



Developing and managing knowledge through intellectual capital statements

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Abstract *On the basis of empirical illustrations from five Danish firms this paper discusses how the objects of intellectual capital statements were constructed. These objects were the activities that defined knowledge management, and the intellectual capital statements monitored these through depicting a particular narrativised strategy for managing knowledge – called a knowledge narrative – and through a monitoring system that reflected the activities set in motion to mobilise the strategy for managing knowledge. Particularly, the paper discusses the idea of knowledge as a narrative. It is suggested that for knowledge to count, it has to be able to produce something. This something is found the value-to-the-user of the products and services.*

Introduction

Intellectual capital is, even if it refers to “capital”, not a conventional accounting or economic term. Some authors use it descriptively “to refer to the knowledge and knowing capability of a social collectivity, such as an organization, intellectual community, or professional practice” (Nahapiet and Ghoshal, 1998, p. 245). Other writers associate it more intimately with management activities, either in the area of human resources (Boudreau and Ramstad, 1997) or of information technology (Davenport and Prusak, 1997). Intellectual capital has also been decomposed into “human capital”, “organisational capital” and “customer capital” (e.g. Edvinsson and Malone, 1997; Stewart, 1997; Sullivan, 1998).

These definitions illustrate three perspectives on intellectual capital that suggest it be about the effects of a collective practice, two sets of management issues or a template for describing its elements. Comparing the three perspectives, there is a possible irony or tension. As effects of a collective practice, intellectual capital is not a “thing” that has certain stable traits: it is “merely” the effects of how certain elements of a collectivity come together. The knowing capability, of which Nahapiet and Ghoshal (1998) talk, does not necessarily reside anywhere. Intellectual capital is not an object but an effect!

Others suggest that it is possible to attach certain management problems to intellectual capital such as human resource management and the management



of information technology, respectively. Here, intellectual capital is a departmental issue – either an HR issue or an IT issue. Even if both Boudreau and Ramstad, and Davenport and Prusak call for top management to support their agendas, they do so to rally support and not because, essentially, intellectual capital is to be found in these two organisational departments. From this perspective, intellectual capital is not an effect of the work of a collectivity; it is more an element in interdepartmental struggles for visibility towards top management.

Finally, authors such as Edvinsson and Malone, and Stewart suggest that intellectual capital is a combination of human, structural and customer capital, whose worth can be identified by subtracting the firm's book value from its market value. Here, intellectual capital is a mathematical form derived from manipulating a model of the capital market. Intellectual capital is a residual, which, on the one hand, illuminates the "total value" of intellectual capital but, on the other hand, poorly reflects the linkages between the three elements of intellectual capital that would explain this difference.

The tension and ambiguity involved here are that neither of the perspectives explains the mechanics of intellectual capital. Intellectual capital may be an effect; it may be a departmental strategy; it may be a mathematical formula, but how it works is difficult to unravel. Against this background, it is not difficult to understand why some authors have struggled to find the referent of intellectual capital – what is intellectual capital mapping and trying to bring into the open? What is an intellectual capital statement attempting to make visible?

One of the possible answers is that the management of intellectual capital and the management of knowledge resources are linked (Sveiby, 1997; Sullivan, 1998) since knowledge management activities can be seen as the substances on which intellectual capital statements report (Allee, 1997; Birkitt, 1995; Bukh *et al.*, 2001; Leonard-Barton, 1995; Mouritsen *et al.*, 2001a, b). To Roos *et al.* (1997, pp. 6-7) this linkage may be appreciated in the following way:

A veritable multitude of theories has emerged, each trying to capture the essence of the problem – on one side the measurement of the hidden value of the company, and on the other side the management of knowledge and information, as sources of sustainable competitive advantage. No theory, though, until the beginning of the 1990s and the development of the concept of intellectual capital, has realised that the two problems are only two sides of the same coin: what you can measure, you can manage, and what you want to manage, you have to measure. Intellectual capital theory represents the fusion between these two streams of thought. IC is concerned with how better to manage and measure knowledge and other intangibles in the company.

The aim of measurement is to mobilise "*intellectual capital as a language for thinking, talking and doing something about the drivers of companies' future earnings*". Intellectual capital comprises relationships with customers and partners, innovation efforts, company infrastructure and the knowledge skills of organizational members." (Roos *et al.*, 1997, p. v, emphasis in original). In this sense, intellectual capital statements report on the knowledge management

activities that allow the firm to develop and exploit a certain resource base or a set of competencies which through knowledge management activities can be made objects for management control and intervention.

More precisely, intellectual capital statements report on firms' knowledge management activities – neither on the value of knowledge, the amount of knowledge, nor on the departments involved in producing knowledge. They report on organisation-wide knowledge resources that in combination are capabilities, which make it possible for the firm to act – to do something!

This is partly the insight from resource based theory, which in Hamel and Prahalad's version claims that knowledge, or organisational competencies, are rooted in routinised complementarities between skills and technologies. "A competence is a bundle of skills and technologies rather than a single discrete skill or technology . . . A core competence represents the sum of learning across individual skill sets and individual organizational units. Thus, a core competence is very unlikely to reside in its entirety in a single individual or small team" (Hamel and Prahalad, 1994, p. 223).

The management part of knowledge management is a practice of combination – combination of technologies and skills, or generally all the interdependent elements that are necessary in order to accomplish organisational knowledge as a phenomenon. But what is this? This is where intellectual capital statements are important, because Prahalad and Hamel's abstract account may be made particular and concrete through them. If intellectual capital statements report on the activities that define both elements and the practice of combining that Prahalad and Hamel presuppose, then intellectual capital statements help identify what the particular idea of knowledge management is. This means that the text of an intellectual capital statement helps to make the object of knowledge management clear – it draws it out. The clarity emanating from actually numbering certain efforts and practices makes the referent of the statement very precise and sometimes perhaps even too clear, because being represented by one or more indicators, knowledge loses a bit of its mystique.

