



How to Develop and Monitor Your Company's Intellectual Capital

Tools and actions for
the competency-based organisation





**The Frame project
Nordic Industrial Fund**

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**Nordic Industrial Fund
April 2003**

Table of contents

Introduction

1. Trends and Perspectives

Wendi R. Bukowitz, Henrik Jensen and Hanno Roberts

2. Overview of Tools and Frameworks for Managing Knowledge

Henrik Jensen

3. Tools and Processes for Engaging the Management Team and Organisation

Wendi R. Bukowitz and Ruth Williams

4. A Deeper Look into a Framework – the MERITUM Guidelines

Hanno Roberts and Christina Chaminade

5. Barriers and Conflicts

Wendi R. Bukowitz and Ruth Williams

6. Rules of Thumb in Building and Using Indicators for Knowledge Transfer and How to Use these Indicators

Hanno Roberts, BI Norway

7. How IC Management Can Make Your Company More Innovative

Cristina Chaminade

Appendix: Examples of Indicators

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Introduction

This publication provides you with a sample of articles that give an overview of what Intellectual Capital (IC) is and how you can use it for developing and monitoring your own company's IC.

The publication is designed for people who have little or no systematic experience in working with IC, but would like to get an introduction to the subject and inspiration to go further.

This is not a textbook, but a sample of short articles and company examples. Each article can be read separately and in the order that fits your purpose, though it does follow a structure. The examples are extracts from interviews with 15 Nordic companies as well as companies in Spain – all of which have several years of experience in working with IC. The 15 Nordic company case stories can be read and downloaded from www.icframe.net

In the articles you will find short presentations of some of the most recent management tools for handling companies' knowledge and for putting Intellectual Capital to work. The tools can be divided into two complementary groups that typically focus at one of these points:

- Tools for *Managing and Developing* knowledge, focusing on how the company can manage and develop its competencies through its organisation and management processes – the aims being to enhance efficiency and ensure that the company's knowledge becomes an integral part of its products and services and can be enjoyed by its customers.
- Tools for *Monitoring*, focusing on the systematic measurement and communication of a company's Intellectual Capital in order to document the company's knowledge resources and illustrate how management works to develop these resources. This can be done by internal or external reporting.

The publication is part of the Frame project's deliverables. It is the result of the joint efforts of a number of international experts who have done research and development on the framework of Intellectual Capital and Knowledge Management throughout the 1990s and up until today.

The Frame project is a project on common frames for how companies can manage and communicate their Intellectual Capital (IC). The Frame project is a co-operative project by The Nordic Industrial Fund and the Employers' Confederations in the Nordic countries (DI, TT, NHO, HSH), with Iceland (the IT sector) as associated member.

You will find further material and information about IC at www.icframe.net

1. Trends and Perspectives

Wendi R. Bukowitz, Henrik Jensen and Hanno Roberts

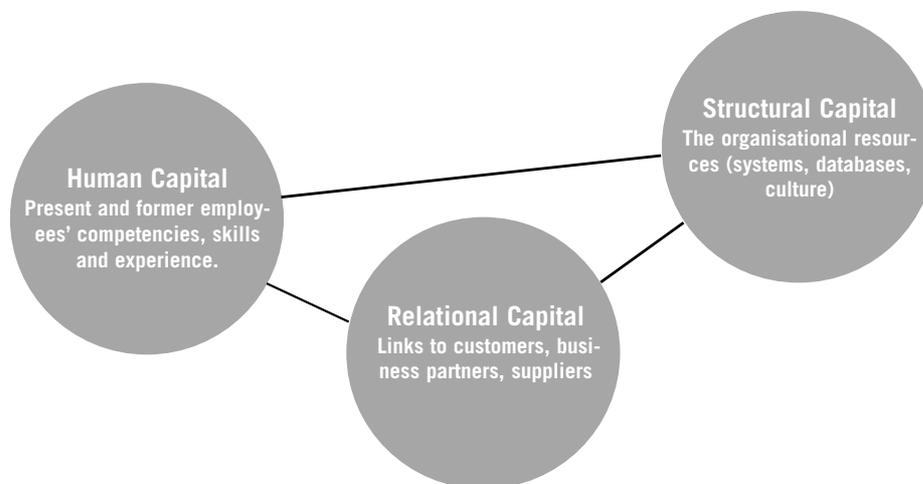
Competence and knowledge resources

If you were asked to specify the most important factors for your company's competitiveness and growth, would it be fair to guess that you would mention things like high-quality products; company reputation; an effective organisation? And last but not least – competent employees?

Then think about what competencies it takes to *sustain* competitiveness and growth in the future? In other words, what it takes to be able to continue selling high-quality products etc.? It may be a good idea to note down some of your thoughts in the margin of this text.

That's an interesting list, since it deals with the most crucial things about your company. We would expect that a large part of your list would be about the capabilities of your company and the knowledge resources it has available. And your list would most probably refer to the three types of knowledge in figure 1.1:

Figure 1.1: Three basic resources



These three resources encompass the competencies and knowledge that companies tap into and which most knowledge approaches use when trying to explain what IC is all about. With some variation, of course, but everyone would agree that this is by and large what we talk about and can use to describe the Intellectual Capital of a company.

The Human Capital of a company is all of its human resources – the expertise, experience, skills and abilities to perform jobs and tasks, including former employees. The Structural Capital is the organisational resources or competencies made up of systems, procedures, culture – how work is organised and done. The Relational Capital comprises links built to external business relations and includes customers, suppliers, investors, networks and communities and, in some cases, even competitors.

Inventory and capital cannot create value if they are not activated; similarly, knowledge is not worth much if it is not put to productive use along with other company resources. What counts is how different types of competencies are related and combined in their use, i.e. projects or activities that involve all three resources.

It is generally recognised that knowledge does not lose its value by being used – it tends to grow and create more value the more it is used. An obvious example is training and education that is commanded better and better when used. Using knowledge means applying it to tasks on the job, sharing it and exchanging it with other people's knowledge so that new ideas emerge. New ideas on products and services, on ways to work smarter, on reaching the customer better; in short, on how to innovate on a dynamic and ongoing basis. Therefore, knowledge should be shared as much as possible.

The awareness about the importance of knowledge sharing in business life has never been higher. The question that most business managers concerned with knowledge ask themselves is thus how to facilitate the sharing and transfer of knowledge among employees, customers and business alliance partners.

Management's role: to create and support connectivity

The initiative for dealing with IC has to come from management – but if the initiative is to prove successful, staff involvement is required as well. Building company-level capabilities and sharing knowledge are not abstract technological concepts: they relate directly to how employees exchange knowledge and how they perceive to be involved and motivated to do so.

The role of management is to bring together the specialised sets of expertise and experience that employees have and to create improvements and innovations that the customers are willing to pay for. The expertise of employees is rarely located in a single part of the organisation and bringing it together to make the exchange and sharing of knowledge possible is one purpose of managing a company's Intellectual Capital. Bringing together expertise and experience means eliminating barriers. These barriers can consist of functional domains and organisation structures, sanctions on surpassing decision-making responsibilities, one-dimensional reward systems, or the use of complex jargon and computations – everything that prevents people from sharing an understanding of or interest in what is going on elsewhere in the company.

The many different locations where expertise can be found have introduced the idea that a company's knowledge is not limited to what it has inside its organisational borders. Former employees, customers, suppliers and other people that interact with the company can hold important knowledge that is worthwhile sharing. As a result, thinking in terms of a knowledge web or network might be helpful in putting all this knowledge into productive use. Managing the Intellectual Capital thus becomes a matter of creating and supporting *connectivity* between all sets of expertise and experience inside and outside the company.

Internal or external reporting?

In terms of where to start – as far as internal or external reporting is concerned – the culture of the company and the nature of the person in charge often determine where the company's initial interest lies.

In some cases, companies see Intellectual Capital reporting as a necessary correction of their financial reporting and their inability to present the true value of their organisation. Thus starting with external reporting makes sense.

Example Coloplast

Coloplast is a producer of utility products for the physically disabled. Coloplast, which has more than 5,000 employees, was founded in 1957 and operates worldwide.

Coloplast's knowledge accounts are so specific so as to allow the company to measure and manage by the accounts – to use them as a management tool. This is demonstrated by models developed by Torben Steen Nielsen, who is responsible for the accounts. The models visualise and simplify complex processes, such as the correlation between cause and effect.

- The accounts show what we have in fact achieved, rather than what we want to achieve. My advice to others wanting to introduce knowledge accounts in their company would therefore be to avoid any high-flying declarations of intent that may prove not to be viable at all," says Torben Steen Nielsen.
- Another basic rule is to communicate with the people involved – be they employees, customers or stakeholders – rather than inventing models while sitting at your desk. Moreover, you should use only data already available to the company.

Coloplast has garnered this experience after working with knowledge accounts for six years. The company has now developed a reporting format to visualise its Intellectual Capital, while at the same time describing how the company's resources are employed to create value.

The company's data-gathering procedures have been systematised and data-gathering now serves as a management tool. Once every three months, the management receives a report on the indicators used as measuring tools in the accounts. Reporting on the company's knowledge resources and relations with stakeholders have been tightened. This means that the value creation to the four main stakeholders designated by Coloplast has become clearer.

Coloplast operates with four stakeholders: customers, employees, the community and shareholders. The company's value-creation indicators are based on the company's core values, mission and business objectives.

