

MEASURING AND REPORTING KNOWLEDGE-BASED RESOURCES: THE INTELLECTUAL CAPITAL REPORT

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Abstract: The purpose of this empirical study is to investigate the current state of best practices in the transdisciplinary field of intellectual capital management and measurement. The paper examines the proposition that intellectual capital report is a key element in firm's sustainable competitive advantage. This relevance will be reflected by way of disclosure of intellectual capital in the annual report or intellectual capital report. The disclosure of organizational intellectual capital contributes to the formation of a more detailed picture of the organization. It clearly signals organizational compromise on key elements, human capital, relational capital and organizational capital, which forms the "invisible" roots of the organizational value. However, intellectual capital measurement tool as well as intellectual capital reports contribute to make visible these hidden roots. Firms which have responded to the challenge of measuring and reporting intellectual capital are able to visualize their intellectual capital, and with this strategic view, they are able to compete and gain a sustainable competitive advantage.

Firstly, this paper is intended to provide a conceptual framework for IC analysis in the Knowledge Economy. Secondly the paper explores interesting factors regarding the dynamics of measuring and reporting IC in pioneering firms from Asia, Europe and The Middle East. After in-depth case analysis of leading firms in this field, an integrative IC model is discussed, which involves managing, measuring and reporting on IC.

Keywords: *Asia, Case study, Intellectual capital measurement, Europe, Intellectual capital reports, Knowledge management, The Middle East.*

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Introduction

This study examines the proposition that intellectual capital report is a key element to create a holistic image of firms' hidden value. This relevance will be reflected by way of disclosure of intellectual capital in the annual report or in the intellectual capital report. The disclosure of organizational intellectual capital contributes to the formation of a more detailed picture of the organization. It clearly signals organizational compromise on key elements –human capital, relational capital and organizational capital- that form the “invisible” roots of the organizational value. So firms that have responded to the challenge of measuring and reporting intellectual capital are able to visualize their intellectual capital, and with this strategic insight, they are able to compete and gain a sustainable competitive advantage.

A new competitive landscape

A great deal is changing today in the way firms compete. The traditional bases of competitive advantage have begun eroding. Over the last decades, several driving forces have emerged. Among these forces we find the following: globalization of business and international competition, sophisticated customers, competitors and suppliers, increased technological capabilities, shortening of product life cycles, etc.

Among the changes that have swept through the strategic management field during the last decades, knowledge management and intellectual capital measuring and reporting have probably made the most outstanding impact. Associated with this has been the advent of the Knowledge Economy (Grant, 2000). Several characteristics define the Knowledge Economy: 1) it is focused on intangible resources rather than tangibles resources (Edvinsson and Malone, 1997), 2) it has a hypercompetitive business environment, 3) it is digital, 4) it is virtual and 5) it is networked.

Intellectual capital

As many authors point out (Edvinsson and Malone, 1997; Ordóñez de Pablos, 2001; Wiig, 1997), a major proportion of growth companies is valued beyond book value. The market value of a firm consists of its financial capital and “something else”. The first term is the firm's book value and is formed by organizational financial and physical assets. The “something else” term represents the firm's intellectual capital defined as resources created from internal learning and development of valuable relationships.

As Roos and Roos (1997) put it, “. . . intellectual capital often says more about the future earning capabilities of a company than any of the conventional performance measures we currently use” (p.413). The growth/decline of the intellectual capital of the

organization is increasingly interpreted as an early warning signal of subsequent financial performance” (p. 417).

Stewart (1997) defines intellectual capital as “the intellectual material – knowledge, information, intellectual property, experience– that can be put to use to create wealth”. Union Fenosa, a top Spanish firm, defines intellectual capital as “the set of intangible values that promote the organizational capability for generating profits now and in the future”. In this sense, the objective of this empirical study is to explore the concept of intellectual capital and the development of intellectual capital reports that could help both academics and practitioners more readily understand the importance of intellectual capital reports and its impact on organizational results in today’s competitive environment.

Prior to continuing the dissertation on the strategic relevance of intellectual capital reports, it may be helpful to conceptualize what the components of intellectual capital are (Edvinsson and Malone, 1997).

