EUROPEAN COMMISSION

INFORMATION SOCIETY TECHNOLOGIES (IST) PROGRAMME

POLICY RESEARCH INTO INNOVATION AND MEASUREMENT PRACTICE IN THE INTANGIBLE ECONOMY

Working Paper Series No.3

Proceedings of 1st Plenary Meeting

Ferrara, November 19-20, 2001

Introduction

The PRISM project was successfully launched at its first plenary meeting in Ferrara on November 19-20, 2001. The session was well attended by both project and Advisory council members; the list of attendees can be found in Appendix 1.

The key issues discussed within the individual sessions are outlined in these pages. For more detail on the project, please visit our website – www.euintangibles.net.

About PRISM

The original RESCUE consortium has been re-named the PRISM project for two reasons.

Firstly, there is a strong analogy between what the consortium is trying to do and the characteristics of a prism. A prism allows for one ray of light to be separated into its constituent parts. Once isolated, these rays' colours and characteristics can be better observed and measured. What was previously hidden from the naked eye is now revealed in its true colours. Similarly, this project group wishes to observe and measure a complex, composite and ill-defined group, namely intangible assets, by delineating it (where possible) into separate parts.

Secondly, the constituent letters of PRISM encapsulate the main themes the project members are focused on, grouped around the central I "pillar" of Intangibles. Each work package within the project's portfolio will be adding colour in at least one of these areas.

Policy-Making – policy makers at *all* levels in Europe need to be better equipped to optimally intervene in the economy to provide the necessary conditions for the intangible asset base to flourish.
Reporting and Measurement – more transparent and robust information on the values of the intangibles circulating within the economy should improve the capital allocation decision of policy-makers, corporate executives and financiers.
Intangibles – intangibles need to be more clearly identified, delineated and measured to achieve this reporting goal.
Skills Development – different skills and competencies will need to be developed for Europe to both measure and report on its dynamic intangible asset base and to more effectively manage in the economic context of the 21st century.
Management – better managerial decisions will ultimately be achieved through the distillation of high complexity into a manageable number of key measures and indicators of how economic sustainability is achieved in a constantly changing context.

Agenda

Introduction and Objectives (Clark Eustace & Clive Holtham)

Session 1: Policy Implications of the Intangible Economy: Innovation Policy and IPR (Patrizio Bianchi & Sandrine Labory)

Session 2: Case Study 1: Skills (Clive Holtham)

Session 3: Measurement of Intangibles in Macroeconomic Statistics (Peter Hill & Richard Youngman)

Session 4: Case Study 2: The Tangible/Intangible Dynamic (Roger Wallis)

Session 5: Corporate Indicators in the New Economy (Jan Mouritsen)

Session 6: Case Study 3: Knowledge Management (Sandra Sieber)

Session 7: Accounting, Financial Analysis and Audit in the Intangible Economy (Stefano Zambon)

Session 8: Case Study 4: XML (Patrick Finnegan)

Session 9: Banking & Venture Capital Metrics (Frede Mørck)

Session 10: Case Study 5: Entrepreneurship (Carla Millar)

Session 11: Government and Intangibles (Edward Truch)

Plenary Session – Conclusions and Synthesis

Appendices:

Appendix 1 - List of Participants

Introduction and Objectives (Clark Eustace & Clive Holtham)

Clark Eustace opened the meeting with a summary of the project's aims and objectives. The European Commission has agreed to fund a two-year programme of economic research which will bring together leading experts from the business, academic and policy communities who are working in this field. Essentially the project will set out to address three strategic objectives:

1. To create a coherent pan-European community of practice out of the fragmented academic and other interest groups currently working on issues relating to business intangibles.

2. To materially advance the knowledge frontier vis-a-vis the economics and measurement of intangibles, through interdisciplinary research directed at the areas of critical concern.

3. To provide a forum for disseminating the results of this and other relevant research.

The first research challenge is to illustrate the extent of the problems caused by the fact that a significant, and growing, part of the EU's economic activity - and key economic assets - are effectively hidden from public view. The second challenge is to gain a much better understanding - at the national, sector and firm levels - of those intangible goods, assets and competencies which can, and should be, delineated, thereby allowing for their measurement and disclosure. A third challenge is how to overcome the artificial academic and professional disciplinary boundaries that are obstructing progress in this area – which are themselves a legacy of the old-world measurement frameworks.

The initiative involves eight academic institutions in seven European countries and a business-oriented Advisory Council, which will attend all plenary meetings at which research results are presented. The Advisory Council is largely drawn from the key interest groups - companies, financiers and investors, lawyers and professional accountants, regulators and policy analysts - and is charged with both guiding the research and ensuring that the materials produced have a practical, commercial or policy application. The Council will also provide an important source of two-way communication between the academic researchers and the business and policy communities, and members will be encouraged to take an active interest in exploiting the research findings commercially.

The change in the global economic environment over the last year has in many ways provided the project with an ideal backdrop. The subsidence of the hype and the capital markets' return to some degree of sense and stability have provided the project with the breathing-space necessary to better scope out a future framework for the measurement and reporting of intangible assets.