Coloplast's core values define the framework for the company's internal and external day-to-day working relations and management procedures. One of the five main elements of the core values is about learning and sharing knowledge, describing how the employees consider their work as a life-long learning process and feel responsible for developing, documenting and communicating their knowledge on issues of importance to Coloplast's competitiveness.

Key procedures and technologies are updated on a regular basis. In the process, it is determined what types of knowledge are most important at group level. For each designated area, the persons to be in charge of competencies, procedures and technologies are selected. These persons will ensure that the relevant parts of the organisation are included in the development work to derive optimum benefit from the knowledge available.

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On the other hand, internal monitoring and reporting seems less risky to most companies, and it is the more common starting point. Even more so when the adoption of new practices does not require the market to act as an external driving force and when the link to business process improvements is important, starting from the inside out can be the better choice.

Basically, companies start working with their IC in order to pursue and sustain their long-term profitability and interests. But once started, it gradually becomes part of the way that companies operate, do business and organise their resources.

However, without a framework or ground model describing how Intellectual Capital creates value within the particular business activities, it is difficult to focus effectively on IC value drivers and make them become part of daily business activities. Examples are timely delivery, immediate response to customer queries, composition of project teams, or relevant employee experience. When the business changes, the framework or model needs to change with it – constant development, renewal and adjustment also apply to Intellectual Capital management.

Making deliberate choices

But many decisions on monitoring or managing are not taken deliberately by management. Instead, they follow naturally from the way companies work and organise themselves.

Decisions simply emerge from the historical path that the company has been walking. This results in many unconscious decisions and perceptions on how and where competencies should be used and developed, and how knowledge should be exchanged and transferred.

Working with Intellectual Capital challenges these historically established mindsets. You need to take a look at your company from a different resource perspective – to look into your hidden production process and your invisible resources. *What* are they; *where* are they, and how do they link up to your daily and tangible work routines? Can we use our knowledge to leverage our existing processes, to improve them, to create more value if we combine them?

The profound question that companies could be asking themselves is – *how* do we use our knowledge to create value for our customers? And the answer should be found in deliberate reflections and choices about what the company's package of knowledge should be and how it should be produced and delivered to the customers i.e. in the ways that knowledge is activated and mobilised, how it is used in work processes and how it delivers solutions or provides resources for consumption, thus representing a value for the customer.

Once you are able to answer these questions, your company has something to tell the outside world as well. In many cases, companies find it important to communicate these deliberate choices externally – and for several reasons. For instance to be able to attract qualified employees, or to strengthen the possibility of raising capital. The value of communicating the company's IC is that it explains what the company stands for – what it does, not only what it has (on the balance sheet etc.). It explains, for example, to future employees or shareholders how the company's IC is made productive and is transformed into a form that is valuable for these stakeholders.

More than an IT task

Today, many knowledge management departments are tasked with launching the corporate intranet as the foundation of an enterprise-wide knowledge management effort. The idea is that by building the perfect tool, people will automatically start using it (“the engineering illusion”). In other words, knowledge sharing is in this case felt to be a matter of tooling up.

In some cases, the sheer volume of information available on corporate intranets has had an opposite effect from what was intended. It has forced employees back into their functional domains where the likelihood of finding relevant knowledge is higher. In fact, information overload is the main impetus behind the rise in information “portals” in which users can limit and customise the information flows that inundate their desktops.

Even though it is important to cope with information overload, doing so does not solve the transfer problem. Knowledge and information are two different things, since information is data put into context, while knowledge is information put into application. In other words portals do not solve the problem of “knowing what you don't know.” It is very difficult for any of us to know what knowledge exists “out there” that might help us to do our jobs better. Likewise, the vast majority of people do not have the opportunity to look beyond their job and across the organisation to determine who else might benefit from what they themselves know — and they might argue, with some justification, that this is not why they are there in the first place.

Example Cowi: More than an IT task

Cowi operates worldwide as an independent consulting and engineering company. It has approximately 2,400 employees, 1,500 of whom have a higher education.

In his capacity of Head of Knowledge Management, Niels-Jørgen Aagaard, COWI, is responsible for the procedures for development, sharing and retrieval of knowledge, but in principle all COWI employees have a co-responsibility.

- Project managers are responsible in terms of projects, heads of department are responsible in terms of divisions. For example, our HR Manager and our Quality Assurance Manager also carry out knowledge management, says Niels-Jørgen Aagaard. If I were to be in charge of all aspects of knowledge management, I would be swamped. My job is to co-ordinate, establish frameworks, language, platforms and “mirrors” for the employees to look in and use to compare their performance with that of others. These “mirrors” are, for example, the knowledge accounts, which are updated every month at all levels: division, department and employee levels. They may be benchmarking of professional levels or of developments in society, making our strengths and weaknesses visible. They could also be Best Practice or descriptions of internal and external procedures.
- The pivotal factor is to establish fairly simple principles for areas and aspects to keep an eye on. To that end, we have drawn up an overview of where to find our knowledge. We check whether we have relevant data and whether we utilise our knowledge optimally – from the employees to the customers, from the customers to the employees and between employees.
- It is a knowledge management task to map how we work, to designate focus areas, and to show our knowledge flows. This is the pre-requisite for our survival in the long term.

COWI considers knowledge management to be the foundation of long-term development, but Niels-Jørgen Aagaard does not disguise the fact that in practice it is sometimes difficult to prioritise long-term aspects over current aspects vis-à-vis customers.

- We also have to establish a system for handling documents. For example, we may need to extract all data on a particular customer, project or procedure. This may sound banal, but in reality it is no mean feat trying to retrieve maybe 5 million online documents. The reason why we are successful to some extent is that we have some sort of structure, though it is not good enough. And it poses a challenge when we have to retrieve drawings that are available in numerous versions and in which small elements of the drawing may refer to overlying or underlying drawings. It does not make the task any easier that a number of people may be working on the same drawings at the same time.
- Therefore, we are striving to build a new structure and introduce new technology. We have launched a project portal to enable our employees all over the world to share documents with one another. We are also contemplating giving our customers access to the portal to allow them to log on to our system to retrieve the data they need. We have to constantly evolve – to become ever more virtual. While this may sound like an information technology task, in reality it is a business development task.

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This means that you have to strike the balance between what can and should be captured in IT systems and other formal methods to codify knowledge and what should be left to remain in human interaction.

Knowledge thinking acknowledges the need for personalised arenas (“communities”); these cannot be designed in their workings; you can, however, facilitate and indirectly support their being born and coming into existence.

“If we only knew what we know”

The most challenging aspect of new organisational forms and models that accommodate knowledge transfer is how to embed accountability and overview into more complicated organisational systems that require cross-functional or cross-company teams to deliver value to customers.

In the dot.com era, the hype surrounding new organisational models made it seem as if these structures had emerged fully formed within the course of a few years. In fact, they were part of an evolutionary process that has been underway for at least a generation as information technology changed the ground rules of access to information.

You may have come across the knowledge management slogan – “if we only knew what we know”. Actually it is about having an inventory of your company’s Intellectual Capital in terms of who knows what, supported by a map of methods, tools, patents, trademarks, and know-how.

Why is this important and why is it on the way? First of all, knowledge inventories are especially useful starting points for knowledge management initiatives. They provide a snapshot of what is currently available – it allows building a roadmap that connects one area with another. But since it is when knowledge resources are combined and put into action that value is created, inventories of knowledge resources are only one way of creating internal visibility of the company’s hidden intangible processes. The flow is extremely important. And if you cannot measure the flow itself, you should measure re-usable knowledge, i.e. repetitive use of the same type of knowledge. For example, in the financial sector where loan applications or policy underwriting constitute knowledge which is re-used.

Example Swedbank: Developing the model

Swedbank has 16,500 employees, 10,000 of whom in Sweden. The bank's working capital is SEK 960 billion.

The management model for IC measuring and intangible resources was introduced in the wake of the 1992 financial crisis. Regional Swedish banks merged in a bid to overcome the crisis and the idea to devise a management model was conceived in response to the changes taking place.

During the second wave of changes in 1997, Sparbanken Sverige and Föreningsbanken merged to create the new Föreningsparbanken – and the management model came into play again.

The management model applied by Föreningsparbanken is based on the following three corner-stones:

- The traditional aspects of profitability, i.e. volume, revenue, etc.
 - Human Capital, i.e. organisation and employees.
 - Market Capital, centring on customers and customer loyalty.
- The management model really facilitated the merger, says Staffan Ivarsson, Assistant Human Resource Director at Föreningsparbanken’s Stockholm-based head office. Thanks to the model, we knew which measures and steps to take and all the necessary instruments were in place.

Each quarter, surveys are made at the local, regional and central levels to establish how the bank is perceived by its customers and employees. External reporting to customers is provided in the annual report and a separate supplement.

- By systematising our work in this manner, we achieve a measure of the job satisfaction and competencies of our employees, our customer service, etc. – factors which between them help to boost profitability, says Staffan.

Since the introduction of the model, it has been adjusted although the core of the model remains unchanged. Now the time has come to make new adjustments.

- When new channels are opened to the customers, for example homebanking, we need to see how these channels function from the customers' perspective. We want to survey the physical customer contact in our branches and establish how to create added value for customers calling at the bank in person. We want to find answers to these questions. The important thing is to ensure that the model does not evolve into an "empty" instrument – it must be used to enhance the company, says Staffan.

Staffan doubts that IC will ever become a separate balance sheet item.