Although definitions and conceptualisations are not entirely identical, the field is starting to see a convergence of what IC encompasses. Generally literature has identified three sub-phenomena that constitute the concept of intellectual capital: human capital, relational capital and structural capital.

Quite simply, human capital represents the individual knowledge stock of an organization as represented by its employees (Bontis, 1998). It is the accumulated value of investments in employee training, competence and future (Skandia, 1996). Human capital is important because it is a source of innovation and strategic renewal [...] The essence of human capital is the sheer intelligence of the organizational members. The scope of human capital is limited to the knowledge node (i.e. internal to the mind of the employee). It can be measured (although it is difficult) as a function of volumen (i.e. a three degree measure encompassing size, location and time). It is also the hardest of the three sub-domains of intellectual capital to codify (Bontis, 1998: 65-66).

The top Indian conglomerate Reliance Limited Industries states that “Reliance’s employee skills is its competitive muscle. Their skills differentiate Reliance from its competitors –whether it be through the speedier implementation of a project or in its implementation at a cost which is significantly lower than that of competition, or in the ability to extract more out of capital equipment, even when it ages. These skills are germinated in the Reliance culture” (p. 5).

The concept of structural capital refers to the value of what is left when the human capital –the employees– has gone home. Databases, customer lists, manuals, trademarks and organizational structures, to give a few examples (Skandia, 1996). According to Bontis (1998) structural capital “includes all the non-human storehouses of knowledge in organisations which include the databases, organizational charts, process manuals, strategies, routines and anything whose value to the company is higher than its material value” (p. 88). Human capital and structural capital are an indication of a company’s future value and ability to generate financial results. This is why a more systematic method of reporting on and managing these intangible dimensiones is needed (Skandia, 1994:6).

Relational capital and organizational capital form structural capital. Relational capital represents the relationships with internal and external stakeholders (Roos et al., 1998). It is the knowledge embedded in organizational relationships with customers, suppliers, stakeholders, strategic alliance partners, etc.

A more refined description of structural capital would demand differentiating between innovation capital and process capital. Skandia (1996) declares that:

Innovation capital refers to the explicit, packaged result of innovation, in the form of protected commercial rights, intellectual property, and other intangible assets and values. Harnessing this power of innovation requires a more dynamic perspective and a synchronized focus on human and structural capital for renewal. Thus the power of innovation is found in the border zone between human capital and structural capital. The goal is to achieve a multiplicative effect in order to enhance rapid knowledge sharing and develop new business applications. In doing so, new value is created [. . .] A company's strategy for growth, competence development and competence renewal can bear great significance for its future value. The power of innovation creates value in that innovation capital is either recycled or generated anew (Skandia, 1996: 4).

As we mentioned earlier, organizational capital can be broken down into innovation capital and process capital. Process capital is “the combined value of value-creating and nonvalue creating processes” (Skandia, 1996:22).

Intellectual capital provide firms with a huge diversity of organizational value such as profit generation, strategic positioning (market share, leadership, name recognition, etc.), acquisition of innovations from other firms, customer loyalty, cost reductions, improved productivity and more (Harrison and Sullivan, 2000). Successful firms are those which routinely maximize the value from their intellectual capital.

Intellectual capital measurement models

Intellectual capital is the sum of the hidden resources of the organization not fully captured on the traditional accounting reports. So neither human capital or the rest of the constructs that formed intellectual capital are visible to the traditional accounting system.

The measurement of intangible resources should be considered a key element in firm's strategy. As Harrison and Harrison (2000) state “calculating the value of intangibles companies based on their ability to develop and maintain cash flows by converting their ideas and innovations into revenue streams is fundamental to adequately assessing and quantifying the value of these firms”.

Among the most well known methods for intellectual capital measurement is Skandia Navigator (Edvisson and Malone, 1997), Intangible Assets Monitor (Sveiby, 1997), Technology Broker (Brooking, 1996) and Competence-based Strategic Management Model (Bueno, 1998).

Intellectual Capital Report

What is an Intellectual Capital Statement? The object of an intellectual capital statement is to give a picture of the corporate effort to build up, develop and streamline its

resources and competencies in relation to its employees, customers, technology, and processes. The intellectual capital statement underpins the development of the future value of the company, and consequently its competitiveness in the knowledge economy (Danish Agency for Trade and Industry, 2000, p. 4).

