



## The measurement and reporting of intangibles

### **Understanding value creation from intangibles: key messages from a portfolio of new case studies**

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#### Introduction

Practical studies are required to test our understanding of the role of intangibles in business, among groups of individuals, and in wider contexts, in nation states and across states. The PRISM program's case study research provides that base of experience. The results of this research are now available to help business and professional practitioners to refine their understanding and as a teaching and learning resource for students and for the benefit of other researchers into this critical area. The debate on the role of intangibles is long on theory and short on practical evidence. There are two principal reasons; firstly, a lack of common understanding of the terms and the issues and, secondly, the difficulty of measuring intangibles. In essence, if a thing cannot be measured it cannot be fully understood, managed or, for that matter, taxed.

In 2001 the EC commissioned the PRISM project to investigate the measurement and reporting of intangibles. The contract specified three chief objectives; extend the boundary of knowledge, disseminate the findings and recommend policy. Six teams of experts across Europe were engaged for deductive research (eg: 'if there was a perfect market, what would it look like') and a further five teams undertook inductive research (eg: 'if we observe how markets actually work in practice we will discern the rules'). The second category has resulted in the portfolio of 15 new case studies on the measurement and reporting of intangibles. The purpose of this paper is to describe their utility.

#### The PRISM case development process

When the project started in October 2001 there was an almost complete lack of teaching case studies on intangibles. A search of the European Case Clearing House (ECCH) collection of over 30,000 cases found eleven on the subject of intangibles. Six were from Harvard, mostly about three pages in length. Only one had been produced in Europe. The nearest substitutes were exemplary but rather out-of-date cases about pioneering work on intellectual capital management at Skandia Insurance in Sweden and Dow Chemical in the US.

The absence of a rubric meant that a case development process had to be created for PRISM. Each of the five research teams would take a discrete intangibles theme and produce a set of three cases – one every six months. They could use any one of the four structures identified by Malcolm McNair at Harvard in the 1950s, namely; narrative, plot, timeline and exposition. Each case would comprise of four documents; an abstract, the case itself, a technical annex and a teaching note. The quality standard would be determined by peer-group review and acceptance for publication by ECCH.

The agreed process also clarified important issues about style. The cases had to be suitable for classroom use in MBA-type post-graduate programs. But they also had to

be accessible, informative and satisfying to readers who would not have the benefit of classroom facilitation.

The process also had to ensure coordination between researchers widely distributed across Europe and integration to promote synergy and prevent overlap. In the first month a website was set up to provide a virtual workspace for developing drafts, circulating them for peer review and, ultimately, for placing approved cases in the public domain for anyone in the world to download and use. During each six-month period this activity was augmented with two plenary meetings open to the entire PRISM community and site visits by the case collection manager for intensive review workshops with the case authors.

The application of this process has resulted in a collection the design of which enables cases to be used, for example:

- individually to increase understanding of an issue of topical relevance to the reader
- in selected sets to augment and support organizational change initiatives
- to animate a 10 week MBA module on the management of intangibles.

## Content

The cases were produced in three tranches; one case from each team every six months. Broadly speaking the first tranche sets out to introduce the principles for the measurement and reporting of intangibles. The second tranche examines methods for creating value from intangibles and the final tranche seeks to explicate implementation methods and issues.

The following section reflects each research team's summary of its set of three cases. (a full citation of each case is appended). The final section shows how the five sets work as an integrated portfolio.

### **3 cases on XML by UCC (University College Cork)**

1	Digifone (O2 Ireland). Measuring and managing intangibles in mobile commerce: the potential of an XML technology called IPDR in the context of m-Commerce billing.
2	NewsML (Reuters). Creating value through news content management through an XML technology called NewsML.
3	The Australian Prudential Regulation Authority. Managing regulatory complexity through the introduction of an XML technology called XBRL for regulatory reporting in the financial services sector in Australia.

XML (eXtensible Markup Language) is a recently-developed and widely-used language for creating consensual taxonomies - sets of shared meanings - within and between communities. This set of three cases shows how XML can underpin and crystallise shared understanding of information about intangibles.

A comparison of these cases can usefully be made under the headings of XML standard maturity; Organisational focus and Functional focus.