- The reason is that companies are extremely different. Therefore, separate tools would be needed to measure each company's IC. It is difficult to devise a common formula to cover both banks and the manufacturing industry. I thus believe that each company – the few companies that actually do report on Human Capital – will continue to present their Human Capital reporting in their own way.

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Investing in knowledge

Investing in knowledge requires a group or network denominator for a bundle of assets. This is because it cannot be defined which knowledge resource accounts for which income stream.

Returns and future cash flows thus depend on the connectivity that has been established between entities of related assets. This is all based on the "knowledge = activities" thinking. It definitely goes against traditional thinking about i.e. "knowledge = inventory" which perceives knowledge as an itemised and separable asset, such as a machine, for which you can compute individual and distinguishable returns.

Such thinking leads to "value extraction", a term often used for patents and other intellectual property rights. These form part of the balance sheet as any other fixed asset and should be utilised in a similar fashion, i.e. value needs to be extracted from the fixed resource. In contrast, knowledge constitutes a flow and value is created by combining it, hence by looking at it as a bundle. Investing in knowledge thus becomes a "bundling exercise"; just as many companies already do when they partner with other companies or build alliances and consortia to enter new customer or technology markets.

Breaking the code of how investments in IC and management knowledge resources impact economic performance is thus a matter of the perspective management has on value creation in the company. A knowledge perspective holds a more synergetic, if not holistic, model of the organisation. This means that knowledge investment is about investing in bundles of assets which cannot be completely disaggregated in their individual elements.

In conclusion, the company should be viewed as more than the mere sum of its parts – instead it is necessary to look at the organisation as a whole, and at how its parts and competencies are combined and put into action.

2. Overview of Tools and Frameworks for Managing Knowledge

Henrik Jensen

Many tools - but which one to choose?

Today there are vast numbers of tools and methods for managing and monitoring your company's knowledge resources and IC. The question facing your company is not how to find a tool but how to choose from the tools and models at hand. Which tool to choose depends first and foremost on your purpose – how do the different models correspond to what you want to accomplish or change given the situation of your company?

Maybe your main priority is to develop your company's knowledge. Or maybe it is to monitor and report initiatives already in place.

In this chapter you will be given an overview of some of the most advanced models, their common features and the features distinguishing them from each other.

The main models

Below you are given an overview of some international, advanced models. In some respects they differ, in others they overlap. The models and what distinguish them are as follows:

- **The Meritum Guidelines** – connectivity of Critical Intangibles
- **Knowledge Management Fieldbook** – practical framework for implementing knowledge management
- **The Intangible Asset Monitor** – knowledge strategy focusing on experts and individuals
- **The Danish Ministry of Research's guideline** – external reporting

The models are introduced in the following sections. To give you an overview of the elements they share, chart 2.1 lists their common features.

Chart 2.1 Common features

| | |
|---|---|
| <ul style="list-style-type: none"> ▶ Strategic, forward-looking and furthering long-term goals ▶ Management tool to develop, communicate and monitor how the company's knowledge resources create value ▶ Give a structured picture of the competencies available to the company | <ul style="list-style-type: none"> ▶ Focus: Competitiveness and how knowledge contributes to business performance ▶ Value is created in the relations between employees, the organisation, the customers and other external partners. |
|---|---|

IC models are tools that management can use to develop and monitor how the company uses its competencies and knowledge resources to create value. As IC management is forward-looking and has a strategic purpose, the models will further the long-term goals of the company.

Example Nokian Tyres: Strategic tool

By international standards, the Finnish company Nokian Tyres is a small tyre manufacturer. Therefore, the company has carved out a niche for itself as a fitter of winter and high-profile tyres for passenger cars and high-quality tyres for vehicles of different sizes.

In order to profile the company as a high-quality niche company, it is imperative for Nokian Tyres to be able to respond more quickly to market changes than large tyre manufacturers.

To meet this challenge, the company relies on its own technical solutions – that is: on employee competencies and know-how.

“Therefore the management of employee know-how is central to the company. Employee competencies are pivotal factors when it comes to immaterial property rights and other aspects of a technical nature in terms of Intellectual Capital”, emphasises Sirkka Hagman, Human Resource Director of Nokian Tyres.

“This has prompted us to adjust and fine-tune our staff strategy in recent years in order to create an open organisation with a free flow of information and knowledge.

Development of a self-learning organisation is our answer when it comes to meeting the challenges of the future.”

Hagman also emphasises that developments in the industry are constantly triggering new demands for tyre properties, meaning that production techniques must be enhanced on an ongoing basis. “Ever stricter environmental requirements and return requirements are factors that we must know how to handle.” Hagman says that the company realised in earnest in the mid-1990s that the organisation’s competencies represented the company’s most important competitive advantage.

“Education and knowledge are becoming obsolete ever faster in the industry. Being the only tyre manufacturer in Finland, we have had to create our own knowledge profile. This also implies that the company’s basic technical knowledge is contained in a relatively small number of people in the company.”

According to Hagman, this means that it may be difficult to assess in each individual case whether the company is in fact innovative.

“Therefore, we place a strong emphasis on the importance of internal training and education, on the one hand, and external networks to, say, universities in Finland and abroad, on the other

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Using an IC tool will enable the management of your company to make its IC firmer by describing and visualising the resources the company devotes to production and to its business system. The IC tool enables the management to discover and get a structured picture of how the company’s competencies and resources create value.

Knowledge is a key factor in making the company more efficient, on the one hand, and managing the totality of its resources, on the other; thus it is directly linked with competitiveness, which revolves, first and foremost, around product/service markets. However, being competitive also revolves around being able to attract better and more qualified applicants from the labour market and around improving the company’s negotiating position in the financial markets. Since companies also compete for these resources, any organisation must ask itself whether it appears to be attractive both to new employees and to investors.

Knowledge comes alive in relations between the *employees of the organisation*, its *customers* and other external partners when they combine all their talents and take advantage of emerging business opportunities. The value of knowledge lies in its use and relations.

How employees, customers and other external partners interact and the effects of this interaction are described and measured by different types of models of the company’s business system and by indicators for changes and effects.

The Meritum Guidelines

The Meritum Guidelines include a model for how to manage and report on IC. The Guidelines describe the management of Intellectual Capital as taking place through identification of intangibles, their measurement and monitoring.

IC is defined as the combination of Human, Structural and Relational Capital, value being created in the connectivity between these forms of capital. This means that they do not exist as isolated resources but are related in a network of intangibles.

The Critical Intangibles are the main factors, the key drivers that contribute the most to the value creation process in the company and those that might help maintain or enhance the company's competitive advantage.

Specific indicators should be identified to measure each intangible resource and activity. Indicators may be financial or non-financial.

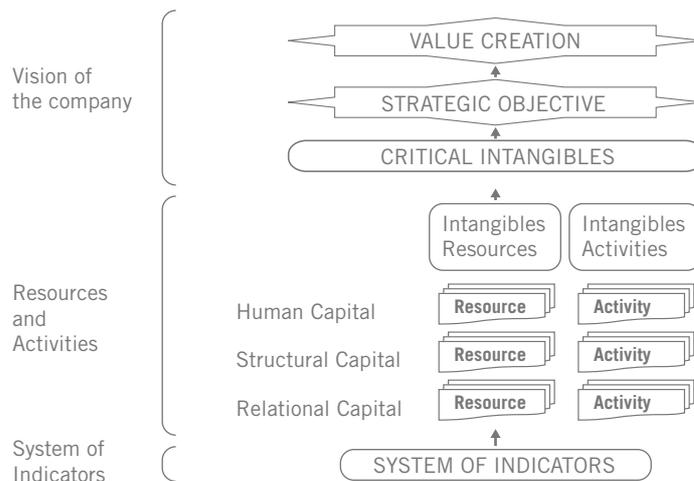
Monitoring consists of assessment and evaluation of the effects of investment on intangible resources. It is useful to distinguish between activities that are to:

- develop intangibles internally or acquire them, for instance by means of activities to attract new employees with certain knowledge or acquisition of new information technology
- increase the value of existing intangible resources, for instance by means of training activities
- assess the effects of previous activities, e.g. employee or customer satisfaction

Reporting is proposed to encompass the *vision* of the company and its strategic objectives and Critical Intangibles, a *summary* of intangible resources and activities, and a system of *indicators* (chart 2.2).

Chart 2.2 Scheme for presenting IC Statements

Meritum: "Guidelines for managing and reporting on intangibles"



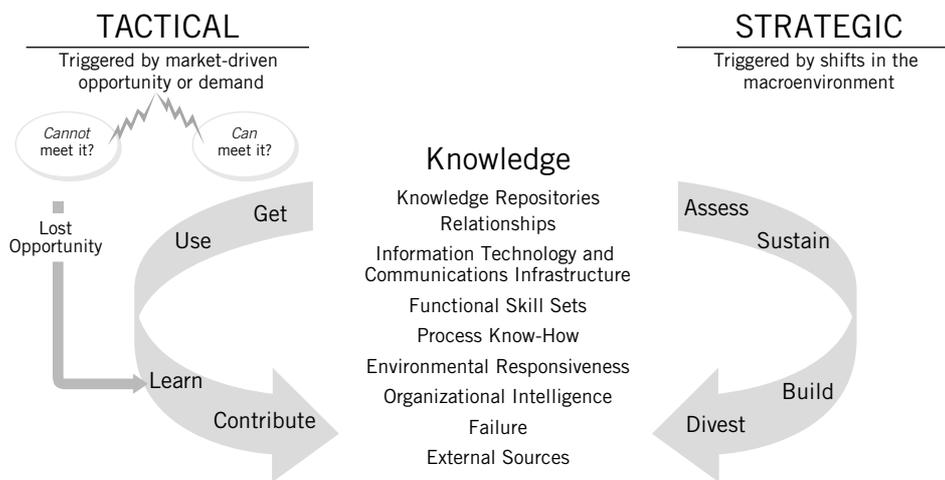
The Meritum Guidelines are described in detail in chapter 4 by Hanno Roberts and Christina Chaminade. Hanno Roberts has also written a chapter on how to build indicators, while Christina Chaminade has written a chapter on IC and innovation. Hanno Roberts and Christina Chaminade were part of the team behind Meritum.

