

# ○ WHY VERTICAL STRUCTURAL SEPARATION IS IN THE INTERESTS OF INCUMBENT TELCOS, AND WHY THEY DON'T SEE IT

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Vertical separation of incumbent telecommunications providers has been a popular topic in regulatory discussion. This paper addresses the question from the interests of the integrated firm itself, and though the case made is general, the case of Telstra is specifically considered. Opportunities for international growth, cheaper cost of capital, the opportunity to simplify systems costs and simpler regulatory arrangements are identified as benefits not sufficiently considered by firms. Bounded rationality, agency problems and misunderstanding strategic management are discussed as reasons for the benefits being insufficiently considered. Lawmakers interested in achieving separation could consider actively engaging the investment banks to study the benefits.

Vertical separation of incumbent telecommunications providers has been a popular topic in regulatory discussion. This paper addresses the question from the interests of the integrated firm itself, and though the case made is general, the case of Telstra is specifically considered. Opportunities for international growth, cheaper cost of capital, the opportunity to simplify systems costs and simpler regulatory arrangements are identified as benefits not sufficiently considered by firms. Bounded rationality, agency problems and misunderstanding strategic management are discussed as reasons for the benefits being insufficiently considered. Lawmakers interested in achieving separation could consider actively engaging the investment banks to study the benefits.

The regulatory and policy debate in telecommunications in Australia has regularly included discussion of the desirability or otherwise of a structural separation of Telstra, either implemented by the Government as owner or the Government as regulator. (See Toohey 2002, Gerrand 2004 and Allen Consulting Group 2006 as examples, Crandall and Sidak (2002) show the international character of the debate). The discussion has never been particularly formalised. The closest it came was a House of Representatives Standing Committee Inquiry that was commenced but never concluded (House of Representatives 2002). The initial inquiry was called by then Minister Alston who terminated the inquiry after the then Shadow Minister Tanner published a discussion paper on the difficulties confronting a half-owner from enforcing a separation (Alston 2002, 2003).

More recent discussion has emerged as a consequence of the development of Next Generation Networks (NGNs) and the acceleration of broadband access. In particular Telstra has made two spirited defences of vertical integration (Ergas 2007 and Telstra 2008).

This paper does not intend to look at the question of vertical separation from a regulatory view, as something that needs to be imposed on incumbent carriers, but from the incumbent carriers' viewpoint. The thesis is that vertical separation is now, given technological and policy developments, in the incumbents' interest but that there are fairly simple reasons why they consistently fail to see it.

The paper first discusses the theory of vertical integration; it then considers the recent arguments for vertical integration from Telstra. Following this the paper advances the reasons why

vertical separation is in the interests of an incumbent operator and concludes with the reasons why they don't see it.

## **THE THEORY OF VERTICAL INTEGRATION**

Vertical integration refers to the process whereby two stages of production are housed within the same firm. The existence of vertically integrated firms creates a conundrum for standard neo-classical economics, just as the existence of firms does, given the theoretically inherent efficiency of the price system.

Perry (1989) identifies 'three broad determinants of vertical integration: (1) technological economies, (2) transactional economies, and (3) market imperfections.' Williamson (1985) introduces 'a cognitive map of contract' that is a bifurcating tree in which the first division is monopoly versus efficiency. In this approach vertical integration is motivated either by the opportunity to leverage market power in an upstream or downstream market to the vertically adjacent stage, or by the consideration of efficiency, primarily the elimination of transaction costs.

Significantly, Williamson considers the technological economies to only be special cases of the transactional economies. He posits there is no reason why the two stages of production, say between steel making and steel milling, can't be co-located but under different ownership except for the high transaction costs involved.

Ultimately these two alternative motivations for vertical integration are the source of a regulatory conundrum. If the integration is motivated by monopoly considerations then competition policy principles would motivate action, and in some jurisdictions this action can include enforced divestiture (as in US vs. AT&T in 1984). If, however, the integration is motivated by efficiency then regulatory action is unwarranted and indeed damaging to efficiency and therefore the 'social good'.