We explored the issue of how intellectual capital was formed and made organisationally relevant through a longitudinal study of 17 firms' work to develop intellectual capital statements over three years[1]. We followed the translations made from initial "good idea" to two documents called intellectual capital statements (see also Mouritsen *et al.*, 2001a). We studied intellectual capital as it was unfolding, and we looked at how it gradually became strong from initially fragile potentialities. The study was concerned with how intellectual capital was stabilised, made productive and potent, and became a key to the firm's construction of its strategy for managing "intellectual resources". We did this by interviews and by participant observation in all firms over the three years, and through participating in workshops held for the firms on their progress.

This is the paper's basis. It starts off by discussing the idea of knowledge management, and then it progresses to illustrate how a strategy for managing

knowledge can be a narrative. This is followed by a section which illustrates how a strategy for managing knowledge can be “put into indicators”, and the last section discusses how counting relates to knowledge.

Knowledge and knowledge management

Knowledge is a fragile object because it is not easy to give it a firm definition. In Socrates’ dialogue with Theaetetus (Plato, 1996), it is suggested that knowledge is never something by itself, but always in relation to something.

On knowledge

Socrates: [...] When you speak of cobbling, you mean by that word precisely a knowledge of shoemaking?

Theaetetus: Precisely.

Socrates: And when you speak of carpentry, you mean just a knowledge of how to make wooden furniture?

Theaetetus: Yes.

Socrates: In both cases, then, you are defining what the craft is a knowledge of?

Theaetetus: Yes.

Socrates: But the question you were asked [...] was not, what are the objects of knowledge, nor yet how many sorts of knowledge there are. We did not want to count them, but to find out what the thing itself – knowledge – is.

As Socrates concludes from the examples of knowledge provided by the student Theaetetus, it is difficult to “find out what the thing itself – knowledge – is”. When attempting to grasp knowledge, one is “defining what the craft is a knowledge of”. Therefore, knowledge does not exist in the abstract but only in relation to a practice. For Socrates and Theaetetus this “something” could for example be shoemaking or carpentry. Such a point of reference – if transported to firms working to identify and manage knowledge – is outside the firm, and yet with implications primarily for the internal structuring of capabilities.

A shoemaker producing Cinderella’s shoes intuitively has to master a set of knowledge resources, which is different from the types of knowledge resources that a shoemaker making general-purpose wooden shoes has to be able to control. There is a linkage between the purpose of knowledge and what it is. This linkage is very specific. It is not “merely” indicated by a division between three types of knowledge resources as in human, structural and customer capital. Even if such headlines are intuitively interesting, they are too abstract to be able to account for the specific kinds of knowledge that are to be mobilised and circulated to serve the uses, which knowledge is supposed to make possible. It may be that Cinderella’s shoemaker and the shoemaker of wooden shoes need similar structural capital in terms (of some) of the tools of the trade, and similarly they may need customer capital to preserve an idea of how the product is used. Perhaps they both even need to develop durable relations with the customer to allow him or her to be part of product development activities.

So, by virtue of their position in a particular industry – such as shoemaking – these two shoemakers appear to be largely similar, and – by implication – they may need similar knowledge management strategies.

But this is a problem. The kinds of relations to be developed, the need for product development, the supplier-relations etc. are very different in the two situations. The wooden shoe shoemaker needs access to a certain kind of wood that can probably be found in the vicinity of the premises of the shop. In contrast, Cinderella's shoe is partly of glass, and it is covered in diamonds that may have to be imported not from the vicinity but from South Africa, which is a long way from, for example, Europe or the USA. Therefore these two shoemakers probably need different knowledge management strategies; and probably these have to be spelled out in much more detail than the three-way split of human, structural and customer capital allows. Another possibility is to create a more specific and also a longer account of the activities that can be done in the name of knowledge. It has been suggested that such an account may consist of a very specific strategy for knowledge management organised around a knowledge narrative, a set of management challenges, and a set of efforts and indicators (Bukh *et al.*, 2001; Mouritsen *et al.*, 2001a, b).

Strategy for knowledge management – narrating the usefulness of knowledge

One piece of experience of Danish firms working to develop intellectual capital statements is that knowledge may usefully be presented and interpreted in the form of a narrative. A narrative is a plot about a certain phenomenon. It shows the sequence of a set of events, it dramatises the linkages between these events, and it points out not only the “good” things that characterise the phenomenon but also the crucial “bad” elements that have to be avoided to make the point of the narrative succeed (Boland and Schultze, 1996; Czarniawska, 1998). A narrative is not only a story – an empirical example – of how things work. The narrative presents something close to the identity of the firm, and therefore it presents some of the *raison d'être* of its activities. Therefore, when understanding knowledge as a narrative it is part of a wider justification of its role in helping the firm to develop and produce something “good”, and it also suggests where it is different from things, which in the situation is conceptualised as “bad”. Part of the narrative is also the means by which it is possible to reach at the “good”, which then presents a path out of the miseries that justify the whole narrative. As a plot, there are “good” things, possible “bad” things that have to be avoided, and a mechanism that makes it possible to reach for the “good”.