The Knowledge Management Fieldbook

The Knowledge Management Fieldbook by Wendi Bukowitz and Ruth Williams is designed for those who have decided to work with their company's knowledge management process. It provides a framework for conceiving the knowledge management process as two streams (chart 2.3).

Chart 2.3

Knowledge Management Process Framework



..... The Knowledge Management Fieldbook, FT/Prentice Hall, 1999.

The tactical side of the Framework deals with how to get the right and relevant information, use it by combining it in a new and interesting way that is focused on creating value for customers, learn from experience in ways that benefit the organisation, and then, which seems to be most difficult for people and organisations to do, contribute what has been learned in ways that can be leveraged in the future.

The strategic side is triggered by shifts in the macro environment and thus deals with the assessment of knowledge resources with respect to the organisation's business goals and current knowledge against future knowledge needs. Building and sustaining relationships means establishing and maintaining relationships with employees, suppliers, customers, and communities and sometimes even with competitors, who are increasingly becoming strategic partners in certain respects. The process is completed by divesting or redeploying knowledge that no longer provides value as an internally maintained resource.

Knowledge management is defined as the process by which the organisation generates wealth from its intellectual or knowledge-based assets, i.e. when knowledge is used to create more efficient and effective processes or to innovate products or services. Knowledge management is about creating a system for making visible what is hard to see in organisations – patterns that exist outside the normal boundaries of functions or divisions. These patterns represent opportunities for improving and innovating existing processes as well as insight into how to enhance existing products and services and invent entirely new ones.

The Fieldbook contains a number of practical tools for diagnosing current states, process schemes, cases, and tools for planning and analysing. Each chapter of the book concludes with an Agenda for Action.

Later in the publication, you will find a chapter on tools and processes for engaging the management team and the organisation and a chapter on how to deal with obstacles and barriers that appear, both written by Wendi Bukowitz and Ruth Williams.

The Intangible Assets Monitor

The Intangible Assets Monitor's main assumption is that people are the only true agents in business. Individuals in a company create structures as a form of self-expression and these structures are regarded as part of the knowledge base. Knowledge is characterised as an unli-

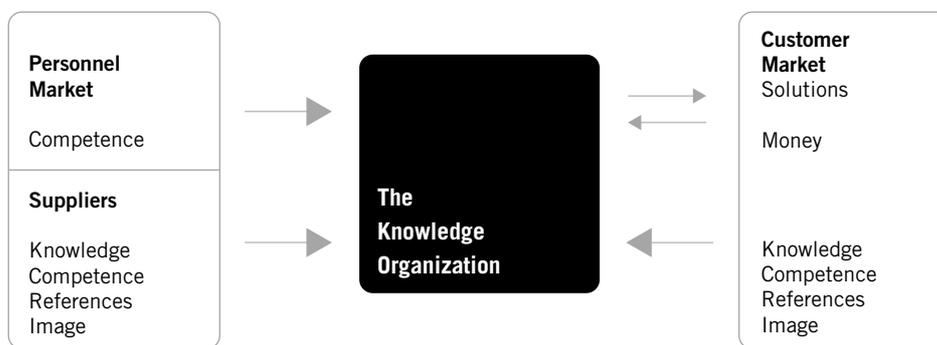
mitted resource which grows and becomes more valuable with use; it is therefore important to see to it that it is shared. The monitor was devised by Karl Erik Sveiby.

The approach is designed for knowledge-intensive organisations. Three types of knowledge are described: *employee competence*, which is by far the most important, and *internal* and *external structures*. Management is the big issue for Karl-Erik Sveiby, who finds that external reporting should be limited to a single page in the annual report. Measurement should contain indicators for growth, renewal, efficiency and stability for each of the knowledge types.

Employee competence involves the capacity to act in a variety of situations to create both tangible and intangible assets. The internal structure includes patents, concepts, models and computer and administrative systems, all of which are created by employees and are generally owned by the organisation. The external structure includes relationships with customers and suppliers, and other intangibles such as brand names, trademarks and the reputation or image of the company.

This approach views customers as sources of value in more than just a financial form. For example, dealing with customers naturally also means training for employees. Customers also help form and propagate the image of the company and encourage development of competence through their demands. These intangible revenues can be described as follows (chart 2.4).

Chart 2.4: Intangible revenues



Source: Karl Erik Sveiby

The Danish Ministry of Research's guidelines for IC statements

In the guidelines issued by the Danish Ministry of Research, IC reporting is part of the process of knowledge management in the company. It reports on the company's efforts to procure, develop, share and anchor its knowledge resources. As a result, it encourages companies to focus on the knowledge resources that are needed to deliver the products and services that users are demanding. In this sense, it is a report that shows what a company does to enhance its knowledge resources.

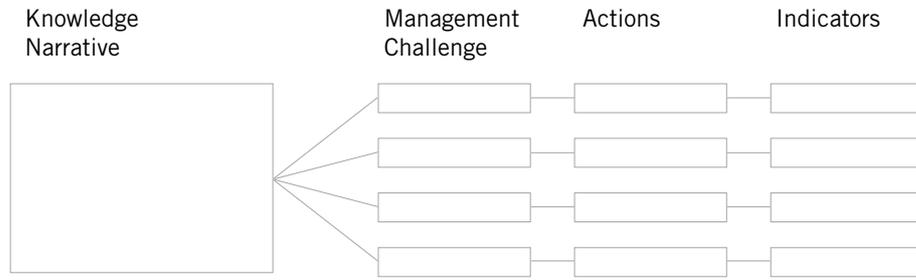
The Ministry's guidelines concentrate on how to work with external reporting, that is: the way companies communicate with clients, colleagues and other stakeholders, and how to create an IC statement. An IC report is seen not only as a physical document but also as a turning point for the company's entire knowledge management system.

An external IC report should comprise a knowledge narrative (a knowledge story about how the company creates value for its users); a set of knowledge challenges and related actions; and indicators (chart 2.5).

The Ministry's guidelines for Intellectual Capital statements were developed by the Ministry of Research in collaboration with researchers headed by Jan Mouritsen and Per Nikolaj Bukh.

Chart 2.5 Model for IC statements

(adapted from "videnregnskaber" (knowledge accounts – available in Danish only) - Dec 2002)



3. Tools and Processes for Engaging the Management Team and Organisation

Wendi R. Bukowitz and Ruth Williams

There are as many tools and processes for engaging the management team and the organisation in the implementation of knowledge management activities as there are organisations. There are so many because each organisation has a unique culture and style that translates into a best way to initiate and manage change.

However, from a bird's eye view, the process for successful organisational change boils down to a few basic well-executed steps that are repeated and refined as the organisation learns what works through trial and error.

1. Set or adjust direction.
2. Establish the baseline.
3. Look for opportunities to:
 - a. Achieve system-wide improvement.
 - b. Enhance existing efforts with a knowledge management component.
 - c. Launch with modest expectations.

In this section, each of these basic steps is examined and we discuss the way in which organisational culture leads to similarities and differences in the tools and processes that can be used to engage the management team and the organisation in knowledge management activities.

1. Set direction

The first step in gaining organisation-wide support for Intellectual Capital management is to establish a framework and a set of priorities for action that are aligned with the achievement of business goals.

It may seem counter-intuitive to start with direction-setting before establishing a baseline. In most companies, people prefer to start with data-gathering in the belief that once baseline information is in hand, it is possible to pursue a “fact-based, data-driven” approach to setting direction. However, when people start gathering information without first setting direction, they run the risk of being unable to interpret that information in any meaningful way because they lack a well-defined framework in which to understand it.

By explicitly stating how they believe knowledge management can support business goals, managers are proposing a set of hypotheses that can be tested. You will find a tool that can be used to initiate the process of setting direction for knowledge management at www.icframe/learningpackage.

2. Establish the baseline

In all cases, monitoring the impact of knowledge management activities will be an essential part of the business case for getting and maintaining investment. For that reason, it is important to know the baseline. Depending on the style of the organisation, measurement can be more or less numbers-based. Tools to be used could be:

- Formal surveys or structured interviews which capture information that can be statistically analysed are recommended if the organisation responds better to charts, graphs, and numbers than stories. Informal research is useful for organisations that respond better to stories. Open-ended interview questions, when posed to individuals or groups, provide case histories that can be used to help others see how the kinds of knowledge management activities that are being suggested might improve their ability to get work done.

- Exploring both past success and failure in developing a solid understanding of the current state. This could be done in a process where you Don't stop with a simple assessment of what happened. Probe. Find out what could have stopped a failure from becoming one or what could have taken a success to a higher level.

