

Spikiness in a flat world

Innovative and entrepreneurial industry clusters, especially when linked with foreign direct investment mean the whole can become more than the sum of its parts, says *Roy Green*.

Discussion of new policy directions in recent years has been strongly influenced by *New York Times* journalist Tom Friedman's much cited book, *The World is Flat*. Friedman was referring to a 'globalised' world economy where increasing interconnectedness among people and businesses is driven by the changing shape of markets, organisations and institutions, as well as new developments in information and communications technologies.

Less well known is the response in *Atlantic Monthly* magazine by academic Richard Florida entitled 'The World is Spiky', which highlights the specific attributes of regions and localities – such as superior knowledge, skills and infrastructure – for establishing competitive advantage in this flatter world. Florida argues that these attributes are not accidental but often arise from geographically concentrated 'clusters' of entrepreneurial activity, with an emphasis on inter-firm collaboration and linkages with research and educational institutions.

The phenomenon of industry clustering is not new. It was first examined by the early 20th century Cambridge economist Alfred Marshall who wanted to understand the factors behind what was then world competitive manufacturing in the potteries of the midlands and north of England. While Marshall was later overshadowed by Keynes, his was arguably the more significant contribution to understanding the 'micro-foundations' of the modern economy. Other later examples of clustering include northern Italy's 'third district' producers of machine tools, household appliances, footwear and clothing, whose market presence was established through value-adding quality and design.

However, regional clusters really took off in the public imagination with the commercial application of ICT (Information and Communications Technology) in California's Silicon Valley and along Route 128 in Massachusetts, both with world class university research hubs and a vibrant, risk-taking venture capital community. Other ICT clusters evolved in such diverse locations as Finland, Taiwan and the south of France, with medical technology and bio-science clusters also taking hold from Minnesota to Munich. Scale is an issue for creative communities as these clusters tended to be based in small economies or cohesive regions of larger ones – clearly geography matters.

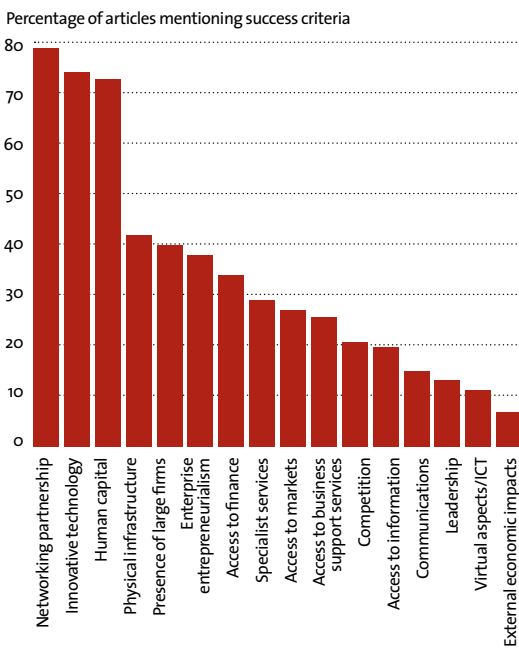
Nor has the phenomenon of clustering been confined necessarily to 'breakthrough' technologies, as Clayton Christensen, among others, demonstrated in his study of the increasing organisational significance and market impact of 'incremental' innovation. This occurs in a number of ways, including integration of existing technologies with new business models whose contribution to industry and firm-level competitiveness is very often based on knowledge exchange, customer-supplier relationships and the operation of real and virtual networks in the 'extended enterprise' – the essence of cluster activity. Eric von Hippel has made the further observation that customers are in a position to drive this activity, though the point cannot be taken too far as it is confined to examples such as Lego Mindstorms (Lego bricks with electronic motors and sensors), computer operating system Linux and the mountain bike.

In recent years, analysis of the 'success factors' for competitive clusters, based on technological and organisational innovation, has become a major field

A key challenge is to link foreign direct investment to the development of clusters and networks.

Figure 1: Critical success factor identified within global literature search

Source: ECOTEC



of academic study (see figure 1). Anne Markusen from the University of Minnesota famously called these clusters “sticky places in slippery spaces”, and Michael Porter concluded from his innovation research program at Harvard that “the enduring competitive advantages in a global economy lie increasingly in local things – knowledge, relationships, motivation – that distant rivals cannot match”. Interestingly, the slogan “think global and act local” has resonance not only for political movements but companies seeking to establish market presence through collaboration.

