MANAGEMENT OF INNOVATION INDUSTRY ANALYSIS SERIES

Snell UK Telco Innovation Report 2004

How to Exploit Innovation to Address the Growth Ambitions of the UK Telecommunications Sector

SnellConsultancy

Technology and Innovation Consulting

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SECTION 3 A VISION OF INNOVATION: PAST & PRESENT

Research Objective #1	How have UK telecoms companies been approaching the management of innovation during the recent industry downturn (2000-2003)?

In the previous section we set out the industry context for this report by highlighting the telecommunications industry's need for further sources of revenue growth and questioned where they were going to come from. We ended by drawing attention to the theory voiced by some industry practitioners and analysts that Telcos could drive revenue growth by proactively `innovating' or `leveraging innovation'.

Consequently, this section examines whether or not telecoms companies have been proactively managing innovation over the last four years and whether their approach has changed at all during this period. There are three elements to this: understanding what the management of innovation is; questioning, why bother with innovation at all; and, asking when should management pay the most attention to driving innovation forward?

- Firstly, telecommunications companies must understand what the management of innovation is. Management thinking has evolved enormously over the last decade with regard to viewing innovation as being more than concerning new product development or R&D. The view taken today is that innovation is a business wide discipline that can take many forms. It can be systematically managed – ironically along similar lines argued by Peter Drucker some sixty years ago.

- Secondly, it is clear that as a management discipline, the importance of the management of innovation is still not totally understood by management. We review some of the comments made at a recent Innovation Summit held in London that support this. This is no different for Telcos that need to develop an innovation business case to justify resources and funding allocation to innovation activities – namely both managing and doing innovation. There is an important distinction between the two, which we will examine further.

> An important distinction: `doing' & `managing' innovation

- Finally, one of the strongest arguments for maintaining a continuous and relentless pursuit of innovation is that the financial benefits of successful innovation outcomes, new products or services or incremental process improvements, can help attenuate the fluctuations of economic cycles. We review whether or not this has been the case as we track UK telecoms companies' efforts to drive innovation during the last four years.

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3.1 What Exactly Do You Mean by `the Management of Innovation'?

"We do not need to sit down to define innovation, it's internal to the culture of the organisation, innovation just happens."
- Director of Global Strategy, UK Mobile Operator

Key Finding #1: Definition of Innovation	Put simply, innovation is the `creation of change for economic gain' yet there are wildly contrasting views as to what Telcos believe innovation means.

3.1.1 Explaining Telecoms Innovations

The origin of innovation comes from the Latin word, innovare, meaning to `make something new'. Today, a search on google.com will throw up over 12 million references to innovation including the Oxford English Dictionary definition of innovation, `making changes to something established'. It is not surprising then that executive's eyes glaze over when the subject of being `innovative' or improving their firm's innovation performance is raised: surely one could argue that all common-sense business changes could be labelled with the title `innovation'?

In fact, there have been a host of differing definitions offered by: economic historians, including Schumpeter's theories in 1934 and Professor Christopher Freeman's in 1982; management gurus, including, Peter Drucker, Gary Hamel Clayton Christensen, and Rosabeth Moss Kanter; and, governments including the UK's Department of Trade & Industry's (DTI) and the Canadian government (See Appendix A).

Perhaps the simplest, shortest and most concise definition and the one used for the purposes of this report is the one offered by Peter Drucker (1985) that:

`Innovation is creating change for economic gain.'

This definition embraces innovation in its widest sense. This includes disruptive, application, product, process, experiential, marketing, business model and structural innovation (G. Moore, 2004). Furthermore, the creation of change implies creativity, initiative and leadership. Thirdly, economic gain can be defined in monetary terms but also has relevant implications to other aspects of the business such as Corporate Social Responsibility.

Firstly, it is important to distinguish between an invention and an innovation. Invention is the act of `coming upon or finding; to discover'. An innovation is not an invention. An invention is the development of a brand new material or device – fundamental to the invention will be a new technology or way of doing something differently. But there are numerous inventions that have never made it to market — they have never been successfully commercialised.

`Invention is based on empirical findings: normally physical things or devices.'

For an 'invention' to become an 'innovation' it must succeed in the marketplace. The VHS video recorder was a successful innovation, the Betamax version was not. The Sony Walkman clearly was, the Sinclair C5 not.

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So having an idea is not an innovation. Levitt wrote many years ago 'simply being creative and generating numerous ideas does not necessarily result in a successful innovation'. It is worth pointing out that innovation should be profitable. Apple Computer, for example, stopped making the striking G4 Cube less than twelve months after its launch in July 2000 because the company was losing too much cash on the investment.

The most common understanding of the different types of innovation are summarised in Table 3-1, with particular reference to UK telecommunications.

Table 3-1: Different Types of Innovation and Examples of Telecoms Innovations

Type of Innovation	Description	UK Telecoms Innovations*
Product / Service Innovation	An innovation in its truest sense is a new product or service that is offered to the customer, be that consumer or business, for which the customer is prepared to pay. Embedded within the product or service is most often a technological innovation.	▪ Subscription free Internet access – Freeserve/Energis ▪ Un-metered Internet access – AOL ▪ National Ethernet – NEOS Networks ▪ Differentiated SLA Packages – COLT ▪ Video on demand over DSL – Kingston ▪ IP MPLS – C&W ▪ Broadband – ntl/Telewest ▪ ADSL – BT ▪ SDSL – Bulldog/Easynet
Technological Innovation	The technology can either be new or derived from the application of an existing technology. It could have been sourced from the research and development efforts within the company's R&D department or perhaps more economically by licensing another company's technology. Technological innovation is not R&D although it is commonly supposed that they cover the same range of activities in a company. Technological innovation implies a company-wide approach to the profitable application of technology rather than the activities of one department.	▪ Use of optical fibre and laser light as communications medium – Nortel Networks ▪ First radio on a single semiconductor chip – Nortel Networks ▪ World's first GPRS network – BT ▪ World's first IP telephony network – BT
Process Innovation	Process innovations typically impact the organisation through driving productivity gains and / or reducing cost structures	▪ Virtual Close - Cisco Systems

Source: Snell Consultancy, 2004
Note: The first and widely accepted player to market product/service innovation is shown

Innovation involves a wide ranging exposure of risk:

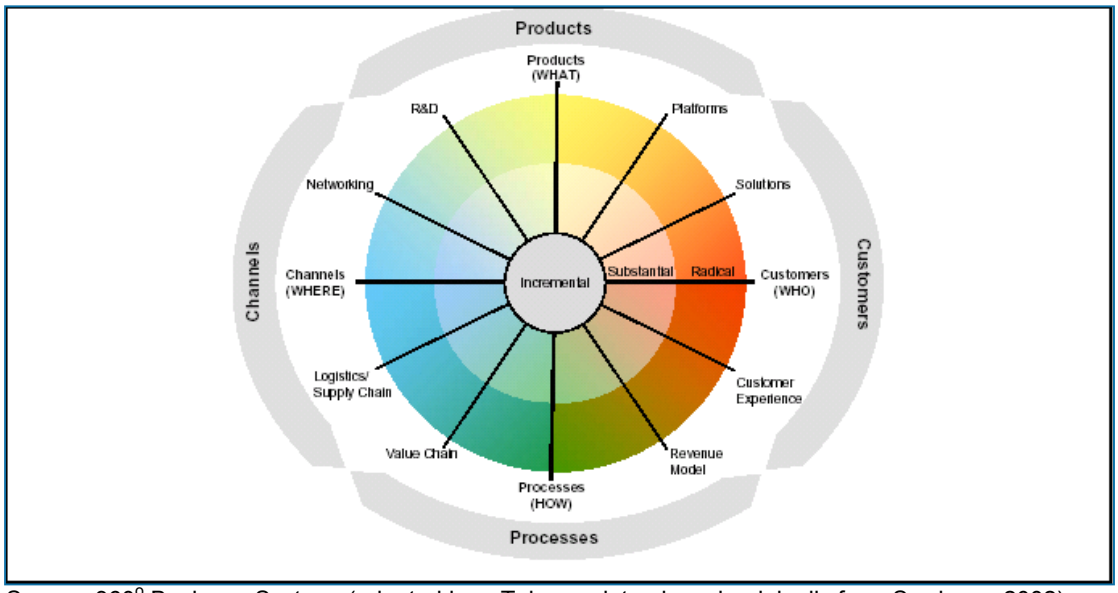
- A radical technological innovation is associated with a high degree of uncertainty, risk and is most likely based on what is known as a 'disruptive technology'. Professor Clayton Christensen (1997), describes 'disruptive technology', as the most exciting in potentially creating completely new revenue streams, families of new blockbuster, breakthrough products or services, or even new businesses.

- A minor product development is considered to be less risky but, nonetheless potentially very profitable.

3.1.2 The Business Innovation Model

Innovation as a management concept is still very much in its infancy, despite the fact that it has been written and commented on for more than 50 years. Consequently, thinking has only recently begun to move forward, as The Economist (April 2004) puts it, to consider other `forms of innovation' such as operational, strategic and demand or customer led innovation. For example, one model that a Telco is attempting to apply is that of `360° innovation'. According to the Telco, it embraces the entire business model along twelve business dimensions as shown in Figure 3-1.

Figure 3-1: How One Telco Manages Business Innovation



Source: 360° Business System, (adapted by a Telco we interviewed, originally from Sawhney, 2002)

The idea is that each business dimension is a valid source of innovation, and that the way to achieve better innovation is to continuously review and challenge all of them to unearth new sources of value. The model lacks employees as a key source of innovative ideas.

3.1.3 Telco's Different Definitions of Innovation

How do the UK Telcos, if at all, define innovation then? Do they see innovation as being solely confined to products or services? Or do they see innovation as having a far more embracing role to contribute to corporate survival and growth?

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Given the seniority of the interviewees and the fact that no interviewee wanted their company to be portrayed as anything less than innovative we expected a good understanding of innovation. This included a clear and concise definition of innovation. The reality varied considerably, as the following quotes from the senior executives interviewed show in Box 3-1.

Box 3-1: Telco's Different Views on the Definition of Innovation

- "Innovation has got to be encapsulated in realisation."
- "You can define it many ways. At the moment, the way it is seen here is different to how it was seen last month."
- "Innovation is about style and culture, management buy-in and support, processes and providing a licence for skunk works."

Source: Snell Consultancy Telco Innovation Survey, 2004

Taking a look at other quotes, however, starts to paint a picture, which is indicative of where each of the different Telcos are with respect to their own innovation journey. As the interviewee quotes in Box 3-2 show, there are differing opinions as to whether innovation is singularly one dimensional or multi-dimensional:

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Box 3-2: Telcos Perceptions of the Different Types of Innovation

Dimension	Type of Innovation	Interviewee Quotes
SINGLE DIMENSION	**Product Innovation**	▪ "Innovation means growth. There are other vehicles for growth such as M&A. Innovation in our company has always meant some kind of relationship to market making." ▪ "Innovation is how we can deliver products at a more entrepreneurial pace than other traditional telecoms companies do."
	Process Innovation	▪ "The other dimension of innovation is to improve efficiencies (internal processes by the innovative use of IT) and reduce complexities. i.e. reduce the different service layer networks with all the costs, complexity and with convergence of voice and data."
	Demand Innovation	▪ "Innovation is the ability to offer bespoke customised services that the customers need." ▪ "Our company does a lot of innovation with clients."
MULTI DIMENSIONAL	**Wider Perspective Relating to the Telcos Business Model**	▪ "A lot of people see innovation in classic R&D terms but innovation needs to be applied. Something must change, otherwise, by definition, there is no innovation." ▪ "It is the ability to do the same things as before but more efficiently, more effectively or, in short, a lot better than you did it before." ▪ "Some people who only touch the subject think it is just an idea. What makes a company innovative is realising the idea. It is everything in the end-to-end process. Once you have that level of understanding of innovation then you understand that it can happen at any point: at the technology incidence or business incidence or business model or application of technology or innovative marketing or pricing." ▪ "We define innovation in a number of different ways, not just to do with innovation in technology, business models, the way in which we work with partners, but also the way we work internally."

Source: Snell Consultancy Telco Innovation Survey, 2004

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We only found one Telco that had a formally documented definition of innovation. In our opinion it was longer and more complex than necessary explaining one reason as to why it had not been communicated to all levels in the organisation,

"Innovation is the creation of substantial or radical new value for customers, and the organisation by dramatically changing the one or more dimensions of the existing business system or by creating entirely new business systems."
- UK Fixed Line Telco

Why then, in our interviews were there few companies who could provide us with a clear and concise definition for innovation rather than defining it `in a number of different ways'? The majority of the respondents were able to define innovation by exception, meaning that they described components of innovation or what innovation was not. Some of the interviewees decided to skirt the issue all together.

Another form of innovation, demand innovation, recommended by Slywotzky and Wise (2003) in their recent book, `How to Grow When Markets Don't', innovation featured in the answers. They cite examples such as Air Liquide and Johnson Controls who, like those interviewees' companies quoted above, are looking to use innovation for the benefit of the customer either by improved delivery, getting closer to the customer, and providing "innovative solutions". The approach is to earn profits not by meeting existing demand in a new way but `by discovering new forms of demand' and adapting to meet them.

The point we make here is that few of the Telcos have a hard and fast definition for innovation. From our experience we recommend that the definition should suit the purpose for each and every individual organisation. Just as each organisation writes its own mission statement, in its own style and format, the same should be applied to an innovation definition.

For smaller companies it can be less important. These organisations can have an inherent innovation capability. From a cultural perspective they exhibit a high level of collaboration and sharing of ideas and experiences. The danger for these companies is that as they grow and add headcount to the organisational structure at a rapid pace, some of the cultural aspects of collaboration and sharing may get lost.

But all the Telcos interviewed are hardly nimble start-ups. As one interviewee at a multinational mobile communications company said, his company tries to maintain its strong goals of being `first to market and innovative' by:

- encouraging entrepreneurial spirit
- encouraging experimentation
- investing in start-up companies
- staying close to technology / innovation cycles
- staying close to start-up companies as opposed to just the large companies.

It is hard though not to think that those Telcos that see no value in defining innovation are merely deluding themselves. Otherwise why would some of the most successful innovators such as the multinational FMCG giant, Unilever find it an absolute necessity? See Exhibit 3-1.

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Exhibit 3-1: Innovation Best Practice - Unilever's Definition of Innovation

BEST PRACTICE LESSONS FROM OTHER SECTORS - DEFINING INNOVATION	
Sector: FMCG	**Company:** Unilever

At the Innovation Summit, London, March 2004, Mehmood Khan, the Global Leader of Unilever Innovation Process Development, presented Unilever's definition of innovation as:

`Innovation is Turning Creativity into a Successful Enterprise'

For the US$50 billion Unilever organisation, successful innovation means satisfying all stakeholders including investors, consumers, its 200,000 employees, the community, government, suppliers and customers. Underneath this is a clear intent to manage innovation systematically. The key features of innovation for Unilever are:

- dedicated innovation resources
- innovation centres across the world
- common IT to support a global innovation process linking 16,000 people
- innovation outputs measured by innovation KPIs.

Source: Mehmood Khan, Global Leader of Unilever Innovation, Unilever, Innovation Summit, 25-26th March 2004, London

One reason often given for not making an effort to define innovation is that it is internal or inherent to the organisation. Innovation just "happens" in different areas of the business or as market conditions change - so what is the point of attempting to define innovation let alone manage it?

3.1.4 `Doing Innovation' versus `Managing Innovation'

It is important to distinguish what we mean by the management of innovation. There is a clear distinction between `doing innovation' – creating change for economic gain, and `managing innovation' in a systematic, purposeful and organised way.

Drucker (1985) sees innovation as one of the central reasons for any organisation to exist. A commercial enterprise, Drucker says, has two, and only two, functions:

- to market; and,
- to innovate.

All of the other activities are costs. Because he sees innovation as a core capability for any enterprise, Drucker is keen to elevate innovation into a discipline: a systematic process that is not subject to the vagaries of imagination.

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Drucker states that, `Innovation requires us to systematically identify changes that have already occurred in a business - in demographics, in values, in technology or science -- and then to look at them as opportunities.'

Drucker's book, Innovation and Entrepreneurship (1985), provides a thorough examination of seven such sources of innovative opportunity – they are listed in descending order of reliability and predictability in Box 3-3.

> `Innovation requires something that is most difficult for existing companies to do: to abandon rather than defend yesterday'
> - Drucker, 1996

Box 3-3: Peter Drucker's Seven Sources of Innovation Opportunity

PETER DRUCKER'S SEVEN SOURCES OF INNOVATION OPPORTUNITY

The first four sets of opportunities lie within the business or its market sector.

1. *The unexpected* – the unforeseen success of failure; the unprecedented outside event
2. *The incongruity* – between what is and what ought to be, between reality and our assumptions about it.
3. *Process need* – a process becomes inefficient or ineffective and needs to change
4. *Changes in industry or market structure*

The last three lie outside the enterprise itself.

5. *Demographics* – changes in population
6. *Changes in perception* – mood swings or new reasons in society at large
7. *New Knowledge* – scientific, social or otherwise

Source: Drucker, 1985

3.1.5 Telco Operational Work versus Innovative Work

Innovation is work and, like all work, it must also be organised but it demands careful management. But because innovation is unpredictable and risky, it requires a different type of management to that required for operational work.

From our experience Telcos excel at operational work – setting up core business process to sell, provision, operate, assure, manage, maintain and secure networks – requiring a continuous cycle of planning, executing, studying and acting. It describes ordinary, functional, maintenance or day-to-day work. Telcos are experts at operating in compliance with standards, rules and routines. The point is that much of the misunderstanding around innovation arises from the fundamental inability of executives to distinguish it from operational work. We cannot do operational and innovative work at the same time. They have different aims. The demands, thinking, activities and resources for each are different. As Barker (2002) clearly expresses, operational and innovative work can be represented by two cycles that complement each other and even link but they are separate.

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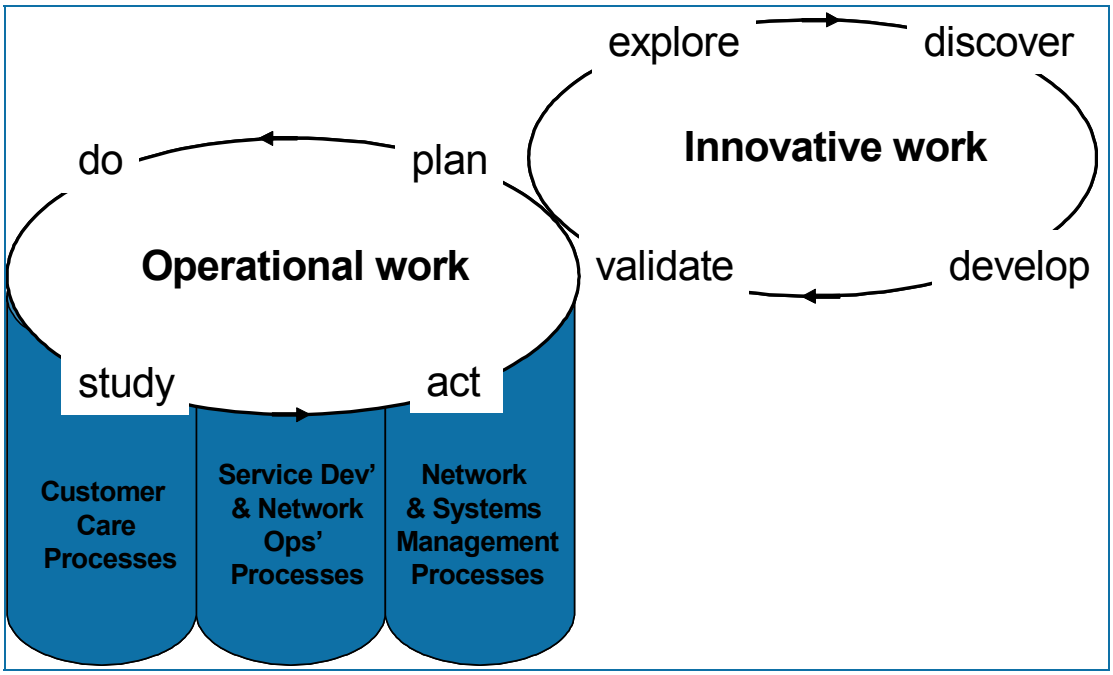
Figure 3-2: The Distinction between Telcos' Operational and Innovative Work



Source: Snell Consultancy, 2004, adapted from Barker (2002) and The Telecoms Operations Map, TeleManagement Forum

The features of each cycle in Figure 3-2 are not dealt with here in detail as they are self-explanatory. The critical point is that telecommunications companies can either:

- Consciously decide to `go innovative' or
- Wait until there is no choice because they have to.

Some Telcos believe that `innovation just happens', and there is some truth in that belief. However, innovation cannot be left to chance and requires hard work. It is vital at this point to explain in more detail why telecommunications companies should see innovation as so important in the first place.

> `Telcos must decide to innovate; it won't just happen'

3.2 The Business Case for Innovation – Hard Evidence Please

"For any company to survive irrespective of whether it is a communications company or not, it has to continuously innovate."
- CEO of R&D, Venturing & Technology, UK Fixed Line Telco

Key Finding #2: The Business Case for Innovation	Telcos understand that the effective and efficient management of innovation can result in achieving both operational efficiencies as well as revenue growth benefits. However, the business case for investing in innovation is not well understood.

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A number of the companies that we interviewed recognised the fact that innovation was important. To some it was critical and even part of their objectives, either from a commercial or an engineering perspective. Few could articulate what the tangible business benefits were of managing innovation systematically.

This is a serious issue, since it is our experience that innovation leaders have to justify and bid for innovation funding efforts from scarce resources. In our experience, competing internal business cases aimed at increasing growth include, for example:

- OpEx budget to recruit additional staff
- CapEx and OpEx budget to upgrade front and back office systems to improve fulfilment processes and take orders of existing services and products faster
- Increased OpEx marketing budget to better market and promote the existing service and product portfolio.

The most crisp and concise account of the benefits of managing innovation in a disciplined manner is provided by Livio D. DeSimone, former Chief Executive, 3M (IoD, 2000). According to DeSimone, the importance of innovation to corporate survival and growth is based on four factors shown in Box 3-4.

`Competing through innovation'

Box 3-4: The Benefits of Managing Innovation in a Disciplined Manner

The Benefits of Managing Innovation in a Disciplined Manner

1. **Innovation provides a powerful engine for growth**

   - *New ideas and solutions lead to new product categories and new markets. And by providing a steady stream of new solutions, growth through innovation can serve to attenuate the fluctuations of economic cycles.*

2. **Innovation provides a self-renewing means to satisfy customers**

   - *Consumers and business customers constantly demand new products and services.*

3. **Innovation can help establish and increase one's market leadership**

   - *In a head-to-head battle, the innovator has a great opportunity to establish clear advantage and differentiation over competitors.*

4. **Innovation is a supreme motivator of people**

   - *It is a source of continual challenge and excitement for employees. It unleashes creativity – both in the organisation and, more importantly, in the individual.*

Source: IoD, 2000

Each of these factors have proven to contribute to a strong business case for investing in innovation. A key reason to innovate is to meet ever evolving and changing customer needs. One can argue that innovation is really only about creating new sources of customer satisfaction – the newness and value of an innovation are in the eye of the customer, not of the innovator.

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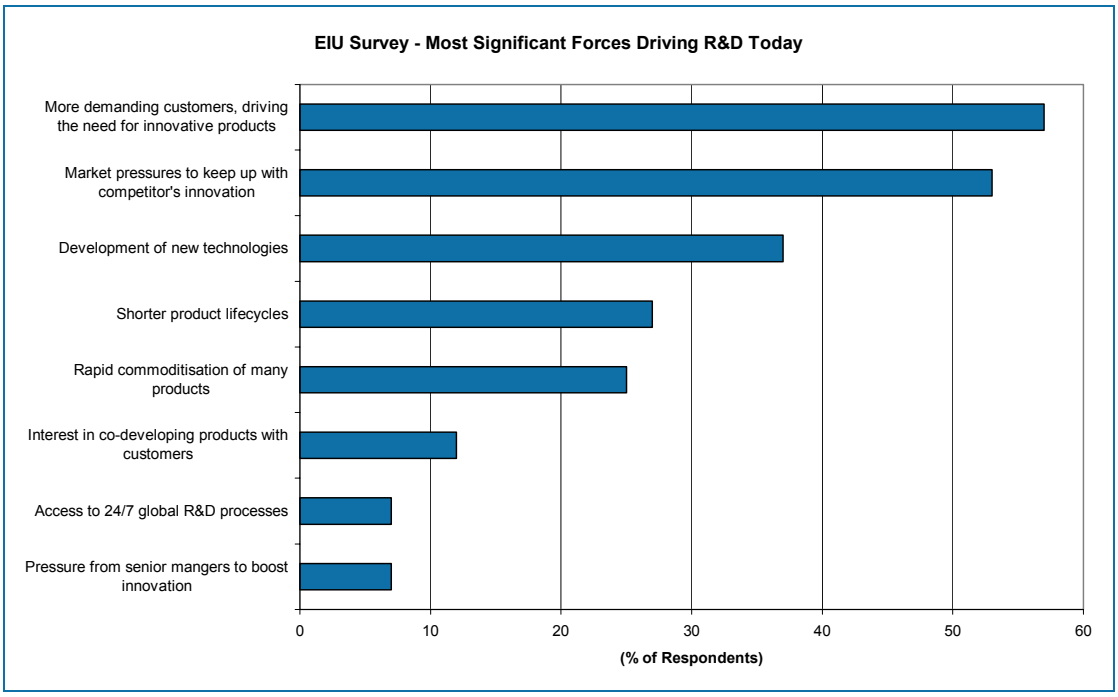
The Confederation of British Industry (CBI) in its 2002 Innovation Survey shows how most innovation is forced on company's by customer demand. 83 percent of 400 respondents rated this as a key driver, while only 14 percent said that customers and markets had little or no impact on them. The CBI concludes that keeping up with demand changes, staying ahead of them, or even trying to influence future demand in a company's favour will depend to a larger extent on a company's success as an innovator.

The Economist Intelligence Unit (EIU) has conducted a more recent survey of 188 senior executives on the topic of R&D strategies and best practice (EIU, May 2004). The EIU similarly found, as shown in Figure 3-3, that more demanding customers are driving the need for innovative products.

Figure 3-3: EIU Survey Results on the Forces Driving R&D Today



Source: EIU, May 2004

However, the focus in this report is on the most powerful reason for managing innovation proactively – that is to generate profitable revenue growth.

> The most powerful reason for managing innovation – generating profitable revenue growth

3.2.1 Innovation as a Powerful Engine for Growth

"Innovation is the only thing that is going to take us out onto a growth phase."
- Director of Innovation, UK Fixed Line Telco

There is strong evidence to suggest that the more innovative companies can avoid stagnation and flat revenue growth through the constant renewal of products, services and processes.

Continuously growing profitable revenues is a serious issue. Christensen and Raynor (2003) reference one consultancy firm's analysis of how Fortune 500 shareholder value is calculated.

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The stark reality, as an extract from the analysis in Table 3-2 shows, is that share price calculation is based upon both future cash flows generated from existing assets and future cash flows that investors expect to be generated by new investments not even made.

Table 3-2: The Impact of Future Returns from New Investments on Market Value

Proportion of Selected Firms' Market Value That Was based on Expected Returns from New Investments on 21st Aug 2002				
			Percent of Valuation that was based on:	
Fortune 550 Rank	Company Name	Share Price	New Investments	Existing Assets
53	Dell Computer	US$28.05	78%	22%
9	IBM	US$81.93	46%	54%
24	Merck	US$53.80	44%	56%
92	Cisco Systems	US$15.00	42%	58%
3	General Motors	US$49.40	5%	95%

Source: adapted from Christensen & Raynor (2003)

Whilst General Motors were off the hook in terms of expectations to create new-growth business – a worryingly reflection, though that might be, on their management's ability to generate growth. On the other hand, Dell Computer at the time was under immense pressure to generate future growth. Only 22 percent of its share price of US$28.05 was justified by cash thrown off by the company's present assets, whereas 78 percent of Dell's valuation reflected investors' confidence that the company would be able to invest in new assets that would generate, as Christensen puts it, `whopping amounts of cash'.

What hard evidence is there though, that a company's innovation investment can be unequivocally linked to its improved financial performance that will enhance shareholder value in such a way? The answer is plenty - both in terms of cross-sector empirical research (see Table 3-3) and company case studies (see Exhibit 3-2).

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Table 3-3: Research Linking Innovation to Enhancing Shareholder Returns

cross sector research linking innovation to enhancing shareholder returns				
Source	**Scope**	**Findings**		
PIMS Database	100 UK Service Businesses (excl. retail and wholesale distribution) 2001	Tidd and Hull (2003) analysed service companies that `out-innovated' their competitors in their target markets over a four year period in terms of new service content. Business key performance indicators (KPIs) for the innovation leaders show that they are successful in three measures most important for shareholder value: ▪ They grew real sales significantly faster ▪ They grew share of their target markets faster than their direct competitors ▪ They increased Return on Capital Employed (ROCE) to levels which were above their cost of capital		
		Key Performance Indicator (KPI)	**Low Innovators**	**Innovation Leaders**
		Innovation Outcomes		
		% New services vs. competitors	< 0	7%
		% Sales from services introduced <3 years ago	1%	12%
		Growth		
		Real sales growth	8%	15%
		Market share growth	3%	8%
		Returns		
		ROI	21%	30%
UK Design Council Facts and Figures Survey	UK Companies 2002	Showed a strong relationship between innovation and corporate growth. Those companies that had grown the fastest in the previous 12 months were also those that identified innovation and design as fundamental to their business model.		
Gary Hamel*	Fortune 1000 Companies 1985-1995	Gary Hamel has shown that fewer than forty Fortune 1000 companies grew total shareholder returns by more than 25 percent per annum between 1985 and 1995. All these high performing companies were united in the pursuit of innovation outside a conventional context – often excelling in spite of bad industry conditions. The star performers, including Microsoft, Harley Davidson, Nike, Intel, Compaq, all developed what Hamel terms `non-linear' growth strategies that radically altered the way they did business or their markets.		

Source:* Gary Hamel, 1997

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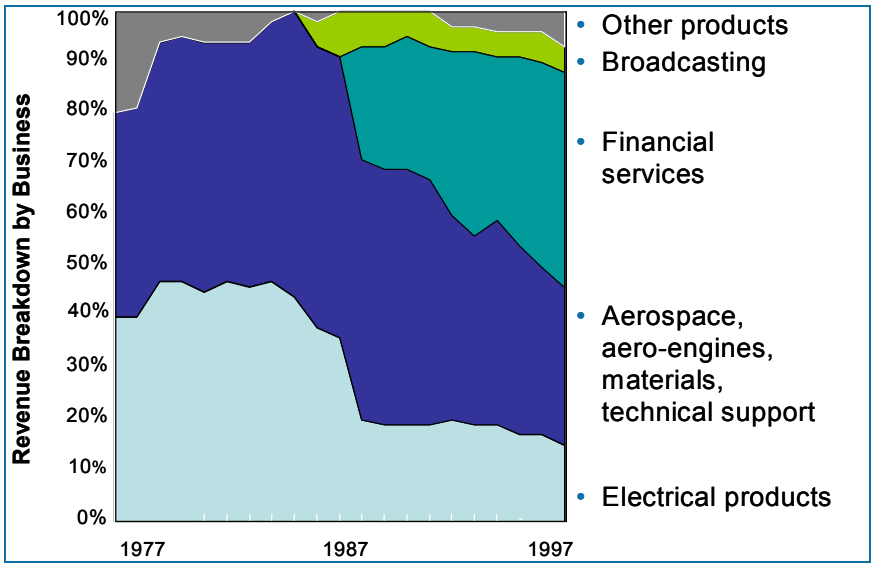
Exhibit 3-2: Innovation Best Practice - Nokia's & Others' Innovation Driven Growth

BEST PRACTICE LESSONS FROM OTHER SECTORS - linking innOvAtiOn to revenue growth	
Sector: Telecoms Equipment	**Company:** *Nokia*
Despite the slow sales of phones since 2000, Nokia continues to launch new services and had 30 new products in 2002. The ability to move faster than its competitors in introducing new features has been the competitive advantage of Nokia. Nokia's secret is that its real business is not 'phones', rather it is 'innovation'. Nokia builds innovation into the organisation, which is reflected in its structural approach; it is not seen as a one-off event, an exceptional idea, or an accident. It has a watchword for its culture of continuous innovation, "renewal", which occurs at both the organisational and individual levels. With R&D costs stabilized at just under 10% of sales, the company continues to proliferate new products at a high speed rate. As a result of 'making innovation an end goal' Nokia had built an impressive sales record, and its global market share (38%), is greater than that of its nearest three rivals combined. Source: Wylie (2003)	
Sector: Media	**Company:** Ragdoll Productions
Creator of the highly successful children's programmes, including the Teletubbies. It has always considered innovation as absolutely endemic to the business and its turnover and profits increased ten-fold between 1997-2000.*	
Sector: High Street Retail	**Company:** Dollond & Aitchison Ltd
The high street optician and spectacle retailer is totally committed to innovation. The company cite it as being both the key to the companies survival in 1996 and, against a backdrop of a static market, the platform for sales growth of 17 percent and significantly increased market share between 1997 – 2000.*	

Source: * IoD, 2000

The most powerful example of how business innovation can lead to revenue growth is that of General Electric (GE) (Figure 3-4). The highly innovative GE mastered, under former Chief Executive, Jack Welch, the ability to continuously cycle the creation and destruction of businesses.

