 Data triangulation

'Data triangulation', as the name suggests, is referred to as the use of various sources of data (Denzin, 1970, p. 31). It should be distinguished from using different methods to produce data (Denzin, 1970). This can be differentiated in a number of ways; such as studying the same issues and phenomenon at different times, in different locations, and with different persons. In the context of this research people were interviewed at two levels, according to the units of analysis: a) at the interaction level, between the cultural institution and individuals, and b) as part of their communities. These two levels serve as points of reference; but at the same time assist in the triangulation of data by allowing for multiple perspectives to be shed on the issues raised in the research.

Another form of triangulating data is via the use of multiple data types. This brings back the three strata of consciousness as discussed by Giddens (1976). These levels of consciousness (unconscious, practical, and discursive) are reflected in this research as stakeholder interviews, gatekeeper interviews, and written documents.

A third form of data triangulation lies in the way multiple case studies are selected. Perhaps one of the most conscious criteria used in selecting the case studies has been the need to compare different types of cultural institutions. As might already be apparent, this comparison is done both in via 'within' cultural institutions of the same nature and 'between' different types of cultural institutions. In the first criterion two cases of the same type of cultural institutions are selected, e.g. two libraries in different cultural contexts; while the latter criterion warranted the need to select case studies that belong to cultural institutions of another type i.e. libraries versus museums. This form of data triangulation ensured that data will also reflect different cultural contexts and institutional backgrounds.

To summarise, data triangulation in this research is conducted in the following ways: a) multiple perspectives (multiple points of reference from people interviewed), b) multiple data types (different types of interviews and written documents), and c) multiple institutional types (within and between methods of selecting cultural institutions).

2.5.2 Methods triangulation

As opposed to data triangulation, methods triangulation:

involves a complex process of playing each method off against the other so as to maximise the validity of field efforts. Assessment cannot be solely derived from principles given in research manuals – it is an emergent process, contingent on the investigator, his research setting, and his theoretical perspective (Denzin, 1970, p. 310).

Denzin (1970) suggested that methodological triangulation can be achieved by using different methods to investigate the same issues. In this research this has been achieved through the between-methods triangulation, that is, the use of different methods in multiple case studies. More importantly, the selection of appropriate methods should be considered against the types of issues or conceptual points of interest investigated. Table 2.2 summarises the methods used for each case study versus the broad points of interest investigated.

	Points of interest	Methods
Museum Victoria-WoFG community	Properties of resources in the knowledge commons, collective processes involved, the role of the museum in engaging participation and both as a structure and/or an agent of change, significant cultural issues.	Action research, observations, document analysis, semi-structured interviews, focus group interviews
Asian Civilisations Museum	Types of communication media technologies involved with different properties of resources in the knowledge commons, collective processes, role of the museum in engaging participation both as a structure and/or an agent of change, significant cultural issues.	Observations, document analysis, semi-structured interviews, focus group interviews
Public libraries (Victoria)	Types of resources in the knowledge commons and their properties, types of practices initiated by libraries and/or communities, types of observable collective processes in such practices, properties of designed participation, and role of library in engaging participation both as a structure and/or an agent of change, significant cultural issues.	Observations, document analysis, semi-structured interviews
Public libraries (Singapore)	Types of resources in the knowledge commons and their properties, types of practices initiated by libraries and/or communities, types of observable collective processes in such practices, properties of designed participation, and role of library in engaging participation both as a structure and/or an agent of change, significant cultural issues.	Observations, document analysis, semi-structured interviews

Table 2.2: Triangulation of methods.

As seen from the table, there are similarities and differences between the issues investigated in each case study (as discussed in the discussion of case studies' selection), but this table also attempts to map the appropriateness of each method against these issues. As the research is underpinned by interpretivist philosophies, interviews make up the primary method in the research inquiries for all case studies. However, other methods complement the interviews, such as the action research component (in the development of a digital collection), observations, document analysis, and focus group interviews in the Museum Victoria-WoFG community case study.

2.5.3 Investigator triangulation

The last form of triangulation in the research comes through investigators. This simply refers to the use of multiple interviewers, observers, or transcript coders in the context of the research. Although the researcher had been the main investigator in the research (and therefore the only person to have been involved in observations and coding transcripts of the study), on some occasions the researcher was able to involve multiple interviewees. In the case of public libraries in Victoria for example,

there were two other interviewers for most of the interviews conducted. The researcher was also able to involve other researchers as interviewers in the Museum Victoria-WoFG community case study, especially during meetings arising out of the action research component and focus group interviews.

Investigator triangulation was especially useful in cross-checking the findings coming from the data, and also valuable in bringing together multiple research perspectives on these results. Cases in Singapore, however, were not part of such triangulation due to the fact that the researcher worked alone and there were limited resources during the time when fieldwork for these case studies was conducted.

Chapter 3 (Foundations 1) – Knowledge Commons

3.1 Scope of chapter

- Using the literature, identifies and explores key issues in Study Domain (A) – Commons (as presented in Figure 1.1) with special reference to the concept of the knowledge commons.
- Discusses criteria that characterise a knowledge commons, including criteria relating to: linguistic meaning, relationship to markets, access and use, and Benkler's (2003) typology of the commons.
- Canvasses diverse manifestations of the knowledge commons including *information commons*, learning commons and other scholarly commons, as well as the framework called the *Creative Commons*.
- Explores issues of ownership, control, value and use of the commons, with special attention to Hardin's (1968) proposition of the 'Tragedy of the Commons' – the commons as a disaster in the making with the asset being destroyed owing to excessive self-interested usage.
- Provides an initial analysis of the notions of Design – Study Domain (D), and Communities – Study Domain (B) in relation to the commons, with emphasis on issues of authority and allocation, as well as sustainability.

3.2 The commons as an explanatory metaphor

Quim Gil, who was inspired by rural life in certain states in Mexico, drew an impression of the knowledge commons – see Figure 3.1 (Claude, 2002). His representation not only identifies the major components of the knowledge commons but also demonstrates the explanatory power of the metaphor by recalling its early meaning in relation to land-use.

Gil's imagery evokes the land-use commons, and demonstrates how it becomes an explanatory metaphor for conditions in 21st century societies when human wellbeing depends increasingly on availability and use of information resources, in addition to physical resources (Bell, 2001; Jensen, 1999; Castells, 1997; Jones, 1983). Using this imagery, three salient characteristics of the knowledge commons can be highlighted: 1) resources that are shared and freely available, 2) the generation and use of co-created knowledge, and 3) spaces or facilities that allow for both personal and public discussions.

The commons metaphor has thus given rise to a range of terms including the information commons, the learning commons, the creative commons, the cultural commons, and so on. These terms will be explored in subsequent discussions; but it should be highlighted that they all display the earlier mentioned salient characteristics of the commons.

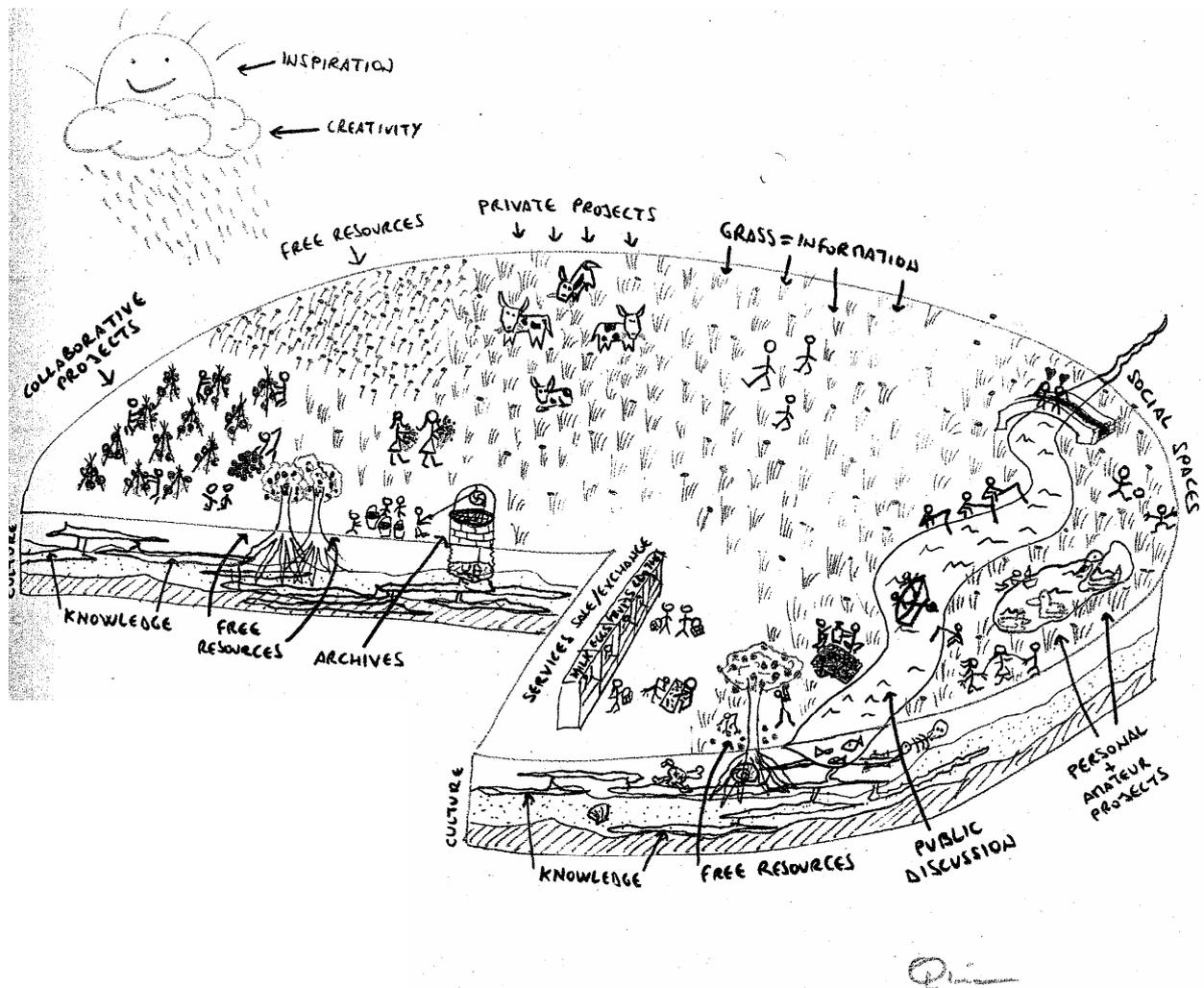


Figure 3.1: The Commons by Gil (Claude, 2002).

3.3 Criteria identifying a knowledge commons

In several parts of the world the 'spirit' of the knowledge commons, including formal or informal models of open licensing, has been prevalent before the stakeholders involved had encountered the term 'commons'.

At the inaugural conference on the Asian Commons held in Bangkok in 2006, which was attended by more than 130 participants from countries all over Asia, there was a long discussion of how the concept was already instinctively known in many parts of Asia. One participant said:

When I heard about this conference, it was also my first time coming across the word 'commons'. But after hearing and talking so much the past two days, I have begun to realise we are all talking about the same thing. I think we [in Asia] have always practised and known this – it's just that we call it collectively by a number of other terms, however loosely they are associated: freedom, the public good, collaboration, and equality (C. Ruangthotvit, personal communication, June 8, 2006).

This chapter discusses key criteria that identify the knowledge commons.

3.3.1 Linguistic usage as criterion

The usage of the word 'commons' as it relates to knowledge in the 21st century is recognised by the Macquarie Dictionary (n.d.) as follows:

5b. *Internet* a website where material is freely available: *information commons; software commons*.

Earlier meanings of commons identified in the same dictionary include:

15. (also plural)

a. Also, *town common*. an unenclosed tract of land available for public pasture.

b. Also, *town common*. an area of public land used by the community for recreation.

c. (in Australia) a tract of land comprising a number of individual landholdings, managed and worked collectively by the group of landholders.

16. *Law* the power, shared with other persons to enter on the land or waters of another, and to remove something therefrom, as by pasturing cattle, catching fish, etc.

Also related to the notion of the knowledge commons is the term 'public domain', which Macquarie Dictionary defined as:

1. the status of a writing in which no copyright subsists.
2. the status of an invention which has not been patented or where the patent has expired.

The key characteristic that is conveyed by these various ideas of the commons, when applied to knowledge is the availability of knowledge resources or amenities for general use, such as the acquisition of knowledge or entertainment, free or at little charge.

3.3.2 Impact of the market

The world today is characterised by a dominance of market relations. The exchange of goods between people is guided by commercial and economic mechanisms (such as the purchasing of goods at the supermarket). Performing artistes are often managed by a recording label or publishing house in order to provide entertainment services. Benkler (2003, p. 6) refers to the commons as 'institutional spaces where human agents can act free of the particular constraints required for markets'. Benkler identifies property rights as the 'most important constraints under-girding markets'.

Bollier (2002, para. 3) discussed the commons in relation to the market as follows:

'The commons' is a useful term for contemporary political discourse because it provides a new lexicon for re-situating market activity in a social and political context. It helps us identify resources that should not be alienated for market use, but should remain non-propertised and 'owned' (in a civic or democratic sense) by everyone. Our culture has no serious vocabulary for contextualising 'the free market' in a social framework; it assumes that it is a universal, a historical force of nature. The commons helps rectify this conceptual problem by offering a rich, countervailing template to the market

paradigm, one that can speak about the economic and legal aspects of a commons as intelligibly as its social and personal aspects.

The commons is largely, but not entirely, distinct from the market. Many knowledge objects in the commons such as folktales or sites on the *World Wide Web* are created initially as non-proprietary knowledge, for free sharing by all. Subsequently, however, they may become – at least in part – proprietary resources when they are used as the basis for product development, for example, Disney's 'Aladdin'. Conversely, other items in the commons may have been initially created as proprietary knowledge, but become part of the commons when they pass out of personal or corporate ownership. Examples are copyrighted works or patented inventions that enter the commons after statutory periods of intellectual property protection have elapsed. In other words, resources in the knowledge commons can become part of the market, and at the same time, many resources that are now in the knowledge commons can also originate from the market.

Clearly the status of an amenity in terms of ownership and the market is an important consideration in characterising a commons, but it seems too simplistic to define the commons just in terms of market and non-market status. For example a free public library collection, which is generally accepted as epitomising the knowledge commons, nevertheless includes many copyrighted works. A free art or antiquities museum, another unquestioned example of the knowledge commons, may contain items that have been expensively purchased on the commercial market and could be traded there again if released from the museum's custodianship.

3.3.3 Access and use as criteria

Access and use are also potent ways of explicating the knowledge commons. The common law of England came about partially because at various stages rulers attempted to systematise the law by finding out what people believed they and others were entitled to and why (Churchill, 1956, p. 225). Thus a field might be owned by a landlord, but by custom and usage the public had right of way to cross that land.

The special interest of this thesis is the intersection of the knowledge commons, community, and cultural institutions. Great cultural institutions of today often started as private property. The Bibliotheque de France began as the monarch's personal library. The Guggenheim and numerous other museums in both the old and new worlds began as private collections which over time became accessible to all, although some of them were still owned privately. Although some museums such as the Guggenheim Museum are still privately owned, they have become widely accessible to public communities.

3.3.4 Benkler's typology of the commons

Benkler argued that commons can be divided into four types based on two parameters.

The first parameter identified by Benkler (2003, p 6) 'is whether they are open to anyone or only to a defined group'. Thus:

Commons type 1: If a commons is open to anyone, Benkler calls it an *open commons*. Examples are the ocean, air, water, and highway systems.

Commons type 2: If a commons is open only to a defined group he calls it a *limited access commons*. An example is a private golf course.

Benkler's second parameter Benkler (2003, p 7) is 'whether a commons system is regulated or unregulated'. Thus:

Commons type 3: A commons without rules is an *unregulated commons*. Example: unexplored outer space.

Commons type 4: A commons ordered by rules is a *regulated commons*. Examples: *Wikipedia* or a library.

Using Benkler's typology it is clear that pairings types 1 or 2 must be paired with types 3 or 4 in order to describe the design of a particular commons, whether that design has emerged from tradition or whether it has been deliberately created.

Just one example of how Benkler's typology can be used to characterise a knowledge commons is the Cooperation Commons (<http://www.cooperationcommons.com/>) founded by Howard Rheingold (Rheingold, 2002). This initiative belongs to Types 2 and 4, in that it is a limited access commons governed by rules. In the Cooperation Commons resources are shared by all who care to visit the site, yet in order to *contribute* to this commons one must be a member. Many research groups take on this form as well, where there is a limited membership but unlimited access to the resources created within the community. As the Cooperation Commons site states:

You do not need a login to view the documents, the blog, or any section of this site. You do need a login to add an entry to the summary documents or to blog. If you are interested in summarising or blogging, or in being a member of our Google Group discussion, contact ...

3.4 Manifestations of the knowledge commons

The knowledge commons are constantly changing and mutating. Existing examples are in a constant state of evolution, and new examples continually appear. It is thus not possible to describe all the areas where the concept of the knowledge commons has been manifested. However a selection of key categories of the knowledge commons would need to include the following.

3.4.1 The information commons

The information commons is a term loosely used to refer to resources on the Internet (Bollier, 2004; Beagle, 1999; Hess, 2000) and redesigned or newly designed libraries (Halbert, 1999; Beagle, 1999). It emphasises the free and equitable use of information resources. In the literature there are two main connotations for the term information commons, namely:

- the online environment itself, in which digital services can be integrated and distributed effectively at marginal cost across distances.
- the infusion of technological services in libraries, and used to 'denote a new type of physical facility specifically designed to organise workspace and service delivery around the integrated digital environment' (Beagle, 1999, p 82).

In both cases, the purpose is to provide possibilities for access and contribution to resources, including framework implications such as information architecture design, the design of spaces and facilities, and so on.

3.4.2 The learning commons

Another widespread term is the learning commons, increasingly used by libraries. In the learning commons, library services, resources, technologies, and physical spaces are integrated towards the core purpose of learning. The focus of the learning commons is on cognitive enrichment through integrated access to information resources in various media free to the user at the point of use (MacWhinnie, 2003). Quite often found in academic libraries, the learning commons brings together various functions of the institution under one roof: such as technological support, language and learning services, and of course, the library holdings.

3.4.3 Other scholarly commons

Other applications of the commons include the Cultural Commons, Science Commons (Levine, 2003), the Academic/Scholarly Commons (Hellstrom, 2003; Bollier, 2004), or the Student Commons (Butin, 2000); aimed at engaging participants in creating dialogue around arts, cultural, scientific, anthropological or wider academic or campus issues. In addition to providing access to onsite topical information resources, such examples of the knowledge commons, all follow the collaborative principles and open content licensing frameworks associated with commons models.

3.4.4 The Creative Commons

Last but certainly not least in this selective listing of contexts in which the knowledge commons concept is manifested, is the Creative Commons.

The Creative Commons is not a place – it is an open content licensing framework which seeks to offer a range of access possibilities between demand for full copyrighted-based payment for every use of information resources and totally unrestricted free use.

The Creative Commons is a prominent example of the range of open licensing frameworks that now exist. It is available as a generic framework, and in localised versions for jurisdictions including India, China, Japan, Korea, Australia, Italy, Taiwan, Brazil, Netherlands, France, Austria, Spain, United Kingdom, Croatia, and others.

The Creative Commons seeks to cater for varying forms of information resources offered both the through the knowledge commons and the market. The following self-description taken from the Creative Commons' website best illustrates this:

Share, reuse, and remix — legally. Creative Commons provides free tools that let authors, scientists, artists, and educators easily mark their creative work with the freedoms they want it to carry... Creative Commons defines the spectrum of possibilities between full copyright — all rights reserved — and the public domain — no rights reserved. We're a non-profit organisation. Everything we do — including the software we create — is free (Creative Commons, n.d., para. 1).

3.5 Ownership and control of the knowledge commons

Ownership is a constantly recurring issue in discussions about the nature and management of the knowledge commons: are resources in the commons owned by no-one or everyone, or something in between?

3.5.1 *Emergence of knowledge ownership*

It would be mistaken to assume that the idea of information or knowledge as something own-able – as property – began in modern times, perhaps in Europe with the advent of printing. In fact the secret knowledge of shamans and priests, and the exclusive powers it conferred, goes back to the beginnings of human history. Mediaeval guilds, also, kept their craft knowledge well restricted as a means of maximising their power both in the marketplace and in the wider society.

Nevertheless Benkler (2003, p. 6) made the valid point that in past centuries, especially since the beginnings of copyright in the 17th century, intellectual property was most often thought of in terms of its physical manifestation as a document or artefact. A poem printed on a page could be limited in its accessibility and reciprocity by copyright, but a poem widely sung by the people had no such constraints – it was part of the knowledge commons. Know-how as embodied in a device, or remedies as embodied in a pharmaceutical product, could be protected by patent, but know-how or remedies as practised by men and women in everyday life was not restricted and readily available – they were part of the knowledge commons.

3.5.2 *Ownership and the knowledge commons*

Bollier viewed the commons as *collectively* owned by society. In a paper he affirmed his argument, defining the commons as ‘various physical resources, social institutions and intangible cultural traditions that we, the members of a society, collectively own’ (Bollier, 2005, p. 4).

Though not disagreeing that some resources in the commons can be collectively owned, Levine (2003) maintained that many resources in the commons can be seen as *unowned* by anyone. He gave several examples of how the ‘unowned commons’ can work: such as the Internet, books and music where copyrights have long expired, and software generated under the General Public License. In these examples, the openness and extent to which they are shared freely contribute to the perceived absence of ownership.

3.5.3 *Control and the ‘Tragedy of the Commons’*

Whether they are seen as collectively owned or unowned, do the knowledge commons need to be controlled? If so who is responsible for controlling them and why?

3.5.3.1 *The need to protect the commons*

Debate about control has arisen mainly because of concerns about *protecting* the knowledge commons. An analogy is seen with the problem described by Hardin (1968) as the ‘Tragedy of the Commons’. In his classic essay in the journal *Science*, Hardin articulated anew the conflict between public and private good in the exploitation of a finite resource.

This conflict was a highly political issue in England in the early 18th century, when common land was systematically transferred to private ownership or ‘enclosed’. At that time one of the key arguments in favour of enclosure was that in private ownership the land would be well maintained and productively used, whereas in common ownership an increasing population would merely exploit the land for personal advantage with no incentive to maintain it (Linebaugh, 2001; Lloyd, 1833).

3.5.3.2 *The commons as a disaster in the making*

Building on Lloyd’s introduction to the potential risks of the commons, Hardin (1968) argued for the commons as a tragedy in the making – a situation that sets itself up for disaster. His rationale was the assumption that:

every man is locked into a system that compels him to increase his herd without limit – in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all. (Hardin, 1968, p. 1244).

This assumption was based on the scenario that on a common and shared land, every man is compelled to increase his own herd – but it also could be that the problem will not arise if the herds were not privately owned. In addition, in the digital age the commons need not be finite in the sense that land resources are finite. Practically, infinite copying of information resources is possible (Shapiro and Varian, 1999) so in what sense does the 21st century knowledge commons need protection for those who claim to own something to dictate to others the terms on which they can use those things?

The debate thus proceeding to-day is about whether, or how far, the notion of ‘tragedy of the commons’ has relevance to the knowledge commons in the 21st century (Bailey and Tierney, 2002; Benkler, 2003).

3.5.3.3 *Recorded music as a claimed case of ‘tragedy’*

In the late 20th and early 21st century perhaps the most prominent example of an argument supporting the ‘tragedy’ proposition has been made by the recorded music industry. The industry has battled peer-to-peer music copying on the Internet with every legal and technological means available. Their ‘tragedy’ argument has been that, without the ownership and control that has been exercised by the industry since the advent of recorded music, the income of composers and artists would dry up and therefore also the sustainable supply of new music. To paraphrase Hardin, freedom to copy in a musical commons would bring ruin to all stakeholders.

This was perhaps best manifested in the battles between Napster and major record labels, such as Universal Music Group, Sony, Warner Music Group, EMI Music, and Bertelsmann Music Group (Merriden, 2001). As pointed out by Merriden (2001), Friedman (2006) and Menn (2003), even though the company eventually filed for bankruptcy, Napster’s legacy was difficult to ignore, because it was based on a philosophy of sharing resources. Shawn Fanning, co-founder of Napster and the original developer of the Napster software, argued how peer-to-peer technology can be used for positive outcomes.

I believe that the peer-to-peer technology on which Napster is based has the potential to be adopted for many different uses. People generally speak about

the ability to share other kinds of files in addition to music, and indeed, Napster has been contacted by entities such as the Human Genome Project that are interested in sharing information among specific communities of interest. But peer-to-peer technology, or distributed computing, also has tremendous opportunity for sharing resources or computing power, lowering information and transaction costs. Peer-to-peer could be used to create a pool of resources in aggregate to solve a range of complex storage, processing and bandwidth problems. Peer-to-peer also has the potential to change today's understanding of the relationship between source and site. Think how much faster and more efficient the Internet could be if instead of always connecting you to a central server every time you click on to a web site, your computer would find the source that housed that information nearest to you – if it's already on the computer of the kid down the hall, why travel halfway around the world to retrieve it? A number of companies, from Intel on down to small start-ups, are looking at ways to develop peer-to-peer technology, and I believe that many of them will succeed (Merriden, 2001, p. viii).

The argued potential of peer-to-peer elucidates the proposition that the value of the knowledge commons lies not only in resources that are freely or equally accessible; its value also lies in the processing of those resources.

3.5.3.4 *Value of the commons*

Hepburn (2005) asked: '...if something isn't able to be owned, how can you put a value on it? If something doesn't have a market value, how can you steal it?'

The concept of value is a complex one². While there can be market or economic value attributed to resources, there are other understandings, such as worth. In fact the very act of appropriation or 'stealing' is one proof that value exists in the commons. Abuse or 'stealing' occurs when individuals or corporations precipitate a 'tragedy' of the commons by taking more than a fair share, or by damaging the common resource to the detriment of other members of society. Corporations which over-fish in international waters, jeopardising the sustainability of the ecosystem, is an obvious present-day example.

The 20th and 21st centuries have demonstrated how a knowledge commons can be inappropriately exploited for profit – prime cases being the appropriation of images from indigenous art for commercial products; or of indigenous herbal knowledge for commercial pharmaceuticals; without permission from, acknowledgement of, or compensation to, the traditional owners of the knowledge.

3.5.3.5 *How use increases the knowledge commons*

One use of the knowledge commons is the free application of knowledge in human pursuits. Another use is to create more knowledge, not only through first discovery but also through the re-integration of existing knowledge: Confucius stated 'I have

² The concept of value was also elucidated by Marx (1976) in his discussion of the commodity. In his complex discussion, Marx elucidated the concept of value in terms of two notions that are dialectically related: use-value (tangible forms of labour time and commodities) and exchange value (constituting socially necessary labour time and allocated monetary terms). In terms of the value of the knowledge commons, use value is clearly present – but exchange value is less discernible, given the distinctions of the commons from the market.

finished my greatest work and I am proud to say that not a single idea in it is mine' (Liang, 2004, pp 13).

Neither the application nor re-integration of knowledge in the commons depletes the resources on which it draws. Drucker (1993) argued that knowledge as a resource does not degrade when used, but rather, increases in value the more it is used. As such, knowledge resources cannot be treated like natural resources in terms of scarcity. A good contemporary example is Wikipedia, where its value and quality depend on the increasing use of the resource – and especially on the continuous critiquing by the readers/creators of the coverage and accuracy of the resource (Wilkinson and Huberman, 2007).

Keen (2007), however, found such examples that rely on the Internet disturbing. As he argued, the problem is with mass participation in the creation of knowledge. With contemporary technologies and the Internet, participation is made easily possible – and knowledge resources in such forms are also characterised by mass 'amateurisation' which can easily lead to misinformation. Keen (2007) quoted Marshall Poe, who recognised that resources in Wikipedia are:

...not exactly expert knowledge; it's common knowledge... when you go to nuclear reactor on Wikipedia you're not getting an encyclopedia entry, so much as you're getting what people who know a little about nuclear reactors know about nuclear reactors and what they think common people can understand. Wikipedia constantly throws people off and they think, well, if it's an encyclopedia why can't I cite it; why can't I...rely on it? And you can't; you just can't rely on it like that (Keen, 2007, p. 39-40).

In addition to the commonness of knowledge, Keen (2007) also highlighted that:

...while the professionals – the editors, the scholars, the publishers – are certainly the victims of an Internet that diminishes their value and takes away their jobs, the greater victims of all this are us, the readers of Wikipedia and of the blogs and all the 'free' content that is insistently reaching out for our attention (Keen, 2007, p. 45).

In other words Keen's concern is that the 'amateur' produced *quantity* of information is eliminating professionally produced *quality* of information. Regarding *quantity*, Keen (2007)'s critique of the amateur's trajectory on the Internet seems paradoxically to have made a positive point for the peer-produced knowledge commons without realising it. The problem of scarcity is eliminated, because the amount of resources that is freely accessible continually increases on the Internet. Thus the potential tragedy of the knowledge commons does not lie with the pursuit of self interests depleting resources that are limited. Rather the abundance of knowledge resources therefore presents itself as an opportunity to resolve global literacy divides, which perhaps explains the increase of projects to bring technologies and the Internet to developing countries in recent years. Some examples are the One Laptop Per Child project, the Telecentre project, and the Swedish Program for ICT in Developing Regions (SPIDER).

Regarding the *quality* of information, Keen's (2007) argument elucidates a key role for cultural institutions as mentors and gatekeepers. Problems such as misinformation and a lack of coherence are significant implications for cultural institutions to consider. The issues of control and allocation therefore become central to the sustainability of the knowledge commons. With limited funding at their disposal, cultural institutions need to provide their communities with some level of quality

control. Amid the plethora of good, bad or indifferent information resources in the commons. Thus key functions for cultural institutions are prioritisation and allocation. As Bradley (2006) puts it,

Twenty-five years ago, at a time when ICT was known as EDP (electronic data processing), I used to close my speeches by arguing that computerisation is really an issue of allocation (Bradley, 2006, p. 84).

On the Internet and other digital platforms, it is proposed that it is the allocation of knowledge resources is one of the key roles for cultural institutions today.

3.5.3.6 *Relevance of Hardin's 'tragedy' proposition*

In the light of the points raised in section 3.5.3, it may be tentatively concluded that in relation to the knowledge commons Hardin's proposition of 'tragedy' may be flawed but is not irrelevant. If left 'to their own devices' valuable resources in the knowledge commons, like in the physical commons, might well be at risk and vulnerable to personal or corporate appropriation, against the interests of society. Many have argued for the importance of sustaining a keen level of vigilance and resistance against abuses of market appropriation (Liang, 2004; Bollier, 2001; Pang, 2007; Lessig, 2004; Benkler, 2003).

Levine (2002) suggested that to prevent tragedy in the commons, state, non-profit, or voluntary ownerships of the commons by the concerned community was desirable. This is one way that the role of cultural institutions such as museums and libraries may be interpreted.

Hardin's vision of a 'tragedy of the commons', however, appeared to provide only a partial explanation of resource creation and use in the knowledge commons and cannot by itself provide guidance on how far and in what ways the knowledge commons should be controlled in order to ensure their sustainability.

3.6 Shaping or 'designing' the knowledge commons

3.6.1 *The necessity of community*

Participation of individuals and communities is instrumental in shaping common resources, and the potential scope for such participation is in turn shaped by these resources. This process is an example of what the social theorist Anthony Giddens called 'structuration' (from the French for 'structuring') and is demonstrated in the development of both the physical and knowledge commons.

For example, spaces in the commons facilitate certain activities, and these activities in turn influence how spaces are developed in the future. Likewise technologies enable certain capabilities, and those capabilities play a part in the shaping of future technologies.

The notion of design in the commons can thus be viewed as interplay of all three modalities in structuration theory. Cultural patterns and trends are (re)interpreted and expressed in the (re)allocation of resources, which in turn (re)establish the normative patterns that become the framework and target of the next (re)design initiative. This community process continuously both establishes and changes the social culture - the 'rules' about what can be done and how it can be done at any point in time or space.

De Angelis (2006, para. 1) stated that ‘there is no commons without community within which the modalities of access to common resources are negotiated’. In other words, the knowledge commons cannot exist without the community – as it is inevitably bounded by the very community that produces and uses it, even in the most open commons.

3.6.2 Community, structuration and the ‘rules’ of the commons

The key point being made here is that there is an inseparability between concepts of commons and community, which goes beyond their linked etymology. No object or resource is intrinsically a commons. Even air, sea or outer space can be ‘enclosed’ or converted into private property.

3.6.2.1 The ubiquity of rules

The commons is ultimately and fundamentally a knowledge phenomenon: a commons exists because a community believes it exists, and there are rules – however broad – that govern its existence. Lose this community of knowledge or belief and you lose the commons. Create or strengthen such a community and you can create, develop or defend a commons.

Levine (2002) argued that there is no such thing as a rule-free commons that is also sustainable at the same time. It should be noted that Levine’s referral to rules is different to Benkler’s referral to ‘unregulated’ commons in his typology of the commons. The rules described by Levine refer to shared understandings and beliefs of how things work, even though within these spaces the commons may be unregulated. He identified as a key shortcoming in Hardin’s (1968) account of the ‘tragedy’ that Hardin assumed a commons that was uncontrollable and unorganised, open to abuse by individuals or groups who were primarily interested in fulfilling their self interests.

3.6.2.2 Authorisation and allocation in the commons

It may be discerned there are two types of resources within the knowledge commons. A commons exists because ‘common knowledge’ of a community recognises its existence, and some level of rules – however informal and fragmentary – are implied by this recognition. The rules may be as minimal as an understanding of what falls within or outside the physical or virtual boundary of the commons.

Giddens (1984, p. 33) calls such rules ‘resources’, and sees a distinction between ‘authoritative’ and ‘allocative’ resources. An authoritative resource consists in the community consensus that a particular social patterning (otherwise called a social institution) can and should exist – in other words the basic or enabling rule(s). Giddens ‘allocative’ resource consists in the rules that social institutions follow in order to share finite goods among people. Giddens defined both authoritative and allocative resources as follows (Giddens, 1984, p. 373):

Authoritative resources: Non-material resources involved in the generation of power, deriving from the capability of harnessing the activities of human beings; authoritative resources result from the domination of some actors over others.

Allocative resources: Material resources involved in the generation of power, including the natural environment and physical artefacts; allocative resources derive from human dominion over nature.

Note that generally in this thesis the term ‘resources’ refers to the content of the commons rather than the rules governing the commons, but Giddens’ special use of the term as rules has great explanatory power and is therefore introduced early into the argument of the thesis.

3.6.2.3 Examples of authoritative and allocative commons

In terms of the 21st century digital economy, the Internet itself is an authoritative resource in that it establishes that certain virtual interactions in society should be possible, and establishes fundamental rules or ‘protocols’ under which the development of allocative resources can proceed. These allocative resources can be commercially enclosed systems of allocation.

The Creative Commons as an open licensing framework described in section 3.4.4 is also an excellent example of an authoritative resource. Equally the *application* of the Creative Commons framework by a site such as www.flickr.com – where anyone may lodge their photographs for others to share – is an example of an allocative resource.

It is noteworthy that the Flickr application of Creative Commons framework provided the first ever testing of the framework in a court of law. A court in the Netherlands ruled that a newspaper had used certain photographs in a way that contravened the Creative Commons license under which contributors to Flickr are protected. Specifically, they were used in a for-profit way in an issue of the newspaper. Damages were awarded to the contributor of the photographs (Garlick, 2006). At the same time, it is also worth highlighting that open content licenses such as those under the Creative Commons framework restrict usage by relating to their potentials for commercialisation. Figure 3.2 shows a screen capture of how one may search for work licensed under the Creative Commons licensing framework.



Figure 3.2: Searching for Creative Commons licensed work.

As suggested by the search options highlighted by the area marked in the figure, work licensed under the Creative Commons framework are differentiated in terms of their availability to be used for commercial purposes and for derivative works to be created. In other words, restrictions do apply to certain resources as stipulated by their creators. In this example, the works themselves, which may be music, photographs, videos, or literature, are allocative resources utilising Creative Commons licenses as authoritative resources.

The example also illustrates complexities between the commons and the market. While commercial works may draw upon the commons (such as the Creative Commons as authoritative resources in the knowledge commons), they do so by seeking to enclose. There are many cases that illustrate this point. During a visit to China by the author, she had come across a large park that was built and maintained by a village over several generations. While access to this park is free, pockets of enclosures have been created within the park – such as the ‘pay-to-enter’

playgrounds for children, puppet shows that charge ‘viewing fees’, and dance classes. Market enclosures can be created within a commons that has been free.

Wright’s (2000) work on the social centres in Italy provides further illustrations. These social centres, referred to as ‘self managed, occupied social centres’ (Wright, 2000, p. 117), are characterised by all sorts of activities and spaces, such as ‘an exhibition gallery, practice rooms for bands, space for theatrical performances, a dark room, a gymnasium and ‘tea salon’ (Wright, 2000, p. 118). Often ‘the product of illegal squatting’ (Wright, 2000, p. 118) they occupy privately owned but unused buildings – but have been instrumental in nurturing ‘cultural innovation’ (Wright, 2000, p. 118) such as Italian rap groups. The example showed how the enclosures of resources, such as spaces that are owned privately, can be contested. As a result, boundaries that are formed around such resources can shift towards the commons.

3.7 Main insights

Insight 3A: The relationship between the commons and the market is complex. The commons and the market are interdependent and their boundaries are contested and often shift.

Insight 3B: The notion of commons is fundamentally implicated with that of communities. Communities as agents, through their collective social processes, influence the rules and allocation practices of the commons, and indeed the entire shaping or ‘design’ of the commons.

Insight 3C: Action-structure theory, and specifically structuration as expounded by Giddens (1984) assists in explaining how commons – including knowledge commons – are initiated, sustained and changed over time, through the agency of communities and processes of implicit or explicit design (relationships a-b, a-d, and b-d in Figure 1.1).

Chapter 4 (Foundations 2) – Community Knowledge

4.1 Scope of the chapter

- Using the literature, identifies and explores key issues in Study Domain (B) – Communities (as presented in Figure 1.1), particularly as they relate to action-structure dynamics of communities, collective processes, and the formation of community knowledge.
- Discusses criteria that characterise communities, including criteria relating to: dictionary definitions, locality, and shared practices, interests, trust and/or values.
- Draws on the structuralist concept of ‘duality of structure’ to elucidate the dynamics of communities, and how Giddens’ ‘modalities of structuration’ (interpretative schemes, facilitation and norms) relate to ways of knowing (practical and discursive consciousness), and reflexiveness (learning from experience).
- Offers a working definition of community knowledge, based on the foregoing structuralist exposition, coupled with Castells’ observations on the nature of communities.
- Proceeds to explore how communities depend on three key collective processes – coordination, cooperation, and collaboration – which map on to Giddens’ three categories of structure.
- Considers the impact on community processes of the contemporary digital media environment, through their effect on social networking. Uses Orlikowski’s extension of Giddens’ theory into the structuration of technology to explain implications for community collective practices, and especially knowledge formation through collaboration.

4.2 Conceptualising community knowledge

Chapter 3 discussed key criteria in identifying resources in the knowledge commons. An important aspect of the knowledge commons is the community and the collective processes within the knowledge commons. This chapter begins by attempting to conceptualise community knowledge – eventually developing a working definition for the thesis.

4.2.1 *The concept of community*

‘Community’ is a much used term. Starting from the general dictionary definitions, this section attempts to build a working definition congruent with the interests and purposes of this thesis.

4.2.2 *Dictionary definitions*

The usage of the word ‘community’ relevant to the topic of this thesis is recognised by the Macquarie Dictionary (n.d.) as follows:

1. all the people of a specific locality or country: *the new transport service is for the benefit of the whole community.*
2. a particular locality, considered together with its inhabitants: *a small rural community.*
3. a group of people within a society with a shared ethnic or cultural background, especially within a larger society: *the Aboriginal community; Melbourne's Greek community.*
4. a group of people with a shared profession, etc.: *the scientific community.*
5. a group of people living together and practising common ownership.
6. joint possession, enjoyment, liability, etc.: *community of property.*
7. similar character; agreement; identity: *community of interests.*
--adjective 8. (of a radio or television station) owned and operated by the community which uses it.
--phrase 9. **the community**, the public. [Latin *commūnitas*; replacing Middle English *comunete*, from Old French]

These definitions have one thing in common – in that there is an indication of a shared resource; be it a local space, property, interests, ethnicity, a set of values, profession or practice.

4.2.3 Other definitions

A comprehensive definition of community from the viewpoint of the US public health sector is as follows:

Community: The aggregate of persons with common characteristics such as geographic, professional, cultural, racial, religious, or socio-economic similarities; communities can be defined by location, race, ethnicity, age, occupation, interest in particular problems or outcomes, or other common bonds. (Turnock, 2004, p. 397).

Perhaps closer to the understanding of community guiding this thesis is a definition from the World Health Organisation:

Community: A specific group of people, often living in a defined geographical area, who share a common culture, values and norms, are arranged in a social structure according to relationships which the community has developed over a period of time. Members of a community gain their personal and social identity by sharing common beliefs, values and norms which have been developed by the community in the past and may be modified in the future. They exhibit some awareness of their identity as a group, and share common needs and a commitment to meeting them (Division of Health Promotion, 1998, p. 5).

The above definition has several interesting connotations. While it may be that a community could possibly exist without necessarily 'living in a defined geographical area' (such as migrant workers who maintain connections with other community members in their home countries), in the context of the thesis it should be recognised that people in the communities that are brought together by cultural institutions often have multiple memberships in both place-based and non place-based communities. As it will be seen in later accounts, this also includes people who maintain connections with these communities based on common interests. As defined, the social structure that is manifested by a community is formed by the common culture, beliefs, values, and norms that are developed by the community over time. This perspective may also be enhanced by the additional insight that the very social

structure of relationships are enacted by the beliefs, values and norms that people perceive they have in common with one another (Giddens, 1984).

In the scholarly literature many varieties of community are identified. There are communities of practice, communities of interest, local communities and virtual communities (Wellman and Haythornthwaite, 2000; Wenger and Snyder, 2000). There are also corporate communities, and the range of communities that make up 'civil society' as defined by the World Summit on the Information Society (Schauder, Johanson, and Taylor, 2006).

In contrast to these cognitive styles of definition, there are also definitional accounts of community that are affective – focused on the emotions or feelings that the word evokes. Community is defined as home, a place or state that is half real, half imagined. Community in this sense is characterised by a sense of longing and belonging, personal self-actualisation and emotional empowerment. Simos (1982, p. 82) wrote of community:

We are all longing to go home to some place we have never been — a place half-remembered and half-envisioned we can only catch glimpses of from time to time. Community. Somewhere, there are people to whom we can speak with passion without having the words catch in our throats. Somewhere a circle of hands will open to receive us, eyes will light up as we enter, [and] voices will celebrate with us whenever we come into our own power. Community means strength that joins our strength to do the work that needs to be done. Arms to hold us when we falter. A circle of healing. A circle of friends. Someplace where we can be free.

Anderson (1991, p. 6) expressed another sentiment, 'communities are to be distinguished, not by their falsity/genuineness, but by the style in which they are imagined'. This idea of a community articulates the awareness that when a community reaches a certain size, it is impossible to know all of the people within it and therefore memberships to such a community is made possible by imagination.

4.2.4 Communities and knowledge: a structural perspective

Structuration theory expounded by Giddens (1984) helps to explain the collective processes of people interacting within communities. The creation, sharing and use of knowledge are seen as fundamental to collective process in communities and society. The notion of knowledge creation and transfer is central to structuration theory, where the rules and knowledge resources are seen as essential for the 'structuration' of any social system. As Giddens explained:

To examine the structuration of a social system is to examine the modes whereby the system, through the application of generative rules and resources, is produced and reproduced in social interaction (Giddens 1976, p. 353).

A cornerstone concept in Giddens' writings that assists understanding of knowledge production in communities is the 'duality of structure'. In the glossary of 'The Constitution of Society' (1984, p. 374) Giddens provided the following concise definition of the term:

Duality of structure: Structure as the medium and outcome of the conduct that it recursively organises; the structural properties of social systems do not

exist outside of action but are chronically implicated in its production and reproduction.

In other words social structure is continuously made and remade as a consequence of people's actions, and at the same time provides the context in which such actions take place. Thus action and structure are inseparably linked in an ongoing interplay through which the institutions or patternings of society, and the knowledge which underlies them, are created and re-created.

Giddens' identified three *modalities* that arise from the interplay of three different kinds of structure and interaction, as shown in the middle row of Figure 4.1.

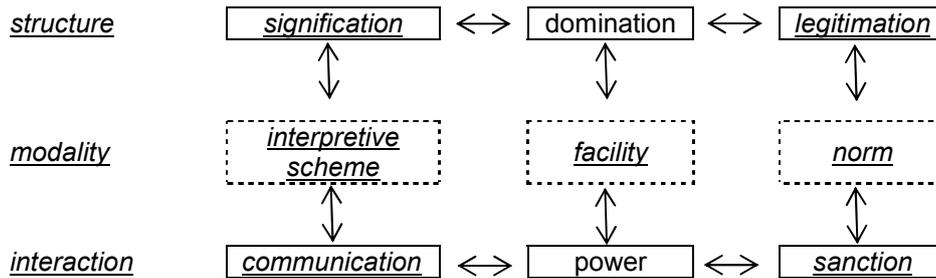


Figure 4.1: Dimensions of the duality of structure (Source: Giddens, 1984, p.29).

The reason for claiming that most discourse in communities are characterised by the interpretive modality arises from Giddens's concept of 'knowledgeability':

As social actors, all human beings are highly 'learned' in respect of knowledge which they possess and apply, in the production and reproduction of day-to-day social encounters; the vast bulk of such knowledge is practical rather than theoretical in character (Giddens 1984, p. 22).

Thus practical knowledgeability is exercised and exemplified constantly in communities. It is enhanced by the *reflexiveness* or learning from experience that is integral to the behaviour of most people. This kind of knowledgeable praxis, proceeding largely informally (for example in the family circle), fall almost entirely within the interpretive modality – political, economic and legal institutions are far in the background.

Actors hardly recognise such *knowledgeability* as 'real' knowledge, as it is not documented or acknowledged by the 'higher' structures which Giddens calls 'facility' and 'norm'. This led Giddens (1984) to distinguish between two kinds of knowing:

Practical consciousness: What actors know (believe) about social conditions, including especially the conditions of their own action, but cannot express discursively; no bar of repression, however, protects practical consciousness as is the case with the unconscious (Giddens, 1984, p. 375).

Discursive consciousness: What actors are able to say, or give verbal expression to, about social conditions, including especially the conditions of their own actions; awareness which has a discursive form (Giddens, 1984, p. 374).

In many situations only the latter – the knowledge that can be objectified in documents – is recognised as 'true' knowledge.

4.2.5 Working definition for the thesis

The picture that emerges from the above definitions and conceptualisations is that knowledge whether held by individuals or shared by groups, is in large or small degree a product of collective community processes. All the ideas recounted above have relevance to the way that 'community knowledge' can be defined.

As Giddens' structuration perspective explains at a theoretical level, in communities, knowledge creation, sharing and use are interdependent processes. This could be witnessed in everyday life, where within a community, one story inspires others, and the knowledge of one individual draws on the accumulated knowledge of others. Knowledge resources that communities regard as 'theirs' may be created by individuals or groups, but are always conditioned by the creators' interactions with bodies of knowledge built up by one or multiple communities to which the creators belong.

Against the background of the definitions and conceptualisations discussed, Castells (2004, p. 8) points the way towards a definition of community that can best assist the exploratory endeavour of this thesis.

Castells observes that as community members come together in knowledge creation processes, they contribute both to the personal knowledge of individuals and to the collective knowledge of the community. Consistent with Giddens' position, he argues that even self-knowledge is in part a subset of community knowledge.

Under this guidance of Castells, many aspects of the previously quoted definitions and conceptualisations can be melded and focused. The working definition of community knowledge therefore offered by the author is as follows:

Community knowledge: Community knowledge is the product of communities operating as sites of discourse, where meaning is collectively and recursively made and re-made in a continuous process of knowledge creation, sharing and use. Community knowledge is both practical and discursive. It is held, in whole or in part, by individuals, groups or the entire community.

4.3 Tensions between self and collective interests in communities

... it is quite true that society may be said to exist only so far as this – independent activity of the individual is controlled in the interest of the group as a whole. That is the reason why the problem of control, using that term in its evident significance, inevitably becomes the central problem of sociology (Park and Burgess, 1921, p. 508).

When individuals come together in a community, issues inevitably arise about individual and collective interests. This is the principal issue that Olson's 'collective action' theory aimed to explain (Olson, 1965). This tension is a central theme in this thesis in considering the relationship between communities and the knowledge commons. The theory of collective action asserts that individuals in communities will not work together to contribute to a common good, or common resources without coercion or some other special incentive:

Unless the number of individuals in a group is quite small, or unless there is coercion or some other special device to make individuals act in their

common interest, rational, self-interested individuals will not act to achieve their common or group interests (Olson, 1965, p. 2).

This argument provided support for Hardin’s (1968, 1971, 1982) reasoning on ‘the tragedy of the commons and problems of collective action’ (Lichbach, 1996). This negative view of the commons suggests that if resources are freely available to everyone, people won’t behave in a sharing way, in other words, people abuse what’s free. The issue of ‘free-riding’ in communities is universal, regardless of the types of communities, and whether they are bounded by market mechanisms, instrumental reasons, or social bonds. Ostrom provided empirical evidence that communities in fact invest voluntarily in resources for the purpose of ‘monitoring and sanctioning the actions of each other so as to reduce the probability of free-riding’ (Ostrom, 2000, p. 138).

Ostrom (2000) also pointed out that the theory of collective action and the probability of free-riding is often contradicted by everyday observations of people behaving as individuals or in groups. For example, many people tend to vote in elections without coercion; people do not as a general rule cheat on their taxes (and likewise, some people who do cheat on their taxes are punished by legitimate structures in the form of moral sanctions); and people do voluntarily contribute to associations and charities.

Many authors have argued on the basis of empirical studies that cooperation levels in fact vary across different settings and variables (Ostrom, 2000; Yoshioka, Yates and Orlikowski, 2002; Benkler, 2002; Nowak, 2006; Moor, 2006; Kollock, 1998; Lansing and Miller, 2003). The concept of cooperation within communities is examined further in the next section.

4.4 Collective processes in communities

Elliott (2007) distinguished three primary human collective processes in communities: coordination, cooperation and collaboration, which will be explained in greater detail in subsequent discussions under this section.

The account in this section maps these concepts against the Giddens’ action-structure modalities as presented in Figure 4.1. The mapping proposes that coordination maps most closely to the structure of legitimation (normative modality), cooperation to domination (the facilitative modality) and collaboration to signification (the interpretive modality).

Figure 4.2 is a further tabulation from Giddens (1984) that demonstrates the linkage between types of structure (and thus also their related actions and mediating modalities) with theoretical domains and forms of institutional order.

<i>Structure(s)</i>	<i>Theoretical Domain</i>	<i>Institutional Order</i>
Signification	Theory of coding	Symbolic orders/modes of discourse
Domination	Theory of resource authorisation Theory of resource allocation	Political institutions Economic institutions
Legitimation	Theory of normative regulation	Legal institutions

Figure 4.2: Structure(s), theoretical domains and institutional order (Source Giddens, 1984, p. 31).

According to this tabulation, the structure of legitimation based on the theory of normative regulation is linked to legal institutions. This can be related to coordination as a collective process that is based on rules and sanctions, to manage the interdependencies of activities. The structure of domination is based on theories of resource authorisation and allocation, and linked to political and economic institutions. Cooperation is associated with this structure, where formal and hierarchical relationships facilitate actions towards a shared goal.

In this light collaboration is arguably the highest order form of collective process for communities in that it requires the least sanctions or formalised instruments of power (authoritative or allocative resources in Giddens' terms), to achieve production of knowledge or any other good. Rather it draws its dynamic from good communication achieved through mutually understood codes of signification (such as language, symbols, ways of conducting discussion, reaching decisions and minimising conflict).

Shirky (2008) on the other hand, identified three different activities that groups undertake with knowledge resources: sharing, cooperation and collective action. Sharing is the simplest form of participation, and with technological applications on the Internet the act of sharing need not be a conscious effort. For example, in the recent social networking application, Facebook, photos can be publicly shared with everyone in the 'global' Facebook community unless users opt out of it. The concept of sharing is important to recognise as a basic collective activity involving the resources in the knowledge commons – without being shared, a resource cannot be treated as part of the knowledge commons.

Cooperation as discussed by Shirky (2008) constitutes several activities. Recognising that some coordination is necessary, Shirky (2008, p. 50) also acknowledged 'collaborative production' as a 'more involved form of cooperation, as it increases the tension between individual and group goals'. The subsequent discussion expands on Shirky (2008)'s notion of cooperation.

The third form of community activity that he defined as follows:

Collective action involves challenges of governance or, put another way, rules for losing. In any group that is determined to take collective action, different members of the group will express different opinions. Whenever a decision is taken on behalf of the group, at least some members won't get their way, and the bigger the group is, or the more decisions are made, the more often this will happen. For a group to take collective action, it must have some shared vision strong enough to bind the group together, despite periodic decisions that will inevitably displease at least some members. For this reason collective action is harder to arrange than information sharing or collaborative creation. In the current spread of social tools, real examples of collective action – where a group acts on behalf of, and with shared consequences for, all of its members – are still relatively rare (Shirky, 2008, p. 53).

The thesis argues for the importance and role of cultural institutions in facilitating such collective action even within social tools – therefore resolving dilemmas and issues involving the knowledge commons.

For now the discussion turns to the main collective processes constituting the collaborative production of resources in the knowledge commons.

4.4.1 Coordination

Elliott (2007, p. 40) saw coordination as a 'fundamental enabling requirement for all collective activities'. Malone and Crowston (1994, p. 90) defined coordination as 'managing dependencies between activities'. Schelling (1960) made an important contribution to the understanding of the concept of coordination. In his research, he showed that coordination is difficult in the absence of rules. Driving, for example, becomes difficult when there are no rules dictating whether cars should drive on the left or right (Kogut and Zander, 1996). Queues in a restroom are difficult to coordinate when there are no rules on where the queues start.

The importance of rules and sanctions is highlighted here, as an essential ingredient to achieve consistent understandings within a community, and achieve efficient coordination. Kogut and Zander referred to the 'prisoners' dilemma' which occurs if there is a lack of 'social knowledge and shared identity' amongst prison inmates (Kogut and Zander, 1996, p. 502). Using this reasoning in undertaking research about the corporate sector context, these authors argued that 'moral and notional consistency' is essential for the coherence of firms (Kogut and Zander, 1996, p. 513).

Consistency achieved through rules is a characteristic of all kinds of organisations, and specifically of firms, social networks, and communities. In Wittgenstein's consideration of rules, he stated that:

... to know a rule is not to be able to provide an abstract formulation of it, but to know how to apply it in novel circumstances, which includes knowing about the contexts of that application (Wittgenstein, 1969, p. 124).

Rules tell people 'how to go on' (Wittgenstein, 1969, p. 124). Giddens used a similar definition, referring to rules as methodological procedures (Giddens, 1979). Coordination with sets of rules as a base are a necessary part of the collective processes by which knowledge may be created and used in a community.

Of the three forms of collective process, coordination is the most dependant on what Giddens calls the normative modality, involving structures of law and actions involving sanctions. First achieved by using sanctions to form norms, it gives rise to structures of legitimation – which in turn provides scopes to those sanctions. At the same time, it draws on power interactions and uses facilities to allocate resources – potentially giving rise to structures of domination. Interpretive schemes are also necessary in order for coordination to happen, achieved by communication and gives rise to the structure of signification.

The rule of driving on the right hand side of the road in most of Europe provides a good example of Giddens' structuration theory. Sanctions and rules were normalised over time, to form the structure of legitimation, enforced through dominant structures such as local government agents, and signified by way of communication in communities. In order for coordination to happen, all of these elements were necessary.

A perfectly coordinated community would imply that there are no rule breakers. Yet in real life this is not the case. There are people who jump queues, drivers who drive in the wrong lanes and workers who defect from their given positions at the assembly lines. The costs of defecting are not always immediate. For example, sanctions and norms in a community can be argued to impose certain costs, such as social isolation. Punishments can be meted out through given power structures, but those who wish, for the sake of self interest, to opt out of coordinated systems and pursuits can still do

so. This is provided that they have access to alternative resources, or if following such systems and pursuits is not essential for existence.

At the same time, the effects of technologies cannot be understated on shaping the intensity of coordination in a community. Malone and Crowston (1994) had already recognised potential consequences of changing practices that comes with using information technologies. However, there is more to collective processes around the creation and distribution of knowledge resources – and does not stop at coordination. As Shirky aptly puts it:

...many tools work by reducing the amount of required coordination, as Flickr does in aggregating photos. Collaborative production can be valuable, but it is harder to get right than sharing, because anything that has to be negotiated about, like a Wikipedia article, takes more energy than things that can just be accreted, like a group of Flickr photos (Shirky, 2008, p. 50-51).

This brings up the next points on cooperation and collaboration.

4.4.2 Cooperation

Elliott (2007) pointed out that while people in a community may share the same pursuit when they cooperate, they need not actually share the same objectives. In cooperation, regardless of the form of costs, there must be collective interests to achieve mutual benefits within a community. Cooperation is argued to be characterised by a 'procedural compliance in a shared pursuit' (Elliott, 2007, p. 43).

A large amount of text has been written on the subject of cooperation (Nowak, 2006; Elliott, 2007; Kollock, 1998; and Lansing and Miller, 2003). For example, Lansing and Miller described a study of Balinese rice farming, which showed that although the enterprise was severely hindered by a scarcity of water and other resources, and plagues of pests, through cooperation the Balinese farmers were able to persevere and meet their goals (Lansing and Miller 2003). Without obvious centralised control, the farmers created, and were dependant on, a carefully coordinated system within the limits of their difficult context. Hence it can be argued that coordination was needed before cooperation could occur. Elliott (2007) reinforced Lansing and Miller's view, and argued that cooperation transcends yet depends on coordination as an underlying collective activity. In his work, Elliott (2007) noted that the process of cooperation relies greatly also on the compliance of will in order to be successful.

Considering Giddens' structuration theory and the principles discussed above relating to coordination, it can be said that cooperation evolves within the collective process of coordination, over time and space. Giddens' three interactions (Figure 3.1) communication, power and sanctions, together with their corresponding structures and mediating modalities, greatly impact on cooperative approaches. Elliott (2007) made the point that cooperation requires compliance in a shared pursuit. Compliance, in turn is much influenced by power interactions and the allocation of facilities and resources as the modality by which a structure of domination is achieved.

Choosing not to cooperate has immediate consequences, regardless of whether the structure of domination and the connected power interactions are formal or informal. This is due to the structural relationships that facilitate cooperation. Moreover, as with coordination, Giddens' theory would suggest that the modalities and interactions relating to signification and legitimation (see Figure 4.1) are equally applicable to the context in which cooperation occurs.

To return to the case of the Balinese rice farmers (Lansing and Miller, 2003) who managed their individual farms without a centralising dominant structure – their need to farm efficiently and responsibly was sufficient incentive to achieve the degree of coordination required in the face of the adverse environmental threats. At the same time, as pointed out by Lansing and Miller (2003), some kind of mechanism was necessary in order to facilitate coordination and cooperation. This mechanism came to be the Balinese rice temples, which sought to centralise activities in order to help coordinate the cooperation between farmers. Ultimately, even though such power relations or dominant structures were neither formal nor direct, the benefits of centralised coordination justified the existence of the rice temples. This thesis argues later that cultural organisations play a similar role to that of the rice temples as informal mechanisms which facilitate cooperation within communities.

4.4.3 Collaboration

Collaboration is a concept that has received much attention from researchers in various disciplines (Benkler, 2006; Newman, 2001; Moor, 2006; Cronin, 2004; Bauwens, 2006; Pang, Johanson, Cao, Liu and Zhang, 2007). Often used to describe teams of people working together, collaboration appears to have become 'one of the leading terms of an emergent contemporary political sensibility'.

If one principle could be seen to inform the opaque surface of what in the 1990s was called a 'new economy' – the shifts and changes, the dynamics and blockades, the emergencies and habit formations taking place within the realm of immaterial production – it would certainly be: 'work together' (Schneider, 2006, para. 1).

Collaboration as the notion of working together is strongly reinforced in the definition of John-Steiner, Weber and Minnis:

The principles in a true collaboration represent complementary domains of expertise. As collaborators, they do not only plan, decide, and act jointly, they also think together, combining independent conceptual schemes to create original frameworks. Also, in a true collaboration, there is a commitment to shared resources, power, and talent: no individual's point of view dominates, authority for decisions and action resides in the group, and work products reflect a blending of all participants' contributions. (John-Steiner et al, 1998, p 780).

Here collaboration is viewed as a higher order process than coordination and cooperation, the latter processes being preconditions for collaboration to take place. Schneider (2006, para. 3) noted that collaboration has the characteristic of being 'emergent' in the understandings, in the types of resources created, and the ways collaborators act. Elliott (2007, p. 31) made a similar point in offered the following definition of collaboration:

The process of two or more people collectively creating emergent, shared representations of a process and or outcome that reflects the input of the total body of contributors.

Structuration theory is applied to this context, and collaboration (which relies greatly on communication while also being affected by power relationships and normalisation through sanctions) is argued to give rise to rule structures which emerge and take on their meaning (signification) over time and space.

Like John-Steiner et al, Schneider (2006) described collaboration as 'far more than acting together, as it extends towards a network of interconnected approaches and efforts'. As with coordination and cooperation, collaboration is affected by all three interactions in Figure 4.1, namely communication, power and sanctions. However, the element of communication may arguably be more integral and more obvious in collaboration than it is in the other two processes, since communication is vital in achieving the outcomes of thinking and acting together as a group.

Collaborators are less constrained by hierarchical structures, and lesser defined roles, responsibilities and resources (Moor, 2006). However communities of collaborators do have rule structures – activities are still coordinated, and there is still compliance and cooperation in undertaking tasks.

In contrast to the serious consequences of opting out in the contexts of the coordination and cooperation processes, non-collaboration is an easier form of defection, because individual contributions from collaborators are not easily identifiable and because the nature of the rules and relationships within collaboration are more dynamic and emergent. Those who defect from collaborative rule structures are sometimes allowed to start their own branch, or community, without the cost of losing access to the original production of knowledge. They can possibly emerge organically, without compromising other collaborators who were in the original production space. Activities are negotiated continuously, and more so than in the processes of coordination or cooperation.

Thus while collaboration is a higher order process than coordination and cooperation, it is nevertheless easier to be a defector from a context of collaboration than from the latter two processes.

The case of software development in the collaborative Open Source Software movement illustrates the point above. Communities in the movement treat any user or participant as a potential producer. Yet one does not have to contribute in order to reap the benefits of collaboration. Non-developers download software that emerged out of the Open Source movement and use them for their self interests, and they can ask for help at forums, without the need to contribute help.

This thesis argues later that collaboration as a collective process is the key to the establishment and development of a knowledge commons because the goals of producing, sharing and defending common knowledge resources cannot be achieved without the high order process of collaboration. This is not to imply that other collective processes of producing knowledge in communities are unnecessary, since collaboration builds on the processes of coordination and cooperation over time and space. But while collaboration is important to recognise as a collective process of a higher order because of its dynamism, it should also be recognised that it is also difficult to achieve as a sustainable outcome because of its less prescriptive structure.

4.5 Conditions and consequences of the contemporary media environment

4.5.1 Digital media and the transformation of social networking

Consistent with the view that structures of signification are fundamental to effective collective processes, and especially collaboration, the contemporary media environment is arguably one of the key drivers of interactions within and between communities.

The media environment, with communication technologies and networks enabled by the Internet, has made the social networks that operate within communities and between communities much more transparent. Information and communication technologies enable social networking activities to have greater breadth and speed, and lower costs of coordination (Schauder and Pang, 2006).

Researchers such as Bimber, Flanagin and Stohl (2005), Wellman and Haythornthwaite (2000), Castells (2003) and Lessig (2004) have collectively identified the following features of the media environment which impact on communities:

- (1) Portals and applications that facilitate non-commercial publishing.
- (2) Communication technologies that facilitate interactions between people.
- (3) Media devices that increase the capability of people to share knowledge and exchange resources.
- (4) Peer to peer networks, interactive forums, and other participative technologies that support decentralised collective action.
- (5) Communication technologies and efficient transfers of resources that help to redefine the concepts of time and space.
- (6) Virtual communities that fundamentally re-pattern social networks through transformations of strong bonding (strong) and bridging (weak) ties. Bridging ties especially – those between rather than within communities – are multiplied by communication technologies. For example, the social application Facebook makes recommendations for users to add other users, based on the number of mutual contacts two people have. In that way, individuals are connected to one another and their communities – even though they may not have immediate or strong ties.