There are, of course, intermediate results. These include the case where there are efficiency benefits from integration but these create both the opportunity and actuality of extended exercise of market power.

This paper does not address the question of the desirability of divestiture powers as remedies; it is only interested in the question of whether the efficiency benefits get overstated or misunderstood by firms. One consideration is, however, the cost to the firm of confusion between motivations for integration.

## **TELSTRA'S ARGUMENTS FOR VERTICAL INTEGRATION**

Telstra's arguments for vertical integration have been made in regulatory contexts and in opposition to propositions for separation. As a consequence they include arguments related to the question of enforcement and do not at any time traverse the benefits that might accrue to Telstra.

## **HOUSE OF REPRESENTATIVES INQUIRY SUBMISSION**

Telstra's first explicit argument was laid out in response to the House of Representatives inquiry. In its submission Telstra (Telstra 2003) advanced four fundamental arguments:

1. Any break-up would be arbitrary and impose significant structural rigidities, which hamper innovation and technological improvements,

2. Structural separation would impose significant costs on Australian consumers, based both on lost efficiencies of integration and the additional systems costs for separation,
3. Separation will reduce the operating efficiencies that are currently used to help fund uneconomic services, particularly in regional and rural Australia, and
4. Structural separation will send strong negative signals to investors as such a dramatic policy intervention increases sovereign risk and runs against the trend of regulation around the world.

Much of this reasoning is based on the consequences of imposed separation rather than voluntary separation, especially some of the separation costs and the question of sovereign risk. Each of the concerns can be examined in turn in relation to a voluntary separation.

The first concern is the choice of a boundary point between the separated businesses. This was indeed a challenge, but Telstra themselves over estimate the clarity of the dividing line between local and long distance calls (see AAPT 2003, 9), though they are correct to identify a clear dividing line between national and international calls, and there was a very clear line between intra-state and inter-state calling in the USA. The boundary between the access network and the core network is relatively clear in an NGN environment, especially under the network architecture envisioned by Telstra (Telstra 2005).

The concern about additional cost for consumers has two elements, the second of which (relating to additional system costs) is primarily a concern of a mandated rather than a voluntary separation (as it specifically refers to the cost of building new systems at a time of the regulator's choosing rather than in accordance with ordinary system replacement timeframes).

The third concern is also only meaningful in a regulatory context, as the application of the funds from efficiencies to social purposes rather than profit is only about the consequences of the efficiencies.

So the arguments against separation, rather than the enforcement of separation, are either technology concerns about the operation of separated elements or about lost efficiencies.

The argument about technology occurs in two parts. The first is about the integrated nature of even notionally layered technical reference models, namely 'ensuring a service works and works reliably often requires a degree of integrated control between and within layers'. (Telstra 2003, 21) This cannot be sufficient justification for integration, as many aspects of the economy require similar co-ordination of 'control'. As Williamson argued the real test is whether there is an efficiency case.

The second argument on technology is what Telstra calls the 'chicken and egg' problem, and the example they give is of the development of Viatel and the question of how to get users without content, and content without users. They conclude: 'from these experiences and others, Telstra has learnt that resolving or avoiding "chicken and egg" problems requires coordinated investment across all elements necessary for service viability' (Telstra 2003, 24).

This is an extraordinary conclusion given that the eventually successful model of on-line services was the Internet, which was always a development without 'coordinated investment' and was indeed a model that trumped every instance of proprietary or walled garden models. The other example Telstra offers is of the content requirements on Pay TV and ignores entirely both the initial dynamic (excessive and wasteful network duplication) and the endpoint (common content on both platforms).

Telstra's final argument then is the efficiency argument. Telstra only spends 33 lines attempting to make this claim, and it is based on loss of scale and scope economies. As these arguments will feature later they will be quoted at length.