Figure 3-4: GE's Evolving Business Portfolio Mix (1977 to 1997)



Source: Referenced by BT Wholesale at a customer event presentation, March 2004

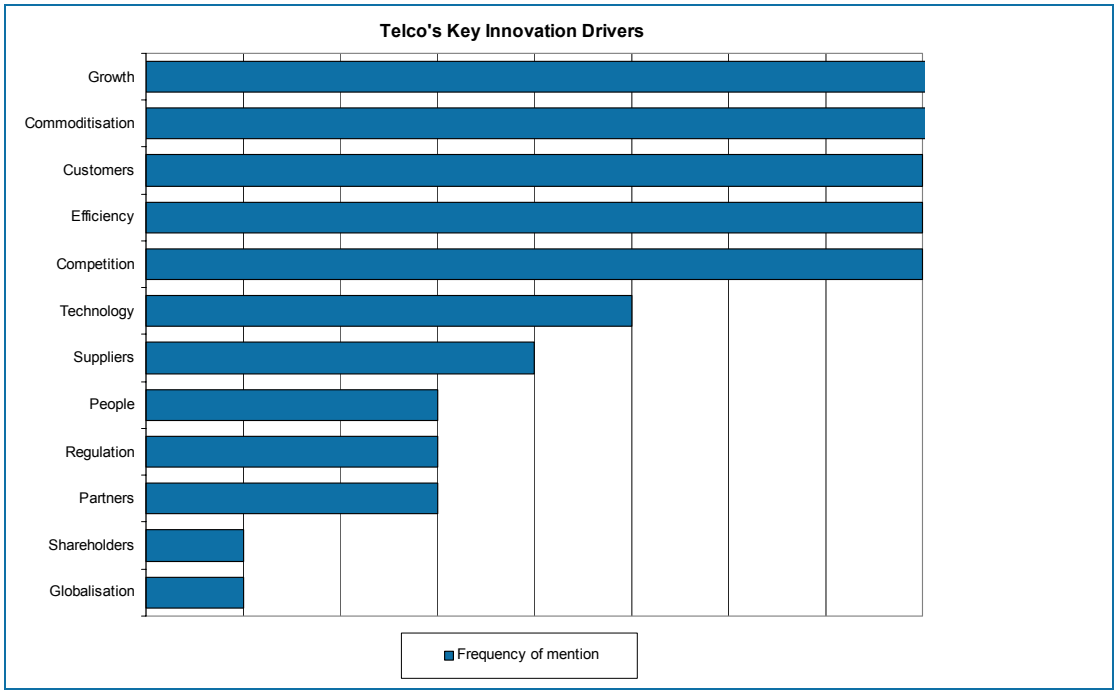
PwC's surveyed 427 CEO's of the fastest growing businesses between 1996 and 2001. The survey indicated that the 35 percent that had made innovation an organisation wide priority had:

- Grown 22 percent faster over the past five years than those that had not
- Expected to grow 58 percent faster over the next 12 months.

Another survey by Business Horizons (1996) found that innovative companies (defined by `the percentage of revenue generated from products less than five years old') experienced profit growth at four times the rate of non-innovative organisations.

How well do the UK Telcos understand these factors as underpinning the business case for investing in innovation? Our research reveals that the Telcos clearly rank growth as one of the key drivers for innovation (see Figure 3-5 and Box 3-5).

Figure 3-5: Telco's Key Innovation Drivers



Source: Snell Consultancy Telco Innovation Survey, 2004

Box 3-5: Telco's Perceptions on the Importance of Innovation to Drive Growth

- "If I was my CEO looking at our growth requirement, and if I thought I could get it from building my voice revenue or charging more for frame circuits then forget it I [would] need to find new market opportunities, new market segment, new ideas."
- "Innovation is the only thing that is going to take us out onto a growth phase."
- "With the volume decline and the value decline in the fixed market one has to innovate in order to get out from the market situation. One also has to develop points of competitive differentiation against other fixed line operators."

Source: Snell Consultancy Telco Innovation Survey, 2004

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3.2.2 Telco Innovation Drivers: Increased Customer Intimacy

Telcos have attempted to move closer to their customer base and change their approach towards market-led innovation due to competitive pressures. The threat of product substitution is now significant. Consequently, managing customer churn has become increasingly more important. Providers of integrated solutions such as Ericsson, 3M and GE have learnt this lesson, by adopting the *customer's perspective* and interfacing with them on a new level – becoming more intimate with customers (see Exhibit 3-3).

Exhibit 3-3: Innovation Best Practice - 3M's Approach to Customer Intimacy

BEST PRACTICE LESSONS FROM OTHER SECTORS - customer intimacy	
Sector: Health Care	**Company: 3M**
`We call it being 'customer intimate.' If we're going to develop new and better products to help improve the practice of medicine and advance human health, we better be out there with the practitioners—the doctors, the nurses, the anaesthesiologists.' - John Benson, Executive Vice President, Health Care Markets	

Source: 3M, 2002

Some of the Telcos we interviewed explicitly confirmed these approaches are high on their agendas, emphasising the alignment of innovation and customer needs.

3.2.3 Telco Innovation Drivers: Emerging Telecoms Technologies

Technological change, which includes drivers such as the shift from voice over the public switched telephone network (PSTN) to voice over IP, proliferation of devices, broadband, and the increasing ubiquity of IP technology, ranked as a medium priority driver for innovation.

The purpose of this report is not to present a telecoms technology futures or convergence road map. However, our work in the UK telecoms sector does enable us to at least share an outline view of established and emerging technologies (Internet Access – see Figure *3-6*; Wide Area Wireless Data – see Figure 3-7; Short Range Wireless Data – see Figure 3-8).

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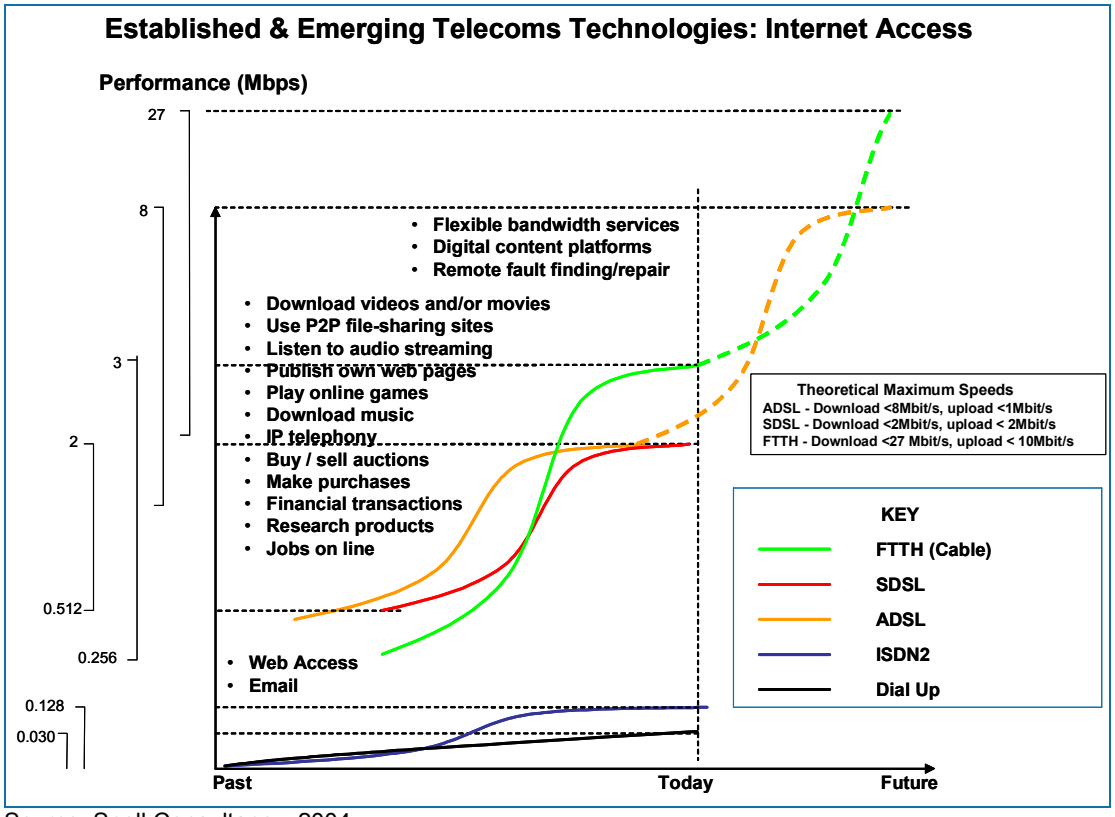
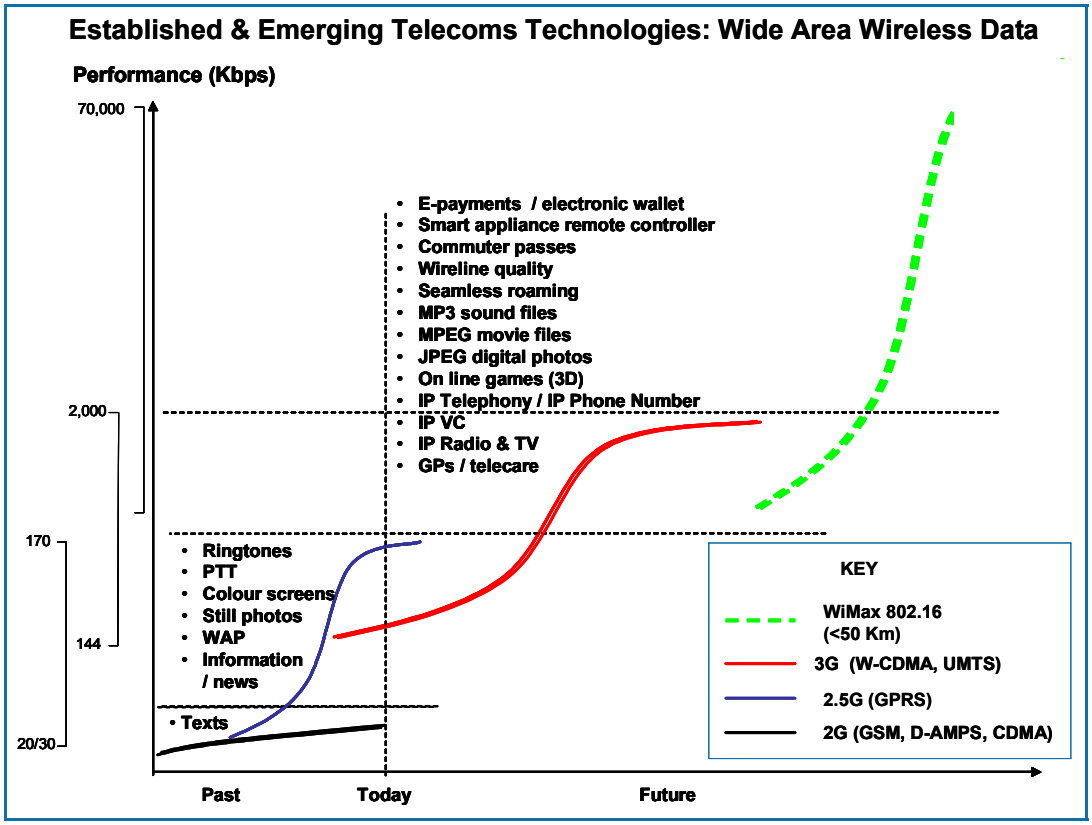
Figure 3-6: Est. & Emerging Telecoms Technologies: Internet Access



Source: Snell Consultancy, 2004

Figure 3-7: Est. & Emerging Telecoms Technologies: Wide Area Wireless Data



Source: Snell Consultancy, 2004

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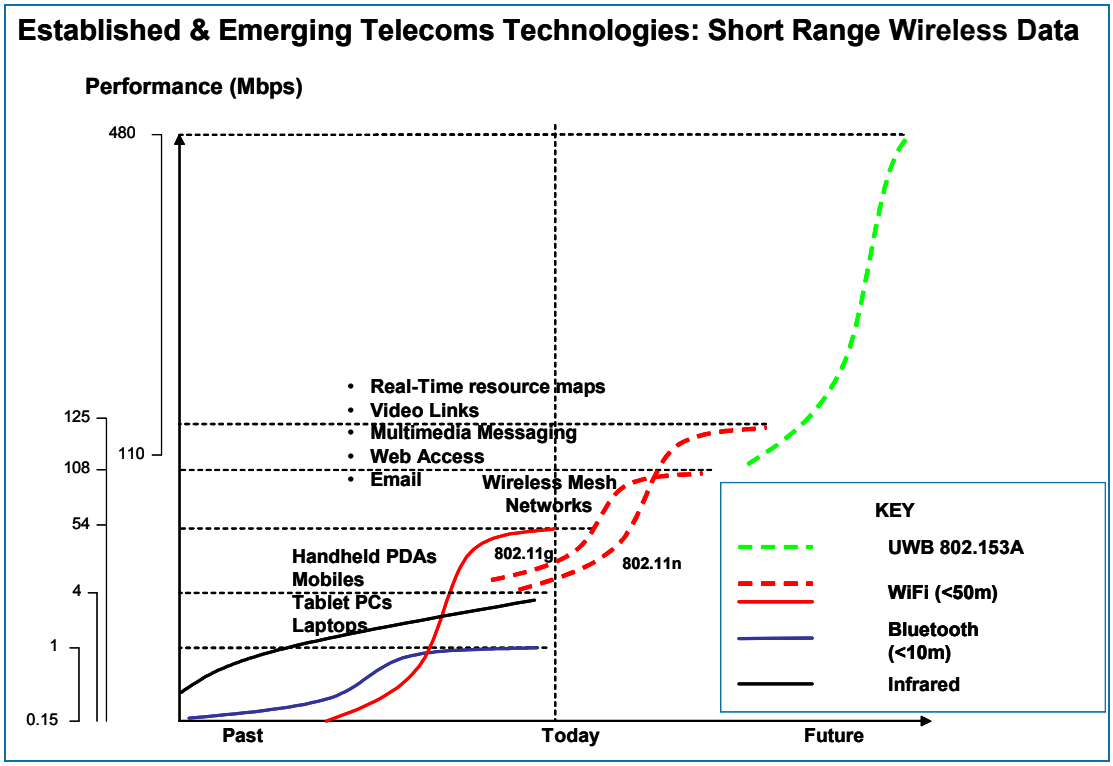
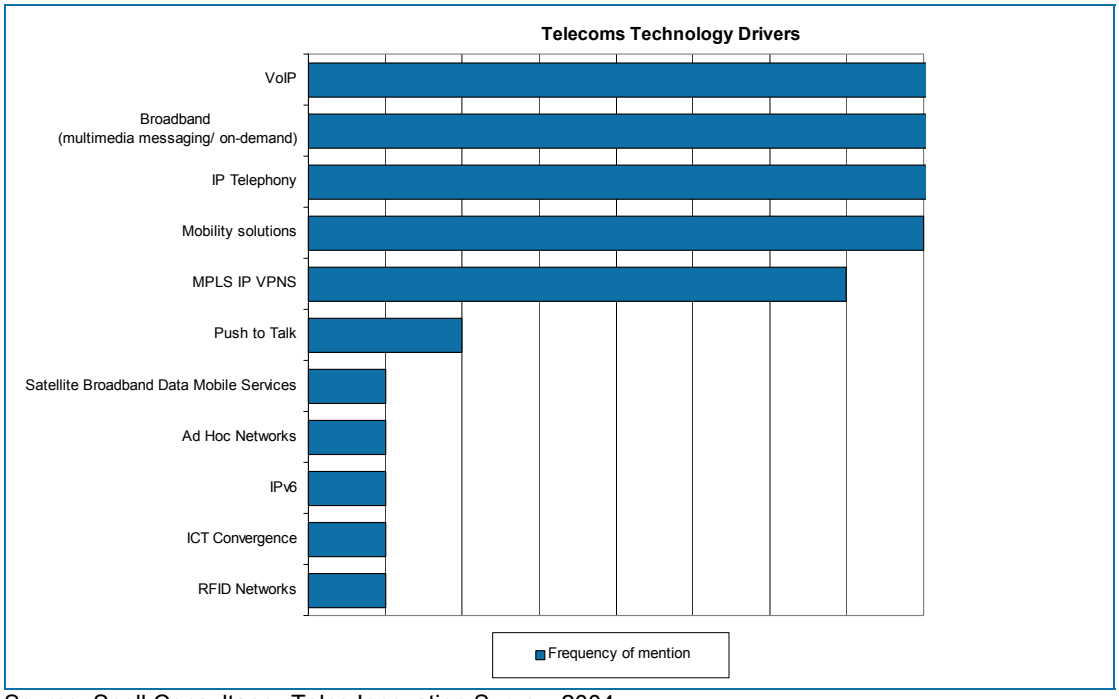
Figure 3-8: Est. & Emerging Telecoms Technologies: Short Range Wireless Data



Source: Snell Consultancy, 2004

The Telcos we interviewed are clearly trying to make the most of some of the new technologies on the radar, to leverage new business and market opportunities opened up by these technological changes, such as VoIP. See Figure 3-9.

Figure 3-9: Telecoms Technology Drivers Mentioned by Interviewees



Source: Snell Consultancy Telco Innovation Survey, 2004

What is evident from our research is that, from a market perspective, the core business of traditional Telco's has changed significantly, extending into ICT and mobile or IP-based services. As one senior executive told us:

"in the past we would have great ideas but there was a question as to whether it was needed to take them forward or not….it was not so critical to the business as the technology was not changing so fast, the margins were bigger and the core business was an extremely successful core business."
- Director of Research & Venturing, UK Fixed Line Telco

3.2.4 Telco Innovation Drivers: Suppliers

A number of respondents claimed that Telecom suppliers were drivers for innovation. In particular, the smaller alternative carriers stated their dependency on supplier-based technological innovations, compared to the R&D strengths of other operators, and their own capabilities to bring such developments to market. As the Vice President, Networks and Engineering stated:

"Our company is changing by understanding technical capabilities and requirements and how to apply those, and the [changing] relationship with suppliers from 'box push scenario' to defining the 'economic cost curve' that we want to follow."
- VP, Networks & Engineering, UK Fixed Line Telco

3.2.5 Telco Innovation Drivers: Other Factors

Partners such as universities, research labs, venturing partners, and start-up companies were mentioned by a few of the survey companies. As the Director of Innovation stated:

"We get most of our innovation from small companies – innovators that are doing something radically different from the mainstream vendors."
- Director of Innovation, UK Fixed Line Telco

Efficiencies in terms of productivity improvements through process innovations were also mentioned. Finally, globalisation was also seen as a driver for innovation. Considering the market focus of our sample, which is primarily the UK market, it is reasonable to assume that for truly more international and regional players (such as Vodafone, AT&T or Deutsche Telekom) globalisation as a driver of innovation would rank higher in importance.

Despite articulating the drivers for innovation there seemed to be a reluctance to justify the need for innovation investments in the form of a formal business case.

The majority of Telcos indicated that there was no business case for innovation.

`There was not a business case for innovation.'

The general view seems to be that, the business case is developed along the way, usually by the business unit that is managing the process. The evolution for the business case comes from a `just do it' attitude or in some instances it was referred to as `breaking the rules' (See Box 3-6).

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Box 3-6: Telco's Perceptions on the Business Case for Innovation

- "There was not a business case for innovation to start with. It was just do it. It morphed out of something else."
- "There is no business case for innovation. Business cases are for the development of new business rather than innovation."
- "We do actually - but we bring it down to a more defined level. We believe most bids/responses to bids are innovative. For all large customer requirements we create a business case."

Source: Snell Consultancy Telco Innovation Survey, 2004

If the value of managing innovation in a systematic way is not understood then it is hardly surprising that developing a business case for innovation is seen as unnecessary. Those Telcos that do invest in innovation activities do it without need to justify the ROI - this is not uncommon. At companies in other sectors a number of senior managers still prefer to look upon innovation as *discretionary expenditure* rather than *essential expenditure* (See Box 3-7).

Box 3-7: Some Still Don't Get It

Some Still Don't Get It
"Our challenges? How do you maintain a job?" - Howard Wright, Head of Innovation Services, Royal Mail, whose innovation team was subsequently downsized.

Source: Innovation Summit conference, London, March 2004

Given the Telco's disinterest with understanding the business case for innovation, it was not surprising to learn that the Telcos' efforts to maintain innovation momentum throughout the recent industry downturn had, in most cases, failed.

3.3 Maintaining Innovation Momentum at all Times

Key Finding #3: Innovation Momentum	No company can afford to stop innovating, yet few Telcos had made a concerted and continuous effort to manage innovation proactively throughout the recent recessionary and dot com induced boom and bust period.

"In periods of economic downturn (and there have been a fair number of cycles we have seen since World War II) the result of innovation is the one thing that lifts us out of economic demise or declines. It is those countries/businesses that have the foresight to keep investing in new concepts and ideas during those periods, whilst at the same time managing their cost bases in the right way, so that they are prepared to exploit new market trends, or exploit the ongoing development of technology against the markets they are operating in."

- CEO of R&D, Venturing and Technology, UK Fixed Line Telco

The Telco's innovation efforts can be divided into three distinct time periods; dot com boom, dot com crash, post dot com crash. The approaches to innovation varied significantly through these time periods.

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3.3.1 Blowing up the Bubble: Innovation for an Insatiable Market

Leading up to and including the dot com boom, the majority of the companies conceded, that they were mostly engineering led. With the abundance of funds there were a lot of ideas around, which according to one interviewee,

"seemed to be cool, but did not have a business case and would have never paid out. In that world, there were a number of radical solutions."
- Director of Telephony, UK Cable Company

Some organisations had innovation departments. However, these were fairly unstructured and in some instances were not taking into account a high level strategic view. Lack of support by senior management and weak communication among business units made innovation and its purpose poorly articulated to the entire organisation. As a result innovation failed, and worse, the innovation department or group was disbanded. As one interviewee stated:

"The output of the Innovation Group, combined with the lack of management support, was consequently not absorbed and executed by the sales force, and therefore nothing tangible was delivered."
- Director of Innovation, UK Telco.

3.3.2 The Bubble Bursts: `In Year' Innovation Returns

From March 2000 the environment dramatically changed. Rosy and over exaggerated forecasts were not met and investor confidence slumped. This ushered in a period of capital starvation. Three key characteristics for the period, supported by quotes from the Telcos that were interviewed, emerge:

1. **With companies trying to avoid making large investments, business operations focused on getting maximum ROI in short time scales.**

   "Projects needed to be cash flow positive within 12 – 18 months. At the same time, emphasis was placed on milking cash cows and the strategic view was very much short term."
   - Director of Telephony, UK Cable Company

2. **The lack of funds required companies to cut costs, and some of our respondents utilised innovation as a tool in that process.**

   "There were rapid cost cutting measures, while trying to maintain a platform for growth. Innovation was still a mindset of free thinking and brainstorming - How do we reduce costs quickly without compromising the platform for growth as and when they arise?"
   - VP Network and Engineering, UK Fixed Line Telco

3. **Organisations tried to get closer to their customers.**

   "The change has been, that we no longer make large investments, only investments in customer driven capital, although there is some network critical capital investment. But most of it is all driven by customer requirements."
   - Director of Infrastructure Strategy, UK Fixed Line Telco

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For some of the Telcos that we interviewed this period meant that, due to the lack of scale and the requirement to generate cash, operations became more tactical rather than strategic. It was no longer `build it big'; it was about an innovative approach, compromising between selecting ideas and technologies for survival and growth while also managing the risk.

3.3.3 Post Dot Com Crash: Innovation Rigour

Innovation today has taken a new form.

"Innovation is taken for granted when times are good. Business cases got seduced by the hype. Today there is a lot of more focus and rigour that goes into innovation."
- VP Global Product Portfolio, UK Fixed Line Telco

Innovation is now once again being taken more seriously by some of the Telcos, but not all. Formalised innovation programs, increased rigour in terms of business analysis, levels of pragmatism and discipline in execution reflect this. However, as one company expressed,

" there is the potential downside of a more controlled process orientation that it may bring the limitation of freedom to think about innovation to the entire organisation."
- Director of Research, UK Fixed Line Telco

Hence, as we stressed at the start of this Section, a Telco's definition and understanding of innovation across the organisation becomes critical.

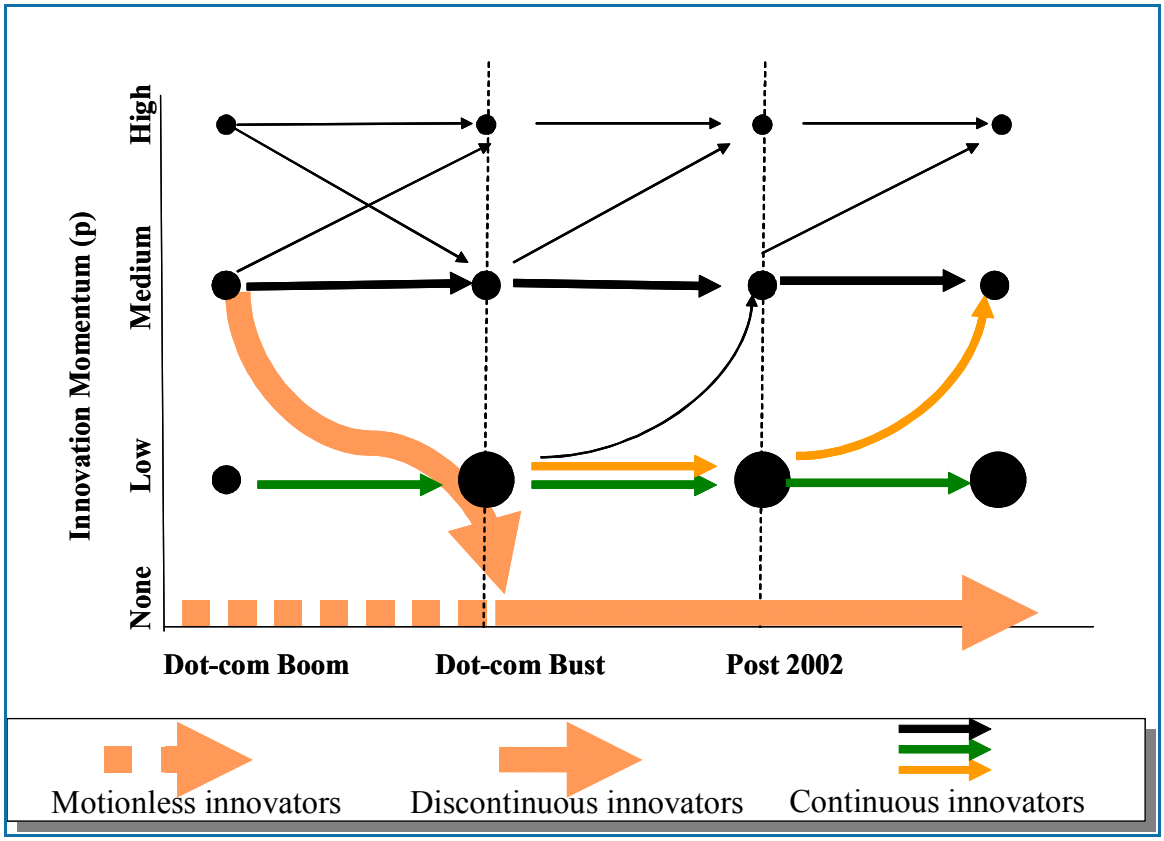
3.3.4 Telecoms Innovation Cycles

One of the mobile operators that we interviewed maintained that their organisation operated through the three eras mentioned above by being customer centric. During this time period, they forged relationships with partners that were close to their end customer. They were also successful in developing a cultural framework to support the activities of the organisation,

"We have been focused on customer centred innovation throughout. Closer relationships with manufacturers, e.g. consumer electronics helped in the design of better products and services."
- Group Director, Business Development & Strategy, UK Mobile Operator

Is it possible to analyse which Telcos continuously innovated during 2000-2004 and which cut innovation spending? Figure 3-10 shows the changing innovation efforts of the Telcos that we interviewed.

Figure 3-10: Telco's Different Levels of Innovation Effort (2000 to 2004)



Source: Snell Consultancy Telco Innovation Survey, 2004

The thickness of the arrows and bullets indicates the number of companies and shows three trends.

Motionless Innovators: these companies were unable to provide any proof points that innovation was managed proactively and it was felt that innovation was left to the whims of good fortune. These companies are represented by the dashed orange line.

Discontinuous Innovators: no matter the size of their previous innovation mass (resources, funding & capital expenditure) or innovation velocity (pace of innovation) or both, these companies' innovation momentum represented by the solid orange line, stalled to zero during the down turn. Post 2002 some of these companies are making a concerted effort to increase their innovation momentum, others are not.

Continuous Innovators: maintained innovation momentum even if they tempered either the mass of effort or the velocity x or both. They kept attempting to manage innovation in a proactive way. These companies are represented by the solid green, black and orange lines.

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3.4 Assessment: Telco's Approaches to Innovation to Date

Table 3-4 assesses each of the Telcos that we interviewed according to their:

- **Definition of Innovation:** During our interviews only BT Exact and BT Wholesale were able to convince us that innovation was defined in any formal manner and written down. It was not clear in either case whether this was shared throughout the organisations. Both of these lines of business within BT and the two mobile operators, mmO_2 and Orange were able to demonstrate that they understand that innovation could be managed from a multi-dimensional business perspective across their organisations.

- **Business Case for Innovation:** Only BT Exact, BT Wholesale and Orange were able to speak to us with any authority on what the business case for innovation was and the return on innovation issue even if it was difficult to resolve.

- **Innovation Momentum:** All of the aforementioned companies were able to defend the assertion that innovation had been put on the back burner when things had gotten tough. Budgets were merely discretionary so it had been the first line item to get slashed. Surprisingly, despite its size and financial difficulties, Energis was the only alternative carrier that had maintained some form of innovation function during the downturn.

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Table 3-4: Assessment of Telco's Approaches to Innovation to Date

	RESEARCH OBJECTIVE #1. How have UK telecoms companies been approaching the management of innovation during the recent industry downturn (2000-2003)?					
	Innovation Definition				Formal Business Case for Innovation Exists	Innovation Momentum
Company / Business Unit	Not Explicitly Defined	Explicitly Defined	Understood - Single Dimension	Understood - Multi-Dimensional		Evidence of Continuity During the Downturn
Band-X	☒		☑		☒	☒
BT Exact		☑		☑	☑	☑
BT Wholesale		☑		☑	☑	☑
C&W	☒		☑		☒	☒
CableCo	☒		☑		☒	☒
Energis	☒		☑		☒	☑
Kingston Communications	☒		☑		☒	☒
Inmarsat	☒		☑		☒	☒
mmO_2	☒			☑	☒	☑
Orange		☑		☑	☑	☑

Source: Snell Consultancy Telco Innovation Survey, 2004

3.5 Snell Golden Nuggets of Innovation Wisdom

In conclusion to this section, we consider it essential to define and systemise the firm's definition of innovation. As a guide we recommend that:

1. Innovation has to be defined
2. The definition of innovation must be clear, simple and pertinent to the business
3. The definition must be aligned to strategy, supported by management and continuously communicated.

A SIMPLE definition of innovation that all can understand

We also consider it vital that the funds allocated to innovation as a percentage of sales or profits are ring-fenced from operational Opex and Capex. Without a budget for innovation, how can the Telco begin to manage innovation in a systematic way?

Without a BUSINESS CASE for innovation how can you start?

Our final recommendation concerns the requirement to continually innovate. Market conditions and Finance should not dictate strategy at the avoidance of any long-term business creation activities. As we will come onto in Section Four, our research reveals that some Telcos have integrated innovation into their genetic make-up and view it as strategic imperative, whilst others have treated it as an add-on.