- Benchmark if needed. Look for stories and potential metrics from outside the organisation that exemplify the types of business improvement that are important for your company. These stories and metrics are especially compelling if they come from key customers or suppliers.

3. Look for opportunities to:

a. Achieve system-wide improvement.

One of the most challenging tasks for the knowledge management team is to identify points of mutual interest or benefit across the organisation's traditional business silos that can serve as a starting point for knowledge management activities. This is what raises knowledge management above the level of functional or unit-based initiatives and offers the potential for system-wide operating improvement and even growth.

To achieve system-wide impact, knowledge management needs to be integrated with the Human Resource and Information Technology functions and all three need to establish a link to Operations. Start by looking for Human Resource programs that have a strong technology dimension. The most common will be e-Learning programs which convert a place-based, time-specific delivery of knowledge to a just-in-time-based, anywhere delivery of knowledge. Look for Information Technology programs that have a strong learning or knowledge transfer dimension. The most common ones will be communities of practice that electronically connect people performing similar tasks at geographically remote locations. These are the types of programs that can result in system-wide improvement.

b. Enhance existing efforts with a knowledge management component.

The most obvious way to launch KM programs is to position them as enhancement to existing programs. Enhancing initiatives that have already been funded and which already have targets established will make it easier to describe the business case for knowledge management. This approach is consistent with the view that knowledge management should be part of the way business is conducted, not something in addition to or in place of what already exists.

If KM contributes to improvement, it will be relatively easy to gauge its impact on business performance, as long as some kind of baseline measure already exists. For example, if an HR initiative is targeted to reduce the time it takes to train a new employee and a knowledge management component is added to the initiative, the incremental change in training time could be attributed to the knowledge management component.

c. Launch with modest expectations.

When it is time to launch KM programs, calling them pilots or experiments is a good way to set modest expectations. Pilots and experiments can achieve outcomes that are different from what is anticipated, as long as the promised results are still good.

Most knowledge management activities succeed in reaching the goal through incremental change. Being prepared to rapidly adapt to changing circumstances is a pre-requisite for successful knowledge management activities. Since effective knowledge management is not a discrete set of activities that exist outside the mainstream of the business, knowledge management programs cannot remain “pure.” They must be fitted to the business problem at hand, which is always in a state of flux.

General lessons for the KM process

About six years ago, we wrote our first article on knowledge management which identified lessons learned from the implementation of a knowledge sharing system at a large professional services firm in the United States.* Those lessons still seem appropriate today for those initiating knowledge management programs.

- Begin before you're ready: Don't over-plan or over-engineer the program. It will need to change anyway.
- Commit to rapid updates and enhancements: Be ready and willing to incorporate what you learn about solving business problems to improve the KM program.
- Plan to dazzle your customers: If you can't make a significant improvement to business performance, no one will care.
- Keep it in prototype longer than you think you should: KM is systemic and systematic. It takes a long time to fully integrate it into the business.
- Make it intuitive: Whatever you do should be so easy to use and its business value so obvious, that it shouldn't require basic training just to check it out.
- Use existing technology whenever possible: If it solves business problems, people will use what is familiar to them, even if it is a little clunky.
- Choose speed and specificity over size and generality: Solve specific business problems fast rather than attempting to overhaul the enterprise. Rome wasn't built in a day.

* Lessons Learned adapted from “In the Know,” CIO, April 15, 1996.

4. A Deeper Look into a Framework - the MERITUM Guidelines

Hanno Roberts and Cristina Chaminade

One of the first things you should do when starting to work with IC in your company is to define a framework, since it will provide you with a master plan and structure to follow in your work.

In chapter 2 you were given an overview of four such frameworks or models. In the following you will become better acquainted with what it means to work with IC in practice by using such a framework, i.e. the Meritum Guidelines, which will be explained and their use exemplified.

The Meritum Guidelines were developed by an EU-supported research project – MERITUM – and they are based upon an extensive analysis of best practices observed in 100 European companies in six countries.

The Guidelines are made both for companies in the initial stages of designing and implementing an Intellectual Capital Management System (ICMS) and for companies with some previous experience, which are primarily interested in external reporting.

The Guidelines consist of:

- a *conceptual framework*, comprising a set of definitions and a classification of intangibles;
- a *management model* for the identification, measurement and management of intangibles, and;
- a *description of the integrating elements* of an externally disclosed Intellectual Capital report.

In short the *conceptual framework* provides the basis for the design and implementation of the subsequently proposed management model. The *management model* describes three phases to be followed in the design and implementation of a corporate management system for intangibles: identification, measurement and action. The *description of the integrating elements* of the IC report is helpful for companies interested in improving their ability to disclose relevant information on the intangibles that determine their value.

MERITUM Guidelines – their elements one by one

Framework

The conceptual framework defines Intellectual Capital as being made up of Human, Relational and Structural Capital. Each of these categories consists of both intangible resources and intangible activities similar to the stock and flow known from regular accounting.

Intangible resources or stocks are for example Intellectual Property Rights (IPRs), or skills and employees. Examples of intangible activities or flows are investments actions in reward systems, training or performance measurement – in other words: dynamic actions that are undertaken to maintain, acquire and produce intangible resources.

The management model

The management model of intangibles consists of the identification, measurement and monitoring of intangible resources and intangible activities.

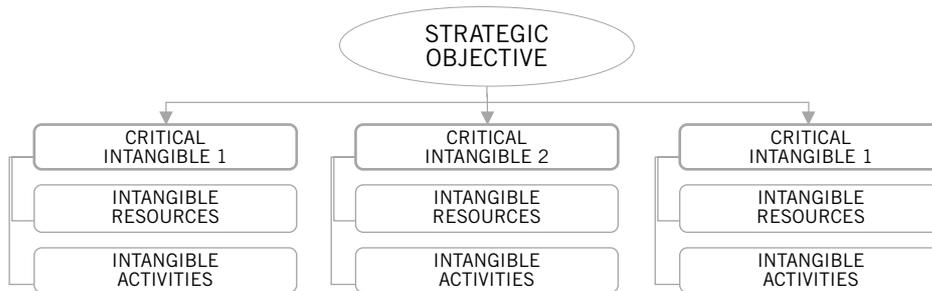
Identification aims at visualising the key intangibles in the organisation. The key intangibles are, in principle, linked to the strategic objectives of the company. Therefore, the identification process starts with an analysis of the current situation of the company and its ability

to obtain its strategic objectives. For example, its ability to be more innovative, or its ability to attract new employees. These abilities are considered as Critical Intangibles.

To identify Critical Intangibles, a clearly formulated strategic objective is important. Otherwise you do not have a criterion for what is critical for the company and what is not.

Once the Critical Intangibles have been established, the company has to identify the intangible resources and activities affecting the Critical Intangibles. The result becomes a network of intangible resources and activities in both Human, Relational and Structural Capital, which are linked to the strategic objectives of the company, as shown in chart 4.1.

Chart 4.1: Network of intangibles



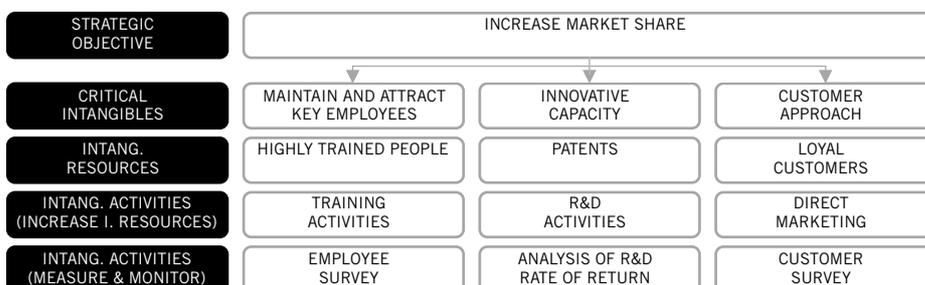
Once this network has been visualised, the organisation might find it useful to identify indicators for each intangible resource and activity to help managers keep track of these key resources. An example from a company taking part in the Meritum Projects illustrate this:

Meritum Project – an example

One of the Critical Intangibles (general abilities) defined by a company in the Meritum Project was to maintain its key Human Resources in order to keep its technical knowledge. That was needed considering the company's previous situation and strategic goals for the future: the company had introduced a general retirement age of 55 years. The consequence was that much of its tacit knowledge was lost, and maintaining what was left in the company was absolutely critical to be able to stay in business. So maintaining key Human Resources was the company's Critical Intangible. In view of that, managers needed to keep track of the key employees (the resource) and activate a variety of investments (activities) to ensure their satisfaction, motivation and willingness to share their tacit knowledge in order to create mechanisms to ensure the transfer of knowledge. The company ended up having activities in all three categories of capital (human, organisational and relational) related to the Critical Intangible.

An illustrating example of the management model is provided below (chart 4.2). As can be observed, a company may have several Critical Intangibles in the form of intangible investments (stocks) and intangible activities (flows), which can be linked.

Chart 4.2: Example of the network of intangibles



As illustrated by the Meritum example above, highly trained employees will increase a company's ability to maintain and attract employees; other vital factors are the company's innovative capacity and its customer orientation. It is also very well possible that a single intangible investment requires several intangible activities to maintain its critical level. Notably a series of support routines need to be developed and linked to the intangible resource that represents the Critical Intangible. That is part of the action phase.