Economies of scale exist whenever the costs of production fall as volume of production increases and economies of scope exist when there are cost savings from performing two or more different economic activities at the same time. Economies of scale and scope are prominent features of the telecommunications industry. Moreover, vertical economies of scope between upstream and downstream markets are usually important in telecommunications as compared with other regulated industries. (Telstra 2003, 29)

### **TELSTRA RESPONSES TO THE FANOC SPECIAL ACCESS UNDERTAKING**

Telstra's second set of explicit arguments for vertical integration has been made in response to the Special Access Undertaking lodged with the ACCC by FANOC in relation to a fibre-to-the-node network (Ergas 2007 and Telstra 2008). These arguments are based more on the value of integration rather than the opposition to the enforced nature, responding as they were to a commercial proposal to develop a structurally separated access network.

Ergas (2007) identifies four 'vertical externalities' which he claims result in efficiency increases from vertical integration; pricing, service quality, investment and on-going adaptation to change.

The first element on pricing is built on a simple argument from the issue of double marginalisation. Double marginalisation is an exercise in the economic theory of industrial organisation that can be shown to occur when two vertical stages are monopolists and hence face downward sloping demand curves. The simple conclusion of the model is that the profit maximising decisions of both firms result in output in the downstream market being less than output in that market were the production decision to be made by an integrated firm. This has the effect that the deadweight loss to the economy is greater than would be the case for integration and that the economic profit (rents) made by the two firms is less than the economic profit of the integrated firm (as the output is less than the profit maximising level of the integrated monopoly). As a public policy argument Ergas is only advancing the proposition that integration enhances welfare.

To make the argument work Ergas relies on the fact that even in a competitive market, all firms in reality face some downward sloping demand curve, that competition never really fully works to make the firm able to increase profit by setting output slightly lower than would occur in a competitive market. This makes this argument on its own an extraordinary claim, because clearly it must apply everywhere; economic efficiency and welfare would be advanced if everywhere in the economy vertical production stages were integrated. As this would occur everywhere and there are certainly economic efficiencies in 'natural monopolies', the conclusion of this argument is that the welfare maximising approach is to manage the entire production of the economy in one integrated firm.

The error in the reasoning is to move from every firm facing a downward sloping demand curve to every firm facing a sufficiently downward sloping demand curve to make a difference. In telecommunications especially, policy makers have focussed at the very least of creating competition between downstream service providers to try to reduce the market power of each individually. To observe that some firms in the downstream market (typically the former

monopolist's integrated operations) have sufficient market power to make a difference simply suggests there is something wrong with the historic approach to introducing competition.

The second argument of Ergas is described as the externality of product quality. Ergas argument gets confusing because he primarily talks about decisions made by the downstream firm, but includes in his reasoning the consequences of investments by the upstream firm, while this co-ordination of investment problem is notionally his fourth concern.

The case without upstream investment appears to be that an innovation by one downstream firm in innovation would create the opportunity for other downstream firms to 'enter the market developed at great risk by the innovating rival'. But this spill-over issue doesn't only exist in cases where vertical integration is an issue (other than the investment co-ordination aspect). It is not a separate argument to the investment co-ordination argument.

The third argument is the vertical externality of investment resulting in hold-up. In this case, once one party has made an investment that is relationship-specific the other party may have an incentive to behave opportunistically on the basis that the investor has little opportunity to use the investment. While a theoretical possibility, the fact that the market isn't a bilateral monopoly makes this unlikely, as in the specific case of the upstream being the capital intensive area, the upstream investor has multiple downstream parties to whom the benefits delivered from the enhanced facility can deliver.

Ergas' final concern is the need for 'adaptive, sequential decision-making' where uncertainty over changed circumstances is resolved over time. This would cover the case of the need for both upstream and downstream firms to invest in, for example, faster speeds and would incorporate the risks of spill-over if only some downstream firms assisted in the upstream investment. It is however broader, covering cases where the investment decisions are different with different risks. In this example the upstream firm invests in a capability that the downstream firms don't buy, or don't buy in the quantities forecast.

This is, in essence, the real issue that needs to be resolved. But Ergas states 'it may be difficult or impossible to completely specify the terms of trade before future uncertain outcomes have materialised', which is again the classic transaction cost efficiency basis for vertical integration. The difficulty is that while the contracts may be difficult, there is no attempt in this reasoning to quantify the difficulty in contracting. There is no attempt to consider the structure of tariffs that might apply to those contracts.