Innovation MOMENTUM must not be stifled or stalled.

These differing strategies reflect back on how the Telcos have managed innovation during the recent economic downturn and more importantly how they are likely to do so in the future, if faced with a rapid change in the telecoms marketplace.

The key behind weathering the storm is that you must continuously innovate regardless of what the season is. As one of the interviewees at a more forward looking Telco said:

> *"Annual investment in R&D in good years—and bad—is a cornerstone of the company. The consistency in the bad years is especially important."*
>
> *- Director, Strategic Business Development, UK Fixed Line Telco*

The next section looks at what extent innovation is a strategic priority for the Telcos today.

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SECTION 4 MANAGING TELECOMS INNOVATION STRATEGICALLY

"Innovation must be seen as a CEO issue."
- VP, Advanced Services Development, UK Mobile Operator

Research Objective #2	What evidence is there that innovation is a strategic priority for UK Telcos today?

So far, we have presented the case as to why telecommunications companies in the UK should see managing innovation in a systematic way as being important to their future survival. Tony Blair's challenge to UK companies is to `put innovation at the centre of their strategies of the future'. We get to the heart of the matter in this section by testing whether the UK Telcos are doing this today. There are three major parts to this: testing Telco's strategic intent to innovate against reality; looking at the different models of the innovation process that Telcos use; and finally, briefly, looking at how innovation should be organised internally.

'Chance favours the prepared mind' – Louis Pasteur, 1854.

- Firstly, we introduce the concept of an `innovation strategy' whether that be from the incrementalist or rationalist school of thinking. Consistent with other surveys, our research reveals a gap between rhetoric and good intentions to manage innovation strategically.
- Secondly, since one of the best established criteria for successful innovation is consciously managing innovation as a process, we examine to what extent the Telcos have institutionalised innovation and built innovation processes to improve both the effectiveness and efficiency of innovation. This brings us onto the important issue that if you manage innovation, it should be measured – which proves to be a headache for the Telcos.
- Finally, we draw out the distinction between creating an innovation function to manage innovation initiatives and act as a catalyst for innovation but warn against the dangers of innovation being left to the auspices of just a few when innovation should be infused into every part of the organisation.

4.1 A Model for Managing Innovation Strategically

Snell Consultancy has developed a way for its clients to align `thinking about innovation' (innovation strategy) to the way in which innovation is `managed' (organisational design or OD) and `done' (innovation operations) on a day to day basis (See Figure 4-1).

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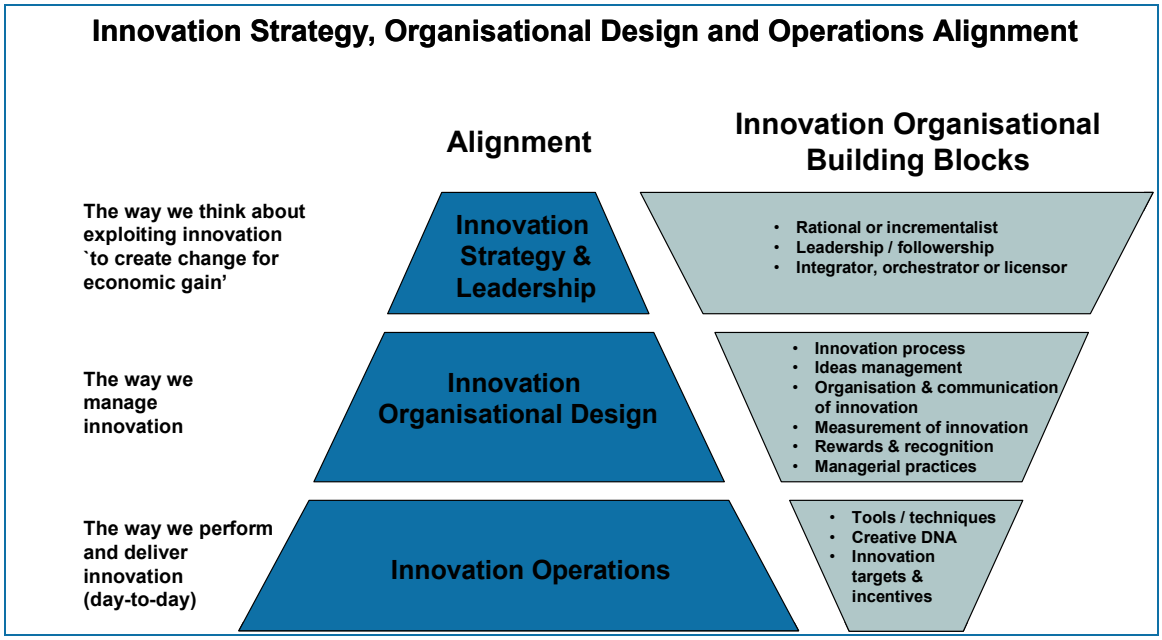
Figure 4-1: Aligning Innovation Strategy to Organisational Design & Operations



Source: Snell Consultancy, 2004

From the above model, focusing on aligning innovation strategy and leadership, three key questions need to be considered:

- Rational or incrementalist approach to innovation?

  Without opening up the long standing debate between Ansoff's (1965) rational (linear steps) and Mintzberg's (1987) incremental (trial and error) corporate strategies, a company has to decide which of the two approaches it is taking to its innovation strategy.

- Innovation leadership or innovation followership market strategy?

  First to market, based on technological leadership, as recommended by Michael Porter (1980) or late to market, based on imitating (learning) from the experience of technological leaders.

- Integrator, orchestrator or licensor model of innovation?

  As recently highlighted by Andrew & Sirkin (2003) companies should decide between taking responsibility for the entire innovation process (integrator), handing off some functions to a strategic partner whilst keeping other functions in-house (orchestrator), or licensing a product out to ensure the product gets the widest distribution for the lowest possible investment cost (licensor).

We shall return to what strategy means in the context of innovation in more detail later on. Initially, we will focus on whether Telcos see innovation as a strategic priority in the first place. If it is not a strategic priority, there can be little point in having a strategy in place `to create change for economic gain'.

4.2 "Of Course Innovation is a Strategic Priority Here." Prove it then!

Key Finding #4: Innovation as a Strategic Priority	All the Telcos, bar one, said innovation was a strategic priority yet there was little hard evidence to support this.

"Innovation is business as usual here."
- *Group Director, Business Development & Strategy, UK Mobile Operator*

Alan Barker (2002) makes the point that `survey after survey suggests that managers see innovation as a desirable strategic objective; yet the same surveys invariably show that few organisations innovate systematically'. A recent Boston Consulting Group survey (2003), listed innovation as a top-three priority for nearly 70% of 236 executives working for major corporations in 30 countries. But how many of those executives could point to tangible ways in which innovation was being engrained in their organisations as a core capability at the strategic, management or operational levels?

There are exceptions of course. Procter & Gamble publicly states that innovation is a core capability at strategic level (see Exhibit 4-1).

Exhibit 4-1: Innovation Best Practice - Procter & Gamble's Innovation Strategy

BEST PRACTICE LESSONS FROM OTHER SECTORS - P&G INNoVATION STRATEGY	
Sector: FMCG	**Company:** ***Procter & Gamble***
Through their '360 degree innovation' strategy, Procter & Gamble are getting the most out every initiative in the organisation. *"We expect innovation in all elements that impact consumer value: product, design, package, in-store presentation, price, and clear, compelling marketing communication. We've developed a new research technique to evaluate how these elements interact with each other for each new initiative."* - Procter & Gamble, 2003	

Source: Procter & Gamble, 2003

Is it the case that the UK Telcos see innovation as a strategic priority and, if so, what are the proof points that they can provide to validate this? Not surprisingly, as the following quotes from the senior executives show innovation, is apparently a strategic priority, but there are exceptions to the rule (see Box 4-1).

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Box 4-1: Telcos confirm that Innovation is a Strategic Priority

- "Innovation is a strategic priority. Our strategic intent is to be number one in broadband and data, underpinned by 6 winning strategies to grow profitable revenues; innovation needs to be its own one."
- "Any organisation that wants to compete and grow needs to factor innovation as a key part of its strategy."
- "Innovation is a board level issue within our company. For there are many ways of producing growth. You can acquire companies but if not you must grow organically though innovation needs to be at the heart of the product/service set."
- "Innovation is a strategic priority for our company, as the business needs to grow, and transform."

Only two interviewees declared that innovation was not a strategic priority:

- "Not explicitly in terms of innovation being listed as an explicit strategic priority but it is built into what we do at all levels."
- "Innovation is not a strategic priority to our company, because the key strategic priorities are broadband leadership, customer focus and cost control."

Source: Snell Consultancy Telco Innovation Survey, 2004

The opinions of the executives that we interviewed were supported by further analysis of whether innovation was a strategic priority in their corporate literature. Our findings reveal only four Telcos out of our sample mention innovation at all as a corporate objective or driver, summarised in Table 4-7 at the end of this section.

How do you further test whether the Telcos expressed strategic intent is actually matched by reality and not just hype? Barker (2002) advocates Drucker's advice. Drucker orders, `Do not make innovation an objective for people charged with running, exploiting or optimising what already exists'. Separating operational from innovative work as we saw in Section 3 requires, according to Barker, a number of strategic imperatives for innovation (see Box 4-2).

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Box 4-2: Imperatives for an Innovation Strategy

IMPERATIVES FOR AN INNOVATION STRATEGY

- **Organise innovation separately.** Depending on the size of the organisation, it may be made the responsibility of a single manager, a team, a department or even an independent business.
- **Integrate innovation in the organisation's policies and practices.** Innovation on the side rarely works.
- **Innovate, don't diversify**. Attempting to create something in one's own field is hard enough, without trying to innovate elsewhere.
- **Place responsibility for innovation high in the organisation.** Someone in senior management must take on the specific assignment of developing new ideas.
- **Budget for innovation separately.** Innovation objectives need to be set differently from operational ones. The rules need to be different. What sorts of policy, rules and measurements should apply? What disciplines to impose on them? People should not be rewarded for failure; but neither should they be penalised for taking risks. And the returns should be measured differently. What are the appropriate time spans? When to scale up, when to pull the plug? The answers will depend on the nature of the business. The risk of innovation is unavoidable; for that very reason, it should be carefully managed.
- **Make sure that the person or unit in charge of innovation is clearly accountable.** It is through accountability that the innovating unit finds its place in the larger organisation.

Source: Barker, 2002

From our experience, we would add to Barker's list the development of an `innovation strategy', aligned to the Telcos business strategy. In the remaining parts of this section we examine the evidence that innovation is what the interviewees say it is, namely, a strategic priority for their companies. We do this by testing a number of proof points, including the existence of a formal documented innovation strategy.

- Does a formal documented innovation strategy exist in any form or shape?
- Is there board level accountability for innovation?
- Is there a ring-fenced budget for innovation?
- To what extent is there an innovation process in place? Is it documented?
- How is the company's overall innovation performance measured?
- To what extent are there resources dedicated to delivering innovation?

4.3 Innovation Strategy

"We do not have an innovation strategy nor should we have one."
- Chairman, UK Telco

Advisors of innovation best practice, ourselves included, do not share this view.

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Others have advised that:

- Successful innovation management involves a number of key themes including, `taking a strategic approach to innovation and the problem of its management' (Tidd, Bessant & Pavitt, 2001).

- Part of innovation best practice is having an `explicit innovation strategy, which is closely linked to the organisation's business strategy' (von Stamm, 2003).

If a company wants to improve its innovation performance then without clear direction about where and how to innovate, people may come up with all kinds of ideas and suggestions that make no contribution to the company's long-term ambitions. Even worse, innovation efforts will be sporadic and disjointed across the organisation as one senior executive explained:

"There are individuals that understand how to create an environment in which innovation can occur. However, across the organisation as a whole, we would collectively struggle to figure out how to create an environment for innovation."
- VP Network and Engineering, UK Fixed Line Telco

Yet our research reveals that no single Telco has a formally documented innovation strategy.

4.4 Accountability for Innovation – The CEO as an Innovation Evangelist

A Marketing Director of a major UK fixed line Telco said to us that:

"Having a head of innovation would be dull."
- Marketing Director, UK Fixed Line Telco

Another senior director with the same organisation verified this view:

"Yes, innovation is a strategic priority but I could not point to anyone at an executive level, even the CEO, and say there is a person who is accountable."
- VP Global Product Portfolio, UK Fixed Line Telco

Our research revealed that accountability for innovation ranged from board level accountability to middle management through to absolutely no one with any responsibility. What was consistent in our findings was, that when the CEO or Chairman was an `Innovation Evangelist', not surprisingly, there would be accountability at board level. Our findings also reveal that only five out of our sample of Telcos were able to name a board level Director with any informal or formal responsibility for innovation.

4.5 Making Innovation Investments

Another test applied, was to ascertain the size of the budget set aside for innovation activities. Namely, ring-fenced funds, other than R&D budgets, or some other form of ongoing fixed investment in innovation (see Figure 4-2).

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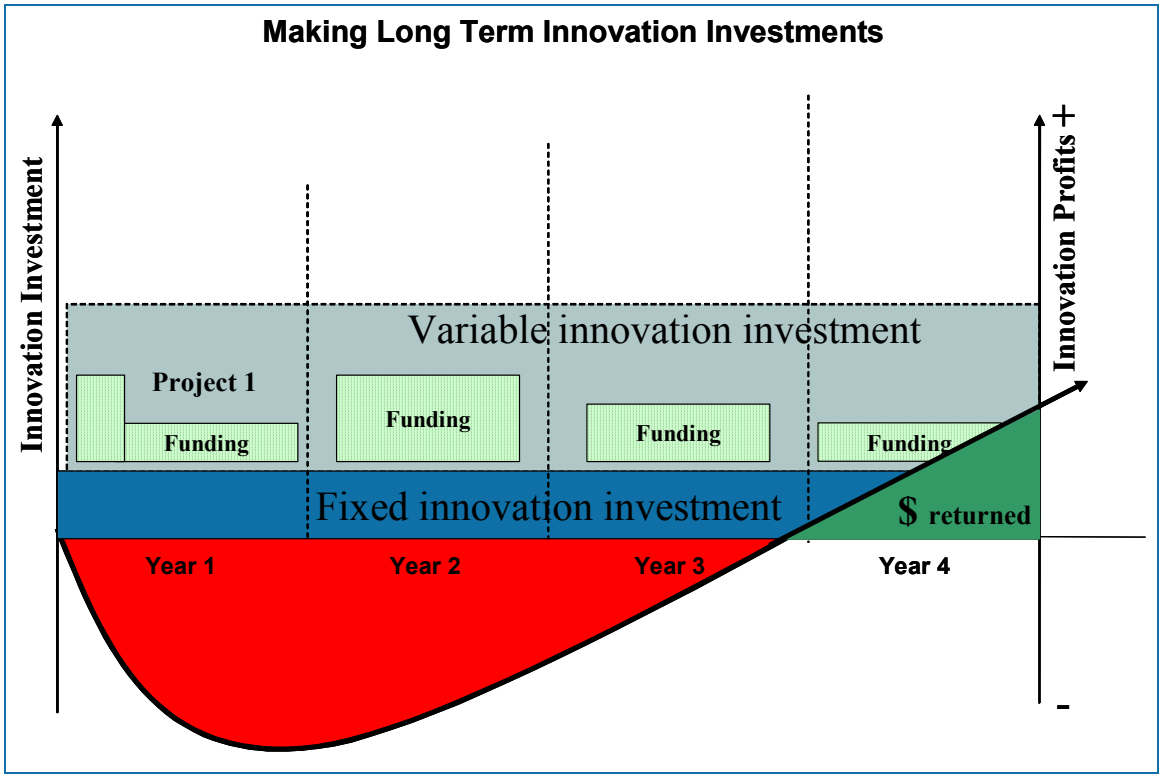
Figure 4-2: Making Long Term Innovation Investments



Source: Snell Consultancy, 2004

From our experience, justifying investment in innovation is a recurring issue for executives charged with delivering the 'innovation ambitions' of their organisations. The reason for this is that traditional investment appraisal techniques do not work when it comes to the decision making process for making innovation investments. This is because the initial returns on most innovation investments, due to their risky nature, give negative net present value (NPV) results.

A `real options' approach that rewards the value of having the future option to invest further as Myers (1984) has shown is more appropriate. Needless to say, companies, at least those that operate in other sectors, do invest significant sums on innovation (see Exhibit 4-2).

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Exhibit 4-2: Innovation Best Practice - BASF's Investment in Innovation

BEST PRACTICE LESSONS FROM OTHER SECTORS - making innovation investments	
Sector: Chemicals	**Company:** ***BASF***

Dr Bruno Kaesler, Director Innovation Management, at BASF Future Business described BASF's Innovation Strategy. This included:

- The mission and structure of the BASF Future Business GmbH
- BASF venture capital funding
- BASF future business strategy
- Pioneering and bridgehead strategies for radical and incremental innovation.

He also made reference to the BASF Future Business GmbH organisation and resources:

- €100 million in 3 to 4 year innovation led business development
- €100 million in 3 to 4 years for venture capital investments
- 19 staff within innovation management, scouting projects, business development and venture capital units.

BASF is a global chemicals company, offering its customers chemicals, plastics, performance products, agricultural products, and fine chemicals. In 2003, BASF had sales of US$ 42 billion and more than 87,000 employees worldwide.

Source: Dr Bruno Kaesler, Director of Innovation Management, BASF, Innovation Summit, 25-26th March 2004, London

BASF's innovation spend is approximately €50 million per year (£34 million per year). This equates to 0.13 percent of BASF's revenues for 2003, or nearly 5 percent of its net income of US$ 1,144 million (£700 million) for 2003.

Any significant investment in innovation by the Telcos we interviewed was limited to the larger operators. What is significant though, is that the two Telcos that invested the most on innovation still only spent between 0.25 percent and 0.5 percent of their annual net incomes. As a guideline, this is ten times less than the amount spent, as a proportion of net income, by BASF.

4.6 Managing the Telco Innovation Process

Key Finding #5: Managing the Innovation Process	The extent to which the Telcos manage innovation as a process in a formalised way varies enormously and measuring innovation was seen as too difficult in many cases.

"There is no such thing as innovation strategy, but there is an innovation process. The strategy is to invest in innovation and put a process in place to leverage innovation. The strategy is to invest in it and reap the benefits of it."

- VP, Advanced Services Development, UK Mobile Operator

For a long time, best practice thinking has advocated that the most successful innovators manage innovation as a core business process. According to Drucker, `innovation can be systematically managed if one knows, where and how to look. Innovation is capable of being presented as a discipline, capable of being learned, capable of being practiced.' (Drucker, 1985).

The innovation process involves a conversion process whereby ideas are turned into value. This is traditionally seen as a management process with multi-functional teams from R&D, design, manufacturing, marketing and sales departments, all of whom work together in parallel to launch a new product or service. However, innovation must be considered to be more consuming than being simply the new product development or product management lifecycle. In fact, thinking on what the innovation process looks like has evolved through a number of generations as Table 4-1 shows.

Table 4-1: Five Generations of Innovation Models

Generations of Innovation Models	
Generation	**Key Features**
First / Second	Simple linear models – market pull, technology push
Third	Coupling model, recognising interaction between different elements and feedback loops between them
Fourth	Parallel model, integration within the firm, upstream with key suppliers and downstream with demand and active customers, emphasis on linkages and alliances
Fifth	Systems integration and extensive networking, flexible and customised response, continuous innovation

Source: Rothwell, 1992

The most important message to bring across here, and one that influenced our modelling of the differing innovation processes that the Telcos use, is that a partial understanding of the innovation process can be a limiting factor to successful innovation.

Table 4-2 describes what the impacts are of only seeing the process of innovation from a `single dimension'.

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Table 4-2: Problems Associated with Only Taking a Partial View of Innovation

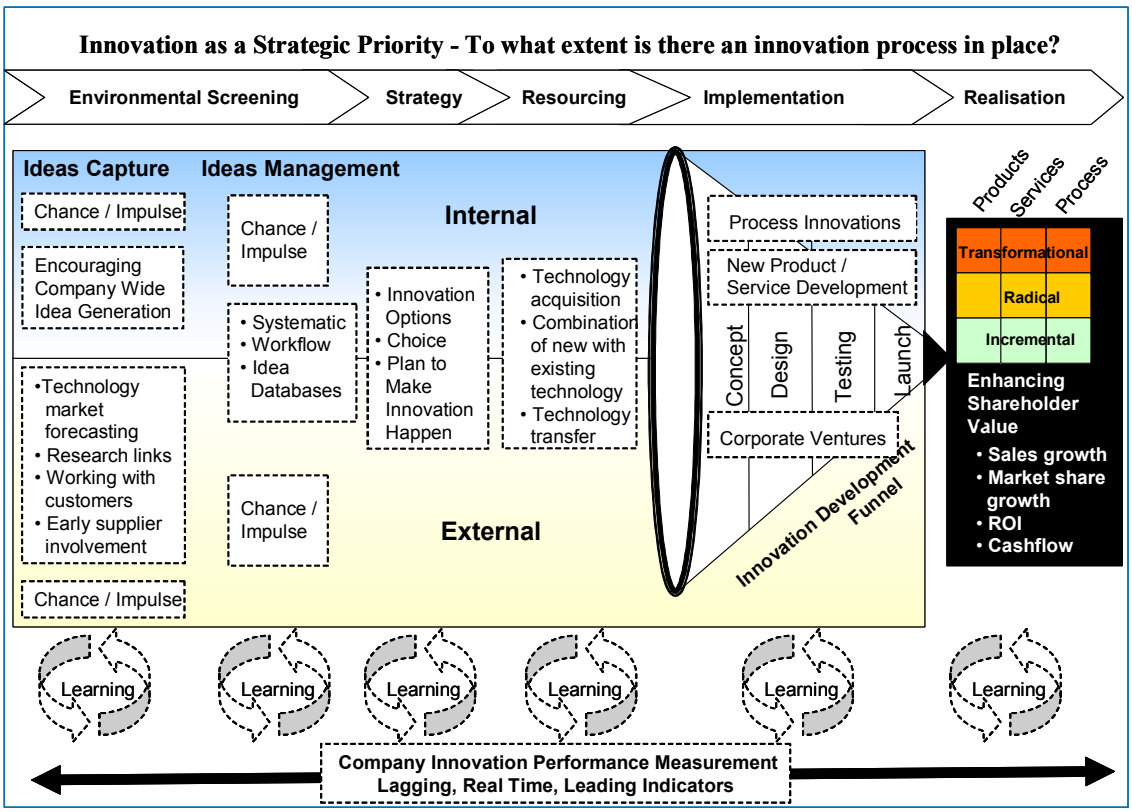
Problems with Only Taking a Partial View of Innovation	
If innovation is only seen as…..	**...the result can be**
Strong R&D capability	Technology which fails to meet user needs and may not be accepted.
The province of specialists in the R&D laboratory	Lack of involvement of others, and a lack of key knowledge and experienced input from other perspectives.
Meeting customer needs	Lack of technical progression, leading to an inability to gain a competitive edge.
Technology advances	Producing products which the market does not want or designing processes which do not meet the needs of the user and which are opposed.
Only about `breakthrough' changes	Neglects the potential of incremental innovation. Also an inability to secure and reinforce the gains from radical change because the incremental performance ratchet is not working well.
Only associated with key individuals	Failure to utilise the creativity of the remainder of employees, and to secure their inputs and perspectives to improve innovation.
Only internally generated	The `not invented here' (NIH) effect, where good ideas from outside are resisted or rejected.
Only externally generated	Innovation becomes simply a matter of filling a shopping list of needs from outside and there is little internal learning or development of technological competence.
Only concerning single firms	Excludes the possibility of innovation value co-creation through various forms of inter-organisational networking to create new products and streamline share process.

Source: Adapted from Tidd, et al, 2001

4.6.1 The End-to-End Innovation Process

We have modelled the end-to-end innovation process to facilitate the strategic management of innovation (see Figure 4-3).

Figure 4-3: A Model for Managing Innovation as a Core Business Process



Source: Snell Consultancy, 2004

The key characteristics of the end-to-end innovation process are:

- It can be divided up into five phases
- The possible outcomes are process improvements, new services and products, which are reflected in enhanced shareholder value.
- An organisation may decide it is best not to exploit an idea or innovation opportunity itself through its established new product development process simply because its traditional expertise and knowledge relates to existing products, markets and customers. This conclusion will lead an organisation to consider venturing or partnering, technology licensing or even M&A activity to exploit the business opportunity.
- The phases need managing systematically starting with the capture and management of ideas.
- Innovation performance can be measured. There should be continual feedback of what has been learnt through trial and error.

It is our experience that successful innovators manage innovation throughout all the phases.

Remaining parts of this section, group the Telcos that we interviewed into the following three categories:

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- **Partial Innovation Process** – these companies have some form of innovation funnel with gated stages for new product development. However, the screening of the environment, both internally and externally, is left to chance, and there is no management, strategic analysis or resourcing for the best innovation opportunities. Typically innovation means accepting product development offered by equipment vendors.

- **Systematic Innovation Process** –the presence of some formal `innovation production line' over and above classic new product development. They capture and manage ideas in a systematic way, regardless of the fact that the potential innovation outcomes will not only be new products or product developments but also process improvements. Typically they have some form of venturing capability.

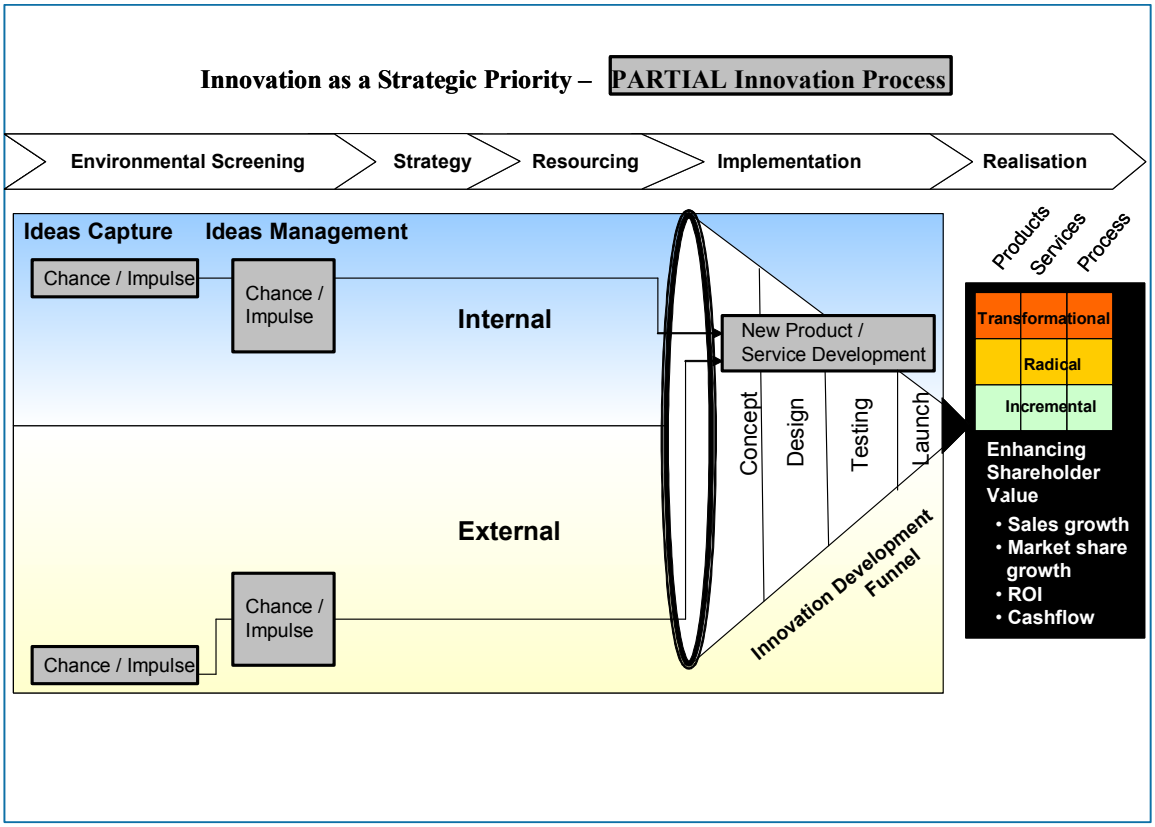
- **Adaptive Innovation Process** – here companies systematically measure company performance with regard to innovation and adapt, amongst other things, the innovation process in a form of learning cycles – both acting upon leading, and lagging innovation indicators.

Our findings reveal that none of the Telcos have an adaptive innovation process. The following sub sections describe each of these different ways of managing the innovation process in more detail. (See Table 4-7 at the end of this section).

4.6.2 Partial Innovation Process

A number of the Telcos we surveyed only took a partial view of the process for managing innovation (see the shaded boxes in Figure 4-4). There is no organised environmental screening for ideas or strategic thinking applied to innovation opportunities.

Figure 4-4: A Partial View of the Telco Innovation Process



Source: Snell Consultancy, 2004

The innovation process is viewed solely as the remit of the product development or product management function as the following quotes in Box 4-3 show:

Box 4-3: Telcos' Partial Views on the Innovation Process

- "Innovation is not a strategic priority for us. What the technology group does is driven by product road maps from the individual business divisions. If it is not on the product roadmap then it does not get done, and people will stop you spending time on it – it is a very product focussed approach."
- "There is nothing stopping people putting ideas forward, but it is not an explicit process, it is very much up to the individual to take the initiative."

Source: Snell Consultancy Telco Innovation Survey, 2004

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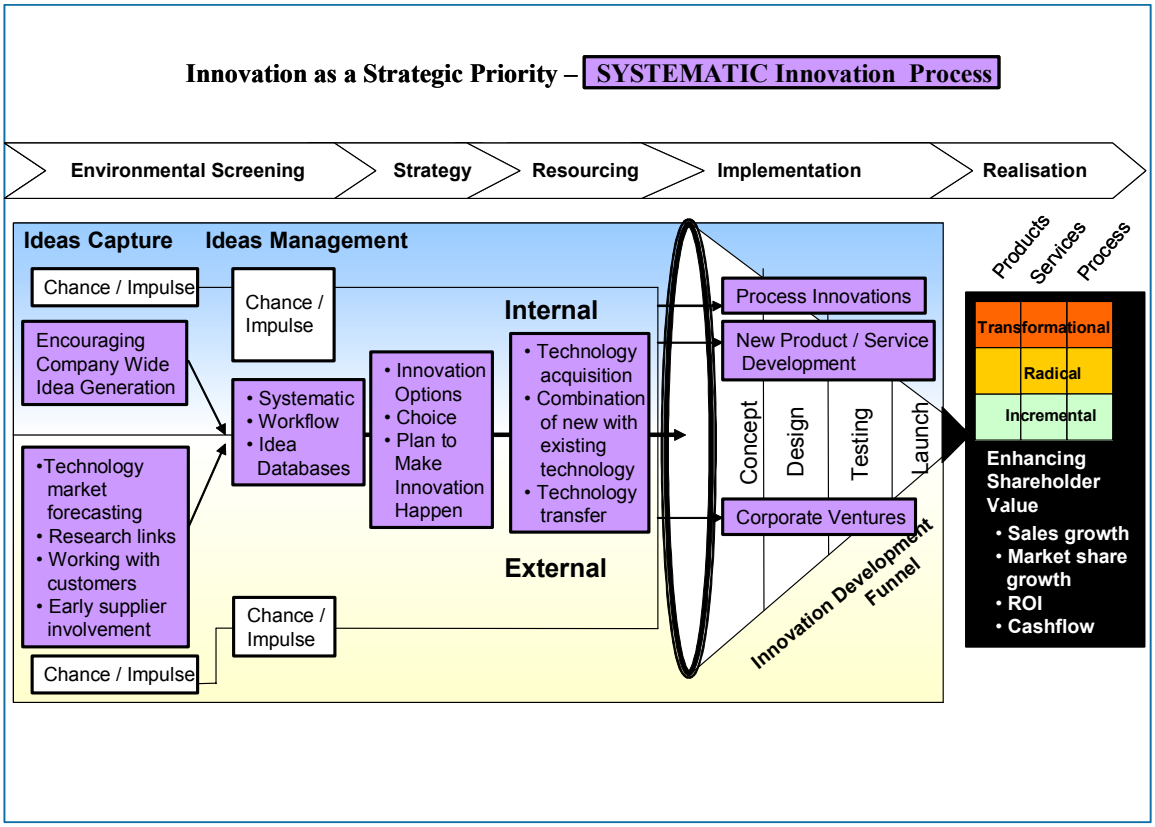
4.6.3 Systematic Innovation Process

Organisations understand with a more formalised approach to managing the innovation process that there are significant benefits to be had. It requires making conscious decisions in regard to the strategy, resourcing and implementation of innovation opportunities (see the shaded boxes in Figure 4-5).