XML Standard Maturity. IPDR is a nascent technology without a clear inter-organisational champion. The first case highlights the initial challenges involved in standards building and acceptance. NewsML is a more mature technology but still faces challenges associated with adoption and implementation. XBRL is a very mature technology with wide-spread adoption. The third case focuses on the full exploitation of XML in the context of the measurement, management and reporting of intangibles.

Organisational focus. The first two cases explored XML as an inter-organisational technology, but within a particular vertical industry and from the point of view of a particular company. The third case shows how it is being applied across industry sectors by regulatory authorities. The first two cases highlight key strategic and

technological changes in two important European industry sectors driven by intangibles - telecommunications and media. While these are of value to one group of PRISM stakeholders - businesses - the third case creates more explicit value for the second group of PRISM stakeholders, namely national and EU policy makers.

Functional focus. The IPDR case focused on XML as a tool for measuring the intangibles associated with m-Commerce services. The NewsML case focused on XML's role in managing intangibles in the news media. The XBRL case completes the workpackage's portfolio by focusing on XML and reporting.

This case set suggests that the XML-based measuring, managing and reporting of intangibles is being driven by “4 C’s”: Complexity (of Value Chains / Webs); Context (of Value Exchange); Cooperation (among Value Chain Participants) and Commoditisation (of Information).

### 3 cases on the tangible/intangible dynamic by KTH (Royal Institute of Technology, Stockholm)

1	Boxman, Deo.com and MusicPool. The music industry in a digital networked world.
2	Aftonbladen, Expressen, Svenska Dagbladet. Newspapers on the web – are they giving it all away? The dynamics and relationships between digital and printed products at three Swedish newspaper companies.
3	Distance learning projects at Stockholm University and at KTH Stockholm. The development of and support for the intellectual capital of individuals and regions. The two case studies cover relationships a) between university students in a capital city and at a learning centre in a provincial town, and b) a course originating in one country (Sweden) and being received at a university in another (Norway).

In the mid- to late 1990s there were well publicised predictions that speedy, universal broadband access would lead to ‘the paperless office’, a cashless society, and a widespread preference for consuming products in digital form. A common assumption has been that products, services and experiences which can be digitised will move from physical to virtual forms, and that the shift will be linear (possibly exponential) and irreversible. Candidate products would be those that are largely intangible (art, value and knowledge) but which all have well-established tangible expressions (CDs, newspapers, universities).

But these forecasts were dramatically overrated and it is likely that these myths have masked the development of new products and services, as well as actual changes of human behaviour associated with them. Inadequate ways of measuring underlying intangible value purely mirror physical equivalents; the result is an inadequate evaluation of what really happens when the physical moves to the virtual.

The three KTH case studies in the PRISM project illustrate the need to understand such dynamics. In particular, in each of the cases genuine value for the user was achieved – but was not recognized. The cases identify some metrics which would allow the creation of more realistic and sustainable business models.

In the case of the music and newspaper industries, the number of downloads paid for by consumers (the mirror of the physical world) led to much confusion. Intangible metrics would have contributed to a better understanding of the added value provided by digital distribution technologies for music and news.

The proposition for distance learning was that the traditional teacher would become obsolete, and that students would become entirely independent of the learning institutions. This case study compares the drivers of different distance learning initiatives with actual results. It also suggest a number of metrics for gauging the

development of an individual's intellectual capital which would allow for a better evaluation of the results of such initiatives compared to traditional, physically based metrics.

### **3 cases on entrepreneurship by TSM (TSM Business School, Enschede)**

1	Transuniverseel. Creating and justifying intellectual capital value: Entrepreneurial networking for business development on the WAP protocol.
2	TeleCats and Rabobank. Banking and Entrepreneurship: assessing and fostering the value of intangibles.
3	The Exploitation of Biotech Innovations: a networking model for survival and success.

The availability of financial support for entrepreneurs depends on the opinions of industry peers and funders. As intangibles become a more important part of the 'pitch' of a new business, the 'network effect' of shared understanding has a greater effect on the development of new ideas and the chances of new ideas becoming reality. Models which solely value physical assets and the delivery of tangible goods become less appropriate and less able to take advantage of new opportunities and markets. This set of cases illustrates this effect within a range of communities. In the first case the emphasis is on knowledge-sharing networks designed to foster innovation. A consortium of large firms, research institutions, government agencies is supporting and developing new company start-ups and products through face-to-face events augmented with an electronic infrastructure.