KNOW NO BOUNDARIES

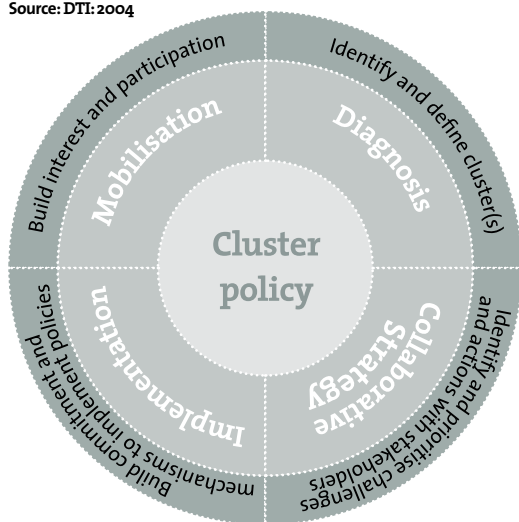
Moreover, policymakers themselves worldwide have also begun to take a greater interest in these ideas, with advice on cluster development and programs for action at local level (see figure 2). However, a key challenge, with particular salience for Australia, is to link foreign direct investment (FDI) to the development of clusters and networks, providing local enterprises with a platform to penetrate international markets while enhancing the value of the FDI subsidiaries. The OECD conducted an investigation of this challenge in the late 1990s and found that “the full benefit of the presence of foreign production firms depends on the extent to which they can be integrated into their environment.”

In Ireland, for example, public agencies were already engaged in an ambitious strategy of FDI attraction in global growth sectors, particularly ICT, medical technology and pharmaceuticals. So were agencies from other countries, but the Irish approach was different. It was to ‘embed’ investors in the local economy through a range of measures linking them to supply chains, graduate labour markets and research and innovation infrastructure. This generated what my colleagues and I at the National University of Ireland, Galway, depicted in an OECD multi-country report on *Innovative Clusters: Drivers of National Innovation Systems* as “boundaryless clusters.”

This approach had three further, related objectives. First, it would enable small to medium enterprises (SMEs) to achieve critical mass through collaboration in clusters. Much of Ireland’s policy framework, especially through the delivery agency Enterprise Ireland, was directed to building innovation capability at the organisational level, supplementing venture capital with loans, grants and equity stakes to encourage start-up activity, including in partnership with research and educational institutions. In the case of ICT firms, Enterprise Ireland established the unique Webworks program to promote collaboration and linkages.

Figure 2: Key elements for action

Source: DTI: 2004



Second, this approach was designed to facilitate devolving R&D activity from head offices to Irish subsidiaries of the FDI companies. The government's various research funding initiatives, particularly Science Foundation Ireland, made it a key priority to underwrite new Centres for Science, Engineering and Technology (CSETs) as joint activities of FDI companies and higher education institutions. Examples at the National University of Ireland, Galway, include the Digital Enterprise Research Institute (DERI) led by Hewlett-Packard which investigates the next generation of web technology – the 'semantic web' – and the Regenerative Medicine Institute (REMEDI), led by Medtronic, whose agenda is to pioneer applications of stem cell research. These centres of excellence, following the model of the US National Science Foundation, had as their core mission to identify research leaders in the field internationally and recruit them to work in Ireland.

Third, Ireland's policy approach also encouraged FDI subsidiaries to provide a springboard for local firms in cluster relationships looking to enter global markets and supply chains both in association with the FDI companies themselves and in their own right. Again, Enterprise

Ireland played a part, not by trying to substitute for the market but by taking best advantage of local capabilities through the funding of 'innovation partnerships' and the development of 'industry-led networks', which linked SMEs to the new opportunities opened up by the deepening presence and activities of FDI companies. The approach is pragmatic and evidence-based and builds on a national consensus around knowledge and ingenuity as a key source of competitive advantage.

The potential relevance of this approach to Australia's current and emerging areas of competitive advantage should be apparent. It was highlighted in the Business Council of Australia's 2006 report, *New Pathways to Prosperity: A National Innovation Framework for Australia*, whose key policy recommendations have largely been endorsed by the Rudd Labor government. For example, if we look at the rapidly growing technology corridor in northern Sydney, with Macquarie University at its hub, we need only ask where are the linkages and relationships that would add value to this concentration of leading international companies and their local supply chains and would consequently drive the competitiveness and capability

Economic gardening

Budding entrepreneurs become blooming successes, write *Jane Robinson* and *John Grace*.

Imagine you were given the challenge of creating an innovative strategy to grow a small regional economy. Where would you begin?

The problems facing economic development practitioners in regional Australia vary enormously from region to region and so do the potential pathways to economic growth. Some local government areas (LGAs) are blessed with large tracts of cheap land located in nationally recognised growth corridors. For practitioners in these areas, the choice is an obvious one – adopt business attraction as the core strategy.