There are, however, many other economists who make a profession from designing contracts for this kind of circumstance. To repeat three times that contracting might be difficult or impossible is not the same as demonstrating that it should not, or could not, be done.

Telstra takes a surprisingly interesting turn in its further submission on the undertaking (Telstra 2008). Where they had previously argued (Telstra 2003) that a difficulty of enforced separation was choosing a network boundary, they now argue that NGNs are 'less vertically integrated technology' offering a 'more natural access point' and claiming that the Internet-based and new media economy has shown 'assets and businesses above the transport layer are highly replicable by non-network providers' (Telstra 2008, 7–8). Telstra's conclusion is that non-discriminatory access can be easily supplied. But says Telstra, while the risks of vertical integration are reduced for access seekers, vertical integration is important for the upstream provider. It is important for the investment coordination reasons given above, though this time phrased as 'securing efficient, coordinated management and progressive upgrading over time'.

At the same time Telstra claims it has a ‘powerful incentive to quickly promote retail uptake through all of the available channels’ (Telstra 2008, 8) though a non-integrated operator has less incentive to upgrade its network ‘because it does not share in any margins accruing downstream’ (9). These are hard, if not impossible positions to reconcile. The second claim is actually a feature of the earlier ‘double marginalisation’ argument, because the incentive Telstra seeks is not ‘margin’ as an accountant sees it but ‘profit’ as an economist sees it (that is above the cost of supply including the cost of capital) and vertical integration of back-to-back monopolies increases rents.

As an incumbent Telstra’s arguments on vertical integration lack coherence and would certainly be unhelpful to business managers deciding how the business should be operated. Once the argument against separation is separated from the argument against enforced separation, then the arguments resolve down to two. The first is that because the incumbent has significant market power in upstream and downstream markets, integration both expands output (welfare enhancing) and increases economic profit. The second is that there are transaction cost savings from integration.

What Telstra in these proceedings never does is talk about the reasons why separation might be beneficial. As we saw in the discussion of double marginalisation that could in theory apply everywhere in the economy, so there must be other factors that mean firms don’t integrate everywhere. We will investigate these in the next section.

## **BENEFITS OF STRUCTURAL SEPARATION**

There are three main benefits that flow to incumbent telcos from separation independent of the regulatory discussion, and these come from an understanding of investment theory, the requirements for international growth and a better understanding of the implementation of technology (as also identified in De Fontenay 2002, 11). There is a further benefit that is impacted by the regulatory discussion (as identified in Lehr and Hubbard 2003). Each of these is discussed in further detail.

### **INVESTMENT THEORY**

Telstra was only first offered to the Australian investor community in 1997, with a second tranche in 2000 and a further sale in 2007. The relatively recent nature of the business as a listed entity, together with the turmoil in telecommunications and IT stocks, has led to some uncertainty about the nature of the business. In 2004 and 2005 there was a high degree of discussion over whether it should be valued as a growth stock or a utility stock. (Hewett 2004, Hill 2004, Sampson 2005).

It was described as if for the purpose of valuation the company needed to be one or the other:

Not that this will entirely solve the continuing tussle with the market seeing it as a utility stock whose main responsibility is to give the money back, versus Telstra’s strong belief that it must also operate as a growth stock and develop into some new areas if it is to survive and prosper in the longer term. (Hewett 2004).

Telstra saw this problem as being seen as either one kind of company or the other, but their problem is not unique to them. Talking of a highly successful Australian company (Westfield) and its head (Frank Lowy) *The Economist* wrote

His big idea came much later, once he understood that the shopping-centre business really consists of two different types of income stream. One is rental income from the ownership of properties – not very risky, and so ideal for investors such as pensioners. The other comes from the construction and management of the centres. This is more volatile, and so attracts a different kind of investor. Financial theory suggests that offering these two income streams separately to the capital markets should lower the overall cost of financing the shopping centres. That cost advantage, in a nutshell, is what now helps Westfield to outgun its rivals. (*Economist* 2002).