The second case focuses on the attitude of banks to the business plans of firms seeking initial funding. Typically, the plans of high-tech and knowledge intensive companies contain too few tangible assets to justify the risk. One traditional bank has retrained its branch managers in a declining rural region to identify and evaluate the intangible elements of entrepreneurs' applications and this is leading to economic regeneration. The third case illustrates how the combination of business networks and entrepreneurship can enable a small team to enter the pharmaceutical industry – dominated by large companies and intense regulation – and convert patentable ideas into marketable products.

### **3 cases on skills & competences by Cass (Cass Business School, City of London)**

1	Thales Optics: A case study on measuring skills in technological leadership - the adoption of a new technology (or tool) to improve the product design capability of the company and its manufacturing processes.
2	Consultancy Skills Training Ltd (CST). Skills and organizational competencies for managing intangibles - the challenges of growing a small firm that has focused on a 'personalised' competitive strategy rather than a 'codification' strategy
3	Pankhurst Design & Development (PDD). The changing face of product design: making real returns from intangible assets. Using new technology and by taking inputs from other intellectual disciplines. One consequence has been the ability of the firm to take a greater part in the complete innovation process and offer a more valuable service to the client

All organisations are becoming more dependent on knowledge as a strategic resource in sustaining competitive edge. As knowledge becomes a driving force in new business development, firms face problems in recognizing, describing and evaluating the nature of the new knowledge assets, and then being able to translate them into new revenue streams. This is causing a shift in management practices both in terms of the

organisation of knowledge resources and greater openness to external influences and networks in the course of knowledge creation.

The three case studies looked at innovation activities, firstly in terms of their potential for increasing the knowledge store within the firm and secondly for leveraging that intangible asset into new business opportunities. The linking analysis identifies two specific areas of interest. The first one relates to the intrinsic nature of the evolution of knowledge and shows how it is a process of generation, capture, dissemination, context-setting, and evaluation – as typified by the Thales and PDD cases. Related issues are the knowledge domains used, the perceived value of new knowledge and the formal or informal nature of the process. All of these aspects are difficult to measure. The second area relates to the range and variety of the processes themselves - as shown in the CST case.

The cases reveal a number of different activities which could themselves be categorized into different typologies but from a PRISM point of view the fact that these processes become visible, and can have value attached to them means that the potential for measuring becomes important. Even so, the measurements that the companies attempt are not direct ones. Instead, they tend to use indirect measurements related to such issues as 'being able to tackle new areas of business', 'understanding the essential competences of the firm better' and 'being able to manage the intellectual assets of the company more effectively'.

### **3 case on Knowledge Management by IESE (University of Navarra, Barcelona)**

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|---|--|
| 1 | Cap Gemini Ernst & Young. The merger of two knowledge-intensive firms – one European-based, one US-based – requires choices and trade-offs to harmonise their different models for managing knowledge assets.  |
| 2 | Union Fenosa Corporate University: Top management sponsorship of a mutual 'teach and learn' initiative upholds corporate values and beliefs during the successful transition from state utility company to multinational energy business.                        |
| 3 | Knowledge Management at Siemens Spain. The promulgation of an enterprise-wide strategy for Knowledge Management allows subsidiaries to develop and support effective knowledge-sharing communities of practice that are in tune with local cultural preferences. |

Organisations which believe they are practicing knowledge management have already traveled a long way down the road to the effective exploitation of intangible assets. This case set outlines the issues tackled by three organizations that are attempting to take the next step - making the creation and exploitation of intangibles a formal, planned and measured part of enterprise management.

All three organisations featured in this case set have recognized that knowledge about knowledge is still limited and that progress needs to be pragmatic and constantly evaluated. Taken together, the cases indicate that this evolution tends to occur in stages. Initially, decisions about the KM initiatives are clearly framed by implicit cost issues and are not explicitly challenged. This is followed by a phase in which costs are viewed in terms of staff time spent creating and spreading knowledge and then being explicitly evaluated and compensated for it. Thereafter a "knowledge centered conception of business" becomes embedded in company's routines and day-to-day activities, even though the quest continues for detailed and tested metrics for gauging the effectiveness of these practices.