But what are the options for practitioners in areas where there is no cheap land, or very little industrial land available at any price, and don't possess those natural attributes that attract big city businesses?

In these situations, business attraction activities can be a case of 'flogging a dead horse' and run the risk of being a cannibalistic exercise. It sets local councils up in competition with each other, facing off in a kind of mating ritual with a handful of 'footloose' companies.

To make matters worse, most local economic development practitioners have access to very limited resources with which to create their strategies. They don't operate the macro-economic levers that influence the direction of the economy. Nor do they control the planning instruments that determine the physical structure of their industrial and commercial environments.

SHELLHARBOUR CITY NSW – A CASE STUDY

For many decades, Shellharbour has supplied labour to the steel and coal industries based in the Wollongong LGA. In recent years, Shellharbour has been designated as a population growth centre. At only 154 square kilometres, Shellharbour City is geographically small but home to 62,000 people, a figure that is expected to reach 75,000 by 2020. Shellharbour also has a low workforce self-containment rate, with more than 60 per cent of its resident workforce commuting outside the LGA to work.

of the embryonic cluster – in other words, enabling the whole to become more than the sum of its parts.

To conclude, there is increasing recognition throughout the world, reflected most comprehensively in the OECD’s national innovation systems program that, “networks of innovation are the rule rather than the exception ... To successfully innovate, companies are becoming more dependent on complementary knowledge and know-how in companies and institutions other than their own”. The European Union, as well as member states such as Ireland, promotes clusters as “regional innovation systems” and has shifted the policy focus to building not only innovation but also networking capability in firms and organisations. This may well become a feature of the Rudd government’s proposed Enterprise Connect program, to be implemented by the new, significantly re-titled Department of Innovation, Industry, Science and Research.

It became evident in Ireland, however, that the practice of clustering there conflicted with the theory, which in Michael Porter’s standard version envisaged a number of preconditions, including a role for national champions in competition for market share.

The Irish government’s National Economic and Social Council (NES) concluded from its own extensive research that if this standard theory applied, Ireland as a small regional economy would have no clusters and no possibility of establishing any in the future.

What this suggested to Irish policymakers is that the theory itself was deficient in that it was based on US experience which had not captured the significance of ‘agglomeration effects’ in a small economy and the key role of FDI companies in leading ‘boundaryless clusters’. The unique but transferable feature of Ireland’s cluster activity is that it is global as well as local, unbounded and open as well as bounded by geography and adept at deploying ‘spikiness’ in a flat world. The challenge in Australia is also to understand what can be done, adapting the theory to the extent required for effective action, and to do it.

Professor Roy Green is Dean of the Macquarie Graduate School of Management and heads the Federal Government’s recently announced review of the Textiles, Clothing and Footwear sector. Previously he was Dean of Commerce at the National University of Ireland, Galway, and a member of Enterprise Ireland’s Research Funding Support Board.

The City is heavily reliant on small business to provide local jobs and the majority of businesses operate in the retail, wholesale, hospitality and service industries. The narrow industrial base tends to limit jobs growth as well as the range of jobs for local residents.

These were the challenges that two partner organisations, the Illawarra Area Consultative Committee (IACC) and Shellharbour City Council, were seeking to address in 2004. It seemed logical that an endogenous growth strategy such as ‘business retention and expansion’ (BR&E) was an essential component of an economic development plan for Shellharbour. But which specific type of BR&E strategy would best suit Shellharbour?

ECONOMIC GARDENING

Illawarra ACC identified a promising strategy that had originated in Littleton, Colorado, in 1987 called ‘Economic Gardening’.

The appeal of Economic Gardening is the way it seems to fit the circumstances of Shellharbour City. Economic Gardening does not rely on business attraction but focuses strongly on encouraging the successful expansion of local businesses. It assists

Growing small businesses
Why is it so important for regional economies to have strong and growing small business sectors?

Here’s why
The small business sector has a total capitalised worth of \$4.3 trillion; four times that of the Australian stock exchange.

potential high-growth businesses to expand, rather than helping struggling businesses simply to survive. The project partners had witnessed the failure of some high-profile business relocations in the Illawarra region and decided that the concept of growing the economy ‘from within’ was a more sustainable alternative.

Rather than just overlaying a US strategy on local conditions, the project team kept the core Economic Gardening principles and redesigned methods to suit the local resources and business environment. Kiama Council, the LGA south of Shellharbour, became a partner in the project. The University of Wollongong is evaluating the project methodology.

A PRACTICAL AUSTRALIAN VERSION

The Economic Gardening pilot project began in November 2006 and by November 2007, sampling >>