Figure 4-5: A Systematic View of the Telco Innovation Process



Source: Snell Consultancy, 2004

As we described in Section Three, a decision has to be made to make innovation happen as the following quotes from the senior executives show (see Box 4-4).

Box 4-4: Telcos' Views on Managing Innovation as a Systematic Process

- "It has been an absolutely conscious decision by our Board to make innovation a more systematic and formalised process."
- "Innovation is `systemic/process orientated', not codified though, it's a one way gating process, of rapid opportunity assessments, budgets and headcounts, allocation and agile workforce to deliver the results."

Source: Snell Consultancy Telco Innovation Survey, 2004

Typically organisations make the transformation to a more systematic approach to managing the innovation process, by firstly focusing on the front end which involves environmental screening.

A senior executive told us,

"it has become imperative to accelerate and expand the innovation process by capturing more ideas that make a difference."
- Director of Innovation, UK Fixed Line Telco

Initially this may be viewed as a front end extension to the traditional new product development process. The expected outcomes are just incremental product/service developments as the following quotes highlight (see Box 4-5).

Box 4-5: Telcos' Views on Innovation's Relationship to New Product Development

- "The product management process is fairly well defined; it takes new products from inception through to the delivery to the customer. Innovation handles the bit up to that point. Therefore, it was seen to be intimately linked to, but independent to, product management. Put in a traditional gate process for product development and innovation got a gate of its own – called Gate 1."
- "The question is how do you get the right ideas for innovation in the business? This is a strength for us, taking an idea, developing a business case, working out technology options, and how that flows through all the way to implementation and market. There is a well-defined process in place for this."
- "Ideas can come from anywhere; suppliers, customers, competitors, rest of industry, VC's, trade shows, trade magazines – we would do ourselves a huge disservice if we cut off any source of ideas."
- "Successful innovation is reliant on people being prepared to sit down and talk about ideas that are not necessarily on the product roadmaps. The product roadmaps originate in the marketing divisions."

Source: Snell Consultancy Telco Innovation Survey, 2004

A wider searching approach involves investing in actively managed external environmental screening:

"We do not try to cover all the research areas itself – quite the opposite, we specialise where our strengths are. We try to get the best of what is around the world and convert that into new concepts and ideas for new services."
- Director of R&D, Venturing & Technologies, UK Fixed Line Telco

This evolves into actively searching for ideas that lead to incremental product/service developments, complete new product ideas and new businesses. This can be grown into separate ventures and ideas that will exploit technology to generate cost saving process improvements.

The capture, management and implementation of such ideas has been practiced by BMW (see Exhibit 4-3).

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Exhibit 4-3: Innovation Best Practice - BMW's Staff Ideas Generation Scheme

BEST PRACTICE LESSONS FROM OTHER SECTORS - CAPTURING, MANAGING & IMPLEMENTING IDEAS	
Sector: Automotive	**Company:** ***BMW***

Continuous Improvement Process (CIP) is a strategic initiative within the BMW Group. Savings of over £43 million were achieved in 2003 from CIP schemes throughout BMW Group's global production network of 24 production plants located in 15 different countries. One such plant where the scheme has been implemented is the new Mini plant in the UK. Every employee at the plant has a target of implementing three ideas a year to improve the business. 11,064 ideas were put into practice from a total of 14,333 submitted in 2003, an 80 percent implementation rate.

The suggestions ranged from simple things such as saving unnecessary paper through to more complex engineering solutions to improve production processes.

A 'Working in Groups' initiative, part of a wider programme of change management, has created more than 200 teams of between 8 and 15 people each with the power to tackle a range of production issues. Each month, the production line is stopped for 90 minutes to allow the teams to put forward new ideas and review plans to implement existing suggestions.

Commenting on the CIP strategy, Dr Tony Heiss, Managing Director of the Oxford plant, said: "I am very pleased with the results achieved which exceeded the plant's 2003 target. We have moved away from a strongly directive management style to a much more autonomous team-work approach. This places the achievement of plant improvement targets directly into the hands of our employees and has made a real difference to the business."

Source: Auto Express, 20th February 2004

The point is that if you rely on the top 20 or even 50 people in your organisation for the generation of business concepts and ideas, you are not going to be as successful as when ideas come from 10,000 or even 100,000 people. The chance that you will be creative increases the more people you get involved. Hamel calls this making your strategy process democratic, to `bring everybody inside and get them involved in giving you ideas'.

Few companies have systemised innovation. A number have, as the CBI and 3M Innovation Survey of 350 organisations in 2000 found:

- 15 percent of the companies surveyed had IT systems in place to manage innovation
- 40 percent had established formal procedures for innovation

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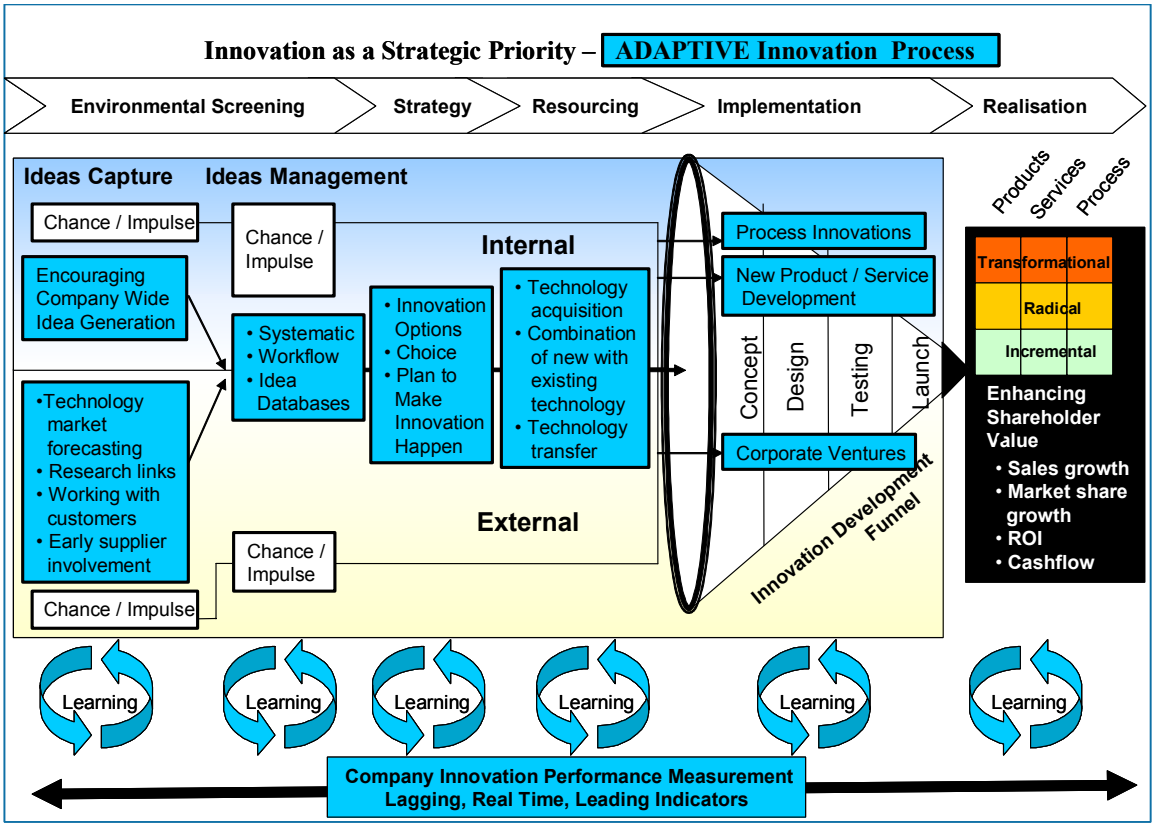
4.6.4 Adaptive Innovation Process

The formal recognition of 'continuous improvement' in business processes throughout the firm as part of the innovation process is the first step towards managing innovation in an adaptive way (see Figure 4-6). This includes the continuous improvement of the innovation process (see Figure 4-6).

Figure 4-6: Managing Telco Innovation as an Adaptive Process



Source: Snell Consultancy, 2004

One of the Telcos we interviewed expressed their attempts to learn from mistakes made in managing innovation as the following quote shows:

> *"The challenges for us are no different than for anyone else. The pipeline involves being good at picking winners, filtering out the losers, and rewarding the killing of projects. The underlying message being that, risks need to be managed and the ability to fail early and often should be fully supported through lessons learnt."*
> *- VP, Advanced Services Development, UK Mobile Operator*

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4.7 Measuring Innovation Performance

"Not measuring innovation could be viewed as an abdication of management responsibility."
- Director of Telephony, UK Cable Company

The suggestion that Telcos should undertake reviews of innovation projects assumes that some form of innovation measurement should occur. The best way to manage something is to measure it. PwC's survey of 427 CEO's of the fastest growing businesses between 1996 and 2001 found that:

`If you don't measure it you can't improve it' – W. Edwards Deming

`Half of the eighty one percent of companies that had made innovation an organisation-wide priority had made an effort to link innovation to the success metrics of their business.'

Those that had linked innovation to the success metrics of their business were expecting 12 month revenue growth 33 percent above those who had not made the connection. Those making such a linkage were concentrating on four success factors:

- Overall revenue growth - 73%
- Earnings/profit margins - 72%
- Growth in revenue from new products / services - 72%
- Customer satisfaction - 57%

The overwhelming majority of our respondents believed that the measurement of innovation was both prudent and possible:

"Sure you can be leveraging innovation but how good are you and how do you do better? How do you know how well you are leveraging innovation, and how do you set goals to do it better if you do not set measurements?"
- VP, Advanced Services Development, UK Mobile Operator

This demonstrates sensible thinking at one Telco. However, very few of the other Telcos that we interviewed offered up any metrics and an even smaller proportion implemented them.

4.7.1 Some Guidelines for Measuring & Tracking Innovation KPIs

The difficulty that companies have with regard to measuring innovation key performance indicators (KPIs) reflects the difficulty they have in defining innovation.

A survey conducted by the Royal Mail in collaboration with the London Business School Innovation Exchange in 2003 found that only six companies out of the 22 member companies were making any attempt to measure innovation at all. A number, were trying to come to grips with the concept but they were struggling (Wright, June 2003).

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This inability to effectively measure innovation is clearly an important issue. A survey by the Kellogg Management School found, `*a lack of any metrics relating to the return on innovation is the number one reason why companies are reluctant to innovate*.' Part of the reason for this, as von Stamm (2003) points out, is that traditional measures of innovation do not provide true insights into how successful at innovation an organisation really is, nor does it provide insights on the return on investment in innovation.

`A lack of any metrics in relation to the return on innovation is the number one reason companies are reluctant to innovate'

Traditional measures of innovation include:

- R&D expenditure
- Patent activity
- Percentage of profit or turnover
- Number of new products introduced.

These are included in the DTI's recommended measures contained within the 1993 CDTI/CBI innovation report (see Table 4-3).

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Table 4-3: UK DTI's Recommended Metrics for Measuring Innovation

The DTI's Innovation Metrics	
Product Innovation (absolute, trend versus competitors)	▪ Number of new product ideas, product enhancement ideas evaluated last year ▪ Percentage sales/profit from products introduced in the last 3-5 years ▪ Percentage sales/profit from products with significant enhancements in the last 3 -5 years ▪ Product planning horizon – years, number of product generations ▪ Market share – global, EC, UK
Product Development (versus plan, versus existing products, absolute trends, versus competition)	▪ Time to market – average concept to launch time; time for each phase, for example concept, design, initial product launch; average overrun; percentage of product overrunning planned finished date; average time between product enhancements; and, redesign ▪ Product performance – product cost; technical performance; quality; return on sales; market share ▪ Design performance – manufacturing cost; manufacturability; testability
Process Innovation (versus plan, absolute, trend versus competition)	▪ Process parameters, cost, quality, work in progress (WIP) levels, lead time. Performance versus competitors; percentage improvement 1-3 years timeframe ▪ Installation lead times – start to trouble-free working; percentage of new processes/process innovations considered successful ▪ Number of new processes, significant process enhancements per year ▪ Continuous improvement – number of improvement suggestions per employee; percentage implemented; average annual improvement in process parameters (quality, cost lead time, WIP, reliability, downtime, capability) ▪ Progress to lean production, WIP, lead time, quality
Technology Acquisition (Versus plan, absolute, trend versus competition)	▪ Number of licences in/out over the last 3 years ▪ Percentage of R&D projects that lead to successful new or enhanced products or processes, licences (percentage of R&D spend and percentage of the number of projects that have been successful) ▪ R&D/technology acquisition cost per new product ▪ Failed projects – percentage number of projects ▪ Percentage of projects killed off too late (after substantial expenditure) ▪ Number of patents over the last 3 years
Leadership (Versus plan, absolute, trend versus competition)	▪ Number/percentage of members from product development/technical function – on main board; on subsidiary/divisional board ▪ Percentage of employees aware of, sharing, company, innovation policies and values (from employee attitude survey) ▪ Number of pages in annual report devoted to innovation/technology
Resourcing Innovation (Versus plan, absolute, trend versus competition)	▪ Percentage of – projects delayed/cancelled because of lack of human resources; personnel in product development who have worked on more than one or two functions; project delayed/cancelled due to lack of funding ▪ System and tools ▪ Percentage of designers/engineers with access to CAD Screens; products of CAD database; products produced on processes with SPC; teams using specific techniques (for example, experimental design methods, failure mode and effect analysis); projects where specific tools are applied; R&D team leaders trained in design for manufacture; development projects using BS 5750 (now superseded by ISO 9000) certified processes

Source: DTI/CB1, 1993

Of course, none of these measures are effective unless they aid a manager's decision making through measuring and tracking both the `doing' of innovation and the `managing' of innovation. The most compelling work that relates to our distinction here is that by Kuczmarski (2000). He suggests looking at two kinds of innovation metrics:

- Innovation performance metrics
- Innovation programme metrics

These metrics are described in more detail in Table 4-4.

Table 4-4: Metrics for Both `Managing' and `Doing' Innovation

Metrics for `Managing' and `Doing' Innovation	
Managing Innovation	**Doing Innovation**
Innovation Performance Metrics Metrics that look at the long-term performance and impact of the new product development program on the firm, thereby minimizing knee-jerk reactions to short-term issues. They include return on innovation investment, new product success rate (`hit rate'), new product survival rate, cumulative new product revenue and cumulative new product profit, and growth impact.	Innovation Programme Metrics Innovation program metrics are used to understand operational concerns reflected by the innovation performance metrics. Program metrics include R&D innovation emphasis ratio, innovation-portfolio mix, process-pipeline flow, innovation revenues per employee, and speed to market.

Source: Adapted from Kuczmarski (2000) and von Stamm (Oct, 2003)

Finally, one of the most useful perspectives on innovation metrics, is the two dimensional view provided by Collins and Smith (1999). It includes a temporal dimension and a company wide innovation health dimension (see Table 4-5).

Table 4-5: Lagging and Leading Innovation Metrics

Lagging and Leading Innovation Metrics				
	Lagging	**Real time**	**Leading**	**Learning**
Stakeholder strategies	Gross contribution of new products	Net present value (NPV) of idea portfolio		
Processes				Take-up rate of new processes
Resources			External alliances being pursued	
Culture/ organisation	Staff turnover rate		Innovation climate	Level of enquiry

Source: Collins and Smith, 1999

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The value of this framework does not lie in the actual metrics generated. The important distinction is the ability to evaluate historic innovation performance combined with real time data to fine tune innovation efforts. The measurement of innovation should provide critical input towards improving decision-making and behaviours, proper and fair evaluation, including better allocation of resources for innovation. Most importantly, it enables the validation of the commitment and investment the company and its staff have made towards innovation.

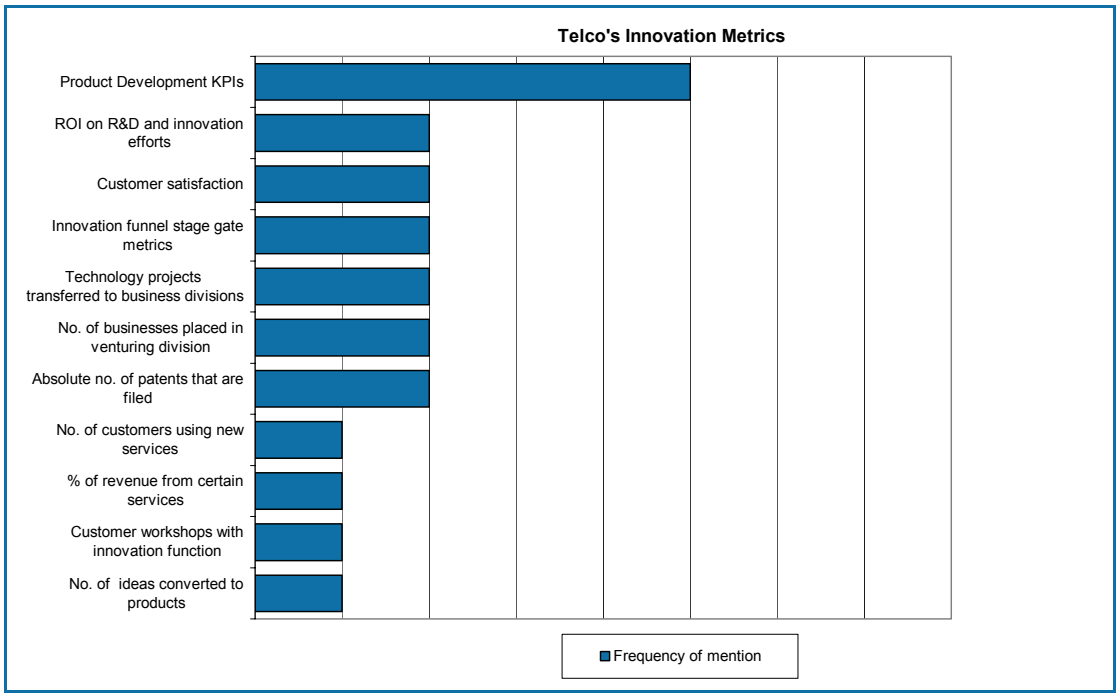
`What gets measured gets done'

4.7.2 Telcos Do Not Measure Company-Wide Innovation Performance

"There is no 'Innovation Plan' or `Innovation Director', so we do not have any specific innovation measurements."
- Director of Business Enterprise Solutions, UK Telco

The Telcos that we interviewed offered their best explanations as to which metrics their companies measured were the most closely related to innovation metrics. The variety of quasi-innovation metrics that were measured, to a lesser or greater degree, are shown in Figure 4-7.

Figure 4-7: Telco's Most Commonly Used Innovation Metrics

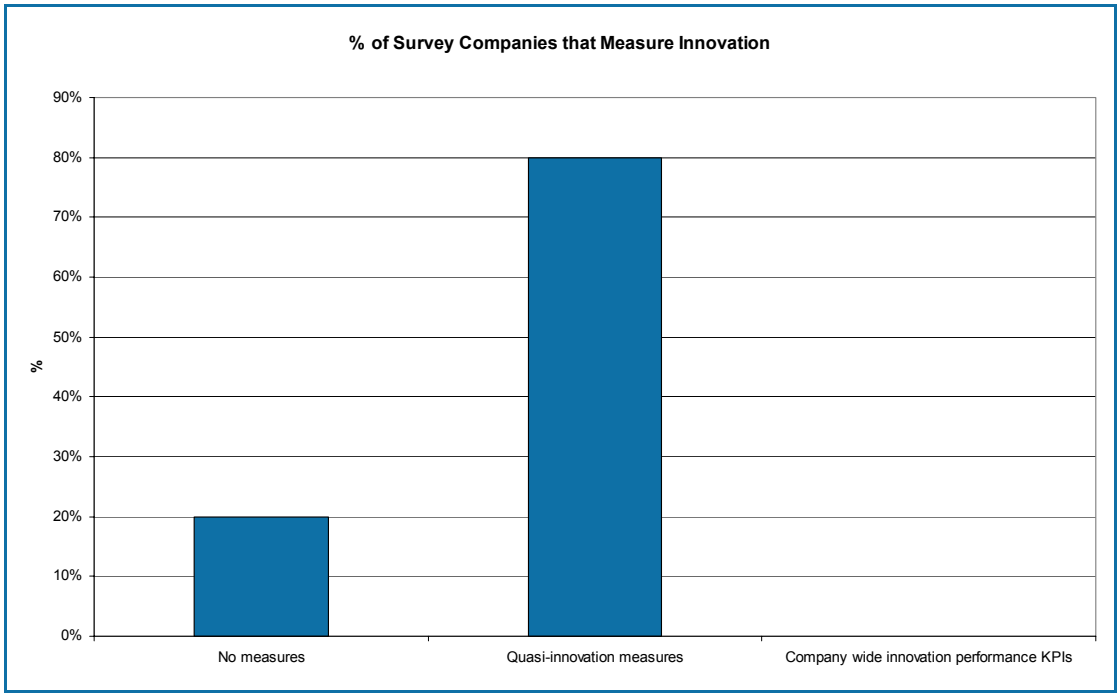


Source: Snell Consultancy Telco Innovation Survey, 2004

In nearly every case these metrics were not seen as formal innovation KPIs. However, if no one has accountability at board level for innovation it is highly unlikely that a company's overall innovation performance will be measured in any joined up way. And, if there are no company-wide innovation metrics that are measured in the first place how can anyone be held accountable for innovation?

As Figure 4-8 shows, our research revealed that no single Telco measured its overall innovation performance at a board level on a company-wide basis.

Figure 4-8: Percentage of Telcos Surveyed that Measure Innovation



Source: Snell Consultancy Telco Innovation Survey, 2004

Clearly, innovation metrics should extend beyond a narrow view, such as investment in R&D or the number of patents filed. These measures are indicators only, as the DTI point out in their 2003 R&D Scoreboard report. R&D spend cannot be the only measure of innovation. From the discussion, it can be argued that 'hard metrics' can be applied and analysed at all levels, from long-term to short-term and in projects and functions alike.

Your customer determines how innovative you are.

4.8 Get Organised: Innovation Resources

Key Finding #6: Organising Innovation	The responsibility for facilitating innovation within the organisation varied from a single person to whole departments with multi-million pound budgets.

Including formal research and development laboratories, each Telcos' efforts with regard to allocating resources to innovation differed greatly. Organising for innovation within an organisation poses a challenge for senior management.

The dilemma is balancing the need to have some form of unit or function for taking responsibility to facilitate innovation or champion innovation, yet not create an ivory tower of innovation that has the reputation of being the only place within the organisation that innovation happens (see Table 4-6).

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Table 4-6: Telco's Different Approaches for Organising Innovation

Telco's Different Approaches for Organising Innovation	
Resource Commitment	**Description**
None	Innovation just happens without any facilitation.
Single Manager / Small Innovation Unit	"The idea of the function is not to have a large department of people. I am the only person in the function. I network extensively across the organisation into marketing, product and technical areas. The role is to facilitate and coordinate innovation."
Innovation Team	"The process to implement that strategy is to have an innovation group solely focused on innovation linked to the business. The customers for that innovation group are the technical and commercial organisations who think what the needs are from a commercial and technical standpoint today and tomorrow. That ties into a much stronger innovation planning function inside of our R&D facility."
Integrated Innovation Planning, Analysis & Delivery teams	Organisational units responsible for delivering innovation across the organisation are managed centrally. Innovation activities from environmental screening, through to the different vehicles to implement innovation opportunities, are co-ordinated effectively. This can take the form of an: ▪ innovation initiative ▪ innovation change programme team.

Source: Snell Consultancy Telco Innovation Survey, 2004

4.9 Assessment: Strategic Innovation Priority – Separating Reality from Hype

All the senior executives that we interviewed, excluding those at Energis and CableCo, told us that innovation was a strategic priority for their organisations. Yet at the time of publication of this report there was only reference made to innovation on the websites or within the latest annual reports for BT Exact, BT Wholesale, mmO_2 and Orange.

Furthermore, the Telcos did not score very highly when it came to assessing their claims against a number of strategic priority proof points:

- **Innovation Strategy:** No Telco we interviewed could explicitly point us to their formally documented innovation strategy.

- **Accountability for Innovation:** At BT Exact, BT Wholesale, Orange, mmO_2 and Band-X, accountability for innovation does rest at board level. In most cases this was part of a single director's role. In the case of Band-X it is the Chairman himself who is responsible. With the exception of Band-X, all the aforementioned Telcos had individuals at a middle management level with unique responsibility for innovation activities in one form or another, including Energis. The rest of the Telcos could not direct us to a board level director who was even informally responsible for innovation.

- **Innovation Investment:** BT Exact, BT Wholesale and Orange had multi-million pound ring-fenced budgets allocated to innovation. None of the other Telcos had innovation budgets.

- **Innovation Process:** No Telco had a truly adaptive innovation process and most, namely Band-X, C&W, CableCo, Energis, Kingston Communications and Inmarsat, only had a partial view of the end-to-end innovation process. BT Exact and BT Wholesale have the most sophisticated systematic approaches to managing the innovation process. BT Exact's streamlined `Discovery Process' for the collection of ideas, `SWIFT' (new services with innovations from technology) technological innovation process and Springboard innovation commercialisation processes have the potential to be world class. The latter also has an `innovation production line' with an ideas hopper and innovation stage gates covering ideas generation, opportunities assessment, innovation papers development, market testing and scale launches. Both mmO_2 and Orange led us to believe that they had similar well thought through innovation processes in place, but no evidence was presented.

- **Measuring Innovation Performance:** No Telco that we interviewed had robust innovation KPIs in place, either hard or soft.

- **Allocation of Resources to Innovation:** Correlated to their company size, the larger Telcos all had considerable resources engaged in innovation activities.

There is a direct relationship between company size and resources deployed (see Table 4-7).

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Table 4-7: Assessment as to whether Innovation is a Strategic Priority for UK Telcos

	RESEARCH OBJECTIVE #2. What evidence is there that innovation is a strategic priority for UK Telcos today?							
	Innovation is a Strategic Priority		Priority Proof Points					
Company/Business Unit	Senior Executive Interviews	Annual Report /Website*	Innovation Strategy Document	Board Level Accountability	Ring - Fenced Innovation Budget	Innovation Process	Company Innovation Performance Measurement	Dedicated Innovation Resources
Band-X	☑	☒*	☒	☑	☒	Partial	☒	☒
BT Exact	☑	☑	☒	☑	☑	Systematic	☒	R&D / V / IU
BT Wholesale	☑	☑	☒	☑	☑	Systematic	☒	R&D / V / IU
C&W	☑	☒	☒	☒	☒	Partial	☒	☒
CableCo	☒	☒	☒	☒	☒	Partial	☒	☒
Energis	☒	☒	☒	☒	☒	Partial	☒	▲
Kingston Communications	☑	☒	☒	☒	☒	Partial	☒	☒
Inmarsat	☑	☒	☒	☒	☒	Partial	☒	☒
mmO$_2$	☑	☑**	☒	☑	☒	Systematic	☒	☒
Orange	☑	☑***	☒	☑	☑	Systematic	☒	R&D / V/ IU

Source: Snell Consultancy Telco Innovation Survey, 2004
Key: R&D (Research & Development); V (Corporate Venture); IU (Innovation Unit); ▲ Single Innovation Manager / Director
* Band-X is a privately owned company – at the time of publication of this report its annual reports were not available at Companies House.
** On mmO$_2$'s `About' page mmO$_2$ `innovation', in the context of being first to market with 2G and 3G trials, is listed on the company's `Company facts' page along with the headings of customers, turnover and cohesion – it is not referenced under the `Strengths' section and the companies strategy statement in the 2003 annual report centres on improving operating performance, managing the group's businesses cohesively and leading in mobile data services.
*** Orange has a declared mission statement to be the first for service, quality, innovation and choice

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4.10 Snell Golden Nuggets of Innovation Wisdom

We refer back to the two overriding objectives of the report here. The first is to test how well Telcos are managing the process of innovation and the second is to kindle curiosity in, and a greater understanding of, best practice with regard to the management of innovation. Clearly the previous assessment has identified a gap between good intentions with regard to the strategic priority of innovation and actually doing something about it. To start to close the gap CEO's might want to ask themselves, and their board members:

- Why do we not have an innovation strategy in place? How do we maintain our innovation momentum?
- Who is accountable for delivering innovation and making it happen in order to grow profitable revenues and deliver cost cutting benefits?
- Are we investing enough in innovation to secure tomorrow's business?
- Have we got a process in place to drive innovation across our entire organisation?
- Why do we not measure our innovation performance as part of our executive board scorecard so we can drive improvement of the innovation process and the ways in which it is managed?

Innovation Scorecard

- Do we have both the right numbers of and balance of resources managing and doing innovation?

Changing the rules of the game is not something that established organisations are generally good at. However, it falls, in the first instance, to Telco's leadership to take responsibility for determining what innovation means for their organisations no matter how rudimentary or crude their strategy might be. This has to be their first step before they address the issue of how to improve their organisation's innovation performance.

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SECTION 5 AN INNOVATION HEALTH CHECK FOR UK TELECOMS

Research Objective #3	What do UK Telcos intend to do to strengthen their innovation performance?

So far we have identified the revenue growth deficit in UK telecoms and looked at the ways in which Telcos define innovation and the extent to which they have motionlessly, discontinuously or continuously approached the management of innovation throughout the recent industry downturn. We have argued the case for the systematic management of innovation as an approach to drive profitable revenue growth.

In the previous section we tested whether the Telcos were really making innovation a strategic priority by assessing some of the vital signs of innovation health including the extent to which they had:

- an innovation strategy
- board level accountability for innovation
- ring-fenced budget for innovation
- an end-to-end innovation process
- a method for measuring innovation performance
- dedicated resources to deliver innovation.

The purpose of this section is to examine what the Telcos are doing, to improve their innovation performance and thereby increase the capability to generate sustainable, profitable revenues in the future. This requires establishing the starting point for each of the Telcos with regard to how well they are managing innovation today.

- Firstly, we examine what the Telcos think drives successful innovation

- Secondly, we present the Snell Innovation Learning Curve™ as a diagnostic tool to determine what stage the companies have reached along each of their individual innovation journeys. We assign each of the companies we interviewed to one of four stages: innovation agnostic; innovation aware; innovation practitioner; and, innovation led. We briefly examine the innovation health of each company in terms of its innovation heritage and innovation potential.

> Innovation is an evolving journey for any company

- Finally, again referring to the Snell Innovation Learning Curve™, we prescribe a practical set of steps to help companies to improve their innovation performance.

5.1 What Creates Successful Innovation?

Organisations are increasingly interested in understanding what makes for successful innovations and what are the organisational building blocks or competencies of successful innovators. Consider, for example, the following list of the characteristics of innovative organisations and survey findings of the 15 best practices on managing innovation (see Table 5-1).

Table 5-1: Characteristics of Successful Innovators

Characteristics of Innovative Organisations	Best Practices from Leading Innovators
A PwC survey of 3000 companies across the world in 1998 concluded that the most successful innovative firms were those that had:	A recent survey by the Vancouver Research Group identified the following 15 best practices with regard to the management of innovation:
1. High management trust 2. Active flow of ideas 3. Fewer organisation levels 4. Effective idea management process 5. Managers who challenge 6. Managers who delegate 7. Managers who involve others 8. Routine future envisioning 9. Sources of ideas other than the board 10. Balanced view of the risk takers	1. Communicating an innovation policy 2. Formulating and establishing breakthrough goals 3. Using an innovation project matrix 4. Scenario Planning 5. Eliminating organisational barriers 6. Commissioning skunk works projects 7. Capitalising on intrapreneurship centres 8. Running an idea management system 9. Using a stage-gate process for portfolio management 10. Exploiting innovation labs 11. Developing new products via concurrent engineering 12. Brainstorming 13. Theory of Inventive Problem Solving 14. Using a performance dashboard 15. Variable compensation systems

Source: PwC Innovation Survey, 1998 and Vancouver Research Group 2004

Our research reveals that UK Telcos also believe that they require a number of these characteristics to create successful innovation. The major characteristics identified were: innovation leadership; an innovation process geared towards killing innovation early, often and fast; and, customer orientated products/services.

5.1.1 Innovation through Leadership

For successful innovation to happen it is well known that both a vision of, and leadership in, innovation is required at the highest level of the organisation.

For example, according to Bill McDermott, CEO and President of SAP America, there are five characteristics of growing companies: they have aggressive goals, they are opportunistic, they integrate partners, they focus on continuous improvement, and they have a culture geared toward growth, whilst emphasising *`the root cause of all that success comes down to leadership'* (Taft, 2004).