The contemporary media environment is characterised by increasingly usable communication technologies, complex networks, and rapid transfers of information independent of location and time. Perhaps one of the greatest impacts of the media environment has been the way individuals now communicate – more quickly, and with many people.

Digital technologies have also enabled people to share, and in some cases, build on the efforts of others. For example, an essay by one person can easily be forwarded to another for further additions; context can be provided in documents by embedding links and rich multimedia objects in a message.

With participatory technologies, it has also become easier for people to create and contribute knowledge even though it may be unconscious to them that they are contributing (Bimber et al, 2005). Del.icio.us (<http://del.icio.us/>), in the form of a tool allowing users to manage and make sense of their personal bookmarks, aggregates the knowledge created around bookmarks by individuals into one integrated repository. On the individual's Del.icio.us page, individual knowledge is contextualised within the knowledge of the community that identified with a resource i.e. a bookmark. This is best explained using an example. Figure 4.3 shows a page of a bookmark saved by a user, after a user logs in to Del.icio.us.



Figure 4.3: Integrated knowledge of the individual and the community around a bookmark in Del.icio.us.

(1) – The location of the bookmark is shown as well as the popularity of the bookmark within the community. The greater the number of people who have saved the bookmark, the better known it is. This provides the user a sense of how many in the Del.icio.us community are sharing and using the bookmark together.

(2) – The yellow-highlighted box reflects how the user made sense of the bookmark i.e. individual knowledge. This is shown by the tags and notes accompanying the bookmark, as well as the date the bookmark was saved. It should be highlighted that this knowledge is recursive; and its ‘recursive-ness’ is made possible with the tool’s ability to allow the user to edit these tags and notes.

(3) – Shows all of the notes created by users who have saved this bookmark. Individual knowledge is therefore contributed as a collective pool of knowledge around a bookmark.

(4) – Shows the most popular tags created for the resource i.e. bookmark. This enables the user to see the most popular ways others in the community (who have saved this resource) interpret the resource.

(5) – The history of posts provides further context for the user to see how the resource has been shared and made sense of within the community.

Barriers to access are breaking down, and people are increasingly empowered to create. This is no longer only the age of the consumer, but one that belongs to the ‘prosumer’: the consumer who is also a producer (Tapscott and Williams, 2006). Of course, these changes are not without their implications: distinctions between an

original resource and a copy are constantly contested, and traditional copyright frameworks are said to be losing their relevance (Liang, 2004; Lessig, 2004). There is thus a need to re-examine legal and ethical frameworks in the contemporary media environment which has become part of contemporary social reality.

4.5.2 The structuration of technology

Orlikowski (1992) has done much work in extending Giddens' structuration theory to the context of technology. Depicting a recursive model of information technology using the structurational perspective (see Figure 4.4), she argued that technology both shapes and is shaped by the structure of institutions. Technology is viewed as both a product and a medium of human actions and agency. This thesis argues that consistent with her model, the contemporary digital media environment is continuously shaped by human agents and at the same time, mediates human actions.

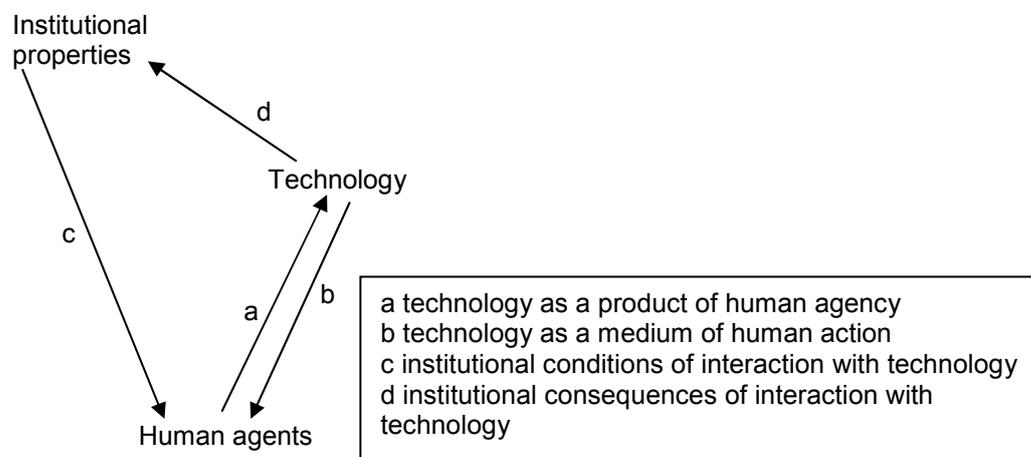


Figure 4.4: Structurational model of technology (Orlikowski, 1992, p. 410).

The contemporary media environment has made it possible for people to form communities and collaborate in ways that were not possible in the past. It is no longer uncommon for young people to invent new things and lead successful businesses, such as Google, YouTube, and Yahoo. In terms of Figure 4.1 such innovations have caused major shifts in patterns of communication and distribution of power, and have challenged the capacity of legal institutions, nationally and internationally, to accommodate the pace of change.

Another contemporary example of innovative interaction enabled by digital media is the prevalence of peer to peer networks, a network technology that is often used for the purpose of file sharing, but can also entail collective knowledge production. One such network, the Peer to Peer Foundation (Bauwens, 2006), is made up of voluntary researchers who share and produce knowledge resources through an easy to use web publishing log, which helps to mediate interactions between contributors in the Foundation's community. The portal of the Foundation, which has evolved and changed its 'face' (appearance and functionalities) several times over the last few years, has been the product of feedback from regular contributors of the community, as well as available peer to peer technologies.

The author of this thesis, during the course of her research, has become a contributor of the Foundation. The members of the community in the Foundation are

connected with one another through the portal – and this has formed the main bulk of the Foundation's knowledge base and the interface with people outside the community. Interactions using the portal are a key characteristic of the Foundation, shaping the actions of both newcomers and current members.

Collaboration has been a key process in all of these kinds of organisations: from peer to peer networks to cultural institutions, and communication has been instrumental in achieving the collaboration.

4.6 Technology, collaboration and community knowledge

A key argument in this thesis is that the capacity for collaboration, which from a structural perspective is the least formalised type of collective process in communities and society, has been greatly strengthened by the advent of contemporary digital technology.

The extent of that change is arguably as marked for community knowledge creation, sharing and use (operating mainly in the interpretive modality), as the advent of ICTs has been in the business and government spheres (operating mainly in the facilitative and normative modalities).

The interest of the thesis in the nexus between community knowledge and the ongoing design and re-design of cultural institutions continues a theme that dominated the deliberations of the UN/ITU World Summit on the Information Society 2003-2005 – namely the distinct yet deeply interpenetrating roles of business, government and civil society. It also follows up on Ostrom's (2000) and Bimber et al (2005)'s suggestion that traditional collective action theory has become inadequate in explaining the collective processes of people in the production and use of knowledge. Like Bimber et al (2005) the thesis seeks a reconceptualisation of collective action theory based on principles of boundary crossing between the private and public spheres.

Both Ostrom (2000) and Bimber et al (2005) cite as examples collaborative participation in software development projects and the sharing of digital bookmarks. They argue that such examples foreshadow how people will increasingly interact with the digital media environment, and the consequences of such interactions. These examples illustrate how the new environment has resulted in changes to the conditions under which people interact with the media environment, and to the consequences of such interactions. Structuration theory thus provides two approaches in analysing the contemporary media environment: (1) as institutional *conditions* of interactions with the media environment, and (2) as institutional *consequences* of interactions with the media environment.

Taking into consideration all sections of this chapter, the form of collective process known as collaboration appears key to community knowledge creation, sharing and use. Thus it is also fundamental to the phenomenon of the knowledge commons discussed in Chapter 3. It is apparent that the contemporary digital media can strongly support collaborative knowledge production in communities. By doing so, they can both strengthen existing communities and assist the establishment of new communities.

4.7 Main insights

Insight 4A: Based on Giddens' duality of structure, and complementary theory by other writers such as Castells:

- Communities are seen as sites of discourse and other action where meaning is collectively and recursively made and re-made in a continuous process of knowledge creation, sharing and use.
- Community knowledge is a product of communities functioning in this way. It is both practical and discursive. It is held, in whole or in part, by individuals, groups or the entire community.

Insight 4B: Fundamental to the functioning of communities are collective processes of coordination, cooperation and collaboration. These can be mapped to Giddens' structural modalities of norms, facilities and interpretive schemes. Each of these has different implications to the ways people create and share knowledge in communities.

Insight 4C: The contemporary digital media environment impacts on all three kinds of collective processes. It especially has the potential to enhance collaborative processes which rely mainly on the interpretive modality (i.e. the interplay of signification as structure and communication as interaction).

Chapter 5 (Foundations 3) – Cultural institutions

5.1 Scope of the chapter

- Using the literature, identifies and explores key issues in Study Domain (C) – Cultural Institutions (as presented in Figure 1.1). It focuses especially on the relationship between cultural institutions and communities (b-c).
- Explores how museums and libraries past and present function as cultural institutions, contributing to the creation and development of social and community culture.
- Draws on examples of contemporary practice to illuminate key types of relationships between cultural institutions and communities.
- In the light of the above, identifies concepts from structuration theory that can help describe and explain the nature and role of cultural institutions.

5.2 The role of cultural institutions

Cultural institutions are defined in this study as organisations whose charter is to promote and support education, arts and sciences through creating, preserving, sharing and transmitting knowledge. This definition is consistent with that used in UNESCO's Virtual Exhibition on the Knowledge Society (UNESCO, 2003).

Cultural institutions include museums, libraries, archives, public broadcasting agencies and arguably other institutions of heritage and education, such as botanical gardens. In this thesis the focus is on libraries and museums.

5.2.1 Museums

Various kinds of cultural institutions have attempted more specific definitions, to articulate clearer statements of purpose for themselves. The International Council of Museums (ICOM), for example, defined a museum as a:

non-profit making, permanent institution, in the service of society and of its development, and open to the public, which acquires, conserves, researches and communicates, and exhibits for the purpose of study, education and enjoyment, material evidence of people and their environment (Ambrose and Paine, 1993, p. 8).

Ginsburgh and Mairesse (1997, p. 16) in their study of 193 museums noted how the term museum has increasingly been applied to enterprises which are very different from museums of the past. For example, many museums may not have collections of artefacts; they may only collect oral stories to enrich their collections. The International Museum of Women (www.imow.org) for instance, operates mainly in the online environment and collects stories and pictures from women all over the world. The medium of the Internet enables this enterprise to solicit participation in discussions and contributions of stories, and through online exhibits, make these resources freely accessible to everyone.

Ginsburgh and Mairesse (1997) believed that an institution can still be called a museum, even if it does not meet all the criteria in ICOM's definition cited above. For example in relation to acquisition, they pose the question, 'Is the Barnes Collection not a museum because it cannot acquire new works?' (this is a collection of French Impressionist and post-Impressionist paintings and includes works by Pablo Picasso and Vincent van Gogh). They also underlined that an institution might not use the term 'museum' in its title, yet still qualify as a museum.

5.2.1.1 *Museums: past and present*

After three decades of working with museums, Anderson (2004) described the last century of self-examination as 'the general movement of dismantling the museum as an ivory tower of exclusivity and towards the construction of a more socially responsive cultural institution in service to the public' (Anderson, 2004, p. 1).

In hindsight, an outcome of such reconstruction of meaning has been the large number of diverse kinds of museum that have appeared, especially in the last twenty years (Ginsburgh and Mairesse, 1997). Carr (2003) argued that 'a museum is an open work' (p. 13), 'a place for the construction of meanings and their integration into the knowledge and experiences one has; beyond this, the museum itself is a construction of meanings' (p. 1). Carr wrote:

To see the museum as an open work is to recognise that it is always discovered by its users in an unfinished state, not unlike seeing it as a laboratory, or a workshop for cognitive change (Carr, 2003, p. 13).

Other factors have also played significant parts in the changing roles, such as the emergence of technologies in shaping material culture; communication and interactions within communities; renewed desires of governments, cities, communities and individuals to invest in museums and other cultural institutions (Lumley, 1988; Falk and Sheppard, 2006); and the transformations of urban spaces (Pang et al, 2008), which have included cultural institutions as part of the new landscape.

Falk and Sheppard wrote that the business models behind museums were shaped by the Industrial age:

The model for how to run today's museum, from content to finances, was forged by the realities and needs of the Industrial age of the twentieth century. In the Industrial age organisations were run as top-down, paternalistic, mass-market, and mass-production businesses; the business models that evolved from this approach were applied to everything from making automobiles to French fries, from schooling to government, and, yes, to the running of museums (Falk and Sheppard, 2006, p. 13).

They proposed that the impetus for transformations in cultural institutions really began when the world moved from the industrial to the knowledge age – arguing that the models and frameworks on which cultural institutions were based needed to be re-examined in the new age, where knowledge-intensive human capital and technologies are creating social, economic and political changes.

Others have realised the urgency for change, such as Margo Neale, Director of the Gallery of First Australians in the National Museum of Australia, when she stated simply:

The museum is an eighteenth-century concept and this is the twenty-first century. This apparent dichotomy will have to be addressed by museums of the future. Do we still need museums? If so, why and what sort? (Neale, 2001, p. 69).

Experiences with the material collections in museums are now often enriched by communication and visual technologies. Artefacts are frequently digitised when the 'real thing' is unavailable, resources in museums are also often digitised and made available on the web, communication technologies and user-friendly interfaces are usually employed to enhance interactions and learning experiences with museum collections – even to address and inspire dialogue from communities (Korteweg and Trofanenko, 2002; McLean, 2004; Silverman, 2004).

And as Gurian (2001) eloquently argued, the meaning of objects in museums can be explored in many ways. With technologies, the potential meanings and uses of objects in museums are multiplied. Are stories contributed by community members regarded as objects? If yes, should they be part of a collection or a collection in themselves? How can they be acquired and preserved, and who owns them? What if the stories collected require no objects? Is it still a collection for the museum to exhibit? If yes, how can it be presented? All of these questions have implications for a museum at every level of its operations and strategies. Licensing frameworks governing the acquisition, production, ownership, and use of objects in collections; technological implications; and the many explorations of the museum as a place are only some of them.

5.2.2 Libraries

The roles of libraries today are diverse. Some libraries remain 'traditional' in their services, meaning that they continue to emphasise the role of print ahead of other information media. Others are in the forefront of applying contemporary digital media. The term library originated from the Latin word (*liber*) for 'book'. In its current meaning the term library refers to collections of 'information resources in print or in other forms that [are] organised and made accessible for reading or study' (Britannica, 2007).

The American Library Association (Soper, 1990, p. 6) defined public libraries as publicly funded information institutions which take on roles determined by the needs of their communities. This definition acknowledges the different and changing services offered by many public libraries, many of which have only been made possible by the existence of the Internet.

5.2.2.1 Libraries past and present

Historically, libraries were constructed for the key function of keeping written records, an ancient practice dating at least back to the third millennium B.C. in Babylonia (Britannica, 2007). As they grew, their role as repositories of books and other resources became more apparent. In today's context, libraries commonly hold collections of periodicals, microfilms, tapes, videos, compact discs, books and electronic resources of different kinds. The advent of the Internet and communication technologies has increasingly served to shape the way libraries engage with their user communities, for example enabling users to search electronically integrated databases from their homes or any other venue.

Libraries have always adopted technology, so the rapid growth in the number of digital and 'hybrid' libraries is hardly surprising (Pang, forthcoming). Technologies, because of their dynamic effects on libraries, can quite often be misunderstood as having privileged attention in libraries. Some collections of electronic resources constitute separate digital libraries, and it should be noted that digital libraries have been created not only by people who work within conventional libraries, but also by people who do not consider themselves as practitioners of libraries (Arms, 2000).

Kapitzke and Bruce undertook case study based research which was reported in their book 'Libr@ries: changing information space and practice'. ('Libr@ries' was so termed to symbolise technological mediation as an integral part of the library discipline in the contemporary context). There the authors asked the following rhetorical questions:

How can we imagine and practice libr@ries to better reflect and refract the highly complex and differentiated times and spaces of post-modernity? What kinds of textual and pedagogical spaces are libr@ries and new knowledge spaces ... [enabling] ... learners, young and old, to develop the literate sensibilities required by symbol-saturated and mediated communities and economies of the 21st century? (Kapitzke and Bruce, 2006, p. xxx).

Research projects such as this, and also the many conferences and seminars addressing the 'Library 2.0' movement (Watson and Harper, 2006), as well as new working frameworks such as the information and learning commons (MacWhinnie, 2003; Mountfield, 2007) all reflect the interest and concern of practitioners and academics concerning the impacts on libraries in the digital age.

5.2.3 Relationship between museums and libraries

Carr attempted to summarise the main points of similarity and difference between museums and libraries as follows:

Ultimately, at their core, both museums and libraries are institutions that give information to their users: through vision, words, comparisons, suggestions, or the powerful presence of a reorganising concept, an insightful connection. Libraries connect information to individual cognitive, personal, imaginative, and economic energies and processes. Museums connect information to the experiences of awe and surprise that follow from seeing the thing itself that has been brought before us (Carr, 2003, p. 44-45).

In today's media environment the roles of libraries and museums are less distinctive from each other than in the past, and so too are the different kinds of resources methods of storage used by them. Options for accessing both of these kinds of institution are radically different from those in the past, changing the concept of a library or museum as being primarily a place. Similarly the communities which are the clients of these institutions are very different indeed to those of the pre-Internet era.

5.3 Cultural institutions and community building

Cultural institutions such as museums, libraries, archives and public broadcasters do not only gather and share information resources in the knowledge commons, but also play a crucial role in community building. Cultural institutions are knowledge custodians and agents, and also participate and foster the creation of knowledge.

Whether in the everyday life of living and working, or in the aftermath of disasters, the community can be energised and sustained by cultural institutions – in formal and informal, direct and indirect ways. Below are three examples.

5.3.1 Library of Congress and Hurricane Katrina

The rapid engagement by the Library of Congress and its partner organisations in eliciting and collecting personal accounts of the 2005 Hurricane Katrina helped to create a sense of mutual supportiveness and common memory among survivors. Hurricane Katrina was one of the worst disasters to ever strike the United States, and especially Louisiana and Mississippi. The disaster had serious impacts: economic, environmental, political, social and psychological.

A survey of psychological wellbeing undertaken soon after the disaster found alarming figures amongst survivors. The percentage of serious mental illnesses had doubled, the percentage of people diagnosed with mild to moderate mental illness had increased by 10%, and records of stress, depression, and nightmares had all increased (Karkosi, 2006).

In response to Hurricane Katrina the Library of Congress facilitated the creation of numerous stories shared by survivors, rescuers, and other Americans. This effort was part of the Library of Congress' national oral history project which aims to help 'instruct and inspire Americans to record one another's stories in sound' (Library of Congress, 2003). The national oral history project is a joint effort of the Library of Congress and a non-profit company, Sound Portraits Productions. Stories are preserved as archives in the American Folklife Centre at the Library of Congress, contributing to the overall richness of its collections.

It was noted that such initiatives contributed to the level of support and cohesion in the aftermath of the disaster, perhaps contributing to a reduction of suicidal tendencies amongst survivors. The main reason identified for this strengthening of morale was the increased feeling among survivors and their families of bonding and belonging to families, communities, and churches (Karkosi, 2006).

5.3.2 The Asian Tsunami and mobile libraries

The disastrous effects of the Asian Tsunami in 2004 left survivors homeless, and with widespread psychological trauma. Although many cultural institutions were destroyed in affected countries, Habeeb (2005) revealed that mobile libraries that visited survivors and rescue workers in relief shelters were instrumental in providing information and in helping to facilitate social support networks, including reuniting separated family members.

In such cases of disasters where communities are left with trauma and broken ties, cultural institutions as safe places could step in to effectively meet community needs.

5.3.3 'The Garage' and 'hard to reach' library users

In Australia, the State Library of Queensland successfully brought together a series of resources to make up a special collection, 'The Garage', featuring technical information pertaining to older cars, Australian motoring history, and an archive of digitised photographs presenting vehicles dating from 1900 (Fielding, 2006). The availability of this resource in online form attracted sections of the public who would not normally have used the library. The creation of the special collection thus had the

effect of bringing new members into the library's user community, increasing the inclusiveness of the library as a knowledge commons.

5.4 Trends towards greater user participation in the shaping of cultural institutions in the digital environment

From small beginnings, many museums and libraries now operate programs that engage members of communities in the creation of knowledge resources and not merely their use. As Carr puts it:

Both museum and library, even those with limited collections and services, are engaged in organising provocative and complex realms of knowledge that exist parallel to corresponding experiential worlds outside. Both institutions must forge illuminating links to the world beyond their walls. They are culturally charged in the connections they make to situations and settings beyond the institutions themselves... As institutions, they are complex in their potential interactions with their communities, and with each other. It is also clear that libraries and museums never become simpler; the complexity of their content never grows less (Carr, 2003, p. 42).

Among examples of contemporary projects with substantial participation by users as creators are the following.

5.4.1 The Smithsonian National Museum of American History: 'History in your Home' collection

The Smithsonian National Museum of American History has been gathering stories with the help of the Internet and communication technologies. While some of these stories enrich existing collections, many of them are acquired as special thematic compilations. For example, the 'History in Your Home' collection consists of a wide range of 'everyday' objects that are meaningful to American history; acquired and presented using a website and online submission tools. Figure 5.1 shows a page from the online collection.



Figure 5.1: 'History in Your Home' collection with the help of the Internet and online tools.

5.4.2 The Powerhouse Museum: Museumblogs.org

Museumblogs.org, a directory of museums and museum-related blogs was established in 2006 by Ideum, a design company that develops interactive exhibits and websites for museums after undertaking a joint survey with Powerhouse Museum in Australia. The popularity of weblogs (known as blogs in short) as a tool to generate dialogue within and about museums is apparent, as summarised by Chan and Spadaccini in the abstract of their paper:

As 2006 began, there were less than thirty known museum blogs; since then, that number has more than doubled. Today there are well over 100 blogs exploring museum issues, from a range of institutions and individuals across the globe. All of these blogs have embraced the concept of 'radical trust', taking the big step to trust (radically) the community on-line (Chan and Spadaccini, 2007).

5.4.3 Virginia Museum of Fine Arts: participative art

The Virginia Museum of Fine Arts was concerned to find through usership studies, that members of the African American community did not typically think of the Museum as the place where they and, most importantly, their children could go to see and experience art. The problem was not a lack of interest in art – the large African American community of Richmond Virginia was attracted to all kinds of art.

In order to bring African Americans into the museum's user community, the Virginia Museum of Fine Arts gave priority to active involvement by children in learning about art:

Among the key factors that helped to break down the long-standing barriers...was reaching out to parents and families by creating opportunities and experiences that supported their children's learning about art; parents came to see their children perform and to support their children's art education experiences (Falk and Sheppard, 2006, p. 101-102).

Engaging the African American community through participation in learning activities was instrumental in making the cultural institution become a large part of their everyday lives. Members of the African American community moved from being non-users of the museum to active participants in the conduct and shaping of the museum's cultural programs. Other museums have achieved similar transformation through participation (Anderson, 2004; Carr, 2003; Kapitzke and Bruce, 2006).

5.4.4 Northern Territory Library and Information Service: Belyuen Bangany Wangga digital audio workstation

Aboriginal people of the Daly region of north-western Northern Territory have for many decades performed their music for outsiders. Sound recordings of such performances, dating from as early as 1942, are held in private collections, state and national sound archives, and some recordings have been published, distributed, and broadcast nationally and internationally.

With funding from the Northern Territory Library and Information Service, a digital audio workstation Belyuen Bangany Wangga was established in 2002 to give local public access to archival recordings to their own music. The collection of some 480 Wangga songs now held in the Belyuen Bangany Wangga digital audio workstation

represents a rich local tradition comprising many ethnographic recordings that – after being dispersed over the decades in different archives all over the world – have now returned to their home community (Barwick and Thieberger, 2006, p. 137).

As described in a case study of the project, librarians encountered significant difficulties in compiling accurate information relating to audio recordings. Difficulties include deliberate or inadvertent omission of information by early collectors; limitations in linguistic knowledge; geographical dispersions of people in the community and consequently knowledge of the music; great variation in the quality and media of ethnographic sound recordings (Barwick and Thieberger, 2006).

The Indigenous community have not been passive consumers of this resource. They have been active partners in its development. Because of the kinds of difficulties listed, indexing the recordings proved to be an almost impossible task – until librarians made use of digital technologies to improve audio quality and replayed the recordings to members in the community. The community participated in putting together the collection. Their role in shaping the collection: in determining the best approaches to its classification and of name and subject entry points, was essential in making the collection a usable and valued resource.

5.4.5 Libraries and blogging

Libraries have adopted the tool of blogging for a variety of purposes, such as generating dialogue with users, providing information, or marketing services to a wider audience. As part of his study of library blogs Clyde (2004) reported that fewer than sixty blogs were used in and by libraries before 2003. Since then, the library's 'blogosphere' has significantly changed – with more than 300 blogs recorded recently in a private library index, created and maintained by institutions and individuals across the globe (Libdex, n.d.). Watson and Harper (2006) noted some interesting examples of how libraries are using blogs and wikis to engage their communities.

All these examples illustrate ways in which cultural institutions bring people together in new areas of common purpose, thereby building new communities or strengthening existing communities. The community building roles of cultural institutions have evolved within the context of building, creating, using, and disseminating knowledge resources in the commons. In many ways, cultural institutions are still the same in their primary purposes; yet the mechanisms have changed to become more participatory and dynamic with the help of contemporary digital media.

5.5 From recipients to participants: communities, digital media and collaborative learning in cultural institutions

The chapter has so far discussed the role of cultural institutions and their relationships with communities in the contemporary context. In doing so, various examples have been raised to demonstrate the changing ways by which cultural institutions are interacting with their communities.

5.5.1 Structuration theory and the role of cultural institutions

At this point, the chapter attempts to examine the interactions of cultural institutions with communities and digital, participatory media using structuration theory.

5.5.1.1 Time-space distancing

In structuration theory, cultural institutions are persistent social patternings concerned with the creation, storage, sharing and use of knowledge across time and place. They contribute to a phenomenon that Giddens termed 'time-space distancing', which he defined as 'the stretching of social systems across time-space, on the basis of mechanisms of social and system integration'. 'System integration' in turn is defined as 'reciprocity between actors or collectivities across extended time-space, outside conditions of co-presence' (Giddens, 1984, p. 377).

These ideas help to explain why the age of digital technology is having a profound impact on the nature and functioning of cultural institutions. In the past the vast majority of citizens could function only as visitors to or users of the exhibitions or resources of cultural institutions. The technology in use was essentially one-way. Even in conditions of co-presence, such as lectures or conferences arranged by libraries or museums, transfer of knowledge would be mainly from one to many – from the lecturer to the audience.

The change towards digitised storage and networked digital media means that many more kinds of interactions between providers and users of museum and library services, and within these groups, can now occur. In Giddens' terms there has been a widening of the range and roles of actors or collectivities among whom reciprocity in knowledge sharing can occur. Moreover the conditions under which such reciprocity can take place increasingly transcends time-space, and is less dependant on co-presence. This concept reframes cultural institutions as rational organisations that are able to 'span time and space' (Giddens, 1990, p. 14) in their capacities for transformations. This is done by defying the constraints of traditional practices and allowing external or distant factors to shape these institutions.

5.5.1.2 Reversible and irreversible time

Another structuralist concept relevant to cultural institutions is that of 'reversible time' and 'irreversible time'. Giddens (drawing on an earlier social theorist Levi Strauss) expounds the distinction between these two ideas. The two-fold concept of 'reversible' and 'irreversible' time can be explained as follows:

- In the daily lives of individuals time is 'reversible' (Giddens, 1984, p. 35), in that there are on-going opportunities for reflection, learning, and self-renewal.
- However for individuals reversible time and the capacity to learn and adjust are limited to their life spans – 'being towards death'. The life span of the individual is 'irreversible time' (Giddens, 1984, p. 35).
- Institutions – and not least cultural institutions – extend reversible time for communities and society as a whole. They enable reflection and learning across generations, centuries and millennia.

Cultural institutions are concerned with both kinds of 'reversible time'.

- They focus on the short-cycle 'reversible' time by providing information that supports individual learning within a lifetime. Such information enriches the daily 'events and routines' (Giddens, 1984, p. 35) for individuals, giving them a sense of growth and achievement, and a capacity to review and adjust both their consciousness and their actions, while life lasts.
- Cultural institutions are also concerned with long-cycle 'reversible' time. Activity by cultural institutions in relation to 'irreversible' time ensures that key ideas and

memories from individuals, groups, organisations and civilisations whose existence has ended flow forward as a resource for future.

Networked digital technologies greatly enhance the potential of cultural institutions to fulfil their functions in respect of both kinds of reversible time. For short-cycle reversible time – the learning that must be packed into the short life-spans of human beings – the more inclusive and efficient the communication technology, the greater the likelihood that learning needs will be met. For long-cycle reversible time, the more robust the digital storage and preservation technologies, the greater the likelihood that somehow, somewhere a copy of a digital information object will survive.

Equally crucial is the existence of communities that form and re-form around and support the cultural institutions ensuring that the institutions themselves survive and adapt across time. Networked digital technology with its support for participation by many actors can also help with this.

5.5.1.3 *Ontological security, meaning and action*

As Carr (2003) observes, museums are continuously constructing and reconstructing meanings – and for communities, museums are sites of discourse where individual constructions of meanings can be made while in turn shaping the overall, shared construction envisaged by the museum as an institution. This perspective can also be applied to libraries, where client needs over large and small time cycles lead to reshaping of the collections of information resources and altered perceptions of the roles and directions of the libraries as a whole.

Giddens's concept of 'ontological security' helps to explain why it is so important for societies to have institutional frameworks to support a continuing negotiation about meaning. He defines ontological security as 'Confidence or trust that the natural and social worlds are as they appear to be, including the basic existential parameters of self and social identity' (Giddens 1984, p. 375). Ontological security, and the institutional frameworks that support it, help human beings to 'rationalise' and 'reflexively monitor' their actions (p. 5).

Giddens provides the following diagram in Figure 5.2 to illustrate how action is supported by rationalisation and reflexivity.

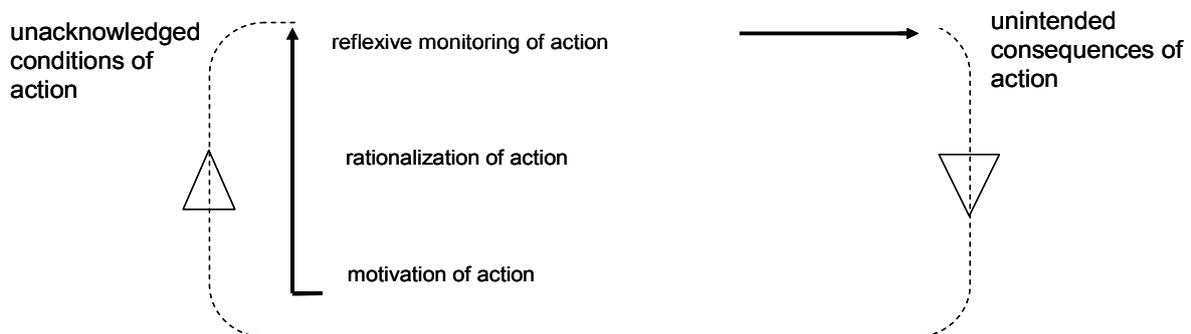


Figure 5.2: Action supported by rationalisation and reflexivity (Source: Giddens, 1984, p. 5).

He further explained:

The reflexive monitoring of activity is a chronic feature of everyday action and involves the conduct not just of the individual but also of others. That is to

say, actors not only monitor continuously the flow of their activities and expect others to do the same for their own; they also routinely monitor aspects, social and physical, of the contexts in which they move. By the rationalisation of action, I mean that actors – also routinely and for the most part without fuss – maintain a continuing ‘theoretical understanding’ of the grounds of their activity (Giddens, 1984, p. 5).

Such rationalisation and reflexive monitoring of actions by individuals and those around them (within the same community and with others from different communities) highlight the importance for meanings to be made recursively. While rationalisation of an action is based on, and shape objective understandings, reflexive monitoring of actions due to unacknowledged conditions can shape subjective understandings. The cultural institution understood in this light can help to integrate subjective and objective ontologies or understandings of reality through their actions and resources.

Previous communication technologies, such as print and ‘traditional’ or analogue museum exhibition were powerful in supporting one-to-many or few-to-many communication – thus in the museum context an exhibit was essentially an lesson being presented by a curatorial provider to a citizen consumer. The alternative of many-to-many communication provided by networked digital technology allows more complex and multifaceted ways of knowledge sharing to occur, and more ontological possibilities to be explored and negotiated, more alternatives for ontological security (‘meanings’) to be discovered by individuals or groups. The reflexive action outcomes might include small or large changes to the cultural institution itself or to other aspects of the world.

5.6 Main insights

Insight 5A: The core role of cultural institutions is to foster meaning through the creation, storage, sharing and use of knowledge across time and space. Not all cultural institutions engage in all of these aspects all the time.

Insight 5B: While their core role remains essentially unchanged over time and space the ways in which that role is enacted varies, in small or large ways, depending on context. A key variant is how far community members are characterised as recipients of, rather than participants in, knowledge production by cultural institutions.

Insight 5C: Structural concepts that help in describing and explaining cultural institutions include:

- Time-space distancing: Especially viewing of institutions (including cultural as persistent social patterning resulting from the ongoing interplay of social action and social structure).
- Reversible time: Especially how institutions can enhance the capacity of individuals and groups to learn reflexively (including experience) within and beyond the human life-span.
- Ontological security: Especially the importance for communities of institutions that can assist and ‘smooth’ the ongoing negotiation and renegotiation of meaning in society.

Chapter 6 (Foundations 4) – Participatory Design

6.1 Scope of the chapter

- Using the literature, identifies and explores key issues in Study Domain (D) – Participatory Design (as presented in Figure 1.1), specifically how the designed actions of cultural institutions shape their involvement in the knowledge commons.
- Discusses the relevance of participatory design in the work of cultural institutions, highlighting tensions between *techno-centric* and *user-centric design*. Structuration theory is used to understand such tensions, drawing parallels between integrating objective and subjective realities, and techno-centric and user-centric design.
- Conceptualises participatory design conceived as a form of user-centric design, and discusses its relevance and merit as a means for cultural institutions to elicit and harness participation from communities.

6.2 Design issues in cultural institutions

The concept of design – and especially participatory design – as it relates to cultural institutions is one of the key focuses of this study.

This chapter explores the idea that contemporary information and communication technologies can and do enable a shift in design philosophy in cultural institutions, as well as in other spheres of society. In this context, participatory design presents itself as an approach and opportunity for cultural institutions to enhance interactions with their communities.

Using as ‘shorthand’ the terms Taylorism and Fordism (after the founding figures of 20th century Western mass production, Frederick Taylor and Henry Ford), it is suggested that in the ‘industrial’ age design of production process in cultural institutions as in factories was conducted by experts and the outcomes were presented to consumers. This relatively authoritarian, uni-directional process of design was an approach that regarded humans as system components within prevailing technical constraints on many-to-many communication and knowledge sharing. Because this approach to design is dominated by experts using standardised techniques, it is referred to as techno-centric design.

Out of the age of mass production, and frequently seen in today’s digital media environment, a different approach to design can be postulated – one where the needs and experiences of user communities are the predominating influence in the design process, and where the role of experts is to facilitate optimal outcomes for those communities through collaboration. This approach is referred to as *user-centric or participatory design*. Digital information and communication technologies are increasingly interactive and participative; shaping the way knowledge is created, enhanced and transferred. They thus have the potential to substantially change interactions between cultural institutions and all kinds of communities.

Such potentialities raise a whole additional set of design issues – concerning the design of participation itself: such as who participates and interprets, and when. Participatory design, like all design, requires management of some kind – and

shaping a style of management that optimises inclusive participation is in itself a design challenge (Silverman, 2004).

Design in the participatory sense is not considered as a final state, but rather a form of on-going purposeful action that recursively shapes the social structures – such as cultural institutions – that empower or constrain such action. This is consistent with structuration theory's view of design, visualising it both as medium and outcome.

In this thesis, the idea of participatory design is seen as essential to the exploration of how communities can participate in the shaping of cultural institutions and the wider knowledge commons

6.3 The tension between techno-centric and user-centric design

The study of information and communication technologies has two broad traditions of assumptions: social reality as subjective or objective (Orlikowski and Robey, 1991). Research assuming the *subjectivity* of social systems focuses on individual, internalised human experiences, interpretations of them, and behaviours based on those interpretations that modify the world in small or large ways. The contrasting view, *objectivity*, focuses on the externalised properties of institutions shaping social systems and providing explanations for their influences on human actions and relationships.

As proposed by Frederick Taylor, 'scientific management' was based on the view that for most profitable results human activities could be measured, analysed, and controlled by techniques usually applied to physical objects (Doray, 1988). Henry Ford went further, applying Taylorism in the automotive industry to achieve unprecedented levels of productivity and profitability. Even before Taylor the capacity of machines to divide complex work into 'bite-sized' tasks had been demonstrated in the textile factories of the British industrial revolution. The human consequences of regarding people as interchangeable components of techno-centric production systems contributed to Marx's concept of 'alienation'.

The Online Dictionary of the Social Sciences (<http://bitbucket.icaap.org/dict.pl>) explains alienation as follows:

A separation of individuals from control and direction of their social life. The term was used widely in German philosophy in the 18th and 19th centuries, but it has become important for sociology through the ideas of Karl Marx (1818-1883). Marx claimed that human alienation was created by a socially structured separation between humans and their work. This separation reached its highest intensity in capitalist society where the great mass of the population depended for subsistence on working under the direction of others. In the capitalist workplace, individuals were separated from ownership, control and direction of their work and were unable to achieve personal creative expression. The competitive nature of the workplace also alienated, or separated, workers from each other.

In a counter-trend to the objectification of workers in industrial production processes, subjective considerations have over time increased through regulative change often spurred by trade union action (Gambino, 1996). There was an accumulation of evidence that a sense of participation improved job satisfaction, which in turn improved production. However as noted by writers such as Penniman (1985) and Virilio and Polizzotti (1986) the information skills required to support such participation tended to open a divide between the more privileged and affluent

members of the workforce who more quickly attained such skills, and their more disadvantaged counterparts who gained them more slowly or not at all.

Part of the change toward more user-centric orientations is marked by terms such as usability, user-centred design, human computer interaction, and user computing, being used almost interchangeably. Organisations which declare a commitment to user-centric design express their various design philosophies differently. However all would claim a focus on the functional needs of users. Karat and Karat (2003) acknowledged the diversity of interpretations in user-centric design, but noted that all interpretations coincide in distancing themselves from techno-centric, Taylorist principles.

Beyond this clear point of agreement there is also a broad consensus in user-centric design advocates that reality is 'mutable', there are 'no certain truths', and 'knowledge is constructed through communally created knowledge and action'. A principle advocated in participatory design is the emphasis on the collective participation of many or all stakeholders, and it is this principle that the research seeks further explore and relate to cases of cultural institutions and community roles in developing the knowledge commons.

Recognising the distinctions between techno-centric and user-centric approaches, Bell (1996) distinguished different forms of society – the pre-industrial, industrial, to the post-industrial – arguing for the need to have a wide range of design approaches focusing primarily on the human participants and secondarily on the technologies.

May (2003) highlighted how the distinctions between techno-centric and user-centric approaches towards information and communication technologies do not exist in dichotomies as in the post-industrial age there remain practices that are characteristics of the industrial and pre-industrial society, even including slavery. As in so many typologies, there is a spectrum of hybrid possibilities between conditions of 'ideal' techno-centric and user-centric design.

A techno-centric design approach can be discerned where structure is emphasised, imposing the actions and tasks of people a template that they have little capacity to change, while a user-centric approach can be discerned where participants possess the potential to transform through their actions the framework within which they function. This thesis explores the positioning of cultural institutions within this range of possibilities.

The tension between a techno-centric and user-centric design approaches can be examined with the help of structuration theory (Giddens, 1984).

6.4 Structuration theory and its application to participatory design

6.4.1 Reality and reflexivity

Thanks to collaborative digital technologies, the potential for participation through continuous design can be much more inclusive. Perhaps as importantly, categories of knowledge not held by experts – 'grass roots' knowledge, in Giddens' terms tacit or practical rather than discursive (Giddens 1984, p.5, 22) – can be brought strongly into play. The challenge in design is to have an encompassing approach where both techno-centric and user-centric approaches are included; and where all contexts or realities as perceived by actors can be accommodated: in Giddens' formulation trustworthy ontologies (1984, p. 375) or in Bell's formulation the realities of the social world, the natural world, and the technical world (Bell 1996). Moreover the approach

must harness the potentialities of more rapid and intensive cycles of reflexivity (Giddens 1984, p.5) resulting from the engagement of more actors and their viewpoints, while guarding against the potentially disruptive effects of heightened reflexivity on society (the kind of danger that autocratic regimes typically warn against when a transition to democracy is proposed).

Heightened consciousness and sensibility of all three of Bell's inter-connected stages are necessary for sustainability of communities and society. Recalling the interplay of action and structure mediated by reflexivity that is the essence of structuration it becomes clear that the theory presents an appropriate framework to account for not only the intentional outcomes but also the unintended consequences and non-explicit conditions of participative design (Giddens 1984, p. 5). Bell (1996) proposes that the change of perspective from objective to subjective – from all things as objects to all things as 'a web of consciousness' (p. 149). In his discussion on culture and consciousness, he posed the question 'which of these changes is primary – social structure or culture – and which is the initiating force?' (p. 476). Such thoughts recognised intricate connections between structure and culture and reflected a fundamental shift towards greater social awareness and sensibility.

Bradley (2006) reinforced this connection in her discussion of the 'network era' (p. 74). This era is characterised by structural changes in the ways people connect to one another through their computing devices. As she pointed out, an organisation in this era displays certain attributes that are closely associated with the new structure. Some examples are: a 'reallocation of power' in an organisation, 'direct communication between various levels of the organisation', 'openness to the surrounding world – borderlessness', 'immediate distribution of information', and 'a multi-dimensional virtual culture' (Bradley, 2006, p. 74).

6.4.2 Participative design: impacts of, and on ICTs in society

Techno-centric design assumes the classic conditions of the 'waterfall' and 'lifecycle' approach, where design is seen as a major creative intervention followed by a lengthy period of routine operation within the framework established. The user-centred approach, on the other hand, assumes continuous and simultaneous processes of observation, analysis, action and adjustment. Often these processes unfold in conditions where entire cycles cannot be completed before the next adjustment is required. Most importantly every adjustment affects the whole – in structural terms the emergent 'culture' both shapes and takes shape.

Within the contemporary media environment, ICTs (information and communication technologies) are so deeply embedded in everyday life that interacting with ICTs in a design sense has become partly deliberate, partly intuitive, like the footballer responding to and initiating change in the flow of the game. They are forgotten as often as they are remembered in the conduct of everyday life, and have long since overflowed their original ambit of the workplace to include almost all other aspects of living.

So extensive are the potentials of information and communication technologies in the digital age that the term 'information and communication technologies' has become too diverse a concept to be captured in any short definition. Information and communication technologies – when considered as an object of study – require a constantly renewed effort at definition depending on context. It is now a reality of the techno-social condition that people need to grapple continuously with the multiple personae of 'information', 'communication', and 'information and communication

technologies’, while interacting with them to fulfil their everyday activities. Buckland (1991) expounded on this complexity, in his discussions of the three meanings of information: as ‘thing’, as ‘process’ and as ‘knowledge’.

As Rose and Scheepers (2001) pointed out, while the use of structuration theory to theorise ICTs (particularly ‘information systems’) and their empirical scenarios is not new, there has been little effort to use the theory to influence practice. Structuration theory is complex and must be carefully adapted to specific contexts in order to operationalise as the basis of any applied methodology. Orlikowski and Robey have done much work in theorising ICTs using structuration theory. According to them, ‘in its constituted nature – information technology is the social product of subjective human action within specific structural and cultural contexts – and [in] its constitutive role – information technology is simultaneously an objective set of rules and resources involved in mediating (facilitating and constraining) human action and hence contributing to the creation, recreation and transformation of these contexts’ (Orlikowski and Robey, 1991, p. 151).

Orlikowski (1992, p. 410) depicted a recursive model of information technologies using structuration theory. The figure was introduced earlier in Chapter 4 and now reiterated in Figure 6.1. The recursive nature of technologies based on structuration theory is manifested in the properties of technologies as being created and changed by human action; but also both supporting and constraining such actions. This is achieved by four components (as indicated by the arrows in the figure): a) technology as a product of human agency b) technology as a medium of human action c) institutional conditions of interaction with technology and d) institutional consequences of interaction with technology. Both a) and b) explain how technology is a product and medium of human actions. As a result of interactions with technology, institutions provide certain conditions (both supporting and constraining) on human agents (this is indicated by c). The agency of technology is also acknowledged in this model, where d) highlights that interactions with technology can also result in consequential changes to the properties of institutions.

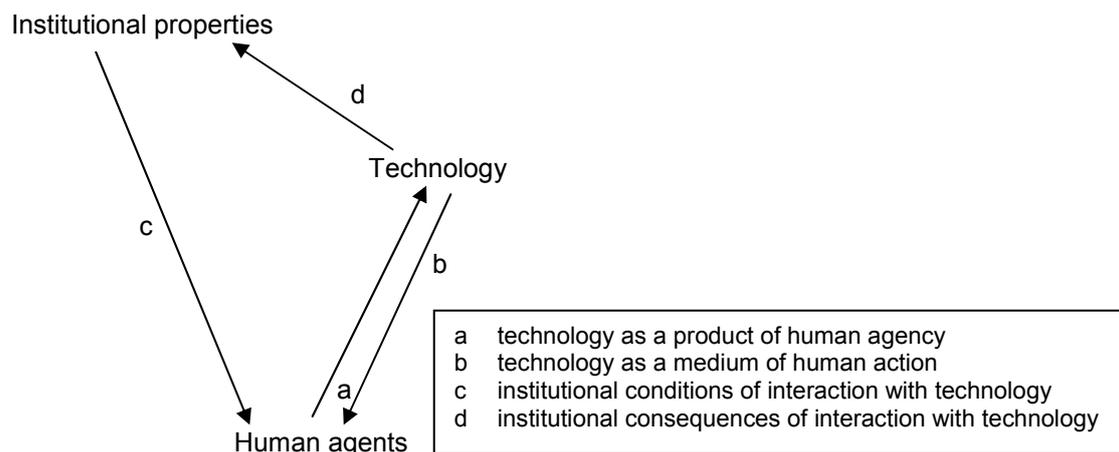


Figure 6.1: Structural model of technology (Orlikowski, 1992, p. 410).

In the case of cultural institutions the trajectory becoming discernable (albeit still faintly, like the changing quality of light preceding the dawn) is a trend towards design as a much more inclusive phenomenon. This trend moves from a ‘object’-subject (expert to user) vision of service delivery, towards a culture of continuing collaborative design in which expert-to-peer and peer-to-peer dialogue and learning

continuously shape and re-shape systems, services, and spaces. This is design conceived of as collaborative innovation by communities.

6.5 Design conceived of as collaborative innovation by communities

Addressing design through the lens of structuration theory highlights the recursive nature of design – the impacts of technology on people are perhaps as significant as the impacts of people on technology. Kuhn and Muller (1993) argued for participatory design as an effective strategy to avoid the devaluation of human work with the introduction of technologies, and the harnessing of workplace democracy to improve design.

In relation to community knowledge, design becomes a key attribute in the production and use of resources in the knowledge commons by communities, facilitated by cultural institutions. Its emergence within the realm of cultural institutions is observable particularly where ‘new media’ and community memory are being brought into creative conjunction.

Referring to collective memories of communities that are shared and understood both implicitly and explicitly (Pang, Denison, Johanson, Schauder and Williamson 2006), it was noted that there is an incipient paradigm shifts in the ways cultural institutions are positioning themselves in communities.

Dale has argued the case for museums as agents of change in communities. As mainstream cultural institutions, museums have a significant role in ‘creating public understanding and knowledge of the world’ (Dale, 2003). In her paper, Dale gave examples of how museums around the world are repositioning themselves as agents of cultural change, by collecting, preserving and facilitating alternative discourses and knowledge. In the midst of such repositions and transformations, the adaptive capacity of cultural institutions is demonstrated in their design approaches and working modes.

This interpretation of trends in cultural institutions from a practitioner viewpoint coincides with the kind of explanation and prediction offered by structuration theory of why user-centric, and especially participatory, design is gaining ascendancy as the approach that makes most sense for building up the knowledge commons.

The role of design in the context of this thesis is one that is posited away from a supply-oriented view of design, which envisions users as groups of people waiting for deliveries. On this point, there are already significant developments in this field of user-centric design, such as user-centred design, community-centred design, cooperative design and participatory design. The last development is most relevant to the context of this thesis; drawing insights from its principles is the focus of the next section.

6.6 Harnessing participation through design

6.6.1 The roots of participatory design

The first international conference addressing research and issues around participatory design was held in 1990 in Seattle (Kensing and Blomberg, 1998). Since then biennial conferences have been held in the United States, focusing on the application of participatory design to technology design and to other fields, such as workplace management, research design, and policy development.

Participatory design had its roots in the 1970s, when organisations in Scandinavia and Germany began a debate on a lack of concern about workers' interests, their working conditions and those most affected by the introduction of new technologies (Sandberg, 1979; Kyng and Mathiassen, 1982; Bodker, 1996). Scandinavian researchers began to purposefully work on a number of projects to develop forms of designing, rather than just what was being designed (Greenbaum and Kyng, 1991). There was mounting tension about the way technologies were quickly replacing the workforce. The story continues today, even in the contemporary context, when workers become resistant to any new technological system that would automate the tasks they perform at work (Gregson, 1994; Stam, Stanton and Guzman, 2004).

Participatory design was thus conceived as a strategy to rebalance and restore power to workers. Strategies and techniques were developed for workers to influence the design and use of technological applications in the workplace, largely through participation. The dialogue of inclusion and participation of workers led to the refinement of the approach in various disciplines.

In Norway, the Norwegian Iron and Metal Workers Union (*NJMF*) changed its practices of working with people by adopting a more participative style. This directly influenced the role of other unions (Nygaard, 1979; Bjerknes, Ehn and Kyng, 1987). Other Scandinavian projects began which focused on engaging the active participation of all stakeholders, and aligning the expectations of all participants in the process (Ehn and Sandberg, 1979).

The *Utopia project* (Ehn, 1988; Bodker, Ehn, Kammersgaard, Kyng and Sundblad, 1987) that lasted from 1981-1984 focused on designing tools for skilled work, in the hope that computer tools and environments could be prototyped and built for the improvement of work life (Kensing and Blomberg, 1998). Although the prototypes did not become commercial products, the focus on hands-on experiences led to different approaches in facilitating participation (Bodker, et al, 1987; Kensing and Blomberg, 1998) and stakeholder participation contributed to the design of alternative products.

The strength of workers as participants can also be seen in the example of Lucas Aerospace (Doyle, 2006). In a bid to avoid layoffs by the company in the 1970s, workers came together to come up with the '*Lucas Plan*', an alternative corporate strategy for the company proposing the conversion of production of military products to civilian goods such as 'kidney dialysis machines, life support systems for ambulances, windmills and heat pumps' (Doyle, 2006, para. 19).

The purpose of the plan was not only to avoid layoffs; it also wanted to redesign the work of the company with greater social value (Doyle, 2006). Mike Cooley (1980), who was then one of the activists behind the Lucas Plan, was dismissed when it was rejected by the management at Lucas Aerospace. Later, he published a critique of the automation and systemisation of engineering work in his book titled 'Architect or Bee? The human/technology relationship' and highlighted the potential and achievements of human imagination. The title of his book was inspired by Marx, who in the first volume of *Das Kapital*, discussed capital production and the struggles of the working class:

A spider conducts operations that resemble those of a weaver, and a bee puts to shame many an architect in the construction of her cells. But what distinguishes the worst architect from the best of bees is this, that the architect raises his structure in imagination before he erects it in reality (Marx, 1887, para. 2).

The potential of constructive imagination by workers can be manifested through worker participation and explicitly demonstrated in the development of the Lucas Plan. Cooley argued for the importance of placing humans over technologies – with each worker as an ‘architect’ instead of a ‘bee’. Towards this view he eloquently argued:

The alternatives are stark. Either we will have a future in which human beings are reduced to a sort of bee-like behaviour, reacting to the systems and equipment specified for them; or we will have a future in which masses of people, conscious of their skills and abilities in both a political and technical sense, decide that they are going to be the architects of a new form of technological development which will enhance human creativity and mean more freedom of choice and expression rather than less. The truth is, we shall have to make the profound political decision as to whether we intend to act as architects or behave like bees (Cooley, 1980, p. 100).

6.6.2 Conflict within participatory approaches

Ehn and Sandberg (1979) noted that with a participatory approach there was a shift in the way that conflicts in organisations were approached. Rather than attempting to resolve conflicts through increased communication and management intervention, it was recognised that some conflicts in organisations are unresolvable. Participation was then used as a strategy to manage such conflicts, and to gain acceptance that they were allowed to exist.

In earlier discussions on collective processes of communities, collaboration was seen to occur as a result of certain levels of coordination and cooperation; it was noted that individuals might not share certain goals, yet they could still reap the benefits of collaboration. Smaller subsets of research groups which choose to collaborate in shaping their own agenda may still benefit from working within a larger research department with different broad aims. As with participation, conflict within collaborative processes is often unavoidable.

Gartner and Wagner (1996) identified three areas in which participatory design can be applied:

- Arena A: ‘The *individual project arena* where specific systems are designed and new organisational forms are created’ (Gartner and Wagner, 1996, p. 195). As mentioned previously participatory design was quite often applied in individual projects in the 1980s and 1990s (Kensing and Blomberg, 1998).
- Arena B: ‘The *company arena* where breakdowns or violations of agreements are diagnosed and hitherto stable patterns of organisational functioning questioned and redesigned’ (Gartner and Wagner, 1996, p. 196).
- Arena C: ‘The *national arena* where the general legal and political framework is negotiated which defines the relations between the various industrial partners and sets norms for a whole range of work-related issues’ (Gartner and Wagner, 1996, p. 198).

In the contemporary media environment where technologies no longer exist as isolated systems, and the boundaries between communities and stakeholders are breaking down, an enterprise implemented even at the individual project arena will have multiplier effects on stakeholder communities and on policy development. The three application areas above are interrelated arenas of impacts. Beck (2002) believed that this complexity is challenging, but also useful, in providing diverse testing grounds in which to apply participation by design.

6.6.3 A taxonomy of participatory design practices

As with the practice of user-centred design, participatory design can be said to lack structure and consistency of approach. In response, Muller, Wildman, and White (1993) developed a taxonomy of participatory design practices mapped onto two dimensions, ‘time during the development cycle or iteration’, and ‘who participates with whom in what’ (Muller et al, 1993, p. 26). Figure 6.2 from Muller et al (1993, p. 24) shows how different practices can be mapped onto both dimensions.

The authors explained the two dimensions as follows:

Time during the development life cycle: Some practices appear to be more appropriate at certain points within the development life cycle or iteration.

Who participates with whom in what: The concept of participation is open to multiple interpretations. The vertical axis of the figure spans one way of organising the various approaches, asking: do the software professionals participate in the users’ world, or do the users participate in the world of the software professionals? (Muller et al 1993, p. 23).

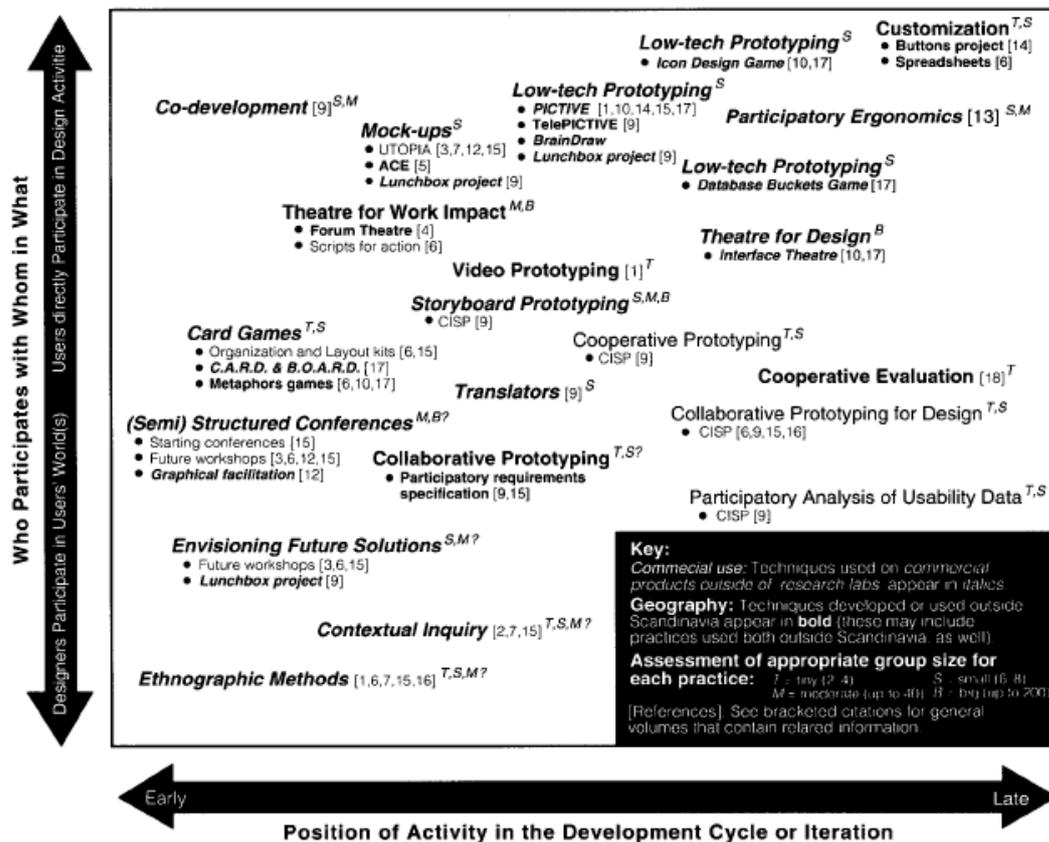


Figure 6.2: Taxonomy of participatory design practices (Source: Muller et al, 1993, p. 24).

The vertical dimension proposed by Muller et al (1993) is reproduced in Figure 6.3 below and extrapolated to cultural institutions as designers, and communities as users. At the left end of the spectrum, cultural institutions (designers) can be seen participating in the world(s) of their communities (users) through outreach activities, for example mobile libraries bringing services to rural communities. On the other end of the spectrum local communities often participate in the activities of cultural

institutions, for example, involvement in the design and content of a museum collection.

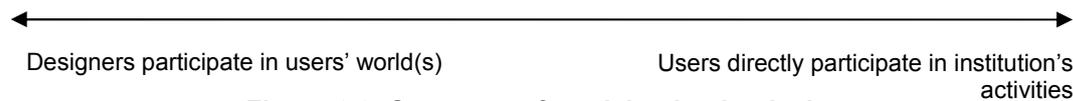


Figure 6.3: Spectrum of participation by design.

Quite often, libraries elicit participation from the communities they serve in the form of periodical feedback, surveys and interviews; and the dialogue generated is significant in the planning and design of services and resources for the coming years. Hybrids or mixtures of the two forms of participation can be placed along the spectrum, recognising the extent to which there has been user or designer inputs. It should also be noted that participation can occur in different, hybrid forms, for example both by engaging communities in design activities and by immersing themselves in the world(s) of communities through collaborative partnerships.

While there are still many situations today in which customers and institutions travel to physical spaces to contribute inputs – outreaching on the one hand, or bringing communities into the walls of the cultural institution on the other – the contemporary media environment could be said to erode the notion of physical space. Giddens (1990) reinforced this view when addressing modernity. In pre-modern societies, space was the area in which one moved, and time was the experience one had while moving. In modern societies, however, space is no longer confined by the boundaries in which one moves. Virtual space and time allows the imagination of space, even if one has never been there. This is manifested keenly by the contemporary media environment, where virtual spaces are prevalent through wireless and wired technologies, and devices linking people and the spaces in which they interact. In addition, the insight on the time-space distancing by Giddens is also relevant:

'the more [institutions] bite into time and space – the more resistant they are to manipulation or change by any individual agent. Time-space distancing closes off some possibilities of human experience at the same time as it opens up others' (Giddens, 1984, p. 171).

This can be attested to by Figure 6.2. The earlier the position of an activity in the development cycle of a project, the less structured and prescriptive it is. In contrast, the later the stage of development, the less likely it is for unstructured and richer activities to occur.

In his work on Swedish museums, Taxen (2005, p. iv) contributed the insights that participatory design is beneficial as an approach to engage visitors in terms of 'the content presented in exhibitions and with respect to the way exhibitions orchestrate and support different forms of social interaction'. These insights are complementary to the thesis, examining participatory design in terms of how it shapes, and is shaped by, interactions between cultural institutions and communities in shared resources as the knowledge commons.

6.7 Main insights

Insight 6A: For cultural institutions, participatory design provides both a conceptual and practical framework for creating, sharing and using knowledge within and among communities, through innovative collaborative action.

Insight 6B: Based on the analysis in the chapter, the research proposes a spectrum typology of participation by design, ranging from designers' (cultural institutions') participation in the users' world to participation by users' in the designers' (cultural institutions') world.

Chapter 7 (Foundations 5) – Victoria and Singapore

7.1 Scope of the chapter

- Using the literature, discusses the relevance and complexities of cultural issues in a comparative study of cultural institutions from Victoria and Singapore.
- Presents statistical information on selected country indices to provide contextual information on both states.
- Fundamentally, the work of cultural institutions intersects with issues relating to concepts of national identities. Notions of national identities from both states are explored.
- Critically explores an approach to cross-cultural comparison using Hofstede's work.
- Provides concise definitions of Hofstede's cultural dimensions and discusses them in the contexts of Singapore and Victoria.

7.2 Ethno-centrism and cross-cultural research

Culture is defined by Merriam Webster Dictionary (n.d., para. 9) in the following ways:

a) the integrated pattern of human knowledge, belief, and behavior that depends upon the capacity for learning and transmitting knowledge to succeeding generations b) the customary beliefs, social forms, and material traits of a racial, religious, or social group; *also* : the characteristic features of everyday existence (as diversions or a way of life) shared by people in a place or time c) the set of shared attitudes, values, goals, and practices that characterises an institution or organisation d) the set of values, conventions, or social practices associated with a particular field, activity, or societal characteristic.

This definition supports Bodley's (1994) view that culture can be defined by the topical, historical, behavioural, normative, functional, mental, structural and symbolic aspects of people living and working together in a society. It is however, essential to note that there are multiple cultures within the society of one nation. Factors such as interests, family histories, and religious beliefs can also distinguish the culture of one community from others. In addition, the New Dictionary of Cultural Literacy (Hirsch, Kett, and Trefil, 2002, para. 1) offered the view that culture is:

The sum of attitudes, customs, and beliefs that distinguishes one group of people from another. Culture is transmitted, through language, material objects, ritual, institutions (including schools), and art, from one generation to the next.

This is relevant to studies in the area of cross-cultural differences and similarities, which can be very challenging. Researchers, like the subjects and participants of

their studies, themselves exist in distinct cultures, which can make it difficult to understand the culture of others. Cole wrote:

It has long been recognised that culture is very difficult for humans to think about. Like fish in water, we fail to 'see' culture because it is the medium within which we exist. Encounters with other cultures make it easier to grasp our own as an object of thought (Cole, 1996, p. 8).

Ethnocentrism was defined by Drever (1952, p. 86) as an 'exaggerated tendency to think the characteristics of one's own group or race superior to those of other groups or races'. Hofstede made the point that to avoid ethnocentrism, research instruments should be developed 'cross-culturally' (Hofstede, 2001, p. 18). Both authors believed that ethnocentrism cannot be completely avoided as it is prevalent in all phases of the research design including data collection and analysis. It also shapes the form and content of research publications and other outputs. For example, research findings are almost always published only in the language of the researcher rather than that of the subject of a study.

Cultural components in all kinds of behaviour are difficult to grasp for people who have always remained embedded in the same cultural environment. Strategies such as living and mixing with the people whose culture is being studied enable the researcher to begin to recognise the numerous and often subtle differences in the ways that cultures are expressed.