The piece of financial theory stems from the Modigliani and Miller theorem (Modigliani and Miller 1958). While that theorem initially only specified that the valuation of a firm was independent of the firm's financing decisions, it has as a corollary the consequence that investors building portfolios prefer the option to develop their own balance between risk profiles.

The issue for incumbent telcos is that they have both utility like income streams in the utilisation of their physical infrastructure, and growth income streams from new applications. This mix of risk profiles is relatively unproblematic while the ratio between them is unchanged. However, as telcos face the need to make the first new major investment in the utility stock of the access network to support NGNs the relative weighting is changing.

The difficulty for investors is that they don't know by how much it is changing and so over the risk weighting separately ascribed to the utility and the growth income streams is a further risk for the uncertainty over portfolio mix.

Whereas when Galbraith wrote *The New Industrial State* he could talk of how large firms built conglomerates to manage risk, these days the trend is to not build diversified conglomerates and instead leave investors to manage risk for themselves across different investments. (Galbraith 1967) There is certainly also empirical evidence to support the thesis that structural separation can increase shareholder value (ACIL Tasman 2003).

## **INTERNATIONAL GROWTH**

Despite over twenty years of deregulation in telecommunications across the globe, there are few instances of incumbent telecommunications operators becoming successful entrants into different geographic markets. In our own region the entry of Telstra into New Zealand and Telecom New Zealand into Australia have not been highly successful. The latter case has included two attempts, the first being Pacific Star from which they eventually retreated, the second has been an investment in AAPT which has been described as a 'struggling' firm only after its acquisition by Telecom New Zealand.

This is not for want of trying. Telstra's former chairman Bob Mansfield once stated 'Telstra is not now a business with telegraph poles running wire. It's now a wholly integrated jigsaw puzzle of IT capability. How the hell do you split it and still maintain the scale factor, not only scale factor in Australia, the scale factor to compete globally?' (Elliott 2002)

This quote from Telstra reveals two weaknesses for international growth for incumbent telcos. The first is that the nature of their integrated operation and the extent to which they leverage their network ownership is so ingrained that they don't recognise it. The second is that they don't understand that their retail operations are not internationally competitive.

Michael Porter (1990) identified that strong domestic competition leads to international competitiveness. While the management of the old Telecom Australia sold the then Labor Government that the merger of Telecom and OTC would create a firm that could be a national champion and compete globally, it instead created a firm whose core competence is leveraging its position as network owner. This is not a competence to help it grow. Porter however explained that 'creating a dominant domestic competitor rarely results in international competitive advantage. Firms that do not have to compete at home rarely succeed abroad'. (Porter 1990, 662).

Unless the incumbent's international growth strategy is to simply acquire other incumbent telcos, it does not have any leverage in international growth. The opportunity would come from separating out the non-access network component and targeting it with growth.

This may seem like a strange recommendation, as it would presumably enhance the ability of competitors to compete in the home market, but the separated firm would face the same access problems in other markets. This reasoning ignores the benefits of developing the competency to compete in competitive markets.

An example of how a firm can be transformed by consciously deciding to face a more competitive market is given by Kimberly-Clark. This was one of the firms used in Jim Collins' *Good to Great* (Collins 2001). For inclusion in the book a firm had to have gone through some kind of inflection point in its earnings performance to have started consistently outperforming similar firms.

The Kimberly-Clark story began when Darwin Smith became CEO. Shortly after he became CEO

Smith and his team had concluded that the traditional core business – coated paper – was doomed to mediocrity. Its economics were bad and the competition weak. But they reasoned, if Kimberly-Clark thrust itself into the fire of the consumer paper-products industry, world-class competition like Procter & Gamble would force it to achieve greatness or perish. So, like the general who burned the boats upon landing leaving only one option (succeed or die). Smith announced the decision to sell the mills. (Collins 2001, 19–20).

For incumbent telcos to learn how to be competitors in other markets they need to try it at home. Their options for international growth will be limited otherwise. In the current Australasian environment neither Telstra nor Telecom New Zealand seems to be pursuing international growth options, except in each other's markets. However, at least in the case of Telstra it has recently made 'threats' to invest offshore if it doesn't get the regulatory outcomes it seeks in its domestic market (Sheedy 2007).