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Our research revealed similar themes, as one interviewee said, "what drives real successful innovation is to do with leadership."

A few interviewees also discussed avoiding duplication and ensuring management alignment towards the end goal of innovation.

5.1.2 Killing Low Potential Innovation Early, Often and Fast

In Section Four, we described the significance of a systemised approach, where companies give innovation the discipline that any structured and organised work demands. To maximise the chance of success, Telcos' innovation pipeline must connect with the operations and strategy of the business. This requires adopting a 'funnel' like innovation pipeline and not a 'tunnel' like approach.

As ideas get developed, limited resources force the Telcos to pursue only the best ideas and to filter out projects with limited potential – hence the process can be illustrated by a funnel metaphor. This means that projects that do not look like being successful should be killed early, often, and as quickly as possible. Quotes from our sample support this philosophy (see Box 5-1).

Box 5-1: Telcos Stress `Kill Low Potential Innovation Early, Often and Fast'

- "You have to have a very good process for killing things that are not working - this is something that Telcos are traditionally not very good at, as we become very committed to projects, over engineer, re-work, over specify because it has to be 99.99 [percent reliable] because that's what we are used to. We have to be more experimental, get services out, see what is working and what is not, take products that are not working and kill quickly."
- "We need an innovation process that allows you, if you have read things wrong, to kill things quickly."
- "One of the mistakes commonly made is to over engineer products, and not kill them off soon enough."
- "Find a way to engage with a fast start but potential to fail fast if necessary."

Source: Snell Consultancy Telco Innovation Survey, 2004

5.1.3 Products / Services

Interviewees placed emphasis on how the innovation process should deliver differentiated products, services or solutions to the customer (see Box 5-2).

Box 5-2: Telcos View Service Differentiation as a Major Innovation Outcome

- "To have something in the market that is different at a price and level of service that others find difficult to compete with."
- "The big difference for us is about bundling of services, preparing to be a little bit off the wall, bundling, wrap arounds, creating stickiness."

Source: Snell Consultancy Telco Innovation Survey, 2004

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5.1.4 Customer Focus

Many interviewees believed successful innovation also depends on how focused their organisations were on market-led innovation. In order to provide such customer-oriented products, Cisco Systems encourages their engineers to talk directly to customers and users incorporating the customer's requirements and needs in the development of new ideas or products. Cisco Systems CEO John Chambers states "Our key differentiating feature is our fanatical approach to customer satisfaction". This is demonstrated by Cisco Systems' philosophy of capturing 'the customers viewpoint first' and also through initiatives such as the regular publishing of 'third party numerical measures of customer satisfaction' (Cisco, 2004).

5.2 How Innovative is Your Company?

"Everyone likes working at our company. Who would like working at a company that is not innovative?"
- VP, Advanced Services Development, UK Mobile Operator

Mindful of what they described as characteristics of successful innovators, how innovative did the interviewees consider their own companies to be in comparison to others in the sector? Given that each of the Telcos did not measure their company wide innovation performance one would expect the answers to be fairly subjective.

Not surprisingly most interviewees considered their organisation to be as innovative as the next. Responses generally included subjective benchmarking judgements, such as a declaration of how innovative interviewees perceived their proprietary technologies and engineering capabilities, experience base, financial strength and pricing strategy. One interviewee considered the question somewhat of an insult, since he believed no one would want to work for a company that was not innovative?

Clearly the answer you get will depend on whom you ask in an organisation. In a Boston Consulting Group survey (2003) 64 percent of the CEO's interviewed said that their companies 'innovation ability was better than their competitors', yet only 42 percent of the managers agreed with that statement.

So how do you compare or benchmark the different levels of innovation performance between Telcos?

For a report such as this one, we can only rely on indicators that refer to the main questions, such as demonstrating that innovation is a strategic priority, level of firm renewal, allocation of innovation resources, and management of the innovation process. These areas arguably represent the tip of the iceberg, but nevertheless provide focus in areas that will be pertinent when considering any comparison.

5.3 The Snell Innovation Learning Curve™

Academics and innovation gurus have likened a companies' level of understanding of innovation to an evolving journey. Industry managers practising innovation within their organisations also understand this (see Exhibit 5-1).

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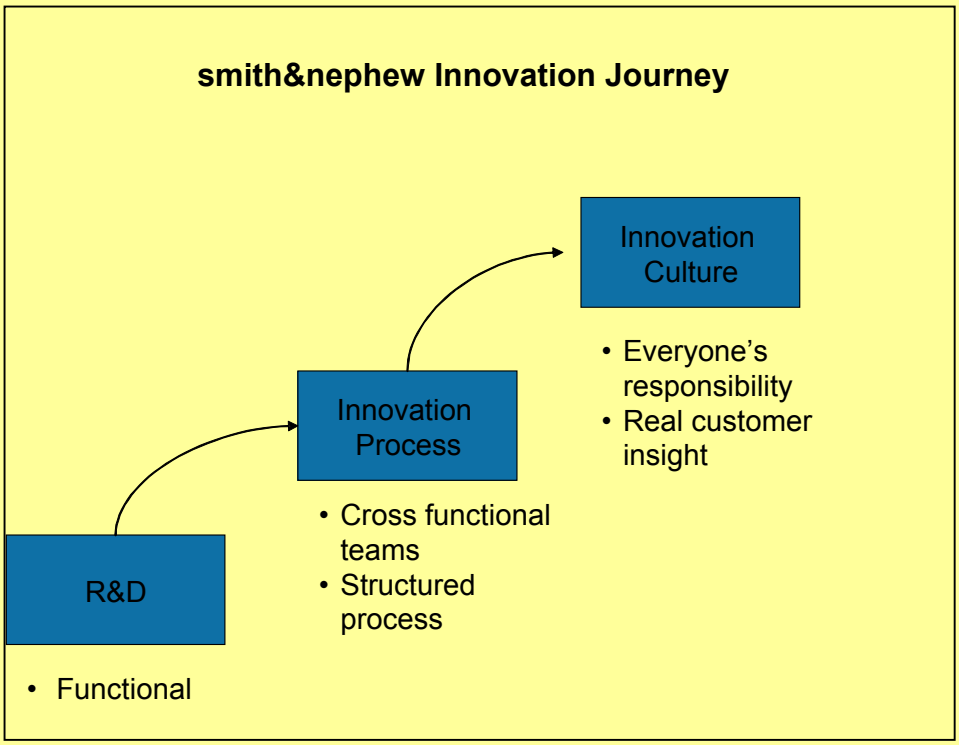
Exhibit 5-1: Innovation Best Practice - smith&nephew's Evolving Innovation Journey

BEST PRACTICE LESSONS FROM OTHER SECTORS - iMPROVING INNOVATION PERFORMANCE OVER TIME

Sector: Healthcare	**Company:** *smith&nephew*

Andy Boyles, the Global Innovation Director of smith&nephew, described how `establishing best practice innovation is a journey not a quick fix'. He presented smith&nephew's innovation journey as shown below.

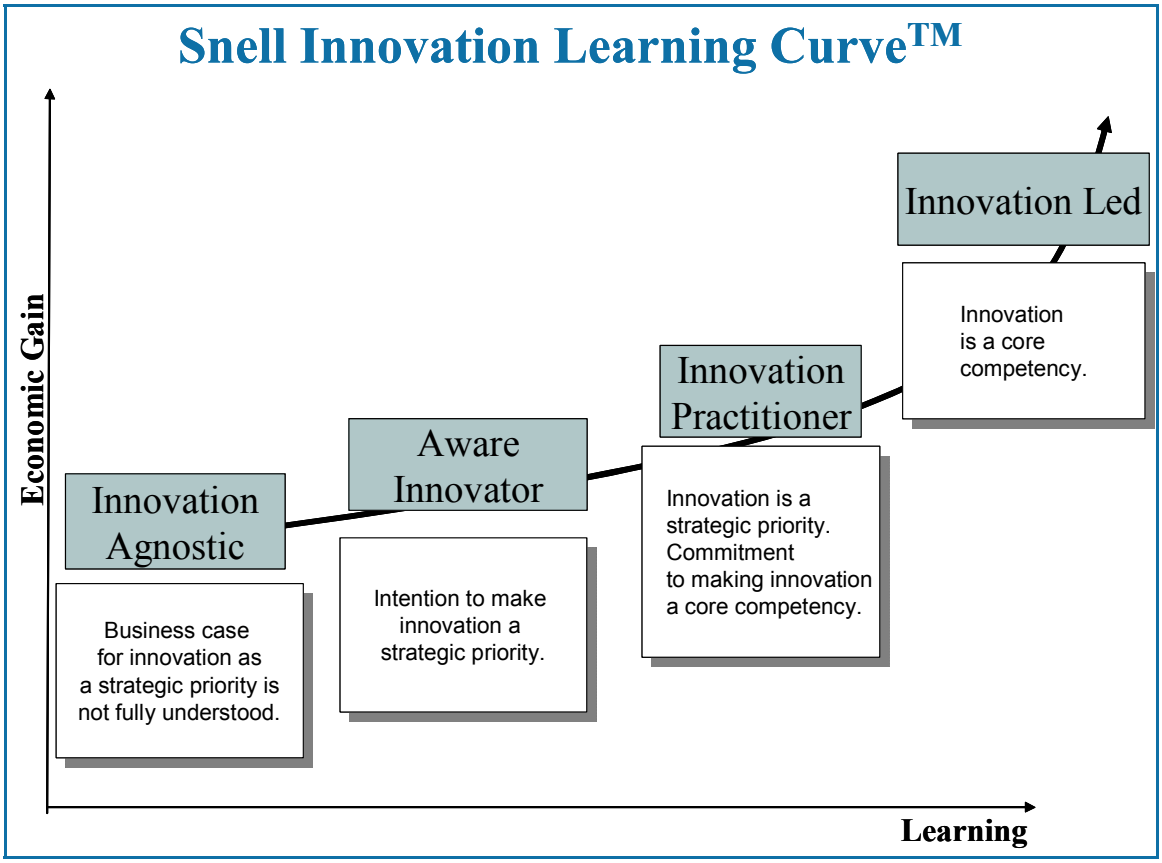


Smith&nephew is a global medical device company with revenues of over £1 billion and a market capitalisation of £4 billion (FTSE, March 2004). Over the last five years there has been a group wide transformation programme to address `how can we excel at innovation?' This has resulted in an increased contribution of new products as a percentage of sales from 5 percent to 15 percent and an improved innovation project delivery from 25 percent of milestones being delivered to 95 percent.

Source: Andy Boyles, Global Innovation Director, Smith-Nephew Medical Ltd, Innovation Summit, 25-26th March 2004, London

For the purposes of this report we have assigned all the companies that we interviewed to different stages along the Snell Innovation Learning Curve™. We use the Snell Innovation Learning Curve™ as a diagnostic tool to help us and our clients analyse how they are performing with regard to the management of innovation. As shown in Figure 5-1 it describes four main stages associated with change along an `Innovation Learning Curve'.

Figure 5-1: The Snell Innovation Learning Curve™



Source: Snell Consultancy, 2004

The definitions for each stage are as follows:

- **Innovation Agnostic** - A company, at its current level of innovation knowledge that does not understand that an organisation-wide commitment to, and focus on, innovation could lead to a competitive advantage over rivals and greater sustainable, profitable revenue growth in the long run. The business case for innovation as a strategic priority is not fully understood.

- **Aware Innovator** – A company whose people, including the executive management team are, to some extent, cognisant of the return on innovation investment by making innovation a strategic priority. They intend to make innovation a strategic priority.

- **Innovation Practitioner** – A company that has made innovation a strategic priority and is also actively practising the business discipline of innovation management on a company wide basis. It has most likely, already made considerable progress with implementing a number of the innovation organisational building blocks required for success. Innovation is a strategic priority and the company is committed to making innovation a core competency.

- **Innovation Led** – A company that continuously strives to ensure that innovation is a core competency on a company-wide basis through implementing all of the innovation organisational building blocks. It is able to demonstrate a track record of successfully implementing innovation

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improvement programmes, which have realised significant, above average, returns for its shareholders.

Assigned to each stage are different attributes associated with innovation organisational building blocks. These building blocks cover innovation strategy and leadership, organisational design and operations (see Table 5-2). At each stage along the curve, not all companies will have every attribute associated with the innovation organisational building blocks required for that stage. For positioning purposes companies will exhibit the majority to warrant their ranking.

Table 5-2: Innovation Organisational Building Blocks

Building Blocks \ Description	Innovation Agnostic	Innovation Aware	Innovation Practitioner	Innovation Led
	`Business case for innovation as a strategic priority is not fully understood.'	`Intends to make innovation a strategic priority.'	`Innovation is a strategic priority. Committed to making innovation a core competency.'	`Innovation is a core competency.'
Innovation Strategy & Leadership	▪ Inherent in founder / owner	▪ Executive Board recognition	▪ Innovation policy / strategy communicated ▪ Funding ▪ Accountability	▪ Strategic pillar ▪ Innovation performance linked to success KPIs of the business
Innovation Organisational Design	▪ Partial innovation process	▪ Partial innovation process ▪ Dispersed innovation teams	▪ Systematic innovation process ▪ Dedicated resources ▪ Operational performance measured ▪ Disparate ideas databases	▪ Systematic / adaptive innovation process ▪ Company-wide co-ordinated innovation teams ▪ Company-wide electronic idea management ▪ Formal knowledge management system(s)
Innovation Operations		▪ Pockets of intrapreneurial spirit ▪ Maverick innovation projects	▪ Creativity and innovation ▪ Training and education	▪ Innovation skills HR policy ▪ Innovation behaviours recognised and rewarded at all levels

Source: Snell Consultancy, 2004

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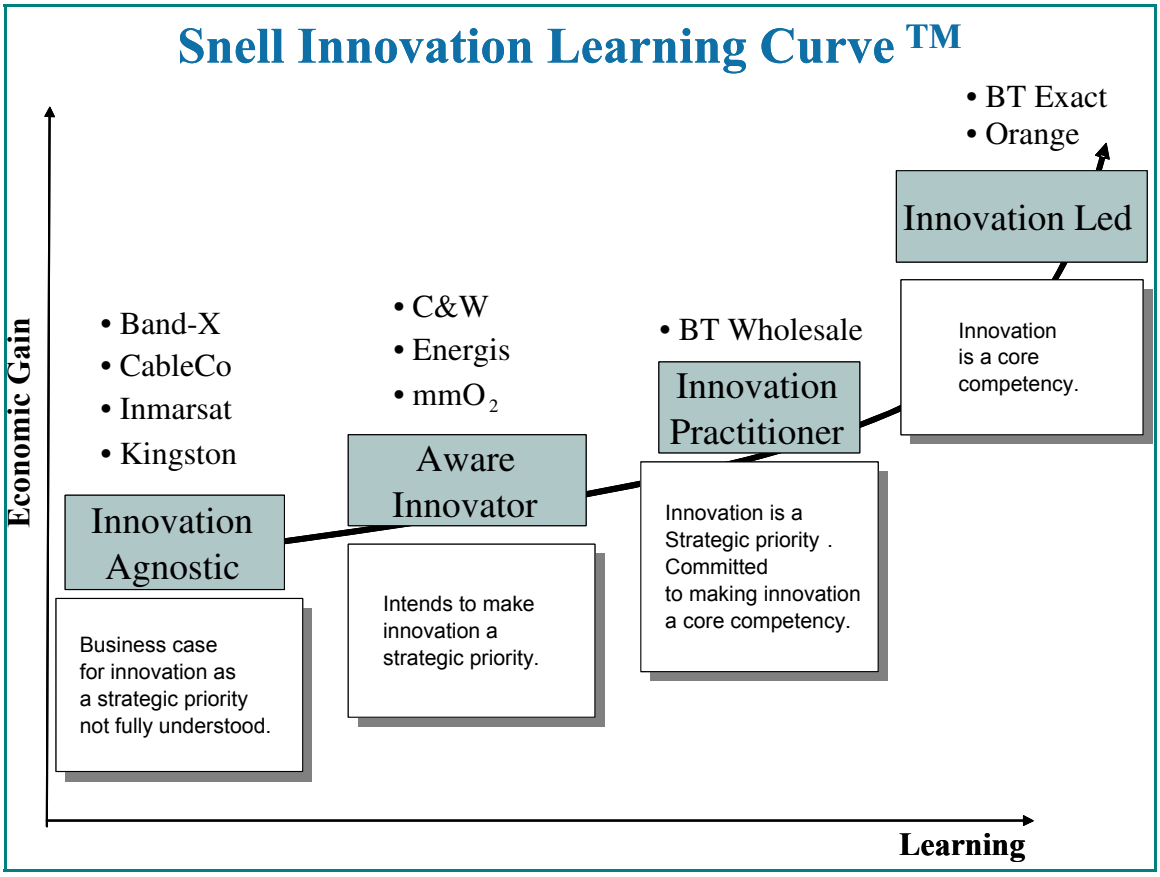
We have placed the Telcos that we interviewed at one of these stages of innovation learning (see Figure 5-2) based on information provided in interviews.

Figure 5-2: Telcos' Positioning along the Snell Innovation Learning Curve™



Source: Snell Consultancy Telco Innovation Survey, 2004

Our mission in doing so is neither to insult nor to confuse, but to communicate and explain with as much clarity as we can muster what we have observed. What should become abundantly evident to the reader is the `ranking' of the Telcos along the curve at different stages is not important – more so, the roadmap that it has provided for discussion and debate with regard to improving innovation performance.

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5.4 Agnostic Innovators

"Innovation is not a strategic priority here. You will get blank looks."
- Director of Telephony, UK Cable Company

Four Telcos that we interviewed have an 'agnostic' approach to innovation. The interviewees did not convince us that innovation was a strategic priority, and in one case, as the quote above shows, we were explicitly told it was not.

The companies are:

▪ **Band-X** http://www.band-x.com
▪ **CableCo**
▪ **Inmarsat Ventures Limited** http://www.inmarsat.com
▪ **Kingston Communications** http://www.kcom.com/

5.4.1 Band-X

Business Background

Band-X operates trading floors for the buying and selling of bandwidth capacity used in IP (Internet Protocol), voice, and network applications. Other services include collocation (space rental) and telecoms job placement.

At the core of Band-X's services are carrier-neutral trading platforms for the buying, selling and physical delivery of wholesale telecoms capacity. In London and New York, Band-X has over 250 carriers and service providers connected to its trading exchanges.

Band-X's customers range from former PTTs, competitive carriers, ISPs, satellite providers, hosting companies, content owners and distributors to start-ups and enterprises.

Band-X was co-founded by the current Chairman, Richard Elliot, and Marcus de Ferranti in 1997. The company is not publicly traded. It is headquartered in London, with investors including Madison Dearborn and Morgan Stanley Venture Partners.

Financial Performance

Revenues grew by 28 percent in 2002 and Loss Before Interest, Tax, Depreciation and Amortisation (LBITDA) was reduced from £8.5 million in 2001 to £3.7 million in 2002 (see Table 5-3).

Table 5-3: Band-X Revenue & LBITDA Decline (1999 to 2002)

Band-X	Year Ended Dec 31, 1999 £(m)	Year Ended Dec 31, 2000 £(m)	Year Ended Dec 31, 2001 £(m)	Year Ended Dec 31, 2002 £(m)	CAGR for the Period (%)
Revenue	4	12	28	35	106.1%
LBITDA	0	-2	8.5	3.7	-

Source: Band-X company accounts 2000, 2002 submitted to Companies House.
Note: Revenues are from continuing operations. LBITDA has been calculated using Band-X's accounting policy for this ratio (i.e. LBITDA is calculated as operating loss before exceptional items, adding back depreciation, amortisation and loss on disposal of fixed assets). Accounts for the year ended Dec 31st 2003 will not be available until October 2004

Innovation Heritage

As a new technology-based firm (NTBF), Band-X innovated from the start, establishing a first mover advantage by creating the bandwidth trading market in 1997. Band-X's 'inherent' innovation ability enabled survival during difficult times, by launching product innovations such as, the voice exchange, IP exchange, and Band-X managed services.

Innovation Potential

The company has undergone some interesting developments, especially throughout the dot com boom era. The business model is sound, the management team very experienced, and from market entry to its position today it has carved itself a niche in the market place.

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Current tight market conditions and the requirement to generate cash have forced Band-X to be more tactical in deployment with innovation taking a back seat. This is by no means to say that Band-X is incapable of innovation. On the contrary, the depth of industry knowledge in the management team is impressive and should provide a platform for innovation in the future. Current priorities are to manage within the financial constraints. However, when assessed against the criteria we have set, our research reveals the strong reluctance by its Chairman to either consider what Band-X's innovation strategy should be, or assign separate budget, resources and performance measures to innovation efforts. Table 5-4 summarises our findings with regard to Band-X's approach to innovation and evidence that innovation is not a strategic priority for Band-X.

Table 5-4: Proof Points that Innovation is NOT a Strategic Priority for Band-X

Band-X		
Research Objective	**Proof Points**	**Finding**
#1. How have UK Telcos been approaching the management of innovation during the recent industry downturn (2000-2003)?	Is what innovation means for the company explicitly defined?	☒
	Is the understanding of innovation single-dimensional / multi-dimensional?	Single-dimensional
	Does a business case for innovation exist?	☒
	Is there evidence of innovation continuity during the downturn?	☒
#2. What evidence is there that innovation is a strategic priority for UK Telcos today?	Is there an innovation strategy in place?	☒
	Is there board level accountability for innovation?	☑
	Is there a ring-fenced innovation budget?	☒
	How extensive is the innovation process (partial / systematic / adaptive)?	**Partial**
	Is innovation performance measured on a company-wide basis?	☒
	Are there dedicated innovation resources?	☒

Source: Snell Consultancy Telco Innovation Survey, 2004

Undoubtedly significant commitment to innovation leads to a competitive advantage over rivals and enhances shareholder value through higher levels of sustainable, profitable revenue growth in the long term. However, Band-X considers that it cannot divert more resources to R&D and innovation generally because it would be `against the commercial constraint of focussing on returns for shareholders'. Therefore, we conclude that the business case for innovation is out of reach and, at least for the present, Band-X is an **agnostic** innovator.

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5.4.2 CableCo

Business Background

CableCo was established in the UK over 20 years ago. CableCo's vision is to become known as the best broadband communications company in Britain. Its strategy to achieve this vision revolves around:

- Broadband leadership
- Customer focus
- Cost control.

CableCo currently connects millions of homes and provides multi-channel television, telephone and internet services to millions of UK households, and voice and data telecommunications services to business customers. It employs over 10,000 people in the UK.

Financial Performance

CableCo's revenue growth has been 6 percent CAGR for the period 2000 to 2003 whilst EBITDA has grown by 19.5 percent CAGR for the same period (see Table 5-5).

Table 5-5: CableCo Revenue & EBITDA Growth (2000 to 2003)

CableCo	Year Ended Dec 31, 2000 £(m)	Year Ended Dec 31, 2001 £(m)	Year Ended Dec 31, 2002 £(m)	Year Ended Dec 31, 2003 £(m)	CAGR for the Period (%)
Revenue*	-	-	-	-	6%
EBITDA*	-	-	-	-	19.5%

Source: CableCo Annual Reports, 2000 - 2003
*Actual figures not presented to maintain CableCo's anonymity.

Innovation Heritage

The key innovations that CableCo have brought to the UK market include cable broadband and price innovations. For example, CableCo was the first to bring un-metered tariffs to the UK. Historically, growth has come from acquisitions. This has created barriers to collaborative innovation. For example, there are switches from four different vendors in the network, making partnering with strategic vendors difficult. As one senior executive told us,

"any requirement for innovation in the first place was due to the fact that the mergers had occurred and a direction needed to be formulated."
- Director of Telephony

Innovation Potential

Table 5-6 summarises our findings with regard to CableCo's approach to innovation and evidence that innovation is not a strategic priority for CableCo.

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Table 5-6: Proof Points that Innovation is NOT a Strategic Priority for CableCo

CableCo		
Research Objective	**Proof Points**	**Finding**
#1. How have UK Telcos been approaching the management of innovation during the recent industry downturn (2000-2003)?	Is what innovation means for the company explicitly defined?	☒
	Is the understanding of innovation single-dimensional / multi-dimensional?	Single-dimensional
	Does a business case for innovation exist?	☒
	Is there evidence of innovation continuity during the downturn?	☒
#2. What evidence is there that innovation is a strategic priority for UK Telcos today?	Is there an innovation strategy in place?	☒
	Is there board level accountability for innovation?	☒
	Is there a ring-fenced innovation budget?	☒
	How extensive is the innovation process (partial / systematic / adaptive)?	**Partial**
	Is innovation performance measured on a company-wide basis?	☒
	Are there dedicated innovation resources?	☒

Source: Snell Consultancy Telco Innovation Survey, 2004

Innovation is not seen as a strategic priority at CableCo. We were told that,

"innovation is a very much undefined area…innovation is not a word that the CableCo culture embraces."
- Director of Telephony

CableCo does not have deep pockets to develop its own technologies. The business model revolves more around the concept of identifying a market requirement and then partnering with an external party to satisfy the requirement. This may mean that CableCo becomes the world's first user of a particular technology, by trialling a technological innovation.

The ongoing financial situation of the company has had a direct impact on innovation, specifically with regard to the availability of cash to finance innovation projects.

"CableCo is not very innovative, it is very difficult to get any budget allocated for innovation projects, management's change of direction in strategy, from blue sky to control of finances, has had an impact."
- Director of Telephony

CableCo is an example of a discontinuous innovator. In the past, a business division called `Strategy and Innovation' acted as a conduit for individuals and groups that had ideas that were not on the product road map. This was a means to vocalise and to document ideas and concepts to senior management. However,

"the division got dropped, as it was not seen as a core remit of the group due to a lack of resources."
- Principal Engineer NT&IT

CableCo does have a partial innovation process. It is limited to classical new product development and it is owned by the product management teams. See Box 5-3:

Box 5-3: CableCo's Views on its Innovation Process

- "Now the whole of the network is tightly controlled, there is no freedom to think about innovation, engineering is tightly tied to time managed projects."
- "What the technology group does is driven by product road maps from the individual business divisions."
- "If it is not on the product roadmap then it does not get done, and people will stop you spending time on it…it is a very product focussed approach."

Source: Snell Consultancy Telco Innovation Survey, 2004

CableCo is **agnostic** in its approach to the management of innovation limited by severe financial restraints.

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5.4.3 Inmarsat Limited

Business Background

Inmarsat Ltd is a provider of global mobile satellite communications services. Inmarsat began operating in 1979 as an Inter-Governmental Organisation (IGO) to provide global safety and other communications for the maritime community. Starting with a customer base of 900 ships in the early 1980s, it grew rapidly to offer similar services to other users on land and in the air. In 1999 it became the first IGO to be transformed into a private company. Inmarsat now supports links for phone, fax and data communications to more than 287,000 ship, vehicle, aircraft and other mobile users.

Inmarsat Group Holdings Ltd is the parent company of Inmarsat Ltd and it has two further operating companies, Invsat, covering VSAT system integration, and Rydex, providing maritime e-mail and automated data communications systems.

The Inmarsat business strategy is to pursue a range of new data opportunities with the convergence of information technology, telecoms and mobility, while continuing to serve traditional maritime, aeronautical, land-mobile and remote-area markets. A cornerstone of this strategy are the new Inmarsat I-4 satellites, the largest commercial communications spacecraft, currently scheduled to enter service in 2005. These will form the backbone of Inmarsat's planned Broadband Global Area Network (BGAN) services, offering phone and mobile data communications at up to 432kbit/s for Internet access, mobile multimedia and many other advanced applications. BGAN will also be compatible with 3G mobile phones.

Financial Performance

For the year ended December 31, 2003, the group reported revenues of US$504.4 million, an increase of US$41.4 million, or 8.9%, as compared with the year ended December 31, 2002. Table 5-7 contains a four year financial summary which shows profitable, but unspectacular, growth.

Table 5-7: Inmarsat Group Revenue & EBITDA Growth (2000 to 2003)

Inmarsat	Year Ended Dec 31, 2000 £(m)	Year Ended Dec 31, 2001 £(m)	Year Ended Dec 31, 2002 £(m)	Year Ended Dec 31, 2003* £(m)	CAGR for the Period (%)
Revenue	279	304	288	281	0.3%
EBITDA	62	59	114	112	21.5%

Source: Inmarsat Annual Accounts 2000 to 2003
Notes: converted into UK £ sterling using the £:US$ year end exchange rate from www.bankofengland.co.uk (2000, 1.49; '01, 1.45; '02, 1.61; '03, 1.79)
* During the year ended December 31, 2003, Inmarsat Ventures Limited was acquired. Consequently, the results for the year ended December 31, 2003 represent an aggregate of the results of Inmarsat Ventures Limited for January 1, 2003 through December 17, 2003 and the results for Inmarsat Group Limited for December 17, 2003 through December 31, 2003.

Innovation Heritage

The Inmarsat website claims that the company has the `most versatile and reliable satellite network in the world' which gives it `the capability to deliver innovative services and solutions on an unprecedented scale'.

In total there are 20 services that serve the traditional base, aeronautical and maritime. Past service innovations that Inmarsat takes credit for are:

- The world's first satellite phone the Mini M
- Maritime services in the late 1970s.

In 2002 Inmarsat launched three major services covering land, air, maritime:

- Regional BGAN
- Fleet family new maritime services (ISDN/packet data enabled)
- Swift 64 service (aeronautical ISDN and packet data 64kbit/s service).

We were informed that, there were no new service/product launches in 2003 and none were planned for 2004.

Innovation Potential

Table 5-8 below summarises our findings with regard to Inmarsat's approach to innovation and evidence as to whether innovation is viewed as a strategic priority or not.

Table 5-8: Proof Points that Innovation is NOT a Strategic Priority for Inmarsat

Inmarsat Ventures Limited		
Research Objective	**Proof Points**	**Finding**
#1. How have UK Telcos been approaching the management of innovation during the recent industry downturn (2000-2003)?	Is what innovation means for the company explicitly defined?	☒
	Is the understanding of innovation single-dimensional / multi-dimensional?	Single-dimensional
	Does a business case for innovation exist?	☒
	Is there evidence of innovation continuity during the downturn?	☒
#2. What evidence is there that innovation is a strategic priority for UK Telcos today?	Is there an innovation strategy in place?	☒
	Is there board level accountability for innovation?	☒
	Is there a ring-fenced innovation budget?	☒
	How extensive is the innovation process (partial / systematic / adaptive)?	**Partial**
	Is innovation performance measured on a company-wide basis?	☒
	Are there dedicated innovation resources?	☒

Source: Snell Consultancy Telco Innovation Survey, 2004

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There is no doubt that BGAN and its predecessor, Regional BGAN, are revolutionary communications systems that enable users to surf the web, send e-mail and transfer a host of other data at high speed from anywhere within the satellite footprint. Regional BGAN service won a 'Highly Commended' award in the Best New Service category at the recent World Communications Awards 2003 and the Network Infrastructure Award (Retail and Wholesale Banking) at the 2003 Banker Technology Awards.

However, Inmarsat is also clearly still navigating itself through a transitionary phase of becoming more market led as opposed to engineering led. It is repositioning itself from being seen as the `media communications provider of last choice'. Competitive pressures from UMTS, and 3G services are forcing Inmarsat to provide solutions that will be used where there are now also other offerings, both terrestrial or cellular, and particularly where those competing offerings are unreliable or slow, patchy or do not provide adequate data rates.

There is no formal accountability for innovation at Inmarsat (see Box 5-4).

Box 5-4: Inmarsat's Views on the Accountability for Innovation at the Company

- "There is no budget or central unit responsible for innovation. Innovation is pushed around the organisation or delegated."
- "There is no innovation plan or innovation director."

Source: Snell Consultancy Telco Innovation Survey, 2004

Despite Inmarsat's drive to deliver BGAN by 2005 we could find little evidence that Inmarsat is any more than **agnostic** with regard to the management of innovation.

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5.4.4 Kingston Communications

Business Background

Kingston Communications was established in Yorkshire in 1904. The company was partially floated on the Stock Exchange in 1999 to expand capabilities and the business on a national level. As well as maintaining the East Yorkshire's telecommunications infrastructure, Kingston offers a broad range of products and services including voice, data, Internet and mobile connectivity, contact centres and a range of managed services, broadband over satellite, and a specialist directory-publishing unit.

The company is structured around 4 core business divisions; *inbusiness, inmedia, Communications and incontact,* and *information.* The inbusiness division, which contributes more than 60% of the group revenue, has recently been re-structured to create three more operating units. The intention is to offer a more targeted approach to the national voice, data & IP businesses.