This research involved spending time in both Victoria and Singapore, and some time in grasping nuances and vocabulary in both states. The researcher, being born and educated in Singapore, has lived and worked for many years within the cultural framework of Singapore. She has also spent a substantial amount of time undertaking most of her higher education in Victoria. The researcher was thus familiar with the cultural frameworks of both states before the beginning of the study.

Phillips and Walker (1997) highlighted that researchers had been studying the diversity of Australian states, such as 'economic, political and cultural differences' (Phillips and Walker, 1997, p. 91). In a third edition to his book on the history of Victoria, Blainey (2006) reinforced this perspective, pointing out several interdependent differences between Victoria and the rest of Australia. The study of indices from the Australian Bureau of Statistics revealed similar points, through data variations between Victoria and other states. Garden (1984) also noted many distinctions to be made between Melbourne and rural Victoria, especially in the development of towns and transportation. Blainey (2006) added to this perspective, describing Melbourne and rural Victoria in various factors – such as climate, number and places of origins of immigrants, business opportunities, originalities in fine arts and literary works, and politics (p. 133; p. 179; p. 224; p. 229).

The cases from Victoria were studied in the context of the state as a whole. Many of them involve the examination of relationships with communities from both Melbourne and rural Victoria. Thus acknowledging that differences exist between the city and rural parts of Victoria is essential, although the cross-cultural comparison with Singapore is carried out in the context of Victoria as a whole. The two states share many similarities, providing grounds for the comparison of cultural institutions from both states to be carried out. As Blainey stated in a concluding chapter of his book on the history of Victoria:

Victoria remains the oddity amongst the Australian states. It occupies only 3 per cent of the area of the nation but holds about 25 per cent of the

population. While Australia as a whole is one of the most sparsely settled places anywhere, Victoria is closely settled by the standards of many large regions of the world, a fact which is little known. Though much of Victoria consists of mountain ranges with few roads and few houses, or wide plains with only a sprinkling of farmers, the state as a whole is settled closely (Blainey, 2006, p. 268).

The characteristics of Victoria, such as its close settlement, total population, and residential broadband subscribers are similar to Singapore. Furthermore, both states are similar in terms of their historical identities as British colonies and then being part of two federations that led to their sovereignty – Victoria, along with five other British colonies, formed the Commonwealth of Australia in 1901 and Singapore, initially part of the federation of Malaysia in 1963, unexpectedly became a sovereign state and nation in 1965.

Singapore, being a smaller state than Victoria in terms of physical area and population, is also a nation by itself and so does not have the issue of interstate cultural differences. As Table 7.1 also demonstrates, statistical data for Victoria and Singapore are comparable – which enhanced the cross-cultural analysis of the case studies. This however, does not imply that culture in Singapore is homogeneous. This stand is consistent with the way cultural identities and perspectives are viewed for Victoria in this thesis. This principle could be captured by Fiske, Hodge and Turner (1987, p. viii-ix), in an introduction to a lively discussion of Australian culture:

The only way we could make sense of these contradictions was to emphasise culture as itself dynamic, to see Australian culture not as a static collection of items but as a play of forces.

The topic of identity was brought up as a way to investigate the various cultures in both states. In the context of national cultures, it also became apparent to the researcher that there were multiple national identities that people in various communities in a state relate to. The researcher sought for a way to identify those perspectives, as explored in section 7.3. Before going into the discussion, it is necessary to present contextual information on Victoria and Singapore. Information for selected indices have been acquired from the departments of statistics in both countries and compiled in Table 7.1.

	Victoria (2006)	Singapore (2007)
Land area (sq km)	227,594.4	707
Total population	4,932,422 ²	4,588,600 ¹
Citizens	4,257,742	3,583,100
% Born overseas	23.8%	Not indicated
% Non-citizens	13.7%	21.9%
Median Age	37	36.4
Birth rate	65,236 births recorded	45,886 births recorded
Death rate	33,311 deaths recorded	20,649 deaths recorded
Literacy rate	Not indicated ⁴	95.7% ³
% with Secondary or Higher Qualifications	68.9%	87%
Mobile phone subscribers	Not indicated	1,225 ⁵
Residential broadband subscribers	26.7% ⁶ of total population	25.2% of total population

Notes

¹ Total population comprises Singapore residents and non-residents. The resident population comprises Singapore citizens and permanent residents. Singapore permanent residents refer to non-citizens who have been granted permanent residence in Singapore. Non-resident

population are those who are non-citizens and non-permanent residents of Singapore, such as employment pass holders, work permit holders, student pass holders, dependent pass holders and long-term social visit pass holders.

² Includes citizens and permanent residents. Excludes overseas visitors, who are non-residents. In the Australian definition, overseas visitors refer to those residing in Australia for less than one year.

³ Among residents aged 15 years and over. In the Singapore context, literacy is defined as 'ability to read with understanding, eg. a newspaper, in the language specified.

⁴ Australia's has a different approach to measuring literacy: literacy is measured in terms of prose (ability to understand and use information from various kinds of narrative texts), document (the knowledge and skills required to locate and use information contained in various formats including job applications, payroll forms, transportation schedules, maps, tables and charts), numeracy (the knowledge and skills required to effectively manage and respond to the mathematical demands of diverse situations), and problem solving (goal-directed thinking and action in situations for which no routine solution is available). Literacy is measured in these four domains across different age groups and gender. As such, no overall measurement for literacy exists.

⁵ The number of mobile phone subscribers was not indicated for Victoria in 2006; but was recorded for Singapore in 2007 – which shows an over-subscription. This indicated that there is a prevalent use of mobile phones in Singapore.

⁶ Overall, 63% of Victorian dwellings had Internet connectivity, and 42% had Broadband connectivity.

Table 7.1: A comparison of selected indices in Victoria and Singapore (information compiled from the Australian Bureau of Statistics (www.abs.gov.au) and the Singapore Department of Statistics (www.singstat.gov.sg)).

7.3 National identity and the multi-ethnic state: Victoria and Singapore

In exploring the practices and values that potentially 'program' national culture, it is necessary to consider emerging national identities in the contemporary contexts of Victoria and Singapore.

Jones (1997) made the observation that over the years, there has been a rise in religious fundamentalism and ethnic loyalties around the world, causing 'dissolutions of ethnically diverse states into more homogeneous nations' - as in the separations of India and Pakistan, Malaysia and Singapore, the Czech Republic and Slovakia, and the break-up of Yugoslavia. Other states have experienced 'the breakdown of social solidarity due to competing ethnic claims' (Jones, 1997, p. 285) – as for example in Sri Lanka and to a lesser extent Fiji.

For culturally diverse Victoria and Singapore, ethnic diversity can be perceived as a threat or it could be indifferent to national unity. Clark (2007) argued for this from the perspective of transnationalism – 'the dual process of globalisation and localisation' (Clark, 2007, p. 304). According to Clark, there are two conflicting points of view about how globalisation and increased migration of culturally diverse groups shapes national identity:

The first is the view that the rise in expressions of transnationalism is weakening national feelings. For example...with increasing cultural diversity, local and global identities are strengthening while at the same time national identities are weakening...as nation states become more diverse, a shared national identity will become less important. The second view suggests that even with increasing cultural diversity, national attachment is not weakening and indeed attachment to the national is still felt strongly among culturally

diverse citizens in western democracies...in the developed world, many people continue to feel a sense of national pride (Clark, 2007, p. 304-305).

This increased the motivation to examine the concept of national identity in both states, a concept involving elusive commonalities that bind people in one country together.

7.3.1 Victoria

In the literature a range of viewpoints have been identified which help to create a picture of national identities in Victoria. Victoria's experiences, while they may be distinct in some ways as discussed by Blainey (2006) and Garden (1984), may also be shared with communities from other states in Australia. In addition, the impacts of globalisation, technological developments, and inter-state migrations of people make it necessary to examine cultural perspectives from Australia as a whole.

Cousins (2005) addressed the topic of national identity by establishing dominant images of Australia. She identified the following images that bore the most resonance in the nation's consciousness: convict origins of Australians, the gold rushes of the 1850s, the rise of anti-authoritarians (such as Ned Kelly – portrayed with images of independence, resolve, resolution, uprisings on the gold fields, rebellion, and the rise of unionists), and a view of the Anglo-Celtic citizens as a major group which suppressed the cultural identities of the Aborigines and Torres Strait Islanders, the Pacific Islanders, the Chinese, the Germans, and other ethnically diverse groups).

It is therefore clear that there are different understandings of an Australian identity. However, there are still common notions of what it meant by 'being truly Australian'. Certain indications of the Australian identity were found to be statistically significant by the Australian Survey of Social Attitudes (2003), a 'large biennial survey that studies the social attitudes and behaviour of Australians' (Clark, 2007, p. 307).

At the same time, national pride was also found to be relevant as a measure of national identity. Evans and Kelley (2002, p. 303) defined national pride as involving 'both admiration and stake holding – the feeling that one has some kind of share in an achievement or an admirable quality'. In the Australian context, Betts and Rapson (1996, p. 61) argued that national pride is 'operationalised as a sense of pride in and commitment to Australia'. A common notion of the Australian identity can thus be summarised in Table 7.2.

<i>Being truly Australian</i>	<i>National pride</i>
Born in Australia	The way democracy works
Have Australian ancestry	Political influence in the world
Lived in Australia most of one's life	Economic achievements
Speak English	Social security system
Be Christian	Fair and equal treatment of all groups
Respect Australian political and laws	Its history
Australian citizenship	Achievements in sports
Feel Australian	Defence forces
	Achievements in arts and literature
	Scientific achievements
Table 7.2: Ascribed notions of the Australian identity.	

Philips (1998, p. 287) proposed that the Australian national identity could be viewed as both 'inclusive' and 'exclusive'.

Inclusive conceptions are founded upon notions of cultural diversity and citizenship, emphasising general, abstract, open and achievable meanings of Australian identity. Exclusive versions are derived largely from the writings of historians and social commentators about traditional and popular Australian culture, emphasising particular, specific, ascribed and closed meanings of the construct.

His analysis of the literature led to the application of two research approaches to the issue of an inclusive Australian identity. The first approach studied 'the extent to which people endorsed traditional and popular Australian values and ways of life' (Philips, 1998, p. 288). Feelings and emotions were noted from the perspective of Australia as a 'blank slate'. The second approach complemented the first approach by gathering perceptions on three limiting aspects of the Australian identity: Australian citizenship, English language competence, and commitment to Australian institutions.

The 'blank slate' and use of limiting aspects were similarly applied in studying the Australian identity as an exclusive one. This approach considered how Australians felt 'towards a range of others who might be thought of as threatening traditional conceptions of Australian values, identity and way of life' (Philips, 1998, p. 288).

Philips' two-pronged framework was adapted to tabulate perspectives on the Australian national identity documented by various researchers – see Table 7.3 (it is not the intention for this table to be a comprehensive overview of all perspectives). Key perspectives of the Australian identity from the table will be discussed here.

In the first scenario to an inclusive national identity, strong weightings can be allocated to perceptions and meanings 'based on a non-operationally defined Australia' (Philips, 1998, p. 286). For example, studies have reported Australians to have one of the strongest senses of national pride in the world (Jones, 1989; McAllister, 1997; Evans and Kelley, 2002). In the second scenario, perceptions and meanings on citizenship, the English language, and commitment to Australian institutions were used as a way to explore an inclusive Australian identity – different from the first scenario, which was 'based solely upon feelings and emotions' (Philips, 1998, p. 287).

Likewise, the exploration of an exclusive Australian identity used two approaches. The first scenario explored 'the extent to which people endorses traditional and popular Australian values and ways of life' (Philips, 1998, p. 288). Chant, Knight, Smith and Smith (1989, p. 395) found that the traditional Australian way of life 'link and affirm patriotism, the 'basics' in schools, law and order, traditional moral values, the family, the individual, free enterprise and oppose Asian migration, radical fringe groups and the unemployed'. The second scenario explored 'feelings towards others as perceived threats to traditional conceptions of Australian values and ways of life' (Philips, 1998, p. 288). These are generally viewed as threats opposing perspectives from the first scenario. Although these are ascribed notions found through the literature, it should be recognised that culture is often shaped and reshaped through the actions of people living and working in social frameworks. As such, the views here may have changed over the years, since they were first reported.

The inclusive/exclusive images of national identity are not independent of each other and should not be viewed as dichotomies. Philips noted that there was a lack of research on associations between the inclusive and exclusive identities, perhaps due to the complexities in defining the scope of such cultural investigations and the emergent nature of social formations in all cultural interactions. One quantitative

research project entitled ‘Australian identity in the 1980s’ undertaken by Philips (1997) did identify strong positive correlations between exclusivity, in terms of others as perceived threats, and various measures of inclusivity. As Philips (1998) later pointed out, there is a lack of research exploring the relationships between inclusivity and exclusivity. More work in this area still needs to be done.

Identity	Approach	Findings
Inclusive	Perceptions and meanings based on a non-operationally defined Australia	High levels of national pride (Jones, 1989; McAllister, 1997; Evans and Kelley, 2002) High importance placed on patriotism and pride (Philips, 1997) Strong importance placed on ‘being Australian’ – reflecting the country as a significant source by which Australians derive their identities (Evans, 1995; Aitkin, 1982; Emmison and Western, 1991; Evans and Kelley, 2002) Identification with convict ancestry by younger, working-class; older, high-income, educated city-dwellers less likely to identify in this way (Tranter and Donoghue, 2003)
	Perceptions and meanings based on three limits: citizenship, English language, and commitment to Australian institutions	Strong endorsement of instrumental civic culture: feeling Australian, respecting Australian institutions (Jones, 1997; Cousins, 2005) Achieving national identity perceived as important condition for being Australian (McAllister, 1997; Evans and Kelley, 2002) Respect for political institutions and laws important to being Australian (McAllister, 1997) Acceptance of a distinct Australian accent (Fiske et al, 1987)
Exclusive	Extent to which traditional and popular values and ways of life are endorsed	Three aspects of society are affirmed: traditional Australian way of life, lifestyles and standards, and national identity (Chant et al, 1989) Warm disposition towards perceived friends of traditional Australia (i.e. working class, Christians, Great Britain, United States) (Philips, 1997; Bean, 1995) Belief in a unique Australian culture (Emmison, 1997; Cousins, 2005) Positive attitude towards patriotism (Ray, 1981) Under half of Australians demonstrated cultural pride, while a majority demonstrated pride in sporting achievements (McAllister, 1997)
	Feelings towards others as perceived threats to traditional conceptions of Australian values and ways of life	Only a minority is strongly xenophobic (Jones, 1997) Lack of evidence of hostility towards perceived threats (Philips, 1997), although there is reported consensus that there are enemies who will seek to undermine the Australian way of life (Kemp, 1977)

Table 7.3: Popular perspectives on the Australian national identity, based on Phillips’ (1998) two-pronged framework (compiled from Philips (1998) and other literature).

7.3.2 Singapore

Compared to Victoria, Singapore is a distinctively younger nation; and recognised as a ‘postcolonial nation state’ (Chua, 1998). Gaining independence only in 1965 after a tumultuous separation from Malaysia, Singapore has continually attempted to construct national identity through policies, strategic actions, and the use of the media (Kong, 1999; Koh, 2005). Prior to its independence, it was part of the Straits

Settlement together with Penang and Malacca (part of Malaysia today). In 1818, the East India Company, a team led by Sir Thomas Stamford Raffles began an expedition for a new British base in Asia. The team arrived in Singapore on 29 January 1819 and recognised the island for its potential as a trading port because of its geographical position. A small Malay settlement at that time, the head of the settlement granted Raffles – and the British to establish a trading port in Singapore through a treaty signed on 6 February 1819 (Chew and Lee, 1991). Thus Singapore began its years as a British colony, until the Second World War in 1942 when the Japanese occupied the island.

The post-war years were tumultuous for Singapore, going through a short-lived period as part of the Malaysian Federation and then becoming independent in 1965 through a turbulent expulsion from the same Federation. Conditions were bleak in the first decade after independence, with widespread poverty, unemployment, illiteracy, racial riots, and a lack of natural resources and infrastructure (Yee and Chua, 1999, p. 230). The other point to be mentioned in this context is that the People's Action Party (PAP), which became the ruling party for Singapore since 1959, had exerted significant influences over the country's cultural, economic, political and social policies – consistencies which had been projected over time (Chua, 1995).

A substantial number of authors (see Table 7.4) have identified characteristics relating to a Singaporean national identity, and the point has been made that this national identity is under threat from factors such as globalisation and the popularity of 'global citizenship' amongst the younger generation, which 'dilute the sense of belonging to the nation' (Nee, 2006).

Another challenge, noted by authors Kong and Nee, is the increased immigration and emigration in Singapore which can be seen as especially significant for a small and young state, already with a migrant and ethnically diverse background (Kong, 1999; Nee, 2006). As with Victoria, Singapore is characterised by waves of immigration and emigration. With globalisation and increase in demands for a multi-skilled workforce, Singaporeans are emigrating increasingly to other countries, often to take up employment or to settle permanently. At the same time, there is also a substantial influx of foreign immigrants who enter Singapore for similar reasons.

Findings from the literature on the concept of a Singaporean national identity have been summarised in Table 7.4 below. This table has been compiled by the researcher using Phillips' (1998) inclusive/exclusive framework. In the search for perspectives on the Singapore identity at the time of this study, it was found that there is a lack of research investigating on a systematic structure to analyse the notion of a Singapore identity; although the literature is extensive ascribing notions of culture in Singapore. It is also highly likely that such a framework need not exist, given the view that culture is an ongoing definition and interplay of several forces, such as language, everyday life in the anthropological sense, economy, political climate, and so on.

However, for the purpose of comparison, Phillips' framework had been adopted, to compare cultural perspectives with those discussed in the earlier section. This does not imply that these perspectives or framework are necessarily comprehensive in the context of Singapore. More research needs to be conducted in this area; however the aim of the chapter is to provide at least a preliminary notion of what some of the cultural perspectives on a Singapore national identity might be.

To summarise trends in the literature on an exclusive national identity, again the 'blank slate' and proposed limiting factors approaches were applied. The first collated

endorsements of traditional and popular perspectives of Singaporean ways of life, while the second approach considered feelings towards perceived threats. Table 7.4 provides a summary.

Identity	Approach	Findings
Inclusive	Perceptions and meanings based on a non-defined Singapore	Caution in voluntarily contributing knowledge publicly to community, due to uncertainty that they will be taken seriously (Ng, 2000) A desire and demand for globalisation, and complaints on the ways by which youths 'apparently mimic mindlessly youths from the US or Japan' (Chua, 2004, p. 129) Recognition that the new 'third generation' political leadership will see a greater 'openness to other lifestyles' (Lim, 2004, p. 110; Tan, 2004, p. 123) Recognise global competition and possess drive to work hard, accept high levels of stress (Ahmad, 1999) Affinity with Singlish (Singapore-English) as the pragmatic medium to communicate (Chua, 1998)
	Perceptions and meanings based on three limits: citizenship, English language, and commitment to Singaporean institutions	Strong respect for Singaporean institutions and government (Han, 2000) Conflict with established institutions and elites unacceptable (Han, 2000) Singaporeans as 'One People' in response to global crisis (Khaw, 2004) Proficiency in English language perceived as fundamentally important but bilingualism is more closely identified with national identity (Pakir, 1991) Acceptance that there is a Singaporean accent (Gupta, 2001) International exposure amongst working class, leading to a renegotiation and imagination of national identity (Kong, 1999)
Exclusive	Extent to which traditional and popular values and ways of life are endorsed	Strong correlation between ethnic and national identity (Liu, Lawrence, Ward and Abraham, 2002) Multi-religiosity is accepted; where religious practices (except for Christianity) are 'able and ready to absorb elements from each other' (Chua, 1998)
	Feelings towards others perceived as threats to traditional conceptions of Singaporean values and ways of life	Only a small minority is xenophobic or sensitive towards ethnic diversity (Liu et al, 2002) The ruling government is also often quoted as reminding residents to be tolerant of others who are perceived as different (Hill and Fee, 1995)

Table 7.4: Popular perspectives on the Singaporean national identity, based on Phillips' (1998) two-pronged framework (compiled from the literature).

In addition to the dominant values discussed in the above table, it should also be noted that there are counter cultures that have been proposed as well. For example, Phua and Kong (1996, p. 215) have found that certain groups of people in Singapore, usually those in 'structurally subordinate positions' use popular music to 'comment on social problems; to express their dissatisfaction with the state of society and resistance to hegemony and the ruling order'.

People from minority communities, such as the Eurasians, are also argued to contribute to perspectives on counter cultures. This group, within themselves, are both diverse and united at the same time:

Despite the fact that the Eurasians are descended from various Europeans and Asiatic forebears, they are one community, speak one common language, that is, English, have similar modes of living and religious beliefs, the majority being Catholics (Hill and Fee, 1995, p. 235).

By late 1991, a 'Eurasian Heritage Day' was formally announced, with nation-wide recognition of the community (Hill and Fee, 1995, p. 234). Such examples provide evidence that within dominant values of national identity, there are also distinct cultures and values that can potentially shape such dominant values.

7.4 An Approach to Cross-Cultural Comparison

In the search for an approach to raise cultural variables in the cross-cultural comparison of cultural institutions and communities from Victoria and Singapore, the relevance of Hofstede (2001) work was raised.

In 1970, Hofstede began an empirical study of IBM and its subsidiaries involving over 100,000 individuals from 50 countries (Hofstede, 2001, p. 160). Through the study, he compared similarities and differences between the cultural values of various countries. From this analysis, distinct value dimensions were captured, which he argued as essential characteristics of national culture. These value dimensions – *individualism*, *power distance*, *uncertainty avoidance*, and *masculinity* were developed to measure cultural relativity between countries. Later studies which involved people with different occupations, namely pilots, students, community representatives, civil service managers, consumers, and identified 'elites' in more than 20 countries validated these cultural dimensions. After conducting an international study developed with Michael Harris Bond of the Chinese University of Hong Kong, and administered to Chinese employees and managers around the world (in Asian and non-Asian countries), Hofstede added another cultural dimension known as '*long-term orientation*' incorporating the effects of Confucianism (Hofstede, 2001, p. 71).

Hofstede's work gained fame quickly, applied in various academic disciplines such as marketing, management, accounting, information science, many other business disciplines, and doctoral dissertations (Sivakumar and Nakata, 2001, p. 556). Its popularity has been attributed to its ability to be 'a watershed conceptual foundation for many subsequent cross-national research endeavours' (Fernandez, Carlson, Stepina and Nicholson, 1997, p. 43-44) and 'help scientific theory building in cross-cultural research' (Sekaran, 1983, p. 69).

Despite its popularity, Hofstede's framework to measure cultural relativity is not without its weaknesses, one of which 'trying to measure the unmeasurable' (McSweeney, 2002, p. 83). As proposed earlier, because of the recursive nature of culture which is changing as a result of everyday actions, it could be argued that culture is therefore 'unmeasurable' as explicit rationalisations. Anderson (1991)'s discussion of nations as imagined communities support this critique. In addition, Hofstede's claim that his notions of culture and values, which take on a deterministic style, can essentially capture a picture of the national culture of any country seem too simplistic especially in countries that are multiculturally diverse, and have distinct counter-cultures and identities (as seen in the earlier section).

Hofstede's assumptions underlying his work are also challenged. His work, which was principally based on a survey of highly educated employees from one multinational corporation, does not include 'new' communities such as recent

migrants in a country or marginal communities such as poorer and/or rural communities such as farmers and women in certain countries.

His notion of national culture has also been challenged (McSweeney, 2002). While he maintained that 'individuals do not all share common subcultures, they share a common national culture' (Hofstede, 1980, p. 37):

the collective programming which I call culture should be seen as a collective component shared in the minds of otherwise different individuals and absent in the minds of individuals belonging to a different society (1980a).

The 'common traits' and characteristics of the inhabitants of a nation (Hofstede, 1980, p. 375) are described via the cultural dimensions outlined. In other words, 'a unique national culture is assumed to be individually carried by everyone in a nation' (McSweeney, 2002, p. 93).

In addition, the statistical treatment has created a normalisation of Hofstede's data. As with many quantitative methods, the resulting relationships gathered in the findings is a statistical average which takes into account responses from the majority and potentially ignore outlying perspectives from minority social groups which could be important or present counter arguments against the cultural dimensions. Hofstede had not recognised this potential weakness but argued for its strength:

We do not compare individuals, but we compare what is called central tendencies in the answers from each country. There is hardly an individual who answers each question exactly by the mean score of his or her group: the 'average person' from a country does not exist (Hofstede, 2001, p. 253).

Given the view taken in this thesis that cultures are richer conceptualisations and are recursively changing everyday in actions and social structures, it is not argued that the five cultural dimensions developed by Hofstede (2001) will effectively describe cultural relativity between Victoria and Singapore. Still, in the context of examining the relationships between institutions and communities, Hofstede's (2001) cultural dimensions pose intriguing points of interest. Their definitions are outlined below and through the analysis of the case studies their potential applications to cultural institutions and communities are examined.

7.4.1 Defining Hofstede's five dimensions of national culture

Definitions of these dimensions are considered below:

7.4.1.1 Power Distance

Hofstede defined 'power distance' as 'the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally' (Hofstede, 2001, p. 98). In other words, it is a value that assesses whether hierarchy and power differences are acceptable.

Hofstede (2001) and others (Desert and Leyens, 2006) found that cultures with a high index of power distance tend to view status, hierarchy and power differences as legitimate and in some cases, desirable; the converse held for cultures with a low index of power distance.

7.4.1.2 *Uncertainty Avoidance*

Uncertainty avoidance was defined by Hofstede (2001, p. 161) as 'the extent to which the members of a culture feel threatened by uncertain or unknown situations'. It 'deals with the collective tolerance for uncertainty and ambiguity, indicating the extent a culture programs its members to feel either comfortable or uncomfortable in unstructured situations' (Hofstede, 2001, p. 161).

Unstructured situations are different from situations governed by expected norms and sanctions. Cultures with high uncertainty avoidance tend to 'support beliefs promising certainty and to maintain institutions protecting conformity' (Hofstede, 1997, p. 347). Hofstede (2001, p. 181) argued that such cultures seek to minimise the possibility of unstructured situations as they are 'led by a philosophical and religious belief in absolute truth'. They are also more emotional, and motivated by inner energies.

In contrast, low uncertainty avoidance cultures are more tolerant of opinions different from what they are used to and 'are characterised by a relativist attitude towards philosophical and religious beliefs'. They are also 'accepting of other races, have a high tolerance for immigrants, and are willing to compromise with external opponents and threats' (Hofstede, 2001, p. 180). According to Hofstede (2001, p. 180), people in such cultures are also 'more phlegmatic and contemplative', and not expected by their environment to express emotions openly. Cultures which are accepting of uncertainty are tolerant of diversity and differing opinions in their everyday life.

7.4.1.3 *Individualism*

Hofstede wrote that:

Individualism ... stands for a society in which the ties between individuals are loose: everyone is expected to look after him/herself and her/his immediate family only. Collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty (Hofstede, 2001, p. 225).

Cultures characterised by low individualism (in other words, high collectivism) often have extended families that are tightly integrated as sub-groups and collective whole groups. 'Collectivism' should 'not be confused with the political meaning of the word' – 'it refers to groups and not the political orientation of the state' (Hofstede, 2001, p. 225).

In some countries such as Australia, the significance of collectivism is different for some social groups such as the Greeks and white-collar employees, and this had changed over time (Rosenthal, Bell, Demetriou and Efklides, 1989; Deery and Walsh, 1999). Again, the failure to capture such differences within a nation is a weakness of Hofstede's approach.

7.4.1.4 *Masculinity*

Hofstede's masculinity/femininity dimension refers to 'the distribution of roles between the genders' (Hofstede (1980; 2001, p. 279). Hofstede concluded that men across different countries are more likely to be assertive and competitive, while women are more likely to be modest and caring. This dimension however, does not

suggest a polarisation of societies – in that there is a dominant masculinity amongst men or femininity amongst women:

Masculinity and femininity, in the sense which I shall use these terms, refer to the dominant gender role patterns in the vast majority of both traditional and modern societies...the patterns of male assertiveness and female nurturance. These words should not be taken to imply that men always actually behave in more masculine manner than do women or that women behave in more feminine ways than do men; rather, statistically, men as a rule will show more 'masculine' and women more 'feminine' behaviour (Hofstede, 2001, p. 284).

Thus to Hofstede, in cultures characterised by low masculinity, both men and women would be characterised as being modest, nurturing and caring; in cultures described as being highly masculine, men were likely to be somewhat more assertive and competitive than women. He defined this cultural dimension in the following way:

Masculinity stands for a society in which social gender roles are clearly distinct: Men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modern, tender, and concerned with the quality of life. Femininity stands for a society in which social gender roles overlap: both men and women are supposed to be modest, tender, and concerned with the quality of life (Hofstede, 2001, p. 297)

In general, this cultural dimension aims to describe societies as generally characterised by 'assertiveness and competitiveness versus modesty and caring' (Hofstede and Peterson, 2000, p. 401).

7.4.1.5 Long-term Orientation

Hofstede's fifth dimension, 'long-term orientation', was found to be significant in a study involving students from 23 countries, using a questionnaire designed by Chinese scholars (Hofstede, 2001). The dimension was conceived after noting that the cultural dimension of 'uncertainty avoidance' described earlier, was not strong in certain cultures.

The notion of long-term versus short-term orientation was derived from studies on cultures with Confucian influences. However it was tested also in cultures without Confucian influences. For example, Brazil and India were found to score at relatively high levels on the index of long-term orientation. This cultural dimension is related to the focus people choose in their actions, whether it be with a long-term or a short-term (low long-term orientation) perspective. Hofstede defined long term orientation as:

...the fostering of virtues oriented towards future rewards, in particular, perseverance and thrift. Its opposite pole, short term orientation, stands for the fostering of virtues related to the past and present, in particular, respect for tradition, preservation of 'face' and fulfilling social obligations (Hofstede, 2001, p. 359).

In other words, Hofstede argued that the focus on future rewards in long term orientation may cause people in those societies to let go of past or present traditions and practices if they are perceived as potential threats to gaining such future rewards. Short term orientation, on the other hand, describes a focus on 'the past and present' and therefore there is a greater devotion to traditions and social obligations.

It should be remembered that the cultural dimensions of Hofstede (1980, 2001) measure what Hofstede termed ‘cultural relativity’ (Hofstede, 2001, p. 15). As such, Eastern cultures that are usually associated by Western writers with traditions and ‘face’ (Hofstede’s short-term orientation) can nevertheless have a high score on the index of long-term orientation in situations where thrift is valued even more than traditions, and status is valued even more than ‘face’.

7.4.2 Hofstede’s cultural dimensions in the contexts of Singapore and Australia

Hofstede has been developing his work in recent years by administering surveys in various countries and making the results available over the Internet. For the thesis, a comparison using Hofstede’s framework was found. Figure 7.1 is a chart showing comparative scores for Australia and Singapore derived by Hofstede on his five cultural dimensions.

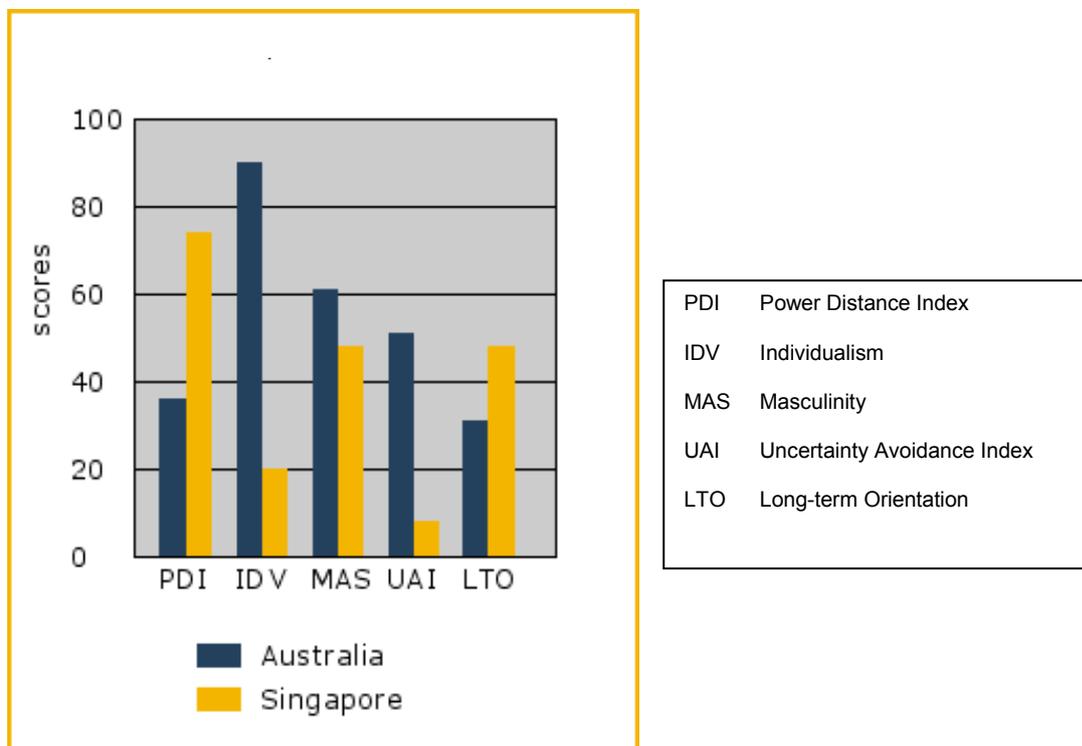


Figure 7.1: A Cross-Cultural Comparison of Australia and Singapore (Hofstede, n.d., para. 2).

According to this figure, Australia scored lower than Singapore in terms of power distance index, much higher than Singapore in the case of individualism, and comparably higher than Singapore in terms of masculinity. Singapore had an exceptionally low uncertainty avoidance index compared to Australia, but a higher index in relation to long-term orientation.

Australia scored lower than Singapore in terms of the power distance index, which, according to the definitions discussed above implied that Australian communities tend to view status, hierarchy, and power differences as less desirable than Singapore. By this reasoning, actions and activities that reduce power differences and hierarchies would be welcomed. On the other hand, it can be argued that in

Singapore, with its relatively high score on the power distance index, status, hierarchy, and power differences are more acceptable, and perhaps desirable.

Australia also had a strikingly high level of individualism compared to Singapore; according to earlier definitions. This suggests looser ties and networks within communities, unlike the case of Singapore characterised by extended family networks and tighter social networks.

In terms of masculinity, both cultures are comparable – although Australia scored higher on this dimension. This implied that women in Australia are more assertive, demonstrating higher masculine values than women in Singapore. At the same time, men in Singapore arguably demonstrate some feminine values (characteristics such as modesty, nurturing and caring) to a greater extent than men in Australia.

These descriptive traits found by Hofstede for both Australia and Singapore are not without weaknesses. For example, acceptances of power distances could change over time and with other compounded factors such as urbanisation and education. This was also reinforced by Walsham (2001, p. 224), who argued that globalisation and contemporary technologies will weaken 'the hold of traditional values', such as centralised decision-making in the Chinese society. In addition, masculinity and femininity can also be differentiated within societies in terms of other variables such as age.

In regard to the uncertainty avoidance index, Australia received an average score on the uncertainty avoidance index. Singapore scored exceptionally lower than Australia in this dimension. Going by Hofstede's (2001) definitions, this suggests that there is a high tolerance of different opinions, and a relativist attitude towards philosophy and religions in Singapore. Although there is a substantial number of religious beliefs in Singapore, the country is predominantly Buddhist. This was reinforced by the work of Taylor (2003), who found that cultures that are predominantly Buddhist, Catholic and Jewish have strong correlations with a low score on the uncertainty avoidance index. Here another limitation of Hofstede's framework is posed, as there may be different levels of 'tolerance' – especially with immigrants, opinions, and other religions. The qualitative differences in such tolerance have not been addressed by Hofstede.

In the chart above Singapore scored higher than Australia in terms of long-term orientation, and according to Hofstede this implied that Singaporeans value thrift, perseverance and status, and have a sense of shame to a greater extent than the Australian population in general.

7.4.3 The use of the Hofstede model

Although the thesis makes use of the extensive work by Hofstede (2001), it is not without caution. Hofstede's model, which is constructed on the basis of an assumption of unconscious values, and states or frames of mind amongst a majority of people in a nation, does not take account of a number of factors. Culture is a concept made up of social patterns that are recursive and fluid, based on reactionary practices but also through living within social frameworks – a complex construction (Giddens, 1984) and imagination (Anderson, 1991).

Distinct individual and minority differences frequently reside within a dominant national culture, and are often the result of a conscious intention to maintain a distinct identity. The implication for the thesis is to recognise that while there may be dominant cultures, the characteristics displayed by these dominant cultures should

not be taken to represent the national culture of any community. Therefore, as a guiding principle, the thesis seeks to include interviewees from different groups. The use of gatekeeper interviewees which introduces intentional selection of interviewees from different backgrounds is an example of how this principle underlined the research.

As already discussed, distinct cultural differences and perspectives exist between states in Australia. This only served to highlight the limitations of Hofstede's model to derive fixed sets of cultural notions, even if they were argued to be relative to other national cultures.

Other structural factors shape the culture of national communities. Global culture today as distributed by contemporary media and the Internet penetrates different nations and has the power to shape their cultures. On the other hand, if the use of the Internet and contemporary media is a result of communication preferences, or communities of people in a nation wanting to accept and use new technologies, then the model by Hofstede (2001) can be used to shed light on the cultural backgrounds of people consuming these technologies and new media (Hermeking, 2005).

7.5 Main insights

Insight 7A: Although there are ascribed notions of national identities for both Victoria and Singapore, there are also cultural perspectives that counter such ascribed notions.

Insight 7B: Hofstede's cultural dimensions present both strengths and weaknesses for exploring cultural relativity between Victoria and Singapore.

Insight 7C: Distinct differences based on Hofstede's cultural dimensions can be seen. These need to be validated further through the case studies for their significance in shaping cultural institutions in the knowledge commons, the engagement of communities, and participatory design.

Chapter 8 (Case Study 1) – Museum Victoria

8.1 Scope of the chapter

- Begins with explaining the focus of the case study as a pilot case shaping the development of subsequent cases. Discusses the research engagement with Museum Victoria (MV) and the Women on Farms Gathering (WoFG) community, with a summary of the research activities that were conducted.
- Provides a background of the WoFG community, and its current roles and responsibilities. Discusses its relationships with cultural institutions in terms of resource holdings and collective processes.
- Provides a background of MV and its current roles and responsibilities, as legislated by the Museums Act of 1983. Discusses the museum's relationship with the WoFG community in terms of resource holdings, engaging participation, and strategic directions.
- Explores some implications for the future, such as the examination of open content licenses for resources in shared community collections and the use of participatory technologies in museum practices.

8.2 Focus of case study: Museum Victoria (MV) and the Women on Farms Gathering (WoFG) Community

Being the first case study in the research, the development of this chapter contributed to setting the scope for other case studies, as Chapter 2 had discussed.

At the beginning of this research, discussions with public history academics led to contact with a senior curator from Museum Victoria (MV). A pilot interview with her revealed some of the challenges and opportunities in her interactions with a community of farm women. It also became clear that she was a pivotal point of contact from MV in the interactions and overall relationship with the community. The voluntary energies and participation coming from the farm women community presented an intriguing opportunity to investigate the case as an exemplary account of how a cultural institution explores community roles in the context of acquiring, developing, and enhancing resources in a collection.

After extensive discussions involving one public history academic and the curator from MV, the case to put a community collection online was clear. The readiness for this development came from the belief that this would have significant benefits for all parties involved. The public history academic was interested to research the impacts of contemporary technologies and oral histories, and the curator was seeking ways to enhance community engagement between MV and the farm women with the community collection.

For the writer, the development of a digital collection would provide a way to study the relevant points of interest on resource holdings and their significance, collective processes emergent from the community, strategic directions of cultural institutions, and how contemporary technologies were beneficial or useful in engaging participation from the community. Benefits of the case however, were not

immediately apparent to the community, as manifested by their scepticism of ‘IT researchers’ (see discussion in Chapter 2).

8.3 Research engagement with MV and WoFG

In 2002, an annual gathering of the Women on Farms community in Kyneton saw over 160 positive votes to give a selected group of women (thereafter referred to as the Heritage Group) endorsement to act on behalf of the community in the partnership with the MV. Museum Victoria responded to the approach from the Heritage Group because at that stage there was little in its collections and practices relating specifically to the lives of rural women and their contributions within the broader community of Victorians. Since the initiation of the partnership, the Women on Farms Gathering (WoFG) collection, stored at MV, has grown steadily. In 2005, the collection was showcased for the first time in MV.

It was at this point that the present author’s research began. The researcher approached MV and the WoFG to ask whether she might undertake a project concerning the community and investigate the role of MV in building and sustaining the collection. This was generally welcomed, although it was clear from the onset that a deeper research engagement was desired by MV in order to achieve greater positive outcomes for the WoFG community. At the same time, the desire for alternative ways to archive and facilitate dialogue around community resources has grown stronger, especially within the WoFG community. With these events, a joint application for a small research grant was made with the academic from public history which proved successful. The grant was then used to acquire oral histories from the community, and to develop a digital collection for the WoFG community.

As the action research component led the writer to support the development of the digital collection, MV also began a working relationship with the writer by conferring an honorary research associate appointment in the history and technology department. This allowed the writer to gain a deep understanding of the internal issues of the museum concerning the WoFG community collection, and at the same time initiated a relationship between the writer and the WoFG community. As an honorary research associate, the writer not only worked on the development of the digital collection with the help of a third-party vendor, but also conducted investigations of the research aims through various focus group meetings, laboratory sessions, and personal interviews.

Table 8.1 provides a chronological summary of the fieldwork undertaken towards this case study, the persons interviewed (pseudonyms are given to interviewees) where applicable, and the duration of time taken in each activity.

Task	Description	Interviewee(s)	Duration
Interviews	Pilot interviews with senior curator from MV and public history academic. Issues identified.	Mabel (MV), Olinda	Oct 05
Interviews	Pilot interviews with three members of the Heritage Group. Challenges and issues from community identified.	Carol, Sue, and Linda	Oct–Nov 05
Action research	Gathered requirements for online collection, meetings with MV and	Mabel (MV), Carol, Sue, Linda, and Dina	Nov–Dec 05

	community.		
Action research	Development of first prototype with third party developer.	(not applicable)	Jan–Mar 06
Interviews	A series of interviews with staff from MV, namely: 2 curators, and 2 staff members from MV's internal IT department. Institutional issues and challenges identified in relation to action research component (online collection).	Mabel and Beverly (curators); Tim and Jacob (IT staff)	Apr 06
Action research	Participatory laboratory session with MV curators and members of the Heritage Group to identify changes required for design reiterations. More issues related to community were identified and ethnographic notes taken on interactions between MV curators and Heritage Group.	Mabel (MV), Beverly (MV), Carol, Sue, Linda, Michelle, and Dina.	May 06
Action research	Development of second prototype (first design reiteration).	(not applicable)	Jun–Jul 06
Action research	Second participatory laboratory session with MV curators and members of the Heritage Group.	Mabel (MV), Beverly (MV), Carol, Sue, Linda, Michelle, and Dina.	Aug 06
Action research	Development of third prototype (second design reiteration).	(not applicable)	Aug–Oct 06
Action research	Third participatory laboratory session with MV curators and members of the Heritage Group. Further ethnographic notes taken on issues relating to community participation and resource properties of online and physical collection.	Mabel (MV), Beverly (MV), Carol, Sue, Linda, Michelle, and Dina.	Nov 06
Interviews	Interview with senior curator.	Mabel	Dec 06
Action research	Debrief session with MV curators, public history academic and members of the Heritage Group. Resulted in joint writing exercise which led to a paper publication and presentation in a conference.	Mabel (MV), Beverly (MV), Olinda (academic), Carol, Sue, Linda, Michelle, and Dina.	Jan–Apr 06
<i>April – June 2006: Intermission due to overseas fieldwork</i>			
Publication	Keynote address in Museums Australia seminar: Storytelling through emerging technologies	(not applicable)	Aug 06
Interviews	Interviews with senior curator and Heritage Group. Revisiting use and	Mabel (MV), Sue, Carol, Linda, and	Sep–Dec 06

	growth of online collection.	Dina.	
Action research	Final laboratory session, focused on training members of the Heritage Group on using and contributing to the online collection.	(not applicable)	Jan 07
Action research / Interviews	Group interview with MV's curators, staff from MV's IT department, third party developer, and public history academic to hand over project to the institution. Further institutional issues and upcoming challenges identified.	Mabel (MV), Beverly (MV), Olinda (academic), Carol, Sue, Linda, Michelle, and Dina.	Feb 07
Table 8.1: Research engagement with MV and WoFG community.			

Since the case study is based on the development of a digital collection for the WoFG community, the chapter will begin by looking at the WoFG community and their relationship to other cultural institutions, specifically MV.

8.4 Women on Farms Gathering (WoFG) community

The WoFG is a forum through which women from rural backgrounds (women who are farmers or connected in other ways with farming) can build better understandings of their own lives and experiences, and convey these understandings to the wider (mostly urbanised) Australian population. Part of this endeavour envisaged a physical and virtual exhibition, focusing on artefacts and other objects to which meanings were or could be attached.

8.4.1 Foundation and development

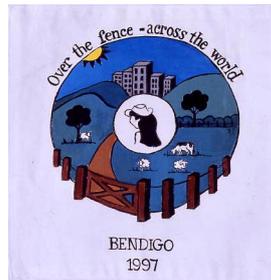
In 1990, the very first gathering of WoFG in Warragul saw participants bring together memorable objects reflective of their identities as rural women living and working on farms in Victoria. Intricately associated with these objects were stories that highlighted meanings and contexts shared by the community of rural women. Thereafter, the forum became an annual event through which the women could make meaningful sense of their collective identity. The event was referred to fondly by members of the community as 'The Gathering'.

The full significance of the objects and stories brought to the gatherings as a collection did not become apparent until 2001, when, at the annual gathering in Beechworth, Victoria, a series of history boards was used to present the stories shared at previous gatherings. The history boards included thematic icons which had been handed from one organising committee of each gathering to the next. This marked the first time that the collection of objects was consolidated. Objects in the collection included a cow pat, an irrigation shovel, a magic wand, a 1994 cheque, a Mallee root, a farm work boot, a horseshoe, a pair of ceramic hands, and a computer motherboard. Examples of other objects were banners, gift packs provided to participants at each gathering, uniforms of organising committees, photographs, quilt patches, oral histories, reports of gatherings, newspaper clippings, diary entries, brochures, postcards, gift samples, song lyrics, and hand-written poems. Figure 8.1 shows some examples of such objects regarded as significant in the collection.



A waistcoat worn by members of the 1996 Ararat Gathering's organising committee.

A banner patch designed for the 1997 gathering.



A memorial plaque shared during the 1998 gathering.

Figure 8.1: Examples of objects from the WoFG collection.

8.4.2 Current roles and responsibilities

By 2001, many women in the community were deeply concerned that many of the resources (objects and stories accumulated over the years) could be lost or damaged, given that they were dispersed and stored under different conditions in a number of private residences. Some items and information about stories and objects in the collection had already been lost, with little hope of recovering them. What was also obvious to many in the community was the inconsistent level of responsibility and care for the collection, and divergent interpretations on the meaning of adequate responsibility and care. The 'Heritage Group' was appointed from within the community, their main role being to seek advice from and interact with MV on protecting and sustaining the collection.

8.4.3 Relationships with cultural institutions

The Heritage Group played a key role in forming and nurturing the community's relationships with other cultural institutions, such as public libraries in the local regions of rural Victoria (MV being one of the most engaging). What follows will focus upon the Heritage Group's relationship with MV.

8.4.3.1 Resource holdings

In initial interviews involving members of the community, questions were directed towards understanding the types of resources produced and shared by the community. Referred to as collection objects, they have been brought together and maintained by the community since 1990. On their own, few of these objects have much monetary value but their meanings are constructed by the community collectively.

The motivations for building and sustaining these resources in the community were many. Women in the community felt a need to connect with one another and share their experiences in order to overcome emotional and physical issues as rural women who had to live and work on farms. Carol, from the Heritage Group, recalled the need to share resources as one of the strongest drivers for the community to come together for its first gathering:

We felt a need to look at the challenges faced by women on the land, to share skills, information and experiences, and to help each other grow.

This reflection provided impetus to share and create significances around resources at annual gatherings. A healthy level of shared knowledge resources was also sustained to promote learning and help one another overcome daily challenges. The sharing of stories and experiences, and symbolic icons helped to instil a collective sense of belonging, engage members of the community, and promote learning and innovation. At the same time, the signification of symbolic icons and artefacts functioned as objects that help the women relate to one another in their diverse experiences. These impacts were explicitly expressed by many in the community. Michelle, a veteran member of the community elaborated on the benefits she had gained in the process.

I have been to eight gatherings... [and] I'm lucky to be a part of WoFG Warragul who has and has had as its member's women who I feel connected to. They have helped me cope with different things, many times maybe without knowing, but most of all I've gained a feeling of self worth through being a part of things, and seeing other women doing things that have inspired me. The interesting meetings we have are very educational and sometimes challenging e.g. learning to tie ropes on a truck...trying to weld and many more. But most of all it's the friendships I've made. I hope, and I feel I have helped others as they have helped me.

The sense of self articulated within a collective endeavour was manifested in the process of sharing resources with others. Interacting with others in the community contributed to a 'feeling of self worth', which was a personal attribute. In this context, resources that were shared in the midst of such interactions may almost appear to be by-products – but they also encourage the construction of meaning by women in the community. Carol added to this point by expressing what a certain object meant to her personally. A picture of the 'rose icon' mentioned can be found in Figure 8.2.



Figure 8.2: Icon from the 2005 Benalla Gathering.

The rose icon at the [2005] Benalla Women on Farms Gathering made me think about...what it meant to me...Life's journey can be quite hazardous at times, and can be extremely challenging as well. The barbed wire showed how a 'prickly' pathway up the stem can mean that no matter what the end result may be, it's the journey that challenges me and helps create my attitude to life. I could either go around the prickle, I could turn back or I could ride over the top of the prickles – the choice has been mine! I know that in my life I have had some 'prickly' pathways but I have somehow managed to assess each situation and calculated the risks as well as the benefits. The rose symbolises that the end of each journey can have a magnificent scent to success and enjoyment...

On the other hand, resources considered as significant in the community were not limited to the physical artefacts and iconic symbols shared at each gathering, as Sue showed:

Benalla Gathering provided a unique tour [of a cherry farm] which I greatly enjoyed...it was a farm owned by one of the women on the committee of the Benalla Gathering...we were shown the different varieties of cherry trees presently growing on their farm and we could see how she and her husband had put an enormous effort in to developing their farm. The stringent monitoring of each variety ensured they were keeping their productivity in line with the market requirements. The opportunities for the family to extend their product has added value to their business...further diversification on the farm is a small plot of olives which are harvested annually are sold in various

styles of oils and pastes. Obviously they have taken considerable planning to establish and grow the cherries and their commitment to the cherry industry is most encouraging. It also proved that you don't necessarily have to own enormous acreage to be able to farm viably – it's quality acreage, not necessarily quantity acreage.

Such narratives indicate distinct resource characteristics. Resources that were produced and shared at gatherings were brought about because of the gatherings. The signification of stories and other resources at gatherings are based on rules and conventions that have been established over time through the annual gatherings.

In the past, resources had largely been shared and distributed amongst members of the community through the annual gatherings. Such resources were also characterised by low accessibility; in that community members who could gain access to them were limited to those who were at the gatherings and who were given the responsibility of storing these resources. This also implied that their appropriation or loss will directly result in a loss of availability for others in the community. This was realised by many members of the community, who often cited this reason as one of the impetus for a cultural partnership with MV. In an early interview Carol emphasised the importance of this impetus:

... along with the realisation that we have a collection, we also became acutely aware that we need to ensure that it needs to be protected and shared for it to be sustainable for future generations. The partnership with the museum was a significant step towards that [desired outcome].

One example has been the connection made to younger generations of women in Victoria through the collection. In the words of Dina, a volunteer of the museum who is also a participant in the project:

I have never lived or worked on a farm in rural Victoria – but my parents were from the country and I have never really understood their stories until now. Now that I can see and participate in gathering some of these stories, experiences, and artefacts, I am now able to relate much better to the stories I've always heard and known.

Allowing non-members of the community to participate also implied that there was greater freedom that could be exercised with the resources that now can be included as part of the collection.

The understanding that the levels of accessibility of resources will change was expressed from the onset of the action research project, but explicitly expressed by many members when the collection was put online and shown to the community during a laboratory session. According to Linda:

I was always aware that we are creating living history...but seeing all our stories and resources we've shared for the first time like this – made me realise that this is not only a powerful way to document and enrich our living history, but this has created a way for us to connect to other communities in Victoria, and I now know that what we know will not be lost but will be carried on through the generations.

Relationships with other cultural institutions were also important in enhancing or building on the resources women in the community share with one another. In an interview with Diane, a community spokesperson who will again appear in the case study of public libraries in Victoria (Chapter 10), the importance of relationships with

different cultural institutions for the community was serendipitously revealed. Diane is one of the main coordinators for networking meetings for rural women in northeast Victoria, which shares a border with the neighbouring state of New South Wales. In passing, the writer brought up the development of the digital collection and asked what might be some of the salient issues for the community in using and contributing resources to the digital collection. Diane quickly acknowledged her knowledge of the development of the digital collection and pointed to the relevance of the local public libraries:

I think this is where the library comes in – it will be great if the library could work with the museum and once the site is launched, the library in these regions – like mine in Indigo Valley – could have training sessions lasting 2-3 days to go through the website and help women learn how to use it because one of our greatest challenges is the availability of infrastructure and also the technical skills of some of these women. The local library is a key to linking the community because it is such a localised and public space...and it will be even more relevant to the community through partnerships with other institutions...

This perspective also pointed to how relationships with relevant cultural institutions can provide potential solutions to different challenges in the communities. Resources reflecting the identities and significance of the WoFG community were preserved and shared in different institutions, and Diane emphasised how these relationships were equally essential to the community.

For us, I think they are all important although I recognise that the kinds of resources that are created and represented are different. The family history section, archived newspaper clippings at the Wodonga library preserves an important part of the identities unique to the women in that area, while our ongoing relationship with Museum Victoria is also very interesting in how we are actively reflecting and shaping our everyday life through the sharing of knowledge and objects of significance.

8.4.3.2 *Collective processes*

One of the most striking features of the study has been the collective endeavours of the community. What began as a small initiative in 1990 has now grown into an annual event and collection known to many state and nation wide. Interacting with the collection has shaped the community in return, and this is evident with the many recollections from members of the community, such as Sue:

The women's stories – always helped me as I identified with issues they were grappling with. Sometimes the men on our property don't appreciate the work I do, but the other women do! It gives me a chance to explore some recreational interests for myself with a safe group too. After [the] Tallangatta [Gathering], a group of us got together as a support group and have met 4-5 times a year since...we chat about caring for relatives, our men, agricultural issues, women's health, craft, gardens - anything that is relevant to us at the time. I think it's good to raise the profile of rural Australia and make all people in agriculture feel proud of the job they do, even though the monetary rewards aren't always there...

The support group being formed after a gathering is an example of how a facilitated event may drive further collective processes. In the case of the support group, communication is a key characteristic; although it is still primarily dependent on shared understandings of what is meaningful within the group. As subtly pointed out

by Sue, the notion of a small group that was perceived as 'safe' was also important for the deep level of communication in the support group to occur.

Linda also used the rose icon (see Figure 8.2) to illustrate how she made sense of her collective identity with others in the community:

I really liked the choice of the barbed wire rose as a symbol for the Benalla Gathering. To me this icon represents the toughness you need to survive as a farmer in rural Victoria today. It also resound the beauty in your life as a farmer as you nurture your crops and livestock to the best they can possibly be. But it also shows that farming women are not 'the bluntest tool in the box' but are astute and aware and will unite to ensure that farming and agriculture...will continue to grow and blossom...

As discussed earlier, such recollections articulated how many women in the community made connections with one another through the resources in the collection. At a fundamental level, such interactions required the coordination of activities, as Sue noted:

Quite simply, none of this would have been possible without the initial organisation and facilitation of activities between us.

Such coordination also implied certain rules governing the interactions between women in the community. For example, the annual gatherings over the years and different places across rural Victoria gave rise to an understanding of how and what resources are signified within the community. At the same time, such rules also evoke power relations and communication structures – as evident by the way members in the community interact with one another via the resources.

As the community consolidated itself over time, hierarchical relations also developed with greater intensity. The formation and role of the Heritage Group was instrumental, as Mabel articulated as a curator from MV in charge of the collection:

It is not possible – even if possible, it would be a huge drain on our resources – to try to communicate with everyone in the community...the role of the Heritage Group has been crucial in representing voices from the community...

This was also seen as desirable by some participants; that cooperation is achieved by the community instead of being facilitated solely by the museum. Sue noted how the level of participation had increased over time:

Being in the Heritage Group has been a great learning experience for me – and we are able to shape the partnership and the collection as members of the community...I have this sense that we are no longer subjects to be studied but are designers and participants of the entire collection.

Before the action research project began, the Heritage Group was largely the main interaction point for the community and MV. With the development of the digital collection, communication facilities were put in place to allow other women from the WoFG community to participate in the shaping of the collection with the museum. Since establishing the digital collection, women in the community other than those from the Heritage Group have accessed and participated in the collection, such as contributing memoirs and other stories, and pointing out missing or erroneous information. In this manner, the community continuously interacted and exchanged

knowledge between members, ensuring ongoing contribution and sharing of resources in the collection, as Sue recounted:

I think the greatest thing the portal has done for us [the community] has been to allow many of us to communicate much more in a very dynamic way.

Such communication took place on top of the existing activities and collective processes already happening within the community. The collective processes and actions of the community took on various forms. They were coordinative on some occasions, such as the organising of the activities at gatherings in order to build and contribute to the collection, and cooperative in other situations, such as the pursuit of greater partnership with the museum by the heritage group.

The community utilised different collective processes in various situations; yet because these collective processes have emerged in the community, they have also resulted in distinct communicative characteristics, ranging from passive communication and tools such as email – to relatively active communication and the desire to use tools such as instant messaging, video conferencing and forums for greater participation. Beverly explicitly noted the dynamics of the community in the following:

It's great working in this project because the women are so creative and inspirational, and takes such ownership of the things concerning them. There is a great amount of energy coming from the community, which translates into deep and active participation in the activities and resources concerning them.

The same curator also acknowledged that time spent on developing the relationship with the community was also crucial in the types of collective processes emerging from the WoFG community.

8.5 Museum Victoria

To help understand the context of this study, including the novelty of the WoFG community's work with a mainstream cultural institution, it is necessary to examine the history and development of MV. Museum Victoria, Victoria's State Museum, is based in Melbourne but has responsibilities under the Museums Act of 1983 for museums throughout Victoria. Under the Act, MV is the official institution for acquiring and receiving collections of 'natural history, human society, and the history of science and technology' (Museums Act of 1983, p. 20).

Governed by the Museums Board of Victoria, MV also functions as the primary space for most activities under the Act. This has significant implications for resources, in that they were assessed at MV before they become an official part of the state's collections in the identified areas. By the same token, resources are not disposed of until they have been assessed by the Board at MV. In this way, MV is the primary place where meanings and significance are constructed and assessed for resources coming into the state's collections.

8.5.1 Foundation and development

MV developed from the National Museum of Victoria which opened in 1854 with geological and natural science collections. By 1863, collections at the National Museum had grown to include agricultural and mining machinery as well as

significant collections of natural history materials. Strengths in industrial machinery and technological collections led to the establishment of the Industrial and Technological Museum in 1870, which was later renamed as the Institute of Applied Science in 1965, and again renamed as the Science Museum of Victoria in 1970. By 1939, the focus on agricultural and mining machinery, natural history, and technological collections grew to include ethnographic and anthropological collections. This development also marked the beginning of a steady growth in collections of aboriginal artefacts, including the tools and weapons of the Australian aboriginals and their farming and hunting livelihoods. In 1983, the National Museum and the Science Museum merged to form Museum Victoria, and social history was added as a new research and collecting focus. This contributed to the conceptualisation of The Immigration Museum, and in 1998 it was opened as a new campus of Museum Victoria which explored and celebrated migration experiences in Victoria.

The historical development of MV sheds some light on the current institutional culture of the organisation. At the time of writing, MV is structured around three main collections and research strengths: indigenous cultures, history and technology, and the sciences – amounting to a total of over 16 million collection items held in specialised storage facilities. The diversity of the collections and research strengths structured by the collection is reflective of how diverse collections and institutional cultures were also brought together with the merger of 1983.

As such, there are different reflections placed upon what can be considered as a meaningful collection object, and what's not. Such value judgments are a significant part of the work of curators and collection developers. The traditional culture of museum work and the long history of Museum Victoria in developing collections and museum exhibits could only possibly strengthen such convictions and practices.

8.5.2 Current roles and responsibilities

Being Australia's 'largest public museum organisation' (Museum Victoria, 2007, p. 4), MV is also 'custodian for the World Heritage-listed Royal Exhibition Building (Museum Victoria, 2007, p. 4). The functions of the Board governing MV, under the Museums Act of 1983, are listed in Table 8.2 below (p. 15-16). Comments have been added to discuss the current roles and responsibilities of the museum.

Function	Commentary
(a) To control, manage, operate, promote, develop and maintain the Museum of Victoria	-
(aa) to control, manage, operate, promote, develop and maintain the Exhibition land as a place	The term 'exhibition land' is defined as the land set out in Schedule 1 of the Act, which includes 'all buildings, structures, fences, gardens, and improvements on the land' (State of Victoria, 1983, p. 3). This has significant connotations in the way public events and exhibitions can be freely and physically held in such land for the purpose of engaging Victorian communities.
(b) to develop and maintain the State collections of natural sciences, indigenous culture, social history and science and	Emphasise key collection strengths of MV, with the integration of the National Museum of Victoria and the Industrial and Technological Museum (see earlier

technology	discussion on MV's foundation).
(c) to exhibit material from those collections for the purposes of education and entertainment	This function clearly articulates the museum's main charter to promote culture and education amongst communities with resource holdings.
(d) to promote use of those collections for scientific research	This function relates to the role of MV in supporting research communities with resource holdings.
(e) to promote the use of the Museum's resources for education in Victoria	Like the earlier entry, this function relates to the role of MV in supporting educational communities.
(f) to research, present and promote issues of public relevance and benefit	Three fields are identified, which reflect contributions to key collections set out in (b). They are: 1) the origins, development and diversity of cultures in Australia and adjacent lands; 2) the natural environment, and 3) science and technology and their applications to the development of society.
(g) to act as a repository for specimens upon which scientific studies have been made or which may have special cultural or historical significance	These functions relate to MV as an official and authoritative place of holding resources of significance. In the context of the thesis, this has significant implications for cultural institutions as places for communities to contribute and store resources of significance. The deeper issue then, lies in how meanings are constructed or reconstructed (by both the community and cultural institution) around such resources.
(ga) to provide leadership to museums in Victoria	
(gb) to advise the Minister on matters relating to museums, and co-ordination of museum services, in Victoria	
(h) to carry out such other functions appropriate to museums and the Exhibition land as the Minister from time to time directs	
Table 8.2: Key functions (as stated in the Act) and implications for MV.	

In the latest annual report of MV, these functions are translated into six desired outcomes:

- a) reach a diverse audience
- b) maintain high levels of community satisfaction
- c) increase the community's knowledge of natural and cultural heritage of Victoria
- d) increase the value of the collection for future generations
- e) increase its capability and maintain sustainability and
- e) be an internationally recognised leader in the field (Museum Victoria, 2007, p. 13).

At the same time, five strategies were identified to pave the way for MV to 'achieve its vision and outcomes':

They are: enhance access, visibility and community engagement, create and deliver great experiences, pursue the development of strategic partnerships,

develop and maximise the value of heritage collections, and ensuring that resources are managed effectively and efficiently (Museum Victoria, 2007, p. 14).

8.5.3 Relationships with communities

Like many museums, MV has a traditional practice of collection development and curators typically become the key in representing, enriching, and in some cases, limiting the scope of an exhibit of a collection. In other words, collections were somewhat representative of the understandings, interpretations, and visions of the curators. The work of Falk and Sheppard (2006) indicated how the traditional work practices of museums have given rise to a conventional culture dictating the work of curators, collection managers and developers, and conservators.