There are consequences of such a narrative view for analysing and understanding knowledge and intellectual capital. First, knowledge has to be related to a phenomenon – for a firm to be “knowledgeable”, “intelligent” or “capable”, it has to be so in relation to a purpose – a “good” purpose. Knowledgeability, intelligence or capability has to be oriented towards something, and the purpose of knowledge defines certain claims to its

constitution in the firm. The Danish firms had problems identifying exactly what kinds of knowledge were necessary because it was difficult to develop an appreciation of the purposes of knowledge. Over time, this aspect of knowledge was gradually developed around an idea that knowledge – as a narrative – connects an idea of value-to-a-user, the product/service and the knowledge resources required to produce products/services in such a way that value-to-a-user is centred. The strategy for managing knowledge was organised around a knowledge narrative that explained the relevance of the firm's knowledge resources to a community of users. It often was a narrative with three types of elements: a product/service; an account of value-to-user; and a presentation of the firm's "intellectual production function". A few brief examples may illustrate this[2].

Coloplast is not merely a producer of complex plastic products; it is a "Producer of Quality of Life"

Coloplast's (www.coloplast.dk) major product line is medical supplies to people with the physical handicap that the colon has been operated out through the side of the body. (The Appendix to this paper illustrates a fuller version of how the knowledge narrative can be written.) The product – which is a "plastic bag" – is a mechanism to collect bodily fluids. This is the product, but thinking about the value-to-the-user, the plastic bag is situated in the situation of its consumption. The narrative of this situation is one of "Quality of Life", as Coloplast puts it. When providing this perspective, the plastic bag suddenly is a much more complex thing than – well, just a plastic bag. It is possible to visualise for oneself how such a plastic bag becomes a critical element in people's lives and how it contributes to making life as normal as possible.

Therefore, the knowledge resources needed to develop, produce and distribute the product centre on placing the plastic bag in the right use situation. Insight into the user's situation becomes a critical form of knowledge, and the efforts to transport this into product development becomes a key knowledge management effort, and the objective to make the plastic bag as unobtrusive as possible in daily life, makes quality control an essential part of knowledge management. Through imagining the user, it is possible to derive the kinds of capabilities that the firm is to master: different use-situations (young/old people, sport/party/work situations etc.) are used to formulate physical, aesthetic and practical requirements to the bag and its usefulness. These requirements are integrated into the research and development activities needed to produce products, but it also goes into quality management because – as is apparent from use-situations – if the bag leaks or is difficult to change, many different kinds of embarrassing situations may occur. This is how aspects of quality control become part of the package of knowledge management technologies.

In brief the knowledge narrative has the following form: Coloplast produces medical supplies (product) to physically handicapped people. It helps these people to lead a near to normal life, and thus helps them create "Quality of Life"

(value-to-user). In order to be able to do this, Coloplast needs knowledge about users' concrete situations, and it needs an ability to translate these into product development. Also, since the products, if they fail, create very sensitive situations that are socially unacceptable, quality control has to be part of knowledge management ("intellectual production function").

Forsikringshøjskolen (The Danish Insurance Institute) is not merely a school offering part time education for insurance people; it is "Frictionless Education in Flexible Networks".

Forsikringshøjskolen (The School of Insurance) (www.fh.dk) is an educational institution that has specialised in educating employees in the insurance and financial sector. It produces part-time educational programs for people employed in the insurance/financial service sector, who periodically spend time at the school and, outside of these periods, work in insurance companies. The school's programs are organised in co-ordination with the industry, and often the school's programs are integral elements of career paths in these firms. The programs are not literally obligatory, but they are important for ambitious people. The school's service is education and teaching.

It is more than that, though, and awareness hereof is necessary to see how the school's knowledge resources are to be managed. Its value-to-the user is not only education but also the particular way it is offered, one aspect of which is captured in the idea of "Frictionless Education in Flexible Networks" to be mobilised via an aspect of virtual education. This idea of usefulness couples the student's work-life and education activities tightly together[3]. Through frictionless education, the school's ambition is to allow the student to decide on the co-ordination of educational elements so that courses and assignments can be approached when and from where it fits the student. This requires certain knowledge management activities such as making IT infrastructure available, and such as constructing a pedagogical form and examination procedures that make this possible.

Another part of this ambition is to create flexible networks not only between the school and its individual students but also among the students so that the physical space in the school's premises is complemented by a virtual space facilitated by the Internet. Again, this requires understanding of the usefulness and potentiality of IT resources and it presupposes a pedagogical form that motivates students to participate in Internet-based forms of communication and educational activities.

Forsikringshøjskolen's knowledge narrative may have the following structure: it produces education (service), and students are offered the possibility to study when and where they would like to do this (value-to-user). This requires that the school develops an IT structure and new pedagogical forms, and develops its network resources so that teaching can be a matter of reflection rather than merely a postal course in insurance matters ("intellectual production function").

Byggeplandata is not only a consulting firm, but also a "Knowledgeable Building Associate – More Customer than the Customer"

Byggeplandata (www.byggeplandata.dk) is a Danish consulting firm whose service is to co-ordinate building projects as a consultant for the firm (or person) that wishes to "outsource" its control of the building process. Byggeplandata thus makes sure that the project is implemented in time and within the financial and quality parameters stipulated in the contract. In this sense, Byggeplandata is "merely" a consulting firm that follows the building process and checks whether it abides with the plan: a controller! However, when Byggeplandata starts to explain the difference it makes to users, it turns out that controlling is a complex affair, which requires very precise skills. Controlling requires Byggeplandata to have various sets of "deep knowledge" in different areas of expertise such as financial and budgetary control, legal matters, engineering science, quality management, and project management. These are the parameters around which the building contract is constructed, and Byggeplandata mirrors this in its composition of knowledge resources. Therefore, the management of organisational capabilities and skills concerns the construction of a portfolio of items of expertise, each relevant to the building project. This also means that each type of expertise can be mobilised separately, and that, in a sense, it is concerned with deep expertise rather than with, say, process skills. In this way, Byggeplandata provides value-to-the-user in the form of "safety" for correct management of highly complex processes. Byggeplandata knows more about the needs of the customer than the customer does, and the task is a technical one.