The case set can be used to raise awareness of the importance of measurement and why the design and adoption of suitable metrics can be difficult and demanding.

## The portfolio

The five themed sets are discrete but not mutually exclusive: the overarching theme is the management of intellectual capital.

In the mid-1980s thinkers like Karl-Erik Sveiby in Sweden and Ikujiro Nonaka in Japan shaped our understanding of this non-financial type of capital. Their definitions might be characterised in terms of structural, human and relational capital. Structural capital could be described as ‘the intangible assets that stay in the office when the people go home’. These would include such things as manuals, procedures, patents, IPR, licenses, contracts. Human capital embraces skills, competences, intelligence, qualifications and how these are applied for creativity and productivity. Relational capital is concerned with reputation, trust, leadership and customer perceptions – in short; how the organisation is viewed by ordinary members of the public.

These categories are not dissimilar to those listed in Prism’s ‘new corporate asset base’ model, namely; intangible goods, intangible competences and latent capabilities (see figure 1).

## The new corporate asset base



Figure 1



[www.EUintangibles.net](http://www.EUintangibles.net)

## Perspectives on the management of intangibles

Every part of the spectrum of intangible assets is coloured to some degree by the fundamental intangibles of knowledge and intellectual capital (IC). Knowledge resides in people’s heads. So the concept of the measurement and management of knowledge is usually applied to individuals, teams, business units and ‘the Firm’.

However, when knowledge is viewed in the context of larger and more impersonal organizations and societal groupings the emphasis tends to shift from knowledge to intellectual capital. This would apply to the corporation, to markets and industry sectors.

In general, case studies produced for education in the domain of business studies have tended to focus on issues at the level of the firm and below. More recently there has been increased interest in studies of value chains and business networks. By the same token, cases applied in the area of social administration tend to focus on the behaviour

of communities. They reach down to the level of the family (perhaps equating to the level of ‘the Firm’) and upwards to the affairs of nation states and socio-economic regions. At these levels business interest is on regulation and standards and the reporting focus is on intellectual capital

The PRISM case study collection reports on the management of intangibles across the whole of this spectrum from the individual to the multinational level.

### Using the PRISM case Portfolio

Within the PRISM case collection on the measurement and reporting of intangibles, specific cases address one or more of level in this hierarchy of knowledge and intellectual capital. It is also possible to view the cases in terms of organizational size and industrial context:

- Four feature small to medium-sized enterprises (TSM 1 & 3; Cass 2 & 3).
- Two look at relationships between large and small firms (TSM 2, Cass 1).
- Two are located in the public sector (UCC 3; KTH 3).
- Two consider industrial clusters (KTH 1 & 2)
- Five describe initiatives within multinational enterprises (UCC 1 & 2, IESE 1, 2 & 3)

Alternatively, the cases can be associated with two key sections of the PRISM final report of research findings and policy recommendations, namely;

- ‘the emerging new theory of the firm’ (KTH 1 & 2, TSM 1 & 3, Cass 2 & 3, IESE 1)
- ‘new measurement tools’ (UCC 1, 2 & 3, KTH 3, TSM 2, Cass 1, IESE 2 & 3)

Figure 2 sets out to assist the reader and/or teacher to navigate the collection and select examples of relevance to a particular purpose.

IC of Regions	3		TSM 2	KTH 3 UCC 2		
IC of Nations	5		TSM 2	KTH 3 UCC 3		UCC 1&2
K & IC of Networks	6	TSM 1	TSM 2		KTH 1&2	UCC 1&2
K & IC of the Firm	11	TSM 3 Cass 3	TSM 2 Cass 1		KTH 1&2	Cass 1 UCC 1&2 IESE 1&2
K of Teams	4	Cass 2				IESE 1, 2 &3
K of Individuals	5	Cass 2	UCC 2	KTH 3		IESE 2 &3
		SMEs	large + small	Public	industry clusters	MNEs

Figure 2



[www.EUintangibles.net](http://www.EUintangibles.net)

The Prism website freely offers an abstract and downloadable copy of each case study plus a hyperlink to the ECCH catalogue for the technical annex and teaching note (see [http://www.euintangibles.net/research\\_results/portfolio\\_html](http://www.euintangibles.net/research_results/portfolio_html)).

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