The academic projects envisaged fall into two broad groups: mainstream research and supporting case studies. The presentations of the sub-group leaders are summarised in the following sections, together with the main questions and discussion points arising from each.

Session 2: Policy Implications of the Intangible Economy: Innovation Policy and IPR (Patrizio Bianchi & Sandrine Labory)

Project Objectives

1. Review the effectiveness of the existing EU innovation policies aimed at

fostering technology transfer, with particular reference to the promotion of corporate and academic spin-offs into the SME sector;

2. In this connection, explore the policy conditions and other factors essential to the diffusion of publicly-funded basic research (into the hands of those who can best exploit it), and the barriers to its commercial exploitation;

3. Assess the extent to which the current EU IPR arrangements pertaining to the protection of intellectual property work to foster or obstruct innovation-transfer. A range of sectors will be examined including the health and education sectors;

4. Assess the extent to which there is justification for a more prominent role for public sector institutions in the funding of basic research than is seen in many EU countries today;

5. Identify specific (normative) recommendations for policy change.

Presentation

Since the very beginning of his interest in the field of intangibles, Patrizio Bianchi has been very conscious of the interrelationship of the two levels at which the intangibles problem predominates – namely, the company and the macro level. A company's strategies need to reflect the realities of what is happening in the macro world. Lack of world peace, an example of a macro intangible, both reduces access to capital and increases the costs of capital for companies, thereby influencing companies' decision-making. In the same way, governments and regional development agencies must act in accordance with the intangible realities of what is going on in the micro worlds of the private sector.

Intangibles are viewed by this project team as sets of complementary knowledge and capabilities and are said to have four major properties: they are complex, costly, dynamic and unstable. This project is not simply looking to make a list of recommendations, but rather to shed some light on the complementarities which exist between the different levels of the economy. These are poorly understood. The team believes that economics has tended to treat intangible assets, such as innovation, knowledge, human capital and organisation, rather separately, thereby missing some of the complex and dynamic ways in which intangible assets inter-relate and complement each other to generate economic value. Similarly separation of policies with regard to education, university research, enterprises, labour markets and the environment, to name a few examples, leads to ignorance of the complementarities and overlaps, and therefore limits their effectiveness.

The project's scope is broad and cannot, in the time available, cover all aspects of government policy. Particular themes have been chosen for focus. Firstly, Patrizio's team is interested in the identification of the sources of values of intangibles in the production process. Secondly, the team is looking to identify policy levers favourable to the development of intangibles at the level of the European Commission, at national and regional government level and at local authority level. More specifically, they are going to study the conditions conducive to the development of innovation and knowledge diffusion with the aim of providing new insights on the interactions between the complementary investments and activities that constitute the innovation process.

Innovation policy at any point in time is influenced by a number of factors, such as the availability of capital, the availability of information, and incentives to collaborate. The identification of such complementarities is not new in themselves. However, their dynamic interrelationships are not well understood. In particular, the project will look to shed light on the structure of intellectual property rights, the structure of externalities and the links between business and knowledge institutions. What linkages are necessary? What are the conditions for such linkages to function?

Using case studies in such sectors as healthcare, bio-technology and pharmaceuticals, the analysis will propose a policy framework re-oriented towards creating the right conditions for accelerating the circulation and commercialisation of innovation and knowledge.

In discussion, various issues were raised. Firstly, the question was raised as to how specifically one could identify and observe a complementarity. Secondly, it was suggested that it would be interesting to come up with insights on how the activity of policy making itself is changing (or should be changing). Allied to this was a thought on how much policy-making is reflective of the relative powers of lobby groups. The Millennium Copyright Act and its reflection on the power of Disney, and Disney's determination to retain IPR over Mickey Mouse, were cited as an example. This begs the important question of how you change this context to "free up" politicians and allow them to stretch themselves to being innovative and challenging. Thirdly, the team was encouraged to review the relevance of theory of the firm within today's socio-economic environment and revisit uncertainty risk (which in his opinion is wrongly priced right now) and how this relates to the theory of the firm.

The hope was expressed that this project would throw up an analysis of what the key policy interfaces *should* look like, whilst building in specific recommendations on a viable IPR framework.

Closing off the session, the project leader re-iterated that they would clearly be unable to complete an encyclopaedia on all the interesting issues raised in discussion. In his view the crux of the problem facing European policy-makers is how to get people working together in a manner which is both stable and sustainable. Ultimately, they wish to contribute a perspective on this problem.

Session 2: Case Study 1: Skills (Clive Holtham)

The first study identified by the CUBS (City University Business School) team under the Skills theme is a study of the opto-electronics industry and how firms within the industry acquire, develop and renew their technology through networks. There are two key questions. One, how do you measure the productivity of a network? Two, how do you differentiate good and bad players in the network?