This knowledge narrative may be put as follows: Byggeplandata is a controller for somebody who needs to monitor and control the progress of a building project (service). The firm assures that the whole process is correctly executed, and the principal can attend to other matters (value-to-user). To be able to accomplish this, Byggeplandata needs a series of very specialised competencies in the different areas of a building contract's domain ("intellectual production function")

Nelleman Konsulenterne (the Nelleman Consultants) provides consulting services; but it also produces Mental and Organisational Growth.

Like Byggeplandata, Nelleman Consultants (www.nelleman.dk) is also a consulting firm. It provides certain services as advise, evaluation, planning and training. These are conventional consulting tasks, but Nelleman also has the ambition to help users cope with changes and negotiation in relation to their jobs, and therefore it also starts off learning activities for the users (and clients). So rather than presenting the user with a conclusion, Nelleman helps the user to develop the skills necessary to solve their problems themselves in the context of their own work. This ambition requires good consultants just like Byggeplandata, but their qualifications are, in part, of a very different kind. For Nelleman, it is very important that the consultants apart from being good advisors in the domain of planning and evaluation, are very proficient in managing relations and have the ability to intertwine project and process knowledge on the spot. They have to be able to interact in relation to sensitive

issues that involve transforming not only the user's tools, but also to a certain degree patterns of work, identity and understanding of self. Technical expertise does not suffice here, Nelleman says, and therefore, the issue of managing the portfolio's resources, experience of handling sensitive social and psychological situations is as important as technical expertise. This is also why the value-to-the-user is mental and organisational growth and not only technical solutions.

This knowledge narrative involves advice and consulting (service) but it is executed in such a way that the user gets not only a technical service but also – included – a process of mental and organisational growth (value-to-user). To be able to accomplish this, Nelleman must have consultants that are able to improvise and catch issues as they materialise in real time and act on them immediately (“intellectual production function”).

Carl Bro is not only an advisor in construction and engineering matters. It is a “Multidisciplinary Knowledge House – The Producer of Intelligent Solutions”

The last example is Carl Bro (www.carlbro.dk) – a large consulting firm that develops and organises large engineering projects primarily around roads, bridges, houses, environment etc. Its service draws on multi-disciplinary solutions through project life-cycle management from inception to completion. It brings together technical product functions, human needs and safe environment, which according to Carl Bro is the characteristic of intelligent solutions. This is more than the delivery of one aspect of an infra-structural investment. The service combines and connects areas of expertise and orients them specifically to the user or customer. Items of expertise are bent around use-situations. The value-to-user here is that complex technical and human dimensions are integrated in one solution, and therefore, the consulting firm – in contrast to both Byggeplandata and Nelleman – has to be able to master not only types of expertise but also their integration in unique solutions.

The items of expertise which Carl Bro has organised in a complex matrix organisation, some of which reside in entirely virtual competency centres, have to be assembled and re-used in a myriad different situations when users draw new lines of requirements through the organisation. Each project is an assembly of items of expertise in new and novel ways, and even if there is stability in the matrix organisation, the expertise organised here is mobilised and drawn out in innumerable constellations, depending on the user's particular problem. Knowledge management is oriented here towards establishing portfolios of expertise, towards showing how the user/customer can bundle these items of expertise, and to how it is possible to make the firm stand out as “one thing”. And the value-to-the-user is that Carl Bro can effectively organise and identify all aspects of complex, novel and unique projects so as to integrate technical, human and environmental concerns – possibly being able to identify and conceptualise many more of the dimensions of the issue at hand than any user or customer is able to do.

Carl Bro's knowledge narrative may be as follows: The service is consulting and planning in relation to highly complex technical projects. The value-to-the-

user is that the firm in a sense “knows more” about the object of concern than the customer. Carl Bro is able to develop the customer’s theme and bend it around multiple economic, technical and environmental concerns. For this to be achievable, Cal Bro has to develop a set of strong and deep competencies and on top of this a mechanism that will make it possible for a customer to navigate between all the types of expertise offered by the firm (“intellectual production function”).

Intellectual capital statements and the development of knowledge management resources

The intellectual capital statement is used to monitor the development and implementation of the firm’s knowledge narrative. The intellectual capital statement is more than a description of the firm’s knowledge, however. Even if Socrates suggested that we really do not “want to count them”, counting is central to the production of the domain of knowledge management. Counting and numbering are means by which knowledge may be drawn forth as an object that has features, attributes and aspects. It is by counting the development of these aspects that knowledge management activities get a form – and a practice. Only when attached to numbers is it possible to identify and communicate, in a reasonable form, what knowledge is all about. Counting is integral to knowledge management. They survey the development of knowledge management activities.

In the Danish firms, it was not easy to specify how knowledge was to be counted. Over time the object to be described “changed character” because new indicators were invented over time, just as new versions of the knowledge narrative developed over time. Indeed, looking closely at the longitudinal aspects of the process of developing intellectual capital statements, the impression is that first, there was attention to the “philosophy” of knowledge. Second, when a deadline came up and a blueprint for an intellectual capital statement had to be in place, a report was assembled from existing materials. Third, this initial report was typically a list of indicators and numbers, particularly in the area of human resources, and the questions pressed forward, how may these indicators be read and understood? Fourth, discussing the relevance of indicators on human resources, the firms translated them into other statements such as customers, processes and technologies. For example training (human resource) was translated into training in IT (statement on technology) or training in knowledge about the product (statement on customer relation). Human resources were gradually separated and attached to other objects. Fifth, to make clear why these translations were necessary, the object behind the indicators was identified, namely as efforts. Indicators were primarily about monitoring the efforts put in place in the name of knowledge. And sixth, to make these efforts intelligible, there had to be some version of a strategy for managing knowledge – like a knowledge narrative[4].