Yet there are also innovations, with MV identifying the diversity of local communities and highlighted the importance of positioning itself to engage with these communities in different ways (Museum Victoria, 2007, p. 14). In the WoFG collection, with its origin as a grassroots and community endeavour, the continual involvement of the community was seen as highly desirable. At the same time, it was perceived as critical in order to fuel the enthusiasm from the community in sustaining the collection, and to empower the WoFG community as a whole in its connection to the broader Victorian community. The action research component in developing the digital collection aided the attempt in keeping the WoFG community at equal and intensive engagement. Centred on developing a community collection, MV's relationship with the WoFG community was nurtured in a purposeful and participatory manner. In such interactions, the senior curator, Mabel, was instrumental in harnessing participation from the WoFG community and realising the potential of different resource properties. The same curator was also influential in shaping the collective processes from the community evolving around different resource properties. As will be seen, the significance of the curator as a pivotal point of interaction is important to observe in the context of the institution's relationships with their communities such as the WoFG community.

The following discussion will discuss the impacts on MV and their relationships with the WoFG community.

8.5.3.1 Resource holdings

The existing collection strengths of MV piqued interests from both curators and researchers in looking at how the WoFG community collection can contribute to collections of agricultural and mining machinery, natural history, ethnographic and anthropological issues. However, the level of community participation in constructing meanings and representations about the collections posed several issues. For instance, there was a distinct challenge to the existing culture of the museum in the way meanings are made. Some resources, such as oral stories that were seen by the WoFG community as necessary and meaningful resources were not necessarily given equal value by the institution. There was also some uncertainty about how such resources should be managed or governed in the museum's repository.

Curators described the struggles they faced in their everyday work, not so much as museum representatives in the community; but as agents of change in an institution that has been grounded, through history, in traditional practices and values. Although such struggles may or may not be understood by the community, there was a sense that the outcomes, meanings, and levels of empowerment brought to the community

were much larger than their struggles. The senior curator, Mabel articulated one of the fundamental challenges in her work:

It can be such an uphill struggle at times – but seeing how the collection is 'alive' and driven by the community, and together with the inspirations coming from the women...it's all worth it.

When asked to identify some of the harder issues to overcome, Mabel and Beverly pointed to the lack of understanding and uncertainty by other colleagues within the museum about their roles in a collection where the community is a major participant and decision maker. Traditional norms about collection development have also posed questions about the value and importance of including stories (and how much to include) from the community in tangible exhibits, or even viewing such stories as a collection in itself. This sentiment confirmed the earlier view that the long institutional history of MV might have strengthened traditional convictions about practices involving resources in a collection. For example, anecdotal oral stories or narratives about how people relate to certain objects were not easily included as part of a collection.

The cultural partnership prompted efforts to provide a meaningful collection relating to the work and lives of rural women in Victoria. Showcasing the collection at MV in 2005 resulted in the first ever public engagement for the community; but there were also limitations. As space constraints prevented all resources being displayed in the physical exhibition. At the same time there were also many resources, such as oral histories, that were being actively contributed through meetings with the community and the action research component. The public history aspect of the action research component engaged selected women from the community to record oral histories from other women residing in their regions. These oral histories were not included in the physical exhibit in 2005 but were still digitised and archived by the museum. One of the key aspirations for the digital collection developed by the researcher was to allow these oral histories to be accessible publicly via the Internet. The dispersion of rural women in Victoria also posed a barrier for potential new members. Some of the resources were thus considered for inclusion in a travelling exhibition in different parts of rural Victoria – but physical limitations still implied some boundaries in the accessibility of such resources.

With the action research project developing the online collection for the community, resources in the collection began to open up in terms of its access to others. Members of the public can now freely access the collection online, but need to be authenticated in order to contribute new resources. Still, it was possible for anyone who is not a defined member of the community (rural women living and/or working on farms in Victoria) to contribute or edit resources in the collection, by putting the collection online.

The increase in accessibility and availability with the help of the Internet was distinctly felt by curators of the museum. One of the urgent issues for the museum has been to reduce the vulnerability of resources in the collection to risks such as physical deterioration of artefacts, and to provide advice and leadership to ensure the sustainability of the collection. Mabel conveyed the benefits she expected from putting the collection online:

Making resources available for the community to access freely and allowing them to participate in the shaping of the collection through the Internet – there are many impacts...but one of the most profound I think will be the access, sharing, and ownership of resources in the collection. Addressing

issues of copyrights, intellectual property, and terms of use of these resources has been a great challenge but I think it's a reflection of the fact that these resources are simply not the same as any collection held in common by a community or an exhibit held in the museum in the past.

Once the collection was made accessible online, it also became apparent that the resources could be shared with other communities. For the curators, it also enabled them to address preservation issues and reduce risks of appropriation. Beverly addressed the implications of digitisation:

...the core purpose of our jobs as curators will not change, I think, because it is still about the community and...we're not here to tell them what they all mean...which is why, in the project we've been emphasising to the community to take ownership and leadership of their collection and not look to us...

All the same, she recognised that such digitisation also held repercussions for the museum's practices:

...definitely different to me, because in the museum we're mostly talking about physical objects and what is significant and should be included in a museum isn't so clear for a digital collection...but there are both opportunities and threats I see...more opportunities than threats I feel, because there is a chance for the museum to take on the role of a mediator and catalyst within the community and our interactions with the WoFG community is a good example of that...

The recognition that there has been a fundamental shift in the characteristics of resources is important in realising other implications, especially in the licensing frameworks used to govern such resources. An appropriate licensing framework will also be one that is extensible and flexible enough to accommodate scenarios where resources change properties in terms of their accessibility over time and space. Towards the end of the case study, discussions began around the possibility of using alternative licensing frameworks such as the Creative Commons licenses for the collection – but inadequate resources and internal licensing practices halted the progress of this aspect in the project.

8.5.3.2 *Harnessing participation*

In the study, community participation was enabled through a number of design decisions. The construction of the digital collection involved the community through a participatory design approach, and the cultural partnership between MV and the WoFG community emphasised the co-production of resources as the emphasis; making participation and dialogue the key in almost every activity and decision.

From these practices, MV invited participation from the community in two broad ways. In the first instance, through institutional activities, events, and workshops all held on the premises of the museum. The laboratory sessions in the action research component of the research were all held in MV and women in the Heritage Group travelled for hours to attend these sessions. But these sessions only make up a small part of the days women spent at the museum; there were often other tours, workshops on artefact restorations at the preservation clinic, tours of storage facilities, and meetings focused on engaging the community. For example, a cow pat was brought to one of the laboratory sessions. As a result the writer was able to participate in a workshop where MV demonstrated how long-term preservation and

storage is conducted for the cow pat, along with other resources that have been brought to the museum by the community. Such activities also worked well to create first-hand experiences for the women, cultivating shared understandings between MV and the WoFG community.

Collaborating in the design of the digital collection also allowed many women from the community to participate in the co-creation of a digital collection. Women who participated saw the additional benefit of learning new skills. This was noted by many in the group, such as Michelle:

I have a very old computer at home and I'm still using dialup to access the Internet...coming along to these sessions help me gain new skills and also to learn what can be done with technologies nowadays...

The divide in terms of technological literacy was immediately apparent to the writer, who conducted all of the laboratory sessions and collaborative design workshops. In one of the early laboratory sessions early in the project in late 2005, the writer recorded a significant challenge with the project:

I was always aware of that there will be a technological divide but that did not bother me until now...because arising out of that divide is the problem of unrealistic expectations of what a digital collection can or should do. There are technological limitations on what is possible and it is also often hard for the women to articulate what they expect, because many do not know what is possible. This is a problem for the designer because the specifications will continue to change from time to time.

The realisation sparked a move to use prototypes within laboratory sessions to better facilitate dialogues around the design of the digital collection in a coherent manner. Use cases were also created to help members of the community visualise how they might use the digital collection. This became the primary approach to finalise the design specifications of the digital collection, although there were design iterations to be made over the course of the research. Figure 8.3 shows a screen from the digital collection; with objects organised around each gathering (year).

The process of collaborating on the design and functional specifications of the digital collection was empowering and beneficial, and changed some of the fears the women had prior to the start of the project. This was especially distinct in the apprehension towards the 'IT researchers'. Dina, a volunteer who worked with MV in the WoFG project, noted the change in attitude a year after the project was initiated:

Dina: There was a lot of scepticism and some fears...but that was before you came in to work with us...but I think the way you've approached the project has been really good, I can see that your inputs are not only accepted but also often welcomed...

NP: What do you think is the reason for the change? What was it about the participatory approach that contributed to the acceptance?

Dina: Oh, I think at a very basic level, the women feel a lot more respected and that their knowledge and skills are actually treated seriously...

The screenshot shows a website page for the 'Women on Farms Gathering' (WoFG) digital collection. At the top, there is a search bar and a navigation menu with links: 'Browse', 'Home', 'Background', 'Displays', 'Resources', 'Contact Us', 'Feedback', and 'Future Gatherings'. The main heading is 'Women on Farms Gathering' with a background image of a rural landscape. Below this, there are three small images: a sign that says 'WOMEN ON FARMS GATHERING', a pair of hands holding a tag, and a yellow triangular sign with a black border.

The page features a green header for the '2005 Benalla' gathering. Below this, there is a table with the following information:

Theme	Relate, Reflect, Rejoice, Re-think, Recognise, Re-act, Revitalise
Location	VIC - Benalla
Date Held	18 Mar 2005 - 20 Mar 2005

Below the table, there is a paragraph of text: 'The 16th Women on Farms Gathering was held in Benalla from March 18th - 20th 2005 with a theme of: "Take time to smell the Roses". The Rose is an intrinsic part of Benalla – taking time to smell the Roses is something that a lot of our hard-working rural women need to build into their lives. That weekend held at the Bowls Club, Benalla, gave that opportunity, with workshops, tours, speakers, and celebrations.'

There are two images: a 'Banner Patch' (a diamond-shaped patch with a red rose) and an 'Icon' (a single rose on a stem). To the right of these images are two blue buttons: 'MORE ON THIS GATHERING' and 'VIRTUAL DISPLAY'.

Below this section is a green header for the 'Heritage Collection'. It contains several items:

- Benalla Gathering 2005 Logo**: 03 May 2006 - Wednesday. The logo features a hand holding a rose with the text 'Take time to smell the roses' and 'WOFG Benalla 2005'.
- Cherry farm tour**: 22 August 2006 - Tuesday. The image shows a woman in a red shirt standing in a field.
- Cherry farm tour**: 22 August 2006 - Tuesday. The image shows a group of people sitting around a table.
- Installing Women on Farms Gathering Display**: Museum Victoria, 22 August 2006 - Tuesday. The image shows a display case with a sign.

Figure 8.3: A page from the WoFG digital collection.

It should also be noted that the success of the participatory approach was largely due to a departure from a product-oriented towards a process-oriented view of design. Still, as realised in the research, it was a dilemma to be managed especially for designers and developers, as the focus on the process should not undermine the effectiveness and timeliness of a desired product as well. Often this had to be negotiated with all stakeholders – in this case the curators and the Heritage Group of the WoFG community. As discussed in the next section, the participatory action research approach used in the project contributed to the development of a strategic direction for MV in their engagement with the WoFG community.

Over the course of the research, the participation of the museum was distinctly observed in the spaces and activities of the community. This was exemplified by the curators participating in the annual gatherings, and setting up mobile exhibitions at such gatherings and other parts of rural Victoria. The digital collection contributed to the mobile exhibition, with laptops being set up to allow women to browse a larger resource collection. Over a year, as the level of participation increased in the digital collection, the latter grew in two ways: in the number of resources and the richness of each resource through the many reflections and meanings attached to it.

The impacts of such approaches have been extensive, reaching out to many in the community. Being a participant in the community contributed significantly to a deep level of understanding about the community's needs and dynamics. The curators who have worked on the project acknowledged this strongly. Mabel expressed how working closely with the community had made a difference in the way she brought together the collection:

Designing the exhibits with the heritage group and being a participant at the gatherings has been particularly inspirational. I can almost hear them while working with the community collection, because at the same time I have also been 'conditioned' as part of the community. This has definitely made a difference to the way the collection has been shaped.

Over time, the community was also engaged in research activities such as public presentations at international conferences, writing academic papers and other publications, partnering with other relevant networks such as the Rural Women Network. As Beverly put it:

I see the community as an integral part of what we do here at the museum – and for this reason including them in activities developing the collection and shaping the community is necessary and not an option.

Such insights have led to the appointment of selected Heritage Group members as honorary research associates of the museum. This illustrated how collaboration as a collective process was characterised by greater communicative participation over time.

If participation was harnessed by MV in the two ways mentioned earlier, it should be noted that they were not dichotomies and reflect recursive practices of the institution. Still, there were distinct impacts associated with each practice. Where the community was drawn into the institution to participate in institutional activities, it was crucial in raising their profile and constructing (and reconstructing) meanings about the significance of their existence in the broader Victorian society. In the second practice where MV was a participant in the community, it was effective in overcoming barriers preventing community involvement in the creation, use and distribution of resources in the collection. The relationship between MV and the WoFG community was also deepened in this manner.

8.5.3.3 *Strategic directions*

The 'uphill struggle' expressed by Mabel earlier reflects the fact that engagement with the community was significantly different from the mainstream practices of the museum. This was well manifested by the development of tags used by the community to describe how they relate to various stories and artefacts in the digital collection. Figure 8.4 shows two examples of a story and a digitised artefact archived in the first prototype of the digital collection, and the fields where meanings could be attached to them by the museum and the community.

'Keywords' represented tags allocated by MV, while the '*folksonomy*' field showed tags entered by the community. In the first prototype of the digital collection, the researcher was interested to explore how different meanings might emerge from MV and the WoFG community around the same resources. A facility was thus developed to allow MV to enter keywords from their internal taxonomy, while community members were able to enter tags for resources in the digital collection. The functionality of these fields were mutually exclusive i.e. MV was not able to enter tags for the community, and members of the community were also unable to edit the keywords that have been entered by MV. The reason for this exclusion was to explore how distinct tags may develop from institutional and community perspectives.

Example A shows a story shared by one of the pioneers behind the annual gatherings. At the time of the study, the museum had not allocated keywords from its internal taxonomy. For the community however, the story was significant in terms of

its inspiration and value as a life story of an important person. These associations are reflected respectively in the 'folksonomy' field. Example B on the other hand, shows an image of a symbolic icon brought to a gathering. As the two fields would demonstrate, many of the tags allocated to this artefact had distinct meanings. Some tags were the same or synonymous, such as 'support' (in 'keywords') and 'support', 'hold', and 'nurture' (in 'folksonomy') but the system was not able to manage such synonyms during the study.

The examples demonstrated how the encounters between a cultural institution such as MV and a community can be encapsulated in terms of classifying resources. As will be seen later in section 8.6, differences between two cultures of allocating meanings to resources – institutional expertise versus community knowledge – resulted in the question of whether both fields should continue to coexist.

The cultural partnership established between the museum and the community aimed to keep the community as an equal, facilitating dialogue from the community (through the Heritage Group) and having them identify relevant issues of concern to them. Through regular dialogue, MV also sought to heighten awareness within the community of other issues related to the collection, and in the process the community becomes more aware of the role of the museum.

While this approach conceived of the museum as a central entity for the purpose of ensuring the sustainability of the collection, it also purposefully engaged the community in actively shaping the collection. Strategically, MV moved away from being primary interpreters of the meanings of the resources in the collection. This engagement was also welcomed by many in the community, such as Linda from the Heritage Group:

I love this idea - what a great way to be involved with Museum Victoria and working towards collecting heritage trails of the Gatherings...and the wonderful rural women who participate, with such friendly, and yet sincere personalities.

Email was the most prevalent technology used for communication purposes, and members in the community and curators found this quite acceptable to overcome difficulties posed by geographical distances. Over time, both the community and the curators found that there was a need to increase communication frequencies as they worked closely together. At a regular meeting at the museum, it was collectively decided that there needed to be a way to interact more publicly and dynamically within and beyond the community. The desire for an upgraded information system was also driven by a need to gather memories and stories for the collection in a more effective way. There was a strong, shared motivation to take this next step in information management, because of the rapid changes affecting rural society and the sense that significant understandings could be lost. This contributed significantly to the conception and functional requirements of the digital collection.

With the development of the digital collection, the facilitation of dialogue was amplified and made even more apparent in the community – as women in the community other than those already in the Heritage Group were able to contribute to the collection and communicate with others and the museum even more. At the same time, the community and MV were able to add a substantial number of oral histories to the collection. Images of physical artefacts were taken and included in the online collection, making up a significant portion of the resources that were shared both within the community and others outside the community.

Story

[Back to Gathering](#)

██████████'s story

Story

Keywords: No keywords defined

Folksonomy: ██████████, inspiration, dairy

██████████ was one of the women who told her story at the first Gathering. Her determination to continue farming solo after the death of her husband was an inspiration to many women.

I was reared in the suburbs of Melbourne. I went to a Domestic Art School of all things. They taught me to make an apple turnover, wash a man's sock and to thoroughly go through a very strict routine for washing floors. That was going to set me up for life ...

Married and a move to the country...

We lived in this tatty old house that didn't have any lino on the floor or anything. Our first block of land was 20 acres and then a year or so after we bought another 40 acres, then we decided to go dairying. My father came across and built this funny little shed with 6 bales. We picked up milking machines and we were on our way. We had a farm. It was great.

Well, I always seemed to be in the background. He was the one out there making all the decisions and I was the one that did all those handy jobs. We were in dairying all through those years and grew potatoes with two irrigation units and I was racing around like a maniac shifting all these pipes. It was all part of wifehood actually. I didn't question anything you know.

Example A

Ceramic Hands

Icon



The hands rise from the earth and reach out over the ranges. Our hands are held out in welcome, are supporting, nurturing, touching and caressing. Hands are strong, hardworking, can hold, care and are flexible - all symbolised in women's hands, made with clay from the earth.

Keywords: Empowerment, Leadership, Support, Spirit, Gathering, Farming

Folksonomy: earth, reach, welcome, support, nurture, touch, caress, strength, hardwork, hold, care, flexible

Example B

Your response to this item

Figure 8.4: Two examples of tags allocated by MV and the WoFG community.

During the period of study, curators also began working with communication technologies that are freely available for download, such as *Skype*, to communicate with the Heritage Group; facilitating dialogue without the need for them to travel long distances to the museum for meetings. This worked well up to a point, although there were limitations such as connectivity issues in some parts of Victoria, and computing literacy differences amongst women. Participation was therefore limited to those who had good connectivity and computing literacy, or had children who could help them overcome difficulties with downloading and using the software. The Group shelved the possibility of the communication service after this exercise, recognising the difficulties and potential exclusion of some members in the community. Carol, who was actively involved in the trial, commented:

Perhaps it's not time yet...when rural Victoria gets connected in a pervasive manner, we could return to the possibility of using this again.

The exercise not only created opportunities for the community to gain new experiences, it was also useful in shaping the digital collection. There is therefore a heavy use of communication technologies at the digital collection for the community to interact with one another via the resource holdings.

With background knowledge of the participatory style that governs the interactions between MV and the community, the development of the digital collection was also aligned with a participatory style. Tasks and needs of the community were discussed iteratively with members of the community and curators, using prototypes (whenever possible) to stimulate discussions and thoughts. It may very well be that the same requirements and outcomes could have been generated by other approaches, but the process was articulated by interviewees as empowering, rather than not. The Heritage Group was initially apprehensive about the community managing the digital resources and learning the administrative functionalities of the portal for themselves. For Beverly, ownership of their collection was critical:

...because only by doing so can the community realise its full potential not just as a community but also as a sustainers of the resources that are meaningful to them.

This approach gave the researcher a role as a participant in the community and institution, as a developer of the digital collection and virtual exhibition, and to help build relevant IT skills and provide training to the community. The participatory approach utilised in the project was also seen by the curators to be strategic in terms of the museum's engagement with their communities. Mabel eloquently communicated the value of such approaches for her work as a curator and for MV as a cultural institution:

...my work actually becomes quite exciting, because through these projects I have the opportunity to get the community to commit to a shared decision and we share power in that way...it's quite different from just telling them and initiating everything...and you have seen [through] WoFG that the energies that can come out of the community from such approaches is quite amazing. It is also about learning for the museum as a whole; as we learn how to better engage people in relevant ways. Ultimately I think the most valuable thing about participatory approaches is that it gives ongoing purpose to our actions...

Such benefits were so apparent to MV that, by the end of the exercise, discussions were underway to develop an application for a large research grant to continue the trajectories of the original project.

It was understood from the outset that, if the digital collection succeeded, the pilot system and ongoing design would need to interoperate with the museum's proprietary information systems. By the end of the project, this was made a reality, with MV and the community pooling together resources and financial support to integrate the digital collection with the museum's backend cataloguing system.

Having the digital collection deeply grounded in the cultural context of the community and the museum ensured a sense of continuing engagement and control, rather than a 'hand-over' or alienation of significant objects and the accompanying heritage to 'experts'. By the end of the case study, the digital collection has become integrated into the annual gatherings of the community, acting as a mobile exhibition for the gatherings and becoming part of the total communicative interactions that are instrumental in constructing and reconstructing the identity of the community. Although the participatory approach adopted in the design and development of the portal required a significant amount of time and iterations, it had been worthwhile. As the researcher noted in a journal shortly after the last training session with the community:

Today marked the end of the case study. After more than a year, I look back to my first day on the project and realise how much we have travelled together on this journey. The community is now far from their initial suspicions of me being an 'IT researcher' (they have perhaps forgotten it) – they see me as part of them, even though I am neither from Victoria nor have I ever lived or worked on a farm. They know my name and I know theirs, and there are friendly faces at tea, luncheons, and lab sessions. I used to have to make many preparations before meeting them at lab sessions to go through prototypes of the site, and there is usually a list of questions I need to ask. Now I can't get them to stop talking and I find myself doing less training and more discussions on ideas coming from the community.

As highlighted earlier, five strategies were identified by MV to achieve its desired outcomes. The experiences of MV in their relationship with the WoFG community can be reflected in these strategies. For example, the website housing the digital collection empowered the community to contribute and reflect on the meanings of resources in the collection and overcome barriers that previously prevented some women from participating. These barriers included physical distances, disconnected rural communities, and the lack of communication mechanisms. New experiences were created for these women. The cultural partnership with the community reflected pursuit of strategic partnership as a strategy, to 'increase community involvement and support' (Museum Victoria, 2007, p. 14). The increase in community involvement can be attested to in the way meanings are constructed around resources, and the increased participation over time.

A clear finding lay in the importance of curators. In their traditional role, they seek and make representations about resources in the museum. But in a contemporary context, they also act as empowerment agents in the communities they are working with while pulling together meaningful resources about them. In their own institutions, they are catalysts for institutional transformations. One of the greatest issues, therefore, lies in the perception of curators and their work and adjustments have to be made to align policies to reflect on their recursive potential in transforming both communities and the institution.

8.6 Implications for the future

At the end of the writer's tenure as an honorary research associate in MV, marking the completion of the digital collection, several challenges still remained. One of the most significant had been the rights applying to digital resources in the collection. While rights have been cleared for resources that were only digital expressions of their physical forms, MV found it extremely challenging to address the rights for other resources that had been contributed by the community through the communicative facilities in the digital collection. The challenge stemmed from the fact that many of such resources had no distinct owners.

For example, missing information about an object was filled in by many women in the community, and sometimes corrected by others. Knowledge about agricultural machinery, farming, even the histories of pioneer members in the community were passed down over the years and contributed as accompanying reflections and stories to objects in the collection. In the final meeting with curators, the question of how open content licensing frameworks such as the Creative Commons might help to resolve these challenges was debated. However, the existing copyright frameworks used by the institution will pose significant challenges to the consideration of such possibilities.

This was one of the conflicts arising from the institution's well established practices. Another issue related to the difficulties of integrating the digital collection with MV's backend systems, such as KEmu, a proprietary cataloguing system used by curators to manage the many collections in the museum. While valuable resources such as information records about objects in the collection were being collected by the digital collection, to populate MV's backend systems with these records was a complex challenge. There are intricate issues to address, such as the update frequency, whether or not it should be a one-way harvest of information (from the digital collection to the museum's systems) or a two-way harvest between the digital collection and the museum's systems, or where these knowledge resources go to in MV's databases.

Participation for MV and the WoFG community had different connotations. For MV, engagement with the community meant harnessing participation in two broad ways: bringing the community into the museum as a participant, and becoming a participant in the community's activities and practices. For the community, the meaning of participation is much more complex with distinct collective processes. Hierarchical relations, the understanding of rules about resource significance, and communication facilities were key influences in shaping the nature of participation in the community. These factors also posed significant issues for MV, as attested by the uncertainty expressed when a community such as the WoFG community demonstrates greater authority and power over decisions concerning the resources they saw as meaningful and representative of themselves.

As eventually discovered in the action research project, while there may be distinct records maintained about collection objects in MV's databases, on the digital collection these distinctions may not be necessary or needed. On the digital collection, information about collection objects could be presented in a single 'about' field, while in the museum's system such information may be arranged in an extensive series of database fields.

As earlier discussed, there were also gaps between the taxonomy used by MV to describe collection objects, and the tags used by the community to allocate

significance to the same objects. This raised the question of whether traditional taxonomies used by cultural institutions or 'folksonomies' were more relevant to the community in the context of a digital collection. Towards the end of the action research project, a conscious point of discussion in the meetings between MV and the WoFG community was whether the coexistence of both 'keywords' (as allocated by MV) and 'folksonomy' (entered by community members) was useful. It was agreed by all that the latter field was more relevant as the collection was recognised as a community collection. However, curators also highlighted that the 'keywords' function, which allowed them to relate resources in the community collection to the taxonomy used internally could potentially enhance the contextual value of resources in both the online collection and the physical exhibit of the WoFG community.

8.7 Main insights

Insight 8A: Resources display different characteristics – the boundaries in terms of accessibility and reciprocity of sharing shift with increased use of communication technologies and participation from the WoFG community. Understandings of the significance accorded to various resources are nurtured and communicated over time, and within the spaces of such discourse (including virtual sites).

Insight 8B: Various forms of collective processes can be observed within the WoFG community, underlined by common understandings and processes established over time, structural relationships, and communication. Different intensities of these traits can be observed for each form of collective process.

Insight 8C: Community participation was engaged by the MV in two broad ways. Within the premises of the museum, it was characterised by institutional activities, tours, and research partnerships. Beyond the premises of the museum, it was characterised by ongoing dialogue, going into the spaces of the community and public spaces such as conferences and other networks.

Insight 8D: The WoFG/MV case illustrated that there is a shift towards greater community engagement and enrichment of individual experiences. Contemporary technologies provide innovative opportunities for a museum to act as a catalyst of transformation in communities, and vice versa.

Chapter 9 (Case study 2) – Asian Civilisations Museum

9.1 Scope of the chapter

- Discusses the focus of the case study as a national institution managing resource collections and engaging different communities. Details the research engagement with the Asian Civilisations Museum (ACM), with a summary of the research activities that were conducted.
- Provides a background of the ACM, and their current roles and responsibilities in relation to the National Heritage Board Act of 1993. Their relationships with general visitors and museum volunteers' communities are discussed in terms of resource holdings, collective processes, strategic directions, and harnessed participation.
- Explores some implications for the future, such as the integration of physical and digital spaces for community engagement, and the adoption of participatory technologies for traditional museums.

9.2 Focus of case study: Asian Civilisations Museum and the significance of resources

The research design of the thesis required parallel explorations of similar institutions in the differing cultural contexts of Victoria and Singapore. Academics in Singapore suggested the Asian Civilisations Museum (ACM) as a suitable counterpart to MV, being a national museum and the first museum in the region dedicated to presenting a 'broad yet integrated perspective of pan-Asian cultures and civilisations' (Asian Civilisations Museum(a), n.d., para. 1).

This second museum case study examines the ACM and the ways they designed their collections and engaged their communities. Interviews about the ACM were carried out between April 2006 and August 2007, involving key personnel from the ACM, such as curators and management staff, gatekeeper interviewees, and voluntary guides of the museum.

Compared to the MV case, this was a smaller study and different in the sense that collections were mostly centrally collated and curated by the museum, focusing on representing the histories of civilisations for multi-racial groups. The ACM was similar to MV in that it was a national or state institution which aimed at facilitating and preserving the stories of different communities. It differed, however, in the way participation from various communities was engaged, and in the production and use of its resources and collections. Given this, the ACM was studied in relation to the general management of collections and on general engagement with communities, rather than on its interactions with specific communities.

The focus for the ACM study arose from negotiations between researcher and institution preceding the study. At MV there was need for a case study that was relatively narrowly focused. At ACM a broadly focused study was of more interest to the researcher's interlocutors. Such divergence is compatible with exploratory research in the ethnographic and hermeneutic tradition: the conversations that occur

between researcher and participants should be those that the participants feel are appropriate. There was no reason to believe that differently focused case studies would imperil exploration of relative cultural factors affecting the two museums. In fact the differences between the case studies might offer additional insights on the interactions between museums and communities.

The interest in the ACM as a case study was sparked by the interactive design of exhibits in the museum. Unlike traditional museums, the ACM presents exhibits by distinctive galleries rather than chronologically. The website of the ACM reads as follows:

Departing from the traditional chronological approach, the story of Asia is showcased in themed galleries integrated with multimedia and interactive components. Virtual hosts, in-gallery videos and our interactive ExplorAsian zones are incorporated in the galleries as guideposts which help visitors learn more about the multi-faceted aspects of Asian cultures (Asian Civilisations Museum(b), n.d., para. 1).

Unlike MV in the earlier case study, the ACM is relatively young – opened only in 1997 in a former school, converted to house the museum's collection on Chinese heritage. The Visitors' Guide to the museum boasts that it is the 'first museum in the region' concerned with 'dynamic forces that have shaped the origins, identities, ideas and artistic styles of cosmopolitan societies in different parts of Asia' (Asian Civilisations Museum(a), n.d., para. 2).

As the museum is concerned about national identity, it has an implicit role in nation building and thus has a political purpose. The relevance of ACM to the shaping of national identity in Singapore was therefore considered to be a significant one from the outset of the case study.

9.3 Research engagement with Asian Civilisations Museum and museum volunteers

A conference in mid 2006 which brought the researcher to Singapore led to a meeting with academics from the Wee Kim Wee School of Communication and Information (WKWSCI) in Nanyang Technological University (NTU). By then, experiences and findings from the research engagement with Museum Victoria (MV) had resulted in a number of publications.

Using these findings as a basis, the researcher began to consult these academics on an appropriate case that would provide complementary insights from a museum situated in a different cultural context. This paved the way for the researcher to take up a visiting research fellowship in NTU, which began on 1 August and ended on 14 December 2007. While the researcher was in Singapore for the conference in mid 2006, she also had the opportunity to conduct pilot interviews with key personnel from the ACM, providing opportunities to further develop subsequent interview schedules during the research fellowship in 2007.

During the pilot interview, the concept of public collections as shared resource holdings in a knowledge commons was discussed. This was also due to the ACM's design principle of including different voices from local ethnic communities, using contemporary technologies. The relevance of participation and how it might enhance the publicly perceived significance of resource holdings emerged as one of the key

themes from the pilot interview, and this sparked follow-up interviews with volunteer museum guides and examination of how these volunteers interact with the ACM. During field visits, it was observed that there was consistent and advanced use of contemporary technologies alongside artefacts on display, often to provide access to oral stories and other information. The inter-infusion of physical and digital resources was intriguing, and further developed the focus on how contemporary technologies may shape the properties of shared resource holdings in a museum such as the ACM.

As a visiting research fellow, the researcher worked on formulating questions that would be appropriate for the specific issues and cultural context of Singapore. Table 9.1 shows a chronological summary of the events that elapsed, with pseudonyms given to interviewees where applicable.

Task	Description	Interviewee(s)	Duration
Interviews	Pilot interview with a key staff member of ACM. Key perspectives on the current challenges and issues were gathered.	Laurence	Apr 06
Interviews	Interviews with a museum curator.	Irene	Apr 06
Planning	Conference in Singapore which initiated discussions with academics and leaders in librarianship in Singapore. Interview questions were adapted for a case study of ACM in Singapore.	-	Apr 06
Fellowship	Researcher began a visiting research fellowship in Singapore.	-	Aug 07
Interviews + observations	Semi-structured interviews with more personnel from the ACM and volunteer museum guides. Ethnographic observations were also noted during field visits to the ACM.	Hiram (ACM). Volunteers: Kim, Belinda, and Nate.	Aug–Sep 07
Interviews	Gatekeeper interviews with selected individuals, who were recognised to possess expert or unique knowledge on the information needs of communities, and current issues and challenges facing museums in Singapore.	Timothy, Ursula	Aug-Sep 07
Publications	Findings contributed to a report written for NTU at the end of the visiting research fellowship.	-	Oct–Dec 07

Table 9.1: Research engagement with the Asian Civilisations Museum.

9.4 Foundation and development

Although the formal constitution of ACM occurred only in recent years, the vision for a local museum in Singapore was articulated as early as the 1820s. It was not until 1887, when the island became established as a British Crown Colony, that a building was dedicated to house ethnological collections of local arts, textiles, weaponry, and religious artefacts (Henderson, 2005). After the independence of Singapore in 1965, this became the National Museum and collections expanded to include art and history of Singapore’s neighbours as well. Efforts in reorganisation during the 1980s led to the formation of the National Heritage Board (NHB), which consisted of The National Archives, the National Museum, and the Oral History Department of the then Ministry of Information and the Arts.

In 1997, shortly after the formation of the NHB, the Asian Civilisations Museum was established. Its aim was to focus on ethnological collections and to begin expanding resources and collections on citizens from China, Southeast Asia, and other parts of Asia (such as South and West Asia.) In 2003, ACM moved to new premises, a 19th century heritage building classified as a national monument. It had taken five years for the building to be renovated and prepared for use by the museum.

Like many museums, ACM was influenced by practices that came out of the Industrial Age (Henderson, 2005; Falk and Sheppard, 2006). However, political influences were also instrumental in shaping the museum's culture and purpose (Henderson, 2005; Singapore Government, 2000.) When Singapore left the Federation of Malaysia to set up a sovereign nation in its own right in 1965, it became a priority to protect and strengthen its sovereignty partly by defining a Singaporean identity. With the state largely made up of migrants from China, India and other areas of Asia, it was seen as imperative to strengthen national identity, a sense of belonging, and shared commitment to a common purpose.

As a newly independent multiracial state Singapore was a country that could potentially be racked by racial tensions and cultural differences, even in the midst of economic and social progress. Since the beginning of independence, the government of Singapore has acknowledged that economic advancement alone was insufficient. A sense of national identity was needed to provide cohesion, continuity and identity amongst the four main races of the country. These sentiments were explicitly highlighted in the Singapore 21 initiative, which envisioned the building of shared values, shared histories, and shared destinies (Singapore, 2000, p. 42):

While we have been successful economically, that is not enough to make Singapore the best home for ourselves and our children. A society founded only on economics lacks the bonds that draw people together. Our foundations must be built on firmer ground (Singapore, 2000, p. 17).

The aspiration for a cohesive national identity while celebrating diversities involved a delicate balance, and it was recognised that participation from everyone was needed to gain this balance. One of the ways to achieve the 'Singapore heartbeat' was the cultivation of national identity and shared values:

No matter one's race, religion, gender or economic status, Singaporeans live together in harmony, with unity of purpose and with a sense of national identity. A shared history, common memories and myths, national icons in sports and the arts, all serve to bond all segments of society into a united and cohesive Singapore (Singapore, 2000, p. 43-44).

However it was not intended to achieve such national unity by denying the distinctive ethnic heritages of the Singapore population. Rather the emphasis lay on celebrating diversity while building a cohesive national identity and this has been a major purpose of the ACM. The ACM contributed to the understanding of this diversity within and across the ethnic communities. It has done so continuously by the gathering and presentation of ethnological collections. The mission statement of the ACM reflected this very clearly:

To explore and present the cultures and civilisations of Asia, so as to promote awareness and appreciation of the ancestral cultures of Singaporeans and their links to Southeast Asia and the world (Asian Civilisations Museum(c), n.d., para. 1)

The aims of the ACM help one to understand the museum's style of presentation. Unlike many museums that present exhibits in chronological order, resources of the museum are showcased in galleries, each of which displays resources of a different Asian civilisation. Quoting from an interview with the director of ACM, Henderson (2005, p. 188) highlighted how the themes of each gallery developed:

[The] display themes for each of the regional clusters have been allowed to emerge naturally. We tested each theme against the sort of stories the available artefacts could support. In some cases where we did not have the materials, but we felt the theme was essential to the coherence of the overall storyline, we have either gone out to acquire the material, or fallen back on computer and audio-visual technology to convey the information.

Field visits to the ACM over the course of the case study have revealed how this approach has also resulted in distinctive styles of presentation and ambience in each gallery.

9.5 Current roles and responsibilities

Singapore's story of transformation from a city state plagued with unemployment, poverty and a lack of natural resources to a wealthy and well-developed economy (Liu, 1991) is widely known. What is significant in this transformation and growth has been the growing awareness that the development and industrialisation of the nation should not 'flatten' the sense of culture and heritage that will shape each individual's sense of identity and a collective society. This challenge was articulated many times by the ruling government over the years, in publications such as 'The Next Lap' (Government of Singapore, 1991) and in various public statements, such as the one made by the then deputy Prime Minister, Goh Chok Tong:

We are part of Asian civilisation and we should be proud of it. We should not be assimilated by the West and become a pseudo-Western society. We should be a nation that is uniquely multiracial and Asian, with each community proud of its traditional culture and heritage (Goh, 1988, p. 15).

These sentiments triggered planning for the development of museums in Singapore. In April 1988, a 'Committee on Heritage' was set up which resulted in a comprehensive policy report, focused on developing different aspects of Singapore, such as culture, architecture, and urbanism in terms of heritage values (The Committee of Heritage Report, 1988). The policy documents and planning committee led to the establishment of the National Heritage Board Act of 1993 and the National Heritage Board to oversee the development of museums, archival and heritage centres, ensuring the nurturing of 'cultural depth' (Yeoh and Kong, 1996, p. 60) amongst Singaporeans.

This background highlights that an emphasis on the nation-building function of museums might be a high order motivator in nations characterised by rapid economic developments and industrialisation. What is significant for the present study is how such historical background explains the current scope of roles and responsibilities for the ACM. The functions that are stated in the National Heritage Board Act (1993) relate to the development of museums and heritage matters generally. Part III of the Act makes provisions for the ACM to be established as one of the national museums of Singapore, and for physical objects to be acquired or donated to the collections held by such national museums. The relevant functions as they relate to ACM are further elaborated in Table 9.2.

Functions (quoted from the Act)	Commentary
(a) to explore and present the heritage and nationhood of the people of Singapore in the context of their ancestral cultures, their links with South-East Asia, Asia and the world through the collection, preservation, interpretation and display of objects and records.	The term 'object' is defined as 'any work of art and any artefact' (Government of Singapore, 1993, p. 1) and 'records' refer to 'papers, documents, records, registers, printed materials, books, maps, plans, drawings, photographs, microforms, videotapes, films, machine readable and electronic records, sound recordings and other forms of records of any kind whatsoever, produced or received by any public office in the transaction of official business, or by any officer in the course of his official duties, and includes public archives' (Government of Singapore, 1993, p. 1). This function enables the ACM to use such resources (both objects and records as defined) for the purpose of putting collections (relating to heritage and nationhood) on display, to be shared as resources of significance to the people of Singapore. This clause also has implications for guidelines on the collection development policies in the ACM.
(b) to promote public awareness, appreciation and understanding of the arts, culture and heritage, both by means of the Board's collections and by such other means as it considers appropriate.	Implies a focus on promoting optimal use of resources towards the strategic societal development of education and culture. This function is also reflective of the ACM's main charter to promote culture and education relating to Singapore with their resource holdings.
(c) to promote the establishment and development of organisations concerned with the national heritage of Singapore.	Along the lines of the earlier point, this stated function of the Act focuses on establishing and developing organisations relating to the awareness and growth of heritage issues in Singapore. This also provides for a strategic action plan for the pursuit of projects with other organisations.
(d) to provide a permanent repository of records of national or historical significance and to facilitate access thereto.	This function allows the ACM, as a national museum and public place to hold resources of significance. In the context of the thesis, this mandates cultural institutions as places for communities to contribute and store records and artefacts. The deeper issue then, lies in how meanings are constructed or reconstructed (by both the community and cultural institution) around such resources.
(f) to record, preserve and disseminate the history of Singapore through oral history methodology or other means.	The focus on building national history relates to Prossler's (1996) argument that the nation-building function of museums is a significant one especially in younger nations. Hall (1995) also added that the focus on building and create public awareness of national history is also significant for nations with diverse ethnic groups and religions, in order to foster a cohesive sense of unity and harmony. These views provide persuasive explanations for the importance of this function.
(e) to conduct records management programmes for the Government.	These functions relate to the NHB as the official authority for heritage matters in Singapore.
(g) to advise the Government in respect of matters relating to the national heritage of Singapore.	
Table 9.2: Key functions (as stated in the Act) and implications for ACM.	

9.6 Relationships with communities

The relationships between ACM and their communities can be examined through the purposes of heritage that drive the work of museums in Singapore. Yeoh and Kong (1996, p. 60) argued that heritage development in Singapore has been motivated by 'social, economic and political purposes'. As they noted, there are multiple benefits from heritage development. It serves to:

represent the city's cultural wealth and diversity, it [also] serves to bind Singaporeans in a multi-ethnic, multi-cultural state together and also to 'sell' Singapore abroad as an exotic tourist destination (Yeoh and Kong, 1996, p. 60)

The understanding of such drivers can help provide insights on the types of communities that ACM engages with, the nature of such relationships in the context of creating and accessing resource holdings, the collective processes that emerge, the strategic directions of the ACM, and how all these factors can harness participation from these communities.

For most of the five main museums in Singapore, the relationships with their communities have been characterised by a principle of inclusion and participation (Yeoh and Kong, 1996; Muzaini and Yeoh, 2005). A common example is the inclusion of oral stories, along with physical artefacts on display. These stories are generally appreciated as humanised representations of history, as articulated in the recent case of the Changi Chapel and Museum, where stories from civilian survivors of the Second World War were included as part of the collection (Muzaini and Yeoh, 2005). In the case of the ACM, the same principle of including voices from communities can also be observed.

For the purpose of this study, ACM's relationships with two types of communities will be discussed. The following gives an overview.

1. General visitors

These include school groups, tourists, local Singaporeans, corporate visitors and grassroots groups. Generally such communities have relatively short engagements and interactions with the ACM, defined by the frequency and length of their visits to the museum. While recognising they are often interacting within the museum as the site of discourse, it should also be emphasised that other special projects or outreach activities of the museum or the NHB can also take such interactions out of the museum itself.

2. Museum volunteers

The volunteer guides of the museum began as a self-initiated community endeavour by 'expatriates' (the understanding of this group of people in the context of Singapore will be discussed in greater detail in section 8.6.2). This endeavour was later formally constituted as the 'Friends of the Museum' community, a non-profit organisation where members pay a nominal fee to be part of the community. As the number of volunteers increased, the local guides separated from the 'Friends of the Museum', to form the 'Museum Volunteers' community on 1 May 2004 – a move that was encouraged and supported by the NHB. Thus there are two types of museum volunteers – the expatriate or non-local volunteers who only guide on weekdays, and the local volunteers who guide on weekends and special occasions on weeknights. What follows refers to the latter community in its discussions. This arrangement is more fully discussed and explained in section 9.6.2.

9.6.1 Resource holdings

During initial interviews, much of the focus was directed towards understanding the types of resources in the collections, and how many of them were produced and shared by members of communities. During the field visits, it became clear that some of the most significant resources reflecting direct participation were the video and audio stories attached to several artefacts on display in the galleries.

When asked how these stories were collected, the curator explained that extensive consultations with a range of stakeholders had been carried out before the museum reopened in 2003. During this time, significant redesign and refurbishments were undertaken. Video and audio stories were also collected from the community to enrich the overall value of the artefacts. There was also an innovative use of technologies to provide greater context to artefacts in the permanent exhibits. For example, projections of different types of mosques were found in the West Asia/Islamic gallery. Figure 9.1 shows an example of such projections in the gallery.

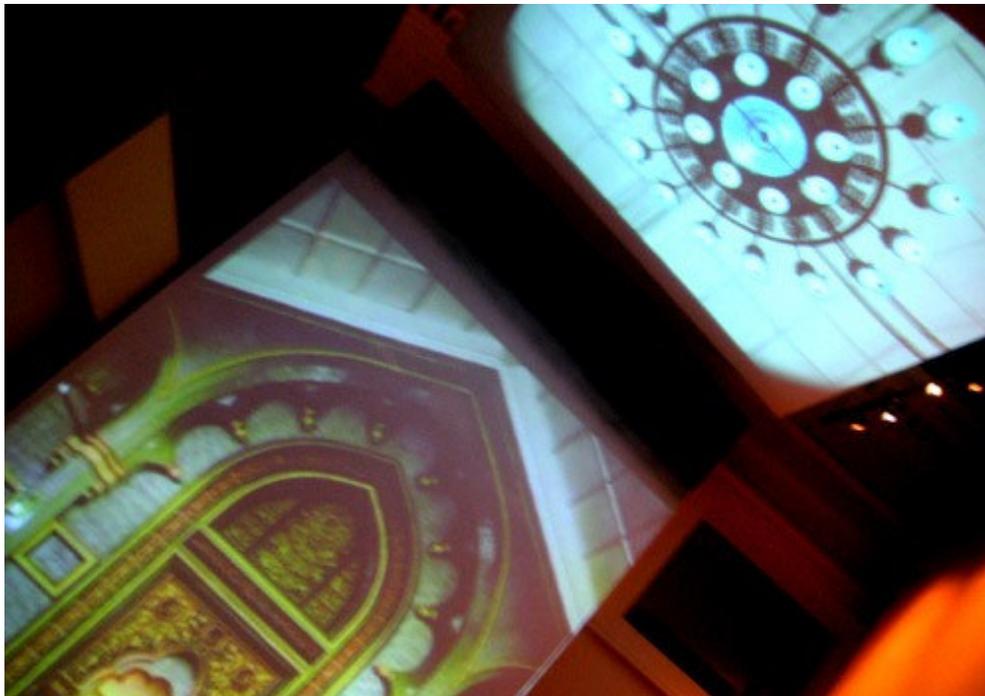


Figure 9.1: Mosque projections in the West Asia/Islamic gallery.

Laurence from the ACM recounted how the redesign of the museum gained celebrated success especially in the first few years after ACM reopened:

...we did something which I suppose is fairly novel. It's not so much the technology itself – it's not complicated but I suppose it's the application of technologies and how it has integrated with the museum's collections...

As in the MV case study, the curators and director expressed consensus that it was not the intention of the museum to provide the sole interpretation of the meanings of artefacts in the collections. The presentation of artefacts and related materials should also encourage the construction of meaning by members of the community visiting the museum's galleries. Laurence explained how he saw the role of curators:

We are not the ultimate source of information – we're there to show and promote to people the richness and meanings of these artefacts. If you really want to find out more, you can go out to the library, Internet and all that to get more information and materials. We try to interpret them but we're here to stimulate further interest, and the museum is not meant to be the absolute authority on what these artefacts mean to people.

The reflection suggested a focus on the physical resources which are complemented with information purposed to interest the visitor. The galleries of ACM and their corresponding themes, as mentioned by Laurence, can be found in Table 9.3.

Galleries	Themes
Southeast Asia	Prehistory; Hindu Buddhist kingdoms; vernacular Buddhism; Javanese kingdoms; the Sinicised Southeast Asian; Malay world; tribal Southeast Asia; material world of jewellery and textiles; performing arts
China	Imperial system; patriarchal family; religions
South Asia	Early beginnings; inventions and innovations; religions; architecture; temple performing arts; rituals; synthesis of Hindu–Muslim cultures; Medieval period; colonial period
West Asia/Islamic	Islam; a way of life; calligraphy; quest for knowledge
Singapore River	Pre-colonial; colonial; today
Table 9.3: ACM galleries and themes (Henderson, 2005, p. 187).	

The galleries mirror the main ethnic groups of Singapore's population, and the key influences on the civilisations that have shaped these groups. The last gallery, 'Singapore River', focuses on history of Singapore itself, the events that shaped the nation. These themes guide the selection of resources on display in these galleries. While there are permanent exhibits in these galleries, there are also non-permanent, 'blockbuster' exhibitions that serve as feature exhibits in the museum from time to time.

Resources such as video- and audio-stories, which enrich the constructed meanings of the artefacts, have been facilitated through involvement with the community. The resources are collected through interviews and other forms of contact, including with focus groups. They are integrated within the design of the exhibits through the use of monitor screens presenting people telling their stories, and explaining their understandings of topics related to the exhibit. This novel integration of traditional and new media enhances the experience of the exhibits for the museum visitor.

Where there are 'incomplete' artefacts, the museum uses technology to project visual images of the original/complete artefact. In the 'Singapore River' gallery portraying life during the colonial period, the audiovisual presentations on the monitors are of people who had a personal connection with some of the artefacts; and in some cases they may actually have donated the artefact. Public access to the collections also enables the museum to involve them on an ongoing basis and thus to collect more of such resources. During a gatekeeper interview with Timothy, the importance of museums maintaining a healthy level of access to resources as part of the knowledge commons was stressed:

Meanings and significance is made by people continuously, everyday...but you also have these stories, narratives, and other information that help to build those meanings. So where can they be accessed? Of course, they aren't just found in the museums – but what the museum offers is a holistic experience, an epiphany...where you don't just gain knowledge, you also experience through [interacting with] the physical artefacts...

The types of resources collected and displayed together with the artefacts are not uniform; instead these resources are allowed to emerge together with the constructed storylines of each gallery. The result is that each gallery in the museum has a distinctive appearance and ambience.

The sharing of stories and experience is intended to instil a collective sense of belonging, engage members of the community, and promote learning and innovation. This has been highlighted as a principle of inclusion, as attested also in the story of the Changi Chapel and Museum (Muzaini and Yeoh, 2005). However, given the constraints of space, not all stories or narratives around each artefact are included, subjected to their perceived importance and filtration by curators. Kim explained how such resources are often peer-produced and at the same time contribute to the engagement of different visitors to the ACM:

...we [usually] form research teams to obtain more information about artefacts especially when there are new exhibitions...the curators share basic information with us as a start but some additional research is necessary. What happens is that we will always share our findings with other volunteers, and they contribute to a rich repository of information so that we can all tell better stories during the tours. Even though they are not included as part of the displays, we use them to better engage certain groups, such as seniors from the community centres, housewives, and so on.

For the local visitors, the NHB Chairman summed up the aspirations of the museum by expressing his hope that the ACM will encourage Singaporeans to deliberate on 'who we are and where we came from', the Republic being the outcome of a 'confluence of the Chinese, Malay, Indian, Islamic and Western civilisations' (Henderson, 2005). It is a special responsibility of the staff in the ACM to determine how this is to be done day by day, exhibition by exhibition.

Belinda, a volunteer guide pointed out that many of the general visitors to the ACM are foreigners in Singapore:

I suppose the [ACM] is part of the landscape of places of interest for visitors and it helps the economy as a whole...but I also think that given that Singapore has a relatively large number of foreigners who actually work and live here...the ACM do actually serve a purpose in helping these people make sense of the place they live and work in by connecting them to the civilisations that shape us, as locals. That's the social role I think.

Through their engagement with the general public and museum volunteers, the educational role of the ACM was also highlighted in various interviews with Belinda, Timothy, and Laurence. This educational role was especially important for the museum volunteers, who engage with the ACM at a deeper level. This point was articulated clearly by Kim, another volunteer guide, who simply stated that:

By now, those of us who have [been conducting guided tours] for more than five years have amassed an amazing amount of knowledge...something that can't be gained just by visiting the museum, even on a regular basis.

Thus high participation (as displayed by the museum volunteers) can lead to the increase of significance and meanings made around resource holdings. Belinda emphasised that her involvement as a museum volunteer had enhanced the sense of belonging and stake in the resources she saw as part of the communities she identifies with:

...resources in the museums are now more meaningful to me because I have somewhat contributed to them...but it's not limited there. Because of my experiences in the museum I realise that things that are outside the museum also speak louder and are more meaningful to me – such as street names, buildings, and festivals.

Hiram, a curator from the ACM articulated how the resources – both the physical artefacts and information – are community resources and how these communities will defend them if necessary:

The knowledge contained in our holdings does not belong to us – it is shared and upheld by all [in the communities] that create and access them. So I don't think it is possible that the museum can ever be replaced, because it will mean a social interruption and I think people, both the general visitors and the volunteers, will defend their resources if necessary...

During the interview with Irene, a dilemma and ongoing challenge with the work of the ACM was demonstrated:

Irene: I think the way by which we build significance and help our visitors and volunteers construct such significance is by letting different resources express themselves, no matter how different they may be from each other.

NP: Do you think that can create tensions between people, when they see how different they are from one another?

Irene: I think we should, all the more, embrace tensions...identity and meanings should be constructed by the individual and it is not our job or purpose to define them for people...but what we can do is to present different voices...let people decide and construct their meanings for themselves...

While addressing the importance of maintaining diversity in the resources through collecting and presenting collections, Irene also raised an interesting point about the construction of meanings both for the self and as a community. This will be followed up in the discussion of collective processes in the next section. Laurence, in making sense of both the constraints and potentials of the ACM's work, said:

We try our best to be relevant to our communities but we're not the kind of museum that can put up an exhibit quickly only to take it down six months later. We're also not the kind to put up controversial exhibits just because they are interesting...what we want to put up are exhibits that are relevant and understandable to the community, because it is part of them...

In the analysis of resources in the ACM, this section has discussed how museums are important links for communities as repositories of meaningful resources. In this context, the issue of participation was raised as a possible variable in shaping the significance built by people around resources alongside the factor of accessibility.

9.6.2 Collective processes

During the case study, the example of museum volunteers was raised several times to illustrate how the museum acquired feedback, enhanced interactions between the museum and members of the public, and engaged active participation with the resources in the collections. Given this, the second phase of data collection involved interviewing volunteers of the museum, and studied how they work within the

museum. The Museum Volunteers' community consisted of working professionals who were trained to be museum guides. Its members conduct tours in English on weekends, weeknights when there are special events, and public holidays, and assist in other activities of the National Heritage Board (of which ACM is a part).

As earlier mentioned, there is another organisation founded before the Museum Volunteers community, which supports the national museums in Singapore including ACM. Calling themselves the Friends of the Museum (FOM) volunteers, this community is mostly made up of family members of expatriates who provide guided tours on weekdays, and organises public lectures at ACM. FOM was founded by four individuals who shared a passion for the history and heritage of Singapore. There are also opportunities to volunteer in the operational running of the FOM, aside from volunteer guiding in the museums. Before the community of Museum Volunteers was officially formed, they were part of FOM. The story of the separation of the Museum Volunteers from the FOM is an interesting one. Although apparently incidental, in fact it was a strategic move for the sustainability of voluntary guiding in the general growth and development of museums in Singapore, as Kim explained in an interview:

When ACM grew, they wanted to have weekend guides...and you have these wives of the expatriates who are in the FOM, and they can't conduct guided tours on the weekends because of family commitments, and on top of that many of them leave after a couple of years when their husbands finish their employment contracts here as expatriates. So that's when the locals were recruited as guides...and many of us have been around as guides for a long time. But while under the FOM's leadership we still had to pay a fee to be a member of the FOM in order to be a volunteer guide... in addition the benefits of being an FOM member were just not of value to the locals as most of the activities and the library were only accessible on weekdays. In the end the idea of forming a separate group just seemed to be a natural solution to the conflicts that were arising between the locals and the non-locals.

Both organisations are similar in the way they support the resources of ACM. The discussion on harnessing participation will explore the mechanisms of how participation is created through intentional design and action especially in the Museum Volunteers community. For now, this section will focus on the kinds of collective processes found in the community of volunteers.

In the examination of the Museum Volunteers community, it was realised that there is still a degree of exclusion, even though it may be unintentional: in that the community does not include tourists and other non-permanent citizens. Identifying this was important because it helped point to the relevance of studying the volunteers: they are self-organised, and the people who become volunteers are usually local Singaporeans and permanent citizens who make up the communities served by the museum.

Belinda, a volunteer, pointed out the key role of the organising body that facilitates the volunteering schedule, training, and contacts with the museum:

...the facilitation and coordination is absolutely necessary – most of us are working and it's difficult for us to come together without some sort of facilitation. I guess it's also essential that there is a group of representatives making contact with the museum, to provide some coherence in our interaction...

Coordination was found to be a necessary process, referred to by the volunteer as 'facilitation and coordination'.

Ursula, as a school teacher who interacts frequently with the museum by bringing student groups to the ACM, expressed her opinion on the support for the volunteers from the museum and the heritage board:

I think for volunteering to be sustainable, support even at the very basic level... [such as] providing the spaces and resources for training, allocating resources for things like communication facilities and support staff for interactions between volunteers and between the museum and volunteers...are necessary. The museum has an opportunity in this context to play the role of a catalyst in driving activities and changes, in direct and indirect ways.

This 'support' from the cultural institution could arguably increase the capacity of the volunteers to augment collective processes within the community. As pointed out by Ursula, the involvement of the museum would also imply an opportunity for the cultural institution to mediate and nurture the community of volunteers.

Coordination was argued in Chapter 4 to be a subset of cooperation. Cooperation utilises all three practices of sanctions, power, and communication – like coordination - but uses power relations with greater intensity in order to achieve shared procedural compliance and will.

In this case study, there is an implied and formal cooperation between the museum and the volunteers. Representatives are selected to liaise between the museum and the volunteers, and to work out the training and guiding schedules for the volunteer guides. The role played by the representatives to liaise with the museum is instrumental. In Belinda's recollection of her experiences as a new volunteer, the leadership of her mentors and leaders in the Museum Volunteers' community was essential in normalising her role as a volunteer in the community:

...when I was a 'newbie', I must admit that I was initially intimidated by how strict and demanding some of my seniors were! But I realise that it was also absolutely necessary, for us as a group and for me as a volunteer guide; because what they were doing was really articulating the standards required of us, and in involving us in all the usual volunteering activities from the start, I felt that I was integrated as part of the community in a relatively short amount of time...

For the ACM, Irene highlighted the importance of regular interactions with the volunteers while maintaining that the institution should not overtake the dynamics of the community:

The role of the volunteers is important, as these people are recruited from the public and the volunteer program allows us to engage the public in a direct and more participative manner. But still, it is not our core mission to manage them, even though they are important to us...

In support of the perspective, some volunteers felt it desirable for cooperation to be achieved by the community, rather than being facilitated solely by the museum. Nate, a volunteer noted the benefits of participating in the guiding program:

It's a good experience for us...being involved beyond conducting guided tours contributes to the sense of belonging and involvement we have with the museum...yet it is clear to all of us...that we are still an independent community...

Some examples of how volunteers are involved in activities out of the usual guided tours were given by Kim:

We sometimes assist with preparations for exhibitions...and our professional knowledge comes in handy in those scenarios. For example, I have helped with re-branding certain exhibitions because I am a marketer by profession...some of our volunteers are translators so they help with translating some of the resources in the exhibitions into different languages. There are also times where many of us are involved. Sometimes we will travel as a group and on our return we will give a talk to share relevant and current knowledge of a particular culture relating to the resources in the exhibits...

Such examples of ad-hoc activities on top of the usual guided tours inject current insights on existing resources in the museum and makes use of peer-produced knowledge that is enabled by the dynamic of communication between volunteers in the community. These examples thrive on the dynamic of communication, as collaborative activities that took place together with different forms of coordination and cooperation. The peer-produced knowledge complements the resources in the ACM, especially during guided tours when the volunteers are able to share their knowledge. Laurence emphasised this value for the visitors who relate to resources during their visits, and the role that the volunteer guides played in the process:

The guided tours are truly interactive for us because our guides are also members of the public and we interact with them a lot. But there is another level of communication and interactivity – because usually during the tours, interested visitors have very deep and engaging dialogues with the guides... and they go away and chat more beyond the tours...

Was there a shift towards greater flexibility and an expansion of interests in tandem with the shift from coordination towards cooperation? As Nate, a volunteer noted:

The longer I serve as a volunteer, the more I benefit from the relationships with other volunteers and the museum...and as we interact more, we also tend to become more flexible in the way we work with each other. In addition, there are all these other possibilities emerging from the normal activities...such as the many interest groups and ad hoc activities like the travelling...

This could be paraphrased as follows: as a community evolves from coordination to cooperation and collaboration, it becomes more flexible or less controlled, and more emergent – as the earlier case of Museum Victoria also demonstrated.

9.6.3 Strategic directions

There was no action research component and thus there was a greater opportunity to study and observe the existing work practices of the museum. Although there was no formal partnership with the community, the museum maintained that there should be no prescriptive-ness over the meanings of the resources. Laurence noted:

Yes... not dominant because we're not a university we're a museum – and what we have are collections of artefacts. We try to interpret them but we're here really to stimulate further interest and we are not meant to be the absolute authority on what these artefacts mean to people.

Like the earlier museum case, the approach of ACM was to perceive itself as a central entity for the purpose of ensuring the sustainability of the collection, and not as the sole or primary interpreter of what the resources mean to the community. This leads to the conjecture that although the two museums differ in the way they interact with communities, there is agreement in the position of the museum as a cultural institution including diverse resources that people in communities can connect with, in their own ways.

This was particularly notable given the earlier discussion on the museum's foundation and current roles and responsibilities. The importance of ACM in contributing towards the building of nationhood was highlighted earlier. It also became apparent through the interviews that within that purpose, the emphasis on including diverse voices and stories from different cultural and ethnic groups may create possible tensions.

At this juncture, it is important to analyse the working mode of the museum. Chapter 5, which explored the potential working modes of cultural institutions, suggested how museums may engage communities in more participative ways to enhance traditional practices. When asked if the museum saw itself as being very adaptable to the changing needs of their communities in order to include the different voices and stories, Laurence from the ACM noted:

I think we can do more in that area – although I must say again we are not that kind of museum – we have physical artefacts and spaces here, and we must provide what we can using our resources...and there are many ways by which we bring people and institutions such as schools into this space.

While adaptability in itself could be addressed as an ongoing challenge and issue for the museum, studies on the cultural policies in Singapore might also provide elucidate the acknowledged need for the museum to 'do more' in terms of adapting to the cultural landscape of communities. According to Kong (2000, p. 423), there is a disjuncture between focuses on 'cultural generation' and 'economic imperatives', although both factors drive the development of cultural policies in Singapore:

...cultural practitioners are less concerned with economic generation as they are by community self-development and self-expression. In seeking to develop a Singaporean idiom and an indigenous voice in their cultural products, they endeavour to draw from local cultural resources as well as to contribute to community life, so much so that artistic and cultural activities may become part of the warp and woof of daily life, generating a pulse and rhythm in the city...economic imperatives, on the other hand, emphasise growth and property development and find expression in prestige projects and place marketing...the trouble is economic drive does not necessarily contribute to cultural regeneration.

Thus a cultural institution that is supported as a 'tourist destination' – an economic driver (Yeoh and Kong, 1996, p. 60) – and at the same time purposed to stimulate and be a catalyst for community vibrancy could find itself trapped in the disjuncture proposed by Kong (2000).

This potential conflict could also be discerned in an interview with Irene, who admitted that there were tensions between cultural institutions in terms of managing their boundaries and scope of work. Her reflection also implied a possible competition between the priorities of standalone tourist attractions and networked community catalysts:

I'm all for partnerships with my sister institutions – I think we all agree that it's a good thing but we're also working from the physical parameters of our institutions and it can be difficult and so time-consuming trying to work on such partnerships and at the same time perform our core duties within the museum...

Such complex sentiments might reflect that the museum defaulted towards operating in a conventional mode, contributing to the co-creation of resources of interest to their communities. It also demonstrated that the museum worked in other modes, specifically as a participant in a nation-wide project involving other institutions:

Explore! Singapore, a collaborative outreach programme aimed to inspire and spark interests in history and heritage, was initiated by the National Heritage Board of Singapore for the first time in 2006. In the project, the National Library Board and the Media Development Authority of Singapore were also approached to collaborate on a nation-wide effort to engage the local communities (Public Services Division, 2007).

During a three-month programme, museums all over Singapore, including the ACM, collaborated with partners from the National Library Board and the Media Development Authority to bring about museum experiences that penetrated homes, schools, and work places (Public Services Division, 2007). This was a demonstration of how the museum can operate by participating as a mediator in the spaces of their communities. This is a similar finding to the earlier case study. It confirmed, once again, that cultural institutions such as museums can and do operate in both the supplying and participating modes. The use of contemporary media such as blogs, television programmes, and mobile messaging services was also significant in this project, and was instrumental in facilitating participation from the communities. This will be discussed in the next section. Ursula remarked on the value of nationwide projects such as Explore! Singapore:

...well the benefits for the community are quite apparent - but I think the bigger value is that these institutions have the opportunity to work together towards a common cause...