There should be strong linkages with Jan Mouritsen's study, "Corporate Indicators for the New Economy", with its focus on networks. Other studies under the PRISM umbrella will be of interest, in particular those concerned with the human capital perspective of intangibles. Choices of subject matter for their other two studies remain under discussion. All cases will ultimately come back to, and link strongly with, the overall theme. How do firms actually measure and manage such skills as innovation and knowledge?

Session 3: Measurement of Intangibles in Macroeconomic Statistics (Peter Hill & Richard Youngman)

Project Objectives

Overall objective:

- To demonstrate why a new taxonomy is needed in macroeconomic measurement systems, a taxonomy in which intangible goods are clearly recognised and differentiated from both tangible goods and from services.

Specific objectives:

- To estimate the scale and significance of the problem and its impact on existing macro economic data systems and the uses of macro data for purposes of analysis, decision taking and policy making.

- To make recommendations as to how concepts and classifications in national accounts might be changed in order to make the data more useful and policy relevant: for example, by redefining capital formation to include investment in some intangibles that are not currently identified and classified as assets.

- To identify what are the key obstacles preventing such changes and how they might be overcome.

- To make some tentative estimates of what effects such changes might have on existing data bases

Presentation

The objective of this study is to examine ways in which macroeconomic measurement systems fail to capture the realities of the twenty-first century economy and to recommend ways in which the gaps and anomalies identified may be overcome. National accountants, the project team argued, are failing to provide the analysts and policy makers who base future-looking decisions on these statistics with all the most relevant and useful data sets of today's world. GDP and other headline figures *may* be being misrepresented.

The project will build on Peter Hill's 1997 paper "A new taxonomy for the classification of output", in which he convincingly argued that there is an important and growing subset of output which is, at worst, missing or, at best, subsumed within the national accounts. He argued that a new taxonomy is needed in which intangible goods are clearly recognised, differentiated and quantified. By way of illustration the team showed a graph of the output from the UK economy and how its output is split between a declining share of tangible goods and a growing share of services. The team argued that there is a raft of intangible goods – such as the originals produced by architects, artists of all types, scientists and software writers – which are erroneously subsumed within services. These intangible goods share all the economic characteristics of goods and none of those of services – and the policy issues are totally different. Goods can be consumed or used long after they are produced at locations which are remote from their place of production. Services, on the other hand, cannot exist independently of the producers or consumers.

It might also be argued that the concept of intangible goods stretches to licenses in their widest form and to some of the more innovative financial products which have been created in recent years. Neither is treated as *produced* assets in the System of National Accounts. The team will explore this grey area.

Other anomalies exist which warrant more thought. Two examples. First, mineral exploration is recognised as an intangible fixed asset. This measure is trying to capture the value of the knowledge of discovering from the exploration process where oil is and is not present. This begs the question of why only knowledge with regard to oil exploration is included. Second, a disproportionate amount of time and resources is spent on collecting a vast amount of data sets on industries which are no longer very significant in western economies. Agriculture was cited as an example. Would it not be more appropriate to divert those resources to sectors such as financial services and the communication industries which are growing and are rich in intangibles, but are relatively poorly covered from a data viewpoint?

The team will not only advance the conceptual case for revising macroeconomic data, but will also be looking to size the problem by putting some numbers to these flows where data is available for a sample of countries likely to include the US and 3-4 EU countries. Research and Development, for example, does not form part of the gross capital formation flows of national accounts, albeit a significant share of this expenditure contributes towards the production of intangible goods such as scientific originals. Training and Development could similarly be considered as a gross fixed capital flow contributing to the value of Human Capital and/or Knowledge.

Aside from the conceptual problems, there are also some significant practical problems. Macroeconomic measurement systems are ultimately constrained by the availability of data at a micro level. How and what intangibles can be measured at a micro level will to a large extent dictate the degree to which macroeconomic data can be enhanced. The team is hoping that some insights of how this might be achieved for the future may flow from other projects focused in on that level.

In discussion, much comment was made on the difficulty of measuring and comparing Research and Development. Research and Development expenditure is, it was pointed out, very people-related and so the figures produced are effectively composites of expenditure on different sorts of assets, some intangible, some not. Further, a valid warning was given (which might be equally applicable to many other projects). How, it was asked, do you minimise the risk of effecting the very thing you are measuring by the fact you are measuring it? By choosing to pick a certain class of intangible asset for measurement, there is a danger that you may make people overlook others which are equally important.

Session 4: Case Study 2: The Tangible/Intangible Dynamic (Roger Wallis)

The hype surrounding the shift from the tangible to the more intangible has overly-focused on digitization. It has had the effect of masking some of the more interesting areas, in particular the dynamics of the inter-relationship of tangibles and intangibles.

Under this theme, four areas are being considered as suitable subjects for the three case studies. The music industry has already been chosen as the subject of the first case, the others are up for consideration.