At the start of the process of developing intellectual capital statements, firms generally suggested that the “person” or the employee was the object to be

monitored. Over time, however, the object gradually got more complex. Increasingly, the object changed from being not only about the person but also indicated by objects like customers, process and technology. Increasingly, the objects for managing knowledge identified in the intellectual capital statement changed from the person to a more varied one.

Intellectual capital statements helped to identify the objects of knowledge by illustrating what has to be done to make the knowledge narrative real. To achieve this, the intellectual capital statement's knowledge narrative is related to a monitoring system, which identifies the knowledge management activities. These connections may be illustrated in Figures 1-5, which are our analyses of certain aspects of the respective firms' intellectual capital statements (all of which are more comprehensive than the small excerpts permitted by the space of this paper)[5].

Coloplast: "Quality of life"

Coloplast's intellectual capital statement may be represented by Figure 1, which connects the knowledge narrative, the management challenges, the efforts and the indicators. The intellectual capital statement comprises all of these elements.

This brief illustration of Coloplast's intellectual capital statement shows first the value-to-the-user of the knowledge narrative and suggests how this is translated into three domains for knowledge management. And these three domains are identified as certain objects to be tracked, such as all of the referents behind the indicators proposed. It is clear that the indicators form a heterogeneous assembly of information, and for each management challenge there is a combination of "human", "structural" and "customer" capital. For quality control to materialise there are indications of efforts in terms of investments, but there are also indicators of effects such as customers' complaints, just as there are indicators about employees in self-organised work



Figure 1.
Coloplast's intellectual
capital statement

groups. In terms of knowledge of the user's situation, Coloplast measures encounters where information can be exchanged and also customer satisfaction, and for R&D a variety of indicators are proposed.

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Forsikringshøjskolen: frictionless education in flexible networks

Forsikringshøjskolen's intellectual capital statement can be represented as shown in Figure 2.

This representation shows the translation from the knowledge narrative's emphasis on the consequences of the Internet age on educational systems. To provide frictionless education, Forsikringshøjskolen develops a translation which emphasises two elements of education, namely the IT side and the pedagogical side. Following these through to their indicators it is clear how ideas of knowledge and knowledge management see themselves: knowledge management supervises the investments in IT and the associated processes for codifying various kinds of insight and information. On the other hand, knowledge management is about structuring the teaching resources and developing methods to cope with the new situation. Knowledge management is presented here as a mechanism to develop infrastructure – it is about the portfolio of resources committed to develop the capability to provide frictionless educational arrangements.

Some of the indicators are "strange". Are investments really indicators for knowledge? As they are financial indicators, this appears counter-intuitive! This is a major point, however, because the distinction between financial and non-financial indicators is not an ontological one – they do not refer to two separate and independent worlds. They are both part of one world, which is being represented by various kinds of indicators, and the move to develop a platform of capabilities to perform Internet-based teaching is related to the investments made – they indicate the commitments made to do this.

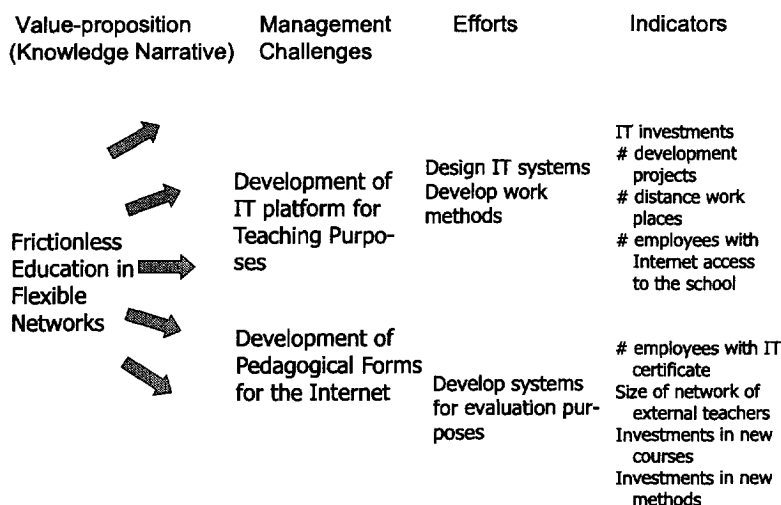


Figure 2.
Forsikringshøjskolen's
intellectual capital
statement

Byggeplandata: risk-aversion: more customer than the customer

Figure 3 represents Byggeplandata's situation.

Figure 3 shows the translation from "risk-avoidance" through to required competencies in Byggeplandata. In Byggeplandata, competency development is about building a portfolio of experts each of whom has unique and deep knowledge about a certain expert domain. To maintain expertise, the evaluation mechanism has to be mobilised constantly, including a mechanism to create a certain form of collectivity around forms of expertise, e.g. in the form of virtual expertise centres, the number of which is the intellectual capital statements. The knowledge narrative also requires knowledge sharing to take place particularly around phenomena such as large building projects, and it requires the development of relations to customers, who – paradoxically, when things go well – never really meet with Byggeplandata. The firm conducts its business unobtrusively, as its purpose is to take risk and burden away from a customer. To get to know the customer and thus to create relations, a special effort is needed.