These support routines have received attention in the wider Intellectual Capital field, for example the creation of a series of indicators that monitor the investment activities in intangible resources – e.g. training days per employee. This specific indicator monitors whether the adequate skill level is maintained with employee skill being a Critical Intangible for the strategic objective of increasing the company's market share.

There are several supporting processes, which take the form of:

- recognition and measurement processes;
- reporting processes;
- evaluation processes;
- attention processes;
- motivation processes;
- marketing and communication processes.

The relevance of routines/supporting processes was discovered, during the MERITUM Project, by several Swedish companies with long experience in ICMS. The successful ones were those that had introduced a stable and durably maintained series of routines in their ICMS. The companies that did not have those supporting routines were not successful over time in terms of better financial performance as they were unable to transform the intangible value into tangible results.

It is important to look at these supporting routines not in isolation, but in the context of being linked with the intangible resources and activities. When it is possible to create a picture as the above example (Chart 4.2.), your company will have created an overview of bundled stocks and flows.

Description of integrating elements of external disclosure

The Intellectual Capital report is a tool used by the company to communicate its ICMS to the stakeholders or, in other words, the commitment of the company in terms of knowledge-based value creation. It shows how the company has developed its ICMS. It describes the strategic objectives and the linkages with the intangible resources of the company (identification phase), the combination of intangible activities and resources needed to attain the strategic objectives, and the supporting processes. Finally, it provides a set of indicators.

Typically, Intellectual Capital reporting is composed of three elements: first, a vision of the company, comprising a statement by the management team on the corporate strategic goals and their related intangibles; second, a summary of the intangible resources the company has available as well as of the activities carried out to develop, maintain or increase these activities; and third, a system of indicators to measure resources owned and activities performed.

5. Barriers and Conflicts

Wendi R. Bukowitz and Ruth Williams

The barriers and conflicts that arise as organisations seek to introduce and implement knowledge management come from diverse sources. None of them are inconsequential and any one of them can derail efforts.

What you will see is that they range from troubles and worries just to understand and agree to the *language*, over resistance stemming from *implementation worries due* to the magnitude of changes, to conflicts stemming from people having worries and feeling disillusioned because of perceived *past failures* with knowledge sharing or *having different* perspectives of working with knowledge management and IC.

Chart 5.1 Continuum of barriers



It will be most helpful if you up front understand which of these typically barriers you are dealing with and what causes them.

In this section we highlight some of the major barriers and conflicts and suggest approaches for handling them.

Language problems: Confusion over what knowledge management means and what it should be called. The language about knowledge management and IC is rather new. You may experience a wall of resistance due to people resisting to yet another management rhetoric or just pretending to be interested.

You would think by now that organisations would not get stuck on this point, but even with the vast body of literature, numerous conferences and presentations on the subject, and well-publicised corporate implementations, it still happens.

Though KM now has more than a decade of history there are still different language and terminology of which part is stemming from various frameworks around the subject. It is therefore not surprising when people in companies believe that before they can get underway with knowledge management, everyone needs to agree on its definition and the terminology. Should we call it knowledge management or Intellectual Capital management or knowledge sharing or knowledge transfer, or make sure we don't even use the terms knowledge or Intellectual Capital at all?

While it would be nice for everyone to agree on the definition or meaning of knowledge or Intellectual Capital management and on the terminology, it should not be the deal-breaker that it often is. We recommend that organisations adopt a “working definition” and not shy away from using either term. Working definitions help people glide past the anxiety that they are going to have to live with something for a long time and instead get down to work. And often it shows to be able to coincide with much of your own company language.

In truth, most organisations never change the working definition because it works just fine. But suggesting that it can change makes agreement easier to achieve and defuses the issue. Despite the predictions of many, the terms knowledge or Intellectual Capital management have not disappeared. In fact, they have become even more firmly entrenched in the

everyday thinking of managers and executives. We recommend that these initiatives boldly broadcast themselves and raise the visibility and importance of knowledge or Intellectual Capital management to the organisation.

Implementation worries: sheer magnitude of the changes required

Successful knowledge management touches every aspect of the business. When people begin to seriously grapple with the full dimension of the changes that are required to succeed in using knowledge management to drive business value, they feel overwhelmed. It seems as if so many pieces must be in place before knowledge management can even begin to pay off, that failure is guaranteed. How will we ever get people to share if:

- The performance measurement system doesn't reward it?
- The information systems don't make it easy?
- Everyone doesn't participate?
- Executive leadership doesn't talk about it?
- We can't measure the business impact?

While we can't say that these issues do not exist and are not significant, they should not stop the show. First off, it is highly likely that knowledge management is already occurring in the organisation, just not in a way that is systematic or systemic. Find these examples, polish them off, and use them to help people see how more of these activities, coordinated and supported, could really improve business performance. These activities have taken place unsupported by the existing performance measurement and information systems. Everyone has NOT participated in them, and executive leadership may not have recognised them. The main hallmark of these activities is that they were invented by the businesses to get business done. They are mainstream activities that sit directly in the flow of the business.

What you should do is to put these activities together in the context of the business model so that they can be seen as contributing to business success.

What people know is often so fluid and integrated into what they do that it is invisible. Simply making the point of observing these activities can make it easier to see how knowledge management is an essential contributor to creating value. It can also make it easier to see how knowledge management can fit into the main flow of business activities so that it is not something else people have to find time to do, but something they do when they are getting their work done.

Experiences

Disillusionment from perceived past failures with knowledge sharing

In many cases, people believe that they have already tried knowledge management or something like it in the past and that it failed to produce the expected results. They believe that the conditions leading to failure remain unchanged, leaving them cool to the idea of trying the same thing again. A key question that managers must ask themselves is whether their organisation is ready for knowledge management.

A red flag should immediately be raised if people doing the same kind of work in various parts of the organisation do not rely on a common method for getting it done. If Joe and Mary work in different business locations doing essentially the same thing but Joe and Mary don't use a common method to get it done, managing their knowledge can't amount to much more than creating an electronic storage place from which they can each retrieve their own work. While this may result in some individual productivity gains, for knowledge management to result in real business impact, both Joe and Mary and others who do the kind of work they do in the organisation must agree to use a common method.

Most knowledge sharing focuses on helping people contribute what they know to other parts of the organisation. However, it is also important to focus on the readiness of people in the organisation to use what is available. If this type of "sharing" and "receiving" is not happening, it seems wise to question the organisation's readiness to undertake IC. Looking for evidence of common business methods in practice and focusing on these areas is one way to avoid future failures in knowledge management implementations.

It would seem quite natural to all if a department or business unit that has been taking the role as a pilot project to test a new system also shared their experiences with other departments as these are starting to implement and use this new system as well. To many it would then also be appropriate to continue this exchange of experiences on an ongoing basis. Existing business practice should be considered in the same way - as possible areas for sharing experiences.

Different perspectives

- Bad faith feelings on both sides of the managerial fence ("they just don't get it")

Knowledge management which is supposed to forge value-creating connections within the organisation, can very easily and swiftly create the opposite effect, an organisational divide between those who "get it" and those who don't. This divide arises from misunderstanding and misperception about knowledge management on both sides of the managerial fence.

Those in charge of a Knowledge Management project need to develop a more realistic view of their role and the level and type of involvement they can expect from business managers.

Business managers are and should be narrowly focused on improving performance in their domain. They only look outside their business silos if:

- It is easy to do.
- There is something there immediately recognisable as useful to their business.
- They recognise a potentially large payoff from going outside.
- They can take that something and make it useful with relatively little effort.
- They don't have to invest a lot to learn how to do it.
- The entire process of accessing, using, and sharing knowledge conforms to the way in which they think about improving business performance.

Knowledge managers have to develop a working understanding of how the various businesses or departments interact. They need to connect the dots by thinking outside the narrower framework of how the businesses currently operate. It should not be the job of business managers to figure out how to connect the dots. They are responsible for running their businesses. If companies want to leverage knowledge, someone who can see across whatever boundaries are currently established (vertical or horizontal) is needed to make new connections and forge new links into the value chain through knowledge. For this reason, knowledge management is a corporate function or more broadly a spanning function.

On one side stand the business managers who are trying to steer a course toward near term financial targets. On the other side stand the knowledge managers who are trying to steer a course toward longer-term strategic goals. Both perspectives are essential to sustaining organisational viability. Without cash the organisation won't survive to realise its strategic goals. Without strategic goals it is impossible to prioritise among the many possibilities for action. Building a bridge that connects these perspectives can help to lessen the "us v. them" mentality that gets in the way of successful knowledge management. Since the knowledge manager is the new kid in town, however unfair it may be, the bridge building has to start from his or her side of the divide.

6. Rules of Thumb in Building Indicators for Knowledge Transfer and How to Use These Indicators

Hanno Roberts

What does an indicator that shows a falling average age of your staff tell you? What does an increase in customer satisfaction mean? And what does an increase in new cross-organisational groups on customer service and product development tell you? The last one probably tells you about active exchange of knowledge, while the first two provide background information on the capacity of the company.

This chapter is about action indicators, the ones that refer to processes and things you do. In other words: indicators that deal with the transfer of knowledge, how you can build these indicators and put them to use. For other types of indicators that refer to inputs or to outcomes, examples and links are available in the appendix to this chapter.

Start with your steering model

Indicators to be used for the measurement of Intellectual Capital are the last stage in the process of managing your Intellectual Capital. Therefore, you should start building them once you have established why you want to work with IC and have decided upon the framework that relates your IC activities to your business goals.