The music industry provides a rich source of evidence for observing the tangible/intangible dynamic and for observing the possibilities of the measurement of the effect of intangibles within it. Phenomena to be considered in the study were illustrated principally through citation of the Napster case. Too much coverage of Napster concentrated merely on the legal battle between the music majors and a college boy's invention and the tensions it revealed in current copyright law. Some of the following aspects were perhaps overlooked which are *identifiable* and *measurable* dynamics. Some studies, for example, suggested that the level of tangible product sales (e.g. CDs) increased due to the Napster technology's ability to form a network of 60m people. Napster (and its clones) could be said to have created (or at least increased) a new form of economic activity, namely home CD-burning. Napster also created revenue flows in the form of telecoms charges, advertising and blank CDs. These are measurable dynamics.

The publishing industry also provides some interesting questions to study. Confusion between the relationship of the print and the digital is rife. Does one drive or replace the other? What is the revenue split between print and digital? He cited the case of a well-known and popular Swedish tabloid whose large advertising revenues (sold as packages of digital and print advertising space) were found to be mainly reported as digital advertising revenue flows - due to some vagary of the taxation system.

Retail banking is also considered an option for study. Here the main dynamics are between the Internet and the concepts of trust and physicality. A subject for study might be a Swedish supermarket who entered into banking to leverage the advantages afforded by their physical presence and the value and trust their brand represented. They anticipated this would lead to a reduction in the amount of cash their stores would hold. In fact, the opposite happened due to a flood of deposits.

Distance learning was put forward as the fourth possibility for study.

In discussion, the following comments were made. Someone commented on the fact that within these value chains so many property rights exist, some of which are probably realisable, while others are mere complementors. And that it is the inseparability, not just the inter-relationships, which are of great interest. Along the same theme, another commented on how the dynamics of the value chain are a very interesting study subject, not least those changing dynamics which may or may not stop value rushing back up the value chain to the artists. Is the creation of IPR, someone else asked, the point at which the tangible and intangible part company?

Session 5: Corporate Indicators in the New Economy (Jan Mouritsen)

Project Objectives

a) *Global (contextual) objectives.* The global focus of the research is to contribute to our understanding of how a network society may be governed. When loosely-coupled firms interact and co-operate on issues of strategy, operations and capabilities, new forms of energy may be released and new management issues arise.

b) *Project goals.* More specifically, the project will explore the relationship between managing assets and resources in a new economy context and the technologies of managing needed to allow management to be performed. This directs attention to management problems, and indicators of relevance to solving these problems - with a particular emphasis on intellectual resources.

Presentation

The principal objective of this project is to deliver indicators to assist a company in deciding whether they want to be part of a particular network. And if so, how and why. He will be studying knowledge-centric network activities, looking for indicators of competence, interested more in the management dilemmas than in the flows. Three principal themes were outlined.

Firstly, how do you include or exclude new firms in a network? How do you assess the value (positive or negative) of adding (or losing) a member of a network? Secondly, how do you achieve a balance between exploration and exploitation of knowledge within a network? How do you know where the correct mix lies? Does power result from holding specific knowledge? What power distribution is necessary in the network for it to be effective? Thirdly, what does it mean to be part of a network? What does it mean to make a strategy for a network? How do you decide how stable or open it should be? How do you put the “powers” of a network together? How do you deal with the dilemmas of network management – the management of jealousy, of exclusion, of fear, of greed?

The project team’s work will build on previous and parallel studies. He cited two examples. The first was the Spar Nord indicators which tracked the circular link between employee satisfaction, customer satisfaction and profitability. The second was the Danish project which has been running for 4-5 years now under which 120 companies’ Intellectual Capital reports are being observed and analysed. His experience with this latter study suggested that there is a certain romantic idea in Accounting that tangibles, in contrast to intangibles, can somehow be measured “properly”. Jan put forward the thought that his five years with these Danish companies showed him that there is no reason to believe that the measurement of intangibles will not mirror the path taken with tangibles. A system is learnt over time and the imperfections are ironed out as they go along.

The study will observe different types of networks and knowledge management activities, and their varying management and reporting practices. It will seek out indicators which are effective in letting us know how successful or otherwise the management has been at getting new individual nodes into the network and in developing the network as a whole portfolio. The indicators being sought are indicators of both lead and lag, and of both assets and liabilities. Take the causality of investment. Why do firms invest in training, for example? Is it because of problems and perceived failings, or is it to build further on success?

In essence, this is the study of how stable rigid organizational structures like companies can successfully be members of dynamic and flexible structures like networks. It may effectively challenge the widely accepted notions of organizational boundaries, in regarding firms as portfolios of activities and portfolios of networks. Innovative change impacts on different component parts of a firm differently. Firms are not homogeneous entities, any more than networks are.

In the subsequent discussion, two more themes emerged. One was a discussion centred on the fact that networks have multiple individual balance sheets but not one for the network itself. It was suggested that this study might be heading for a lateral accounting methodology based on flows, collecting the tangibles and the intangibles of the network, in contrast to the vertical “silo” approach of traditional accounting methodology which was based on the control of resources. Ultimately, therefore, an output might be a ratio of capabilities to achievements which would be useful at all levels, micro and macro.