The indicators are about the structure and processes of the firm. Some of them are financial and others non-financial. They are not primarily about people *per se*, but more about the structure of knowledge resources; they are examples of categories of expertise. Note that many of these indicators count organisation structure.

Nelleman Konsulenterne: mental and organisational growth

Nelleman's intellectual capital statement can be read as shown in Figure 4.

The illustration shows that there are two elements in the translation from mental and organisational growth to the indicators, one following the route of mobilising the structure of knowledge resources and the other element of making organisational systems to integrate people within evaluation. To

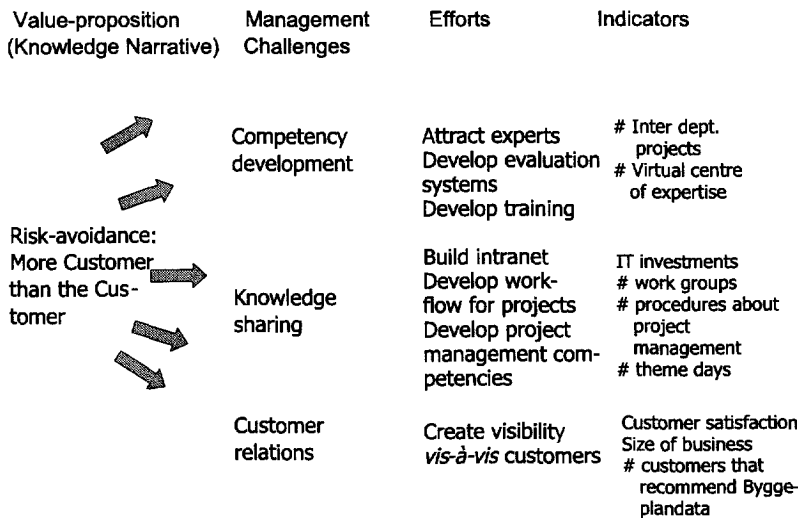
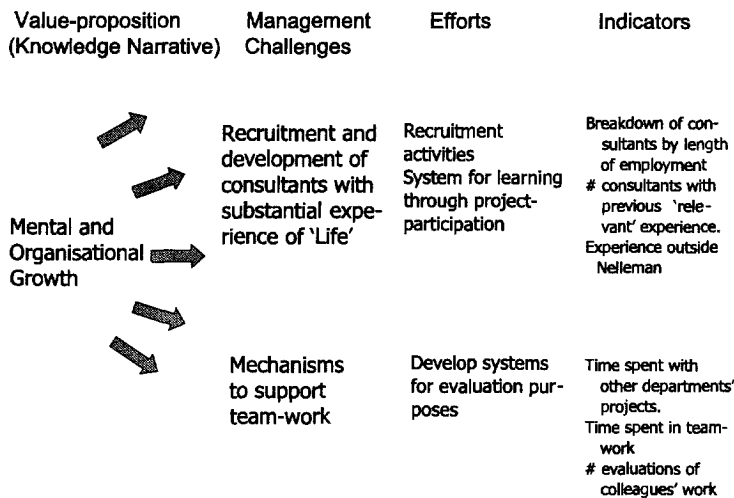


Figure 3.
Byggeplandata's
intellectual capital
statement



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Figure 4.
Nelleman's intellectual
capital statement

entertain these challenges, Nelleman needs to develop and recruit "experienced" consultants who know more than their technical speciality. There are indicators for this in terms of the portfolio of resources available. The narrative also requires certain things to integrate employees and make sure that some forms of knowledge transfer occur. Interestingly, evaluation is here a mechanism for knowledge transfers rather than for allocating blame. In this firm, evaluation allows people to talk about their experiences, and this is the background for understanding the indicators thus mobilised.

Carl Bro: intelligent solutions

Carl Bro's intellectual capital statement can be read as shown in Figure 5.

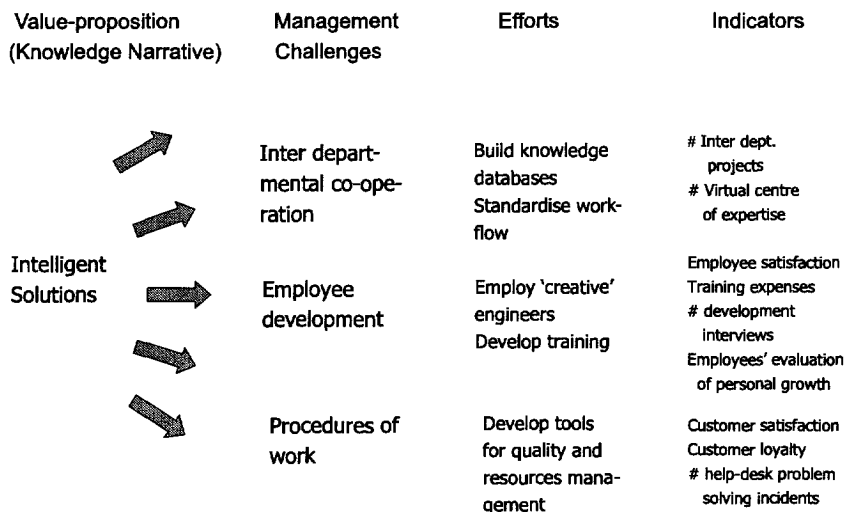


Figure 5.
Carl Bro's intellectual
capital statement

This presentation shows that intelligent solutions may be translated into three different management challenges in order to make sure that the various kinds of deep expertise of the firm are organised towards a customer's particular problems and projects. This requires interdepartmental co-operation that has certain indicators attached to it. It also requires employee development, particularly in the area of integration and willingness to co-operate. And the third element is the development of procedures of work so that all use the same systems and draw on the same principles of conducting projects. The indicators follow the specific challenges and efforts devised in the model. They are not merely about the portfolio of resources, but also about how the systems work and whether they provide relevant results in terms of, for example, satisfaction measures. This is a focus on effects of resources on the firm given their role in integrating the various items of deep expertise of the firm. It is a matter for combination and integration.