The intellectual capital statement forms an integral part of working with knowledge management within a company. It reports on the company's efforts to obtain, develop, share and anchor the knowledge resources required to ensure future results. The intellectual capital can contribute to creating value for the company by improving the basis for growth, flexibility and innovation. Its merits lie in expressing the company's strategy for what it must excel at in order to deliver satisfactory products or service (Danish Agency for Trade and Industry, 2001, p. 13)

However, today the number of firms that publish intellectual capital reports is small (Mouritsen, 1998).

Intellectual capital report versus traditional annual financial report

Leading European pioneer firms publish two types of reports: the intellectual capital report and the financial report. Some firms elaborate and publish the intellectual capital report separately from the financial report. However both types of reports are complementary and offer a more holistic view of the firm.

The Intellectual Capital Report is aimed at providing a holistic picture of the firm on the basis of chosen strategies, taken actions and current challenges. Rather than on financial resources, this report is focused on "softer" resources such as intellectual capital. In essence it is a supplement to the financial accounts as well as a valuable strategic management tool.

Most of the participating firms in this research recognize that the objective of the Intellectual Capital Accounts is to deal with all major knowledge-related activities in the firm. In fact, according to Cowi, "it is a tool to help us measure the results of knowledge management at all levels of the organization. The accounts show whether we are on the right track in implementing our strategies and policies" (Cowi, 1999).

Cowi is a special case due to its decentralised intellectual capital report. They compile a decentralised Intellectual Capital Report of each department and division of the organization. This decentralization has two major objectives: firstly the Intellectual Capital Report can be used as a landmark for decentralised planning and secondly as a guide for evaluating to what extent a manager lives up to the values that are not expressed in the financial accounts.

The Intellectual Capital Report is a dynamic report that shows the direction in which the firm's intellectual capital is being developed (Ordóñez de Pablos, 2000, 2001).

Accounting policies

Intellectual capital does not appear in the traditional financial report. The explanation is the following. An asset –under International Accounting Standard Committee (IASC) literature- is a resource controlled by an enterprise as a result of past events and from which future economic benefits are expected to flow to the enterprise. According to IAS

38 (International Accounting Standard), the list of items that will not make it onto the balance sheet include expenditure on the following items: a) research, starting-up a business, training and advertising; and b) generating internally customer lists, brand names, mastheads, customer loyalty, customer relationships, human capital, structural capital and publishing titles. These items will not meet the definition of an intangible asset and the recognition criteria. Expenditures on these items will therefore be expended when incurred (Rivat and Nulty, 1998).

As there are no generally accepted accounting policies for the presentation of the intellectual capital accounts, this is a field currently under development where everything is left to be done in the next following years.

Additionally, as there are no standards and/or generally accounting policies for the intellectual capital accounts, the reliability of intellectual capital accounts depends “on quality data and accumulation methods, and we have therefore chosen to draw up accounting policies, which explain how Carl Bro data is obtained” (Carl Bro’s Intellectual Capital Account, 1999).

EMPIRICAL STUDY

Data collection

The aim of this paper is to provide a holistic model for intellectual capital reporting taking into account what pioneering firms from Asia, The Middle East and Europe are doing in this field. It is especially interesting to build a model from a trans-continental perspective and focusing on early reports when even fewer companies than now were measuring and reporting intellectual capital. In this sense, years 1996 and 1997 are very representative as pioneering firms started their journey in the intellectual capital world.

We selected a sample of firms that were elaborating the intellectual capital report in Asia, Europe and The Middle East. In particular, we analyzed IC reports from firms operating in Austria, Denmark, India, Israel, Korea, Spain and Sweden. In some cases, we sent a survey on intellectual capital and knowledge management and/or contacted the firm to get more exhaustive information on intellectual capital measuring and reporting. All this information was compiled and processed to get a holistic picture of intellectual capital indicators.

Table I. List of participating firms

| COUNTRY | FIRMS |
|----------------|--|
| AUSTRIA | ARCS |
| DENMARK | Carl Bro Gruppen Cowi Systematic Software Engineering |
| INDIA | Reliance |
| ISRAEL | Optimet Teva |
| SPAIN | Bankinter BBVA BSCH Indra Mekalki Union Fenosa |
| SWEDEN | Skandia |

Due to the small number of firms that currently elaborate the intellectual capital report and the differences between these firms (size, number of employees, sector of activity and so), we focused more on qualitative data and therefore conclusions are limited.