One of the insights from this case study is the fact that various types of museums have emerged. ACM works differently to cater to the needs of their communities, and thus achieves different benefits. Timothy, who has considerable experience interacting with the board of directors of the National Heritage Board noted in an interview:

I know several types of museums have now emerged and I think they all do very good but different things. The traditional museums are important because they provide us with connections to our stories and identities through physical holdings, but there are also new types of museums with very different approaches to presenting and involving the public in their collections. For example, there are those that have very quick 'turnaround times'. They often change their themes and displays...and they can put together collections that evolve around current issues and themes. And there are those museums with digital collections available on the World Wide Web which offers public access, and they can also make use of the web to generate participation...but of course there are always pitfalls for every type of museums...

It is clear that the working modes of museums reside in a spectrum and not in a dichotomy. While there may be museums which operate 'traditionally', and there are

those that are characterised by innovative practices involving technologies, community involvement, and the Internet. On the same note, it could also be said that such practices need not dominate 'certain types' of museums, and be included within the scope of one museum. Both traditional and contemporary practices can possibly involve participation from communities; but this has implications for how participation is promoted.

Whether or not the spectrum is valid for other types of cultural institutions remains to be seen and discussed in the next two case studies (public libraries).

9.6.4 Harnessing participation

There were several ways in which participation was promoted in the museum. The key question is whether participation was felt to be effective, especially in contributing to resources in the knowledge commons. This discussion will focus on two examples in the case: (1) museum volunteers and (2) designing the involvement of schools and institutions.

(1) The Involvement of Museum Volunteers:

In earlier discussions two groups of volunteers supporting the work of ACM were described. Although they differ in size and membership (the FOM collects a fee for membership, and only members are allowed to become volunteers of the FOM), they both support the activities of the museum and enhance interactions between visitors and the resources contained in the museum.

As previously discussed, the museum saw the volunteer guides as a good example of how the technologies can directly include the participation of their communities in the daily operations, and more specifically, enrich the meanings of its resources. Timothy noted:

Many times I have seen how visitors become so interested and engage in deep dialogue with the guides...I don't think the museum keeps track of the things that are inspired by such dialogue but this is what makes cultural institutions like museums so valuable; they stimulate interest and knowledge through their holdings and dialogue, and serve as a point of inspiration for further knowledge and inventions.

The effectiveness of the guides was encapsulated in the following sentiment by Hiram:

Our volunteer guides provide a human and living means for people to interact with the resources. When the guides are not available, there are the 'talking heads' in the museum which can still provide a living interaction...but technologies have their limitations, and some people are not keen to use them.

The same curator added:

There are various ways for visitors to interact with the resources. When there are guides, the communication is far more interactive. With the digital stories, people can then relate to stories or by expressing what the artefacts mean to them...

Kim on the other hand, addressed a challenge concerning the use of technologies within the ACM, such as the 'talking heads':

...they hum and sing folk songs depending on which gallery you are in...and they will draw you to them because they call out to you with interesting questions, songs, and stories...so people go to the 'talking heads' but then they are abruptly stopped at some point because of technological limitations...

The usability and relevance of technologies present issues for the museum. According to Kim, these were relatively hard to resolve because they relied on proprietary systems and so could not be customised easily. As she explained:

The 'talking heads' will prompt visitors to 'start' by inserting their entrance tickets into the scanner...but there are problems with the scanner...I always see people trying repeatedly to insert their tickets and eventually they give up...then I would go over to tell them to press certain keys so they can actually use the systems without having to insert their tickets...the museum is aware of the problem but it's too expensive to reprogram every single machine...and it will also mean that they will have to record the introductions for the 'talking heads' all over again..

Laurence stressed the importance of allowing meanings that were constructed around resources to emerge within communities, and not be led by the interpretations of the institution:

...it's important to note that whatever methods we design to allow people to participate. Or interact with the resources – the mechanism should not dominate or overpower the resources themselves...the object is still the central element by which people interact and participate...

It is clear that even though the volunteers' community is a collective endeavour, self-organised and founded by members of the public, the volunteers work cooperatively (see earlier discussion on collective processes) with the museum to participate in the activities of the museum. Such participation is enhanced by the availability of communication technologies:

Ursula: If you ask me what's really different about museums today, I'd say it's the way they interact with people, because I don't think the core purposes of museums have changed much...but what's impressive is the opportunity for museums to include so many people who can all be very different...but having said that it could also be a challenge as well...

NP: What do you think is this challenge?

Ursula: I think it's all about trying to maintain coherence, and also to manage possible tensions that can arise out of diversity...

The challenge of maintaining coherence and managing possible tensions as suggested by Ursula is a notable one in the context of using contemporary technologies to harness mass participation.

In addition to making observations about the increase of participation in museums, Kim also noted the impacts of sustained participation in the work and social lives of the volunteers:

Some have even gone on to SOAS (School of Oriental and African Studies) to further their studies...and become curators at the museum. One of our volunteers has written a book on Chinese symbolism...and many guide in

more than one museum... very often, an exhibition would inspire a study trip in Asia to learn more about a culture or a country...

Such impacts may also be seen as reflections of the 'cultural depth' Yeoh and Kong (1996, p. 60) spoke about in earlier discussions. Harnessing participation from the Museum Volunteers can be seen as one of the clearest examples of how the ACM directly engage a community. The next discussion will look at how participation is harnessed from communities such as schools and institutions.

(2) Designing the Involvement of Schools and Institutions

The museum has actively organised in-depth study tours and seminars with schools and other educational institutions. Laurence explained the rationale behind this action:

If we look at museums in the past, we can find examples where inventions have been inspired by people's interactions with resources in museums...and that is one of the things we try to do. For example, we work with design and fashion schools and they bring their students here so they can interact and study the resources on display and which may serve as an inspiration for their creations.

In Chapter 6, a spectrum for participation was identified. On one end of the spectrum, users and communities participate in the activities of the cultural institution, and on the other end of the spectrum, the cultural institution participates in the world of users and communities. In the case of ACM, the first-mentioned type of participation is a lot more apparent than the latter. This is demonstrated by the discussed earlier, the conduct of guided tours according to the exhibits and opening hours of the museum, the in-depth visits and study tours by schools and other relevant groups according to the resources on display.

Ursula articulated how interactions of the students with the resources of the museum, helped to enhance learning and stimulate interests in her class. She noted:

Such tours really help with learning out of the classroom, and it's a way by which we can get students to participate in the knowledge they are acquiring, because they can see these things on display and in a sense, they help them to visualise what they can do with such knowledge...the possibilities are endless, and the best thing is that the resources in museums are so accessible and public – it will continue to inspire so long as they are there.

The impacts of these actions have been notable, benefiting students, researchers, and volunteers. For curators, interacting with their communities has helped shape the way collections are brought together. Irene, a curator expressed this while explaining how she visualised the 'storylines' of collections:

One of the most important factors to us in a collection is, I guess, the storyline of a particular exhibit. For us it's all about Asian civilisations, and we want to present different voices and stories. So being aware of the interests of the communities, having [members of the communities] actively involved in our activities is essential. And once we have a storyline, we put the resources to that storyline...even if we don't have certain resources, we go out to get them or we use other ways to present those resources. It has definitely helped us to overcome material limitations...

In the challenge to overcome material limitations, Kim also showed how the participation of the volunteers is useful in building participation from schools and other institutions:

...it comes down to the group we are conducting the tours for. Depending on the group, we share different materials for greater relevance to the group...sometimes there are explicit requests either from the group, for example a school, or the NHB to showcase different aspects of an exhibition. So we are able to bring in complementary knowledge to an exhibition depending on the types of interests for each group...

These reflections implied shared understandings of what resources are meaningful, how people made sense of these resources, contributing to a structure of significance within the museum and their communities. Nate explained how the ACM is different from other museums because of its Asian focus in terms of its holdings and representations:

...its collections are focused on Asian civilisations and sometimes there are no representative communities of these civilisations that are still alive today. So unlike some of the national or the more contemporary museums that have living communities and collections that are more current, ACM also has a meaningful purpose of collecting and representing the Asian histories and civilisations that are on the verge of being lost...

Joint projects such as Explore! Singapore provided special opportunities for the ACM to engage with communities by going beyond its own walls. A blog, www.yesterday.sg was also launched; and is still widely read and contributed to at the time of writing. People in the community were invited to share their stories about living and working in Singapore, thereby creating a rich archive of written narratives. While enabling participation, the blog also contained facilities for asking questions – which will be answered by librarians. Figure 9.2 shows some examples of the many stories that are created and shared using the blog.

Using the blog, resources were created and shared openly by people in communities, which increases the accessibility of these shared resources. The use of tags and links to other sites containing stories about living in Singapore provided additional layers of accessibility while enhancing the richness of the content at the blog.

Aside from the blog, the project made use of mobile technologies (such as short messaging services) to harness participation from people in communities. Ursula was a participant during the event; and explained how this shaped her perspectives and interactions with the museum:

Unlike my parents and grandparents I've not lived through some of the hard times from the past...it's one thing to go to the museum to see the artefacts or read the stories but being a participant...I guess interacting with others has deepened my appreciation of the journey we've been through and the bonds that we all share, young and old...

The example demonstrates how contemporary technologies can be effectively utilised to facilitate mass participation amongst the communities, thereby enriching interactions between these communities and cultural institutions.

The Mama Shop (1)

June 06, 2008

[Victor Koo](#) finds a mama shop that is still operating in modern-day Singapore. He challenges you to identify where it is located.

I have blogged about the [mama shop](#) before.

When I visited the Singapore Philatelic Museum last year, I was pleasantly surprised to find a mock-up of a mama shop:



The explanatory notes accompanying the exhibit was as follows:

Indian Mama Shop - A sundry shop or general provision stall traditionally operated by Indians, especially the Tamil ethnic group. Colloquially refers to as "Mama Shop or Stall", the word "Mama" means "uncle" in Tamil.

Such stalls were commonly found in Little India, the enclave of the Indian community in Singapore. Operating in very small and tight

Where did Mat Salleh come from?

May 08, 2008

You might hear your Malay friends referring to Caucasians as "Mat Salleh" - but do you know where this term came from?

The Backlog investigates the [origins of this slang word](#).

I ran a search in Google about the origin of 'Mat Salleh', and most of the blog posts returned tell the same tale. They say the term actually originated from the term 'Mad Sailor'. This was because during the British rule, there were many British sailors who often got drunk and harassed the people. Some locals were beaten up, while some were even raped. The locals began to call the British 'Mad Sailors'. However, due to some problems with pronunciation, the locals could only managed to say something like 'Mat Seler'. This, in time, became what we know today as 'Mat Salleh'.

Dumpling making in the kampong

July 09, 2008

[yg](#) shares his memories and experiences of [making dumplings in the kampong](#). Although it was a long-drawn affair with many stages to pass through, the end result was made worth it because of the communal spirit that was shared throughout the kampong.



i have fond memories of the dumpling festival because of the kampong spirit which is difficult to replicate in our housing estates. folks who did not know how to make or who did not have the time to make would receive dumplings from the neighbours. those who made would also get dumplings to sample. there would be a lot of exchanging going on and we ended up trying all types and qualities of dumplings.

Find out [how dumplings were made in yg's kampong on yqblog](#).

A Traditional Peranakan Wedding

June 12, 2008

Visitors to the Peranakan Museum during the opening festival last month might have caught a reenactment of a traditional Peranakan wedding. If you didn't manage to see it, [Eastcoastlife](#) caught it all on (digital) film!



Check out the Traditional Peranakan Wedding on [Eastcoastlife](#)!

Tags: [Peranakan Museum](#), [Peranakan Wedding](#)

Figure 9.2: Some examples of stories from Yesterday.sg.

9.7 Implications for the future

When asked what would be a significant immediate challenge for the ACM, Kim clearly articulated an opportunity that arises with emerging technologies:

...I think the core of new age museology is that the museum can move beyond the notion of a 'dead' place...it's about engaging people and there are all these ways you could consider to make museums exciting places – regardless of their resource holdings. For example, ACM could consider having 'wayang' presentations at night when the building is usually closed. I think those kinds of activities could connect very well with the locals, especially the older generations. I also think that part of the challenge about being exciting comes from marketing and reaching people in the most relevant ways...so communication tools are important considerations...print publications are nice but shouldn't be the only ones to depend on because there is a limit to the number of people you're going to reach...

The 'wayang' presentations that Kim mentioned refer to a form of cultural theatre that has been adapted in many Asian cultures. The word 'wayang' means 'theatre' in the Malay language, and is a type of puppetry which uses opaque figures projected onto illuminated screens for traditional storytelling and entertainment. Such examples are part of the landscape of disappearing arts in Singapore. Interestingly, this is a conscious awareness of the local communities and efforts have been made to transform the traditional art form into a contemporary one using computing technologies according to a local Chinese newspaper (Cai, 2003).

The use of appropriate technologies that are flexible and adaptable to the changing needs of the museum has been brought up several times in the chapter. Contemporary technologies are also important considerations in the context of the ongoing dilemma to maintain both coherence and diversity within the resource holdings in ACM. As bemoaned by Keen (2007, p. 16):

...the free-user-generated content spawned and extolled by the Web 2.0 revolution is decimating the ranks of our cultural gatekeepers, as professional critics, journalists, editors, musicians, moviemakers, and other purveyors of expert information are being replaced...by amateur bloggers, hack reviewers, homespun moviemakers, and attic recording artists. Meanwhile, the radically new business models based on user-generated material suck the economic value out of traditional media and cultural content.

The criticism of user-generated content by Keen has not been an apparent 'problem' in this case study. Instead, the examples of peer-produced knowledge which are shared by volunteers with one another and with the people in their guided tours appear to enhance the overall value of interactions with the resource holdings of the museum. Having said that, it should be noted that the ACM has not been aggressively pursuing a technological strategy, and interviewees such as Timothy have highlighted that:

...there is much more the museums in Singapore can do, especially in the way they optimise the opportunities offered by the Internet and Web 2.0 technologies...for example some collections can be put online...and that will increase people's accessibility to the resources in those collections...

While the reflection reinforced the point that the properties of resources in terms of their availability will increase when they are shared and made accessible online Keen's argument about the potential risks of Web 2.0 technologies should be noted

for cultural institutions considering to utilise contemporary technologies to engage participation from their communities.

Chapter 4 discussed a form of community activity that is relatively difficult to achieve with diverse opinions emerging from the community, Terming it 'collective action', Shirky (2008, p. 53) identified 'governance' as a key characteristic. As Middleton (2007) demonstrated through a series of exemplary projects from cultural institutions, the potential of cultural institutions as enablers or catalysts of such 'collective action' is clear.

The proposed disjuncture between the drivers of cultural regeneration and economic imperatives in forming cultural policy in Singapore (Kong, 2000) is also an ongoing issue for the ACM. As commented in a local publication (Art vs. Art, 1995, p. 63):

By definition, monuments commemorate the dead. There is a kind of reciprocal structure: when you go before a monument you not only commemorate the dead, you are struck dumb. This is the general effect of government intervention in the arts.

For the ACM, being both a significant monument and a catalyst for collective processes and connectedness requires an ongoing negotiation and renegotiation of its place in the communities. Reconciling the tension is made more complex since the communities that connect with the ACM as a place are characterised by diversity – within the local, diverse ethnic and religious cultures, and beyond the local communities. Also, there is also a large number of non-locals who are either tourists or residents who have come to Singapore for the purpose of employment. Museum policy and practice need to accommodate not only the multicultural diversity of Singapore but also the transience of a significant part of its international workforce.

9.8 Main insights

Insight 9A: Museums as sites of discourse and places of experiences influence the accessibility and availability of meaningful resources for communities. Participation is a possible variable in shaping the understandings of significance accorded to various resources. In addition, it provides a way by which possible tensions can be guided and managed by cultural institutions.

Insight 9B: Various forms of collective processes can be observed arising from the communities interacting with the ACM. Coordination was found to be the most basic form of collective process. Cooperation is characterised by structural relationships and greater communication, which have as their goal to achieve procedural compliance. Collaboration is the most unstructured form of collective process, with ad-hoc activities that are flexible to changes and are less controlled.

Insight 9C: While primarily operating as a supplier of resources and experiences through the collections housed within the ACM, there are also ways by which participation is engaged from communities. There are various implications in terms of impact and reach.

Insight 9D: A shift towards greater participation from communities is observed, enabled by contemporary technologies and the Internet. Limitations are also raised on this point, particularly the adaptability of technologies to changes.

Chapter 10 (Case study 3) – Public Libraries in Victoria

10.1 Scope of the chapter

- Explains the focus of the case study, consisting of three accounts of public libraries from Victoria. Discusses the research engagement with public libraries in Victoria, with a summary of the research activities that were conducted.
- Provides a background of public libraries in Victoria, and their current roles and responsibilities as legislated by the *Libraries Act of 1988*. Discusses their relationships with communities in terms of resource holdings, collective processes, strategic directions, and harnessed participation.
- Explores some implications for the future, such as inclusion as a guiding principle in formulating policies for the management of library services in order to overcome social divides amongst communities.

10.2 Focus of case study: Public libraries in Victoria

In 2005, a search began for case studies that would provide triangulating views and perspectives from a different type of cultural institution. The writer became actively involved in a project that had been initiated and funded two years earlier, bringing to it the perspective and potential of libraries as knowledge commons. Three public libraries in different regions of Victoria were selected, to reflect diversities in the social demographic profiles of the communities they served. They were also selected based on the length of their establishments. One of them has a relatively new building headquarters and operating structure compared to the other two. Permissions to study these libraries were acquired in different ways. In one case, the chief librarian was also collaborating, in another research project, on the information needs of the 'baby boomers' with a fellow Monash researcher. In the two other cases, emails were written to the chief librarians of each library and approvals were given respectively.

In these accounts that follow libraries demonstrate central roles in engaging communities through the design and implementation of activities such as outreach programs, new spaces and services, and literacy programs.

10.3 Research engagement with public libraries in Victoria

In 2005, the present writer began discussions with academics who were involved in a project to investigate how well public libraries perform in relation to creating and developing networks in communities. The relevance of the knowledge commons as a research concept for the project was made clear and thereafter the writer was drawn into the project as a research assistant. The knowledge commons implied an investigation of resources that are made freely available for all in public libraries, in order to build community relationships and cultural democracy. Modern commentaries have referred to the public library as 'a place for people to meet that has been likened to the village green' (State Library of Victoria, 2005). The introduction of the knowledge commons vocabulary also indicated the emergence of several understandings of the term 'commons' being applied by libraries; such as the

information commons, the learning commons, and the academic commons (Pang, 2007).

The introduction of the knowledge commons concept as an appropriate framework for the project was also timely. The original panel of researchers had been struggling with a systematic approach and inquiry into the community networks of public libraries. The struggle reflected their awareness that public libraries are increasingly influenced by technological trends and the changing meanings and nature of resource holdings in public libraries also posed significant challenges.

As research assistant, the writer began work to develop questions and research aims that would meet both the aims of this study as well as the goals of the original project. This went smoothly, and overlapping issues and themes of the two studies were found. Table 10.1 shows a chronological summary of the events that elapsed, with pseudonyms given to interviewees where applicable.

Task	Description	Interviewee(s)	Duration
Interviews	Pilot interview with a university librarian, who also had extensive experience with planning and managing public libraries in Victoria. Key perspectives on current and future challenges for public libraries in Victoria were gathered.	Debra	Nov 05
Planning	Discussions with original project members. Interview schedule were developed, reflecting overlapping issues and themes of both studies.	-	Nov–Dec 06
Interviews + observations	Semi-structured interviews with library managers and chief librarians at three selected public libraries across Victoria: the Hume Global Learning Village (HGLV), Whitehorse Manningham Library (WML) and the Upper Murray Regional Library (UMRL). Ethnographic observations were also noted during these field visits.	Kate and Marilyn (UMRL), Wendy and Denyse (HGLV), Hurst (WML)	Dec–Mar 06
Interviews	Further interviews with selected individuals, who were recognised to possess expert or unique knowledge on the communities of the selected libraries, the usage of the libraries, or strategic partnerships that the libraries have developed. Some of these interviews were conducted concurrently with field visits to the libraries.	Diane, Mary, Van, Theodore, Karl	Jan–Apr 06
Publications	Findings resulted in three publications, jointly authored with original research team.	-	May 06 – Dec 07
Table 10.1: Research engagement with public libraries in Victoria.			

10.4 Foundation and Development

In 1851, after the discovery of gold in Victoria, a group of pioneer citizens began to actively create and support a proposal for a library to be built. The motivation stemmed largely from a 'belief that the greatest dangers to freedom arise from the prevalence of ignorance and vice', these pioneers saw the building of a free public library as a solution to also 'avert political unrest by encouraging the spread of education' (State Library of Victoria, n.d., para. 4). Such an outlook also supports the

ideals of the knowledge commons, in its shared belief that through free access to resources cultural democracy will be enhanced.

With the separation of Victoria from New South Wales in 1851, the proposal for a free public library to be built was approved. Hugh Eardley Childers, one of the supporters of the proposal, was also the Treasurer in the new government in Victoria. He was instrumental in introducing the 'Appropriation Bill that provided 3000 pounds for the library collection and 10,000 pounds for its building' (State Library of Victoria, n.d., para. 6). Judge Sir Redmond Barry, another influential pioneer in the group of supporters, was appointed Chairman, a position he held until his death in 1880. By 1854, the foundation stone of the library was laid and on 11 February 1856 the Melbourne Public Library was officially opened.

It was said at that time to be a 'remarkable achievement' (State Library of Victoria, n.d., para. 3). It was not surprising, given that the then British colony was only 20 years old, and was 'entirely funded by government and free of charge to users' (State Library of Victoria, n.d., para. 3). The aspirations of the library to overcome ignorance and build a knowledgeable society were also strongly reflected in the way it opened access to the Victorian communities, which was said to be 'most unusual and liberal for the times' (State Library of Victoria, n.d., para. 10):

'Every person of respectable appearance is admitted, even though he be coatless...if only his hands are clean'. Female readers were catered for with a separate area which allows the 'thirst for knowledge and the poetic or aesthetic desires of every woman to be satisfied, undisturbed' (State Library of Victoria, n.d., para. 10).

Over the next two decades the size of the collection was to grow, and by the 1880s the institution had become 'the largest library in the Australasian colonies and comparable with the major public libraries in England' (State Library of Victoria, n.d., para. 23). The Copyright Protection Act in 1869 also became a major growth factor of the library's collection, when it required 'a copy of every book, magazine, pamphlet and map published in Victoria' to be 'lodged at the Library by the publisher' (State Library of Victoria, n.d., para. 21).

From the 1880s till the first half of the 20th century impacts from the world wars, the depression, and economic downturns were felt by all libraries in Australia which saw significant cuts in funding. This improved with economic improvements in the later part of the 20th century. From 1950 onwards, The State Library of Victoria began an effort to strengthen its Australiana collection. The action also marked the first move towards including resources that were previously rejected as 'ephemeral or of no value' (State Library of Victoria, n.d., para. 29).

The State Library of Victoria has recently admitted that 'today [it] is collecting material that probably contravenes every one of the numerous rules of exclusion laid down by Redmond Barry' (State Library of Victoria, n.d., para. 30). This is also reflective of the many ways public libraries in Victoria have grown, increasing their engagement with the broader community in the spheres of information poverty (Williamson, Schauder, Wright and Bow, 2000), lifelong learning (Bundy, 2002), and bridging child and adult literacy (Gibbs, 1990).

At the time of writing, public libraries are coordinated and organised by the Library Board of Victoria, under the Libraries Act of 1988. Since the establishment of the Libraries Act, there have also been structural changes in the state's local governmental sector, most significantly from 1993 to 1995 (Dudley, 1998). Since then,

public libraries in Victoria have operated under new service agreements, negotiated with their governing councils in the governing areas of the libraries (if they are regional). Even more significant has been the surge of co-operation between public libraries (Dudley, 1998), which are finding new grounds for partnerships, and service delivery policies to better serve their communities.

Public libraries in Victoria recognise the need to maintain an interdisciplinary perspective to address contemporary challenges. Some of these challenges include: the infusions of technologies in physical spaces, collaborative partnerships with communities, paradigm shifts in librarianship, integration of spaces in new and redesigned libraries, and the need for multi-skilled library staff.

10.5 Current roles and responsibilities

Public libraries in Victoria are governed under the Library Board of Victoria with the Libraries Act of 1988. As laid out in the Act, there are functions of the Board that lays out the core roles and responsibilities of public libraries in Victoria. Importantly, these functions are carried out with the core objective to ‘contribute to the enrichment of the cultural, educational, social and economic life of the people of Victoria’ (Libraries Act of 1988, p. 9). Although these functions relate to the Library Board, there are relevant inferences to draw for public libraries in Victoria. These are listed in Table 10.2 and comments have been added to elaborate on the implications for public libraries.

Function	Commentary
(a) to ensure the maintenance, preservation and development of a State collection of library material including a comprehensive collection of library material relating to Victoria and the people of Victoria	Library materials as set out in the Act includes ‘books, periodicals, newspapers, pamphlets, manuscripts, films, sound recordings, musical scores, maps, charts, plans, pictures, photographs, prints and other recorded material, whether in writing or in some other form, and whether stored on tape, microfilm, microfiche, disc or any other method of information storage’ (Libraries Act, 1988, p. 3). For all public libraries this translates into the maintenance, preservation and development of these materials according to their collections.
(b) to ensure that library material in the State collection is available to such persons and institutions, and in such manner and subject to such conditions as the Board determines with a view to the most advantageous use of the State collection	Implied a focus on the promoting optimal use of resources in the State collection. The ‘State collection’, according to Part 1 of the Act, comprises of a) all library material vested in the Board, b) all publications deposited with the Board under section 49 and accepted for the State collection, c) all library material acquired and accepted for the State collection by the Board, and d) all donations, gifts, dispositions and trusts of property real or personal.
(c) to ensure the availability of such other services and facilities in relation to library matters and library material (including bibliographical services) as the Board determines	Along the lines of the earlier point, this section of the Act relate to the importance of promoting equal accessibility to resources in library collections. This is also an important clause for public libraries.
(d) to arrange the publication and sale of reproductions of any library material in the State collection	This is an interesting clause, which relates to derivative work created out of resources in the collections of the State Library and public libraries.
(e) to oversee the exhibition of material from the State	Reflective of the libraries’ main charter to promote culture and education amongst communities with resource holdings.

collection for information, education and entertainment	
(ea) to oversee co-operation in programs with libraries and information organisations to promote access to library and information services and resources	This function not only relates to the role of public libraries in supporting educational communities but also propagates the establishment of cooperative agreements with other institutions and agencies for the purpose of education.
(eb) to exercise leadership and promote high standards in the provision of library and information services	These functions relate to public libraries as official and authoritative places of holding resources of significance. In the context of the thesis, this has significant implications for cultural institutions as places for communities to contribute and store resources of significance. The deeper issue then, lies in how meanings are constructed or reconstructed (by both the community and cultural institution) around such resources.
(ec) to provide advice and information to the Minister on any matter concerning libraries and information organisations	
(f) to perform any other functions appropriate to the Board as the Minister may approve	
Table 10.2: Key functions and implications for public libraries in Victoria.	

Libraries, especially public libraries, are often discussed in terms of their many possibilities and potentials. They are seen as a solution to information poverty (Williamson et al, 2000), the providers of lifelong learning (Bundy, 2002a), and “helpers” in bridging the gaps in child and adult literacy (Gibbs, 1990), all of which meets the needs of the baby boomers (Williamson, Johanson and Schauder, 2006).

10.6 Relationships with communities

Indeed, it is difficult to imagine how the promises of democracy can be achieved by an ill-informed society. Since the opening of the first public library and the significant developments of public libraries in suburban areas from the 1950s, Australia’s public library networks are now one of the most accessible and heavily used.

Australia started late, long after New Zealand, in realising the importance of investing in free local public libraries for communities (Bundy, 2005). The first ‘Friends of Library’ group in Australia was only formed in 1932. Nevertheless, Australia now ranks amongst the top ten public library nations (Bundy, 2005).

The restructure of public libraries (Dudley, 1998) aimed to make public libraries more competitive and connected to their local councils. Yet the reality is that if a local government chooses not to contribute to a public library, there is no requirement or legislation for it to do so. As found in the interviews, even though the importance of public libraries in communities has always been given prominence in research and literature, it has been continuously questioned.

In a pilot interview, Debra mentioned a recurrent issue with local councils:

[They] have no idea why money goes into libraries and, whatever the amount allocated, it is always said that it should have been less!

While this may explain the disparity in public library services offered by different counties and towns in Victoria, it was acknowledged by the same interviewee that although funding for public libraries has been challenged over the years, it was clear that investing in their public libraries was important to local councils. This was reaffirmed by another interviewee Van:

If you took libraries away from councils, the councils would lose. But I think the community would [eventually] lose, because the council is theoretically there to represent the community and [people in the community] can give a lot back through their library if they're aware of its capacity...

This highlighted the importance of the relationship between councils and public libraries. In situations where local councils do not realise the potential of the public library, the community can change the actions of the local council. This insight was given by Merilyn, a librarian in rural Victoria, who shared a story of the community which turned the situation around for their public library:

I think the library, probably in lots of councils, has to fight hard to get its dollars, and yet it's the one thing [that will be the] most positive for the council. That was reflected in my previous work with the council. We set up a library but had a fire that destroyed everything but our building. So we had to start from scratch again [to build the collection]. When we finally opened, we were a rip-roaring success. [The council then] got to the next budget session and one of the councillors said, "Well why [is the library] asking for more books and resources? We can get rid of that \$60,000. They don't need it."

That was the attitude then but what happened was that the feedback from the community was: "Well hello? Don't you touch our library. We finally got one." And the usage just kept going up and up. So the local council had to continue [to commit resources to develop the local library]. So the community changed the council around.

The sentiment is exciting, but hardly surprising if we truly understand the purpose and contribution of public libraries in supporting democracy. As Bundy (2002b) argued at the fourth Friends of Libraries Australia (FOLA) biennial conference, public libraries and librarians:

serve the precious liberties of our nation: freedom of inquiry, freedom of the spoken and the written word, freedom of exchange of ideas. Upon these clear principles, democracy depends for its very life, for they are the great sources of knowledge and enlightenment. And knowledge- full, unfettered knowledge of its own heritage, of freedom's enemies, of the whole world of men and ideas- this knowledge is a free people's surest strength.

In the examination of the interactions and relationships between public libraries and their communities, the chapter explores the ways public libraries are actively empowering communities for collective action, and harnessing participation from communities via design. In the midst of such interactions, the case studies also explore how resources in the knowledge commons are actively built and maintained. The remaining discussion in this section attempts to provide an overview of the communities served by three public libraries in Victoria and their relationships with them. Although the three cases of public libraries are examined collectively, the writer has provided an overview and introduction to each of them, with special reference to the demographic profiles of their communities.

1. **Hume Global Learning Village (HGLV):** HGLV, which incorporates the six Hume public libraries, caters for a large area in the northern part of Melbourne, about 20 kilometres from the city centre. Although HGLV includes six public libraries from Hume, its new commemorative building – the Hume Global Learning Centre was established in Broadmeadows, a suburb that did not previously have a public library.

The new Broadmeadows Public Library also housed 'The Age' (a leading Australian news agency) library and a range of services such as computer rooms, meeting rooms, Internet access and a café. The headquarters of the HGLV, which has about 300 members, is also a council facility (reflecting close cooperation with the local council). Apart from the libraries, members include educational institutions, neighbourhood houses, local businesses and community organisations. HGLV is funded by the local council, with support from the Victorian Government's Community Support Fund, The Age newspaper, Ford Australia and the Pratt Foundation. Officially opened on 12 March 2003, HGLV is often quoted as a 'new, innovative place' ...part of a broader investment in learning across the municipality' (Phillips, Wheeler and White, 2005, p. 8).

Its official web site (Learning Communities Catalyst 2005), talks of the cultural, ethnic and social diversity of the Hume population, where perhaps 40 different languages are spoken. The city has strong industrial, commercial and business bases. The web site describes HGLV as 'an innovative project facilitated and supported by Hume City Council that links learning and education providers across Hume City'.

2. The second case was the **Whitehorse Manningham Library (WML)** which, through its eight service points, serves a population of some 250,000 in the eastern suburbs of Melbourne. The area is predominantly residential and, while the population is relatively homogenous, significant numbers of residents were born outside Australia, notably in Southern Europe and Asia. Household incomes are higher than average (Local Government Victoria, 2006).
3. **Upper Murray Regional Library (UMRL):** The Upper Murray Regional Library Service (Albury Wodonga) straddles two states – Victoria and New South Wales (NSW). Serving three (3) local government areas in Victoria and five (5) in NSW, it caters to a population of 130,000 over an area of 28,211 sq km. The area includes a number of regional centres, such as Wodonga and Albury, as well as a number of smaller towns and rural areas. In addition to its twelve branch libraries, it has two mobile vehicles that provide a full range of materials and Internet access, at some 72 sites (Local Government Victoria, 2006).

10.6.1 Resource holdings

Public libraries have begun to engage their respective communities in constructing memories and creating meaning, important processes in the forming of communities. An example of direct engagement is the publication the life stories/biographies of key figures in the community. Again, collection of such resources is reflective of changes in collection policies, compared to the 'rules of exclusion' in the early part of the State Library's history (State Library of Victoria, n.d., para. 30). It is also clearly that public libraries are forging new partnerships and service delivery policies to aggregate and better serve their communities.

Unlike museums, resources in public libraries are diverse and come in a variety of forms. Physical artefacts such as rare books, and donated collections; periodicals, books, magazines, digital libraries, and other digital resources are only some examples.

During the pilot interview with Debra, the first gatekeeper interviewee, the importance of public libraries in building and maintaining access to resources in the knowledge commons was addressed and reaffirmed. Debra told the story of the public library in New Orleans:

When New Orleans was devastated by the flood, its public library stepped into an information vacuum. The librarians set up web centres and made themselves keepers of the most up-to-date information. This was critical in helping people to track family members, and to find out what social security balances were and so on. When I read about this my first thought was this: when things settle down they'll have a new role in the local government.

To add to the role of the public library as a custodian and point of access to resources in the knowledge commons, Debra expressed the further opinion:

Legal information, health information, and all other kinds of crisis and common information – they should be positioned in the public library. It's partly branding – and I don't mean that in a cynical sense. They have the skills, they are a hub, and are generally open for long hours – they are more available than many other places.

Diane, another gatekeeper (interviewee) who is a representative of a rural community in Albury, saw how the public library actively contributes to resources in the knowledge commons:

It is important for the community to protect who we are, what we do, and our heritage, in general. The way to communicate this is through the resources provided for us and the things we create as a community...I see libraries, especially public libraries as a vehicle for collecting our history as well as preserving and making community information available. For example the family history section at the Wodonga Library preserves an important part of the identities unique to the local communities there...

Such reflections reflect the central role of public libraries as custodians of resources for communities. The crisis and common information referred to by Debra are characteristic of resources in the knowledge commons. The issue is this: how are these resources signified in communities to be shared and (made) available to people in those communities? In other words, what and how are such resources justified in public libraries as representative of the resources communities need? This has a lot to do with the purpose of engaging communities – and once this question can be answered, the case study can then point to the appropriate resource characteristics of public libraries.

Although resources in the knowledge commons need not be facilitated by public libraries, and the community can manage on its own to create and disseminate these resources, the public library, when involved effectively, can amplify the strength of these resources.

Debra recounted her experience as follows:

When I worked in the Box Hill – Doncaster region, I thought it was really silly that the region was having help and community information hubs all over the place and none of them were connected. I thought the library's computer system could be the connecting hub for these different centres. So I went to the Citizens Advice Bureaus, the St James and St John churches, the drug information centre, welfare centres, and the hospitals.

When I approached the Citizens Advice Bureaus, they immediately said: "Oh, we might as well shut our doors." I had to step back and articulate the benefits [and processes] from their points of view, so they could understand they could gain from the information being available through the library's catalogue. And we actually did it after a while. You could look up dancing classes in the library's catalogue and find out where you could enrol in dancing classes. You could find out critical information you needed to know as part of the community. Such information was [probably] generated and updated by the Citizens Advice Bureaus and you didn't have to go to a different place to find such information. But it took us months to get past the fear of basic information being available on a computer; which is not their core business, and to assure them that they still have a role to play within the community.

The story points out one issue very clearly: in the pooling of resources, boundaries between territories often have to be broken down before resources can be made available centrally in the public library. In Debra's story, other organisations and institutions were holding resources, and the involvement of the public library created doubts.

The process can be understood by looking at how resources in a collection change when they are being shared or co-created. As a resource pool moves from being shared by a specific community to being shared and available for all communities to access, the resource transcends previous boundaries to move towards greater accessibility and openness. Learning from this perspective, such communities can include other organisations, even if they are non-profit institutions or local councils representative of communities.

The function of public libraries connecting with communities through resources was openly acknowledged by all three public libraries studied, one librarian under the pseudonym of Hurst in WML pointed out the challenge in maintaining a delicate balance in representations.

We really are a local community service, and I think that's one of the intellectual challenges that we have. For one, certain parts of our staff want to reach out and start engaging and providing services to people overseas, through the resources that we have, and we are very excited about that. But at the same time we have staff that want to literally walk out the front door and work with local groups, and that can bring about some intellectual tension within the organisation. Because whichever way you go, and hopefully you'll end up with a mix, you only have one pool of resources.

Hurst further explained that his library maintains diversity in representing communities by running three library services: the traditional library service, the virtual service, and the community building service – utilising different types of resources in all three forms of services. HGLV, on the other hand, chose to integrate the public library within the concept of a learning community, in response to the social and economic problems faced by these communities.

Denyse, a manager of HGLV, said:

Developing a learning culture in Hume was seen as the best way to improve social and economic conditions, and through that grew [the] concept of the Global Learning Village.

On the same point, integrating the functions and resources of the public library within the learning community is a way for the local council to focus on social justice. Wendy, a manager at HGLV, talked about how the public library directly addresses social justice for communities, thus inspiring the concept of the learning village.

We're the only council, I think, to have a social justice charter and a Citizens' Bill of Rights. This approach is of paramount importance to us, and the learning community is the vehicle through which we hope social justice will be achieved.

Resources are actively acquired for the programs within the learning village. Denyse spoke enthusiastically about how the integration of resources in the communities also led to the design of spaces in the new library and how it is being used, e.g., by young people without suitable study space at home. There are similar experiences at UMRL, where the public library has become a learning place. Marilyn pointed out how the educational role is a natural one for public libraries:

Sometimes library users want to know how to update their hardware, or how to update their software, and they're not keen to ask someone who will want to sell them something. They just want to know how to go about it. They think libraries are a good place to come and sit and have that demonstrated. It's a non-threatening environment – a learning space that has no expectations of the learner.

It is important to point out the role of public libraries as custodians of resources in the knowledge commons, characterised by a good level of availability and access. There has been an emphasis here on the public library as custodians, offering a 'non-threatening' and 'safe' environment, 'without expectations'. It is also a place where resources that are made available are openly shared and are accessible to people from different communities. Resources are not expected to be appropriated and usage is not expected to result in a loss of availability for others. This was shown in part by the need to maintain the delicate balance mentioned by Hurst from WML.

Van pointed out how public libraries make resources available for those who would not have access to these without the public library.

Certainly the public library's got very strong relevance to its communities, especially in communities like Moreland. There are a lot of disadvantaged people here and people living on really low incomes and stuff like that. It is a question of making resources available to them that they can't otherwise afford, so it's not only books and basic resources we're talking about, but also assisting with technology and reading disabilities and other subjects. The way I look at the resources- everything – from the library buildings, staff capabilities, to the books and digital resources – everything there is a community resource. I do realise the communities paid for these resources through their rates and taxes. The public libraries, like the councils; are the gatekeepers. The resources don't belong to us.

This reflection, like others from the libraries, stresses how resources in public libraries should be viewed in an open manner, clearly visible and freely available, rather than restrictive. Resources include more than tangible information objects, and depend on communicated and understood rules that make them openly available and

accessible. Some examples of such information resources are of general interest to communities; such as business directories, listings of local services, and inspiring stories of personalities in the communities.

Van further explained how the community may act collectively to defend these resources in public libraries.

[The resources] really belong to the community and they will tell you the same thing if you try to do something to their resources without them agreeing with it. They are very vocal about that. So if for instance you want to close the library, they'll come after you...

This echoed the experience of Merilyn, discussed in the opening part of the chapter, where the community changed the proposition of the local council to cut funding by showing their support of the public library. Through these examples, it is also interesting to ponder about whether or not communities are defending information resources that they recognise as theirs, or the public libraries, along with the information resources, spaces, and services found in them.

In the analysis of resources in public libraries, the section has found how the view of resources by communities has been inseparable from the perception of public libraries in the communities. The role of public libraries is clear in shaping the characteristics of resources in the knowledge commons in this case – making them accessible and even acting as a defender of such resources at times, especially in communities disconnected because of geographical distance and the lack of communication channels. The next section examines the collective processes in the communities of the libraries studied, and analyses the nature of some of these processes.

10.6.2 Collective Processes in the Community

One of the more difficult aspects of the case study has been the investigation of collective processes in the community. First impressions indicated a mixture of collective energies coming from different communities.

At HGLV, implementation of the concept of a learning community has entailed bringing together everybody in Hume with an interest or role in community learning. The library has key involvement in this, including fulfilling the role of learning advocate or facilitator. According to the Denyse:

The council expects the library to have/play a pivotal role and to be the driving force within the community. We need to keep refining our role as the learning advocate or learning facilitator. Members of our library staff are the people who accomplish and develop this facet of our work. We're going/ we need to take that action beyond the library staff and share it with some of our other professionals in the council.

Arising out of the learning community concept has been the volunteering program at HGLV. Wendy explained how people in the community united through the volunteer program:

You either become a volunteer with a view to gaining the skills and confidence you need to go out to work, or you become involved because you want to contribute and it assists you to form social relationships.

In addition, people from the communities contribute to the inspiring stories program, supplementing the collection of community history in the public library. Denyse summarised how people in the communities cooperate towards this program.

We actually have about 80 people on our database, and they all have committed to simply allow us to use their stories to inspire others in the community, particularly young people. And so we act as a broker. We need to go out and do some more promotions on this, but news is already starting to travel. So, if one of the schools or sporting clubs needs somebody to come and inspire the kids, give speeches, do a careers night, or whatever, we go to our database, do the match and ring the person and say, 'Are you prepared to go to this school at this time and do this activity?'

While the resources maintained by the public library were instrumental in helping people to connect with one another, such cooperative activities (examples are the inspiring stories in HGLV and volunteering program in HGLV and other libraries) also served to inspire further actions and synergies amongst people in the community. As people are brought together for cooperative activities, there is a potential for collaboration.

This also suggested that there is certain openness about collaboration that springs from cooperative interactions. Similar sentiments were shared by UMRL. Marilyn illustrated this with the example of mobile libraries.

My mobile libraries are very much part of the local communities; a community gathering point if you like, and a social interaction point, depending on what age group you are in. When a mobile library pulls up, people come from all over the place. You don't know that they're there, and then all of a sudden there are five or six cars. The library becomes the social hub for the hour or two hours that it's there. And having been out on it, I see people exchange recipes, bring along resources they think we want others to have; and we spread the word about new activities and resources in the library. I think that's a tiny picture of what happens in the bigger libraries. It's just that you are not quite as aware of it because you're not hearing it. You're in a small space with the mobile library, so everybody chats and you hear it.

There are many people who like to sit and chat. That's reflected in the Wodonga Library, where you'll find a lot of people working on PCs. There's also a newspaper area where a lot of people sit around. And there are lounges where people meet and chat. So I think people don't necessarily say 'I'll meet you at the library, but they do meet up and interact at the library.

Mobile libraries provide cooperative spaces for communities, with the aim of sharing resources and making them available for isolated communities. This has been a service welcomed by many in the community. Marilyn's example served to demonstrate how libraries, as cultural institutions, provide structural spaces and cooperative rules for people to interact – but based on these terms people are then enabled with the capacity to innovate new ways by which they create and share resources. This is what distinguishes collaboration – that while they are not totally without rules or bases that underline coordinative and cooperative interactions, they also have the capacity for innovation amongst communities.

A community leader, Kate, explained how collaborative activities have been inspired amongst people because of the mobile library.

The little trucks that go out carrying books to the communities in the rural areas are very helpful and important. Because of rising petrol prices, travelling to central towns and areas can be quite difficult for some of us. The mobile libraries allow people to pick up books, read them and drop them off afterwards. Aside from education, the mobile libraries provide networking activities. They play an important social role because of the networking and social interaction taking place there. People are able to have coffee and tea as they go to the mobile libraries, and network while they access the services of the mobile libraries. I know of so many partnerships and collaborations that have been initiated because of our interactions at the mobile libraries.

While they need not follow the same forms of interactions, it is important that the rules governing the earlier examples of cooperation are explicitly communicated to build trust in sustainable collaboration.

WML, on the other hand, found rich benefits from the coordination of community activities, given the demographic diversity in its local communities. Hurst explained the importance of the public library service as a coordinator.

Our communities come from a range of cultural backgrounds. In the Box Hill branch, for example, we have an enormously diverse community. People think: oh yeah, eastern suburbs - White Anglo-Saxon middle-class people. That's not true. There's a huge Chinese population. When we hold story times, three generations come. You get the young kids – the pre-schoolers, you get the parents, and you get the grandparents. They all come down. It's a family event, a social event. It's an incredible challenge catering to the needs of three generations.

While cultural integration is a broader issue to be addressed at policy level, the experience of WML demonstrates how coordination is needed for communities that are characterised by cultural diversity. Like the other two libraries, partnerships with community organisations and local councils are also instrumental in initiating and inspiring collective processes in communities.

This was elaborated by an example of neighbourhood houses from Hurst. Neighbourhood houses are known by many names, and some of them are: community houses, living and learning centres, and neighbourhood centres. Sharing similar objectives, neighbourhood houses are local organisations that provide social, educational and recreational activities for their communities in a friendly and welcoming environment. As part of their mission, they also operate privately as registered training organisations (RTO) in order to meet the training needs of local communities.

When you're actively working with the neighbourhood houses and their communities you'll have exposure to each other. I mean, a community may say: 'Well, we'd like to do this but we've got no money. Who can we approach who may have the resources?' That happens a lot with us, and we do the same thing too. It happens both formally and informally. Quite often it will just come up in a conversation because if you're out there participating...you'll suddenly find that you have some goals in common with the local president of a neighbourhood house and you'll think: 'Oh gee, we could do that', or, 'That's a good idea! Eureka!' And what happens next is that the community will get together and work with us towards common objectives.

The writer's analysis confirmed initial impressions there was a variety of processes found in communities, contingent upon the strategic actions of the libraries and how they harness participation – bringing the discussion to the next two sections.

10.6.3 Strategic directions

Debra, the first gatekeeper interviewed for the case study, pointed out the power and potential of public libraries in engaging communities:

They have freedom in choosing resources; so in a way, they have freedom of action. They are at an advantage in always having something appealing and interesting to the user.

Indeed, this was found to be the case in all three libraries studied. All the features - from information resources, to the spaces, to the services provided by librarians – were used extensively in multiple ways.

Librarians at HGLV consider partnerships as their major achievement. Wendy mentioned they had just won the local government National Award for Excellence. The library staff members have undergone training to enable them to broaden their role in the community:

We've done an action learning program with them ... and they have learned new skills.

It appears the library is working in a supplying manner; but there is more to this. The library also takes programs out into the community; for example, the story time program is taken out to play groups, kindergartens and neighbourhood homes. With this program, library staff has searched for people in the community who speak two languages, English and their own, and have paid for their help, which makes them feel valued. Also, as revealed earlier, the volunteers' program is seen as one of HGLV's strategies in its learning community concept and model. Through the volunteers program, the public library acts as a participant on the grounds of their communities.

Another example by which communities are engaged with the library is the 'Inspiring Stories' program at HGLV. The library acquires and shares stories that belong to their communities, thereby generating and collecting community memories. These are collected in a database, and form the basis for displays in the library. Wendy described the concept thus:

The idea of it is that these people in the stories are able to go out and be advocates, saying, "You can achieve anything." And living in Hume, we have people who have gone out and achieved well in their working lives and their sporting careers.

Such programs are initiated by the library, and communities are drawn into close engagement with the library through the programs. While the innovation in such programs is widely appreciated and recognised, the new ways that libraries are working with their communities can cause some concern and fear. Denyse puts this into perspective:

...our local neighbourhood houses were really very nervous about us. They (as most neighbourhood houses do) sometimes operate out of an unpleasant environment, and they thought that with this big beautiful building...we would

take the business away from them. So we very quickly said that we had no intention of becoming an RTO [registered training organisation]...This is a building. It's a facility that is here for you and others to use. By all means come and use it and we'll be more than happy to support you, by giving you discounted access, for example.

Regarding the experience shared by the managers of HGLV, the writer recorded in her diary:

The fears of the neighbourhood houses were not grounded in reality. And when HGLV explained that their intention was only to act as brokers, to guide people to the different services available, their fears evaporated.

Merilyn, the chief librarian of UMRL, acknowledged the reality of such experiences, but added that public libraries need to be flexible and work in a variety of ways:

...I think, if you're smart, you'll partner with your neighbourhoods and communities. You may still initiate and hold that service or program in the library, but you may get the neighbourhood houses, or whoever is more relevant, to actually run it, and they can then connect with the people...so I think that's how you deal with the partnering...

The previous discussion covered how multiple collective processes can be at work in communities. It sheds further insights into how cultural institutions can interact with communities in a recursive manner: They flexibly shape the collective processes in their communities. At the same time, the working modes of libraries are influenced by such multiple collective processes, fluidly emerging from the communities.

Merilyn also quoted other examples, where the library works as both a supplier of services and a co-participant of other services and programs with partner institutions:

We belong to the Chamber of Commerce, and there was an opportunity in the beginning for us to stand up and say "Well, we're here to do this and that for you". It would have been easy and straightforward but I think it would have gone 'phut' over their heads. But we've worked out that it's better for us to be there for a while, to get to know everyone and to become known, and then only start to say why we're there and what we can do...we're now seen as part of the business community and helping them work towards the town design...we've become a bit like: you're a builder and I'm a designer, we get together and build houses. So the library can now become a partner because we can supply you with the latest up-to-date information for your business and all that, whatever your needs are...

This was a good example of how the library moved out of its working mode as a supplier and became a participant in the business community, working alongside the plans and activities of the community. As Merilyn rightfully pointed out, such interactions and relationships need a longer time to build and emerge.

Merilyn provided another example in which the library was both a supplier (in terms of providing spaces and personnel) and a participant (in the activities of an institution). This is the example of homework centres with a school:

Homework centres have been around for quite a while, but this one is really different and we're involved in it. There's a high school which has students with various challenges, such as: a) when they go home their parents may not be home for various reasons; b) they don't have access to the Internet

and other resources and c) they don't have the skills to do research. So we're [having a trial with] a number of children...where we will actually run a homework centre for the school [in the library], and the school will monitor the children for their behaviour and other problems. We manage through a paid coordinator and some volunteers. It's a club in the high school that kids want to belong to. It's involving the parents as being part of the support as well...

What began with the library as a participant in a high school-initiated program had the potential of impacting on students in other schools, with the library working as a supplier of spaces, information resources and services – a different way of interacting with the community. This is expressed simply by Marilyn:

We'd like to look at this in the long-term – once we have a successful trial and the program is up and running, we want to get this service running in remote areas as well and we want to get businesses to actually support it on a financial basis, because it's in their interest to have the kids come through being well-educated...I mean it's all part of that community thing...

In this case, it was demonstrated how the strategic action was quite different yet important. In the early stage, when the library was running a homework club for the high school, the library was a participant, as well as a provider of a safe and central space which was accessible to the school, children, and parents. By aligning itself with the specific needs and activities of the school, the library built a deep relationship between the library and the school. At the same time, the project paved the way for the library to impact other schools and communities by becoming a supplier of the same service to them.

WML shared similar experiences with the homework centres and clubs, although the strategic directives they started with and later developed were rather different from UMRL. Hurst elaborated on their experience in detail:

We run a migrant and refugee homework club together with the local youth organisation and council, and what we've done is opened our staff training room for use by the homework club, as well as our meeting room. The kids come in, work on all our computers, and complete their homework. It's facilitated by the youth workers. Originally, we were going to have no real interaction apart from the courtesy aspect of it, but there were many good ideas from the youths, and it grew to a stage when we were having about 40 kids turning up. Later, we found it wasn't just a term activity, because the parents liked the idea of the kids going to the library instead of TimeZone (*a gaming and arcade centre in Australia*). Even during the school holidays, the kids kept turning up. Eventually we decided to run some activities with them.

For this project, the library began working with the council and youth organisation by supplying students with the space and computers the homework club needed. The library was working in a supplying mode, and was not actively participating in the activities of the homework club. However, as Hurst pointed out, over time the library's interaction evolved, and the strategic action became participatory within the community over time. This resulted in benefits that deepened the library's relationship with the community. As Hurst explained:

...over time we found that so many of the parents were working long hours, with two jobs – they had a great challenge in establishing themselves - so where the teenagers went, their younger siblings came, too. In fact, we found that we were running a homework club for teenagers, but had all the younger kids, too...and we had to provide something for them as well, like the story

times. It wasn't in our initial planning, it wasn't funded and I wasn't sure [of how it was going to fit in with the homework club]. But we just started doing it because it seemed so natural...

In hindsight, this was a demonstration of how the public library saw itself in their communities. It was important for them to align the way they work with the community's needs. At the beginning of the interview, Hurst stated this clearly in the following but it was only through the earlier examples that the perspective was clarified:

I think it is about working and integrating with other agencies...I mean if we just stay by ourselves, circling the wagons, we will become irrelevant. We have to be out there in the dynamics of the council and the communities...

Again, the importance of public libraries' understanding and acting upon the needs of their communities is highlighted. Theodore is a representative of a learning and community house located in the same areas. He gave the following comment on public libraries:

I think the concept of a library as a building standing on its own, has changed. It's crucial for libraries to become part of an integrated facility, working with other agencies. The answer is to have the right agencies or groups [near to] or within the library building. I tend to think of libraries in the human service area. It's important for them to be situated next to the relevant community agencies.

Theodore pointed out an important challenge for libraries working in the supplying mode. Through joint services and programs, communities and other institutions become partners with the libraries – but the key is to involve suitable institutions and agencies; and sometimes it can be a challenge managing such relationships and the boundaries or scope in such partnerships. This might be where the alternative working mode comes in as a suitable strategy – where public libraries participate and align themselves with the services and programs of other institutions and agencies.

10.6.4 Harnessing participation

While examining the working modes of the various public libraries, several insights informed the way these actions resulted in or enabled participation amongst their communities.

Denyse discussed how a different approach towards participation contributed to the success of a service:

We were running monthly bilingual story times in the library, and they were badly attended at first. People were not participating and no-one seemed interested...that's the reality of it, and we had people in the library saying, "Oh well, no one's coming, we should cancel it". But others among us were saying, "Well, we know that we have roughly 9000 (nine thousand) people in the area who speak Turkish and we know that they have this great need". So some of the staff came up with the idea to stop waiting for people to come to us, but get out there and go to the kindergartens.

Wendy shared further insights on why the change in approach worked.

It was a brilliant idea to take the story times out to the community. The library building can be quite daunting for some people, especially people who are socially isolated and don't speak much English. At the same time, one of the aims of the project is to encourage integration.

This was only one of the many strategies and actions by HGLV. Other than making the many facilities available for hire by schools, community centres, and other institutions, HGLV actively seeks partnerships with local community organisations, such as neighbourhood houses and adult learning centres.

The distinction between the participation of communities in the activities of HGLV and the participation of HGLV in the activities of their communities was far from apparent.

Denyse: We have a strategy which aims to spark people's interest in the Internet and show how information technology is relevant to them. We took IT to recreation centres, community groups, sports clubs and so on, to show how it can be effectively utilised in their activities.

In this example, though it was an activity initiated by the HGLV, it was also integrated with the activities of their communities. The project established a number of IT hubs around the local neighbourhoods for their communities; and the people were also able to use these IT hubs to enhance their own activities and meet their information needs.

Findings from UMRL shed further insights on the fusion of libraries and communities. Diane, a community representative from the local rural region of Albury, named mobile libraries as one of the most useful services of the public library service, one that has become part of the everyday life of their communities:

...the librarians that come with them [the mobile libraries] are absolutely wonderful. They have so much to share and they really make an effort to find out our interests...and then they bring the relevant books and resources. At the same time, the mobile libraries also provide networking activities...each mobile library creates a social hub because of the networking and social interaction that takes place...I know it is expensive, but it is such a good service for the community; for the community building and capacity building that [takes place as a result]...

Mary, a community leader working at a women's health centre from the area of Wodonga (one of the areas served by the UMRL), pointed out how public libraries could integrate their activities with the objectives of community organisations even further:

Since you made contact with me, I've been thinking: well, what role can the library play for us and our clients? And it would probably be helpful for instance if they were involved in some of the same...for a lack of a better word – social actions as we are. They do have Reader's Week, for example. But maybe they should also support and create awareness of our other issues such as domestic violence. Such publicity by the library service would be a great help to us in our work...

This interview helped the writer to realise that action-based research methods can potentially exert influences and impacts on community organisations. After the interview, the writer was brought for a tour of the women's health centre and the reflection provided by the writer after the tour echoed suggestions that came up in the interactions during the tour.

...in the library were three (3) bookshelves, nicely packed on one side of the wall...it was clear that it was a special collection, from depression, self-help, medical health, even fictional stories purposed to provide inspiration and empowerment...then [Mary] pointed out that having the library in the women centre was important as a place that belongs [to the women]. Then we were talking about how the library could actually provide support to the community in that manner... [Mary] raised the point how some of the women she counsels will not walk into the public library if they really wanted resources on topics that were sensitive or touchy to them; such as women in depression...I thought that point was really important in how there is a need for spaces with well defined boundaries for certain communities.

But [Mary] also explained that they have not had much time or money to update the collection very often as there is significant work involved in screening the language and contents of the books by counselors to make sure they were not written in any unedifying manner. I think we both had an epiphany then...that's where the library could really be valuable.

On the issue of participation, WML also saw it as necessary that the public library participates in the activities and dialogue within the community in order to trigger new activities and services. Hurst put this in perspective:

Quite often a project will just come up in a conversation because you're out there participating. You go to the annual meetings, move around the local environment, and expose yourself to the neighbourhood houses and groups. You can be having a cup of coffee or a glass of wine together with other people, when you'll suddenly find that you've got something in common with the local president of the local neighbourhood house, and you think "Oh gee, we could do that!" or "That's a good idea!" And such moments can happen both formally and informally; but the key thing is to be 'out there' participating.

Although the starting points for the three public libraries were different, i.e. sometimes an activity was initiated by the library, and sometimes by the community – all involved entities became co-participants and their activities become fused with one another. Distinct boundaries between an activity that belongs to the community and one that belongs to the public library breaks down, as demonstrated by all cases.

By the same token, participation has become an inevitable element of public libraries – regardless of whether they are participating in the activities of communities or if the latter are participating in the activities of public libraries. On these points, the very act of participation is seen as a strategic way to achieve the desired state, or potential of public libraries. In the interview with Van, the following motive was suggested:

Beyond the concept of providing resources and services, it's about bringing together the community and creating opportunities for people in a non-threatening and freely available space...and you cannot connect with communities without participation – whether it's within the library or out of it...

10.7 Implications for the future

One of the issues that came up during many of the interviews related to a sense of a divide of services between rural and city public libraries, even though they may be under the same public library service. In a visit to the region of Albury and Wodonga, this issue was made clear during visits to public libraries in bigger and smaller towns. As the writer noted at the time:

After coming out from the Albury public library I made an attempt to visit the public libraries in the smaller towns such as Beechworth and Chiltern. To my surprise, some of these public libraries do not open everyday (one was closed when I visited) and have obviously fewer resources and much smaller. I suppose it might also be reflective of the size of the population living in those towns...but I now understand [Diane]'s recurrent emphasis on mobile libraries...

The need to address divides in terms of resources and services is also felt by community organisations, who work directly with their communities. Karl echoed the concern in a detailed explanation:

...you are probably aware of certain divides between [us], the economic and technological divides, literacy divides and all that. So if we can't 'bring' everyone along with what we do and ignore possible gaps like technological skills, literacy, and geographical distances, what happens is that can cause social dislocation, and that affects everyone...so that brings us down to focusing on cohesion on using that as an underpinning idea...

The same challenge was also felt by the libraries themselves, who saw the need to manage differing levels of services. In an interview with Kate, the motif in digital information resources was echoed and how public libraries as cultural institutions can manage the challenge was suggested.

Kate: ...a lot of stuff goes online [now], [and] there is a whole lot of people that won't have [access] because they are not in any other format. So you're starting to divide people, [though] not consciously. There will be those that are better informed than others and then you start to get a disproportionate swing to various ways of thinking.

NP: Do you think libraries can become that bridge to overcome this divide?

Kate: I think so. I mean people sit and play [games] and interact with people over in America and other places...and I think that's the sort of thing that we can do. I don't mean that they should play games in the library...but that's the sort of interaction we can facilitate. We don't have that kind [of service] here, but if I log on I can probably talk to somebody in the Library of Congress and they'll have the answer for me...that's the sort of thing we have got to be able to do, particularly for people who don't have access to many things... Even if they've got the PCs at home, they may not have the searching or research ability, knowledge, or resources of how to acquire those skills.

On the part of the libraries, it was also admitted there is an internal challenge to prepare public librarians to take on roles in the contemporary context. Gaps in technological skills were highlighted, along with the paradigm shifts required in the mindsets. While admitting this challenge as one of the most ongoing one, Wendy suggested that there is a wider acceptance of changes in the librarian's job functions.

Well the person who says, "I just want to work in my library and be left alone and check books in and out and answer references" might get upset because it changes his world view. But I think most librarians or library-trained people in [Australia] just see these changes as how they ought to be.

Another issue that was observed related to strategic partnerships with community organisations. As stated clearly by most interviewees, libraries do form many partnerships. Hurst thought that there should be a focus on partnering community

organisations to emphasise on the community building role of public libraries, while evidence from other public libraries found various types of partnerships, including cooperative service agreements those with other cultural institutions like the museums and art galleries. Latter types of partnerships were often pointed out to serve community building roles as well. The cultural contexts and specific needs of communities should be important factors to take into account. At the same time, the potential of libraries as knowledge commons and sites of participation from strategic partners needs to be more strategically considered.

10.8 Main insights

Insight 10A: In Victoria the boundaries between different resources in terms of accessibility and openness for derivative works to be created are shaped by the levels of sharing, participation and technologies used. These boundaries are also negotiated with communities.

Insight 10B: Public libraries in Victoria play a fundamental role in coordination, facilitating cooperation with greater intensity of communication and structural processes, and inspiring collaborative activities which are less controlled and are flexible to changes. These collective processes are observed as stages by which public libraries and communities move towards greater innovation and reflexivity.

Insight 10C: Public libraries in Victoria engage communities both within their premises and in the sites of communities. In the latter, this is often enabled by partnerships with other institutions, such as neighbourhood houses, municipal councils, and schools.

Insight 10D: For the public libraries in Victoria, participation is seen as a way to inspire new activities and develop strategic directions. In addition, it is also used as a method to engage communities in a non-threatening way.

Chapter 11 (Case Study 4) – Public Libraries in Singapore

11.1 Scope of the chapter

- Explains the focus of the case study, consisting of three accounts of public libraries from Singapore. Elaborates the research engagement with public libraries in Victoria, with a summary of the research activities that were conducted.
- Provides a background of public libraries in Singapore, and their current roles and responsibilities in relation to the National Library Board Act of 1995. Discusses their relationships with communities in terms of resource holdings, collective processes, strategic directions, and harnessed participation.
- Explores some implications for the future, such as the potential of libraries as agents for digital and social inclusion, and as catalysts of change in communities.

11.2 Focus of case study: Public Libraries in Singapore

By early 2006, the researcher began to examine the relevance of public libraries in Singapore and how they can provide comparative views from a different cultural context. Due to distinct differences in the establishments and governance of public libraries in Singapore, the researcher realised that individual accounts of different public libraries, located in various residential suburbs with distinct demographic profiles of communities, will need to be enriched by strategic insights from key personnel from the National Library Board. Three accounts of public library services were selected with referral from interviewees from the National Library Board. Permissions were acquired via email with library managers from these libraries. In addition, individuals who were recognised to provide perspectives on the development and use of public library services in Singapore were further interviewed as gatekeepers.

In this case study public libraries demonstrated central roles in utilising information resources to engage their communities to participate in public activities, often involving the use of communication technologies and collaborative partnerships with other institutions and community organisations.