The second major discussion point arose from a question about the differences between internal and external reporting. The presenter believes that knowledge loses its power and value if it is not made public or visible. It is a motivator. It needs communicating. Very few of the companies who participate in his Danish study are interested in financial markets. Yet they systematically disclose and explain their knowledge base, in particular to employees and customers. However, surely there would be practical obstacles in that CFOs would be reluctant to be forced to report too much too quickly? Indeed, given the focus of CFOs and external reporting is all about liabilities, should a network prove to be a liability (rather than an asset), no one will want to report that. Another view expressed was that internal reporting needs to be considered in the context of individual parts of the organisation winning resources for innovation and change ("soft credit rationing") whilst external reporting needs to be considered in the context of transparency and access to external sources of funding ("hard credit rationing").

On a different note, a concern was voiced with regard to the fact that the study will be conducted within one culture. Leadership style, he argued, is important in networks and style will vary from place to place, from culture to culture. Conclusions may need to be drawn with such a caveat.

Henley Management College has done some work with regard to Vodafone's management of its global network. They have looked at power and ownership and cultural issues and built a model around it. It was suggested that the study may have some useful parallels.

Session 6: Case Study 3: Knowledge Management (Sandra Sieber)

Knowledge is regarded by the IESE team as a principal source of competitive advantage. The dimensions of knowledge are visualised as lying along the following axes:

- Tacit-Explicit
- Individual-Organisational
- External-Internal
    - External knowledge has a market value and, in principle, is available to the market as a whole.
    - Internal knowledge is seen to be what Drucker says is "the difference that makes the difference". It is hard for others to imitate and take advantage of. Indeed it may not be useful for others.

Most KM initiatives are based on the implementation of systems. There is less focus on the softer issues surrounding the non-technical, more human issues; in particular, it is contended, that little is known about the key success factors. IESE, therefore, propose to tackle three case studies in this area, thereby allowing them to formulate some recommendations for the measurement of intangibles (in particular, the underlying mechanisms of knowledge creation). As with previous groups, the subject matter for the first case has already been defined, with the other two still to be decided.

The first case upon which work has already begun is centred on the acquisition of Ernst and Young Consulting by Cap Gemini. A core challenge of the merger has been the integration of two different knowledge management practices. Cap Gemini's could be described as an IT-based system; Ernst and Young's, by contrast, was a "softer" KM practice. The integration of the two was regarded as very important in the setting of the future culture and shape of the firm.

IESE has been observing the evolution to the point where a decision has recently been taken to scrap the two legacy systems and build a new one.

Four possibilities have been outlined for the two remaining case tranches. The first one is the World Bank. The team would examine the launch of the “Development Gateway”, a global initiative aimed at managing and transferring knowledge at research institutes and educational institutions in emerging economies. The second possibility is Formula One, considered to be a classic case of a business dependent on intangible assets and competencies. If someone could provide access to the company, they would like to do it. They have experience in the domain, having studied Rally Racing SEAT build up their knowledge base from scratch. Some was acquired externally, some was built internally.

A third area of study might be that of Corporate Universities; the central issue will be why organizations establish their own. Finally, E-Learning is considered interesting. The central issues will be how do organizations conceive it and what do they expect from it. A possible case may be the Open Catalan University, a leading university in online education.

Session 7: Accounting, Financial Analysis and Audit in the Intangible Economy (Stefano Zambon)

Project Objectives

- The unit intends to investigate from an international and comparative perspective the new developments in the corporate reporting domain, without disregarding the potential implications of these innovations for public sector organisations.

- The study will assess the solutions proposed in the literature aiming to respond to the challenges posed by the new economic framework on the three professional service industries of accounting, financial analysis and audit. To this end, the research will consider the emerging forms of organisational reports that have been suggested to cope with the lack of information on the new value drivers. The contents and challenges which these reports pose to audit and financial analysis will be thoroughly analysed.

- More specifically, the project will aim to provide a blueprint for auditors, professional accountants and financial analysts regarding the new corporate information disclosures required by the intangible economy. It will also set out to identify areas where the existing accounting standards and market regulatory systems may need special attention.

Presentation

The project’s subject matter is centred around three key interest groups – accountants, financial analysts and auditors. The team will study the ongoing developments in the field of corporate reporting in the private sector, not ignoring, however, the implications for public sectors. They will assess the solutions that have already been proposed, analysing the challenges for, and impacts on, these three groups.

Accounting, Stefano observed, is under great pressure due to a perceived obsolescence in the financial reporting and management accounting systems typified by a focus on cost and not value, and its transaction-based and historically-oriented philosophy. Furthermore, there is great suspicion in accounting circles surrounding intangible assets, in particular with regard to their separate transferability, their usefulness and their measurability.

Reactions to this within the financial accounting world are underway, manifested most publicly in such statements as SFAS 141/142. Within these statements there is a trend towards fair value and consolidated accounts will be looking to break goodwill down into pieces, pieces which will be reviewed regularly for impairment. The question remains as to whether such initiatives will ultimately result in *better* financial accounting. An important aspect will be to examine EU financial statements pre and post conversion to the new FASB standard.

Parallel to this have been developments within management accounting, exemplified by the use of Kaplan & Norton's scorecard, the rise of non-financial metrics and other means by which to evaluate managerial performance and the increasing emphasis on value creation.