## **IMPLEMENTATION OF TECHNOLOGY**

One of the themes in the discussion of separation by Telstra was the importance to them of vertical economies of scope. Economies of both scale and scope are both features of a firm's cost

function, which in turn is dependent on the production function and the cost of inputs (labour rates, cost of capital, rent, etc.). Each production function is determined by the technology employed. In fact, if technology is used in its widest sense to mean all the techniques of production; a production function is a description of a technology.

Yet hearing telco executives talk you would think that there are aspects of their technology that are fixed, rather than that technology choice is made by executives. And if technology choice is made by executives, it means that the existence of economies of scale and scope depends on the choices of executives – that is, these economies are endogenous to the circumstance of the firm.

The technology employed by incumbent firms is technology employed by former monopolists and what are still firms with significant market power. This leads de Fontenay et al to conclude,

The central problem inhibiting a better understanding of the scale and scope of market forces currently at work today may well be the incumbents' perception of themselves – their market position and challenges. Incumbents (and indeed most others in the industry, even policy makers with whom incumbents feel eternally at loggerheads) naturally continue to look at the legacy of vertical (and horizontal) integration as the way to control the environment, including what incumbents perceive as the two primary sources of uncertainty: competition and innovation.

They further conclude

the monopoly selects and shapes the technology to serve its own interests. If the technology is endogenous, that is, if it becomes a strategic variable managed by the firm in pursuit of its own private objectives, then the technology we continue to observe throughout existing concentration in the sector cannot be presumed to be socially efficient, even if it could be efficient for the firm itself. Indeed, it is generally the case that a monopoly largely determines technology to meet its needs. (De Fontenay et al. 2005, 88–89).

Incumbent firms believe they have certain scope efficiencies in the way they construct their IT systems, that there is an efficiency as the one system supports all the vertical involvement in service delivery. However, the very inefficiency of incumbent IT systems is one of their great strategic challenges. In all cases they are confronted by vast suites of systems that are incompatible.

The source of the inefficiency is the very design feature that has been trumpeted as a benefit of integration. A separated firm would be designing retail and network systems separately with a transactional layer between them. This would mean the retail services company only built one front of house system. Meanwhile the access network business and core network operations could build bespoke network platforms (often tied to the systems of telecommunications technology vendors) and integrate to the firm only at the transactional level.

Similarly, some of the biggest investment co-ordination tasks are supposed to be made easier, but in the final analysis there is little network engineering can do to hold sales and marketing to their forecasts. In markets the revealed preference of the downstream market in how much it will pay for technology is a better commitment. Put another way, there are real limitations to

how effective command inside an organisation can be; and, when it fails, vertical integration removes the information that would come from the price system.

## **IMPACT OF REGULATORY DECISIONS**

There seems little prospect of any Governments deciding to no longer pursue the objective of competition in telecommunications service markets. This will unfold in one of two ways for new broadband or NGN developments.

The first is that the access network will continue to be an economic bottleneck and subject to an open access regime. Such a regime, if effective, should be aimed at ensuring the integrated firm is not advantaged in the downstream market and hence any of the supposed benefits of integration need to be 'shared' with competitors. At the very least the firm continues to have a fight over the terms of access, at the worst the firm is regularly dealing with both access issues and anti-competitive conduct complaints. Lehr and Hubbard (2003) concluded that in these circumstances the integrated firm would be better served by voluntary structural separation.

This was the position apparently adopted by the former CFO of Telecom New Zealand. Sainsbury 2008 reports

recently departed TNZ finance chief Marko Bogioevski did not agree with the way the company's board accepted the New Zealand Government's bid for a strong internal separation. He said shareholders would do better off with full separation – spinning off the network and wholesale business into a separate company either by sale to an infrastructure manager or the creation of a new listed vehicle. The argument goes that shareholders get all the downside of more regulation and no upside for a sale of excellent assets.

The second scenario is that the integrated firm's access network is not an enduring bottleneck. That means that an alternative network build can offer the service to downstream providers at lower prices than the incumbent at even relatively small volumes. In that case the two divisions of the integrated incumbent become captives of each other, most particularly the downstream operations being locked into a higher cost structure.