11.3 Research engagement with public libraries in Singapore

At a librarianship and information education conference in mid 2006, the presentation of a paper on the potential of cultural institutions as adaptive institutions in the contemporary context sparked discussions with academics in Singapore. The relevance of studying public libraries and their interactions with their communities and at the national context was clear. Building on a visiting research fellowship with Nanyang Technological University, the researcher began to develop the case study of public libraries in Singapore.

The relevance of shared resource holdings as knowledge commons was introduced, the ways by which public libraries are engaging different communities using these resources, and how such participation shapes (if it does) the characteristics of shared resources was made known. Although it was apparent from the onset that the term

'knowledge commons' was unclear, the concept was not new. An investigation of resources purposed to nurture cultural democracy, foster a learning society and relationships in the communities was of interest, and strategic actions by the National Library Board since 2000 had positioned public libraries towards these directions. It was also realised early that there was a significant utilisation of various contemporary technologies in recent years, reflective of the technological influences on public libraries in Singapore. However, a lack of current research on how such influences may shape the properties of shared resource holdings in the public libraries of Singapore pointed to a clear need to better understand this complexity.

As a visiting research fellow, the research worked on adapting questions and research aims that would be appropriate for the specific issues and cultural context of Singapore. Table 11.1 shows a chronological summary of the events that elapsed, with pseudonyms given to interviewees where applicable.

Task	Description	Interviewee(s)	Duration
Interviews	Pilot interview with a university librarian, who has had significant experience working in public libraries in Singapore. Key perspectives on the current challenges and issues were gathered.	Davis	Apr 06
Planning	Conference in Singapore which initiated discussions with academics and leaders in librarianship in Singapore. Interview questions were adapted for the case study of public libraries in Singapore.	-	Apr 06
Fellowship	Researcher began a visiting research fellowship in Singapore. The National Library Board was contacted and interviews were also set up involving librarians from three different public libraries.	-	Aug 07
Interviews + observations	Semi-structured interviews with key personnel from the National Library Board (NLB) and library managers from three public libraries: Jurong Regional Library (JRL), Marine Parade Community Library (MPCL), and Jurong West Community Library (JWCL). Ethnographic observations were also noted during these field visits.	Kylie (JRL), Thelma (JWCL), Trish and Tanya (MPCL), Olivia (NLB)	Aug–Sep 07
Interviews	Further interviews with selected individuals, who were recognised to possess expert or unique knowledge on the information needs of communities, current issues and challenges facing public libraries, the usage of the libraries, or strategic partnerships that the libraries have developed. Some of these interviews were conducted concurrently with field visits to the libraries.	Faith, Wayne, and Tom, Irene, Kate	Aug-Sep 07
Publications	Findings contributed to a report written for NTU at the end of the visiting research fellowship.	-	Oct–Dec 07
Table 11.1: Research engagement with public libraries in Singapore.			

11.4 Foundation and Development

In many countries, a national library board does not manage public libraries. It manages the national and state libraries, and advises the government on issues pertaining to libraries generally (Ramachandran, 1999). In Singapore however, the National Library Board (NLB) has always been directly responsible for *both* the national library and public library functions. The provision for this dual function within the NLB was first created by the first National Library Act of 1958, and later replaced by the National Library Board Act of 1995.

Following a review of library services, the National Library Board of Singapore was established in September 1995 and became an umbrella organisation for almost all libraries in Singapore – including the Reference Library, academic and special libraries, and 23 public libraries. Prior to its establishment, the Board was a department under the Ministry of Information and the Arts (Ngian, 2008). The National Library Board plays a central role in the activities of the public libraries, and engagement with their communities.

The ‘Library 2000’ report released in early 1994

If there was a year to mark the start of radical transformation of the public libraries of Singapore, it should be the year 1995 – after the release of the ‘Library 2000’ report in early 1994 (MITA 1994) – and the launch of a new team under the leadership of Dr Christopher Chia. The report was an outcome of the Library 2000 Review Committee appointed in 1992, with the sole mission of thoroughly ‘re-thinking the role of libraries in Singapore in line with the thrust to reposition Singapore’s economy’ (Garg, 2005) at that time. Along with this mission, the role of information and communication technology in contemporary library services was deeply considered. The report recommended six strategic thrusts (MITA, 1994) as follows:

- An adaptive public library system
- A network of borderless libraries
- A coordinated national collection strategy
- Quality service through market orientation
- Symbiotic linkages with business and community
- A global knowledge arbitrage.

Three key enablers were also identified as ‘pre-requisites’ (MITA, 1994) in bringing about the changes proposed in the report: the setting up of a new statutory board, staff development, and the use of new technology. Thus the National Library Board was formed which spearheaded the development and transformation of libraries in Singapore through various policies and strategies.

The transformation of public libraries in Singapore has been of special relevance to the themes explored in the thesis. In addition to the fact that they manifested distinct national and institutional cultures (see the next section for discussion on cultural elements), public libraries in Singapore have grown from being a rather traditional and conservative public lending service to being a provider and promoter of knowledge resources in many forms. This development has taken place in a relatively short period of time.

The development of public libraries in Singapore

The transformation described above was closely associated with a change in the political climate of Singapore. In 1990, Goh Chok Tong became the second prime minister of Singapore after the founding Prime Minister, Lee Kuan Yew, stepped

down. At that time, Singapore's economy was recovering from the recession of 1986 – and Prime Minister Goh was eager to prepare Singapore for the challenges ahead (Garg, 2005). His draft blueprint, 'The Next Lap', called for a number of studies to be undertaken in the areas of preparing Singapore for the challenges ahead and making the visions in the blueprint achievable realities. One of these studies resulted in the appointment of the Library 2000 Review Committee in 1992 and eventually the Library 2000 report that set the pace for transforming Singapore's public libraries.

The National Library Board introduced above was established on 1 September 1995. Its aim was to lead libraries in supporting Singapore's position as a 'learning nation' in the information age (Garg, 2005; MITA, 1994). This mission is clearly stated on the website of the National Library Board (NLBa, n.d.):

...to spearhead the transformation of library services in Singapore in the Information Age. NLB's mission is to provide a trusted, accessible and globally connected library and information service so as to promote a knowledgeable and engaged society. It sees itself as an inspiring beacon of lifelong learning, bringing knowledge alive, sparking imagination and creating possibilities for a vibrant and creative Singapore.

The history of public libraries in Singapore goes a long way back to the 1820s, when the founder of modern Singapore, Sir Stamford Raffles opened the 'Singapore Institution' which housed the first library in Singapore (NLBc, 2003). In 1844, after more than two decades of growth as a thriving colony and the success of the library in the Singapore Institution, several residents raised the need for a public library to be set up in Singapore. This led to the opening of the Singapore Library on 22 January 1845 – the first public library for all residents of Singapore (Tan and Nasir, 2002).

It was also at the Singapore Library that the foundation of the Singapore Museum was laid. In 1849, a few years after the opening of the Library, the Governor of Singapore presented to the Singapore Library two ancient gold coins given by the Temenggong of Johore (now part of modern Malaysia). The chief librarian of the Library also became the curator of the Museum Committee at that time (Tan and Nasir, 2002).

From 1845 onwards many branch libraries were established in the suburbs of Singapore. These functioned as traditional public lending libraries (Garg, 2005) until 1995, when the changes proposed in the 'Library 2000' report were implemented.

The changes proposed in the report also took into account the needs of communities. For example, while maintaining that public libraries needed to focus its development on both 'technological and cultural tracks' (Yeo, 1995), the report recommended that public libraries be restructured into a three tier structure to relate to the cultural preservation of 'self and family' (Reid, 1997, p. 208): regional libraries, community libraries, and children's libraries. Presently there are three regional libraries, twenty community libraries, and ten children's community libraries.

The population had grown to be mostly bilingual in English and a mother tongue (e.g. the Chinese would also be proficient in the Chinese language). In addition, the number of professional workers had grown, and they required extensive and specialised information databases (MITA, 1994). Like the Asian Civilisations Museum in the earlier chapter, the library was seen to be a nucleus of culture and heritage, which would contribute significantly to the nation's need to build shared values, histories and destinies (Singapore Government, 2000).

In 1995 there was also a revision to the National Library Board Act which significantly expanded and broadened the definition of 'library materials' to include materials in various media forms, in order to meet the diverse needs of the communities (Ramachandran, 1999; NLBc, 2003; Garg, 2005). Most of these revisions included a strategic inclusion of media forms enabled by computing technologies and the Internet.

The goals contained in 'The next lap' (mentioned earlier) also influenced the direction and strategies of the National Library Board in relation to the development of public libraries in Singapore. In the book, the social and physical assets of Singapore – such as people as intellectual capital and Singapore's competitive advantages in its geographical position and economy – are envisioned and highlighted, ultimately establishing the foundation for the NLB's contribution towards national development in Singapore. The same revision to the Act passed in 1995 also empowered the National Library Board with direct authority over its member libraries (including public libraries) beyond the strictly advisory powers of the Board under the previous library act (Ramachandran, 1999).

At the time of writing there are more than thirty public libraries across the relatively small country. Each of these libraries is located within walking distance from public transport interchanges or stops, and many of them are also positioned in the midst of public residential neighbourhoods. In its corporate brochure it was clear that the NLB saw public libraries as learning centres and social hubs which also penetrate the leisure spaces of their communities:

We prime ourselves to be a major lifestyle activity besides Singaporeans' two main leisure options – shopping and dining. Our shopping mall libraries are positioned to make inroads into the Singapore heartlands. These highly popular libraries contribute over 40% of all library loans and visitorship despite amounting to less than 20% of the total physical space in the library system. They have become community gathering places and play host to activities that enrich the lives of many. (NLBc, 2003, p. 6).

There are many differences in the types of resources held by the three types of public libraries. The regional libraries which are located in large neighbourhoods such as Jurong and Woodlands contain collections targeted at people living in those neighbourhoods as well as those who have more specialised information needs. They have a wide range of reference materials in addition to their general collections. The community libraries have fewer reference materials; but are focused on servicing people living in the suburbs in which they are located. There is usually a balance of both fiction and non-fiction materials, in various media forms.

The community children's libraries, a concept that began as a joint venture between the People's Association Party (PAP) Community Foundation and the National Library Board, are usually located in the void decks of government housing estates, and are focused on meeting the needs of children aged below ten. These children's libraries hold a variety of books in four languages – English, Chinese, Malay and Tamil – as well as interactive multimedia stations.

11.5 Current roles and responsibilities

Public libraries in Singapore are governed by the National Library Board with the National Library Board Act of 1995. As explicitly stated in the Act, there are functions granted to the Board that directly relate to the core services of public libraries in

Singapore. As mentioned earlier, the National Library Board manages both the national library and public libraries in Singapore and this is made possible through the provisions of this Act. The relevant functions as they relate to public libraries in Singapore are elaborated in Table 11.2.

Functions (quoted from the Act)	Commentary
(a) to establish and maintain libraries and to provide library information services.	This is a provision for the board to directly manage all libraries established under the board. 'Library information services' refers to 'any information service provided and managed in conjunction with a library or library service' (National Library Board Act, 1995, p. 1). This provides a strategic action plan for the library board to pursue projects with other libraries in order to provide other information services in addition to the existing public library services.
(b) to promote reading and encourage learning through the use of libraries and their services.	Implies a focus on the promoting optimal use of resources towards Singapore's strategic thrust in promoting 'lifelong learning' (Garg, 2005).
(c) to provide a repository for library materials published in Singapore.	Along the lines of the earlier point, this section of the Act relate to the importance of promoting equal accessibility to all library resources in Singapore. For public libraries as public and shared platforms this has special significance.
(d) to acquire and maintain a comprehensive collection of library materials relating to Singapore and its people.	Reflective of the libraries' main charter to promote culture and education relating to Singapore with their resource holdings. This clause also has implications for guidelines on the collection development policies in the public libraries.
(e) to establish standards for the training of library personnel in Singapore.	Since the establishment of the Act, the Board had been working closely with the National Technological University to develop post-graduate library training programmes and also with the Temasek Polytechnic on para-professional training programmes' (Ramachandran, 1999, p. 5). Scholarships are also offered to staff members who enrol in the courses. In addition, the National Library Board Institute is also set up to ensure that the professional development of staff members stay relevant and of quality.
(f) to provide advisory and consultancy services concerning libraries and library information services.	This function not only relates to the role of public libraries in supporting educational communities but also propagates the establishment of cooperative agreements with other institutions and agencies.
(g) to compile and maintain a national union catalogue and a national bibliography.	These functions relate to public libraries as official and authoritative places for holding resources of significance. In the context of the thesis, this has fundamental implications for cultural institutions as places for communities to contribute and store such resources. The deeper issue then, lies in how meaning or significance are constructed or reconstructed (by both the community and cultural institution) around such resources.
(h) to advise the Government on national needs and policies in respect of matters relating to publicly-funded libraries and library information services in Singapore.	

Table 11.2: Key functions and implications for public libraries in Singapore.

The possibilities of public libraries to overcome barriers to information access and to promote lifelong learning were manifested in Singapore in various ways. In 1996, shortly after the establishment of the National Library Board Act, the NLB embarked on a venture with the National Computer Board (NCB), a major Internet service provider, Novell and Compaq to provide free Internet access in all public libraries in Singapore (Ramachandran, 1999).

To date, this service has grown to also include wireless Internet service in the National Library. While providing free access to digital information and information repositories in the public libraries, it was also argued by Ramachandran (1999) that the move also played a major role in shaping the adoption and use of the Internet in the public community sphere in Singapore.

11.6 Relationships with communities

The dual functions and powers granted to the NLB by the National Library Board Act have been clearly argued for its effectiveness in developing public libraries in Singapore in the literature (Ramachandran, 1999; Ngian, 2008; Reid, 1997). For example, clause 7 of the Act grants the NLB power over 'publicly-funded libraries' (National Library Board Act, 1995, p. 3). According to the Act's definition, 'publicly-funded libraries' refer to 'all libraries owned by the Government or any statutory body and such other libraries which are, directly or indirectly, funded by the Government (whether fully or partially) as the Board may determine' (National Library Board Act, 1995, p. 1). In other words, except for privately funded corporate libraries, all other libraries in Singapore will come under the governance of the NLB.

The growth and effectiveness of public libraries in meeting the information needs of communities were also acknowledged by Davis, in a pilot interview:

I think Singapore has been very blessed in the level of support coming from the government to develop the public libraries for the people.

When asked for clarification on the 'level of support' as mentioned by Davis, funding from the national budget and the exploration of new services were explicitly mentioned. However, Davis went on to raise questions on future challenges of public libraries in a detailed contemplation on other possible roles of public libraries:

...there is another space that I think public libraries are not adequately addressing. When someone encounters information what the library does is that we stop at meeting the information need. I think [public librarians] should go beyond that...simply because there are many more sources for people to meet their information needs [today]. I think public libraries could intervene in the space between the information object and the person...helping to turn information into knowledge. Can the libraries intervene? Can the library help the user in transforming information into knowledge? I don't have the answer – maybe it is a space that don't belong to us...or a space that belongs only to the individual. But this is one aspect public libraries could think about...

The sentiment highlighted how interactions between the public libraries and communities have possibly grown beyond meeting information needs. Another interviewee, Olivia, affirmed this thought as she talked about the various 'new' services the NLB has been exploring in public libraries, one of it the 'portable library', which makes it possible for people who do not have time to come to the library to still gain access to information resources anytime:

I guess it has become more about how we bring the library closer to the people? That's why some of our experiments are really onto means of reaching people by reducing the costs involved in going out of their way and visiting the libraries. This is the service philosophy.

In the following examination of various aspects of the relationships between public libraries and their communities, the chapter will explore the ways public libraries are actively using contemporary technologies to transform information resources, the collective processes emerging in such transformations and engagements of the communities, strategic directions and how participation is harnessed from communities through the design of old and new services. The remaining discussion in this section aims to provide an overview of the profiles and target communities served by three selected public libraries in Singapore.

1. **Jurong Regional Library (JRL):** JRL is the third regional library and also the largest public library under the National Library Board in Singapore. Located in a refurbished building, the library occupies four storeys and a basement, and is made up of two wings connected by a common atrium. The old wing stores the main collections while activities are mostly held in the new wing. The library is strategically located in the heart of the industrial and business parks in Jurong East, making it a rich resource point for local professionals, business and technologically literate communities. Aligned with the specific needs of its target communities, the JRL aims to 'identify and catalyse projects to promote the fusion of the arts, business and technology so as to unlock the collective creativity of the community and to achieve a new level of connectedness' (NLB, 2007). Indeed, the design and layout of the library was an eye-catcher on the researcher's first visit – to which a librarian explained:

Our service theme is the fusion of arts, business and technology...so you can find bright colours, artistic pictures, multimedia stations, and music listening stations that reflect this service theme...

In addition to serving the business and professional communities of Jurong East, JRL is also positioned to serve the needs of communities in the larger western region of Singapore with special services such as the children's advisory services and the teens' library.

2. First opened in 1978, the **Marine Parade Community Library (MPCL)** was originally located at the town centre of the Marine Parade housing estate. In 1995, along with an announcement by the People's Association (a community organisation) to upgrade 54 community centres and the release of the Library 2000 report in the same year, the local Member of Parliament for Marine Parade and the then Prime Minister, Goh Chok Tong proposed to the People's Association to consider the idea of combining the upgraded community centres with other services, such as libraries (Ng, 2000; Yeo, 1995; Sng, 2000). The idea was taken up quickly, which led to the relocation and development of the MPCL in the Marine Parade Community Building. The building is also shared by the Marine Parade Community Club and The Necessary Stage, a local performing arts group. This also marked the MPCL as the first public library in Singapore to be co-located with a community centre and an arts group (Sng, 2000).

Covering an area of over 3500 square metres, the public library is located in the midst of housing estates and serves local residential communities from Bedok, Braddell, Changi, Simei, Fengshan, Geylang Serai, Joo Chiat, Chai Chee, Kampong Ubi, Kaki Bukit, Macpherson, Marine Parade, Mountbatten, Potong Pasir, Serangoon and Siglap. As such, there is a strong family theme tagged to the public library. In the later discussion, examples on how the library engage participation and the types of resources acquired, created and shared using this theme will be examined.

3. The **Jurong West Community Library (JWCL)**, first opened in a neighbourhood shopping mall in 1996, closed for two months before reopening in a dedicated community building (NLBg, 2007). The building was newly constructed to house the JWCL and the Frontier Community Centre. JWCL is used by largely residential communities, serving communities from Ahmad Ibrahim, Hong Kah West, Jalan Bahar, Jurong West and Tuas (NLB, 2007). JWCL thus shared many of the characteristics of MPCL, being co-located with a community centre in a building and serving communities from large residential estates.

The reopening of the JWCL also came years after the success of the MPCL. With its reopening, the concept of integration with community centres was tested further – users of the library are able to move from the community centre to the library on all levels of the building, reflecting a deeper integration with the community centre.

11.6.1 Resource holdings

In the pilot interview with Davis, the impacts of constructing meaningful memories by public libraries was brought up as an important aspect of building and engaging their communities. Relating this to the public library's role in preservation, he described in a vivid response that when a library acquire resources they are:

making sure significant knowledge is made accessible to the communities...and therefore it is also about preserving collective memory. Without our memories we cannot exist...memories ensure that we progress as a community. There is personal memory – that makes up my identity, and the meanings I perceive for myself. But with communities, societies and civilisation there is also collective memory. Without such memory there is no way to characterise the society or allow us to make use of what has been accumulated in the past. Records therefore play a critical part here. What libraries do is that they become the guardians of such cumulated knowledge. Few institutions do this kind of work, particularly in the direct forms of written works.

The same interviewee also acknowledged that resources in public libraries were not limited to information resources, but also included shared spaces, facilities, services and potentially other forms of knowledge which may also be created by people in the communities.

Like most public libraries, JWCL has a range of fiction and non-fiction collections, aiming to cater to the variety of needs from the local residential communities. The collections come in various types, from audio-visual materials to books, and comics. On first impressions, it was easy to misunderstand that resources in the public library were limited to these collections – and the temporary borrowing of these resources will result in their unavailability for others. But Thelma, a librarian who was a participant in the research clarified this misunderstanding and showing how the use of shared reviews and recommendation notes can be used to improve access to resources even if they were not available:

We have something which we call expression boards, which allow our users to share book reviews and recommendations with others. These are usually located on the children and young people's sections...other than cultivating a love for reading and sharing, we have also found that these young people also enjoy sharing and learning with their peers...

These expression boards, which contain reviews and recommendation notes on resources, can be found across the library, strategically located near the resources they are written for. Such resources enhance the existing collections of the library, and are generated by users of the library. Anyone can write and submit a review or recommendation, which will be vetted and put up on the expression boards by the librarians. The same librarian also highlighted that these expression boards were used by local users select or watch out for books when they become available again.

The process demonstrates how derivative works of shared resources can increase the accessibility and availability of a resource. It is also important to note that the creation of such derivatives was not enough on its own – it was also crucial that they were shared with others who use the public library. Although access to these resources is still moderated by the library, Thelma explained how the public library is important to the sharing of these resources:

Of course, people can write their own reviews and notes and even publish it on the Web for everyone to see...the public library isn't going to be included in the formulae. But what we have here is context, and trust that is nurtured by the institution and the expertise you can find in this space...

Such resources are mostly generated by users, and may be combined with other existing resources to enhance their overall significance. MPCL demonstrated in another example how the overall significance of resources may be increased through user interactions. MPCL, which serves mostly communities and families living in both private and government residential estates, has a service named 'Kids Discover' for children aged six to twelve. Using interactive exhibits organised around three themes of water, earth and sound, resources are presented in different forms (books, games, multimedia exhibits, and talks) and children can participate and interact with these resources to learn new knowledge. Children generate their own questions, and use the resources to help them generate their own answers to these questions. Some of these questions are imaginative, such as, 'what if mosquitoes were as big as cats?' (NLBd, 2007). Trish, a librarian from MPCL, explained the rationale behind such activities:

It is still essentially about information resources, but in recent times it's also about how the public library is actually reaching out, educating or going into the learning spaces of users in their interactions with information resources...including those on the Web...with today's technologies and convenience of digital information, I also think that helping users to evaluate resources has become a crucial and interesting part of our jobs as public librarians.

The service, purposed to inspire the discovery of new knowledge through play, also aim to help children pursue, acquire or assimilate and create knowledge through self-generated questions. Through workshops and other activities, such new resources are then shared with participants in the library. In this manner, resources are created with users so there is a greater level of access and availability with greater participation. In other words, participation was significant in increasing the availability and accessibility of resources to be shared with others in the same community.

In another account, JRL serves a large community of professionals working in the technological and creative business hubs nearby; which explained the large number of special collections found in the library, freely accessible to their communities. However, the library goes further to facilitate the creation of resources amongst users. A librarian at JRL gave the example of the 'Pseudo Book Club' ('pseudo' – as the

resources being shared is not limited to just books), which are usually facilitated by the librarian in charge of the teens' collection or a self-appointed teenager who is a user of the library. Katherine explained:

...we have a service called V.A.T which stands for 'Verging All Teens', and the Pseudo Book Club is just one of the many activities in that service. Sometimes the teenagers appoint a facilitator within the group, and they will share with others their favourite book and why. For the teens, it's about learning and sharing knowledge with your peers.

Like the earlier case of public libraries in Victoria, there were similar beliefs in the role of public libraries in preserving and enabling equal access to resources in a knowledge commons. Faith, a gatekeeper interviewee who runs a tertiary library in Singapore, expressed how she saw public libraries bridge knowledge gaps:

Learning doesn't stop after finishing school, and is certainly not limited to the rich or the poor...this is where public libraries are really important because they have the potential and role of ensuring lifelong learning, and they have a strong significance to communities because the resources in them are supposed to be openly and equally available to everyone...

The earlier reflection by Davis on how libraries might help in the transformation of information into knowledge sheds light on the examples given by librarians, how resources are utilised and shaped further through user interactions. In the case of public libraries in Singapore, as resources are shaped, it was also seen how they take on different resource characteristics: their availability increases with sharing and participation, and they rest on authoritative resources (as discussed in Chapter 3) in order to enable their creations and exchanges. For example, in order for the expression boards to be shared freely in the JWCL, the books and other resources addressed by the expression boards must first be openly available within the library. The fact that such resources were produced and shared by the users themselves also increased the availability of these resources as it became harder to restrict access when they were shared.

Olivia, one of the leaders in NLB, also expressed how the Internet and technologies helped to enhance accessibility:

Technologies are prevalent in our libraries...there are the self-service kiosks, the catalogue which is also fully available online, the rich amount of resources that are freely accessible online, just to name a few. They are crucial to help us improve on the depth and amount of resources available to our users. There may be certain challenges with technologies, such as differing computer literacy amongst people but to me it is also about how we implement or utilise them and educate our users...

As resources from the library become accessible via the Internet, their availability to be shared is enhanced. This is consistent with the propositions that distinct resource characteristics evolve with the increased participation that is enabled with communication and participatory technologies in the contemporary environment.

At the National Library itself, it was also observed that the NLB had formed a partnership with an Internet service provider, allowing free access to wireless networks for all users of the National Library. During the ethnographic visits to the National Library, it was noted how this free service had transformed the National Library into a multi-purpose space. The researcher wrote:

The free availability of the Internet allowed anyone with a laptop to freely search the catalogue and at the same time surf other websites while they are using the library. Definitely this has transformed the National Library into a different kind of space – it is filled with people almost all the time, and the integration of physical resources that are on the shelves and online resources is seamless...

Although the wireless network was not freely available at other public libraries visited, it was observed that there were always a number of networked computers available at each of the libraries. This mirrored the same principle held at the National Library. Tanya also clarified how the infrastructure was made possible with little cost to the users:

I think one thing is that people, especially the business communities, realise that there are good opportunities and exposure by working with the NLB. It translates into direct benefits for the public libraries too...that is one advantage of being under the same umbrella.

The point was also reiterated in how public libraries are also integrated with other community functions. Trish gave an account of how the MPCL is being used as a public library integrated with a community centre:

We are the first integrated community centre [in Singapore]...we share the same gate you know...and we allow you to take the library books to any part of the building...and I think it's just one of the many reflections of how we are really a community service and not an institution that stands alone...

The section has discussed, with various examples from public libraries, how resources in the knowledge commons are closely linked to public libraries and participation from communities. Also of significance is the role of technologies in shaping the characteristics of resources, also acting as bridges to communication gaps between the library and their communities. The next section examines the emergent collective processes in the communities of these libraries.

11.6.2 Collective processes in the community

Perhaps one of the most difficult aspects of the case study has been the investigation of collective processes emerging from the community. The reason for the difficulty was largely cultural. The NLB has largely been acknowledged as being aggressive in their services and programmes – so much so that it is a challenge in detecting emergent and self-initiated collective processes in the communities. This could be explained in two ways.

The discussion in Chapter 7 has shed some light on cultural relativity and differences in national identities between Australia and Singapore. Although not all of the cultural differences were found to be true, the study by Hofstede (2001) pointed out that the index on individualism was markedly higher for Australia than for Singapore. Once again, it should be reminded that cultural relativity does not imply mutual exclusivities; they are relative rather than absolute. So in this case, Hofstede (2001) does not mean that individualism is non-existent in the culture of Singapore; it is only ranked lower as compared to Australia on the individualism index scale.

This could perhaps shed light on the emergent collective processes in the case. Cultures that have low individualism (high collectivism) are argued by Hofstede (2001) to exhibit cohesive in-groups and extended families. Cultures characterised by high

collectivism and low individualism see these cohesive in-groups and extended families as protection and in return, they will offer loyalty to their groups and families.

This is an interesting proposition that intersects with the examination of collective processes in communities. In an interview with Faith, a gatekeeper interviewee who is also a frequent user of her local public library, she expressed clearly the somewhat implicit parental role of the NLB:

I think there is a certain level of trust in our government here and also our public institutions to pursue our best interests because we're all part of the community...so there is a lot of trust and also reliance on the organisation to initiate activities because we also want to be in line with the priorities of the society as a whole. It's just like being in a family...how can we achieve our best if we're all running off in different directions?

The reflection is also an interesting one considering the power distance index as raised in Chapter 7. Singapore had a relatively high score on this index, indicating that power differences and hierarchy were acceptable and perhaps desirable in some contexts.

Faith's opinion perhaps explained the proactive attitude of the NLB and the public libraries, which may shape the collective processes emergent from the communities. At the same time, in Chapter 10, Australia which scored relatively lower on the power distance index also saw public libraries in Victoria as the 'fundamental plank' driving collaboration and other collective processes in the community (such as the case of HGLV). But in a subtly different way from Singapore, less overtly prescriptive of frameworks and processes.

This insight is important in pointing out the strength of the cultural roles of public libraries in shaping the types of collective processes emerging from their communities.

A mixture of collective processes was suggested in all three public library accounts. For example, the V.A.T space in JRL comprises of a teens library wholly managed by teenage volunteers, coordinated by a librarian. They cooperate on programmes and activities to attract other teens into the library, and are also involved in the selection of books and other materials. While most of these activities may be coordinated by the library and cooperative in nature, some collaborative processes are also apparent when self-appointed teams of 'Teen Ambassadors' and 'Teen Dudes' collaborate to take on special projects together with the library. In other words, there are suggestions that certain collaborations, which are less hierarchical and more unstructured, emerge from coordinated and cooperative activities. This was subtly suggested by Kylie, in a descriptive account of what goes on in the V.A.T space:

The spaces are more like social spaces and it's quite amazing what the kids can do once we give them freedom with the right resources and 'feel good' spaces. It doesn't necessarily come with high costs...but over time we have noticed that the kids can be quite creative and do use their own initiatives to shape the selection of collections in the V.A.T spaces.

On 3 July 2007, a nation-wide project, the 'BookCross@SG' was launched. After collecting more than 500 books that were donated or sponsored, the NLB collaborated with taxi companies and cafes to allow people to pick up any of these books at the nominated taxis and cafes identified as public 'hotspots' (NLBe, 2007, p. 7). Intended to encourage collaboration and sharing of resources amongst people in

communities, the project identified all books with a unique ID number and also require 'book crossers' to register online. Figure 11.1 shows a typical note accompanying every book circulated through the public 'hotspots' in the project.

Using a blog, the project has also created a community of 'bookcrossers', who meet each other through social functions, workshops, and talks. At the same time, 'bookcrossers' are also able to contribute reviews and share them through the website (<http://bookcrossing.com.sg>). The purpose of the 'Bookcrossing Club' was made clear on the website:

All in all, BookCrossing club was created with the concept of making the world into a "mobile library" where books belong to no one, yet everyone owns all the books, making and meeting a friend who shares the same passion for books with people all over the world. That's what makes BookCrossing Singapore such a fantastic place to be!

You've just found a **BOOKCROSS@SG** book! Log on to <http://bookcross.sg> and register its **BCID number** (as shown below). Find out where this book has been and who has read it. Then Read and **RELEASE** it because... Books need to be **FREED!**

Terms and Conditions apply. Go to <http://bookcross.sg> for more information on **BOOKCROSS@SG**

BCID:

First Released By:

When & Where:

 **Books need to be FREED!**
<http://bookcross.sg>

 **NLB**

www.nlb.gov.sg Knowledge-Integration-Flexibility

Figure 11.1: Accompanying tag to books in the BookCross@SG project.

The following are some examples of the responses about the books and 'bookcrossing' experiences.

'Waiting by Ha Jin'. Picked up at Galilee Cafe in Pasir Ris. Love it. Struggle of a man torn between his mistress who has been waiting for him for almost twenty years to divorce his ever faithful, simple, and humble wife. Ha Jin gracefully spins a story-classic yet rather convincing story. He managed to pace the story evenly and had me spellbound on the journey.

Great collaboration between NLB and BookCrossing.com! Honoured to be part of the Launch of BookCross@SG and may this initiative spur more readers and turn the whole of Singapore into one mobile library!

I think the idea of Bookcrossing is fun! It's also a very good way to get books circulated to other people so that we can share good books and enjoy reading collectively.

Am really enjoying Nice Work by David Lodge. Have been meaning to read it for years. Nice to have 'caught' the book via serendipity. Great initiative for book-lovers.

Although the project is at large a coordinative intermediating effort coming from the library, there are deeper cooperation and collaboration opportunities. Other than success at ongoing book donations coordinated by the library, the project also required open contribution and sharing in order to thrive. In addition to the many talks, workshops and social functions, thematic 'crossings' are also held monthly for the community to have discussions on topics of interest. Publicising these 'crossing' events, the website read:

Crossings are a little different from our Socials. For one, they are a lot smaller and will be held monthly. We want to have our bookcrossers interact with other like-minded crossers. There will be short activities and snacks to help break the ice. Come join us to meet the flesh-and-blood individual behind the online BookCrosser or the anonymous person who picked up the same book you liked. (NLBe, 2007)

At the same time, it was openly acknowledged that there may be individuals and hoarders who will keep the books for themselves; as the sharing of the books and registrations are left to the voluntary decision of anyone who picks up a book. Kate, who was also part of the organising team of the project, expressed hope that such behaviours will belong to a minority:

I guess it's inevitable that there will be people who pick up the books and keep them for themselves...but our hope is that the majority will realise that the project cannot sustain itself for long in that way ...so the culture of sharing will be perpetuated...

In order to facilitate effective collective processes from the communities, Olivia also pointed out how a division was established to systematically promote active volunteerism and drive different collective processes from the their communities nation-wide. The Community Partnerships and Outreach (CPO) division was set up for the main purpose of soliciting volunteers from the communities and corporations to volunteer for activities at the libraries, or cooperate on other activities and programs. Olivia also recounted how collaborative projects also emerged over time through these partnerships:

...sometimes we start small, and it may just be case of volunteering for one of our existing activities or services but over time, as we work closely together and become familiarised with each other's objectives we also begin to see different possibilities on how we can work together for mutual benefits...

Upon investigation many of these collective processes were initially coordinative and cooperative in nature. It was also apparent that they contribute to the building of collaborative processes from the communities, such as the collaboration of 'Teen Ambassadors' and 'Teen Dudes' who take on special projects. This perspective is significant in demonstrating how all three collective processes are essential within cultural institutions such as the public library. In a report by NLB, it was clearly expressed how collaboration was perceived:

We cannot be effective as a knowledge based society unless we know how to collaborate, share our knowledge and learn from one another. Learning from one another result in the creation of new ideas and inventions. As we collaborate we expand our capacity to innovate and create knowledge dividend for Singapore. (NLBb, 2005, p. 20)

The building of a 'collaborative innovation space' (NLBb, 2005, p. 21), and the reflection from Olivia helped to affirm how the three collective processes were needed to invigorate and inspire each other. In other words, for collaboration to happen it was also necessary that there were fundamental activities from the public libraries facilitating coordination and cooperation in communities. This finding is congruent with the propositions put forward in the discussion of collective processes within communities. However, the perceived cultural role of public libraries should also be taken into consideration in the conceptualisation of these collective processes.

11.6.3 Strategic directions

Davis, one of the gatekeeper interviewees who ran a university library, acknowledged that public libraries in Singapore have increased in their versatility in their interactions with their communities:

I think our libraries are doing a lot especially in the past few years, both within the library and out of the library buildings...

The opinion reflected that public libraries in Singapore are working both as a supplier of services and resources and as a participant in the spaces of their communities.

Two of the three public libraries visited were co-located together with a community centre. In the case of JWCL, users are able to move freely to and between the library and the community centre on all levels of the building. Thelma explained the underlying rationale for this design:

It is quite simple, we just wanted the boundaries between the community centre and the library to be blurred...because it is more about being community centred rather than being organisation centred...

The integration and partnership with the community centre should not lead to the misunderstanding that the library operates mostly as a supplier of services and resources. Instead, there is a rich variety of ways the libraries operate in, at times supplying resources and services from within the building, and at other times these resources and services are taken out into the communities, often referred to as outreach programmes. As Olivia explained, there is a dynamic program by which the libraries work with various partners:

We have more than a hundred partners working with us here. Some activities can easily involve fifteen partners and some just one or two. But it's all about the expertise they have and what we have...this building for example to many people is very nice, central, and kind of neutral so it's very conducive for public communities to come to. And over time, all these partnerships will evolve and they have a life of their own...before they end possibilities for other activities will show up so we're never out of things to do...

The same interviewee also pointed out how public libraries need to be flexible and adaptable to the ways they operate:

We use a simple principle: whatever is core to us we should do ourselves...for example selection is core to us, cataloguing is core to us, answering enquiries is core to us; but other functions or services we can outsource, or even work with volunteers or partners to provide them...we have to always look at ourselves and make ourselves more flexible for our communities and partners.

In the previous discussion Olivia had pointed out how collaborative projects emerge over time via the CPO division. The same insight also helps to illuminate how the working modes of public libraries can be shaped by, or shape collective processes emerging from the community. This further reinforces findings from the earlier case study of public libraries from Victoria – the possibility that cultural institutions interact with communities in a recursive manner, shaping collective processes in the communities and at the same time, being influenced by the multiple collective processes emerging from the communities. Trisha, a librarian from MPCL, gave an example of how the public library created an impact on the physically disabled by delivering books to their homes through an existing group of volunteers:

We just started recently to deliver books to the homes of the physically disabled through volunteers. It's a new service, so they will basically request for the books they wish to have and then we will make arrangements for the volunteers to pick them up from the library and then bring them to their houses. It's great that we have these volunteers signing up to help, which helps us to make this service possible, and at the same time enable us to reach out to a community that is otherwise hard to reach.

This case study has shown that the traditional borrowing model of the public library, where the public libraries mostly act as a supplier, has been enhanced by the library as catalyst and intermediary in peer-to-peer resource creational sharing. The issue of sustainable partnerships is significant especially for public libraries. This view was also reinforced during an interview with a gatekeeper interviewee, Irene, who volunteers in a museum and is also a frequent user of the public library. Acknowledging the proactive activities of the public libraries, the innovative ways they have made their holdings accessible to communities, and the success of the public libraries in instilling lifelong learning amongst their communities, she also reflected on the challenge they might face from other institutions:

...the libraries have been very aggressive in pursuing their visions and they have also been very creative in the process, having cafes installed in the libraries, bringing communities into the libraries through their activities, and sometimes they even have exhibitions in the libraries. But this is where it might get quite challenging...as it could be easy for them to step out of their boundaries to the territories of their sister institutions...and sometimes they could be unwanted in those spaces or holdings...

Yet at the same time, partnerships can be powerful and strategic complements to cultural institutions who work in the supplying mode. The challenges are sustainability, and perhaps the perceived intrusion of boundaries, as pointed out earlier by Irene. The challenges also point out potential opportunities for cultural institutions to work in multiple ways, and alternatively as participants, aligning themselves with the services and activities of other institutions and agencies.

Partnerships are also significant for cultural institutions working in the participating mode; and this affirms the significance and potential of institutional partnerships as a type of two-pronged strategy for cultural institutions. While working as suppliers of resources and services, cultural institutions such as public libraries may form

partnerships with other institutions to complement their existing resources and holdings, providing communities with holistic experiences with the resources presented in different forms. At the same time, public libraries as a participant engage communities with other cultural institutions or community agencies in participatory activities, and the communities are viewed not only as end consumers or recipients, but also co-participants in such activities.

In the earlier discussion of the ACM (see Chapter 9), the example of Explore! Singapore was raised as an example of how the museum, together with other museums, solicits the participation of other cultural institutions to engage their communities to interact with their collective holdings in the knowledge commons. By the same token, this example also demonstrates how public libraries work in the participating mode, being participants with other cultural institutions such as museums.

As manifested in all case studies, the practices and actions of cultural institutions seem to reflect awareness that isolation in the contemporary age is no longer an option. This has pragmatic implications for practice. This was also demonstrated by Ngian (2008, p. 5) in the following example of how external partners were roped in to provide complementary services within the library:

By the time we were planning for one of the last new shopping mall libraries in a new town called Sengkang, we found that we had automated every single library transaction in the library, and there was really no need for any library staff to be around to assist the user in any library transaction. The remaining last service that we wanted to offer an alternative service was what we called the cybrarian service, ie have a telephone and PC to allow the user to speak with a librarian if he or she needs to speak with someone...though it could not really replace someone onsite to help the user when personal assistance is needed. The personal service came in the form of a concierge service that we outsourced to a company who supplied manpower for us to train to provide a basic enquiry service onsite.

The learning we took away from Sengkang Community Library was that we could open a library round the clock if there was a need to, as we could open a library to provide all the necessary services that a standard public library provides, except for in-depth enquiry service where a professional librarian is needed. We were operationally ready for a 24-hour service...

11.6.4 Harnessing participation

Perhaps one of the most obvious examples where direct participation from communities was observed is the case of the V.A.T (Verging All Teens) library in JRL. In V.A.T, teenagers are involved in designing and managing the library through a proactive volunteering program and mentoring by full-time librarians. As Kylie recalled, one of the most significant outcomes is the sense of ownership by the teenagers:

Our teens are involved in almost everything...from the selection of resources, duty shifts, the creation of activities and programmes to even the naming and design of spaces within the V.A.T library and I think one of the greatest achievements has been the sense of belonging...I can see it because some of our teens are so enthusiastic and are becoming very good leaders within their groups...

The 'Book Cross' project raised earlier in the discussion on collective processes was also viewed as a nation-wide project for libraries to participate in the spaces of communities. Tanya, a librarian at MPCL, also pointed out how public libraries are already working increasingly in those spaces.

We also often have invitations to go to community events, where we organise activities such as storytelling, we bring our books and materials to those events...so we do find ourselves increasingly out of our libraries and in the spaces and events of the communities.

At the same time, Tanya also pointed out how the distinctions between institutional spaces of the public library and the spaces of communities are gradually diffusing:

So we actually have started and maintained a number of blogs, such as the Ask blog and the blog for children. The public actually asks questions and contributes to the blog, and so do the staff. So I guess in such digital spaces it's sometimes quite hard to distinguish the 'spaces' – although the blogs are hosted by us.

In addition, all public libraries also partner with schools to solicit participation from the communities. For example, volunteers can be engaged to read to children in the children libraries, contribute book reviews which are put up in the libraries or online, help in putting up book displays, design library posters and publicity materials, shelving or act as roaming helpers to provide help to other users (NLBf, 2007).

In the case of MPCL, it was explained how the integration with the community centre and the arts group contributed to the redesigned concept of the public library – 'Discovery through Learning, which promotes learning in an informal and unstructured environment' (NLBd, 2007). The building had also been strategically located near private and government housing estates, and together with the community centre and the arts group, the public library had a family theme, to be a destination for families with overlapping activities with the other two partners in the same building. As such, both Trish and Tanya saw participation as essential in the engagement of the many families in the communities. Tanya pointed out the contemporary value of the public libraries and the role of technologies in harnessing such participation:

There is [always] this equality and social justice role that public libraries perform but now there are also different technologies today that allow the active participation of people...interactions with people using SMS and multimedia, and blogging, which have become a source of information as well. In a sense, they are participating in the creation of knowledge, and through our interactions with people I see that we are also inculcating...the active creation and discussion of knowledge.

The design of the services and spaces therefore conjugate this underlying philosophy, with a lifestyle concept on the first floor containing adult fiction, magazines and a café; access to collections through contemporary media such as networked workstations, music stations and multimedia posts on the mezzanine floor; the second floor dedicated to children; and the third floor dedicated to adult, reference, newspapers and Singapore collections. More multimedia stations can also be found on this floor.

As the design of the library would reflect, there is something for everyone in the family, and these spaces also shape the types of activities carried out within the library. Other than a significant integration of media technologies in the library, there

is a noticeable number of activity rooms and multi-purpose spaces that facilitates participation from communities through activities. Not all of these activities were initiated or solely organised by the library, however; as articulated by librarians from the MPCL:

Our facilities are open for booking by the public and other organisations...so they do bring their activities into our spaces in a sense but at the same time there is a number of ways we interact with them...sometimes we just supply the spaces and resources, but at times we can be participating in their activities as well...

The experience reflects on the changing characteristics of public libraries as multi-purpose spaces, and blurs the distinctions between the phases of participatory design – where designers (in this context, the public libraries) participate in the users' worlds on one end of the spectrum and users can be participating in activities of the library on the other end of the spectrum. Coupled with the findings from the other case studies, a different perspective is offered. Especially in cases where public libraries involve the community through volunteering and collaborative programs, the public library and its associated activities are an integral part of the world and life of users. The institution is therefore part of the community, and the distinctions between the institution and the community in the participatory design taxonomy (even if they are on a spectrum) is perhaps difficult to validate especially in the contemporary media environment where participation can be harnessed effectively and with relative ease than before.

The perspective could also possibly be understood using cultural relativity. Earlier in the discussion of national cultures, Hofstede (2001) proposed that that Singapore rated significantly higher than Australia on the power distance index, defined as 'the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally' (Hofstede, 2001, p. 98). This also meant that communities in a society that has a high score on the power distance index are also more accepting of institutions and organisations as leaders in their social activities. This proposition was reinforced by Faith, a gatekeeper interviewee who reflected on the culture in Singapore and also on the leadership coming from public libraries:

I guess there will always be people who lament that we have 'no choice' when it comes to speaking up or having a say in public policies and so on...but if you look at our responses and actions I think we do have choices...in a way I think there is an acknowledged need for strong leadership especially in public activities and policies because of the diversity we have in this country, that could tear us apart. So when you asked about public libraries harness participation from communities, or how they participate in the spaces or activities of the users; who brings what to the table and so on I was a bit hesitant there...because to me the public library is the community, and the community is the public library...it may look like the libraries are taking the lead all the time but I think it's also because it is necessary...

Earlier in the case of the ACM in Singapore, awareness of diversity was also similarly expressed. Together with this reflection, the conscious awareness of diversity can be seen – which was raised in the discussion of the uncertainty avoidance index (Hofstede, 2001). These reflections do highlight how the issue of diversity is critical, and the perception of cultural institutions as a neutral and safe space to deal with issues arising from diversity.

This also has one inference for the study of participatory design. In a place like Singapore where the issue of diversity is highly visible, the role of cultural institutions in harnessing participation from their communities can become even more essential.

11.7 Implications for the future

With the proliferation and prevalence of the Internet in Singapore, a significant challenge which may see the trend of development of public libraries was addressed early in the interview with Olivia.

Olivia: More and more Singaporean tend to access the internet for information, and so I think there is a challenge to we place ourselves in the digital world and make ourselves so convenient that users don't have to come to us...to be part of the digital world is a challenge and we have not fully realised our potential in that area yet I think. We want to and I believe in next 2-3 years, we would be able to get into people's lives without them feeling that we are leading them by the nose. I think that is not practical.

NP: What do you think happens to people who don't have access to interface technologies that eliminates the need for people to 'come to you'?

Olivia: ...there is no sense that physical library is disappearing, and the provision of resources and service through a complex mix of physical and digital spaces is one of our value to our communities I think. The physical library is also a physical digital library meaning when you come into physical library, you may be using digital content and then even if people access digital library from their home, quite often they feel they still need to use a physical library because there are certain materials that exist in physical forms...the role of the library and as a social learning thing and also the role of the library and the mediator between the library resources and the end user continues to be essential.

These ideas also served to demonstrate the potential of public libraries to bridge the digital divide locally. While this core mission remains unchanged, the ways to engage people in communities are changing and an ongoing challenge. Davis articulated the merits of public libraries in actively engaging their communities.

...what's good about our public libraries is that they are continuously experimenting with ways to engage with the public...and that's how they learn about what the users actually want, what kinds of technologies are relevant to them, and other factors that will influence them...it's a consciousness that's closely associated with experiential learning.

Thelma discussed this concept of experiential learning within the organisation and its benefits.

...it's good for ourselves and the end users. Sometimes we are restrained because many people have questions but they somehow they totally don't know how to ask, don't want to ask or they feel shy. In fact we have even launched a campaign to teach people how to ask questions...there are 4 sessions of 'how to ask questions' which I think is quite interesting and it is done not in a formal lecture kind, it's like a workshop or program so people won't feel [pressurised]. So we have to do a lot of things in parallel to the implementation of new services... [for example] if you have an SMS service but people are not asking questions then the service is useless. So you have to create motivations, make it easy and all these are the important considerations for designing or redesigning a new or existing service...

In the later part of the above discussion, another significant issue was raised, which related to the ability of people to clearly articulate their questions and needs. In this context the way public libraries deal with this issue was also raised – which reflect an underlying philosophy of holistic design. As described by Thelma, it was necessary to recognise the factors that may possibly shape the adoption of a new service or resource and take steps towards engaging people in those factors, rather than a one-headed focus on the service or resource itself. Thelma also recognised that these challenges also provide an opportunity for public libraries,

...to be a librarian at this point in time, one is very fortunate because of the many possibilities that are out there and the expectations of our users are high...but similarly we do also have high expectations of our users...

Acknowledging that the job of a public librarian is now a complex one, Olivia expressed how librarians can take up the challenge by also visualising themselves as end users and participants of the library's resources and services.

...I think it is every librarian's responsibility to figure out 'what is it you want to do', both individually and as a group...as a professional librarian, what you believe in, and what do you want to do as a person in this community so then you can figure out how to work with that community...I think most of us are driven by what we can see partly because we are active users ourselves. My family members are very active library users...my daughter [for example] when she does her homework the first thing I always tell her is to use the library first because we are always here for you...so in that sense being a librarian at this point in time is also a very personal thing...

The expression was backed by the thought that in their personal and work lives, public librarians are entrenched in the creation and use of knowledge resources through the rich interactions of technologies. Although cultural contexts are important considerations, it was also recognised that everyday interactions with information resources mediated through technologies are powerful global factors in shaping the role and vision of public librarians. In public libraries as sites of participation and discourse where meanings are made, the librarians themselves will continue to be essential both as designers and mediators of resource holdings, and also as co-participants in these holdings.

11.8 Main insights

Insight 11A: Resources available within public libraries in Singapore are inherently part of the commons because they are shared. Access to resources and their reciprocity can be enhanced with derivative works, contemporary technologies especially the Internet, and technological infrastructure such as wireless networks enabled within the public libraries.

Insight 11B: In Singapore libraries, various forms of collective processes can be observed. The cultural role of public libraries in shaping a range of collective processes is also correspondingly discernible. Coordinative, cooperative and collaborative collective processes are shaped by, and shape levels of communication with communities, and participative technologies such as blogs.

Insight 11C: In Singapore the traditional borrowing / supplying model of public libraries is enhanced by the ability of public libraries to act as a catalyst for community participation and intermediary in peer-to-peer resource creation and sharing. In the latter role, partnerships with other institutions are often found.

Insight 11D: In Singapore contemporary technologies offer innovative opportunities for public libraries to engage communities in a participative way. In cultures characterised by diverse ethnic and religious groups, the forms of participation is even more important. The design of participation is therefore essential to managing diversity and possible tensions.

Chapter 12 – Theorisations

12.1 Scope of the chapter

- Builds theorisations based on three key points: resources in the knowledge commons, collective processes involved in the creation, sharing or use of such resources, and the engagement of cultural institutions in this interplay while designing participation from communities.
- Discusses cultural dimensions pertaining to the research on cultural institutions and the cultural relativity between Victoria and Singapore.

12.2 Insights gained

The insights gained from Chapters 3-11 (theoretical foundations and case studies) are tabulated in Table 12.1.

Study domain / Case study	Insights gained
Commons (A)	<p>Insight 3A: The relationship between the commons and the market is complex. The commons and the market are interdependent and their boundaries are contested and often shift.</p> <p>Insight 3B: The notion of commons is fundamentally implicated with that of communities. Communities as agents, through their collective social processes, influence the rules and allocation practices of the commons, and indeed the entire shaping or 'design' of the commons.</p> <p>Insight 3C: Action-structure theory, and specifically structuration as expounded by Giddens (1984) assists in explaining how commons – including knowledge commons – are initiated, sustained and changed over time, through the agency of communities and processes of implicit or explicit design (Relationships a-b, a-d, and b-d).</p>
Communities (B)	<p>Insight 4A: Based on Giddens' duality of structure, and complementary theory by other writers such as Castells:</p> <ul style="list-style-type: none"> – Communities are seen as sites of discourse and other action where meaning is collectively and recursively made and re-made in a continuous process of knowledge creation, sharing and use. – Community knowledge is a product of communities functioning in this way. It is both practical and discursive. It is held, in whole or in part, by individuals, groups or the entire community. <p>Insight 4B: Fundamental to the functioning of communities are collective processes of coordination, cooperation and collaboration. These can be mapped to Giddens' structural modalities of norms, facilities and interpretive schemes. Each of these has different implications to the ways people create and share knowledge in communities.</p> <p>Insight 4C: The contemporary digital media environment impacts on all three kinds of collective processes. It especially has the potential to enhance collaborative processes which rely mainly on the interpretive modality (i.e. the interplay of signification as structure and communication as interaction).</p>
Cultural	<p>Insight 5A: The core role of cultural institutions is to foster meaning through</p>

<p>institutions (C)</p>	<p>the creation, storage, sharing and use of knowledge across time and space. Not all cultural institutions engage in all of these aspects all the time.</p> <p>Insight 5B: While their core role remains essentially unchanged over time and place the ways in which that role is enacted varies, in small or large ways, depending on context. A key variant is how far community members are characterised as recipients of, rather than participants in, knowledge production by cultural institutions.</p> <p>Insight 5C: Structural concepts that help in describing and explaining cultural institutions include:</p> <ul style="list-style-type: none"> - Time-space distanciation: Especially viewing of institutions (including cultural as persistent social patterning resulting from the ongoing interplay of social action and social structure). - Reversible time: Especially how institutions can enhance the capacity of individuals and groups to learn reflexively (including experience) within and beyond the human life-span. - Ontological security: Especially the importance for communities of institutions that can assist and ‘smooth’ the ongoing negotiation and renegotiation of meaning in society.
<p>Participatory design (D)</p>	<p>Insight 6A: For cultural institutions, participatory design provides both a conceptual and practical framework for creating, sharing and using knowledge within and among communities, through innovative collaborative action.</p> <p>Insight 6B: Based on the analysis in the chapter, the research proposes a spectrum typology of participation by design, ranging from designers’ (cultural institutions’) participation in the users’ world to participation by users’ in the designers’ (cultural institutions’) world.</p>
<p>Cultural dimensions</p>	<p>Insight 7A: Although there are ascribed notions of national identities for both Victoria and Singapore, there are also cultural perspectives that counter such ascribed notions.</p> <p>Insight 7B: Hofstede’s cultural dimensions present both strengths and weaknesses for exploring cultural relativity between Victoria and Singapore.</p> <p>Insight 7C: Distinct differences based on Hofstede’s cultural dimensions can be seen. These need to be validated further through the case studies for their significance in shaping cultural institutions in the knowledge commons, the engagement of communities, and participatory design.</p>
<p>Museum Victoria (MV)</p>	<p>Insight 8A: Resources display different characteristics – the boundaries in terms of accessibility and reciprocity of sharing shift with increased use of communication technologies and participation from the WoFG community. Understandings of the significance accorded to various resources are nurtured and communicated over time, and within the spaces of such discourse (including virtual sites).</p> <p>Insight 8B: Various forms of collective processes can be observed within the WoFG community, underlined by common understandings and processes established over time, structural relationships, and communication. Different intensities of these traits can be observed for each form of collective process.</p> <p>Insight 8C: Community participation was engaged by the MV in two broad ways. Within the premises of the museum, it was characterised by institutional activities, tours, and research partnerships. Beyond the premises of the museum, it was characterised by ongoing dialogue, going into the spaces of the community and public spaces such as conferences and other networks.</p>

	<p>Insight 8D: The WoFG/MV illustrated that there is a shift towards greater community engagement and enrichment of individual experiences. Contemporary technologies provide innovative opportunities for a museum to act as a catalyst of transformation in communities, and vice versa.</p>
Asian Civilisations Museum (ACM)	<p>Insight 9A: Museums as sites of discourse and places of experiences influence the accessibility and availability of meaningful resources for communities. Participation is a possible variable in shaping the understandings of significance accorded to various resources. In addition, it provides a way by which possible tensions can be guided and managed by cultural institutions.</p> <p>Insight 9B: Various forms of collective processes can be observed arising from the communities interacting with the ACM. Coordination was found to be the most basic form of collective process. Cooperation is characterised by structural relationships and greater communication, which have as their goal to achieve procedural compliance. Collaboration is the most unstructured form of collective process, with ad-hoc activities that are flexible to changes and are less controlled.</p> <p>Insight 9C: While primarily operating as a supplier of resources and experiences through the collections housed within the ACM, there are also ways by which participation is engaged from communities. There are various implications in terms of impact and reach.</p> <p>Insight 9D: A shift towards greater participation from communities is observed, enabled by contemporary technologies and the Internet. Limitations are also raised on this point, particularly the adaptability of technologies to changes.</p>
Public libraries in Victoria	<p>Insight 10A: In Victoria the boundaries between different resources in terms of accessibility and openness for derivative works to be created are shaped by the levels of sharing, participation and technologies used. These boundaries are also negotiated with communities.</p> <p>Insight 10B: Public libraries in Victoria play a fundamental role in coordination, facilitating cooperation with greater intensity of communication and structural processes, and inspiring collaborative activities which are less controlled and are flexible to changes. These collective processes are observed as stages by which public libraries and communities move towards greater innovation and reflexivity.</p> <p>Insight 10C: Public libraries in Victoria engage communities both within their premises and in the sites of communities. In the latter, this is often enabled by partnerships with other institutions, such as neighbourhood houses, municipal councils, and schools.</p> <p>Insight 10D: For the public libraries in Victoria, participation is seen as a way to inspire new activities and develop strategic directions. In addition, it is also used as a method to engage communities in a non-threatening way.</p>
Public libraries in Singapore	<p>Insight 11A: Resources available within public libraries in Singapore are inherently part of the commons because they are shared. Access to resources and their reciprocity can be enhanced with derivative works, contemporary technologies especially the Internet, and technological infrastructure such as wireless networks enabled within the public libraries.</p> <p>Insight 11B: In Singapore libraries, various forms of collective processes can be observed. The cultural role of public libraries in shaping a range of collective processes is also correspondingly discernible. Coordinative, cooperative and collaborative collective processes are shaped by, and shape levels of communication with communities, and participative technologies such as blogs.</p>

	<p>Insight 11C: In Singapore the traditional borrowing / supplying model of public libraries is enhanced by the ability of public libraries to act as a catalyst for community participation and intermediary in peer-to-peer resource creation and sharing. In the latter role, partnerships with other institutions are often found.</p> <p>Insight 11D: In Singapore contemporary technologies offer innovative opportunities for public libraries to engage communities in a participative way. In cultures characterised by diverse ethnic and religious groups, the forms of participation is even more important. The design of participation is therefore essential to managing diversity and possible tensions.</p>
Table 12.1: Summary of insights.	

Building on these insights, theorisations on the knowledge commons, the collective processes involved, and the contemporary role of cultural institutions were derived.

12.3 Subtractability, Collective Processes and Cultural Institutions

The discussion in this section builds on insights from the literature and case studies to derive theorisations on resources in the knowledge commons, the collective processes involved around the creation, sharing and use of these resources, and the role of cultural institutions in this context.

12.3.1 Resource characteristics

Table 12.2 shows the key insights used to build theoretical propositions about resource characteristics in the knowledge commons. These have been extracted from Table 12.1, and displayed in two columns to show how they complement and enrich the theorisations for this study domain.

Insights from study domain: Commons (A)	Insights from case studies
<p>Insight 3A: The relationship between the commons and the market is complex. The commons and the market are interdependent and their boundaries are contested and often shift.</p> <p>Insight 3B: The notion of commons is fundamentally implicated with that of communities. Communities as agents, through their collective social processes, influence the rules and allocation practices of the commons, and indeed the entire shaping or ‘design’ of the commons.</p> <p>Insight 3C: Action-structure theory, and specifically structuration as expounded by Giddens (1984) assists in explaining how commons – including knowledge commons – are initiated, sustained and changed over time, through the agency of communities and processes of</p>	<p>Insight 8A: Resources display different characteristics – the boundaries in terms of accessibility and reciprocity of sharing shift with increased use of communication technologies and participation from the WoFG community. Understandings of the significance accorded to various resources are nurtured and communicated over time, and within the spaces of such discourse (including virtual sites).</p> <p>Insight 9A: Museums as sites of discourse and places of experiences influence the accessibility and availability of meaningful resources for communities. Participation is a possible variable in shaping the understandings of significance accorded to various resources. In addition, it provides a way by which possible tensions can be guided and managed by cultural institutions.</p> <p>Insight 10A: In Victoria the boundaries between different resources in terms of accessibility and openness for derivative works to be created are shaped by the levels of sharing, participation and technologies used. These boundaries are also</p>

<p>implicit or explicit design (Relationships a-b, a-d, and b-d in Figure 1.1).</p>	<p>negotiated with communities.</p> <p>Insight 11A: Resources available within public libraries in Singapore are inherently part of the commons because they are shared. Access to resources and their reciprocity can be enhanced with derivative works, contemporary technologies especially the Internet and technological infrastructure such as wireless networks enabled within the public libraries.</p>
<p>Table 12.2: Insights on characteristics of resources in the knowledge commons (extracted from Table 12.1).</p>	

Moving away from conceptualising the knowledge commons in terms of their ownerships and regulations, the knowledge commons is theorised in Figure 12.1.

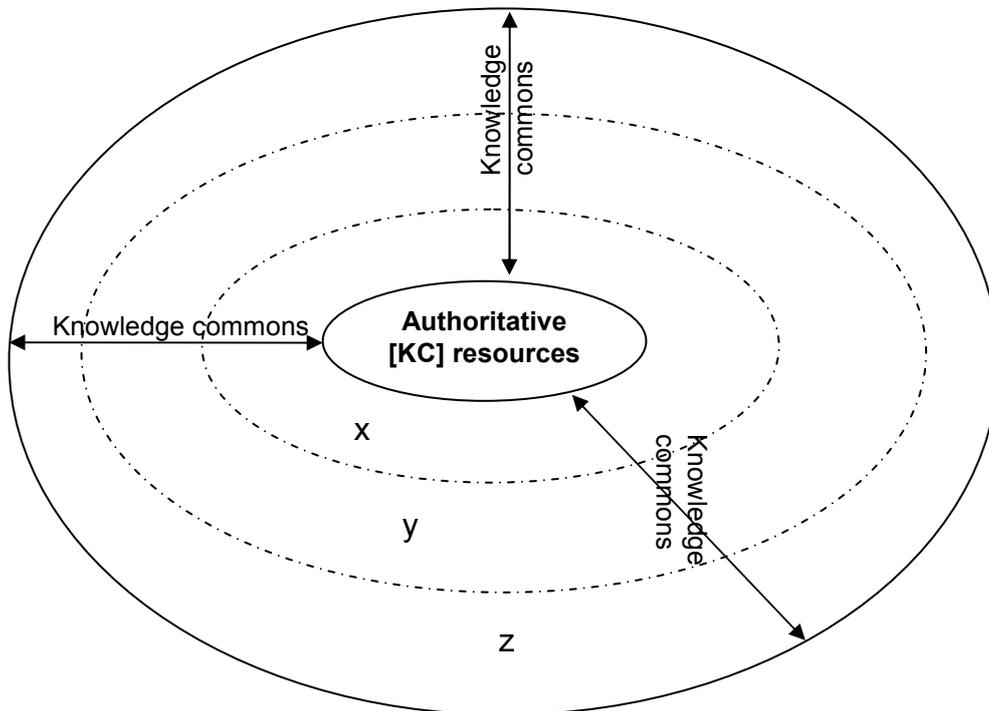


Figure 12.1: Theorising the knowledge commons.

Note that resources in the market will also ride on authoritative resources, such as shared rules, accepted conventions of communication established over time in a culture. Authoritative resources have also been observed in the case studies, such as the sometimes unspoken and accepted conventions of meaningful collections in the museums. In the case of public libraries in Victoria, authoritative resources were also adequately expressed as well-established conventions and work culture within the librarians’ community. As all other resources in the knowledge commons are envisioned as dependent on authoritative resources, they are conceptualised as the core resource pool for the knowledge commons.

The subsequent spheres of resources are allocative resources of varying forms according to their availability to others beyond a defined community. These allocative resources are conceptualised at three levels, named here as: x, y and z. The boundaries defining these resources are highly permeable (as indicated by the dotted lines) due to the contemporary media environment and the fact that such boundaries are often widely contested. This will be explained with examples in each sphere.

Resources in sphere X

Access to resources in the sphere x are limited to a defined community, characterised by formal regulations or close ties with authoritative resources. Benkler (2003) refers to such resources as common property regimes, as they are in many ways exclusionary except to the community that owns and controls them.