Stefano sees a clear trend of convergence between the fields of financial and management accounting. Similarly, the internal and external perspectives of Intangibles reports are merging. All of this indicates the rise of a new form of accounting, part of which may be seen to be a reaction to the shareholder value mantra pushed by business schools. There are many other values of an organisation which need recognising. These take different forms and are of varying significance from one case to another. Hence we have seen innovations in new accounting such as social, ethical, environmental and Intellectual Capital reports.

However, many problems remain. These are illustrated well by a diagram of Sveiby's which depicts how "far apart" on some of these issues are some well-known measurement systems already in use. How do you measure a value without a market price, a problem noted as far back as 1904 by an Italian economist? Where do you stand on the specific-generalist scale? Or, on the atomistic-holistic measurement methodology scale? Should compliance be voluntary or regulated? Should measurement units be common or allowed to be different (which makes comparison harder)? How do we deal with reliability over relevance?

Alongside the development of new accounting, Stefano's team proposes to examine "new" auditing and the consequences for financial analysts. The audit issues are clearly closely connected to the accounting trends. The audit profession is following a trend towards supplying Assurance, rather than Audit, services which raises two key questions. Which are the new techniques emerging? Is it necessary for these to be formulated into standards, to fit, perhaps, alongside the standardisation of electronic financial reporting through XBRL?

From the financial analysts' perspective, the project is looking at three questions. How do you interpret the new data sets and integrate them with the traditional reports? How do you link this information back to the drivers within the value creation process? And how do you rank organisations as to the quality of their intangibles disclosure? On the latter Stefano has started work with some Italian companies, ranking their disclosure on three levels.

Session 8: Case Study 4: XML (Patrick Finnegan)

Patrick Finnegan outlined what the work the University of Cork would be doing under the PRISM umbrella.

The primary focus is the use of technology in the management of intangibles. They are looking at what XML can do in that regard, but wish to ensure tie-in with the rest of the project. Ultimately they are interested in understanding better the standards building process through their case studies.

The first case is intended to observe the standards building process. The original idea had been to look at XML and the competing visions which surround it. These include XML as the implementer of B2B, XML as the means by which to integrate enterprise applications, XML as a tool for the management of content, and XML as a tool with which to create trust on the Web. They may, however, shift to XBRL to ensure closer tie-in with other PRISM projects.

The second case would then observe the implementation/exploitation of such a standard at industry sector level. They have in mind a study of XBRL within the Australian banking sector, albeit would happily cover a European context should someone find a suitable subject.

The third case may drop down one more level – to that of a particular organization.

In discussion, the project team was encouraged to take a look at global weather reporting with a view to drawing out some commonalities. Local weather reports are derived from a process chain which begins with the pictures and information captured at a global level by satellite. The information is distributed through global standards thereby allowing for local analysis.

Session 9: Banking & Venture Capital Metrics (Frede Mørck)

Project Objectives

1. Carry out an empirical research study in the banking and venture capital sector of the current needs in relation to measuring intangibles.

2. Identify existing methods used by interviewing leading players in the market.

3. Identify key assets and competencies critical to assessing the value of intangibles.

4. Define elements and indicators which could be used as tools to describe the value-creation process and, ultimately, the value of intangibles.

Presentation

Frede Mørck is interested in how actors external to the firm make judgement on the value of the firm, large parts of which constitute intangible values. He will limit his study of how users of financial information deal with intangibles to two groups – bankers and venture capitalists. How do banks cope with intangibles in their internal assessments of counterparties' creditworthiness? How do Venture Capitalists evaluate prospective investments when their value lies predominantly in intangibles? He recognizes there are other important user groups but time will not permit their study.

This is a study of *real* values, defined as follows:

REAL VALUE = Tangible Assets – Liabilities = Equity +/- Intangibles

His team will primarily be conducting empirical investigation (through interviews) to unearth the true nature of the needs to measure intangible assets within these two professional groupings.

They will identify methods already in use and assess the critical assets and competencies required in the evaluation of intangibles. Ultimately the project intends to define the elements and indicators necessary to effectively describe the relevant values of intangible assets.

This project, in part, is about a shift in attitude. Frede will approach the banking community, for example, with the message that it is essential for them to define and express to organizations what it is they need to be able to satisfactorily complete their analysis. It is not acceptable to sit there and wait for organizations to come to them.

Two former bankers made comments in discussion. One pointed out that banks increasingly use predictive models for their credit assessment. This is partly for reasons of cost efficiency, but some would argue that “emotionless” computers probably make better decisions than humans do over a cycle. It would be interesting to consider what the implications are of such a trend. From a social viewpoint this will reduce the human interaction of lenders to borrowers. On an economic front, computer modelling will likely turn off the tap in leaner times quicker than a human would.