The main focus of the organisation according to Michael Abrahams, the Chairman of Kingston is a '*continual drive towards profitability and cash generation*'.

Financial Performance

Kingston reported a modest increase in turnover until March 2003 of £330 million, compared to the previous year of £318 million (see Table 5-9). However, the group showed operating losses of £20 million for the same period and although this was reduced by more than 40% compared to the previous year, the board decided not to recommend that the company pay dividends for last financial year.

Table 5-9: Kingston Communications Revenue & EBITDA Growth (2000 to 2003)

Kingston Communications	Year Ended Mar 31, 2000 £(m)	Year Ended Mar 31, 2001 £(m)	Year Ended Mar 31, 2002 £(m)	Year Ended Mar 31, 2003 £(m)	CAGR for the Period (%)
Revenue	184	232	318	330	21.5%
EBITDA	28	17	29	41	13.6%

Source: Kingston Communications Annual Reports 2000 to 2003

Innovation Heritage

To date, Kingston Communication has innovated through use of pioneering leading edge technology in the UK and in customer services. Some of Kingston's key achievements in the last decade have been:

- Achieving 90% broadband coverage in the East Yorkshire franchise area, against a national average of 60%
- Being the first Telco to offer itemised billing, un-timed dial-up internet access, internet access over ADSL technology and a fully digital network in the UK
- Pioneering the use of ADSL to provide interactive television services.

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Innovation Potential

Kingston Communication's approach to innovation and lack of evidence that innovation is a strategic priority for Kingston Communications are some of the findings summarised below (see Table 5-10).

Table 5-10: Proof Points that Innovation is NOT a Strategic Priority for Kingston

Kingston Communications		
Research Objective	**Proof Points**	**Finding**
#1. How have UK Telcos been approaching the management of innovation during the recent industry downturn (2000-2003)?	Is what innovation means for the company explicitly defined?	☒
	Is the understanding of innovation single-dimensional / multi-dimensional?	Single-dimensional
	Does a business case for innovation exist?	☒
	Is there evidence of innovation continuity during the downturn?	☒
#2. What evidence is there that innovation is a strategic priority for UK Telcos today?	Is there an innovation strategy in place?	☒
	Is there board level accountability for innovation?	☒
	Is there a ring-fenced innovation budget?	☒
	How extensive is the innovation process (partial / systematic / adaptive)?	**Partial**
	Is innovation performance measured on a company-wide basis?	☒
	Are there dedicated innovation resources?	☒

Source: Snell Consultancy Telco Innovation Survey 2004

Kingston Communications would consider that everything it does is innovative because it is a small, agile company. But we could find no proof points that innovation is a strategic priority for Kingston Communications – **Innovation Agnostic.**

5.5 Aware Innovators

"I could not point to anyone at an executive level, even the CEO, and say there is a person who is accountable for innovation"

- VP Global Product Portfolio

Three Telcos that we interviewed are definitely innovation aware. But we were not convinced by the interviewees that innovation was a strategic priority, and in one case, as the quote above shows, we were explicitly told it was not. The companies are:

▪ **Cable & Wireless (C&W)** http://www.cw.com/new/
▪ **Energis** http://www.energis.com/
▪ **mmO$_2$** http://www.mmo2.com

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5.5.1 C&W

Business Background

Cable & Wireless is an international telecommunications company, with customers in 80 countries. The company has been in operation for 130 years. In 2003 it had over 23,000 employees. In the UK, C&W is a FTSE 100 quoted company, delivering voice, data and IP services to the business sector.

The company integrated its global and regional divisions in 1993 to create a group of national telecoms companies with strong focus in their primary markets. A common strategy binds these national companies with shared marketing, technical and regulatory skills; and established relationships both with each other and with national operators across the world.

Financial Performance

In 2003, C&W announced a three year plan to bring the organisation under tighter financial control and to lay the foundations to rebuild the company as a profitable telecommunications operator. This announcement was made after a significant drop in Group revenue from £5.7 billion in 2002 to £3.677 billion in 2003 (see Table 5-11).

C&W Group

Table 5-11: C&W Group Revenue & EBITDA Growth (2000 to 2004)

C&W Group	Year Ended Mar 31, 2000 £(m)	Year Ended Mar 31, 2001 £(m)	Year Ended Mar 31, 2002 £(m)	Year Ended Mar 31, 2003 £(m)	Year Ended Mar 31, 2004 £(m)	CAGR for the Period (%)
Revenue	9,201	7,851	5,748	3,677	3,384	-22.1%
EBITDA	2,467	1,782	822	334	486	-33.4%

Source: C&W Annual Reports 2000 to 2004

C&W UK

In the UK, revenues remained flat for the year ended March 31st, 2004 (see Table 5-12).

Table 5-12: C&W UK Revenue & EBITDA Growth (2000 to 2004)

C&W UK	Year Ended Mar 31, 2000 £(m)	Year Ended Mar 31, 2001 £(m)	Year Ended Mar 31, 2002 £(m)	Year Ended Mar 31, 2003 £(m)	Year Ended Mar 31, 2004 £(m)	CAGR for the Period (%)
Revenue	1,865	2,365	2,145	1,684	1,661	-2.9%
EBITDA	N/A	N/A	N/A	N/A	N/A	N/A

Source: C&W Annual Reports 2000 to 2004

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Some of the company's key highlights in 2003 were:

1. Closing down the USA operation
2. Halting the decline of UK revenues for the first time in three years. Operational restructuring was reported to be on plan with £93 million reduction in cost base
3. Definition of a strategic framework to be the clear number two telecommunication provider in the UK market and world leader in small and medium sized countries
4. Bulldog acquisition.

Innovation Heritage

The first visible attempt at innovation goes back to early 1990s in the days of Mike Harris, the CEO of Mercury (a former UK division), who set up the concept of 'Imagine'. His vision was to transform Mercury from a small company to a large one through innovation. He, therefore, created the philosophy of Big Mercury and Little Mercury as two totally separate entities. The thinking behind this was for Big Mercury to focus on the core business, whilst Little Mercury would work on leading innovation projects that would drive the entire organisation forward into growth. The initiative failed and the post mortem showed two reasons for it:

1. There were no processes in place
2. No one was running the business with an eye on the P&L.

Perhaps the other notable initiative driven by C&W is the 1993 'Innovation Scheme' set up primarily to help sell into the Business Markets sales channel. The aim of the scheme was to encourage staff at all levels to put forward new ideas that would create large revenue opportunity for C&W. However, the scheme proved unworkable, with hundreds of ideas (primarily from engineers) in the pipeline that had little or no revenue opportunity associated with them, and no management sponsorship or accountability. As a senior manager explained:

"we had the foresight to create the front end of the process but we were unable to figure how to link it to the rest of the business processes."
- VP Global Product Portfolio

On the whole, C&W's most successful innovation efforts have been the provision of a versatile, resilient and high performance network infrastructure. The company considers itself to have a strong competency in 'the service culture' and the 'ability to listen to customers'. One of channels created to achieve this goal, is the 'Voice of the Customer' (VoC) survey. This was created as part of a programme to encourage and monitor feedback from customers. Customer comments enable C&W to make the improvements that customers want to see.

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Innovation Potential

Table 5-13: Proof Points that Innovation is NOT a Strategic Priority for C&W

C&W		
Research Objective	**Proof Points**	**Finding**
#1. How have UK Telcos been approaching the management of innovation during the recent industry downturn (2000-2003)?	Is what innovation means for the company explicitly defined?	☒
	Is the understanding of innovation single-dimensional / multi-dimensional?	Single-dimensional
	Does a business case for innovation exist?	☒
	Is there evidence of innovation continuity during the downturn?	☒
#2. What evidence is there that innovation is a strategic priority for UK Telcos today?	Is there an innovation strategy in place?	☒
	Is there board level accountability for innovation?	☒
	Is there a ring-fenced innovation budget?	☒
	How extensive is the innovation process (partial / systematic / adaptive)?	**Partial**
	Is innovation performance measured on a company-wide basis?	☒
	Are there dedicated innovation resources?	☒

Source: Snell Consultancy Telco Innovation Survey 2004

The innovation initiative that Harris started over 20 years ago in Mercury is continuing in a different form under different leadership. On the surface it looks like C&W is making some effort to get back on the right path. Evidence is the re-launch of the Innovation Scheme in 2003, with sponsors in the organisation, an innovation web site and regular articles in the internal newsletter. The scheme also offers financial incentives to encourage staff to come forward with new ideas.

The outcome of the initiative so far has been interesting to say the least. The key highlights are:

1. Over 90% of all ideas that come through are killed immediately as it is impossible to associate any value to them.
2. Over 50% of all ideas are sourced from Operations (not from Sales and Marketing or Customer Services). This is perhaps due to the Operations Director's presence on the innovation panel. He has also played a key role as a champion of the initiative.

It is worrying that little input has come through Sales and Marketing channels, considering that the organisation is looking to them as a source of innovation.

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The key issue is that C&W lacks an innovation strategy and innovation culture. Innovation is not in the DNA of the organisation and as one executive stated,

"it is hard to point to anyone in C&W and say that they are accountable for innovation. There are small groups of people that understand what innovation is, but that is very different from having an innovation culture."
- VP Global Product Portfolio

This was confirmed by another executive who told us that "innovation had not really been landed in C&W as yet".

C&W is **innovation aware.**

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5.5.2 Energis

Business Background

Energis plc fell into the administrator's hands in 2002. A reformed Energis Ltd has been largely owned by banks and former bondholders and headed by Archie Norman, former Chief Executive of ASDA and John Pluthero, the former head of Freeserve.

The company shifted its focus from European ambitions to the UK only. The new management replaced about 60% of staff that served mid-market customers (i.e. telecom spend of £100k to £1million) with 500 or so staff from non-telecoms backgrounds, such as retail and IT.

Today, Energis provides a product portfolio which is organised into four categories: Contact Centres, Data, Voice, and Internet Services. Some of its key clients include the BBC, Tesco, Wanadoo (Freeserve), Centrica and National Grid Transco. Energis is BT Wholesale's 3rd largest customer with an annual spend of £500m.

Financial Performance

Revenue was down on last year but Energis has reported a profit this year, only two years after restructuring (see Table 5-14). The progress has been attributed to the leadership of Archie Norman and John Pluthero, and the new corporate culture they are implementing.

Table 5-14: Energis Revenue & EBITDA Growth (2001 to 2004)

Energis Ltd	Year Ended Mar 31, 2001* £(m)	Year Ended Mar 31, 2002** £(m)	Year Ended Mar 31, 2003 £(m)	Year Ended Mar 31, 2004 £(m)	CAGR for the Period (%)
Revenue	840	-	770	745	-1.6%
EBITDA	142	-	103	125	10.2%

Source: Energis plc Annual Report 2001 and Energis 2004 Results Announcement
Notes: * Energis plc / ** Energis Ltd. Due to the change in ownership CAGRs for revenue and EBITDA have only been calculated for 2003-04. Accounts are not available for 2001/02.

Innovation Heritage

In 1999, the company set up a large innovation team of 40 people to "refresh the products, generate new business and excite the customers." Three years later, the group was disbanded and it was not until 2003/04 that Energis was once again, ready to launch into the 'Do Innovation' phase.

With the new management team that has been brought in, and after a number of organisational shake ups, the first building blocks of the innovation process started to be laid. Innovation was defined as Gate One in the product development cycle and the idea collection, evaluation and customer testing processes were put in place.

The Head of the Innovation and Development team states "his life is about getting product managers to say YES". He was somewhat surprised that he was still allowed to head up innovation at the time when Energis was at the brink of collapse. Despite the fact that innovation is about long-term growth, he stated that "having someone focused on the five to seven year window is a bit of luxury," considering that Energis had short term priorities.

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Innovation Potential

Table 5-15: Proof Points that Innovation is NOT a Strategic Priority for Energis

Energis		
Research Objective	**Proof Points**	**Finding**
#1. How have UK Telcos been approaching the management of innovation during the recent industry downturn (2000-2003)?	Is what innovation means for the company explicitly defined?	☒
	Is the understanding of innovation single-dimensional / multi-dimensional?	Single-dimensional
	Does a business case for innovation exist?	☒
	Is there evidence of innovation continuity during the downturn?	☑
#2. What evidence is there that innovation is a strategic priority for UK Telcos today?	Is there an innovation strategy in place?	☒
	Is there board level accountability for innovation?	☒
	Is there a ring-fenced innovation budget?	☒
	How extensive is the innovation process (partial / systematic / adaptive)?	**Partial**
	Is innovation performance measured on a company-wide basis?	☒
	Are there dedicated innovation resources?	▲

Source: Snell Consultancy Telco Innovation Survey 2004
Key to symbols: R&D – Research & Development / V – Venturing / IU - Innovation Unit / ▲- Innovation Director / Head of Innovation

Energis states that it is entering the next phase of the programme to drive innovation. It is aware that "if it does not innovate, it will bumble along, produce small growth percentage, and the banks are going to say it is not worth it." Innovation is now seen as the force that will give the company the leap forward it needs.

However, despite an abundance of new ideas, the Head of Innovation stated that one of the biggest issues he faced was a lack of resources, funding, and having people to champion ideas. He also believes that the company needs to remain highly business conscious and set appropriate targets at all times. Engaging with the right set of external resources and experts will also bring benefit to the company. He is aware that there is a cultural issue with a 'Not Invented Here' (NIH) syndrome among key managers.

Energis does not believe that innovation can be measured as it may constrain the effectiveness of innovation. Measurement is therefore seen relevant to long term results only. This begs the question then as to how Energis can manage innovation when it is unable to measure results in the short and medium term. Mindful of the challenges faced by the innovation team, it is difficult to understand how the company envisages driving innovation forward unless it makes innovation a strategic priority – it is **innovation aware.**

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5.5.3 mmO_2

Business Background

mmO_2 plc is a leading provider of mobile communication services in Europe, deploying mobile packet data capabilities based on GPRS technology.

In November 2001, mmO_2 was hived off from the BT Group. Today the company operates in three countries – the UK, Germany and Ireland – and it also has operations in the Isle of Man (Manx telecom) and a mobile internet portal business. In September 2001, a new brand, mmO_2, was announced for the Group with introduction in May 2002.

As of May 2004, the business served 18.2 million mobile customers. The company employs in excess of 14,000 employees.

UMTS licenses are held for the UK, Germany, Isle of Man, and Ireland. On the Isle of Man, mmO_2 launched Europe's first fully operational UMTS network in December 2001, offering a full range of high-bandwidth applications, including video telephony and advanced business and e-commerce solutions.

Financial Performance

Combined Group turnover for the year ended 31 March 2004 reached £5,646 million, up 22 percent from £4,611 million for the preceding year (see Table 5-16). During the period 2000 to 2004, revenues have grown 21 percent CAGR and over 37 percent EBITDA.

Table 5-16: mmO_2 Revenue & EBITDA Growth (2000 to 2004)

mmO_2 plc	Year Ended Mar 31, 2000 £(m)	Year Ended Mar 31, 2001 £(m)	Year Ended Mar 31, 2002 £(m)	Year Ended Mar 31, 2003 £(m)	Year Ended Mar 31, 2004 £(m)	CAGR for the Period (%)
Revenue	2,618	3,200	4,276	4,611	5,646	21.2%
EBITDA	385	317	433	858	1,367	37.3%

Sources: mmO_2 Annual Report 2003 & preliminary results for the 12 months ended 31st March 2004

Innovation Heritage

mmO_2 have been first to market with the following successful innovations:

- The first mobile operator in the world to launch a commercial GPRS (2.5G) service
- The first 3G network in Europe
- The Xda, the world's first combined colour PDA and mobile handset.

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Other notable product and service launches include:

- The range of Blackberry™ handhelds for the corporate market developed in partnership with wireless solutions designer, manufacturer and marketer, Research in Motion (RIM)
- mmO_2 Active, a branded intuitive, icon-driven menu (Jun, 2003)
- UK mobile video service (Oct, 2003)
- mmO_2 Music, Europe's first mobile `over the air' music download service
- UMTS Laptop cards for mmO_2 corporate customers in Germany
- surf@home service, allows mmO_2 Homezone customers in Germany to connect their home PCs to the Internet via the mmO_2 UMTS network.

Innovation Potential

Table 5-17: Proof Points that Innovation is NOT a Strategic Priority for mmO_2

mmO_2		
Research Objective	**Proof Points**	**Finding**
#1. How have UK Telcos been approaching the management of innovation during the recent industry downturn (2000-2003)?	Is what innovation means for the company explicitly defined?	☒
	Is the understanding of innovation single-dimensional / multi-dimensional?	Multi-dimensional
	Does a business case for innovation exist?	☒
	Is there evidence of innovation continuity during the downturn?	☑
#2. What evidence is there that innovation is a strategic priority for UK Telcos today?	Is there an innovation strategy in place?	☒
	Is there board level accountability for innovation?	☑
	Is there a ring-fenced innovation budget?	☒
	How extensive is the innovation process (partial / systematic / adaptive)?	**Systematic**
	Is innovation performance measured on a company-wide basis?	☒
	Are there dedicated innovation resources?	☒

Source: Snell Consultancy Telco Innovation Survey 2004

mmO_2 exhibits none of the more formal or harder aspects of managing innovation that we would expect to see. "Innovation is not listed as an explicit strategic priority" and we were not provided with any documented evidence of mmO_2's innovation process although it was described as being systematic in nature.

Despite this, mmO_2 has successfully launched a number of new products and services in recent years. Furthermore, since 2000, mmO_2 has produced impressive and consistent revenue and EBITDA growth.

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This leads to a number of interesting questions:

- Is mmO_2's financial success, therefore, just a function of the growth rates within the mobile markets (UK, Germany, Isle of Man, and Ireland) that it operates in?
- Or is mmO_2's financial success a function of the softer elements of innovation such as the level of creativity in the organisation and establishing the right culture to foster innovation?
- If the last hypothesis is true, has this just happened by good fortune or has mmO_2 made a conscious effort to get the cultural climate right for innovation?

Our research reveals that mmO_2 has made a conscious effort to develop the right culture to facilitate innovation (see Box 5-5).

Box 5-5: mmO_2's View that its Culture Facilitates Innovation

- "Innovation is built into what we do at all levels."
- "It [innovation] is internal to the culture of the organisation, `innovation happens', by accessing different areas of the business, marketing, R&D, services provision."
- "People have the mindset to be innovative."

Source: Snell Consultancy Telco Innovation Survey, 2004

The criteria we have set for assessing whether Telcos are managing innovation as a strategic priority excludes the softer element of culture, a difficult element of innovation to assess. Judged against the criteria that we have set we have placed mmO_2 as being **innovation aware**. However, mmO_2 is the closest to being a practitioner of innovation of all the other telcos in this category.

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5.6 Innovation Practitioners

"Jigsaw pieces all there but a little muddled."
- Head of Business Innovation Unit, UK Fixed Line Telco

We have classified a line of business within one company that we interviewed as being a practitioner of innovation; they are clearly innovation aware and have the ability to `do innovation' as well `manage innovation', with the relevant support systems and processes in place. The company is:

- **BT Wholesale**

  http://www.btwholesale.com

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5.6.1 BT Wholesale

Business Background

BT Wholesale (BTW) is a major line of business (LoB) within the BT Group. BTW provides network services and solutions within the UK. Its network consists of 873 local and trunk processor units, 121.7 million kilometres of copper wire and 7.3 million kilometres of optical fibre. As of March 2004, BTW had an installed base of more than 2.2 million ADSL broadband connections in the UK. By May 2004 the number of broadband lines had increased to 2.45 million and 2,652 exchanges had been upgraded for broadband with total UK coverage reaching 90 percent.

BTW generates revenue from two major customer bases. Revenue is generated firstly, through internal trading with other BT lines of business, BT Retail and BT Global Services. Secondly, revenue is derived from providing wholesale products and solutions externally to other operators interconnecting with BT's fixed network including, since its de-merger in November 2001, mmO_2. In total BTW serves over 500 communication companies, fixed and mobile network operators, and service providers.

BTW employs over 27,000 people, which, at March 2003, accounted for 28 percent of the 96,300 people that work for the BT Group in the UK.

Financial Performance

Table 5-18 shows, for the year ended 31st March 2004, that BTW's revenue totalled £10,859 million, a decline of 3 percent on 2003 following a decrease to £11,247 million for that year of 9 percent from 2002. BTW's revenue in 2003/04 accounted for 58 percent of BT Group's total revenues of £18,519 million. Looking past 2003 BTW's revenues and Earnings before Interest, Taxation, Depreciation and Amortisation (EBITDA) have declined at 2.5 percent and 4.9 percent CAGR respectively since 2001.

Table 5-18: BT Wholesale Revenue & EBITDA Decline (2001 to 2004)

BT Wholesale	Year Ended Mar 31, 2001 £(m)	Year Ended Mar 31, 2002 £(m)	Year Ended Mar 31, 2003 £(m)	Year Ended Mar 31, 2004 £(m)	CAGR for the Period (%)
Revenue					
External	3,287	3,911	3,525	3,445	1.6%
Internal	8,441	8,345	7,722	7,414	-4.2%
Total (Group)	**11,728**	**12,256**	**11,247**	**10,859**	**-2.5%**
EBITDA	4,276	4,156	4,156	3,681	-4.9%

Sources: BT Group Annual Reports 2001 - 2004

Internal Revenues: Since 2001 there has been a decline in internal revenues of 4.2 percent Compounded Average Growth Rate (CAGR). This has been caused mainly by the continued maturing of the legacy fixed telecoms market, resulting in BT Retail and, in turn, BTW being exposed to lower sales volumes and prices.

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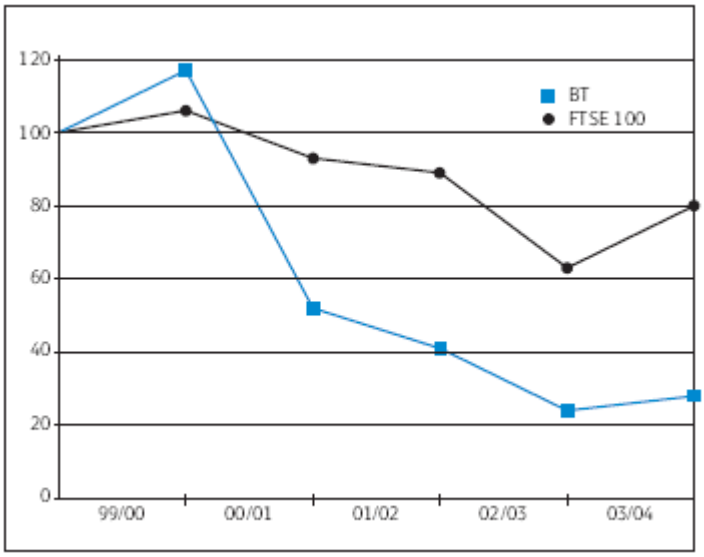
External Revenues: The decline in external revenues in the 2003 and 2004 financial years is due to, according to BTW, `the mobile termination rate impact and price reductions, Network Charge Control (NCC) and other Oftel price determinations, coupled with unfavourable market conditions' (BT Annual Report and Form 20-F 2004). However, as our table shows, over a longer period there has been a marginal growth in external revenues of over 1 percent CAGR between 2001 and 2004.

It should be noted that the share price for the BT Group as a whole has significantly underperformed against the FTSE100 (see Figure 5-3).

Figure 5-3: BT's Total Shareholder Return (TSR) Performance (1999 to 2004)



Source: BT Annual review 2003/04, Datastream
Note: Rebased at 100 on 1 April 1999, adjusted for the rights issue and de-merger of BT's mobile business in the 2002 financial year relative to the FTSE 100.

BTW's overall declining revenue is only part of the sum total of flat revenue growth which is being experienced by the BT Group as a whole. For the last financial year ended 31st March 2004, BT Group revenues actually declined by 1 percent from £18,727 million to £18, 519 million.

Since the beginning of 2002, there has been a drive within BT for profitable revenue growth. As described by Chairman, Sir Christopher Bland in the 2001/02 BT Group Annual Report, (BT, May 2002) this has been targeted at the `new wave' services arena, which includes information communications and technology (ICT), broadband, mobility and managed services. Consequently BT now reports revenues, which are derived from these new wave services and products, and the proportion from traditional legacy telecoms products.

Whilst traditional revenues have been declining year on year (2003, 3 percent decline; 2004, 5 percent decline) new wave services have been increasing (2003, 46 percent; 2004, 30 percent). The point is that overall revenue growth is still flat (as Figure 5-4 shows).

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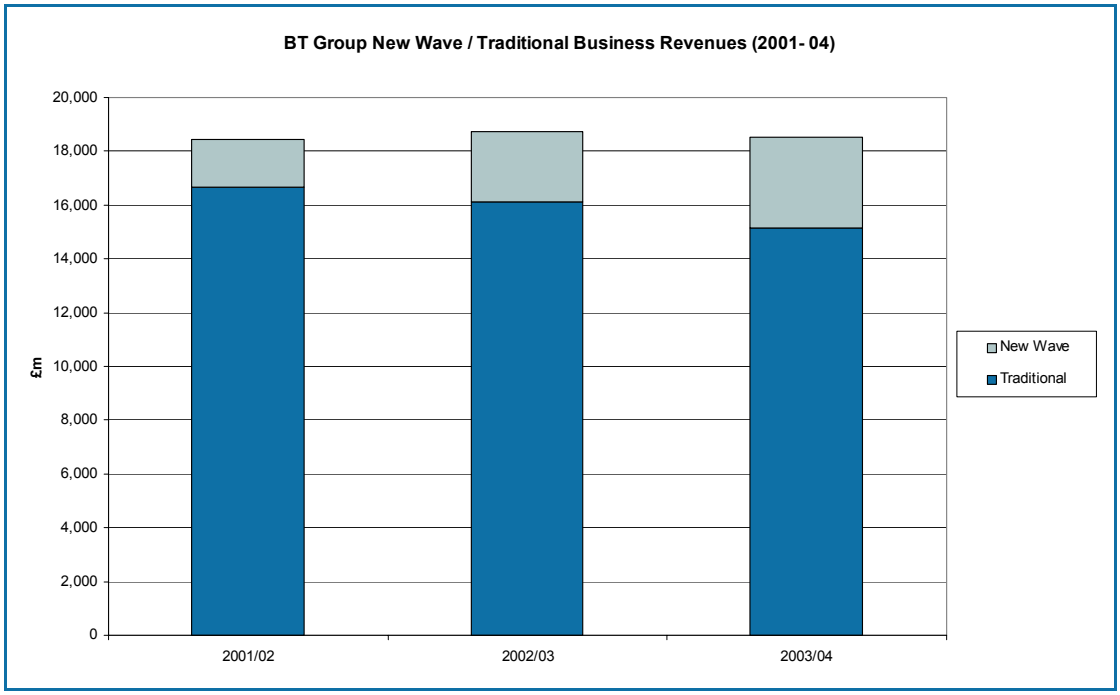
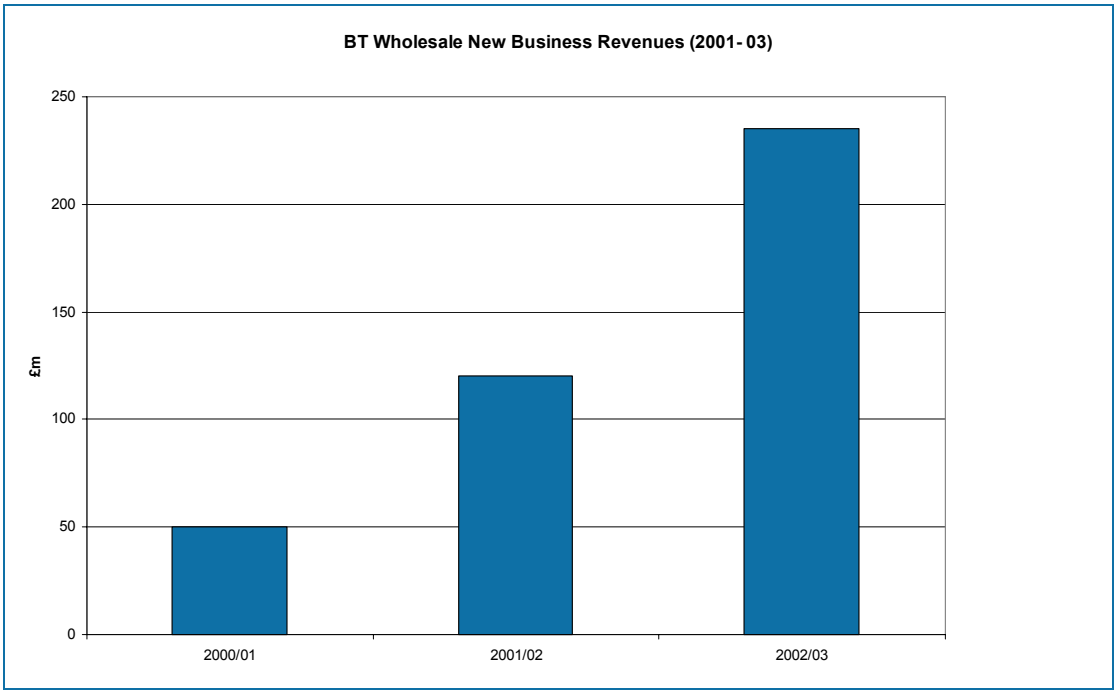
Figure 5-4: BT Group New Wave & Traditional Business Revenues (2001 to 2004)



Source: BT Annual Reports (2001-04)

For BTW a key performance indicator (KPI) is the amount of new business revenue. This was over £225 million for year ended 31st March 2003 (see Figure 5-5).

Figure 5-5: BT Wholesale New Business Revenues (2001 to 2003)



Source: BT Wholesale Brochure & Snell Telco Innovation Survey 2004

Innovation Heritage

BT Wholesale grew external revenues ten fold from £380 million in 1997 to over £3 billion today with one of BTW's key strategies being to grow profitable revenues. This has been, and is continuing to be, achieved through the development of new business opportunities to:

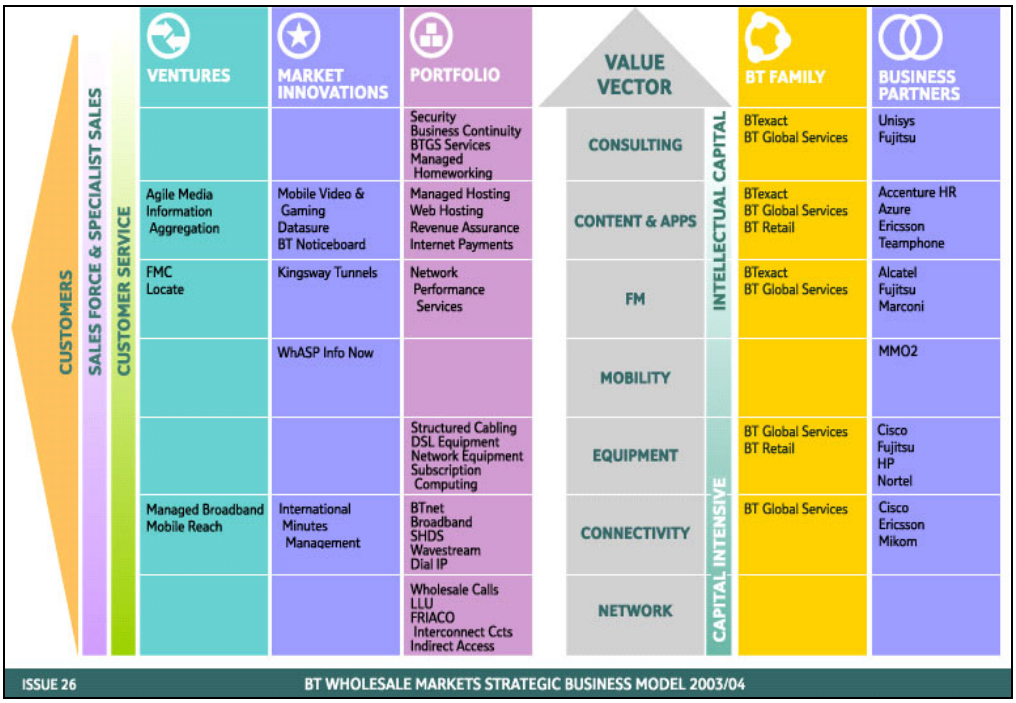
- Deliver incremental revenue growth
- Embrace Innovation
- Position BTW as the supplier of choice
- Create new business products.