So under both the scenarios the incumbent telco has real incentives to move faster not slower on voluntary structural separation.

## **WHY INCUMBENT TELCOS DON'T SEE THE BENEFITS**

The argument so far has only demonstrated that the incumbent telco arguments overstate the costs and significantly understate the benefits of voluntary structural separation. Unfortunately this is not more fully quantified, though on the face of the arguments it would seem a good case has been made for voluntary structural separation.

It is commonly argued, however, that clearly the net argument is against structural separation on the basis that no incumbent telco has fully embraced the path. This would be a more compelling argument if it weren't for the fact that it is made by executives of incumbent telcos themselves. This is an example of 'bounded rationality' of decision making, the first of three main reasons why the incumbents underestimate the value of separation. The other two are the incentives faced by management and a general misunderstanding of strategy.

## **BOUNDED RATIONALITY**

The foundations of economic reasoning are based on the idea that individuals make informed rational choices in their self interest. However, it is recognised that agents are only boundedly rational ‘an agent with limited computational ability and perhaps, imperfectly defined objectives, attempting to cope with an often complex decision environment’. (Starmer 2004, 126). This recognition applies not just to individuals as agents but firms as agents, indeed the recognition started there. (Simon 1955).

We should not be surprised by this. We know that even in the hard sciences such a process occurs, labelled paradigms, wherein the best scientists ignore inconsistencies to continue to develop their theories. (Kuhn 1968) There are good theoretical underpinnings for such behaviour described in both philosophy and psychology (Quine and Ullian 1970, Goleman 1995); within the discipline of economics itself this has been identified and labelled as ‘conventional wisdom’ (Galbraith 1958). It is simply not possible for an individual, or collection of individuals, to gather all the data and undertake a full analysis of the circumstances each time a new circumstance is presented.

The existence of these kinds of managerial or business paradigms can be found in telecommunications history. An early example was the delay in the introduction of automatic switching by AT&T at the start of the 20th century (the technology had been available since the 1890s and despite use by AT&T’s competitors was not used by them till 1919). Nix and Gabel (1996) conclude ‘that when a multiplicity of actions appears reasonable, ideological presuppositions resolve some of the rationality issues firms face’.

A more recent experience affected multiple firms in the rapid expansion of fibre capacity in the US and trans-oceanic markets. This was based on what Malik (2003,13) calls ‘the big Internet myth’ that ‘Internet traffic doubles every hundred days.’ This belief fuelled investments around the globe and was repeated by telco executives in many markets, until, (as Theresa Gattung said at her Charles Todd oration for the Telecommunications Society of Australia 2003, though not recorded in the published version) ‘we discovered it was just a WorldCom memo’. There was, as Malik details, plenty of information on which to challenge the belief, but globally telco executives found it easier to accept ‘conventional wisdom’.

Management studies also suggest that organisations don’t, as one might expect, respond to external threats by seeking out new alternatives. The ‘threat-rigidity hypothesis’ instead suggests that organisations confronted by difficult circumstances resort more to their standard way of doing things. It is as if, being unable to accommodate the external fact into their belief system, they reinforce their belief system (Staw et al 1981).

In the context of structural separation of telecommunications companies the issue has mostly been presented by people pushing a regulatory argument, so it is seen as a threat. Further, no telco has embraced the separation of an access network from core network and service provision. In such a circumstance we would expect a telco to not adequately consider the opportunity presented by structural separation.

Indeed one of the areas where the managers are consistently misled is their own understanding of the history of telecommunications. The technologies for telecommunications were developed for most of the twentieth century in an environment where all the customers (telcos) were vertically

integrated firms. The integrated nature of the technology has been a consequence of integration, not a cause of it.

## **PRINCIPAL-AGENT**

The principal-agent problem in corporate governance refers to the idea that the principal (shareholders) are unable to fully supervise the agent (management) and consequently management makes decisions in its own interests, rather than shareholders. The consequence is that management may have an incentive to increase sales or staff rather than profit. This is particularly true where the remuneration of management relates to some measure of the size of the company.