Counting knowledge management

The examples presented above show that the way firms indicate knowledge management is through putting indicators and numbers on the efforts that are mobilised in the name of knowledge. Knowledge does not exist in the abstract but only in relation to a theme or purpose, and its justification lies in its potential ability to make a difference to somebody. This difference puts demands on firms to be able to do something, and this something is the object of knowledge management. Intellectual capital statements make this object visible by attaching indicators and numbers to it via efforts, the implementation of which is monitored through the statement.

The analysis suggests that the indicators are part of the mechanism that makes knowledge manageable. An object is formed through the indicators because it is only through the phenomena that indicators refer to, that it is possible to get to the specific idea of knowledge. The examples shown above illustrate that there are various – and highly different – ways in which indicators can be developed and formed. There is considerable discretion[6].

One observation is that the firms do not separate between functions of human, structural and customer capital. These functions are not represented in the indicators that are all about actions and effects of activities. It may be – as is the case for Carl Bro – that certain inspiration can be found in this three-way split in terms of reporting and communicating the work to manage knowledge, but when attention is to the structure of the statement itself and its message, it is composed differently. The actions and activities are mobilised around a firm-specific purpose rather than around generic functions of intellectual capital. This is probably also why the three examples of consulting firms can turn out so differently. The knowledge narratives differ enormously even if they all produce the same service – consulting! Their ideas of a knowledge management strategy and its relationship to the tasks they wish to be able to perform differ; and their solutions in terms of capabilities are different.

Therefore, the firms' experiences cannot be organised according to the three-way model, even if they can be rationalised in those terms. In addition, it is

clear from the examples that it is rarely the case that a statement on humans necessarily is concerned with human capital. For example, when humans are stratified according to their abstract qualities such as types of expertise, it is not clear why this is not structural capital. After all, such types are generic and there is a potential market for them. Why is this not structural[7]? The examples presented above tend to suggest that there are numerous linkages between the indicators that cannot be reduced to functional entities such as human, structural and customer capital.

Another observation is that the indicators monitor the development of a particular knowledge narrative. They cohere because they are all part of building the infrastructure required to make the knowledge narrative possible. The indicators do not stand in a causal relation to each other. It is, for example, not meaningful to suggest that in Coloplast the investment in quality assurance is causally related to number of dialogue groups with users. Nor does it make a lot of sense to suggest that in Forsikringshøjskolen there is a causal link between number of employees with an IT certificate and investments in the development of new courses and new pedagogic methods. Likewise it is difficult to claim that in Byggeplandata the number of departmental projects is causally related to the number of customers that will recommend the firm to others. They may be related and they all participate in mobilising the firm, but to say that they are causally related is probably wrong[8]. They are related not because they correlate but because they make sense towards implementing the knowledge narrative. This is their function: they visualise the path towards realising the knowledge narrative.

Is this not a limited ambition? Why not make a direct representation of knowledge itself? Such an ambition is unfortunately in vain because knowledge is not a phenomenon in its own right. Intuitively it is clear that it is about getting wiser and more intelligent, but such aspirations are themselves difficult objects. How do we know that somebody is getting more intelligent? Typically by assessment – which is a grade – or by judgement – which ends in a social tag such as “competent”, “good”, “clever” etc., but these are themselves quantification items in a long, complex argument. The situation is that knowledge sounds good, but often it is but a general justification – who can be against knowledge in a knowledge economy? When firms work with knowledge and intellectual capital, they quickly learn it is difficult to identify and pinpoint this ambition just by intuition.

However, if time is spent actually working to develop an appreciation of how knowledge might make a difference to firms, the idea of knowledge as a narrative is often legitimate. It is about the usefulness of what we can do, and therefore it concerns the question of how we can develop the firm's capability to provide for (future) needs. It is not a direct financial agenda, but obviously it has financial implications. Therefore, even if there are problems with the market-to-book argument, it does signify the point that intellectual capital can translate into financial capital. But it does so indirectly by insisting on a “detour” around the things that the firm is to be able to accomplish. There are many indicators

for this purpose but they only make sense if the perspective is held in mind that the knowledge narrative is the framework to be implemented and tested.

The intellectual capital statement is thus a document that ties together various kinds of resources and activities. It is a “small” document which presents grand ideas, though, because it concerns the resources needed to be able to account for what the firm is to be able to achieve – and what management is doing towards this end.

Conclusion

This paper argues and illustrates that the object of intellectual capital statements is knowledge management activities. To make this possible, the statement combines knowledge narrative and a monitoring system which together form an index of the progress of knowledge management activities. The statement needs quantification to develop a precise appreciation of the object of knowledge management, and by doing this, it shows that the activities that go into managing knowledge can be found in various parts of the firm. When translated to indicators the complexity of knowledge is reduced, and made manageable and communicable.