Examples of such resources can be found in the collection of the WoFG community, where objects and oral histories of women were only available to the women who were present at each gathering, or those who were charged with the responsibility of keeping objects in the collection. The creation, sharing and use of these resources were immediately dependent on the structural processes, conventions and understandings nurtured within the community over time and space (through annual gatherings). However, the appropriation, loss, or damage of any of the resources in the collection will result in long-term unavailability to others in the community. As discussed in the case study, this changed when the collection was put online – leading to the shifting of these resources to other spheres.

Resources held within the ACM in Singapore provide another example, with the material objects being accessible only to visitors to the museum, and the collections put together by curators following to the collection guidelines and understandings of accorded significance established within the practices of the museum (examples of authoritative resources). However, as shown in the case studies, even resources in such collections can be transformed or permeate other spheres.

Resources in sphere Y

Resources in sphere y are becoming increasingly popular with the Internet. Many research groups and community sites contribute to this type of resources, in making their work openly available but limiting contribution by membership. Again, such resources ride on authoritative resources in their regulation and rules governing participation but they are less formal in nature.

Some services, such as the BookCross@SG project in Chapter 11, facilitated the creation of book reviews and recommendations to be shared openly with the public via a website, but limited contribution only to registered participants in the project. The creations, sharing and use of book reviews were subjected to certain rules, such as agreements to the terms and conditions of the website, and following certain processes in order to contribute, share or read a review. This still showed a dependency on authoritative resources, but resources in this sphere are less enclosed and more available to others beyond a defined community.

Examples of such resources can also be seen in the case of the WoFG collection, after it was put online. The resources within the collection moved towards greater availability and accessibility to others beyond the WoFG group, although contributions were still limited to registered members from the community.

Resources in sphere Z

The last sphere of resources marked by z in the figure is the most open and varies in terms of its use of authoritative resources. For example, while water is often seen as a resource in the open access commons, it is often regulated by countries with the stated purpose of allocation. The knowledge commons in the thesis, however, refer to resources that are human-made. One example of knowledge resources in the open access commons are resources on the Internet: while they can be open to all, they are regulated to a certain degree via the domains they belong to. For instance, websites registered under the '.sg' domain need to fulfil requirements as a

Singaporean institution or individual in order to qualify as a '.sg' website and likewise for other country domains such as '.au' or '.nz'. Dependencies on authoritative resources can still be found, although these relationships are less prescriptive.

Resources in sphere z being the most open are characterised by communities with a relatively higher degree of collaboration. Pages in Wikipedia provide another example, with most pages open to edits by anyone.

The three spheres discussed provide key perspectives by which resources in the knowledge commons can be compared and analysed. Again, it should be noted that these are not dichotomies – knowledge resources often move backwards and forwards in these spheres because knowledge production is a continuum of the self and others.

12.3.1.1 Subtractability

Resources evaluated in the case studies exist in a spectrum of all three spheres (x, y and z). Resources in the knowledge commons are generally difficult to exclude, even though there may be boundaries around them. With such boundaries, resources are termed as common pool resources by researchers such as Ostrom, Gardner and Walker (1995), Carpenter (1998) and Schlager (2002). In other words, these resources become common only to the defined community congregating around them. There are varying degrees of availability for common pool resources. This was argued by Ostrom et al (1995) and further studied by others (Carpenter, 1998; Schlager, 2002). 'Subtractability' was the term used to refer to such varying forms of common pool resources, which in this thesis are differentiated as knowledge commons resources in spheres of x, y and z, according to Carpenter:

Subtractability deals with whether or not one person's appropriation of a resource reduces the availability of that resource for others (1998, p. 38).

High subtractability is characterised by well defined boundaries offering resources only to specific communities; in their creation, sharing, and use of these resources. This mapped on most aptly to resources in sphere x: such as the community collection from the WoFG group (before it was digitised and put online) and traditional collections from museums and libraries. Access to these resources was limited only to specific communities or those that pay a fee to enter the physical museum. At the same time, any losses, damages or appropriations of these resources will result in their unavailability to others.

On the other hand, resources characterised by low subtractability have loose or easily permeable boundaries and can be easily accessed to others beyond a specific community. These resources are the most difficult to exclude; and their appropriations does not result in unavailability to others. Resources on the Internet with openly editable pages, or that do not limit access by memberships are examples of low subtractability³. This is mapped as resources in sphere z.

Resources in sphere y lies in between the two types of resources, where they are characterised by open access while maintaining memberships for those wishing to

³ By this reasoning, resources in digital formats may alter the picture for resources with high subtractability, given that they are easier to duplicate. In other words, it is much harder to argue that digital resources are highly subtractable – although there are exceptions (i.e. the 'hidden web' – such as limited access digital libraries and repositories).

participate. The subtractability of such resources is varied: when it comes to access to resources there is low subtractability, while when it comes to participation, they display moderate subtractability.

The insight offered by the idea of ‘subtractability’ enabled the addition of another dimension to resources in the knowledge commons, revised as Figure 12.2.

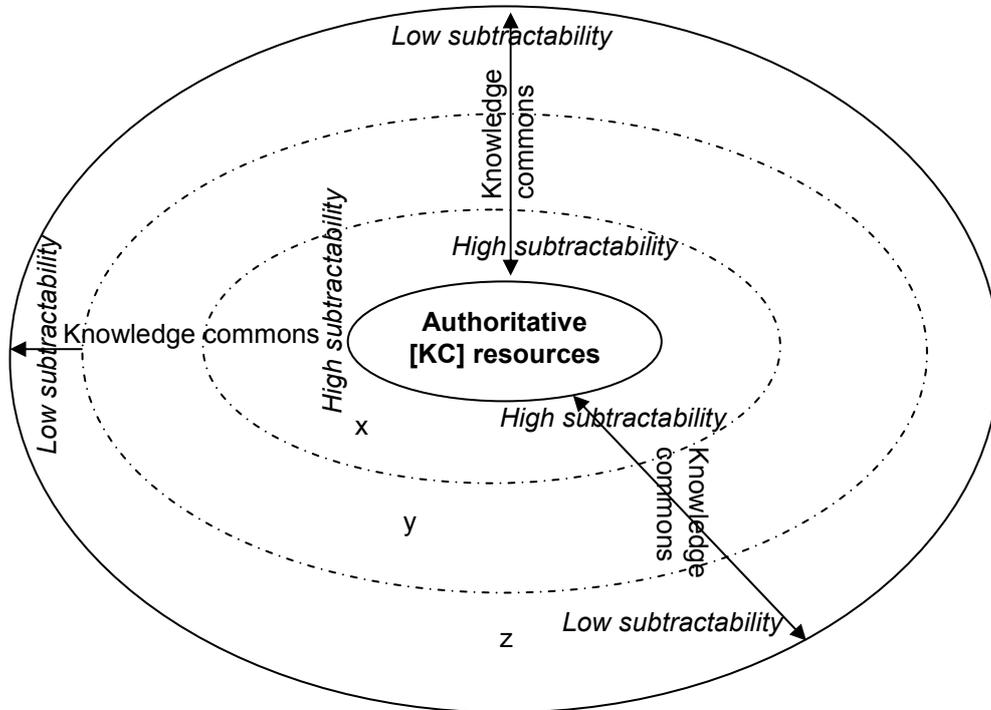


Figure 12.2: Theorising the knowledge commons (revised from Figure 12.1).

Resource characteristics of the knowledge commons result in, and are brought about by collective processes of coordination, cooperation and collaboration. Communities are not only end users and consumers, they are also co-producers and participants in the commons. It is the very concept of the commons that leads them away from being consumers – in order for them to use resources meaningfully in the commons they have to co-create and co-produce. The consumer of knowledge resources thus becomes a producer, contributing to collective knowledge at the same time. Another unique characteristic of the community in the commons lies in the continuum of knowledge processes; in this case the lines between individual and collective knowledge are blurred, as also raised in Chapter 4. Self-knowledge is shared with the peer and the community and at the same time is constructed by the knowledge one receives from the peer and the community.

A key observation about the knowledge commons is the transformation of physical and digital spaces by the tools which enables the creation, storage, sharing and use of resources. Many of the cultural institutions studied in the thesis are integrated facilities that include the use of both digital and physical spaces. Regardless of their forms, they are spaces and tools that support collective action while fulfilling needs for individual pursuits. As discussed earlier knowledge of the self and collective is seen in a continuum; and so are the spaces and tools that exist. Through the integration and transformation of spaces, institutional partnerships are formed as well.

These implications of contemporary media on resources, and the collective processes involved in the knowledge commons will be discussed in the following sections.

12.3.1.2 Contemporary media as transforming agents of resources

The subject of resources had strong appeal to cultural institutions in the case studies. This is hardly surprising given that resources make up the key holdings of any cultural institution, and constitute the inputs and/or outputs of any interactions that cultural institutions have with their communities.

As illustrated in the case studies, cultural institutions both past and present have had to deal with resource complexity in the knowledge commons. While there are multiple characteristics of resources within cultural institutions, there are also differing levels of subtractability with each resource type. As a resource moves from the x to y to the z sphere, there is reduction in subtractability and there are various tools that enable this transition; such as the Internet, blogs, the use of volunteers, and other communicated mediums such as the expression boards used by the public libraries in Singapore.

The contemporary media environment does not only refer to the increased importance of knowledge processing characterised by information and communication technologies; it is also driven by the existence of abundant networks of people who are connected by strong and weak bonds, sharing and creating knowledge together. With the findings from the case studies, the contemporary media environment is therefore perceived as an enabling tool by which resources can be transformed to take on different characteristics; reducing their subtractability and increasing the scope of participation by communities.

The relationship between participation and subtractability is inverse and recursive. The greater the participation, the lower the subtractability of resources. At the same time, resources with low subtractability can also enable greater participation. The self-created library blogs containing book reviews and stories for example in Singapore, allow people to comment, share and submit their own contributions – facilitating participation in the creation and sharing of resources with others in the communities.

Borrowing perspectives from structuration theory, the communication facilities inherent in contemporary media also contribute to a structure of signification, through shared interpretive schemes. This insight is important to the picture of the knowledge commons, as not every resource is in the knowledge commons – only the ones that are shared and communicated are considered to be significant to the communities that create, share and use them.

With greater communication facilities higher levels of participation by communities can also be observed, adding new dimensions to the concept of resources in the knowledge commons, as presented in Figure 12.3.

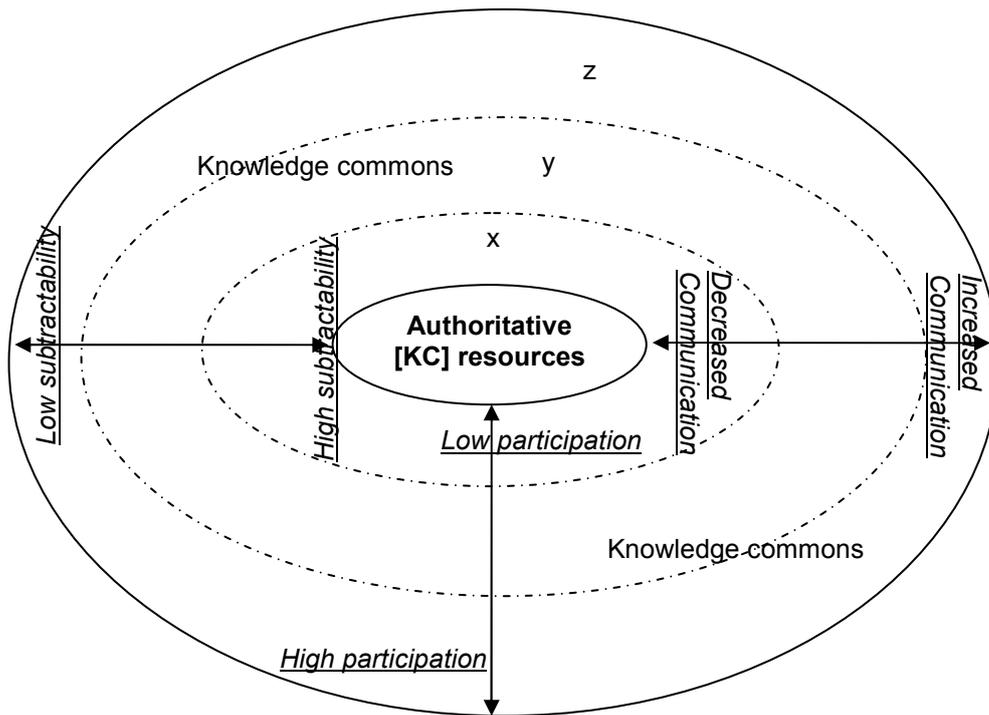


Figure 12.3: Theorising the knowledge commons (revised from Figure 12.2).

As depicted in Figure 12.3, communication and participation are inversely related to the subtractability of resources. With greater participation and increased communication there is also lower subtractability of resources. Similarly, with increased communication higher participation can be noted. Although it is theorised that the relationships are inversely or positively associated, the proportion of such relationships cannot be assumed or concluded at this point.

In other words, the picture does not imply that an increase in communication, for example, would give a proportionate increase in participation and decrease in subtractability. Such indications are beyond the scope of the study. In this thesis one does not need to be explicitly creating or sharing new resources in order to qualify as a participant. This insight was borrowed from Nonnecke and Preece (2000), who established ‘lurkers’ as non-public participants. The sharing of book reviews for example, by forwarding relevant links using the BookCross@SG website qualifies a reader as a participant, even though he may not be writing a new book review or posting any comments on his own.

12.3.2 Collective processes

Table 12.3 shows the relevant insights from the literature and case studies shaping the theorisations of the collective processes involved in creating, using and distributing resources in the knowledge commons. These insights have been extracted from Table 12.1. Like section 12.3.1, they form the basis for the discussion in this section.

Insights from study domain: Communities (B)	Insights from case studies
<p>Insight 4A: Based on Giddens' duality of structure, and complementary theory by other writers such as Castells:</p> <ul style="list-style-type: none"> – Communities are seen as sites of discourse and other action where meaning is collectively and recursively made and re-made in a continuous process of knowledge creation, sharing and use. – Community knowledge is a product of communities functioning in this way. It is both practical and discursive. It is held, in whole or in part, by individuals, groups or the entire community. <p>Insight 4B: Fundamental to the functioning of communities are collective processes of coordination, cooperation and collaboration. These can be mapped to Giddens' structural modalities of norms, facilities and interpretive schemes. Each of these has different implications to the ways people create and share knowledge in communities.</p> <p>Insight 4C: The contemporary digital media environment impacts on all three kinds of collective processes. It especially has the potential to enhance collaborative processes which rely mainly on the interpretive modality (i.e. the interplay of signification as structure and communication as interaction).</p>	<p>Insight 8B: Various forms of collective processes can be observed within the WoFG community, underlined by common understandings and processes established over time, structural relationships, and communication. Different intensities of these traits can be observed for each form of collective process.</p> <p>Insight 9B: Various forms of collective processes can be observed arising from the communities interacting with the ACM. Coordination was found to be the most basic form of collective process. Cooperation is characterised by structural relationships and greater communication, which have as their goal to achieve procedural compliance. Collaboration is the most unstructured form of collective process, with ad-hoc activities that are flexible to changes and are less controlled.</p> <p>Insight 10B: Public libraries in Victoria play a fundamental role in coordination, facilitating cooperation with greater intensity of communication and structural processes, and inspiring collaborative activities which are less controlled and are flexible to changes. These collective processes are observed as stages by which public libraries and communities move towards greater innovation and reflexivity.</p> <p>Insight 11B: In Singapore libraries, various forms of collective processes can be observed. The cultural role of public libraries in shaping a range of collective processes is also correspondingly discernible. Coordinative, cooperative and collaborative collective processes are shaped by, and shape levels of communication with communities, and participative technologies such as blogs.</p>
<p>Table 12.3: Insights on collective processes in the knowledge commons (extracted from Table 12.1).</p>	

No community can claim to possess collective wisdom without the involvement of others, especially in the process of collaboration. The production of knowledge in a community is never an isolated process, without the inspiration of others, whether they are remote or direct.

De Angelis (2006) argued that without communities Hardin's (1968) proposition of a tragedy of the commons would be true. In the context of the knowledge commons, it is put forward here that without communities there will be no commons. Boyle (2003) argued for the reality of the second enclosure movement facing the world right now: around a commons that is intangible, filled with ideas, innovations and inventions. One that is threatened by traditional copyright frameworks.

As discussed earlier, with more communication tools enabling people to easily participate in the creation, sharing, and use of resources in the knowledge commons, resources often shift from one sphere to the next and change in terms of their

subtractability. The community is crucial in this equation, and likewise, the knowledge commons cannot exist meaningfully without the community.

If without its community, there is no sustainability; as collective resources in the commons will deteriorate over time due to high subtractability. The effects are recursive. With resources characterised by high subtractability, communities cannot evolve to the state of collaboration; implying a lack of emergence and innovation. While the tragedy of the commons argued in 1968 (Hardin, 1968) had the pursuit of self-interests of individual property owners as its premise, the tragedy of the knowledge commons of today will be caused when a community halts its progress and evolution, and stops negotiating its boundaries. This is the reason why the state or the cultural institution alone is not sufficient: the community is necessary.

This insight has been made clear in the case studies, where the involvement of the cultural institution was crucial to the sustainability of resources in a collection (such as the case of Museum Victoria and the Asian Civilisations Museum). Yet, as recognised the cultural institutions themselves, the collections also cannot be without the communities that identify with them and are motivated to contribute positively to them. Collective processes that drive such contributions are therefore significant in their associations with the types of characteristics arising from resources in the knowledge commons.

The evolution of collective processes involved in the knowledge commons is envisioned through the time and space analogy of Giddens (1979). This is compared on a vertical axis of *community emergence and innovation*. A high level of community emergence and innovation is less prescriptive and the community is characterised by self-organising attributes. The WoFG community for instance, was highly organised on their own without a partnership of an institution for many years and over many gatherings in different locations around rural Victoria.

A representation of this relationship is illustrated in Figure 12.4. As seen from the figure, the relationship between collective processes over time and space, versus the total emergence and innovation of the community resulted in an S curve. Interactional practices outlined by structuration theory (Giddens, 1979) – sanctions (S), power (P), and communication (C) – are represented in each collective process, with the interdependencies between coordination, cooperation, and collaboration highlighted via underlying areas under the curve.

The dependencies of community emergence and innovation versus the time and space continuum of social practices are represented as concave and convex curves. In this figure, coordination (represented by a gradual concave curve) stipulates a basic level of community emergence over a rapid collective process of coordination in order for communities to collectively produce and use common knowledge resources. Cooperation, which implies procedural compliance, is reflected as a convex curve – indicating the growth of cooperation on a diminishing (but still increasing) level of community emergence and innovation. The highest level of collective process, collaboration, is represented at the top part of the curve – a steeper concave curve – highlighting the emergent and dynamic networks that are constructed and de-constructed in the case of collaboration.

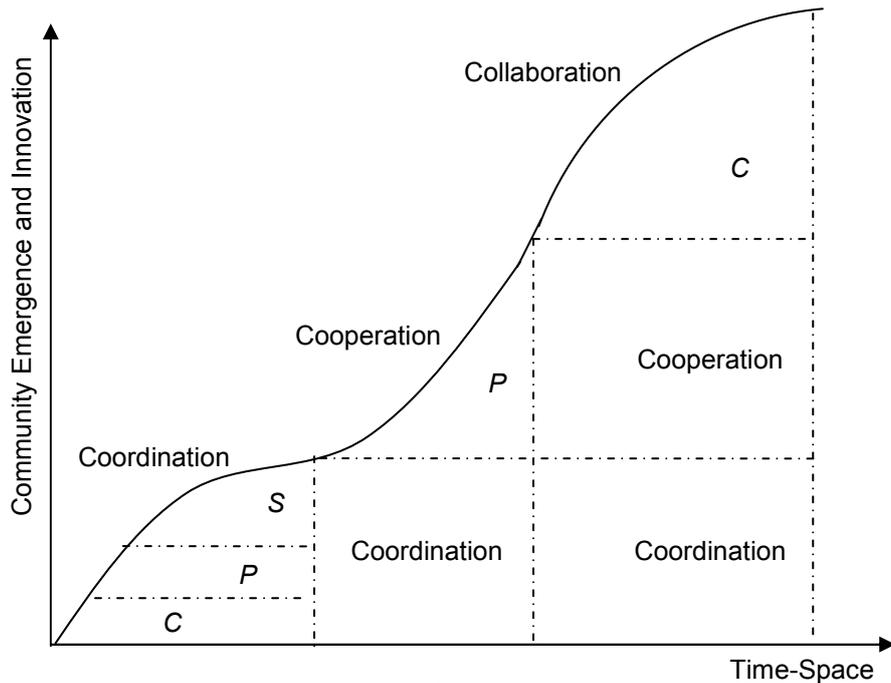


Figure 12.4: A vision of collective processes.

The factor of defection is defined as the departure of one or more community members from the original goals of the community. Defection for all three collective processes is not included in this picture, as they are independent of time and space, and the impact of defection on collective emergence and innovation in a community can be insignificant. A tightly coordinated community can have minimal defection and still emerge over time and space and become creative. A collaborating community in producing and using knowledge resources, such as the open source movement of software development, can have high rates of defecting but still remain innovative in terms of contributing and using knowledge resources from the community.

The implications of defection are varied and are dependent on a wide number of variables, such as group dynamics, communication devices, the strength of social networks, and so on; and although it is examined here in considering collective processes of knowledge production and use, it is beyond the scope of this thesis to study them in deeper detail.

Collaboration is therefore the most desired form of collective process in the context of producing and using knowledge in communities. It should not be misunderstood as a collective process without cooperation and coordination – therefore misunderstood to be destructive to communities. Although it is significantly different from coordination and cooperation, it is an evolved form of collective process – and in the context of contemporary media where time and space are highly organic and continuously redefined, the evolution of collaboration is similarly vibrant, characterised by a rapid rate of knowledge transfer and sharing, highly unpredictable community networks that are bounded together for multiple reasons, emergent relationships and high levels of creativity. Examples such as Wikipedia and the many peer to peer networks purposed for knowledge production and use are testimonies to collaboration.

12.3.2.1 Time-space influence on collective processes

Perhaps one of the most obvious findings has been the influence of the time-space continuum. As Giddens (1979, p 54) argued, time-space intersections are 'essentially

involved in all social existence'. While there was evidence of all three proposed types of collective processes in the case studies, they were not dichotomies and evolve in various ways. In other words, the collective processes did not exist in isolation and are shaped over the time-space continuum.

As highlighted by several interviewees, deeper forms of collective processes such as cooperation and collaboration resulted over time and with certain forms of space. For example, in the BookCross@SG project, the use of online spaces provided people from the communities of the participating public libraries with a platform to cooperate and collaborate on dialogue and projects relating to thematic areas of interests. In the case of Museum Victoria, the role of the online portal helping to facilitate contributions and sustain cooperation with the WoFG community was also evident.

The case studies reinforced the relevance of the time-space continuum to collective processes, thereby in congruence with Giddens' (1979) assertion that the time-space intersections are omnipresent in social existences. In addition, the role of contemporary media in shaping the emergent collective processes from communities was clear – which helps to inform the picture further as an additional insight. Depending on media, cultural institutions could engage their communities in certain collective processes, and they evolve over the time-space intersection.

This insight is also consistent with the earlier picture, where collaboration is predominantly characterised by communication at its core of interaction. With communication facilities embedded in contemporary media, it is therefore not surprising that collaboration occurs when cultural institutions utilise contemporary media technologies in their interactions with their communities. The use of the portal by MV, blogs by ACM and public libraries in Singapore, and integrating mobile libraries with communication technologies by the public libraries in Victoria are only some of the many examples of interactions leading to deeper collaboration with their communities.

Where communication facilities are not present, collective processes that emerge from communities are characterised by power relations and established sanctions – cooperation and coordination – reinforcing the earlier proposed picture (Figure 12.4) of collective processes. The figure is revised in Figure 12.5, this time reflecting the effect of increasing the use of communication technologies.

As shown in the figure, increases in communication can shift collective processes towards greater cooperation and collaboration. However, this intersection should not be perceived in isolation or misunderstood as implying a technological determinism of the various collective processes. Increased communication should be viewed as interacting with the time-space continuum and at the same time can be shaped by, or shape the overall emergence and innovation of the community.

This has implications for both cultural institutions and communities, in that communication technologies may be considered to draw or engage communities in deeper interactions. This finding also adds an additional perspective to the concept of collaboration (Schneider, 2006; John-Steiner, 1998), which contended that collaborators can work with one another without being directly connected. The use of communication technologies can facilitate collaboration in the absence of direct connections between potential collaborators.

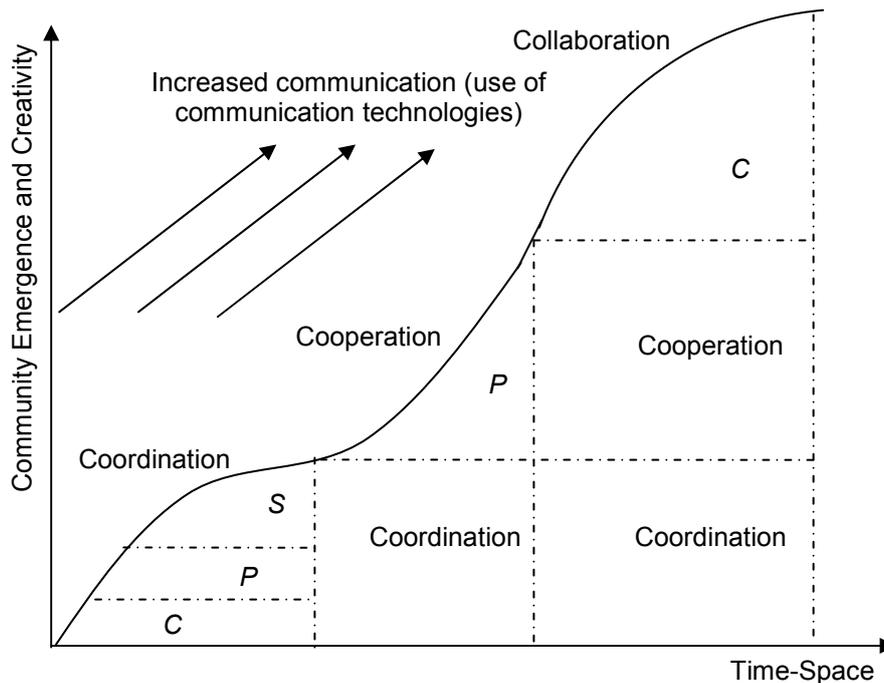


Figure 12.5: A vision of collective processes (revised from figure 12.4).

In terms of participation, the finding distinguishes communication as a key factor in transforming collective processes towards collaboration. In instances of cooperation, power relations between the cultural institution and their communities become the main factor. As discussed in the case studies, the power distance index was found to be very relevant in this context – where power distances were perceived differently in different cultural contexts, the accepted power relations between the cultural institution and their communities also differed.

Cases from Singapore have consistently demonstrated the utility of this index, with the cultural institutions often seen as the proactive initiator of cooperative projects with communities. This however, does not imply that the potential of cultural institutions in initiating cooperation with their communities would be undermined in cultures with a low index of power distance.

As shown in the cases studies from Victoria (which has a relatively lower index of power distance compared to Singapore), both Museum Victoria and public libraries were equally able to engage their communities in cooperative projects. This could possibly be attributed to empowered communities who also proactively interact with cultural institutions in cooperative arrangements.

Coordination, on the other hand, is seen as the most fundamental form of collective process; resting largely on established sanctions and norms. In all of the examples raised in the case studies, coordination was the most basic process underlining different collective energies from the communities: from the coordination of duties by volunteer guides to according significances around objects and stories in the WoFG community or the ‘inspiring stories’ program by the HGLV library.

12.3.3 Cultural institutions working in both the supplying and participating modes were both able to elicit participation

Table 12.4 shows the relevant insights used to shape the discussion on cultural institutions in the knowledge commons in this section. Insights from the literature on

cultural institutions and participatory design have been integrated in this table, because of their causal associations. As the case studies revealed, design – the actions of cultural institutions are largely attributed to their design approaches. This has direct implications on the roles in their communities in the knowledge commons.

Insights from study domain: Cultural institutions (C) and Participatory design (D)	Insights from case studies
<p>Insight 5A: The core role of cultural institutions is to foster meaning through the creation, storage, sharing and use of knowledge across time and space. Not all cultural institutions engage in all of these aspects all the time.</p> <p>Insight 5B: While their core role remains essentially unchanged over time and place the ways in which that role is enacted varies, in small or large ways, depending on context. A key variant is how far community members are characterised as recipients of, rather than participants in, knowledge production by cultural institutions.</p> <p>Insight 5C: Structural concepts that help in describing and explaining cultural institutions include:</p> <ul style="list-style-type: none"> - Time-space distancing: Especially viewing of institutions (including cultural as persistent social patterning resulting from the ongoing interplay of social action and social structure). - Reversible time: Especially how institutions can enhance the capacity of individuals and groups to learn reflexively (including experience) within and beyond the human life-span. - Ontological security: Especially the importance for communities of institutions that can assist and 'smooth' the ongoing negotiation and renegotiation of meaning in society. <p>Insight 6A: For cultural institutions, participatory design provides both a conceptual and practical framework for creating, sharing and using knowledge within and among communities, through innovative collaborative action.</p> <p>Insight 6B: Based on the analysis in the chapter, the research proposes a spectrum typology of participation by design, ranging from designers' (cultural institutions') participation in the users' world to participation by users' in the designers' (cultural institutions') world.</p>	<p>Insight 8C: Community participation was engaged by the MV in two broad ways. Within the premises of the museum, it was characterised by institutional activities, tours, and research partnerships. Beyond the premises of the museum, it was characterised by ongoing dialogue, going into the spaces of the community and public spaces such as conferences and other networks.</p> <p>Insight 8D: The WoFG/MV illustrated that there is a shift towards greater community engagement and enrichment of individual experiences. Contemporary technologies provide innovative opportunities for a museum to act as a catalyst of transformation in communities, and vice versa.</p> <p>Insight 9C: While primarily operating as a supplier of resources and experiences through the collections housed within the ACM, there are also ways by which participation is engaged from communities. There are various implications in terms of impact and reach.</p> <p>Insight 9D: A shift towards greater participation from communities is observed, enabled by contemporary technologies and the Internet. Limitations are also raised on this point, particularly the adaptability of technologies to changes.</p> <p>Insight 10C: Public libraries in Victoria engage communities both within their premises and in the sites of communities. In the latter, this is often enabled by partnerships with other institutions, such as neighbourhood houses, municipal councils, and schools.</p> <p>Insight 10D: For the public libraries in Victoria, participation is seen as a way to inspire new activities and develop strategic directions. In addition, it is also used as a method to engage communities in a non-threatening way.</p> <p>Insight 11C: In Singapore the traditional borrowing / supplying model of public libraries is enhanced by the ability of public libraries to act as a catalyst for community participation and intermediary in peer-to-peer resource creation and sharing. In the latter role, partnerships with other institutions are often found.</p>

	<p>Insight 11D: In Singapore contemporary technologies offer innovative opportunities for public libraries to engage communities in a participative way. In cultures characterised by diverse ethnic and religious groups, the forms of participation is even more important. The design of participation is therefore essential to managing diversity and possible tensions.</p>
<p>Table 12.4: Insights on cultural institutions and the relevance of participatory design (extracted from Table 12.1).</p>	

In Chapter 5, it was recognised that cultural institutions are working in more participatory ways, involving their communities as participants in knowledge production rather than recipients. At the same time many traditional forms of cultural institutions still exist, operating primarily as suppliers and engaging their communities as recipients. The case studies further provided evidence of these two systems: supplying – where cultural institutions are suppliers, engaging communities as end recipients and consumers of resources and services; and participants – where cultural institutions engage communities as co-participants in the creation, sharing and use of resources in the knowledge commons. In addition, the case studies showed how many cultural institutions were able to complement their traditional supplying modes with concurrent activities facilitating the participation of their communities in their services and resources. Both styles of engagement therefore showed evidence of participation.

Although the supplying mode of cultural institutions was largely shaped by the industrial age, they were also able to utilise contemporary methods to facilitate or initiate participation. In other words, participation from communities was possible in both working modes; although their forms may be different. Partnerships with other institutions and organisations to utilise their spaces innovatively in the public libraries of Singapore, integration of the public libraries’ activities with other community organisations and agencies in the public libraries of Victoria and in the case of the ACM. In these examples relating to the discussions on the supplying mode of cultural institutions, two observations were most apparent.

The involvement of other institutions, community organisations and agencies as partners within the spaces of the cultural institution appeared to be most obvious. At the same time, cultural institutions often did not operate in isolation, and other than partnering other institutions and agencies, they also utilised contemporary media such as online exhibitions, blogs, mobile messaging and instant messaging to involve partners and communities. The use of contemporary media infused physical spaces of the cultural institution with digital spaces, which distinguished cultural institutions away from the supplying mode.

As found through the case studies, many interviewees attributed this to a shift in perceptions – within the cultural institution and by external institutions and organisations. As aptly expressed by an interviewee from Victoria commenting on public libraries, ‘the concept of having libraries just as a stand-alone building has changed’, which suggests that the supplying mode of cultural institutions as earlier conceptualised needs to be re-examined.

In terms of impacts, both working modes were also found to be important to achieve depth and breadth in the interactions with communities. While the supplying mode had the benefit of reaching a variety of communities quickly by drawing them into

various activities and projects, the participating mode had the benefit of creating high impacts on specific communities.

As demonstrated by the case of Museum Victoria and the WoFG community, the participating mode which the museum largely worked in was a major factor in contributing to impacts felt by members of the community. Although interactions throughout the course of the project were recognised by both members of the community and the curators within the museum to be deep and engaging, it was also acknowledged that there were several implications and potential pitfalls.

It took considerable time for the museum to become a participant with the community, and for a formal partnership to be formed. As seen from the case, the WoFG community collection was not conceived until 2001 even though the first gathering was held as early as 1990. Only when memorable items and stories from the past ten years were brought together for the first time in 2001 did the community realise that they had a collection and they needed the participation of a museum to help them sustain the collection.

Communication was also crucial, especially in this case where many members of the community were remotely located away from the museum. The use of the online portal and exhibition thus acted as one of the main platforms for the community and the museum to gain access to the resources and interact with one another.

Breakdowns in communication facilities were therefore detrimental to the interactions between the museum and the community. As the researcher had experienced, when there were network disruptions or when certain members of the community had inadequate computing facilities or knowledge – contributions to the collection were greatly undermined. At the same time, interactions between the community and the museum were also disrupted. The importance of a reliable and affordable infrastructure is thus evident.

These findings help to revise the earlier concept of working roles in cultural institutions, as illustrated in Figure 12.6.

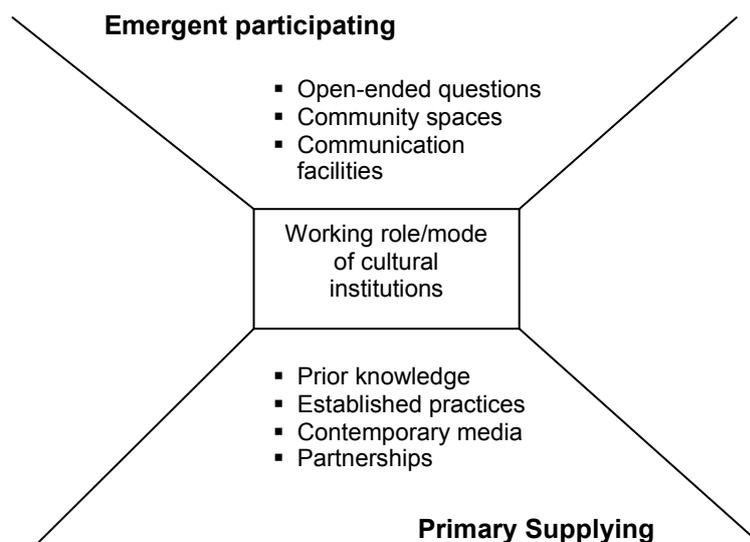


Figure 12.6: Revised concept of working roles/modes of cultural institutions.

Here, the two earlier proposed working modes of cultural institutions are now revised from a spectrum of participation to a richer diagram to show the multiple roles cultural institutions adopt when they interact with communities and resources in the knowledge commons. Simply put, the two working modes represent multiple possibilities for cultural institutions. In '*primary supplying*', cultural institutions make use of prior knowledge on their communities, established practices in interacting with these communities, leverage on contemporary media and form partnerships with other institutions, community organisations and agencies. In '*emergent participating*', cultural institutions ask open ended questions about how they are fulfilling their key visions of sustaining resources in the knowledge commons and helping communities make sense of these resources, bring activities to community spaces, and leverage on communication facilities to sustain their participation in these activities. Participation is possible in both working modes; although they may differ in their forms. This leads to the next key finding on designed participation.

12.3.4 Distinctions between designed participation were hard to validate even on a spectrum, and participation was also found to be closely associated with time-space

Although all of the study domains in the thesis have been identified as recursive and interdependent, the case studies found an intimate association between the working modes of cultural institutions and designed participation. In hindsight, this was not surprising, as cultural institutions that considered how they might design the participation of their communities. It was thus decided that the picture of designed participation in cultural institutions needed to be integrated with the earlier picture (Figure 12.6).

At the same time, distinctions between designed participation, even though it was earlier conceptualised as a spectrum, was inseparable from one another. This was evident from the case studies where it was often expressed that communities and cultural institutions are co-participants and designed participation evolve – over time and the spaces that are available at certain points in time. For example, in the case of the Asian Civilisations Museum both museum staff and volunteers had talked about how the volunteers shape the significance of collections on display to visitors, even though most volunteers only begin a relationship with the museum based on activities of the institution. Again in this context, the time-space distancing (Giddens, 1979) was relevant. Even though communities may be participating in an activity designed by cultural institutions, such participation can lead to the institution participating in activities from the community. This insight is closely associated to the earlier discussed working modes of cultural institutions. Museums and libraries working in traditional modes supplying services and resources can often complement their practices with more participatory methods over time and space as they increase their interactions with communities.

There were certain benefits and potential pitfalls found in different forms of participation. With a well-established activity designed to involve the participation of multiple communities, interviewees often expressed the popularity and reach of such activities. The mobile libraries of public libraries in Victoria where communities living in remote areas would come together to socialise and share resources, the ACM in Singapore bringing together school and interest groups for thematic tours and discussions are only some examples.

Yet while such activities have the benefit of reaching out to a wide community of people, they could become irrelevant as learning interests evolve, and new

perspectives emerge. As such, it is important that feedback and communication are maintained with communities. On the other hand, where cultural institutions are involved as co-participants, the issue of relevance is less of a risk – as they also become agents of change and impact in those communities. The case of Museum Victoria and the WoFG community is a good demonstration of this benefit. However, as highlighted earlier, such a form of participation comes with a price as they also take a longer duration of time to emerge and materialise. These findings help to enrich the earlier picture, as shown in Figure 12.7.

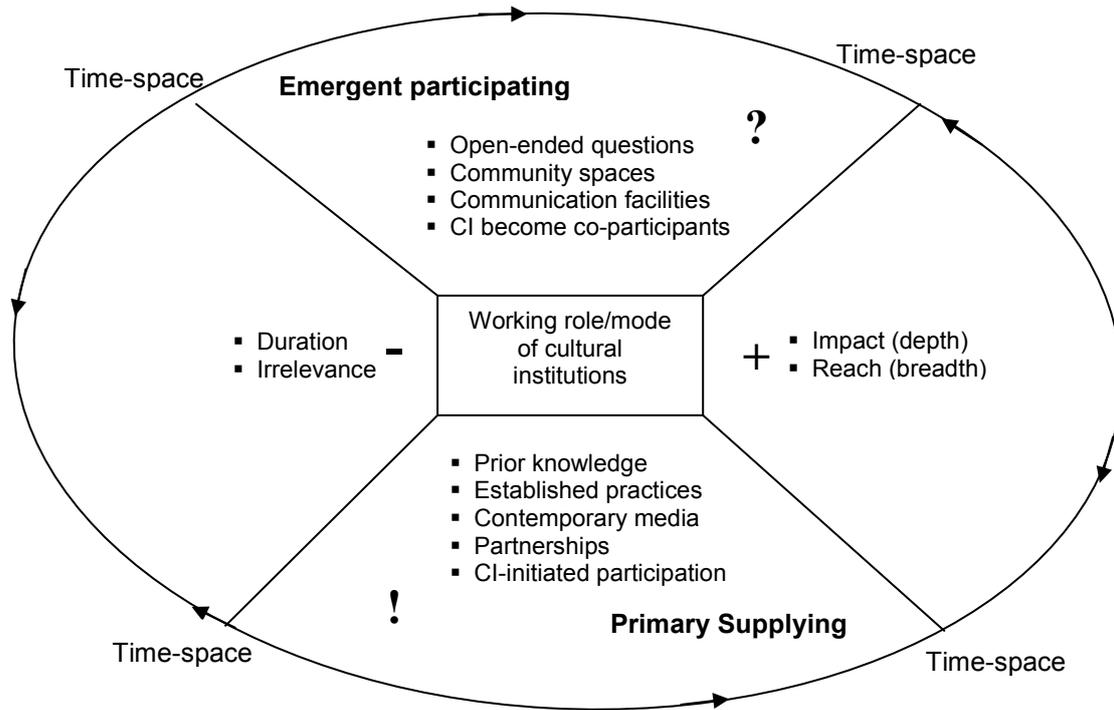


Figure 12.7: Revised concept of working roles/modes of cultural institutions with designed participation.

The time-space distancing is now included in the picture as a recursive factor, shaping both working forms, designed participation, negative and positive effects of actions. Because the ‘primary supplying’ mode is based on what is already known by cultural institutions and makes up the primary manner by which cultural institutions interact with communities through resources, it is depicted with an exclamation mark (!), since the other form, the ‘emergent participating’ is based on unknowns and are community-initiated, it is depicted by a question mark (?). The ‘primary supplying’ mode is also further informed by the insight on participation, as within this mode the cultural institution initiates and designs participation from their communities in their activities. Conversely, actions that take place in community spaces – leading to co-participation by cultural institutions – are seen to belong to the ‘emergent participating’ form. Cultural institutions can utilise both working forms, creating multiple possibilities in interactions with their communities.

In these actions, positive outcomes and potential risks and pitfalls can occur; reflected on the right and left spheres of the figure respectively. As earlier discussed, both working modes are essential, to achieve benefits of creating high impacts with communities or to be able to reach a wide community. Both come with potential risks, as a deep and engaging relationship with communities can also take a longer

duration of time to nurture; while trying to reach as many communities as possible runs the risk of being irrelevant to all.

12.4 Cultural dimensions

12.4.1 Two cultural considerations

Institutions reflect minds and vice versa: what forms cultures take depends on what individual humans can think, imagine, and learn, as well as on what collective behaviours shape and sustain viable patterns of life in ecosystems. Cultures must be thinkable and learnable as well as livable (Keesing, 1974, p. 86).

In structuration theory, social structure is shaped by actions; and some such actions are constrained by their structures (Giddens, 1986). In the context of the study, this implies a high level of interdependence between institutions and the communities they serve in shaping culture. This is reinforced by Hofstede (2001)'s argument that a systems approach to considering culture in research is highly desirable. As he explained:

The institutions-versus-culture dilemma is, I believe, a non-issue...I argued that societal norms shape institutions (family, education systems, politics, legislation), which in their turn reinforce the societal norms. They are the chicken and the egg. (Hofstede, 2001, p. 20)

This is especially applicable to cultural institutions, whose main purpose is to promote, support, and shape communities by creating, preserving, sharing and transmitting knowledge. By the arguments of structuration theory, the societal norms of communities will shape cultural institutions, and through actions they will in turn reinforce societal norms. This is a recursive process, and the levels of cultures are iteratively constraining and empowering each other.

Before proceeding with the discussion, it is necessary to revisit what is meant by culture in the study. Schein (1984, p. 3) defined institutional culture as 'a pattern of basic assumptions that a given group has invented, discovered, or developed in learning to cope with its problems of external adaptation and internal integration, and that have worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems'. Hofstede (1991, p. 62) related culture to mental programs, likening it to collective programming which differentiates one group from another.

National culture is thus the cumulative effect of communities living and working in social frameworks, that is constantly renewing themselves in everyday life (Pang and Schauder, 2007). This, however, does not imply that national cultures are easy to change. As studies have suggested, they can be resistant to change (Hofstede, 1980; Newman and Nollen, 1996); and evolve from one generation to the next (Ralston, Holt, Terpstra and Cheng, 1997). Recalling structuration theory's arguments for the duality of structure, it could also be conceived that this evolution of culture between generations is the effect of agency – actions shaping the very structures that were previously constraining them. Along the same line of thought, this inter-generational evolution or changes in culture is resolved here with the core element of structuration theory: the time and space intersection.

I regard it as a fundamental theme of this paper, and of the whole of this book, that social theory must acknowledge, as it has not done previously,

time-space intersections as essentially involved in all social existence.
(Giddens, 1979, p. 54)

Recalling that the time-space intersection runs through all other constructs that have been built since chapter five, the time-space intersection is again, found to be applicable in the context of cultural considerations. The time-space intersection requires special attention in the contemporary media environment. To name a few examples, the contemporary media environment has given birth to virtual communities, is characterised by wireless and networked devices, compressed time through rapid information processing and created new types of spaces for communities to interact. They are familiar examples where the concepts of time and space require rethinking. Castells, in his discussion of what he termed the 'information age', has drawn significant attention to such issues.

I propose the hypothesis that the network society, as the dominant social structure emerging in the Information Age, is organised around new forms of time and space: timeless time, the space of flows. These are the dominant forms, and not the forms in which most people live, but through their domination, they affect everybody (Castells, 2000, p. 405).

Yet the time-space intersection of structuration theory is still relevant. The time-space intersection of structuration theory is drawn from the studies of Heidegger, who originally wrote in 1927 in his book 'Being in Time', and posited that:

time-space no longer means merely the distance between two now-points of calculated time, such as we have in mind when we note, for instance: this or that occurred within a time-span of fifty years. Time-space is the name for the openness which opens up in the mutual extending of futural approach, past and present. The self-extending, the opening up, of future, past and present is itself pre-spatial; only thus can it make room, that is, provide space...prior to all calculation of time and independent of all such calculation, what is germane to the time-space of true time consists in the mutual reaching out and opening up of future, past and present (Heidegger, 1978, p. 14).

The notion of time-space written by Heidegger is especially relevant in today's contemporary media environment even after more than seven decades. The time-space concept is likened to a presence (Heidegger, 1978) – something that gives form to content. Through structured differences, it holds the past, present and future together – and at the same time, apart. The evolution of culture, when considered using the time-space intersection, can thus be understood using the recursive property of the duality of structure. The day to day life can be related to wider attributes of social systems; and as people draw upon their understandings of the social structures they are embedded in, they recursively produce and reproduce actions that constitutes a collective programming of meanings – culture.

From this discussion, it could also be perceived that certain social structures could exist between communities and their wider societies. James attempted to elucidate the relationship, by contending that a community is a social formation, but has its 'cultural-political boundaries crossed by broader social forces' (James, 2006, p. 21). In other words, all nations, institutions, communities even families are social formations that are inseparable, recursively shaped and shaping one another through the drawings and crossings of boundaries. In his discussion of nation states, James argued for the complexities involved in conceptualising the nation-state. James wrote:

Nations are historically-produced social entities existing within a system of 'discontinuous histories and elements of invented or reconfigured content, but which in an uneven process of consolidation come to be experienced as naturally extending out of the past and into the past' (James, 2006, p. 221).

This view is congruent with perspectives proposed by Anderson (1991, p. 86), who argued that 'official nationalism' is developed after, and in reaction to larger national movements that had proliferated in the region of individual states. The emergence of the nation is therefore an emergent social formation, with gradual dominance of abstract social relations across all modes of practice, such as monetary and trade transactions.

Like nations, institutional cultures could be thought of as social formations that are shaping and shaped by other factors, such as notions of national identities, community cultures, and global trends. Morosini, Shane and Singh (1998, p. 138) define 'corporate cultures as routines and repertoires, ways of organising and managing business activity'. Institutional cultures are therefore created and shaped fundamentally by these practices: routines, processes, and principles of organising and managing activities related to their defined scopes of service.

Institutional cultures can be significantly influenced by national culture (Kessapidou and Varsakelis, 2002) – but national culture is not the only factor shaping institutional cultures. As Hofstede argued, there is no universal rationality governing organisations – the more culturally diverse they are, the greater the need for diverse practices, skills, and routines.

Two cultural considerations were hypothesised in the study. Bearing in mind that communities are made up of individuals, and that cultures are the cumulative effect of individuals living, working, and interacting in social frameworks, cultural considerations are reflective of both individuals and institutions.

- National cultures as shaped by communities of Singapore and Victoria,
- Institutional cultures, which exist in two ways:
 - Internal organisational cultures of cultural institutions, and
 - Cultural differences between cultural institutions; such as the cultural characteristics shared by museums and similarly, cultural characteristics shared by libraries, and the collective cultural differences between museums and libraries.

These cultural considerations should be examined interdependently, rather than viewed as dichotomies. Yet it is important that these considerations are maintained as separate discussions, as there are distinct cultural factors shaping the cultural institutions. Internal organisational cultures are distinct and unique to every organisation including cultural institutions, and can differ according to the size and tenure of the organisation.

On another level, cultural institutions collectively share certain purposes and differ in other ways. Museums and libraries for example, share the same purpose in building, preserving, representing and transmitting the knowledge of their communities – but differ in the ways they achieve this purpose and the scope of the communities they serve. With libraries, there is recognition that they share certain institutional cultures – but again, the differences from one library to the next bring back the notion of internal organisation cultures.

It should be clear by now that these cultural considerations have to be examined in a recursive way. For example, organisational cultures can be shaped by national cultural characteristics and likewise for the cultural characteristics shared by a collective group of public libraries. This highlights the need for a systems approach to study culture. As Jervis argued in his work on systems effects, a system is apparent when certain observations can be made. In his own words:

We are dealing with a system when a) a set of units or elements is interconnected so that changes in some elements or their relations produce changes in other parts of the system, and b) the entire system exhibits properties and behaviours that are different from those of the parts (Jervis, 1997, p. 6).

The ways by which national cultures influence institutional cultures, and vice versa, can be observed in the study. Shifts in national cultures frequently imply changes and adjustments in organisational cultures and collective cultures of cultural institutions. For example, Kessapidou and Varsakelis (2002) found significant impacts of national culture on business performance, even on firms wholly owned by foreign entities. In his study of the Brukenthal Museum in Germany, the Transylvanian Museum Society in Hungary, and the Astra in Romania, Nissen (2006) found that even though these institutions shared similar beginnings, they developed differently due to national cultures and the growth of the professional practice of libraries, museums and archives. Similarly, the institutional cultural characteristics of cultural institutions can shape the collective national culture that communities are embedded in. This argument can be reinforced by structuration theory, which posits that social structures can be transformed through actions.

Yet national culture is not necessarily shaped only by many institutional cultures – there are communities that are not directly shaped or shaping institutional cultures, political changes, and other external events that can dynamically shape national culture. Without going into the intricacies of such accounts, Figure 12.8 conceptualises the relationship between institutional and national cultures.

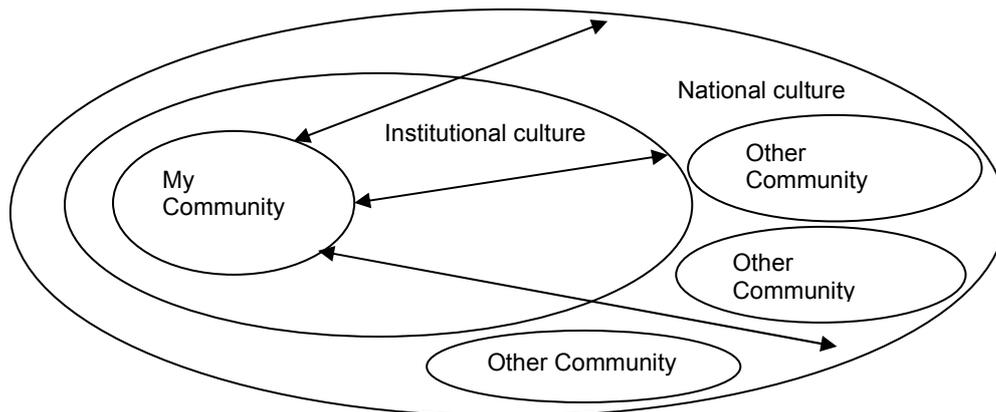


Figure 12.8: Cultural Considerations.

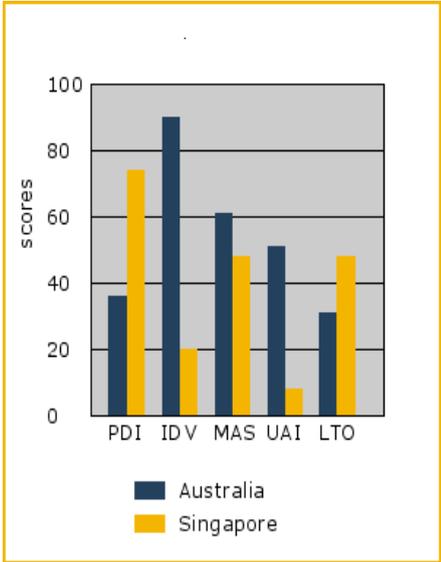
Certain inferences can be drawn here. The everyday life of communities living and working in social frameworks makes up the core element in shaping both institutional and national cultures. The larger concentric circle of institutional culture recognises other cultural elements at work, such as internal organisational culture and the collective culture of different streams of cultural institutions. Likewise, national culture is the largest concentric circle in the figure, recognising many other cultural elements

at work that it shapes and is shaped by. Although the study had not intended to examine differences between the community cultures within the service locus of cultural institutions and national cultures, several insights from the case studies pointed to the need for cultural institutions to manage such differences and similarities. As represented in Figure 12.8, cultural institutions perform the role of a mediator and negotiator, managing possible tensions while celebrating cultural diversities of various communities.

12.4.2 Relevance of national cultural influences

Five indices of cultural relativity were introduced in Chapter 7, giving some insights to how the cultures in Victoria and Singapore differed or were similar. These indices however, were not conclusive and through the semi-structured interviews they were further analysed for their relevance on the main study domains of the thesis. The five indices and their definitions are recaptured in Table 12.2.

Index	Definition
Power distance (PDI)	The extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally.
Individualism-Collectivism (IDV)	Society in which the ties between individuals are loose: everyone is expected to look after him/herself and his/her immediate family only. Collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people’s lifetime continue to protect them in exchange for unquestioning loyalty.
Masculinity	Distribution of roles between genders.
Uncertainty avoidance	The extent to which members of a culture feel threatened by uncertain or unknown situations.
Long-term orientation	Refers to choice of focus by which actions are based on (i.e. long term versus short term orientation).



Index	Australia	Singapore
PDI	~35	~75
IDV	~90	~20
MAS	~60	~48
UAI	~50	~10
LTO	~30	~48

Table 12.5: Five indices of cultural relativity (Hofstede, 2001).

Singapore had a relatively high score on the power distance index compared to Australia; implying that status, hierarchy, and power distances were viewed legitimately and perhaps even desirable. Earlier in Chapter 7, this index was hypothesised as influencing the working modes of cultural institutions – with higher scores on the power distance index, cultural institutions were perhaps inclined to work mostly in the supplying mode. However, as evident from the case studies, this was inconclusive; as cultural institutions in both Victoria and Singapore have demonstrated examples where they interact with communities through their resources via multiple modes. In terms of driving collective processes this index was

also found to have lesser impacts as compared to the cultural role of cultural institutions. This was adequately demonstrated by public libraries from both states where they were perceived as fundamental drivers of collective processes in communities. In other words, the differences in perceived power distance did not stand to affect the core role of cultural institutions in facilitating collective processes in communities.

What was very interesting was the individualism-collectivism index – which appeared to influence the perception and trust in cultural institutions in a number of ways. Singapore had a much lower score on this index than Australia; meaning that Singapore's culture was characterised by a higher degree of collectivism. As the case of public libraries in Singapore demonstrated, there is a certain degree of trust in the public libraries. This was explained using the metaphor of a family that coordinates its efforts and relies on each other towards common goals. The insight is also consistent with the explanation of collectivism.

Although this index seemed to have an influence over the perception and trust in cultural institutions, it was not apparent as an independent factor shaping the findings on the various study domains. As the case studies demonstrated, all collective processes were observed in communities from both states, contributions towards the knowledge commons were present, and the case studies also demonstrated multiple working modes. This index did not show favour or preferences over certain resource characteristics, collective processes, working modes of cultural institutions, or designed participation. Again, the cultural role of cultural institutions appeared to be much stronger than this index on the cultural relativity of societies.

A similar lack of evidence can also be made on the masculinity index, which leads to the exclusion of this index as a significant cultural influence. The extent of masculinity in men and feminine characteristics in women were not observed to be a significant shaper on resources in the knowledge commons, or cause variations on collective processes in communities that create, share or use such resources. At the same time, none of the case studies of cultural institutions pointed to such influences shaping institutional culture and the ways they engage their communities.

Australia had a much higher score than Singapore in terms of uncertainty avoidance. Though Hofstede (2001) argued that this produces different implications for the communities of both countries, the research found that cultural institutions still maintained their cultural role, and were as essential nonetheless; although the ways by which they were needed differed. High uncertainty avoidance cultures (i.e. Australia) tend to 'support beliefs promising certainty and to maintain institutions protecting conformity' (Hofstede, 1991, p. 347) – which has implications for the role of cultural institutions in protecting such conformity. On the other hand, low uncertainty avoidance cultures are argued to be tolerant of diversity and differing opinions, and not expected to express emotions openly. This was validated by the case studies, such as the case of ACM in Singapore, where curators consistently talked about embracing diversity as their approach in putting together resources and the ways they interact with their communities.

While there was a lack of conclusive evidence pointing to the significance of the final index (long-term orientation) and its influences on inclined participation, working modes, collective processes, or resource characteristics, this index was found to complement the time-space intersection more readily. As many interviewees expressed it, collective processes such as collaborations emerge only over time and the spaces available at certain points in time. This was also complemented by the choice of focus by cultural institutions for certain communities or partner institutions.

For example, in the case of MV and the WoFG community, there was a long-term focus reflected in the formalisation of the partnership between the museum and the community, and the communication facilities, dedicated curators and time spent on interacting with the community.

This also influenced the types of designed participation, where the museum often participated in community-initiated activities while involving them in their activities and spaces according to their needs. Interviewees from WML, a public library from Victoria added to this insight, in explaining how the library viewed it as important that they choose their partners – so a long-term focus with community services is chosen over others in his library. As a result, the library also saw greater participation from these community services over others.

In the case of cultural institutions from Singapore, the long-term orientation index was similarly complementary to the time-space intersection. Curators from the ACM for example, expressed how the choice of focus influenced their exhibits. Interviewees from the ACM recounted the design of exhibits in the museum by explaining how the galleries serve as long-term themes and base exhibits but at the same time there were also mobile exhibits that are introduced periodically. One example is the 'Beauty in Asia: 200 BCE to Today' exhibition, held from 3 May to 23 September 2007. Hiram, a curator in charge of the exhibition, explained how the use of short-term and long-term focuses shape the presentation of the museum's exhibits:

Exhibitions such as Beauty in Asia allow us to showcase our own collection, and give our visitors an opportunity to see what is not usually on display. However our own collection was not comprehensive enough to provide all the exhibits, so we also had to borrow widely to fill the gaps in the exhibition. So it is important to have both types of exhibits I think...those that are there as basic collections, and those that are changing and reflect more contemporary issues...

The establishment of the Community Partnerships and Outreach (CPO) division in the National Library Board of Singapore reflected a long-term orientation as well, setting the momentum for deeper and more engaging collaborations or cooperation with communities and institutions.

In the cases studies from both states, there was however no strong evidence reinforcing the proposed relativity of the long-term orientation index – as the case studies reflected both short and long term orientations according to their needs and perceptions. Though this factor cannot be included as a significant cultural factor influencing the generality of key findings on the main study domains, it is significant as a complementary insight to the time-space intersection. In other words, the cultural perception of long-term orientation in communities should be considered when investigating the implications of any practices against the time-space distancing.

12.4.3 A cross-cultural theorisation

The two spheres of cultural considerations raised in Figure 12.8 are further enhanced in the context of cultural relativity between Victoria and Singapore. As it can be seen in Figure 12.9, the picture is now compared between Victoria and Singapore using the five indices of cultural relativity proposed by Hofstede (2001).

In this picture, communities which contribute to institutional cultures are represented as the inner core. Overlapping this core is national culture, which consists of other

communities and institutions. The whole picture represents cultural dimensions of Victoria and Singapore. They are further compared with each other using the five indices of cultural relativity proposed by Hofstede (2001).

As discussed in the case studies and earlier in the previous section, not all of the differences in terms of cultural relativity were found to be significant. Collective cultural influences were significant factors in shaping cultural institutions. Together with cultural characteristics emergent from communities, they contribute to and shape institutional culture.

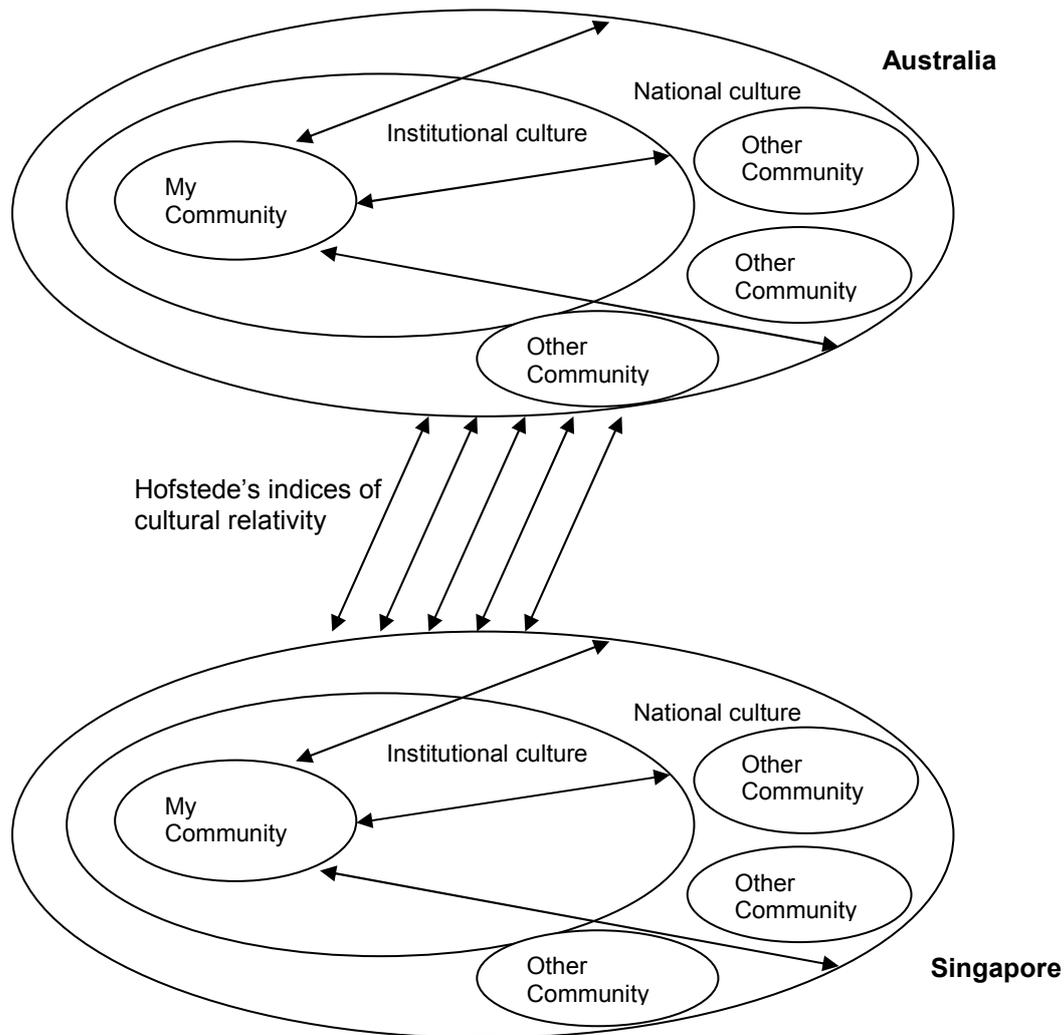


Figure 12.9: Cultural considerations and their relativity.