Consequently, BTW has expanded its small set of wholesale products and services into an `A-Z' list of products and services', covering the following 20 product families:

▪ Access ▪ Applications ▪ Business Partnership ▪ Call Centres	▪ Co-location and Hosting ▪ Content ▪ Equipment ▪ Interconnect Services	▪ International Services ▪ IP ▪ IT Solutions ▪ Mobile Services for Mobile Operators	▪ Network Services ▪ Number Information ▪ Operator Services ▪ Private Circuits	▪ Professional Resources ▪ Resilience ▪ Revenue Assurance ▪ Security

Furthermore, BTW has set out its path to profitable revenue growth through its Strategic Business Model as shown in Figure 5-6.

Figure 5-6: BT Wholesale Markets' Strategic Business Model (2003/04)



Source: `The Whole Story' BTW Brochure, 2003/04

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In particular, Figure 5-6 shows the BTW range of products and services and the areas they fit into depending on their scale and maturity as follows:

- Ventures - focus on rapid growth in key markets
- Innovation - very new experimental products
- Portfolio - mature and large scale new products

Innovation Potential

Table 5-19: Proof Points that Innovation IS a Strategic Priority for BT Wholesale

BT Wholesale		
Research Objective	**Proof Points**	**Finding**
#1. How have UK Telcos been approaching the management of innovation during the recent industry downturn (2000-2003)?	Is what innovation means for the company explicitly defined?	☑
	Is the understanding of innovation single-dimensional / multi-dimensional?	Multi-dimensional
	Does a business case for innovation exist?	☑
	Is there evidence of innovation continuity during the downturn?	☑
#2. What evidence is there that innovation is a strategic priority for UK Telcos today?	Is there an innovation strategy in place?	☒
	Is there board level accountability for innovation?	☑
	Is there a ring-fenced innovation budget?	☑
	How extensive is the innovation process (partial / systematic / adaptive)?	**Systematic**
	Is innovation performance measured on a company-wide basis?	☒
	Are there dedicated innovation resources?	R&D / V/ IU

Source: Snell Consultancy Telco Innovation Survey, 2004
Key to symbols: R&D – Research & Development / V – Venturing / IU - Innovation Unit / ▲- Innovation Director / Head of Innovation

The commitment that BTW has made to innovation through its innovation programme under the leadership of CEO Paul Reynolds is impressive. The programme includes: a significant financial investment in innovation, the development of an innovation pipeline, and initiatives aimed at infusing innovation into the culture of BTW.

Paul Reynolds states that:

"We're constantly searching to create and innovate at BT Wholesale. It's about developing our products and services to satisfy our customers, and delivering solutions to their business problems. That's our competitive edge."

At the March 2004 `BTW Open for Innovation' customer event, BTW summarised its innovation programme in the following seven stages:

1. **Network employees:** Internal network to support ideas generation. Employees rewarded for ideas that make the grade. Internal ideas schemed saved BT £7million in 02/03 alone.

2. **Tap into external networks:** Links to industry and academia – customers, partners, venture capitalists, Henley Centre, London Business School, BT Exact, Silicon Valley and the Far East.

3. **Strong leadership and culture:** Innovation unit set up with committed resources both people and financially. Board level agenda.

4. **Select & filter best ideas:** Innovation ideas hopper and strategic filter process to ensure the correct ideas are being progressed.

5. **Test new concepts thoroughly:** A proven methodology of 'rapid experimentation', which enables swift assessment and market testing of innovative ideas and reduces time to market.

6. **Implement ideas in a structured way:** Factory led way to scale launch.

7. **Monitor delivery of innovation:** Robust metrics, success criteria.

BTW's commitment is evidenced by the multi-million pound budget allocated to innovation activities and a dedicated team of innovation generators within the Business Innovation Unit. The Business Innovation Unit manages BTW's innovation production line from the collection of ideas in an `ideas hopper' through to full scale launches. BTW defines the purpose of the innovation process as follows:

`The BT Wholesale innovation process determines how, year-on-year, BT Wholesale will extend its expertise into new markets, generating increased new business sales revenue and improved margins'
- `The Whole Story, BT Wholesale 2002/03'.

The sources of ideas and the stages of the BT Wholesale innovation process are reproduced here in Figure 5-7.

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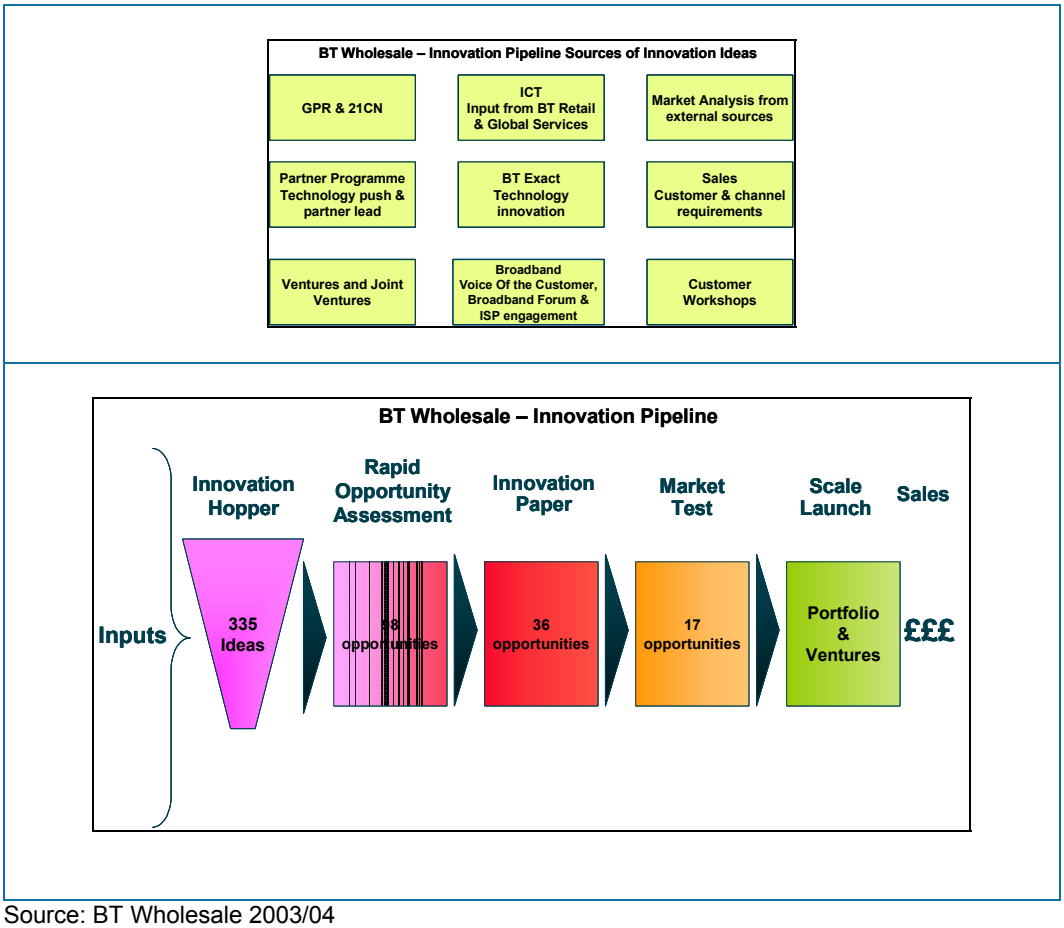
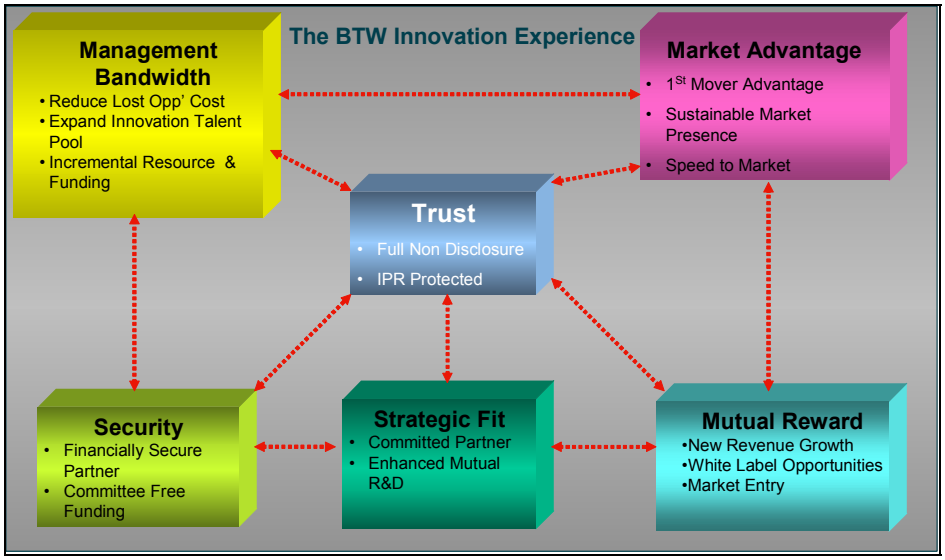
Figure 5-7: BT Wholesale Sources of Ideas & Innovation Pipeline



Source: BT Wholesale 2003/04

Part of the innovation team's responsibility is `customer-led' innovation, driven by customer workshops and events, such as `BTW Open for Innovation'. Figure 5-8 shows how BTW believes it can work with its customers as part of an `innovation experience centred on trust.'

Figure 5-8: The BT Wholesale Innovation Experience



Source: BT Wholesale 2003/04

Finally, despite the fact, as shown in Figure 5-7, that employees were not seen by BTW as a source of ideas, employee related activities are in place to help establish a culture of innovation. Some of the initiatives which we were given access to included:

- The Arrow Awards programme - rewards customer service
- The Market Leaders Programme - to encourage people to come up with weird, wacky, and wonderful ideas to create new revenue opportunities
- Ideas climate - through the Innovation Hopper to promote the creativity needed to allow ideas to be floated up the organisation
- Accelerated Implementation Methodology - how the implementation of innovation should happen.

The question is, though, is all of this working? BT Group investors, no different from any other fixed-line telecoms company's investors, have not exactly given a vote of confidence in recent years (see Figure 5-3).

For just BTW, in terms of innovation products and services outcomes, irrespective of whether the services are commercially successful, the rate of new service launches is impressive. Table 5-20 summarises 24 services which were either at the test or launch stages when we interviewed BTW this year.

Table 5-20: BT Wholesale `Bow Wave' of Products and Services (2003/04)

BT Wholesale `Bow Wave'				
▪ Broadband IP Stream ▪ Surfport ▪ BT net family ▪ Short Haul Data Services ▪ Flexible working	▪ Network FM ▪ Equipment distribution ▪ Consultancy ▪ Service Provider Networks ▪ Revenue Assurance	▪ Directory Enquiry Services ▪ DataStream ▪ WHASP-Virtual Mobile ▪ Accurate Billing Solutions ▪ Intelligent Numbers	▪ WHASP-Internet Payment ▪ Locate ▪ Managed broadband ▪ Managed Home working ▪ Wireless LAN	▪ Agile Media (JV with BT Retail) ▪ Auto Data backup (Datasure) ▪ SDSL ▪ Fixed SMS (Wordsworth)

Source: BT Wholesale 2003/04

BTW CEO, Paul Reynolds, would point out that `innovation contributed to a healthy financial year for us in 2002/03…we grew our external turnover by 2 percent and our new business grew by a staggering 96 percent to £235 million.' Furthermore, BTW presented to its customers what expectations would be, from more investment in the innovation pipeline (see Figure 5-9).

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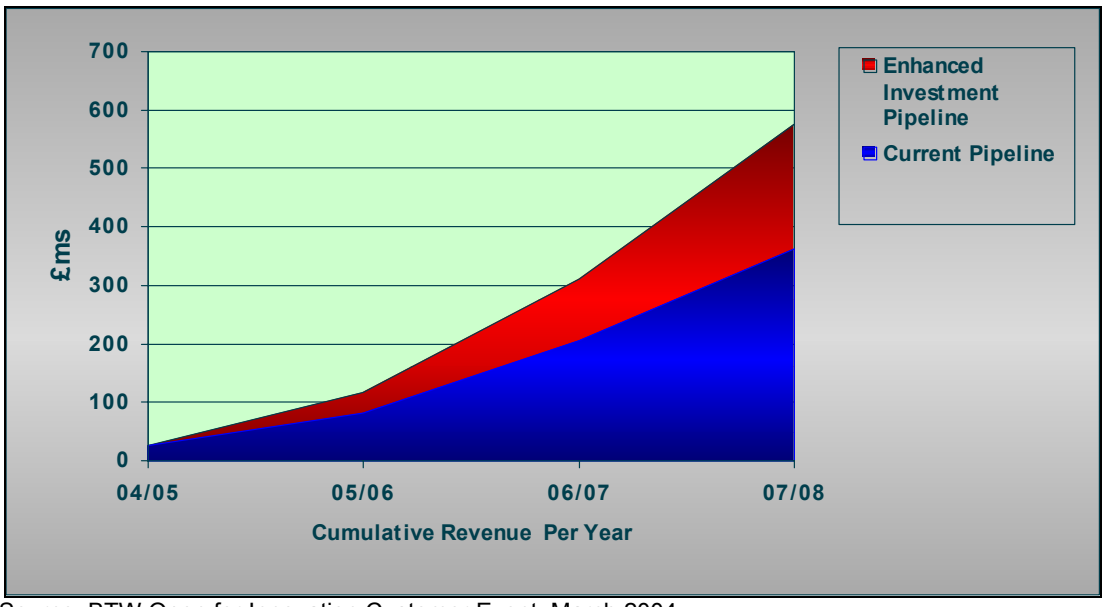
Figure 5-9: BT Wholesale's Future Revenue Growth from Innovation Investment



Source: BTW Open for Innovation Customer Event, March 2004

It was recently reported in the national press, that BT's and BTW's strategy is working. One analyst commented `the trick [to arrest BT's fixed-line market share decline] pulled off by Chairman Bland and his Chief Executive, the ever talkative Ben Verwaayen, has been to soften the blow by building new streams of revenues' (Mail on Sunday, May 2004).

There is no doubt in BTW's commitment to innovation as a strategic priority, and its efforts as a **practitioner of innovation management**.

This has resulted in innovations such as the recently launched Wholesale Web Call Connect (WWCC) service, which uses a technology interface called Parlay X. This service has been developed in close collaboration with one of the major sources for ideas for BTW, BT Exact which is BT's research, technology and IT operations business. We turn to BT Exact next.

5.7 Innovation Led

To qualify for this classification, the Telcos had to prove that innovation is a strategic priority, have a supporting innovation process, have resources in place, and have strong senior management support. An innovation led company continuously strives to ensure that innovation is a core competency on a company-wide basis through implementing all of the innovation organisational building blocks.

It is able to demonstrate a track record of successfully implementing innovation improvement programmes, which have realised significant, above average, shareholder returns for its sector. These companies already operate with an innovative culture. Innovation is a core competence with continual audits on innovation performance.

An example of an organisation-wide approach for creating and sustaining an inspiring environment for innovation is 3M's philosophy on a 15 percent work time for innovation, whereby staff are free to take 15 percent of their time to explore new opportunities. *"The 15 percent rule is unique to 3M. Most of the inventions that 3M depends upon today came out of that kind of individual initiative…" (3M, 2002).*

Our `innovation led' companies or businesses are:

▪ **BT-Exact** http://www.btexact.com
▪ **Orange** http://web.orange.co.uk/

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5.7.1 BT Exact

Business Background

BT Exact is the research, technology and IT operations business for BT Group. It has a team of over 6,000 `technologists' and one of the world's largest communications research and development facilities. BT Exact has research labs in MIT, Boston, Kuala Lumpur, and its' main facilities at Adastral Park, Ipswich in the UK. It has also set up the following organisational vehicles for implementing innovation:

- IPValue Management – exclusive long-term patent licensing programme with Silicon valley based IPValue Management
- Brightstar – created in January 2000 as a business incubator with the goal of commercialising BT's extensive patent portfolio
- NVP Brightstar – created in March 2003 in partnership with Coller Capital and New Venture Partners (NVP) to create a new independent corporate venturing partnership.

Financial Performance

Table 5-21 presents the investment BT makes in research and development (2000 – 04), of which BT Exact plays a major part. This shows a slight reduction of nearly one percent CAGR for the period 2000 to 2004.

Table 5-21: BT Exact R&D Investment (2000 to 2004)

BT Exact	Year Ended Mar 31, 2000 £(m)	Year Ended Mar 31, 2001 £(m)	Year Ended Mar 31, 2002 £(m)	Year Ended Mar 31, 2003 £(m)	Year Ended Mar 31, 2004 £(m)	CAGR for the Period (%)
	(£m)	(£m)	(£m)	(£m)	(£m)	%
R&D Investment	345	364	362	380	334	-0.8%

Sources: BT Group Annual Reports 2000 to 2004

Innovation Heritage

BT's laboratories at Adastral Park have been responsible for some of the world's far-reaching advances in telecommunications technology. These include the advancement of single-mode optical fibre and the technology and worldwide standards supporting passenger phones on aircraft and videoconferencing.

BT Exact claims to have over 14,000 active patents and a track record of successful innovation in optics, wireless, broadband, web services and most recently pervasive intelligence (see Figure 5-10).

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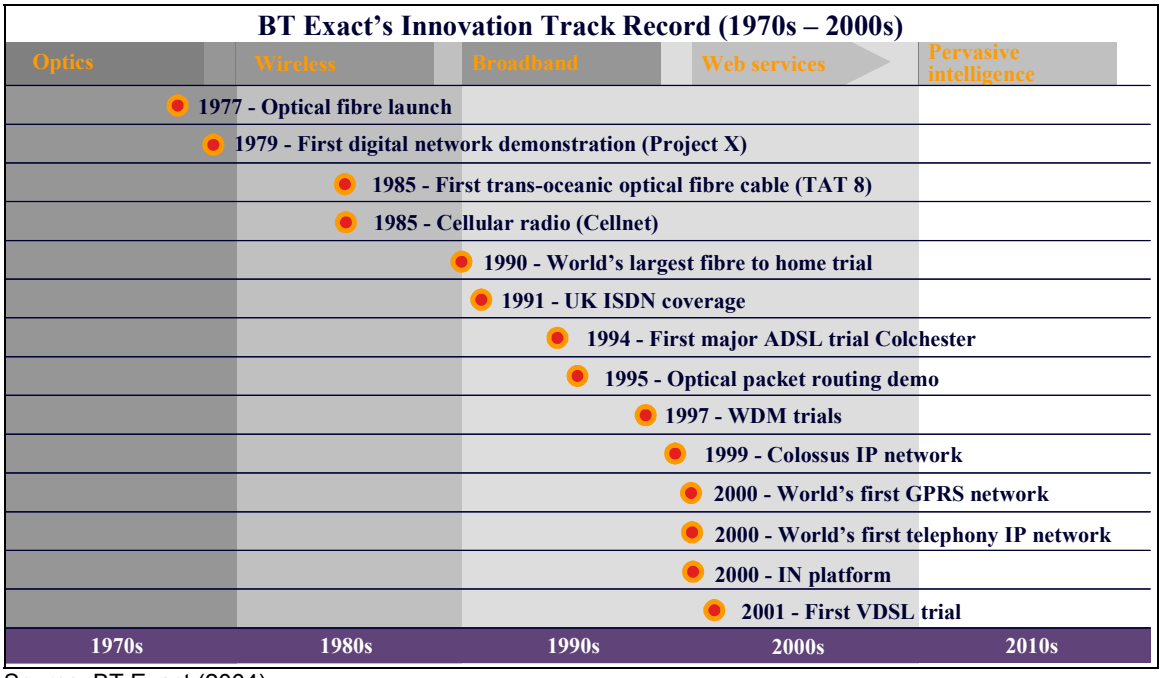
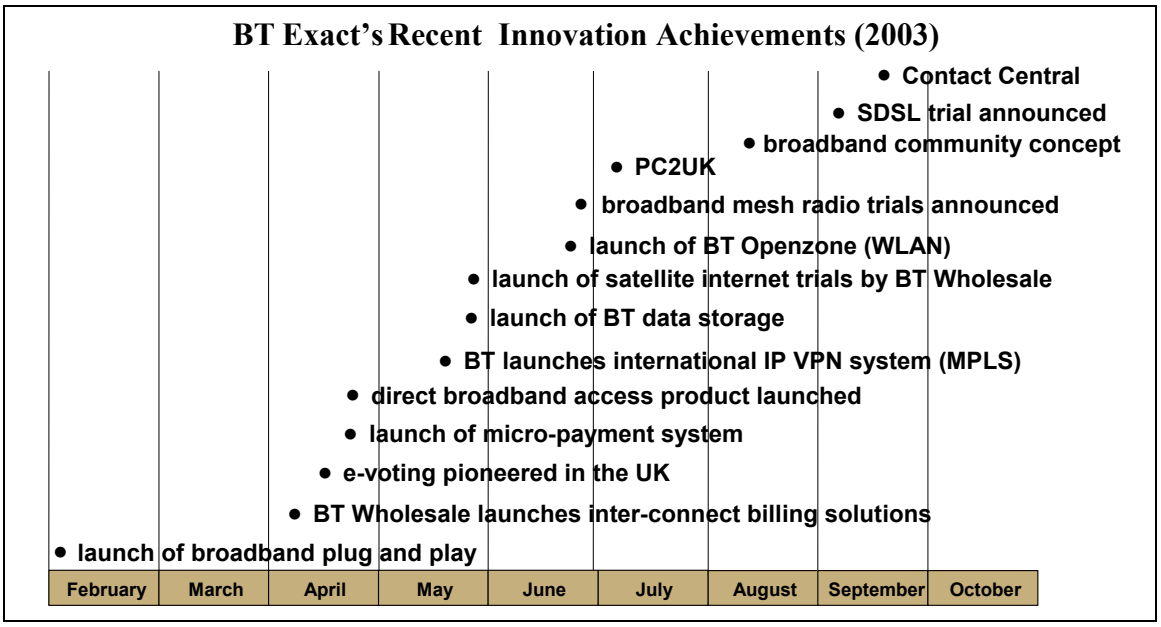
Figure 5-10: BT Exact's Track Record of Innovations (1970 to 2000)



Source: BT Exact (2004)

More recently, throughout last year, BT Exact claims to have launched over 14 different new services and products (see Figure 5-11).

Figure 5-11: BT Exact's Recent Innovation Achievements (2003)



Source: BT Exact (2004)

One of BT Exact's major roles within the BT Group is to stimulate new ideas and develop new technologies and innovative applications in conjunction with not only BTW, but also the BT Retail and BT Global Services lines of businesses.

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Innovation Potential

Table 5-22: Proof Points that Innovation IS a Strategic Priority for BT Exact

BT Exact		
Research Objective	**Proof Points**	**Finding**
#1. How have UK Telcos been approaching the management of innovation during the recent industry downturn (2000-2003)?	Is what innovation means for the company explicitly defined?	☑
	Is the understanding of innovation single-dimensional / multi-dimensional?	Multi-dimensional
	Does a business case for innovation exist?	☑
	Is there evidence of innovation continuity during the downturn?	☑
#2. What evidence is there that innovation is a strategic priority for UK Telcos today?	Is there an innovation strategy in place?	☒
	Is there board level accountability for innovation?	☑
	Is there a ring-fenced innovation budget?	☑
	How extensive is the innovation process (partial / systematic / adaptive)?	**Systematic**
	Is innovation performance measured on a company-wide basis?	☒
	Are there dedicated innovation resources?	R&D / V/ IU

Source: Snell Consultancy Telco Innovation Survey, 2004
Key to symbols: R&D – Research & Development / V – Venturing / IU - Innovation Unit / ▲- Innovation Director / Head of Innovation

Technologies and services of note that BT Exact have led on and are currently in various stages of development (field trials, market testing, scale launch) include:

- WIMAX / UWB Trials
- EVOCA Telco in a box Platform
- Communicator VoIP solution
- PC2UK Services
- Web Connect.

Aside from these outcomes of innovation (i.e. new services and products) what is remarkable is the extent to which BT Exact has gone through a transformation over the last 12 to 18 months with regard to the management of innovation. The intent has been to improve BT Exact's linkages with the BT LoBs and look at ways in which it can improve both the effectiveness and efficiency of its innovation processes.

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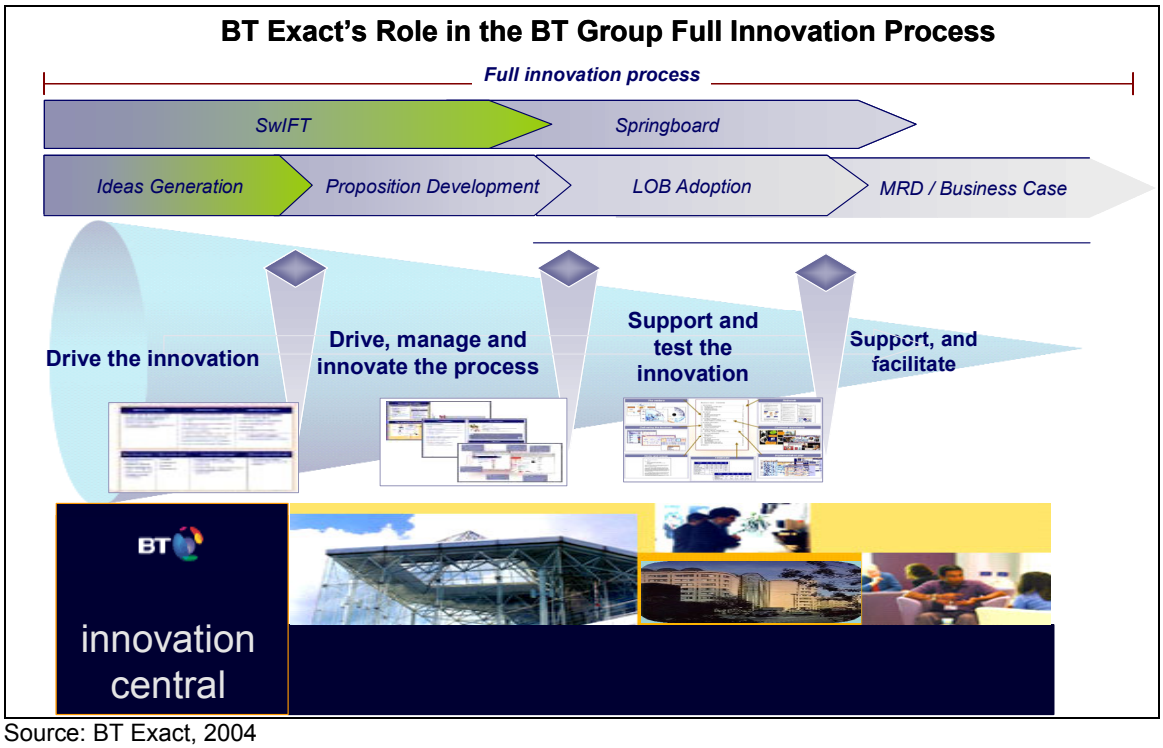
The drive for revenue growth from Ben Verwaayen and Sir Christopher Bland has sharpened the focus of R&D for BT Exact, which is now has a more asymmetrical balance of little `r' and big `D' so that technology research projects have as much commercial applicability as possible. As the BT Exact CEO told us:

"It has been an absolutely conscious decision by the BT board to make innovation a more systematic and formalised process….more than ever R&D is aligned against BT plc's strategic agenda and goals."

Figure 5-12: BT Exact's Role in the BT Group Full Innovation Process



Source: BT Exact, 2004

The BT Group full innovation process (see Figure 5-12) includes the following:

- SWIFT Process - the `New Services with Innovation from Technology' (SWIFT) process has been formalised in the last 12 months in partnership with the BT LoBs. Its focus is on technological innovation whether the source of technology is BT's labs or external research partners including funded projects from a network of universities.
- Springboard - involves launching products and services that are properly supported throughout their lifecycles. BT Exact's involvement becomes less important, and the LoBs, more towards the end of Springboard process.
- Innovation Central - based on the new solution focused `ideas discovery challenge process' whereby LoB innovation champions' market problems are identified, competitions with prizes are run and ideas are managed through two and ten pager innovation opportunity summaries.

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There is no doubt that there has been extreme pressure applied on BT Exact to increase its focus on the commercial realities by aligning technology output to its customers, the other BT LoBs and in turn, their customers. The CEO of BT Exact emphasised the point:

"How do you get out of situations where competitors are making progress? You have to innovate on every front."

It would seem that BT Exact can no longer be labelled as an ivory tower undertaking blue sky research detached from reality. Given that BT Exact has already been practising the management of innovation as a discipline for a number of years - it even sends its most promising managers on technology and innovation part time degree courses – we believe it truly is an **innovation led** organisation.

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5.7.2 Orange

Business Background

In March 1994, Hutchison Microtel's name was officially changed to Orange. A month later, Orange launched into an already crowded UK mobile marketplace. The vision was to become the first choice in wirefree™ communications. Orange believed that the only way to achieve this was to differentiate itself from the other three big players.

Prior to the launch, Orange set about creating its corporate brand. The aim was to develop the most honest, open, dynamic and straightforward, personal Telco company in the world in dealing with customers and staff alike.

In 1996, Orange plc underwent its first initial public offering with the shares being listed on the London and Nasdaq markets in April 1996. Orange plc shares were priced at 205 pence. Major shareholders at the time were Hutchison Whampoa with 48%, and British Aerospace with 22%. With a valuation of £2.4 billion, Orange plc became the youngest company to enter the FTSE-100.

In July 1997 Orange reached its first milestone of one million customers. The company was also named the best performing share in 1998 on the FTSE-100.

In October 1999, Mannesmann announced the acquisition of Orange plc. The offer was completed in February 2000 and Orange was de-listed from the London and Nasdaq stock exchanges. During this time, Mannesmann itself was bought by Vodafone, a deal approved by the European Commission subject to an undertaking from Vodafone to divest Orange plc.

In August 2000, France Télécom acquired Orange plc from Vodafone for a total consideration of £25.1 billion. Orange SA group was formed by merging the wireless interests of France Telecom and Orange plc. In February 2001, Orange SA was floated on the EuroNext Paris (formerly Paris Bourse) with a secondary listing in London.

Orange Group companies have been awarded next generation (UMTS) licenses in the United Kingdom, France, the Netherlands, Austria, Switzerland, Belgium, Denmark, and Slovakia.

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Financial Performance

More recently Orange has experienced revenue growth of 18.5 percent CAGR and EBITDA growth of over 60 percent for the period 2000 to 2003 (see Table 5-23).

Table 5-23: Orange Revenue & EBITDA Growth (2000 to 2003)

Orange	Year Ended Dec 31, 2000 £(m)	Year Ended Dec 31, 2001 £(m)	Year Ended Dec 31, 2002 £(m)	Year Ended Dec 31, 2003 £(m)	CAGR for the Period (%)
Revenue	7,573	9,229	11,146	12,608	18.5%
EBITDA	1,109	2,011	3,324	4,649	61.2%

Source: Orange Annual Accounts converted into UK £sterling using the £:€ year end exchange rate from www.bankofengland.co.uk (2000, 1.59; '01, 1.63; '02, 1.53; '03, 1.42)

Innovation Heritage

Orange is a fine example of an organisation that has demonstrated continuous innovation to maintain its corporate values.

To bring simplicity into the marketplace, Orange built a strong and clear identity to set it apart from high-tech jargon and complex pricing. Orange stated this as 'the start of a revolution'. Innovations such as simple Talk Plans that offered per second billing, Caller ID, itemised billing free of charge, and direct customer relationships helped change people's attitudes towards mobile communications.

Investment in innovation has also meant acquiring small start-ups (e.g. Wildfire). It has also meant playing a proactive role in influencing future product designs, such as the partnership with Microsoft to design the Smartphone OS. Orange was the first mobile communications company to launch Microsoft OS handsets, a year ahead of the rest of the market.

Orange admits that in the past it used to acquire the best and the brightest. Today, it's all about partnering with the best and the brightest. Examples of this type of partnering can be seen with PocketThis, a company that has developed a solution to enable surfers to make web content mobile. Orange would like to see 1,000 web sites in the UK using PocketThis.