Notes

1. The project was a collaborative effort between us and the Danish Ministry of Trade and Industry. Apart from academic papers, the project has also produced a guideline: *Guideline for Intellectual Capital Statements: A Key to Knowledge Management*, which can be downloaded from www.efs.dk/icaccounts or from www.cbs.dk/staff/jan.mouritsen
2. These examples are not complete presentations of these firms' activities and of their strategies. Even if the examples draw on their experiences of the firms, they are brief, and are only illustrations of parts of their particular knowledge narratives. In addition, as they are presented here, they are interpretations made by us. They have been presented to the firms and they do not presently disagree on our interpretation, but there may be other facets that they may prioritise in the future. Therefore the presentations made here will not necessarily be central in these firms' future knowledge narratives.
3. Forsikringshøjskolen attempts to produce virtual education as a sole service. The virtual element is part of a broad set of possible pedagogical methods and thus it is also part of education conducted at the premises of the school.
4. This is obviously a brief and caricatured model of the longitudinal aspect of the development of the intellectual capital statements. However, it does convey the impression that the process started out with simple indicators on people. It gradually attached people to other aspects of the firm, and it ended in the formulation of the *raison d'être* of knowledge.
5. It is important to note that these interpretations are based on interviews with the firms and on their intellectual capital statements. The interpretations are ours, however, and the firms cannot be held accountable to the views presented here. Even if they do not disagree with these interpretations, they may change their view in the future when their own work to develop intellectual capital statements and knowledge management develops.
6. This does not mean, though, that it is not possible to find analytical methods by which it may be possible to discuss in more general terms what an intellectual capital statement says. It is possible to group the various indicators so that a broader conceptualisation of knowledge management is developed and certain analytical properties can be developed (see Mouritsen *et al.*, 2001b).

7. Some may wish to claim that it is not structural capital because it cannot be owned. Then it is surprising that firms can be sold even in situations where people are the main resource.
8. We do not say that it is impossible to find correlations between various indicators, and we do not say that causality may not be inferred (Johansen *et al.*, 2001). However, if so, then causality is typically part of the knowledge narrative rather than an intrinsic part of the status of the indicators. This means that causality can only be about proposed relations in a knowledge narrative and not part of the indicators themselves.

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Appendix

To illustrate how a long version of a knowledge narrative may look, the following analysis of Coloplast's intellectual capital statement may be useful. Note again, that this knowledge narrative is a strategy, and the particular communication of it in an intellectual capital statement is a separate thing. See the intellectual capital statement at www.coloplast.dk

Coloplast's knowledge management strategy

To improve the quality of life for the disabled.

Helping people via disposable care products. Coloplast's mission is to develop, produce and market disposable care products that help the disabled to a better quality of life.

Based on skin-friendly adhesives Coloplast develops innovative, knowledge-intensive and safe products. These include ostomy care products to people who have had part of their colon removed and their intestine re-routed to an outlet (the stoma) in the abdominal wall, continence care products for people with involuntary urination and wound care products for people suffering from chronic wounds. We also make preventive and curative skin care products, special dressings for the OTC market as well as breast forms and textile pads for women after breast surgery.

A physical handicap limits self-realisation. Living with a physical disability means having to accept constraints on self-realisation. Many things get far more complicated when somebody is physically disabled. Living a close to normal life takes practice, and in many situations the disabled person depends on the help of others. Vulnerability, lack of self-confidence and worrying are often experienced, and these feelings sometimes take predominance over life. As a result of unnecessary constraints the disabled individual is prevented from enjoying the positive and rich life to which all humans should be entitled.

Safe products that are easy to use yield freedom. In order to help improve the quality of life of the physically disabled, Coloplast must be able to produce and deliver disposable care products that are safe and easy to use. Easy to use so that the product requires as little attention as possible from its users. And safe to use in order that users should not have to worry about possible leaks and any ensuing inconvenience or physical and psychological discomfort. In other words, our overall concern in trying to help the physically disabled to an improved quality of life is to offer convenient and reliable products. Thus, users should be able to live their life without being constantly reminded of the product and their disability. Coloplast aims to reduce as much as possible the physical and psychological constraints of our disabled users.

How to get to know the user and map out his needs. For Coloplast to develop and bring out the products that will help the disabled obtain an improved quality of life, we must acquire a deep understanding of the physical as well as the psychological aspects of living with a disability. This insight is created through dialogue groups of users and health professionals based on our attitude that it takes personal experience to convince. We firmly believe that only by building on personal experience will we be able to separate the essential information to be used for planning our innovative and developmental activities. In continuation of this proximity with users, it is clear that research and development in products, processes and high technology are crucial to our endeavours to help the physically disabled obtain an improved quality of life. There is a great potential for further improvement in the quality of life of our users by developing new materials, and by putting more and more knowledge into our products. Likewise, there are many more disabilities whose constraints and discomforts can be relieved through disposable care products based on the skin-adhesive technology if only these products are developed. The point of departure for process development is our work with quality issues, for which we obtained not only a quality award, but which structures the development of our manufacturing processes. Quality is at the centre of all our efforts to match every development of the production processes, the organisation and staff with getting it right each and every time.

Quality and innovation are key issues in our efforts

If quality, innovation and understanding of the daily issues of users are so crucial to our efforts to help the physically disabled to obtain an improved quality of life, it presupposes the support of a culture of delegated responsibilities that rewards individual initiative. It is also essential that our ability to interpret user needs is widely appreciated and that we are recognised as a reliable business partner. In our culture we emphasise innovation and support knowledge sharing, for example by means of interdisciplinary project groups, self-managed teams and job rotation.

Our ambition to improve the quality of life for the physically disabled raises central management challenges to Coloplast in developing a strategy for our intellectual capital. More specifically, our management challenges at Coloplast focus on:

- Being able to understand the most important physical and psychological needs of users. This is achieved by establishing dialogue groups and personal contact to users and health professionals.
- Ensuring low rejection rates and reliable delivery through comprehensive QA for standardised processes, process improvement and development activities.
- Creating a culture to sustain knowledge sharing and to support product and process development.
- Building a working environment that will ensure the best development of staff by means of job rotation, self-managed teams, supplementary training and social responsibility to ensure the best development of our employees.