While Hofstede’s indices of cultural relativity can highlight dominant characteristics between cultures, it should be used with caution. As earlier critiqued, there are non-dominant identities and cultures within one state and this awareness needs to be included when using Hofstede’s variables. This weakness is particularly striking in ethnically diverse cultures. Walsham (2001) has found through his studies of Chinese and Western organisations that national cultures are seldom homogeneous, and both dominant and non-dominant cultural identities are changing everyday; with such changes partially motivated and inspired by the trend of globalisation.

As the research had revealed, Hofstede’s variables concerning relativity and differences between the cultures of Australia and Singapore were limited in their

explanatory powers as the cultural dimensions shaping the findings were complex. Within the rich organisational and national context, cultural effects are better understood in a recursive sense: they are constantly shifting due to both structural and agency effects. This was also Walsham's (2001) conclusion, in his work of studying technological adoption and use in cross-cultural organisations. As he indicated, 'Hofstede-type variables may have limited value as sensitising devices to cultural difference' and cultural analysis are better carried out through a 'process-oriented view as to how culture is implicated in IT adoption and use processes' (Walsham, 2001, p. 201). Walsham's arguments reinforced the perspective that culture is a dynamic that is shaped continuously; therefore are better understood by not aiming to capture 'snapshots' but rather by interpreting it within the processes (such as actions, methods, procedures, and so on) of the daily life of communities. This insight in the context of this research can thus be construed as this: culture is a modality that is collectively shaped by both structural forces and the interactions of communities.

Chapter 13 – Conclusions and Recommendations

13.1 Answering the research questions

As argued throughout this thesis, the recursive effects of human interactions in creating, sharing and using knowledge resources in the contemporary media environment call for an examination of the roles cultural institutions play, being custodians and public institutions holding many of the resources in the knowledge commons.

In Chapter 1 four study domains had been conceptualised, along with key research questions in each domain. These study domains provided a basis to develop the research methods in Chapter 2. Subsequent chapters (3-7) discussed theoretical backgrounds relating to each study domain and research questions. These theoretical insights are further enriched by insights from four case studies of cultural institutions situated in different cultural contexts of Victoria and Singapore (Chapters 8-11). Building on these insights, Chapter 12 proposed a number of theories for each study domain.

As a recapitulation, Table 13.1 shows the research questions and their summarised findings. These findings have been explored through their theorisations in the earlier chapter. They should not be viewed as stand-alone findings; rather as recursive influences on each study domain and research question. The following discussion will discuss their interdependencies, and further explain how they answer their respective research questions.

Research Questions	Exploratory findings
1) What are the characteristics of knowledge resources in the commons in the contemporary media environment?	X – high subtractability, low participation and communication. Y – medium subtractability, medium participation and communication. Z – low subtractability, high participation and communication.
2) What collective processes are involved in, and how do they contribute to the knowledge commons?	Coordination – enables coordinated contributions of resources based on shared sanctions and understandings. Cooperation – working towards a shared goal with procedural compliance. Collaboration – greater communication and signification, allocating meanings to resources.
3) What is the role of cultural institutions?	Multiple working roles (Primary Supplying and Emergent Participating) to facilitate participation.
4) What are the types of designed participation relevant for cultural institutions? What are the benefits and potential pitfalls, if any?	Institution initiated – benefit of reaching a wide audience, but there is potential irrelevance or failing to cater to specific needs of communities. Community initiated – beneficial in terms of the depth of impact on the community, but require significantly more time and effort.
5) Will the different cultural contexts in which cultural institutions are situated affect the findings?	Not all indices were valid; the cultural role of cultural institutions was a more immediate influence on the findings than national cultures. A recursive relationship was proposed, between the cultures of communities, institutions, and nations.

Table 13.1: Summarised exploratory findings to research questions.

13.1.1 What are the characteristics of knowledge resources in the commons in the contemporary media environment?

Three main spheres were theorised, to describe multiple forms of resources in the knowledge commons. They differ in terms of: subtractability, potential for participation, and communication tools as enablers of interactions between people in the communities that create, share, and use these resources. As argued throughout the thesis, resources do not tend to stay in one sphere – the defining boundaries are permeable and resources are able to shift from one sphere to the next, or transform into multiple forms to take on characteristics from other spheres. The WoFG community collection, for example, began with resources that were identified in sphere x (high subtractability, low participation and communication) but over time, as digital versions were put online to be shared within the community and then with others beyond the community, resources assumed features that were characteristic of other spheres.

The case studies provided strong evidence of how contemporary technologies are a consistent influence (and are also influenced by the resources themselves) in shaping the characteristics of resources in the knowledge commons. Yet this cannot be considered as an independent theory – the collective processes involved in creating, sharing and using each resource must also be considered.

13.1.2 What collective processes are involved in, and how do they contribute to the knowledge commons?

Three types of collective processes were identified: coordination, cooperation and collaboration. Giddens' (1984) typologies of interactions (sanctions, power, and communication) were theorised to underline all collective processes. In cooperation however, power relations (in the form of hierarchical relationships and processes) were proposed as more dynamic in order to achieve procedural compliance in working towards shared goals or pursuits. Collaboration on the other hand, while still relying on basic processes of coordination and cooperation over time-space, is characterised by greater communication as the functional form of interaction between people in the community. The following will examine how all of these collective processes are desired within each resource sphere of the knowledge commons (as discussed section 13.1.1).

Coordination, which relies largely on the development of shared sanctions and understandings (which have to be communicated and also standardised within a community, even if informally) is a feasible process to ensure fair access and regulated production of knowledge resources. In other words, coordination is necessary to prevent over-use; as resources are characterised by high subtractability, even within the community that produce and use such resources. Cooperation is also desirable, as with compliance and greater procedural participation the community defined around resources in sphere x become grounded as co-operators. Collaboration, emphasising communication over all other interactions, can lead to resources that are characterised by high subtractability (sphere x). Depending on the nature of communication and the collaborators involved, such resources can have very clear boundaries limiting access to the collaborators involved.

Resources in sphere Y are lower in subtractability, characterised by more open access but still limiting participation and communication by membership. For resources in this sphere, coordination, cooperation, and collaboration are possibilities. There is often a shared and well-communicated goal, and formal and informal

mechanisms laid down for participants to contribute to the goal. For resources in this context, coordination and cooperation are essential for the long-term sustainability and engagement of community members. In addition, over time and space, the increase in communication (characterising collaboration) can also lead to the widening of access and participation to other collaborators – therefore lower in subtractability.

Resources in sphere Z are the most open, and again, all collective processes of coordination, cooperation and collaboration are possibilities given the complex nature of these resources. Being the most open and unrestricted, it is driven by collaboration to rejuvenate the development and evolution of these resources over time and space. At the same time, some degree of coordination is required, for example to ensure regular contributions of resources and new rules or understandings are shared within the community with new members and policy changes. Cooperation is also fundamental, for instance, to enhance the continued pursuit of shared goals by other members, and to ground new members as co-operators and eventually as collaborators.

The relationships between various collective processes and resources in the knowledge commons are recursive and interdependent. This recursive and interdependent relationship is represented in Figure 13.1.

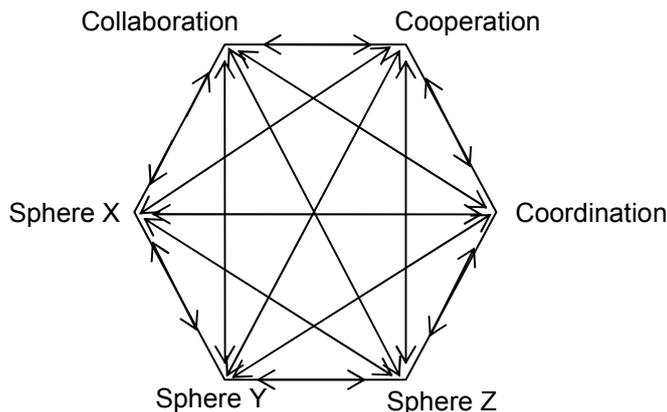


Figure 13.1: A recursive relationship between the knowledge commons and collective processes.

Collective processes are recursive between themselves, as it is the case for resources between different spheres in the knowledge commons. Because of the contemporary media environment, boundaries between different collective processes are increasingly permeable within communities. This also implies that there can be multiple collective processes associated with different resource types in the knowledge commons, and vice versa. The next discussion explores the role of cultural institutions in this interplay.

13.1.3 What is the role of cultural institutions?

Two main forms of practices by which cultural institutions engage their communities and facilitate or initiate participation emerged from the research. They are named as: 'primary supplying', and 'emergent participating'.

In 'primary supplying', cultural institutions utilise prior knowledge about their communities, established practices of creating, sharing and using shared resources within the institutions, and contemporary media to share and make resources available for their communities. These resources can take on multiple characteristics (see discussion in section 13.1.1). They also form partnerships with other institutions and community organisations to enhance engagements with their communities. Community participation is largely initiated by the institutions, and various forms of collective processes are facilitated or inspired, depending on the interactions within each community.

In 'emergent participating', cultural institutions rely less on their prior knowledge and established practices and pose open-ended questions in the engagements with their communities. They may engage multiple collective processes depending on the interactions within each community. They interact in the spaces of communities, out of their institutional walls, and are co-participants instead of leaders of participation. Here communication facilities are instrumental in the creation, sharing and use of resources in the knowledge commons.

13.1.4 What are the types of designed participation relevant for cultural institutions? What are the benefits and potential pitfalls, if any?

The working modes (primary supplying and emergent participating) of cultural institutions can be enhanced through participatory design with the purpose of exploring community participation. Cultural institutions can, in the primary supplying mode, elicit the participation of communities in their activities, or get drawn in the activities of their communities as participants in the emergent participating mode. In the first proposition, many examples of public libraries in the case studies involving different communities in their activities can be found, such as the participation of teenagers in the design of the teenage library space and collections in Singapore. In the latter proposition, there is the case of Museum Victoria becoming a participant in the gatherings of the WoFG community is one such testament.

Conversely, the participatory mode of cultural institutions – where they engage communities as equal or co-participants in the building and defending of resources and services in the knowledge commons – is clarified further by the interplay of design. The participatory mode of cultural institutions refers to the case of cultural institutions participating in the worlds of their communities through collaborative partnerships with communities. Earlier in Chapter 5, the case of StoryCorps was discussed as an initiative of the Library of Congress and an independent production company. This example of a cultural institution going to the ground to collect stories offers a useful illustration. The case of MV and the WoFG community provides another example, where MV as a cultural institution engaged the WoFG community through a cultural partnership and became a participant in the shaping of a collection by the community.

There are therefore two forms of participatory design for cultural institutions: institution initiated and community initiated – intentionally similar to the working modes proposed for cultural institutions so that the dialogue of participation is consistently prevalent in both working modes. These forms of participatory design have different implications in terms of impacts on communities.

In the first case (institution initiated), there was evidence of reaching multiple communities – and therefore a wide reach – with the creation, sharing and use of resources in the knowledge commons. However, the potential of irrelevance, failing

to cater to specific community needs, or reaching hard-to-reach communities was also present with such institution initiated participation.

On the other hand, community initiated participation is beneficial in terms of creating deep impacts on communities (as seen in the engagement of teenagers in the V.A.T spaces in the case of public libraries in Singapore), and reaching otherwise hard-to-reach communities (such as the example of the State Library of Queensland working together with mechanics and car enthusiasts to put together 'The Garage' collection). This form of participation however, requires significantly more time and effort – as also experienced by the researcher in the development of the digital version of the WoFG community collection.

13.1.5 Will cultural institutions situated in different cultural contexts affect the findings?

As already discussed in the previous chapter, most of the indices proposed by Hofstede differentiating the cultural contexts of Australia and Singapore were not immediately valid in influencing all of the above findings; although they proposed different explanations (such as the degree by which diversity was embraced and presented in resource holdings). Regardless of their cultural relativity, there was evidence of different types of resources in the knowledge commons of communities in both nations, different types of collective processes, and all forms of working modes and designed participation by cultural institutions. The only index which appeared to shape the findings was long-term orientation, which complemented the effect of time-space distancing on cultural institutions. In addition, the thesis had also argued for institutional cultures of cultural institutions to be immediate influences on the findings, while recognising that these cultures are recursively shaped by (and shaping) multiple community cultures.

13.1.6 Contributions of findings

These findings have resulted in implications for both theory and practice, and suggested future work. They will be discussed in subsequent sections of this chapter.

In addition, the effects of the research had been many, impacting a number of research projects, practices in the museums, and teaching methods which could not be discussed given the scope of the thesis. The insight on how participatory design may be used not just as an approach to developing technical systems, but also for cultural institutions as systems in engaging their communities was useful in many ways. During the research engagement with MV, many conversations were held with curators on how the principles of participatory design can be simple yet powerful underlying philosophies to follow in the museum's interactions with their communities.

13.2 Implications for theory

As earlier elaborated, the findings have provided contributions to existing theories. The discussion in this section examines how they contribute to existing theories in each domain.

13.2.1 The knowledge commons

Research on the knowledge commons had been gaining pace especially in the past decade. It has been much studied by many researchers such as Ostrom (1995,

2000), Benkler (2003, 2006), Bollier (2001, 2003, 2004), Lessig (2004), Levine (2002), Carpenter (1998), Schlager (2002), Lindenschmidt (2004), and many others focusing on regional and disciplinary studies of the relevance of the knowledge commons (Liang, 2004; Beagle, 1999; MacWhinnie, 2003; Chan and Costa, 2005). The impacts of the Internet and contemporary technologies in enriching and making available resources in the knowledge commons had been discussed by many of these researchers.

Findings from the research provided additional perspectives on the how allocative resources in the knowledge commons can be differentiated in terms of subtractability, potential for community participation and communication. Boundaries around these resources are also recognised as permeable due to the contemporary media environment.

13.2.2 Community knowledge and collective processes

Studies of collective processes in the knowledge commons were closely associated with a number of sociological studies. Olson's (1965) theory of collective action, for instance, had been argued to be irrelevant in the contemporary media environment and theorised on the basis of private and public boundaries by Bimber et al (2005). Ostrom (1990, 1995)'s research on the commons grew to include studies on collective action and the sociological norms involved in the commons (Ostrom, 2000).

On a similar note, the thesis had elucidated three main collective processes, argued as essential in the creation, sharing and use of community knowledge commons. These processes were clarified further borrowing insights from Giddens' structuration theory and reinforced with insights from the case studies. In this discussion, it was also shown how structuration theory is relevant as insights into the collective processes involved in the knowledge commons.

13.2.3 Cultural institutions

The case studies and discussion of the literature provided various narratives on how cultural institutions, as institutional spaces, contribute to the knowledge commons in the contemporary media environment. This was fulfilled through discussions of the case studies. At the same time, the association between cultural institutions and the knowledge commons was also noticeable; even though their cultural contexts and working modes may be quite different.

This implied that research and practice in cultural institutions would also need to engage issues on the knowledge commons. Future studies involving more cultural institutions of different forms and from diverse cultural contexts are desired to affirm this proposition.

13.2.4 Participatory design

In the case of Museum Victoria and the WoFG community, the building of the digital collection saw active participation from members of the community such as the definition of functional requirements of the portal housing the digital collection, the establishment of operational workflows and processes for the portal, discourse about the inclusion of resources in the collection, and the community also participated by contributing stories to accompany objects in the digital collection.

Similarly, the building and sharing of collections in the Asian Civilisations Museum saw participation from communities such as the volunteers and other community groups – although the forms of participation differed from the earlier case of Museum Victoria.

In the case of public libraries in both Victoria and Singapore, resources in the knowledge commons were also often complemented by participation from the communities. For instance, expression boards and many displays in the public libraries in Singapore were created with the participation of volunteers and members of the communities.

The ubiquitous presence of participation leads to the proposition that participatory design has impacts on the creation or sustainability of resources in the knowledge commons. In other words, there is a significant and recursive relationship between designed participation and the knowledge commons; although the exact depth of this relationship is not known. At the same time, this has implications for communities and cultural institutions – in activities where participation is engaged from communities, there will be resources created that are part of the shared knowledge commons; and by the same token, in the creation and maintenance of resources in the knowledge commons, participation will be engaged although this does not mean that it is always a positive trajectory for the knowledge commons.

13.2.5 Research Design

The research programme developed for this thesis built a style of inquiry for research, which had an important influence in the research design of another project conducted between September 2006 and May 2007.

A joint research between Monash University and the Victorian Association of TAFE Libraries (VATL), the project aimed to investigate challenges facing TAFE libraries in the contemporary media environment using the knowledge commons concept. Over time, this primary aim was modified to relate to the learning commons, seen as a precise specification of the knowledge commons for TAFE libraries.

As a result of this research, the joint project was set up to construct participation from target stakeholders in many ways; such as the inclusion of selected participants in the project team, the use of semi-structured interviews, questionnaire surveys, and a conference designed to facilitate distributed dialogue between library managers and identify emergent themes on the topic. The full day conference, which was highly participative, saw the compilation of action items for many library managers, the creation of many plans and strategies to better prepare TAFE libraries for the challenges ahead, and perhaps the most significant outcome was the initiation of dialogue on significant topics – which saw an impressive depth of voluntary participation.

13.3 Implications for practice

One of the most significant outcomes of the study for museums and libraries has been the analysis of how their current practices and actions may be understood in terms of enabling participation, the types of resources contributed or enhanced towards the knowledge commons, and how cultural institutions may be facilitating or inspiring various collective processes from their communities. The study of cultural dimensions also provided another facet to the study of practices in museums and libraries as cultural institutions, and contributed towards an approach by which they

may consider the recursive effects of cultures from their communities and themselves as cultural institutions operating in those communities. Using the findings of the research, the remaining discussion aims to demonstrate how a tool may be used to document and interpret the impacts of practices in cultural institutions.

13.3.1 A tool for mapping practices in cultural institutions

As highlighted by the findings, there are complex relationships between the various domains raised by the research. This also meant that any practice or action of a cultural institution can be mapped against multiple possibilities and points of each study domain. Figure 13.2 shows a conceptual construct developed from the findings to reflect how a cultural institution may be using different working forms and designing participation to create or share resources of various characteristics, and facilitate different collective processes from communities. This construct may be used as an instrument to document practices and aid the analysis of the community impacts and contributions towards resources in the knowledge commons.

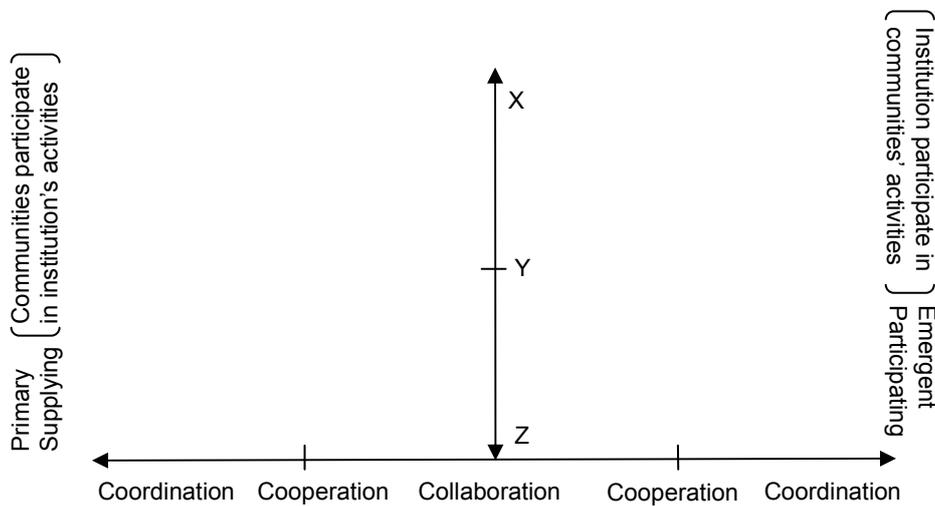


Figure 13.2: Conceptual construct.

The discussion will now use a few examples from two case studies (public libraries in Singapore and the case of Museum Victoria and the WoFG community) to illustrate how the instrument can be applied.

For the purpose of this discussion, the following examples are extracted from the case of public libraries in Singapore:

1. Use of expression boards: under the facilitation of librarians from the library, expression boards, containing book reviews and recommendations are created cooperatively by users at JWCL to be shared with visitors to the children and young people's sections. Although these expression boards are created within the library, they are generated by users, made openly available to visitors and shared – indicating a reduction in subtractability. As such, x and y resource characteristics apply, moving the practice between the continuum of x and y while reflecting the cooperative nature of the practice. This practice also resides in the primary supplying mode of the library, locating this practice in the left side of the construct.

2. Kids Discover: children generate their own questions and answers through interacting with resources presented in multiple mediums. Through the use of contemporary media by the library, children participate in the creation of their own resources while interacting with existing resources that are presented in a variety of forms (reflecting y resource characteristic). These self-created resources are then shared with one another, pushing the practice in between the continuum of y and z resource characteristics. Although the practice involves children largely in a cooperative sense, as facilitated by the library, there is also potential collaboration due to the use of communication facilities to allow the children to share resources to one another.
3. Pseudo Book Club: a special project where teenagers appoint facilitators from within their own group to share book recommendations. The Pseudo Book Club is carried out within the V.A.T. space for teenagers at the JRL. Similar to the earlier example, but this time there is a greater sense of collaboration and lower subtractability in terms of resources created and shared. Like the earlier case, the practice is initiated by the library and so is located on the left-hand side of the construct.
4. Sharing of reviews on books via BookCross@SG: using a blog, participants in the project are asked to register online and from there they can gain access to a global site to share reviews or read contributions from others (locally and overseas) on a book of interest. Although participants cooperate at a fundamental level through parameters defined by the library, the level of collaboration is also high – with the openness of dialogue at the blog. As the resources created are also shared and made available via a global site with other ‘bookcrossers’ locally and from other parts of the world, the practice is pushed towards the z resource type on the construct. This practice is also determined as an example of the library working in the emergent participating mode, as resources are penetrated to the lifestyle ‘hotspots’ of communities.
5. Acquiring books to be made available via BookCross@SG: largely a coordinative effort by the National Library Board, where people contribute new and used books to be shared in the BookCross@SG project. As this practice is largely coordinative, takes place in public spaces of communities, the example is mapped to the right-hand side of the construct. These resources are acquired with the purpose of sharing them with the public via the BookCross@SG project; but not made openly available yet – as such the practice is inclined towards x resource characteristic.
6. Explore! Singapore project: a joint project initiated by the National Heritage Board, where the libraries are participants in joining the museums in their activities to heighten heritage awareness and broaden access to their collections. The practice reflects cooperation by the libraries, and because activities under the project take place in community spaces, the practice is mapped on the right-hand side of the construct.

At the same time, resources that are made available to complement the activities of the project are shared openly with partner institutions and communities in a variety of media – locating the practice in between the y and z resource continuum. Compared with example 4, resources have a relatively higher subtractability; as access and availability is still facilitated via institutional partners in the project and not globally via the Internet (example 4).

Figure 13.3 shows how these practices can be mapped onto the construct. Other practices can be added on to this construct on an ongoing basis, which help to visualise the contributions they are making towards resources in the knowledge commons, the types of collective processes emergent from these practices, and the working forms of cultural institutions.

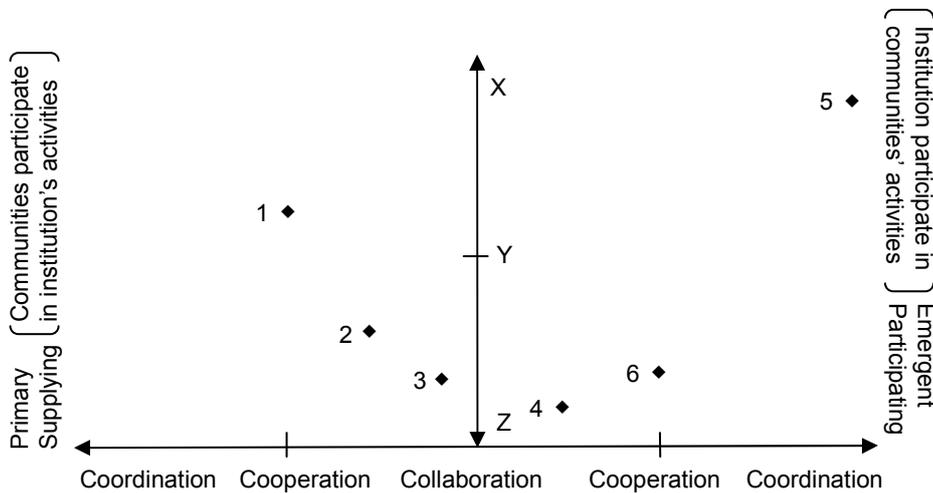


Figure 13.3: Practice construct (Public libraries in Singapore).

To further illustrate the application of the construct, the following examples from the case of Museum Victoria and the WoFG community will be used:

1. Mobile exhibitions at the gatherings of the WoFG community: exhibits containing stories and artefacts of significance are created by curators from the museum and brought to the annual gatherings of the WoFG community as part of the mobile exhibition on display. Originating from members of the community, these resources are given added meanings with inputs from the curators and are shared as a meaningful collection within the community. However, access is limited to members of the community (x to y resource characteristic). Being a mobile exhibition at the community's annual gathering, this practice is mapped to the right-hand side of the construct. Although a coordinated production by the museum, the exhibits are also created with some participation from the community, which sees the engagement of coordinative to cooperative collective processes.
2. Development of the WoFG community online collection: an action research project which saw the participation of the museum, the WoFG community, the researcher, and researchers from the arts faculty of Monash University, this practice brought resources to their lowest level of subtractability by making most of the collection openly accessible via the Internet (although there were parts of the collection which were not openly accessible). The nature of the joint participation also reflected a collaborative effort, with the community participating in early stages of the development and generating much of the records and resources themselves. The project made optimal use of the spaces and primary resources of the museum; which was much desired given the geographical dispersion and lack of facilities by the community. This places the practice in the primary supplying mode – left-hand side of the construct.

3. Interactions with the heritage group: The group, a committee made up of elected members of the community is the key representing body interacting with the museum. This reflected a structure of domination that helps to facilitate cooperation within the community and with the museum. Resources created out of the interactions between the heritage group and the museum are not openly available, although they are shared with a registered list of members of the community. In other words, these resources reflect a relatively higher subtractability (x to y resource characteristics). Much of these interactions also take place within the museum, although there was some use of email. As such this practice is mapped to the left-hand side of the construct.
4. Collection of oral histories: a joint effort by the museum and the community, selected members of the community were reimbursed for going out to others in the community and collecting oral histories from them. Once these records were collected, they were then brought back to the museum to be annotated and added as resources to the WoFG collection. Due to licensing restrictions, constraints in the online portal and a lack of computing facilities by many members of the community, these resources were not able to be shared; thereby limiting access to them. The joint effort saw the collectors cooperate within collection parameters set by the museum, and also some level of collaboration between members of the community in order for stories that were collectively signified and meaningful to be collected. This example, taking place in the spaces of the community, therefore maps the practice to the right-hand side of the construct.
5. Participation in preservation: as the partnership between the museum and the community matured over time, the museum began to involve members of the community in more activities at the museum. Facilitating visits to the preservation clinic and allowing members of the community to participate in the preservation of their contributed resources is one such example. The community gained first-hand experience and knowledge of how their contributed artefacts are preserved at the museum. This contributed to the shared knowledge between the museum and the community, driving such knowledge to higher participation and communication, towards lower subtractability. As access is not open to people outside the community, z resource characteristic is not included. The action, based on the norms, sanctions, and procedural compliance from the museum, puts the collective effort in a coordinative and cooperative sense.

These practices are then mapped onto the construct, as reflected in Figure 13.4. Like the earlier case, other practices can be mapped onto the construct. Although the second case differed in the sense that the practices relate directly to a specific community, the construct can be used to document actions with other communities as well, by explaining the different contexts of using the tool.

The construct is useful as an instrument, to reflect the complex variety of approaches employed by cultural institutions, the types of collective processes emerging from communities and the nature of resources created or enhanced. Once the practices are documented as narratives with the instrument, it may assist cultural institutions to reflect on the range of services and programs they have; and modify them in different ways. For example, new programs may be created to generate more z-type resources if they are currently lacking in current practices. The depth and breadth of the impacts arising from the services and programs of cultural institutions may also be systematically analysed in this way, enhancing the level of analysis that can be applied to the practices of museums and libraries operating in their communities, including global communities.

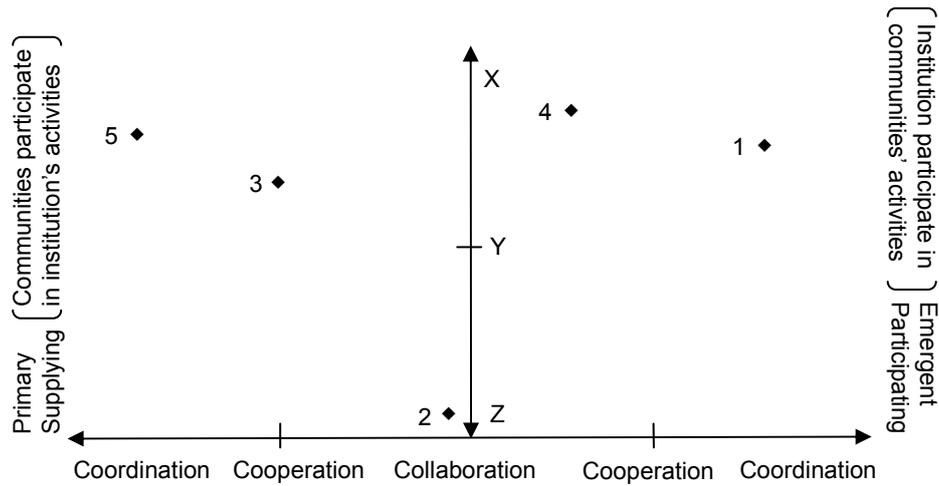


Figure 13.4: Practice construct (Museum Victoria and the WoFG Community).

13.4 Limitations

Certain limitations apply to the study. Given time constraints, coupled with the aim of exploring cross-cultural effects, only museums and libraries were included as cases of cultural institutions. The research was therefore unable to include effects arising from the diversity of practices, institutional cultures, and interactions with the communities of other types of cultural institutions such as public broadcasters, national archives, and public newsagencies. On a similar note, the research was only able to include the study of cultural institutions from Victoria and Singapore –similarly cultural indicators were raised only from these two countries. In terms of cross-cultural research this posed a limitation, and more work involving other cultures is desired in order to test the generalisations of the findings. This is also desirable to refine the cross-cultural theorisation for research involving institutional case studies.

For some researchers, the interpretive style of inquiry, the use of qualitative data and inclusion of the researcher’s knowledge and insights as part of the methods used in the case studies can be viewed as biases in the research. However, given the need for deep insights and to include contexts, the research design has been intentional. This had been explored and justified in Chapter 2.

The scope of the research involving multiple disciplines posed another conceptual limitation, with a significant amount of effort in grounding various theories and terminologies within the context of the research. This is a challenge especially in drawing inferences (in both the literature and case studies) on the interdependent relationships between the four study domains. The complexity of the interplay between four study domains, while presenting unique perspectives, presents weaknesses due to the lack of current research investigating a similar range of issues within this scope.

In addition, by conducting the inquiry as case studies, the research was not subjected to repetition. Different insights and therefore variations in theorisations that could result from repetitive data collection remain unknown. The uniqueness of each case further increase the need to treat the theoretical insights with caution – as preliminary theories that require further refinements through future work involving other cultural institutions and organisations on similar issues and scope.

13.5 Future work

There is a range of future work associated with the study. Although the study had found participation to be beneficial in the creation and sustainability of the knowledge commons, such participation is voluntary since the knowledge commons imply equitable access and open sharing. It is therefore of interest to study the motivations for voluntary participation. Outcomes from such a study can help to map a picture of voluntary participation, a noticeable trend especially in the virtual environment. Cultural institutions, policy makers and non-profit organisations can use these findings to design their services and programs or enhance interactions with their communities. For researchers, the findings will be of relevance especially in topics like collective action and processes in socio-technological contexts, altruism in the contemporary media environment, and for information science. Such a study will also need to include participants from various cultural contexts, to contribute to the generality of the findings. A quantitative survey may also be desired, and findings from this thesis could contribute to the construction of such a survey.

Over the course of the research there had been significant discourse on the application of open content licenses to the knowledge commons. In recent years open content licenses as opposed to traditional copyright frameworks have risen in popularity, with the ongoing and laudable efforts of scholars and practitioners in movements such as the Creative Commons, General Public Licenses, and open source projects. However, as the thesis had found in the case of Museum Victoria and the WoFG community, the relevance of open content licenses and how they can be applied to knowledge commons resources within cultural institutions is still ambiguous. More inter-disciplinary studies need to be done in this area, with a spectrum of researchers from various disciplines such as information science, law, and museology.

The research had focused on shared collections from cultural institutions as exemplars of the knowledge commons in communities. More work involving other types of shared resources in communities, investigating their characteristics in terms of subtractability, potential participation and communication are desired to refine the theorisations formed in this thesis.

The potential of participatory design as an approach and opportunity for cultural institutions to enhance interactions with their communities has been highlighted through this research. This is also argued to be a key shaper in library and museum practices in contemporary cultural institutions. Case studies from other types of cultural institutions, and from more libraries and museums from diverse cultures will contribute to disciplinary research and practices in museology, curatorial studies, library science and information management. Collaborations with other researchers, such as Taxen (2005) doing similar work in this area would enhance the coherence and contribution of findings to the field.

In addition, other related themes had been brought up in the context of the study on collective processes in the knowledge commons. As mentioned earlier in Chapter 12, the impacts of the defection of community members have not been studied in this research. This factor is significant especially in virtual communities; and studies have found the rate of defection to be significantly higher than communities with face to face communication. More research needs to be done on this behaviour and how it can impact the virtual knowledge commons.

The thesis had found national cultural differences between Victoria and Singapore to be insignificant in influencing the findings – but the presence of institutional and sub cultures from diverse communities adds to the complexity that needs to be accounted in cross-cultural studies. The research program in cultural institutions from other cultural contexts needs to be continued in order to develop and elucidate such cultural complexities further. In these case studies, it is also useful to include other types of cultural institutions, such as public broadcasters and news agencies. The documentation and analysis of cases will be useful to refine the findings from the research and continue to sharpen the development of the suggested tool as an instrument to document the practices of cultural institutions.

While the study had placed an emphasis on cultural institutions, it is reasonable to suggest that the issues raised here can also be applied to other institutions or agencies whose key missions are located in interactions with their communities, and are perceived in similar roles as custodians or defenders of the knowledge commons. Examples of such institutions and agencies are non-profit organisations, community organisations, and public educational institutions. Research in this area will contribute towards the development of social policies in such communities, especially in developing countries where access and availability to knowledge resources, as well as community impacts are both essential priorities to any practice.

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Glossary

This list includes key terms in the thesis, and those that are used differently from common usage. It aims to summarise and provide brief elucidations of key concepts discussed in the main text. These terms are highlighted as such when they first appear in their context in the main body of the thesis.

Action	See <i>design</i> .
Allocative resources	'Material resources involved in the generation of power, including the natural environment and physical artefacts; allocative resources derive from human dominion over nature' (Giddens, 1984, p. 373). Resources on the World Wide Web are examples of allocative resources. See <i>World Wide Web</i> .
Authoritative resources	'Non-material resources involved in the generation of power, deriving from the capability of harnessing the activities of human beings; authoritative resources result from the domination of some actors over others' (Giddens, 1984, p. 373). See <i>Internet</i> and <i>Creative Commons</i> as examples of authoritative resources.
Blogs	Short for 'web logs', blogs are websites consisting of date-related posts often presented in a diary-style format.
Collaboration	'The process of two or more people collectively creating emergent shared representations of a process and/or outcome that reflects the input of the total body of contributors' (Elliott, 2007, p. 31). Collaboration is distinguished from coordination and cooperation but at the same time acknowledges that coordination and cooperation are essential for collaboration to emerge over time, and with increased communication.
Collaborative production	Shirky (2008, p. 50) refers to this as a 'more involved form of cooperation, as it increases the tension between individual and group goals'. The thesis expands on the notion of collaborative production as consisting of coordination, cooperation, and collaboration. See <i>coordination, cooperation, collaboration</i> .
Collective action	'Collective action involves challenges of governance, or, put another way, rules for losing. In any group that is determined to take collective action, different members of the group will express different opinions. Whenever a decision is taken on behalf of the group, at least some members won't get their way, and the bigger the group is, or the more decisions are made, the more often this will happen. For a group to take collective action, it must have some shared vision strong enough to bind the group together, despite periodic decisions that will inevitably displease at least some members. For this reason collective action is harder to arrange than information sharing or collaborative creation' (Shirky, 2008, p. 53). Recognising its challenges, the thesis argued for cultural institutions to act as catalysts and agents in facilitating collective action. See <i>collective action theory</i> .
Collective action theory	Originally conceptualised by Olson (1965), collective action theory stipulates certain conditions for collective action to occur. For instance, small groups were argued as more likely to be successful than large groups, and that there must be a

	conscious awareness and pursuit of the same goals by all members of a community. Researchers such as Ostrom (2000) and Bimber et al (2005) have proposed revisions of this theory.
Commons	Historically land used in common by people of a community especially for pasture. In today's context, different manifestations of the commons can be observed. See <i>knowledge commons</i> , <i>information commons</i> , <i>scholarly commons</i> , <i>learning commons</i> , and <i>Creative Commons</i> .
Commons typology	A typology of the commons proposed by Benkler based on two parameters: 1) whether they are open to anyone or only to a defined group, 2) whether a commons system is regulated or unregulated (2003, p. 6).
Communication	Communication is regarded as a 'general element of interaction, and is a more inclusive concept than communicative intent (i.e. what an actor means to say or do)' (Giddens, 1984, p. 29). In other words, communication is regarded as an interaction or action between people – rather than simply intending to communicate. Communication between humans agents draw from and also shapes interpretive schemes (modality). See <i>signification</i> , <i>interpretive scheme</i> .
Community	A term used by many individuals and organisations, but in the context of the thesis this is used in its widest sense. Communities are groups of people who share common interests, culture, values, spaces, and practices; and are 'arranged in social structures according to relationships which the community has developed over a period of time' (Division of Health Promotion, 1998, p. 5). They display 'some awareness of their identity as a group, and share common needs and a commitment to meeting them' (WHO, 1998, p. 5). They are bounded together by affective accounts, or by the 'style in which they are imagined' (Anderson, 1991, p. 6).
Community emergence and innovation	Communities displaying high levels of this attribute are less prescriptive, and more creative and innovative.
Community knowledge	The product of communities operating as sites of discourse, where meaning is collectively and recursively made and re-made in a continuous process of knowledge creation, sharing and use. Community knowledge is both practical and discursive. It is held, in whole or in part, by individuals, groups or the entire community.
Contemporary media environment	Fuelled by the development of two technological growths: the personal computer, and the Internet. The first refers to not only home and server computers, it also includes mobile and handheld devices. In the second factor (the Internet), email, the World Wide Web, instant messaging have been very popular – but in addition the popularity and growth of social networks and participative applications on the Internet have led to the term Web 2.0 being coined (and is now part of the landscape of the media environment). Information and communication technologies (ICTs) are pervasive in both factors. See <i>Web 2.0</i> , <i>Internet</i> , <i>World Wide Web</i> .
Cooperation	Characterised by the pursuit of a common goal, enabled by coordination and procedural compliance in order to achieve the

	shared goal. Cooperation is a subset and inspiration for collaboration. See <i>coordination, collaboration</i> .
Coordination	Basic requirement of all collective activities, and is defined as the management of 'dependencies between activities' (Malone and Crowston, 1994, p. 90). Coordination is a subset of cooperation and collaboration. See <i>cooperation, collaboration</i>
Creative Commons	An example of an open content licensing framework seeking to offer a range of access possibilities between demands for full copyrighted-based payment for every use of resources and totally unrestricted free use. This is an example of an authoritative resource. See <i>authoritative resources</i> .
Cultural institutions	Organisations (some of which are state-owned) whose charter is to promote and support education, arts, and sciences through creating preserving, sharing and transmitting knowledge.
Culture	Various definitions exist, which describe culture by the topical, historical, behavioural, normative, functional, mental, structural and symbolic aspects of people living and working together in a society. Cole (1996, p. 8) wrote that one's cultures can only be understood by 'encounters with other cultures'. See <i>ethnocentrism</i> Structuration theory sees culture in a recursive way, stipulating that the cumulative effect of people living and working together in social frameworks is the production and reproduction of culture. See <i>structuration</i> .
Decreased communication	In the context of the knowledge commons this refers to the decrease of communication gathered around resources – implying high subtractability and low participation. See <i>increased communication</i> .
Design	The term has many definitions depending on the context used. In the thesis it refers to the purposeful construction of actions within cultural institutions and communities.
Discursive consciousness	'What actors are able to say, or give verbal expression to, about social conditions, including especially the conditions of their own actions; awareness which has a discursive form' (Giddens, 1984, p. 374).
Domination	Domination as conceived by Giddens 'is the very condition of existence of codes of signification' (Giddens, 1984, p. 31) and is dependent 'upon the mobilisation of [authoritative] and [allocative] resources. This is an analytical structure that is shaped by, and shapes in turn the use of power in the interactions between people and facilities allocating resources. See <i>facility, power</i> .
Double hermeneutic	'The intersection of two frames of meaning as a logically necessary part of social science, the meaningful social world as constituted by lay actors and the metalanguages invented by social scientists; there is a constant 'slippage' from one to the other involved in the practice of the social sciences' (Giddens, 1984, p. 374). This double hermeneutic has been conceptualised from issues identified in the philosophy of hermeneutics in social sciences. See <i>hermeneutic</i> .
Duality of structure	Structure as the medium and outcome of the conduct it

recursively organises; the structural properties of social systems do not exist outside of action but are chronically implicated in its production and reproduction (Giddens, 1984, p 374). The duality of structure is a main part of structuration theory, and is illustrated using three analytical structures and how they may be transformed or constraining/empowering certain actions. For example, the structure of signification may be shaped by the communication of people using certain interpretive schemes; but these may also be shaped by the structure itself.

Emergent participating	Refers to a contemporary approach of community engagement by cultural institutions: open ended questions about how they are fulfilling their key visions of sustaining resources in the knowledge commons and helping communities make sense of these resources, bring activities to community spaces, and leverage on communication facilities to sustain their participation in these activities.
Ethnocentrism	'Exaggerated tendency to think the characteristics of one's own group or race [as] superior to those of other groups or race' (Drever, 1952, p. 86). See <i>culture</i> .
Exclusive (national identity)	'Exclusive versions are derived largely from the writings of historians and social commentators about traditional and popular culture, emphasising particular, specific, ascribed and closed meanings of the construct' (Philips, 1998, p. 287). In the thesis, this is part of a two-pronged approach to construct ascribed notions of national identities in Victoria and Singapore. See <i>inclusive national identity</i> .
Expert-to-peer	A culture of dialogue between expert users and peer users. In the context of design, 'experts' are regarded as the in-house professionals that have working knowledge of the service, policy, or project. In participatory design this dialogue is included with peer-to-peer dialogues. See <i>peer-to-peer</i> .
Facility	Facility is a modality that refers to the ways by which both allocative and authoritative resources are allocated. Facility is reflexively applied in the sustaining or distribution of power, or it is caused by the exercising of power relations in interactions. It shapes and is shaped by the structure of domination. For example, an administrator of a website is granted certain rights (facility) and this may also shape, or be shaped by his position in the community. See <i>domination, power</i> .
Folksonomy	An approach by which all users of a resource are able to create keywords (tags) to describe their interpretations or meanings of the resource.
Hermeneutic	Refers to the art and science of interpreting documents using philosophical and logical rules. Habermas (1971) distinguished the philosophy of hermeneutics as directed by interests in communication and the clarification of meaning within a normative sequence. Giddens positioned structuration theory to elucidate the link between the use of concepts by social scientists to interpret documents, and the concepts used by 'lay actors' to make sense of the social world. This is the double hermeneutic. See <i>double hermeneutic</i> .
High participation	Characterised by high levels of engagement by individuals in a

	community or institution. This is also assisted by participatory technologies that facilitate or enable individuals to share and contribute to resources. See <i>low participation</i> .
Hofstede's cultural dimensions	A framework proposing that the cultural relativity between nations can be measured through five indices: power distance, uncertainty avoidance, individualism, masculinity, and long-term orientation. These indices have been critiqued widely in the literature, such as their inability to reflect culture as an ongoing dynamic that is shaped by both structural (such as globalisation) and agency (such as the exertion of non-dominant cultures in small communities) forces over time. See <i>power distance, uncertainty avoidance, individualism, masculinity, and long-term orientation</i> .
Inclusive national identity	'Inclusive conceptions are founded upon notions of cultural diversity and citizenship, emphasising general, abstract, open and achievable meanings of identity' (Philips, 1998, p. 287). See <i>exclusive national identity</i> .
Increased communication	In the context of the knowledge commons, this refers to the increase of communication gathered around resources – implying low subtractability and high participation. See <i>decreased communication</i> .
Individualism	'Stands for a society in which the ties between individuals are loose: everyone is expected to look after him/herself and her/his immediate family only. [In contrast], collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty' (Hofstede, 2001, p. 225). See <i>Hofstede's cultural dimensions</i> .
Information commons	Emphasises the free and equitable use of information resources. The term is used to refer to pooled resources in the digital environment (such as the Internet and mobile devices), or the infusion of technologies and resources in libraries.
Interaction	In structuration theory, there are three types of interactions proposed: communication, power and sanction. These interdependent and analytical interactions describe relations between people, caused by their respective structures and modalities and are also proposed to transform the very same structures and modalities.
Internet	A global system of interconnected networks of computers. The Internet itself is an example of an authoritative resource. See <i>authoritative resources</i> . One of the most widely used parts of the Internet is the World Wide Web. See <i>World Wide Web, contemporary media environment</i> .
Interpretive scheme	'Interpretive schemes are the modes of typification incorporated within actors' stock of knowledge, applied reflexively in the sustaining of communication' (Giddens, 1984, p. 29). The allocation of meanings to certain terms in the WoFG community provides an illustration of interpretive schemes and how they may be used to shape (or be shaped by) a structure of signification and communication within the same community. For example, the term 'gathering' evokes historical attachment and expectations of skills-building workshops and the sharing of

inspiring stories purposed to empower women in the community. Interpretation of the 'history board' is another example, suggesting a visual display of the themes, symbolic objects and stories of each gathering. See *signification, communication*.

Irreversible time	See <i>reversible time</i> .
Knowledge commons (in cultural institutions)	Historically 'commons' denoted land used in common by people of a community. Lately, the term 'knowledge commons' has become applied to cultural institutions and the creation of intellectual property. Libraries may now refer to themselves as sites of shared and available resources and places where collaborative work happens. Public institutional spaces which support the creation, use, and storage of public knowledge, which are free from market constraints, and equally accessible to all in the local community. Public knowledge can exist in the forms of (but is not limited to) resources, services, physical facilities, and digital networks.
Knowledgeability	'Everything which actors know (believe) about the circumstances of their action and that of others, drawn upon in the production and reproduction of that action, including tacit as well as discursively available knowledge' (Giddens, 1984, p. 375).
Learning commons	An increasingly popular term in libraries, which refers to the integration of library services, information resources, technologies, and physical spaces towards the core purpose of learning. The learning commons has been borrowed from the concept of the historical commons, to elucidate the purpose of shared spaces, resources, and services in libraries that are freely available to their communities.
Legitimation	The structure of legitimation is shaped and shaping sanctions, mediated by the modality of norms. Legitimation, or formally accepted social orders and codes of conduct, are enshrined within the norms and the use of sanctions in interactions. See <i>norm, sanction</i> .
Libraries Act of 1988	An Act in Victoria (Australia) providing guidelines for the governance of public libraries under the Library Board of Victoria.
Library	Originated from the Latin word (<i>liber</i>) for 'book', the library refers to collections of information resources in print or other forms that are organised and accessible for the purpose of acquiring knowledge. See <i>public library</i> .
Library 2.0	A term inspired by Web 2.0, Library 2.0 describes a trend of designing and developing library services focused around user needs and user participation (Middleton and Lee, 2007; Casey and Savastinuk, 2006). Library 2.0 examines developments in Web 2.0 in the context of integrating and using them to repackage services and resources (both physical and virtual) within the library context. See <i>Web 2.0</i> .
Long-term orientation	'The fostering of virtues oriented towards future rewards, in particular, perseverance and thrift. Its opposite pole, short-term orientation, stands for the fostering of virtues related to the past and present, in particular, respect for tradition, preservation of

'face' and fulfilling social obligations' (Hofstede, 2001, p. 359). See *Hofstede's cultural dimensions*.

Low participation	Characterised by low levels of engagement by individuals in a community or institution. This is also observed by a lack of participatory technologies that facilitate or enable individuals to share and contribute to resources. See <i>high participation</i> .
Lucas Plan	Using an open and participatory approach involving the workers, this was an alternative corporate strategy designed for Lucas Aerospace proposing the conversion of production of military products to civilian goods such as 'kidney dialysis machines, life support systems for ambulances, windmills and heat pumps' (Doyle, 2006, para. 19). The purpose of the plan was not only to avoid layoffs; it also wanted to redesign the work of the company with greater social value. See <i>participatory design</i> .
Masculinity	'Refers to the distribution of roles between genders' (Hofstede, 2001, p. 279). This cultural dimension attempts to measure the extent of dominant masculinity (assertiveness) and femininity (nurturing and caring) amongst genders. See <i>Hofstede's cultural dimensions</i> .
Modality	Mediating factors by which certain structures and interactions are associated. In structuration theory three modalities (interpretive scheme, facility, and norm) are linked to three analytical structures and interactions. These modalities should be viewed in a recursive sense; they are both conditions and consequences for and of their respective structures and interactions.
Museum	'Non-profit making, permanent institution, in the service of a society and of its development, and open to the public, which acquires, conserves, researches and communicates, exhibits for the purpose of study, education and enjoyment, material evidence of people and their environment' (Ambrose and Paine, 1993, p. 8). More recently, other researchers have an increasingly inclusive view of what defines a museum, even if an institution may not use the term in its title.
Museums Act of 1983	An Act in Victoria (Australia) providing guidelines for the governance of Museum Victoria and policies for the acquisition and collections of 'natural history, human society, and the history of science and technology' (State of Victoria, 1983, p. 20).
National Heritage Board Act	An Act in Singapore providing guidelines for the governance of museums in Singapore, and policies for the acquisitions, preservation, storage, exhibition, and governance of collections.
National Library Act of 1995	An Act in Singapore providing guidelines for the governance of all libraries in Singapore. This Act replaces a previous version of the Act from 1958.
NJMF	Abbreviation for the Norwegian Iron and Metal Workers Union. Changing its practices with people by adopting a more participative style, the NJMF radically influenced the role of other unions. See <i>participatory design</i> .
Norm	Refers to sanctions that have been normalised and formal

legitimations that have resulted in norms. In structuration theory, norms exist as a modality that mediates and is shaped by both legitimation and sanctions. See *legitimation, sanction*.

Objectivity	Focuses on the externalised properties of institutions shaping social systems and providing explanations for their influences on human actions and relationships. See <i>social systems</i> .
Ontological security	'Confidence or trust that the natural and social worlds are as they appear to be, including the basic existential parameters of self and social security' (Giddens, 1984, p. 375). Ontological security, supported by institutional frameworks, helps human beings to 'rationalise' and 'reflexively monitor' their actions. See <i>rationalisation of action, reflexive monitoring of action</i> .
Participation	An outward expression of engagement with a community or institution. Participants take part in the activities of a community of institution by sharing, contributing to the creation or allocating significance to resources. Participation may not always be publicly displayed, as with private exchanges and sharing of resources in virtual communities. See <i>high participation, low participation</i>
Participatory design	Situated within user-centric design, this approach to design is characterised by the iterative participation of stakeholders in different stages of a project, policy, or service. This is argued to support the potentialities of reflexivity and rationalisation, accounting for not only the intentional outcomes but also the unintended consequences of actions. See <i>rationalisation of action, reflexive monitoring of action</i> .
	By its ability to capture this process with much intensity and velocity, this approach is argued to be a sensible guiding principle for building up the knowledge commons, and managing potential conflicts by cultural institutions. There are various examples of participatory design in different disciplines, forms, and cultures. See <i>NJMF, Utopia Project, Lucas Plan</i> .
Peer-to-peer	A culture of dialogue and exchanges between peer users. The uses of peer-to-peer are many, such as file sharing, telephony, and media streaming. In peer-to-peer architecture, there is no central administrator or server and peer users are both contributors and users. The concept has also been broadly adopted in other ways, such as the conception of people as users and contributors in knowledge management, art, literary fiction, and education. In the context of design the users are also regarded as the experts, having the knowledge and abilities to shape a service, policy or project. See <i>expert-to-peer</i> .
Power	Power is seen by Giddens as 'inherent in social association or human action' (Giddens, 1984, p. 32). It is 'not just the capacity to say no' but includes the capacity to transform how resources are allocated. The use of power in the interactions between people is shaping and shaped by structures of domination through the modality of facility. See <i>domination, facility</i> .
Power distance	'The extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally (Hofstede, 2001, p. 98). See <i>Hofstede's cultural dimensions</i> .

Practical consciousness	'What actors know (believe) about social conditions, including especially the conditions of their own action, but cannot express discursively; no bar of repression, however, protects practical consciousness as is the case with the unconscious' (Giddens, 1984, p. 375).
Primary supplying	Refers to an approach of community engagement by cultural institutions that has been largely influenced by traditional practices: cultural institutions make use of prior knowledge of their communities, established practices in interacting with these communities, leverage on contemporary media and form partnerships with other institutions, community organisations and agencies.
Public domain	Refers to resources (such as writings or inventions) in which copyrights and patents do not exist or have expired.
Public library	Publicly funded libraries that serve the needs of their communities in a defined space (not necessarily geographical).
Rationalisation of action	'Actors – also routinely and for the most part without fuss – maintain a continuing theoretical understanding of the grounds of their activity' (Giddens, 1984, p. 5). The rationalisation of actions can shape objective understandings, which is also checked by the reflexive monitoring of actions that gives rise to subjective understandings. See <i>reflexive monitoring of action</i> .
Recursive	A two-way, dialogical effect of a relationship between two or more factors. A concept from structuration theory's insights on the duality of structure, this is a significant influence on the perspectives in the thesis. For example, the study domains (cultural institutions, participatory design, the knowledge commons, and collective processes in communities) explored in the thesis were identified to be recursively shaping, and shaped by each another.
Reflexive monitoring of action	'Chronic feature of everyday action and involves the conduct of not just of the individual but also of others. That is to say, actors not only monitor continuously the flow of their activities and expect others to do the same for their own; they also routinely monitor aspects, social and physical, of the contexts in which they move' (Giddens, 1984, p. 5). See <i>rationalisation of action</i> .
Reversible time	For the individual, the experience of daily life is reversible time, while life span, being finite, is irreversible time. Over generations, however, the long-term existence of institutions creates reversible time for institutions. Institutions, with their abilities to outlast the irreversible time of individual life spans, thus possess reversible time. For instance, many collections in the Asian Civilisations Museum belong to Asian tribes that no longer exist (irreversible time) – but their collections, and the experiences of collecting and interacting with these collections is reversible time that is made possible through the museum.
Sanction	'The constraining aspects of power are experienced as sanctions of various kinds, ranging from the direction application of force or violence, or the threat of such application, to the mild expression of disapproval.' (Giddens, 1984, p. 175). Sanctions are felt as coercion, which culminates as norms, or are shaped

by these norms. As interactions, sanctions have a recursive relationship with the structure of legitimation. See *norm*, *legitimation*.

Sharing	This is the simplest form of participation in the digital environment according to Shirky (2008). The sharing of bookmarks, for example, is a default assumption that is enabled by tools such as De.licio.us. Because of this assumption, such sharing has been argued by Shirky (2008) and Bimber et al (2005) to be a sometimes-unconscious or effortless action by people, resulting in the growth of user-generated content and the amount of shared resources (contributing to the knowledge commons) available on the Internet.
Signification	The structure of signification is mediated by the modality of interpretative schemes as signs and knowledge that has been 'the medium and outcome of communicative processes in interaction' (Giddens, 1984, p. 31). See <i>interpretive scheme</i> , <i>communication</i> .
Skype	An example of an instant messaging and telephony application using the Internet protocol. See <i>Internet</i> , <i>contemporary media environment</i> .
Social system	The patterning of social relations across time-space, understood as reproduced practices. The practices are understood in the context of a society of people that are organised by their relationships with one another.
Structuration	Adapted from a French word, the term structuration is used by Giddens in the development of a social theory addressing the classic structure / actor dualism. Inherent in the word is the ongoing interplay between action and structure, through which culture is produced and reproduced. The cultural context is continuously generated and re-generated through the interplay of action and structure (the 'duality of structure'). Social structure both supports and constrains the endeavours of individuals, communities, and societies. (Giddens, 1984, p. 1-40.) In essence, structuration theory holds that 'man actively shapes the world he lives in at the same time as it shapes him' (Giddens, 1982, p. 21). 'The structuring of social relations across time and space, in virtue of the duality of structure' (Giddens, 1984, p. 377). See <i>culture</i> , <i>duality of structure</i> .
Structure	'Rules and resources, recursively implicated in the reproduction of social systems. Structure exists only as memory traces, the organic basis of human knowledgeability, and as instantiated in action' (Giddens, 1984, p. 377). Three analytical structures are conceptualised by Giddens: the structures of signification, domination and legitimation. Such structures are argued to be constraining or empowering corresponding interactions of human agents, and potentially transformed by the same actions and modalities. See <i>duality of structure</i> .
Subjectivity	Focuses on individual, internalised human experiences, the interpretations of them, and behaviours based on those interpretations that modify the world in both small and large ways. See <i>social systems</i> .
Subtractability	Similar to the understanding of resource availability; but is

	extended in the measurement of how the loss or appropriation of a resource will affect its availability for others. This is an important concept in the study of the knowledge commons, given the emphasis on shared resources and distinctions from market enclosures. The concept of subtractability is also shaped by technologies; a resource with digital copies is low in subtractability and the loss of an 'original' copy is less likely to result in a loss of availability for others.
System integration	'Reciprocity between actors or collectivities across extended time-space, outside conditions of co-presence' (Giddens, 1984, p. 377). This insight contributes to the understanding of how cultural institutions are moulded by their communities and technologies over time. See <i>time-space distancing</i> .
Techno-centric design	Approach to design focusing on using standardised techniques and experts. In contrast to user-centric design, this process and approach is relatively authoritarian and uni-directional.
Time-space distancing	'The stretching of social systems across time-space, on the basis of mechanisms of social and system integration' (Giddens, 1984, p. 377). This concept reframes cultural institutions as rational organisations that are able to 'span time and space' (Giddens, 1990, p. 14) in their capacities for transformations. This is done by defying the constraints of traditional practices and allowing external or distant factors to shape these institutions. See <i>system integration</i> .
Uncertainty avoidance	'The extent to which members of a culture feel threatened by uncertain or unknown situations. [It] deals with the collective tolerance for uncertainty and ambiguity, indicating the extent a culture programs its members to feel either comfortable or uncomfortable in unstructured situations' (Hofstede, 2001, p. 161). See <i>Hofstede's cultural dimensions</i> .
User centric design	Although several definitions exist, they all agree on the same differentiation from prescriptive design, in that the needs of users were defined by the users and stakeholders first before the development of any system, service, or practice.
Utopia Project	A collaborative project between Swedish and Danish researchers and the Nordic Graphic Workers' Union. Its primary goal was to develop new computing technologies for skilled work in the printing industry in the early 1980s. New strategies and methods were developed for systems development and participatory design. The participatory approach included many hands-on experiences by stakeholders and contributed to the design of alternative products and an inclusive dialogue between all stakeholders. See <i>participatory design</i> .
Web 2.0	A term coined by Tim O'Reilly in 2004, to describe a trend of designing applications towards social interactions, mass participation, user-generated content and harnessing collective intelligence on the World Wide Web (O'Reilly, 2005). Discourse and developments around Web 2.0 have resulted in other thematic developments in different disciplines, such as Library 2.0. See <i>Library 2.0</i>
World Wide Web	Usually abbreviated as 'WWW', the World Wide Web provides access to information resources using browsers such as Internet

Explorer, Mozilla Firefox, and Netscape Navigator. Such information resources are developed using protocols of the Internet (as an authoritative resource). This is an example of allocative resources. See *allocative resources*.

Appendix A: Sample of analysed transcript

The following is an example of a transcript that was analysed using a system of thematic coding. To prevent the biases of preconceptions – in other words – applying the preconceived codes onto only selected parts of each transcript, the approach that was used for analysis was line-by-line coding which allowed the data to reflect itself. While this approach also enabled the researcher to map the concepts with the interviews, it was also useful in expanding the richness of each thematic concept. Table A.1 shows the grouping of the codes organised by their corresponding themes.

Cultural institutions	Knowledge Commons
Past practices Transformations Current/desired practices Use of technologies Impacts of technologies on CIs Cultural influences on CIs Shared resources in CIs Collection management Community engagement Enabling/facilitating participation Institutional culture	Shared knowledge Resource types Levels of access/availability Peer participation Use of technologies Impacts of technologies on resources Authoritative resources Allocative resources Cultural effects/impacts on creating/sharing/using
Communities	Participation/Design
Coordination Cooperation Collaboration Institution-driven Self-organisation Cultural identity Technological effects Impacts on technologies used Communication Shared rules and conventions Hierarchical relationships Community resistance	Community driven participation Community spaces Institution driven participation Institutional spaces Media and communication technologies Cultural effects Impacts/outcomes of participation Impacts on institutions Impacts on communities
Table A.1. Codes grouped by themes	

These codes are used when analysing each line of the transcripts. Examples are shown here, with excerpts taken from one interview.

Transcript no. [VICLIBK]		
Line Nos.	Excerpt from transcript	Line-by-line coding
1058-1070	So when I became manager and worked with my staff I said, "Look, I think we need to make some changes." They said, "Yes". So what we did was took the large-print collection and put it on the low shelves just inside the door, in the cooler part of the building and only on certain heights, so that every one was accessible. But it meant we had to rearrange all the other shelves. So we did that over a weekend with pizzas and family and great lots of laughter and hysteria and we had a great time and we were still... We didn't open till the Tuesday morning and we thought we'd thought it through and we put big fluorescent	Hierarchical relationships Past practices Transformations Levels of accessibility Cultural influences on CIs Institutional spaces Shared resources in CIs Collection management

	feet saying, you know, "This way to" and all those things. And we had people, additional staff, that weren't working on the desk (who would normally have been in the backroom) we put out just to guide people and that worked really well except for this one person, this lady, and you know, it was such a thing in my face about change.	
1072-1085	<p>She walked in apparently and she'd always come in, and they had this pattern and you didn't realise it. They'd drop their books, they'd walk there, they'd go to there and they knew books starting with M would be there. Well when she did that and got to there, we'd moved all the books. So she hit the magazines or something and one of the staff said, "I went up to her and said, 'Can I help?' and she said, 'No, no. I'm leaving. I have to go home and think about this' and walked out".</p> <p>So you know, to me, such a thing about change, that she actually couldn't even cope with it by staying there. She actually had to go home. So we'll do something, we'll hit with those sorts of things, maybe not as dramatic as that but some of the things that we do will actually challenge people in the community because we have actually said we will phase out videos and audio cassettes, because we can't afford to run two collections and people are moving more that way.</p>	<p>Community resistance Shared rules and conventions Authoritative resources Cultural identity</p> <p>Cultural identity Community resistance Impacts on communities Impacts of technologies on resources Transformations Use of technologies Impacts of technologies on CIs</p>
1210-1216	So a lot of stuff goes online, there's a whole lot of people that won't have that information because it's not going to be in any other format. So you're starting to divide people, not consciously but they are. There'll be those that are better informed than others and then you start to get a disproportionate swing to various ways of thinking.	<p>Use of technologies Impacts of technologies Levels of access/availability Technological effects Cultural effects/impacts on creating/sharing/using</p>
1218	<i>Do you think libraries can become that bridge to overcome this divide?</i>	<p>Community engagement Impacts of technologies on CIs</p>
1221-1230	I think so. I mean people sit and play [games] and interact with people over in America and other places...and I think that's the sort of thing that we can do. I don't mean that they should play games in the library...but that's the sort of interaction we can facilitate. We don't have that kind [of service] here, but if I log on I can probably talk to somebody in the Library of Congress and they'll have the answer for me...that's the sort of thing we have got to be able to do, particularly for people who don't have access to many things... Even if they've got the PCs at home, they may not have the searching or research ability, knowledge, or resources of how to acquire those skills.	<p>Communication (weak ties) Desired practice Facilitating participation Community engagement Current practice Levels of access/availability Impacts of technologies Institutional culture Shared knowledge Resource types</p>
Table A.2. Excerpts from an analysed transcript, using line-by-line coding		