The problem is usually thought of as applying to one group called ‘managers’. In reality management is divided into two groups, the Board and the Executive, and the principal-agent problem applies to each of these groups. It also appears that there is a third group, share analysts, who have a dramatic influence on companies but possess another different set of incentives. The influence of analysts is particularly strong in firms like telcos that are widely held resulting in few if any ‘major shareholders’.

The modern solution to the problem is the tying of executive remuneration to share price performance. This is, however, less effective for Boards. And for both groups size still matters, running a \$30B turnover firm is significantly more attractive than running a \$10B or \$20B firm. (A specific case where ‘Telstra’s plan to retain market share is not profit maximising for Telstra, and results in a loss of productive and allocative efficiency’ is detailed in AAPT 2004.)

With this combination of multiple principal-agent gaps, it is not surprising that achieving major changes in strategic direction is rare. While a strategy might be in the interests of shareholders it might not be in the interests of the three groups mentioned; and it has to be in the interests of all three to achieve change.

It is also here that there is an interaction between the bounded rationality issue and the principal-agent issue, because all three groups are boundedly rational, and hence may well not be making decisions that really are in their interests.

## **MISUNDERSTANDING STRATEGY**

Finally, executives in firms tussle with questions of strategy; what sets of actions to take to achieve the objectives of the firm (which are usually taken to be maximising shareholder returns). Informing their thinking are a significant number of strategy writers. A body of their work focuses on the question of how to achieve returns above the cost of capital.

Porter (1980) introduced the idea of three generic strategies; overall cost leadership, differentiation and focus. By the time of his next book, however, Porter (1985) only provided detail on the first two, as focus was really only a strategy for a small firm aim for a specialised market. Executives over time have come to understand differentiation as being the same thing as monopoly, which is not surprising as the differentiated firm can be thought of as a monopolist in its own market, a position referred to as monopolistic competition.

At the same time many executives and their advisors have taken much heart from the apparently approving comments on monopoly made by Schumpeter (1942). Schumpeter argues that monopoly is not the economic evil of neo-classical theory, but can be thought of as the just reward for innovation. He further thinks that monopoly will only be transitory as it succumbs to the process of creative destruction.

However, Schumpeter does not think this process can go indefinitely. He thinks that firms will continue to expand to the point where innovation withers, and competitive entry becomes too hard. This led to his summary ‘Can capitalism survive? No. I do not think it can.’

Firms cannot adopt strategies simply designed to build monopoly power, and then trust in some kind of sophistry about dynamic efficiency. Firms need to invest in new competitive models that encourage innovation. The alternative leaves no alternative but for greater regulation.

The position of Lehr and Hubbard (2003) or the view apparently believed by Marko Bogioevski at Telecom New Zealand (Sainsbury 2008) is that separation might be in the interests of the firm because of the insistence of lawmakers on regulating the existing structure. However, telco executives (and Boards and analysts) would question the very precept of the argument.

Executives and Boards, believing their strategic purpose is the creation of shareholder value and that this value is determined by exceeding standard market returns, are looking for strategies to achieve beyond normal returns. The literature cited above makes it clear that the generation of above normal returns comes from monopoly power. Executives and Boards struggle to understand why Government policy would continue to seek to confiscate the benefits of monopoly power when the executives and Boards read literature that tells them this is the purpose of strategy.

## CONCLUSION

There have been a number of arguments advanced by Telstra against structural separation. When separated from the arguments against enforcing separation they resolve to very simple arguments on transaction cost economics and co-ordination of investment. NGNs have the potential to significantly change those economics, and the example of the Internet demonstrates that the ‘chicken and egg’ argument is over-stated. There are other potential benefits of separation not addressed in the regulatory arguments. The fact that no telco has ever separated can be explained by bounded rationality, agency problems and a confused understanding of strategic management.

Telco shareholders should be more demanding of their executives and Boards and seek a full evaluation of the possible benefits of separation. In the absence of shareholder action, Government should sponsor the full analysis of the benefits by the investment banking community.

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