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Innovation Potential

Table 5-24: Proof Points that Innovation IS a Strategic Priority for Orange

Orange		
Research Objective	**Proof Points**	**Finding**
#1. How have UK Telcos been approaching the management of innovation during the recent industry downturn (2000-2003)?	Is what innovation means for the company explicitly defined?	☑
	Is the understanding of innovation single-dimensional / multi-dimensional?	Multi-dimensional
	Does a business case for innovation exist?	☑
	Is there evidence of innovation continuity during the downturn?	☑
#2. What evidence is there that innovation is a strategic priority for UK Telcos today?	Is there an innovation strategy in place?	☒
	Is there board level accountability for innovation?	☑
	Is there a ring-fenced innovation budget?	☑
	How extensive is the innovation process (partial / systematic / adaptive)?	**Systematic**
	Is innovation performance measured on a company-wide basis?	☒
	Are there dedicated innovation resources?	R&D / V/ IU

Source: Snell Consultancy Telco Innovation Survey, 2004
Key to symbols: R&D – Research & Development / V – Venturing / IU - Innovation Unit / ▲- Innovation Director / Head of Innovation

Innovation and the pace of it, is everything to a company that is very hot on getting to the market first. The question is, how Orange can maintain its position as it grows? The VP of the Advance Services Delivery Group with 80 staff and responsibility for innovation in both consumer and business sectors believes that there are a number of things that companies can do to maintain their edge:

- Encourage entrepreneurial spirit in the organisation
- Encourage experimentation
- Invest/stay close with start-up companies
- Stay close to technology/innovation cycles.

Is innovation a strategic priority for Orange? The answer from the VP of the Advance Services Delivery Group is "yes absolutely, it is at the CEO, and COO level". The key ingredients of a truly innovative company are in his opinion:

"Having innovation as a fundamental aspect of corporate culture supported by the senior executives, aligning investment with commercial and technical group that are responsible for delivery of products and services."

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There is a business case for innovation and tracking ROI is key to senior management. Having an innovation process to leverage innovation is important to Orange. The idea is to invest in innovation and reapply the benefits of it. The single key benefit that Orange refers to is 'to be first to market' with better, more innovative products than its' competitors.

The challenges ahead of Orange are no different than for anyone else in the market, namely, 1) being good at picking winners and, 2) filtering out the losers quickly. From what we know today, Orange clearly understands these challenges and in our opinion are **Innovation Led.**

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5.8 Improving Telcos' Innovation Performance

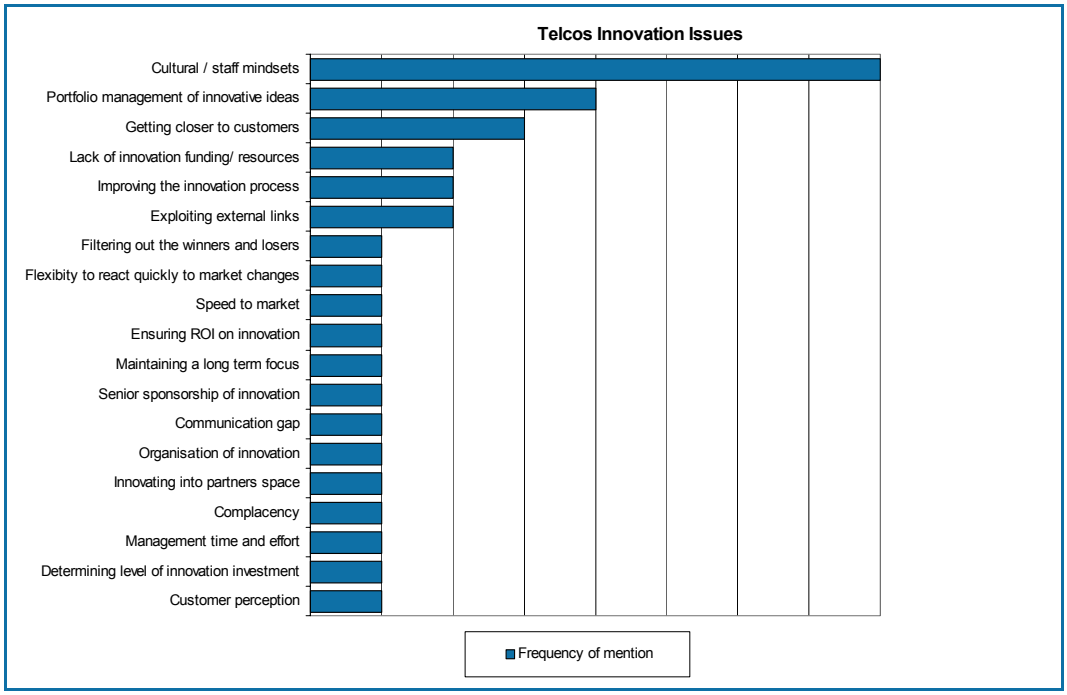
Our cross-company analysis, provides the Telcos with a benchmark in terms of their ability to manage innovation both past, present and in the future.

For this report to be of any real value though, the next logical question, given where the Telcos are at today, is how can they improve and strengthen their innovation performance still further going forward? A good starting point is determing what issues or challenges Telco senior executives think they have with regard to the management of innovation.

5.8.1 UK Telcos Major Innovation Challenges

Our research revealed that the Telcos we interviewed had a number of innovation related issues as Figure 5-13 shows.

Figure 5-13: Telco's Innovation Issues



Source: Snell Consultancy Telco Innovation Survey, 2004

We have focused here on three of these isssues as follows:

- Culture
- Innovation process
- Organisational competence

5.8.2 Culture

The most frequently mentioned issue was 'cultural' challenges. Executives referred to the difficulty of having innovation engrained in the culture of the business and within the 'routines' of daily business activity. As one interviewee said,

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"to move from where it is just in pockets to where innovation is in the DNA of the business is incredibly difficult."
- VP Global Product Portfolio, UK Fixed Line Telco

Incorporating innovation into the DNA of the organisation cannot be done if innovation has not been defined properly. Furthermore, the absence of remuneration and incentivisation tools to recognise and reward innovation will hinder the behaviours necessary to become innovation led.

5.8.3 Innovation Process Issues

Emphasis was placed on the critical need to capture and process ideas more quickly than competitors. Gartner's Annual EXP study interviewed more than 600 Chief Information Officers (CIO's) and found that they expressed the same challenge `*while budget pressures remain the leading influence on decisions, bringing fresh ideas to the market faster than competitors is increasingly important'* (Gubbins, 2003). Furthermore, of the same sample,

`…57 percent admit that, if their companies cannot change, they may be vulnerable to newly-formed competitors which may be faster and more able to get to market ahead of the pack' (Gubbins, 2003).

For Telcos, the challenge involves moving beyond the traditional procurement approach, using vendors/partners to help deliver innovation. A major obstacle to managing innovation included "being able to pick the winners and prioritising support resources", as the CEO of BT Exact stated,

`"Historically, employees in large firms that had a good idea would have had to jump through hoops to get it accepted. By the time the project was ready to launch the market place had often moved on."

Thus, appropriate skills and competence are required to identify critical opportunities and respond to them accordingly, which also relates back to 'developing a rapid process' and having the right culture.

5.8.4 Organisational Competence

Telcos, particularly those lacking proprietary technologies, described the challenge of constantly needing to keep abreast of technological developments.

Arguments for maintaining an internal R&D capability were balanced by the benefits of outsourcing to groups of smaller innovative suppliers.

Optimising the organisational configuration for innovation relates back to being adaptive to the environment, particularly with respect to managing larger organisations. In this respect, the Telcos expressed concern with improving agility, and in the same breath seeking to 'return to the entrepreneurial spirit' that gave birth to their firm. As one executive said, `Not Invented Here syndrome is a challenge in itself here.'

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5.9 Next steps: Innovation Performance Improvement Initiatives

Key Finding #7	There was no evidence of any company wide initiatives in place to raise innovation performance in the future.

Given that none of the Telcos measured innovation performance on a company-wide basis it is not surprising that our research revealed that they were not undertaking any significant company-wide initiatives to improve their innovation performance. Consequently, we have suggested some work programmes, which the Telcos might like to consider depending on the level they are on the Snell Innovation Learning Curve™.

5.10 Focused Efforts to Improve Innovation Performance

The Snell Innovation Learning Curve™ can be used as diagnostic tool to help companies choose where their innovation efforts should be focused to best advantage. By thinking about its own situation whilst reviewing the learning curve, a Telco can decide at which level it is located:

1. *Innovation Agnostic* - needs to become innovation aware
2. *Innovation Aware* - understands the innovation business case
3. *Innovation Practitioner* - committed to innovation as a strategic priority
4. *Innovation Led* - innovation is a core competency

For those Telcos that are aware of which level they are at, the next section outlines some practical initiatives to improve innovation performance. If not, the following are four sets of questions, which will help test the current innovation health of the company.

Innovation Health Diagnosis

If a Telco cannot answer `yes' to **all** of the following questions they are ***Innovation Agnostic*** and need to focus on becoming more ***Innovation Aware***:

- Is there explicit understanding at all levels (including the Executive Board) of what innovation means and how it is defined for the company?
- Does the company know how many employee ideas or improvement suggestions are generated in a year and how many of them are implemented?
- Does the company have an explicit innovation process to evaluate, resource and implement innovation opportunities internally or externally with clear pass criteria at each stage?
- Are all the company's customers, potential customers, partners and suppliers involved in the strategic planning and new product development process for the company?

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If a Telco answers `yes' to all of the previous questions but answers `no' to **any** of the following questions they are most likely to be at least ***Innovation Aware*** and need to concentrate on becoming a ***Practitioner of Innovation****:*

- Does the company have an explicit innovation policy and strategy that all employees are aware of, and are clear on how they contribute to it?
- Does the company have a board level executive responsible for innovation funding and managing a balanced innovation portfolio?
- Does the company have a team or unit, no matter how small, with responsibility for facilitating and managing both hard structured innovation activities and infusing the softer elements of innovation into the culture of the company?

If a Telco answers `yes' to all of the previous two sets of questions but answers `no' to any of the following questions they are a ***Practitioner of Innovation*** and need to work on becoming more ***Innovation Led****:*

- Does the company measure innovation performance on a company-wide basis and know what the approximate financial benefit of ideas and improvement suggestions have been?
- Does the company have a company-wide electronic ideas management system and knowledge management system so that knowledge generated in one area of the business is available to other areas of the business?
- Does the company manage the end-to-end innovation process holistically from environmental screening through to the measurement of financial realisation and learning?

If a Telco answers `yes' to all the previous sets of questions and the final question below they are **Innovation Led** and can do no more than focus on re-innovation*:*

- Is innovation really infused into the culture of the organisation (time allocated creativity, exploration and problem solving) at all levels including training in creativity tools, physical innovation space and failure recognition?

These sets of questions are presented in Figure 5-14, along with some practical programmes of work that can be designed and implemented to improve innovation performance on a company-wide or business unit basis.

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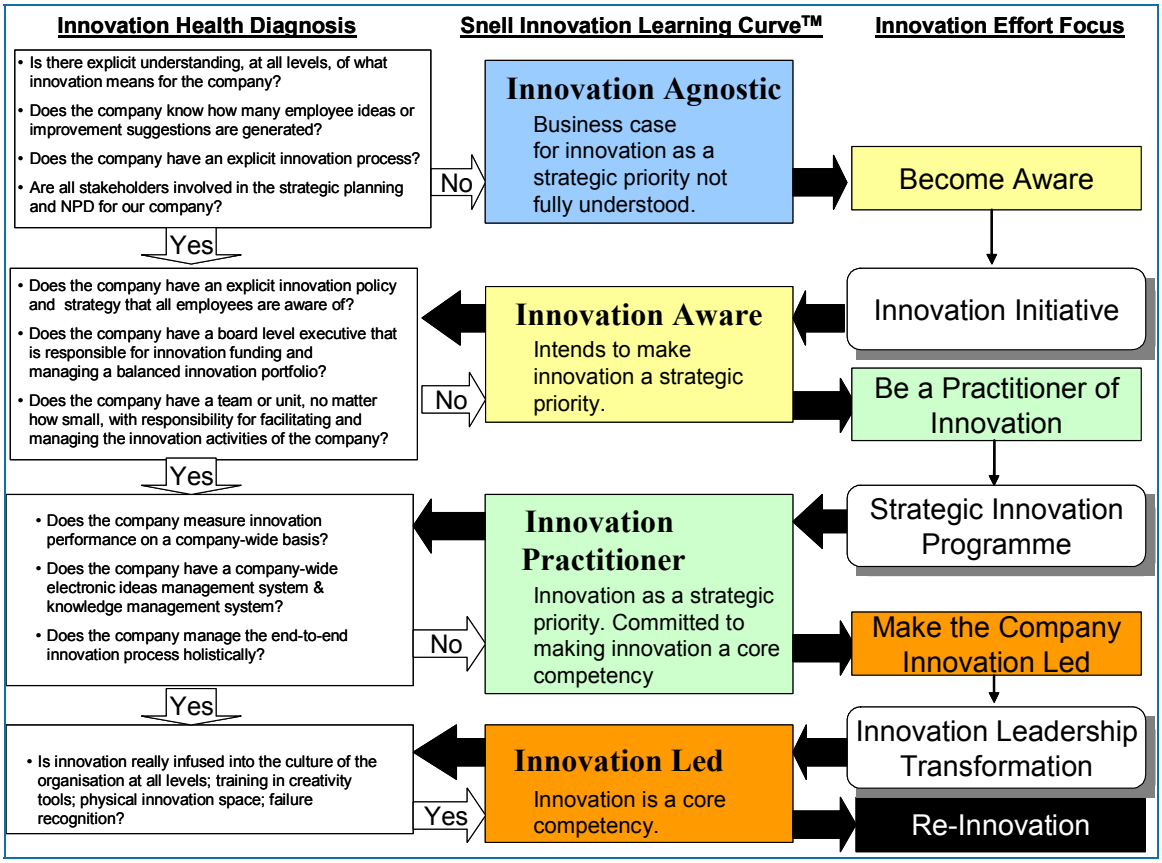
Figure 5-14: A Tool to Help Telcos Decide Where to Focus Innovation Effort



Source: Snell Consultancy, 2004

5.10.1 Innovation Improvement Initiatives for Telcos

The following paragraphs outline practical steps that can be taken to improve innovation performance, starting with an innovation initiative, through to a strategic innovation programme and onto innovation leadership transformation.

Clearly the world is not so black and white as our model suggests. Companies may well exhibit innovation strengths from more advanced levels of innovation learning and be weak in other areas. But the initiatives give some practical steps to improve innovation performance to pick and choose from, depending on the extent of the Telcos commitment to change. The ideas included here are from a synthesis of company case study material sourced from Snell client projects or well-known public domain examples. Client names have been omitted to protect their confidentiality.

Starting an Innovation Initiative

The purpose of an innovation initiative is to raise awareness of innovation within the executive management team.

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Typically this can take on a number of forms including:

- Holding **innovation planning sessions** with the leadership team to discuss the role innovation will take in the future of the company
- Setting up an **innovation book-club** and subscribing to industry relevant innovation management journals that are distributed to the leadership team
- Organising cross sector **innovation thought leadership round-tables**
- Identifying **high impact innovation business projects** for special focus as they are innovative in nature and need leadership from the top
- Developing **the business case for innovation** specific to the company.

Embarking on a Strategic Innovation Programme

Due to the potentially far-reaching impact of a strategic innovation programme, significant buy-in is required at senior levels. Driving a strategic innovation programme includes:

- Holding an **innovation conference** for all the senior management team to establish the need for joined-up thinking on innovation management
- Developing an **innovation strategy and policy** which can be communicated to all levels throughout the company
- Selecting innovation as a strategic imperative within the company's corporate planning process and as a **fixed board meeting agenda** item for review
- Setting up an **innovation meeting mechanism** to review and move the Innovation Agenda forward
- Developing a **network of innovation managers** to be a focal point for leading cultural change
- Kicking off **innovation organisational capabilities building programmes**
- Establishing a benchmark with regard to **staff's perception of innovation.**

Innovation Leadership Transformation

Innovation leadership transformation is about making innovation infectious thereby creating viral innovation that spreads throughout the organisation. Initiatives could include:

- Aligning HR policy to include an **innovation skills profile**, identifying key skills that contribute most to a company's innovation performance (namely, creativity and continuous improvement skills, risk-taking skills, relationship-building skills and implementation skills)
- Implementing formal **mechanisms/systems/tools for gathering and testing ideas** and **rewarding innovative behaviours**
- Designing **innovation metrics linked to success KPIs** of the business
- Setting up **insight and foresight visioning teams** with responsibility for environmental scanning for, and screening of, ideas and disruptive opportunities at different time horizons.

Re-Innovation

Re-innovation involves capturing the learning from innovation project successes and failures, and adjusting the capabilities and routines needed for effective innovation management.

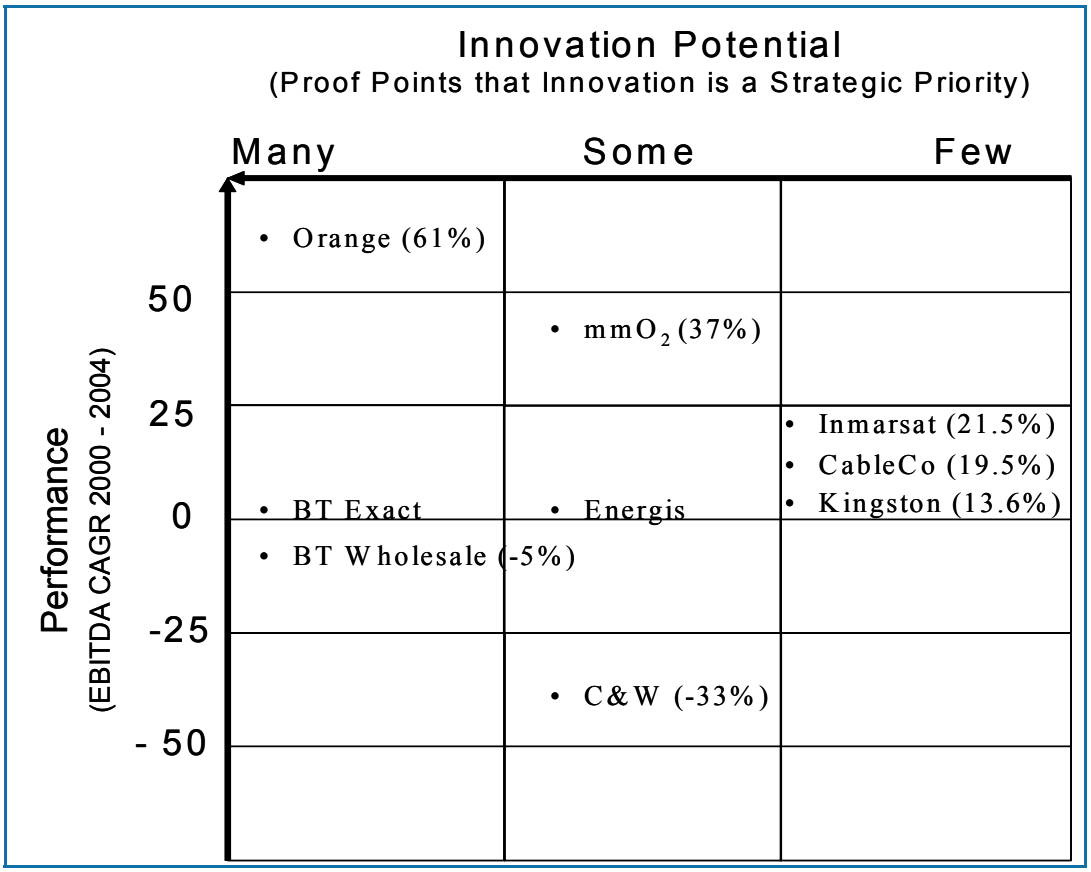
A focus on continuous innovation helps prevent the corporate immune system suppressing innovation.

For companies that already have innovation as one of their strategic pillars, and have implemented a number of innovation improvement initiatives, a focus on continuous innovation improvement helps prevent the corporate immune system suppressing innovation. Outside independent reviews and innovation auditing systems might also prove to be of value.

5.11 Assessment: Telco's Innovation Performance versus Potential

We have advocated throughout this report that securing tomorrow's business is as important as managing today's. Therefore, we have assigned each of the Telcos that we interviewed into an eighteen square grid to show each company's innovation performance and potential (see Figure 5-15).

Figure 5-15: Telco Survey Companies Innovation Potential versus Performance



Source: Snell Consultancy Telco Innovation Survey, 2004
Notes: Calculation of EBITDA CAGR was not possible for BT Exact, or Energis Ltd

The best rating is in the upper-left-hand square. The criteria used to place the companies relies, firstly, on the companies' past financial performance in terms of EBITDA growth and, secondly, our assessment as to whether innovation is really viewed as a strategic priority against the criteria we set.

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5.12 Snell Golden Nuggets of Innovation Wisdom

This section started out by describing what practicing senior executives in Telcos viewed as being the criteria for successful innovation. The main characteristics, according to the senior executives that we interviewed were:

- Innovation leadership
- An innovation process geared towards killing innovation early, often and fast
- Customer orientated products/services.

To improve Telco innovation performance in the future we made the point that it would be useful to know what the starting point for each Telco is today. Since all Telcos consider that they are as innovative as the next this is difficult. Surely they are not all on a level playing field in terms of innovation ability or capacity to innovate?

Consequently, we presented the Snell Innovation Learning Curve™, which is consistent with both theoretical and practical wisdom that managing innovation is an evolving journey for an organisation. In addition, we ascribed different innovation organisational building blocks to each stage of the Snell Innovation Learning Curve™.

We assigned each of the Telcos surveyed to a stage on the innovation learning curve, judged against our criteria of what we would expect to see as proof points for a company managing innovation as a strategic priority.

Some of the companies we interviewed may see their placement at a certain stage, particularly those assigned to the bottom of the curve, as contentious. But we have been careful to build the case in Section 3 and Section 4 for why managing innovation in a systematic, structured and organised way should be an imperative if the Telcos are to really make innovation a strategic priority. In brief:

- Band-X, CableCo Kingston Communications and Inmarsat, as **Agnostic Innovators**, have the most to learn from understanding how other Telcos are approaching both the managing and doing of innovation.

- C&W, Energis Ltd and mmO_2 are all **Aware** to a greater or lesser degree of the management of innovation but their leadership do not judge it to be a strategic priority.

- BT Wholesale clearly **Practices Innovation Management** but the jury is out as to whether their latest efforts at developing an innovation production line will reap the deserved rewards that its systematic approach and CEO Paul Reynolds innovation leadership merits. Cynics would suggest that `ticks in the box' with regard to the innovation organisational building blocks that BT Wholesale are developing do not equal superior returns.

  We would agree that this might be the case in the long run but it is early days at BT Wholesale to expect to see returns on the recent 18 months effort. Surprisingly, given the effort and significant budget that has been invested in innovation, one would have expected to see the returns on innovation investment measured across the line of business as a KPI for BT Wholesale's Executive Board.

- Both Orange and BT Exact justify their position of **Innovation Led** by virtue of the commitment that has been made to managing innovation and continuously looking for ways to develop the organisational building blocks required to form innovative organisations.

What should be abundantly evident to the reader is that the `rankings' of the Telcos, are not important – more so, the roadmap that it has provided for discussion and debate with regard to improving innovation performance. We see investment in the innovation organisational building blocks as important, for the innovation agnostics as well as the innovation leaders.

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CONCLUSION – COMMITTING TO IMPROVE INNOVATION PERFORMANCE

This report is the first effort of its kind with the explicit objective of helping Telcos examine how well they are managing innovation strategically and holistically on a company-wide basis. The report has aimed to achieve two overriding goals, namely:

- Gather enough data through a quick snapshot assessment to obtain a picture of how well companies in the UK telecoms sector are managing innovation
- Ignite a spark that will kindle curiosity in, and a greater understanding of, best practice with regard to the management of innovation.

Managing innovation is complex, risky, uncertain and difficult. We do not suggest that there is a magic formula that can be prescribed to increase the chances of making one Telco more innovative than the next.

> `Creativity is 1% inspiration and 99% perspiration.' - Thomas Edison

We are practising innovation ourselves through the publication of this report, assessing how well innovation is being managed by surveying a small, but representative, sample of telecommunications companies in the UK.

We have provided the busy senior executive with a greater understanding of what innovation is about, beyond ubiquitous phrases such as `innovative technology', `innovative solutions' or `leveraging innovation'. We have presented the management of innovation as a valuable but clearly under-utilised business discipline. A business discipline that UK telecoms CEOs would be best placed to invest in, with an urgency that the growth deficit in the industry warrants.

In conclusion, we call into question the ability of UK Telcos to manage innovation to their best advantage. The points that underpin our conclusion are as follows:

- The pace of technological innovation is increasing and the rate of customer adoption of new entrants' telecoms services and technologies is accelerating.

- Fixed line Telcos are experiencing revenue erosion of between 5 and 8 percent per annum. Although currently more profitable, mobile companies' cellular ARPUs are flat, if not in decline.

- Considerable evidence exists that making innovation an organisation-wide priority will provide a significant return on investment through, higher and more sustainable levels of profitable revenue growth.

- Although several Telcos are making significant investments in innovation, in some cases between 0.25 percent and 0.5 percent of their annual operating profits, innovation is clearly not receiving the investment levels or attention that it deserves.

- The Telcos surveyed in this report are at different stages in the evolution of innovation management. Most are still in the first or second stages, and very few are practitioners of innovation or innovation leaders.

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The management of any cross-functional, company-wide process requires joined up thinking. Management of innovation should be viewed as a full and all-encompassing company-wide process. Optimisation is end-to-end, extending right from the start to the finish of the innovation process, not just a series of disjointed silo activities.

Key Points for Telco Boards

There are five key points that the Telco board should consider:

1. **Telcos Must Innovate:**	**All** the Telcos interviewed stated that the only long-term strategy open to them, for reversing continuing revenue decline, is the acceleration of product and service innovation.
2. **Innovation Requires a Strategic Focus:**	**All** Telcos recognise the need to manage innovation strategically. Telcos understand there is simply no choice, it is a matter of survival.
3. **Telco's Innovation Intentions Do Not Match Reality**	**Few** Telcos really understand the concept of innovation and understand how to manage it strategically. **None** of the Telcos we talked to had formally documented innovation strategies, or could state what the business case for innovation really was.
4. **The Management of Innovation is at a Very Early Stage**	**No** Telcos measure and **very few** manage innovation performance on a company-wide basis.
5. **Leadership in Innovation Matters:**	**The most** innovative Telcos in our survey have developed a culture of innovation with strong leadership from the top.

We have identified four stages in the evolution of innovation management:

- **Innovation Agnostic** – The business case for innovation as a strategic priority is not fully understood.
- **Aware Innovator** – A company that intends to make innovation a strategic priority.
- **Innovation Practitioner** –Innovation is a strategic priority and the company is committed to making innovation a core competency.
- **Innovation Leader** – A company that continuously strives to ensure that innovation is a core competency on a company-wide basis.

Assigned to each stage are different attributes associated with innovation organisational building blocks. These building blocks cover innovation strategy and leadership, organisational design and operations.

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Each of these stages has their own set of priorities for maximising scarce managerial resources.

At a strategic level Telco boards need to become better acquainted with the innovation challenges facing their management teams and the implications of the strategic innovation options that are open to them. Although each Telco is at a different stage in implementing the organisational building blocks required to make innovation a core competency, the need for action is shared by all.

Making the Commitment to Improve Innovation Performance

Telcos must act decisively if they are to manage innovation better in order to gain a competitive advantage and reap the rewards that innovation brings in terms of faster and more profitable revenue growth. This will be critical to driving future value creation for the sector's investors and safeguarding the industry's future longevity and prosperity. Any delay could further deteriorate the competitive position.

If Telcos decide to commit to innovation, they will then have to assign responsibility and measure progress and create the tools, techniques and management practices needed to better understand, measure and improve their company's innovation performance. If they do not, we predict that we will see more, not less, business casualties in a sector which, some would, argue has the capability of becoming one of the most profitable areas of the emerging global economy.

Call to Action - Next Steps

From our observations, there appear to be several key steps that are a necessary basis from which to start if Telcos intend to improve their innovation performance and move from one stage to the next:

1. **Baseline - undertake a company-wide innovation health audit**

2. **Initiate - assess the company's position on the Snell Innovation Learning Curve™**

3. **Control – introduce the innovation improvement work programme appropriate for the company's position on the Snell Innovation Learning Curve™**

Successful innovation for Telcos requires a combination of skills, supportive cultures and climates, structures and processes, and distinctive competencies based on leadership. Once innovation is infused in their organisations as a core competency, there will be other innovation issues that the Telco boards, on their ongoing innovation journeys, will have to address in the future.

Innovation – Learning by Doing

There are no recipe books on innovation. However, this report has provided information, suggestions and some tools that offer senior executives in the telecoms industry new ways to think, question and understand how to exploit innovation.

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In particular we have provided:

- An explanation of **the business case for innovation**
- A model for **managing innovation strategically**
- Different approaches used for **managing and measuring the innovation process**
- Suggestions on what **creates successful innovation**
- **Case studies of innovation best practice** from other sectors
- The **Snell Innovation Learning Curve™** with its four stages in the evolution of innovation management.

Outstanding Innovation Issues for Future Resolution

To learn more, we invited immediate feedback on our findings from the senior executives, that we had originally interviewed. The following are a selection of the comments made:

- "No UK based telecoms operator, other than BT, has the funds to invest in improving their innovation performance."

- "All Telcos, us included, undertake innovative activities but they do not label them `innovation'."

- "There is little evidence that getting `ticks in the boxes' and developing innovation organisational building blocks will lead to success."

- "A cross-company analysis of innovation is flawed since innovation means so many different things to different companies."

- "The problem we would still have is explaining to the board what innovation is, they just won't get it."

- "We score poorly when our company is assessed against your evaluation criteria, because you are examining the structured, formal, process and organised side of innovation of which the benefits are doubtful for us. Innovation just happens as part of the culture here."

What has become apparent from the feedback, and ongoing dialogue, is that the industry has very few models capable of guiding the outcomes of its actions with regard to innovation-related decisions. The industry should consider aligning innovation to its strategic thinking.

If the industry does not learn to use such tools on a regular basis to better understand and measure its innovation performance, then the management of innovation will continue to be poorly understood and under-utilised.

Above all, learning to manage innovation is an ongoing challenge and requires the development of multiple competencies as laid out in the Snell Innovation Learning Curve™.

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APPENDIX A – DEFINITIONS OF INNOVATION

Author	Definition / Perspective	Description
Schumpeter Theory of Economic Development, 1934	Entrepreneurial	`Innovation is based on economic production. It is the introduction of a new idea or service, a new method of production, opening up a new market, the conquest of a new source of supply or the creation of a new organisation of industry, like the creation of a monopoly position.'
Chris Freeman The Economics of Industrial Innovation, 1982	Economic Transaction	`An innovation in the economic sense is accomplished only when the first commercial transaction involving a new product, process, system or device, although the word is used to describe the whole process.'
Roy Rothwell and Paul Gardiner Technovation, 1985	Radical vs. incremental	`Innovation does not necessarily imply the commercialisation of only a major advance in the technological state of art (a radical innovation) but it includes also the utilisation of even small-scale changes in technological know-how (an improvement or incremental innovation).'
Peter Drucker Innovation and Entrepreneurship, 1995	The Discipline of Innovation	`Innovation is the specific tool of entrepreneurs, the means by which they exploit change as an opportunity for a different business or service. It is capable of being presented as a discipline, capable of being learned, capable of being practised.'
Rosabeth Kanter Frontiers of Management, 1997	Invention vs. innovation	`Innovation is the process of bringing new ideas into productive use, and, incidentally, the idea doesn't necessarily have to originate with you. Innovation is not necessarily invention. If you are the one who gets an idea into the marketplace, the payoff can be tremendous. The secret is building that bridge between the idea and its commercial viability. It's indefinitely practical.'

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Author	Definition / Perspective	Description
Christensen & Raynor Innovator's Dilemma, 1997	Sustaining & Disrupting	`Sustaining innovations are technologies that make a product or service work better in ways that mainstream customers already value. These innovations are most often developed and introduced by incumbents.'  `Disruptive innovation creates entirely new markets by the introduction of new kinds of products and services. Incumbents have a hard time introducing or coping with disruptive innovations.'
Joe Tidd Managing Innovation, 2001	Innovation as a Process	`Innovation is a process of turning opportunity into new ideas and of putting these into widely used practise.'
Gary Hamel Innovation as a Deep Capability, 2003	As a Business Concept	`True innovation is based on the recognition that a business concept represents a dozen or so design variables, all of which need to be constantly revisited and constantly challenged. A company that is not experimenting with new business concepts is probably living on borrowed time.'
The UK DTI (Innovation Report, Dec' 2003)	Commercial Innovation	`Innovation is the successful exploitation of new ideas.'
Government of Canada	Different Types of Innovation	`Innovation occurs when a business introduces new products or services to the marketplace, or adopts new ways of making products or services. The concept may refer to technical advances in how products are made or shifts in attitudes about how products and services are developed, sold and marketed.'

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