Do not start working with indicators first, filling in the “strategic soft stuff” later on. If you try working this way, you will notice that the identification and selection of indicators will run into trouble because you do not have selection criteria or a ranking of your strategic priorities.

A framework will provide you with a much needed overview of “how it all makes sense” and put the indicators into the bigger picture. Having an idea of how all that comes together in a meaningful way creates a holistic overview and allows you to see the wood for the trees.

The advice is to start by drawing up your corporate steering model - and showing by arrows and drawings what goals, strategies and business processes look like.

The MERITUM model provides a framework you could use to draw up this model - as does the Knowledge Management Fieldbook with its knowledge management processes figure. The models literally provide “the big picture” that surrounds the indicators themselves. Indicators cannot be isolated from this “big picture”; you need to have that picture before you fill it in with indicators in the last step of designing a working IC model.

You should use these pictures to develop an IC model of your own business. Or use a schematic illustration that already exists within your company; for example, the one used for Total Quality Management (TQM) activities or for strategic business planning. This will help you to make sense out of the indicator scores once they become available.

Build indicators for knowledge exchange

A core issue when it comes to IC management is, as said over and over again in this publication, the ability to share and exchange knowledge. Knowledge creates value in relations between employees, customers and external partners. When building the indicators, think along three lines that are important to make sure that knowledge is indeed exchanged in these relations:

- Think about connectivity, i.e. the moments when knowledge is handed over
- Think about networks – do not think about hierarchy and departments
- Think about your organisation as having a knowledge production process

Connectivity

First, think connectivity. As already mentioned, value creation from your company knowledge takes place when knowledge is exchanged. This requires linkages or connectivity. This means that you should focus on typical “hand-over moments” when a product or service in process is changing hands/heads from one person to another and from one unit to another. These can be either hand-over moments within the production/service delivery chain or milestones in your project team’s activities.

During these hand-over moments, teams brief each other on what has been done. Typically, these moments are partly *an exchange of information*, and partly *an exchange of understanding*.

The exchange of *information* usually follows a regular format or standard procedure – these are what is called codified and all that we all typically use for business reports, indicators, time sheets, budget numbers etc.

However, the exchange of *understanding* is not codified but often consists of talk exchanged between people when working with the customer order or the team’s assignment. This means that the person or the team involved has learned something as well. For example, how a particular customer reacts to a phone call, or how a certain unit within or outside the organisation is always late with a specific piece of information. That understanding also needs to be exchanged and connected to other people’s understanding.

Unfortunately, an indicator for “understanding” does not exist. What does exist is an indicator of the moments and occasions during which that understanding could be exchanged. That is, you can make indicators which measure how many debriefing sessions, business reviews, milestone moments, etc. you have and how often. In short, indicators that focus on the type of content that is handed over and the moments when hand-over occurs.

An example of indicators could be cross-organisational customer committees and idea groups, which would indicate, for instance, customer needs in R&D, while the composition of such groups would indicate the cross-organisational customer orientation.

Networks

Second, think networks. Or perhaps the reverse is more obvious – do NOT think vertical hierarchy or horizontal work interdependence. A vertical relationship follows the hierarchical chain of command. This will point to the usual responsibilities and formal reporting in the company. And further horizontal work interdependence makes you think in terms of your immediate context only – i.e., which colleague provides me with input and to whom do I have to deliver my output.

There are several ways of identifying knowledge network indicators, and all of them require giving up thinking in well-established up-or-down, left-or-right relationships. Instead, think differently about relationships and try to see beyond the immediate context of your assigned task.

One way is to skip one or more steps in the sequence of the work or reporting flow; for example, who is your customer’s customer? Or who needs to know this besides my closest colleague? It means going beyond a classic input-output picture of what you do, use or provide. It will create a bigger picture in terms of where your part of the puzzle fits in and can be combined with the understanding of other people elsewhere in the organisation.

The above-mentioned customer committees or idea groups can serve as an example. In these groups, a variety of people participate – not only the closest employees or customers. The big picture is established by the cross-functional and cross-customer composition of these groups.

Another approach is to look for people with memberships of different groups, projects, committees etc. – people who are so-called boundary spanners. People that are members of

several project teams, units or organisations and so to speak stretch (“span”) the boundaries of the organisation because they are able to bridge knowledge gaps and make unexpected connections and see events or information in a new light.

The “boundary spanners” are partially visible in an organisation’s file on project staffing – who is doing what where? And partially visible in the formal alliances, partnerships and cross-functional teams that an organisation is engaged in. The number of “boundary spanners” can be an example of an indicator. However, these boundary-spanning individuals and teams are the ones to ask for suggestions about network indicators.

Knowledge production process

Third, think about your organisation as having a knowledge production process next to its regular production/service delivery process. The regular production process is usually captured in manuals, work routines, specifications and cost/revenue categories. The knowledge production process is a “hidden factory” behind all these elements. It also goes through stages, just like a regular production process, and it has a start and an outcome. However, it transforms meanings and interpretations and not physical goods or service actions.

Try to identify the knowledge production stages just as you identified the regular production process stages; what follows what, when and how? Where and when does this knowledge production process meet the formal organisation chart and production processes? What are its critical stages? Who provides these? What are its critical resources? Who knows most or best about these critical knowledge resources?

When developing a knowledge production process map, it is highly relevant to think in terms of networks and activities. It is very likely that you will run into non-linear maps of circles and arrows. Moreover, you probably cannot avoid using the word “learning”. Do not define that word – just indicate where in the map it occurs. If your organisation works smarter, it necessarily learns and uses its knowledge. It combines knowledge in its knowledge production process.

Creating a knowledge production process map has a number of advantages. It is usually a picture that establishes the location and the type of indicator you want to put on top of the knowledge production process. Next, it allows you to establish critical knowledge resources and critical knowledge activities that need relatively close monitoring as well as sustained investment and management attention; it fits in with the MERITUM framework in that respect.

You may compare the knowledge production process map with your regular production process to establish which existing indicators you already have and want to keep as well as locations of measurement. And you can use the knowledge production process map to help select an appropriate indicator from the many lists of other already existing IC indicators.

Use indicators that measure knowledge exchange

As may be clear from the above, an indicator represents a knowledge exchange moment. In order for the indicator to work properly, the design of the communication structure and the design of the measurement structure must be two sides of the same coin. If the communication structure is not designed concurrently with the management structure, the “new numbers” will be treated as just that – and management decision-making and attention will once again become redirected to the conventional financial resources only. Therefore, you should also think about how the report is going to be used.

The information that an indicator carries needs to be an exchange of understanding of what it actually means. For example, an increase in the indicator score of customer satisfaction from 86% to 94% is a positive 8% increase, but what does it mean? Which actions account for the increase? Where in the organisation did that increase originate (a knowledge production process map might answer that question)?

Indicators thus need to be used in a collective manner; a single person poring over an indicator report does not provide understanding on a wider scale, nor does he or she provide the combination of alternative interpretations and insights from other people on what the score means. Typically, indicators need to be used in a group or at a team meeting, allowing full participation in providing opinions on what scores mean.

This may imply a number of things.

First, that it is important to decide who will be using the indicators as well as who will be participating in the discussion. In other words, the call for meetings addresses in equal importance *who* is going to be there and *what* is going to be discussed. It also hints at a quick-and-dirty way to leverage knowledge exchange – to consciously manage the meetings by inviting a variety of diverse people to attend.

Second, the order of the meetings allows for explanations and discussions on how and why the scores are as they are. This is not the same thing as having endless meetings and “waste time”. The development of a series of discussion questions thus becomes part and parcel of the use of indicators.

One can rephrase that by stating that the quality test of a good indicator is whether it can be easily replaced by a question. Indicators that are hard to understand or use specific jargon will by definition fail that quality test (and this is something that many existing accounting indicators can be accused of!).

The use of indicators, finally, is helped strongly when their presentation provides cues for alternative interpretations and combinations with other information. Typically, that means that indicators are represented not in tabular columns as if they were cost numbers, but in a graphical manner, e.g., either as charts or figures. Making charts of indicator numbers results in developing trends over time (curves of indicator scores on the vertical axis and time on the horizontal axis) that tend to be more informative than point-item scores.

And it can show where /when changes from regular patterns occur – shed light on whether expected relations actually exist – or reveal relations that otherwise would be unclear or hidden.

Moreover, such curves can be combined with other indicator score curves in a single chart, triggering discussion on alternative explanations. For example, when plotting the scores for project overtime, customer satisfaction, and recruitment meeting frequency into a single chart, one might trigger a discussion on the present project staffing routines.

Apart from charting the indicator scores, the indicator itself could be represented in a non-numerical format, for example by a picture using different smileys (☺ and ☹) for different score levels or using a picture of a man with different sizes of his body parts to indicate increases in his brain (knowledge), his muscles (production), his feet (R&D) and so on. The important thing is to find interesting and self-explaining ways to visualise what your indicators show.

More information

You will find lists of empirically validated indicators in the Meritum, Nordika and Danish Intellectual Capital reports. Although developing your own indicators would be ideal, you are likely to find that many of the indicators you develop have already been defined and tested by others – or that you already have much data in your records that are useful for making indicators.

See also the appendix to this compendium, which has a list of indicators and links.

7. How IC Management Can Make Your Company More Innovative

Cristina Chaminade

IC management can make your firm more innovative through the implementation of routines around the identification, development and use of a unique combination of knowledge resources. That is, it helps the company to identify its knowledge-based distinctive features and systematically maintain them over time.