On a different tune, it was suggested it would be interesting to frame this study within the context of the new Basle capital adequacy rules currently being devised. The rules will put much more onus on banks to “prove” to the regulators the efficacy and reliability of their credit assessment systems. Effectively dealing with intangibles will be an important component. Ultimately it is in the interests of banks to “modernise” their evaluation systems since they will be rewarded by having to provide less capital to support their risk exposures.

Another delegate argued that it would not be the most beneficial approach to study the two groups in isolation. Venture capitalists tend to focus on complementarities and hidden values, bankers on identifiable and realisable values. Two separate analyses in isolation, he suggested, ran the danger of telling us what we already know. However, studying the two together and looking for cross-overs would increase the chances of coming up with some really valuable insights.

With regard to the scope of the work, it was suggested it would be more interesting to concentrate primarily on what they could or should be doing, rather than what they actually are doing, and to be aware of the synergies with Stefano Zambon’s project.

Session 10: Case Study 5: Entrepreneurship (Carla Millar)

Technology has had significant impact on the structures and strategies of industries, products and markets. One such development has been within the sphere of networks, a domain where new economic activities are developed, mostly of an intangible nature. These networks, composed of a range of socio-economic institutions, both shape, and are shaped by, new technological development. Such networks are particularly critical to knowledge intensive entrepreneurs.

The team, a partnership between TSM Business School and the Dutch institute for knowledge intensive entrepreneurship (NIKOS), defines entrepreneurship as a three-stage process in which an idea is conceived, a business form conceptualised around it, and then it is exploited in an economically viable way.

How the network is formed or developed is regarded as a particularly important part of the evolution of this entrepreneurship process. Therefore, the case studies will concern themselves with the organization and operation of these networks, seeking out insights on the successful management of the entrepreneurial network on four dimensions:

- SCOPE – what kind of contribution is made to the strategic goals of the entrepreneur?
- SCALE – what kind of contribution is made to the economic development in the network?
- SKILL & VALUES – what kind of contribution is made to the development and institutionalization of entrepreneurial networks in the region?
- SOCIAL NETWORK - what kind of contribution is made to the development of entrepreneurial networks?

The team will link closely with Jan Mouritsen's project work, ensuring tie-in to, and cross-over with, some of his fundamental questions. Where do the powers lie in the network? How is it controlled? As a network member what do you give up (and get in return)?

The first case study will analyse these concepts within a recently-ended project in which a heterogeneous network of large IT and telecom firms, SME's, research institutes of the University of Twente, entrepreneurial students, NIKOS, and the provincial and regional development agencies worked together to stimulate the growth of knowledge intensive companies based on WAP. A key question to consider in this particular case, suggested from the audience, would be what has *actually* been achieved that would have been unachievable without the entrepreneurial networking.

A second case has been identified, albeit it will actually form the third case since the initiative being studied only launches on January 1st 2002. The initiative is led by Rabobank who will look to stimulate entrepreneurship in a predominantly rural area in the east of the Netherlands. The network, whose participants will include bankers, farmers and prospective entrepreneurs, local business angels and intermediaries such as consultants, will aim to establish 50 new firms in the areas of IT, new forms of agricultural business, tourism and healthcare. Among other things the case study will look at the training and educational dimensions of what they teach the bankers to "teach" the farmers and what the bankers learn about the non-financial issues of entrepreneurship.

In discussion afterwards, a delegate commented on the inherent difficulties in measuring the dimensions outlined, made worse by the fact these dimensions grow. On the one hand, you have a dimension like "Scale" which is more akin to the "static" accounting model; but on the other, you have Skills and Values" which are very dynamic in nature because networks themselves are always evolving.

Session 11: Government and Intangibles (Edward Truch)

Project Objective

- To identify and publish leading edge practices in the areas of e-Government with a focus on measurement of intangible assets

Presentation

Edward Truch's central theme will be the measurement of intangibles within government machinery and departments. The precise areas on which he will focus will be shaped by holding a government workshop in the early phases of the project.

There has been a growing trend for some years now in which citizens have become far more demanding of the efficiency and quality of the services governments provide, and yet at the same time expect to pay governments less and less tax for those services. There is consequent pressure, therefore, on government departments to sweat their assets. In accounting terms they have always been measured on budgets, but are now considering how best to manage their assets. Metrics for measuring this asset management process will be required. More forward-looking government departments are already formulating Intellectual Capital frameworks.

The project will look for similarities and differences with the private sector, albeit the output is likely to be very different since there are no shareholders or financial reporting requirements. In some ways it may prove to be easier to measure intangible assets within the framework of government as so many are non-financial in nature.

The short-term objective of the project would be to hold a forum to assist in the finalisation of the project content. In the long-term, the objectives stated were two-fold:

- To identify and publish best practice within government machinery
- To develop benchmarks within a forum to compare practices.

Two delegates made comments in the ensuing discussion time. One pointed out that reward systems are in total contrast to training and brainpower. He reckoned that 20-30% of employees in banks, a high-paying sector, were "academically-trained" (masters or equivalent) while in the public sector this figure was closer to 60%. Another wondered as to the degree to which governments might be expected to practice what they preach as far as reporting and disclosure of their own assets and liabilities including intangibles. He pointed out that ratios such as borrowing as a proportion of GDP (EU stability pact) needed a wider range of information on assets and liabilities in order to provide sensible background for comparison purposes.

Plenary Session – Conclusions and Synthesis

The plenary discussion concentrated on the unifying themes of the whole project to which each work-piece must link. Discussion centered on the view expressed that this initiative has three such unifying themes which are pertinent to an array of different players in the economy (including, inter alia, policy makers, regulators, the financial community, and corporate executives):

1. **The old theory of the firm is now outdated and need re-conceptualizing to help executives and decision-makers at both the micro and macro levels.**

No doubt this theory was always an oversimplification, but in the light of developments of the last decades (not least the impact of vast technological advancements) its patent anachronism needs addressing.

Different dimensions and relationships have emerged as the drivers behind a firm. Patrizio mentioned four which this project is principally concerned with:

- Networks and open structures – firms are not "islands" and organizational boundaries are hard to draw
- Organizational – modern firms can be sub-sectioned horizontally as validly as vertically

- Knowledge – “the one asset that grows with use” (Paul Romer)
- Change – all firms are susceptible to change and must have the capacity to effect change

Another way to look at this, it was suggested, might be to consider that the old theory of the firm was all about best practice and the new theory of the firm is all about best options.

2. The balance between Public Goods and Individual Appropriability in the Modern Economy.

There is an inherent conflict between the public and private worlds in use and ownership of some key assets. Consider Innovation and Knowledge, for example. Public policy would favour the widest diffusion of knowledge

Brussels’ strengths lie in the legislative field. This project’s work, therefore, must assist in ensuring strong linkage between new legislative initiatives and market practice and realities. It must reveal clearly to the policy makers what are the new jewels in the economy, how big they are, and how their production, distribution and exploitation can be encouraged at different levels by different actors.

Striking the right balance, enabling the effective management of IP, and facilitating and encouraging the right environment for IP markets to flourish are key challenges for European policymakers in the 21^{st} century. It may not be over-dramatic to suggest that their success or failure in this regard will be largely responsible for what sort of economic legacy is handed on to the next generations.

3. The reduction of a vast array of complex and inter-related issues (imperfectly and loosely grouped as Intangibles) to a series of metrics and indicators to facilitate manageability.

Four of the work projects are principally concerned with this problem. How to account for, and how to measure, these complexities in such a way as to provide more meaningful and relevant information to an array of end users - decision-makers of one sort or another – is a core issue for this project.

The case studies series will be used to bring colour and life to these themes and complexities. Theories and empirical research can only take us so far – particularly in the project’s dissemination aspirations. All the cases must help people actually understand the skills and competencies required within the new conception of the firm to cope with the identified dynamics and to better manage their intangible asset and liability bases.

Maybe one should see this project as the beginning of a concerted attempt to provide Europe with new tools, new theories and new models in much the same way as the Renaissance did. The project must not lose sight of the global context of this study. A new global map is developing and a new European map needs to be drawn up within it to allow us to pass on a good legacy to our grandchildren. After all, Europe has only 6% of the world’s brainpower; and many companies are gradually downsizing their European operations and growing in Asia.

Appendix 1 – List of Participants

PRISM members

Eustace	Clark	Mantos Ltd
Holtham	Clive	City University Business School, London
Hoad	Tim	IntangAbility Ltd
Bianchi	Patrizio	University of Ferrara
Courtney	Nigel	Courtney Consulting
Finnegan	Pat	University College, Cork
Hill	Peter	City University Business School, London
Johansen	Mette	Copenhagen Business School
Labory	Sandrine	University of Ferrara
Millar	Carla	TSM Business School, Enschede
Morck	Frede	Copenhagen Business School
Mouritsen	Jan	Copenhagen Business School
Sieber	Sandra	IESE, Barcelona
Truch	Edward	Henley Management College
Wallis	Roger	KTH, Stockholm
Youngman	Richard	Perle Consulting
Zambon	Stefano	University of Ferrara

Advisory Council

Bezant	Mark	Andersen, London
Caredda	Sergio	Summit Consultancy, Milan
Edvinsson	Leif	UNIC, Stockholm
Enqvist	Reinhold	Nordic Industrial Fund
Guthrie	James	MacQuarie Graduate School of Management
Hoffmeister	Jan	Skandia
Loro	Daniele	Italian Association of Financial Analysts
Pupillo	Dr Lorenzo	Telecom Italia
Ramin	Kurt	IASB
Roberti	Paolo	ISTAT
Simeoni	Dr Franco	Ernst & Young, Milan
Starkie	Mike	BP, London
Stewart	Dr John	Ernst & Young, Milan
Welzl	Alexander	ARCS, Austria

Ferrara University

Di Tommaso	Marco	Donato	Fabio	Prodi	Giorgio
Masino	Giovanni	Iorio	Roberto	Rubini	Lauretta
Schweitzer	Stuart	Bergamini	Ilaria	Del Bello	Adele
Droghetti	Stefano	Galassi	Francesco	Tosi	Chiara