Launching new products or services into the market is one of the strategic goals of many companies. Being innovative and, furthermore, maintaining the innovative status over time is a guarantee of success in terms of sales, profits, exports, market share, but also a means to attract new employees, obtain financial support, etc.

Generally and ideally speaking, innovation is about creating the conditions for new ideas to emerge, and about being able to identify customer needs, knowing who has the required expertise (either inside or outside the company), and having the organisational support to transform those new ideas into marketable products, etc.

But getting there is no easy task, and one that requires a unique combination of knowledge and competencies that makes the company capable of learning fast. Indeed, learning is the key word in modern innovation processes, in a context of globalised activities and complex production processes. Learning abilities can only be pursued by combining the Human Capital, the organisational competencies (including technological competencies) and the Relational Capital also called Customer Capital. Focusing on just one single competency is just not enough to be innovative.

The right connections

A recent study of 90 Dutch firms (J. Cobbenhagen, 2000) clearly showed that companies that invested in only one type of knowledge (technological or customer knowledge, for example) failed in terms of innovation over time or, at best, succeeded for only a limited period of time. The most successful companies in terms of innovation were those that systematically invested in the three types of knowledge (Human Capital, Organisational Capital and Relational Capital) and found the *right connections* between them. Those were the fastest learners, capable of responding rapidly to new market challenges.

But what are those right connections? There is no general recipe of what the right connections are. They are company-specific and depend on the current situation of the company and its environment, on its strategic goals and resources. Intellectual Capital Management (ICMS) is a tool to identify (and to manage) the existing and lacking knowledge pools of the company, that is: what do I know and what do I need to know? (Considering my strategic goals and the formal and informal connections between those knowledge pools.)

Company examples

This can be illustrated by an example. Until 2000, the Spanish electrical market was extremely regulated; the market share was ensured, so there was no need for innovation. When the market was liberalised, one of the largest electrical utility companies showed strong limitations when it came to innovating, but the managers failed to see why. They argued that they had good technical staff and that they had hired really good sales people, so what was wrong? The implementation of the ICMS following the MERITUM Guidelines (Cañibano et al. 2002) helped the managers to identify the bottlenecks: they had the knowledge (resour-

ces) but they did not have any form of formal or informal networks between the “technicians” and the “sales staff” and there was a strong repulse from the technical staff to listen to the market.

In other words, the technical knowledge was there, but it was totally isolated. The managers decided to create communities of practice around market needs involving technicians, sales people and, in some cases, customers, suppliers, the R&D department; the design of specific training programs for technical employees, the development of IT tools (intranet) where employees could search for expertise and existing solutions to common problems, etc. The result was a much clearer focus on the market and new services based on the combination of both commercial and technical knowledge. In this specific case, the right connections were between Human (technicians) and Relational Capital (marketing/sales), through Structural Capital (creating the communities of practice). The implementation of the ICMS helped the company to learn about their competencies and how to make better use of the existing knowledge resources in a systematic way.

A similar situation was encountered in a Swedish banking group. A few years ago, the bank decided to link performance indicators to a number of Human Capital and Structural Capital variables. What they found was that the branches that showed the poorest performance in financial terms (growth in earnings, profit/customer, etc) were those that also scored the lowest in Human Capital and Market Capital. In contrast, those that performed better were also the ones that scored higher in Human Capital and Market Capital. Within the first group, there was a clear absence of linkages between the human resources and the market (customer demand). The ICMS helped the organisation to visualise the weak (and strong) linkages and implement a set of activities to overcome the negative situation. The result was a clearer orientation towards the market with new services and products to satisfy customer demands, thus creating value for the company.

In short, an ICMS helps the company to develop the routines needed to more intensively use its Intellectual Capital. If innovation is about the combination of different sources of knowledge, then ICMS is the tool to, first, identify those different sources and, then, to implement the activities needed to make better use of them.

In sum, innovation presupposes the use of different forms of knowledge – both tacit and explicit – that can flow across the organisation through different channels from formal to informal, and from different sources, such as internal R&D or marketing departments, to external links with, for instance, universities and research centres. As such it requires a broad perspective, encompassing the internal knowledge resources of the company and its external linkages.

Learn to learn

IC Management tools provide such a holistic perspective for the company, by identifying, valuing and monitoring all types of knowledge needed for innovation. An important aim of the Meritum model and the Knowledge Management Fieldbook and of other approaches to IC is to transfer and share knowledge, that is: to provide management with better tools for creating the right connection between internal and external knowledge resources.

By integrating the IC management tools into the management system, the company learns how to learn in a more systematic way, thus being able to maintain its innovative advantage over time. IC management tools are, therefore, strongly related to learning and as such they serve as a basis for the innovative company.

The important impacts of IC management are to systematically identify and increase the knowledge resources, using IC models such as those described in Chapters 2-5. The models are tools that help management to create and motivate knowledge sharing and to remove barriers, while at the same time building the opportunities for connectivity between critical

resources and processes. The reason being that IC management by its systematic approach is handing the management team a framework for developing and leading the knowledge production process and evaluating how successful the company is in creating conditions for new ideas to emerge and be incorporated into new products and markets that are effectively commercialised.

The impact of the systematic investment in IC on the innovative capacity of the company is not visible in the short term. There is clearly a time-span between the implementation of an IC tool and the move to a knowledge-based company on the one hand, and the company's ability to innovate, on the other.

The above mentioned study by J. Cobbenhagen clearly shows that current front-runners in terms of innovation are those companies that started early to invest in the three pillars of IC: Human Capital, Organisational Capital and Relational Capital. That is, time matters, and innovation should not be considered an immediate or short-term goal of the implementation of IC tools.

An example of the time-lagged innovation results of investing in IC stems from the Spanish bank, Bankinter. In 1996, it was one of the first companies in Spain to introduce an IC management system. As a result of the identification process, the company became aware of the intangibles that created value for the company in terms of Human, Organisational and Relational Capital.

The company implemented a series of activities to assure, for example, the satisfaction, commitment and motivation of its human resources as well as its unrestricted access to information (Bankinter, 2002). It kept track of new ideas, and provided the conditions for the emergence of new ideas.

The result of that transformation was felt in the late nineties, 2-3 years later, when Bankinter came to be considered as the most innovative bank in Spain, attracting new customers, new employees and new investors. Bankinter has proven itself to be successful in providing new services to the market much faster than the competition. Financial analysts recommend Bankinter as a reliable investment and among the reasons they provide to investors is the bank's commitment to IC. In sum, the bank moved from being a traditional banking organisation to being a knowledge-based organisation, characterised by flexibility and innovativeness.

In summary:

- IC management tools allow managers to have a holistic picture of the company in terms of knowledge. IC tools identify different pools of knowledge and channels, and create the motivation to share and connect the different types of knowledge → creating a unique and distinctive competence for the innovative company.
- IC management and innovation is a long-term relationship. Managers should not expect short-term results with regard to innovation immediately after the implementation of IC.

References:

- Bankinter (2002) Annual Report. Available in English on www.bankinter.com.
- Cañibano, L.; Sánchez, P.; García-Ayuso, M.; Chamínade, C. (Eds) (2002) Guidelines for Managing and Reporting on Intangibles. Intellectual Capital Report. Madrid: Airtel Foundation.
- Cobbenhagen, J. (2000) Successful Innovation. Cheltenham: Edward Elgar.

APPENDIX: Examples of Indicators

| Human capital | | Structural Capital | | Relational Capital | |
|-------------------------------|--|-------------------------------|---|------------------------------|--|
| Indicator examples | Description | Indicator examples | Description | Indicator examples | Description |
| Employee structure | Ratio/number of employees in different competence categories | Sales of new products | Turnover of new products (< 2 years) | Customers using new products | Sales to number of customers of new products (< 2 years) |
| Average Seniority | Number of years of employment in the company/business divided by number of employees | Time to market | The calendar time it takes before a new product is introduced to the market | Rate of new customers | Number of new customers divided by total number of customers |
| Professionals turn-over rate | Number of professionals leaving the company per year divided by number of employees at the start of the year | e-business indexes | Proportion of internet sales <i>or</i> Internet hit index | Trust | Most trusted company in public polls |
| Rookie Rate | Number/ratio of people with less than two years' employment | Professional ratio | The number of professionals divided by staff and back-office personnel | Reputation | Highest rated employer among graduating students |
| Motivation index | Attitude polls shown in index | HRM efficiency | Cost/activity level (number of salary payments + employment events + internal courses held <i>divided by</i> direct HRM cost) | Customer Satisfaction | Attitude polls shown in index |
| Diversity Index | Gender, age and ethnic background mix measured vs. the population mix | Knowledge diversity | R&D cost in new technologies divided by total fixed knowledge investments | External integration | Number of joint-ventures with external partners |
| Competence enhancing projects | Ratio of project assignment contributing to competency development | Cross functional work pattern | Cross functional groups in percentage of total number of groups | Focus groups | Number of groups with critical customers |

For further examples and inspiration: www.icframe.net and www.eu-know.net

The Nordic Industrial Fund – *Centre for innovation and commercial development* is an institution under the Nordic Council of Ministers. The Fund initiates and finances cross-border research and development projects aimed at the Nordic innovation system. Such projects are expected to enhance the competitiveness of Nordic industry and reinforce Nordic business culture while encouraging sustainable development in Nordic society.

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