However, data provided cutting-edge information on what is going on in this field of research and at the same time pioneer firms set trends for firms that are about to start their publication of intellectual capital reports, highlighting the benefits of reporting on knowledge-based resources.

Knowledge management and intellectual capital: Stages

Firms have a collection of different histories, goals, visions and endowments of organizational resources. These factors represent what the firm is today and contributes to its success and development. But at the same time, the historical organizational path and decisions as well as resource endowments can be the cause of organizational inertia and therefore the source of organizational core rigidities (Leonard-Barton, 1992). In this sense, knowledge intensive firms tend to complement their knowledge management strategy with the implementation of intellectual capital measuring and reporting initiatives.

Most surveyed firms initiate themselves in the intellectual capital field setting up a company model where they relate organizational foundation (organizational vision, values and goals), efforts (people, processes, infrastructures, etc) and results (“soft”

results related to employees, customers, etc, and financial results) (Ordóñez de Pablos, 2001).

Generally these firms include a knowledge management model which highlights the most strategic areas for firm's future success. Knowledge management encompasses all activities that are aimed at generating, sharing, utilizing, conveying and measuring organizational knowledge. Firms devote special attention to learning capabilities and knowledge sharing as well as technologies and processes.

A close concept to knowledge management is the concept of intellectual capital report. Larsen et al., (1999) state that "more precisely, knowledge management initiatives are the object that intellectual capital statements attempt to illuminate"(p. 15).

The following Table summarizes major steps that pioneer firms accomplish in the intellectual capital challenge.

Table I. Major steps into the development of intellectual capital reports

| |
|---|
| <input checked="" type="checkbox"/> Mission, vision and values |
| <input checked="" type="checkbox"/> Organizational excellence model |
| <input checked="" type="checkbox"/> Knowledge management model and organizational intellectual capital structure |
| <input checked="" type="checkbox"/> Intellectual capital accounts and reports |
| <input checked="" type="checkbox"/> Auditing intellectual capital accounts |
| <input checked="" type="checkbox"/> Dynamic review of intellectual capital indicators included in intellectual capital accounts + building intellectual capital account standards |

Source. Ordóñez de Pablos (2001)

Major areas in the intellectual capital report

The analysis of these reports shows that three major areas are taken into consideration: human capital, relational capital and structural capital. They include a comparative view of figures for each area with reference to both current year and past years. In addition, goals are set for a period of time: short and long term. They are stated in terms of increase, decrease or maintenance of data. They show target evolution for key indicators.

Careful examinations of this set of reports from different continents allow us to propose an exhaustive list of indicators of each area.

Human capital area

Six sections form our proposed area for human capital: 1) employee profile, 2) staff turnover, 3) education, 4) commitment and motivation, 5) training and 6) results.

- ◆ Employee profile: this section provides data on gender and age distribution, number of employees working in the production, distribution, IT, sales and marketing, administration departments,
- ◆ Staff turnover: includes data on beginners, resigned staff and circulation % of personnel, among others.
- ◆ Education: includes employees' academic formation and experience (unskilled personnel versus skilled personnel, bachelors, PhD personnel, international experience, etc).
- ◆ Commitment and motivation: as stated in the title, two main indicator categories are set. Commitment indicators include among others, seniority and % of promoted staff/total staff. Motivation indicators include % of promoted staff/total staff, % of staff feeling explicit recognition, % of staff feeling their opinions are taken into account or that they are happy with the working environment.
- ◆ Training: includes indicators about formation provided by the firm. Indicators like training days per employees, ratio training hours/working hours (per year), training investment (employee/year), measure this category.
- ◆ Results: shows global satisfaction with the job. Generally it is measured with an employee satisfaction index. Other measures are also included, such as absence due to sickness and injuries with loss of working hours.

Structural capital area

This area could be structured into 6 major sections: 1) general infrastructure, 2) knowledge-based infrastructure, 3) innovation, 4) quality and improvement projects, 5) customer support and 6) administrative processes.

- ◆ Infrastructure: acts as an indicator of firm's equipment regarding to offices, computer capacity, phone services, etc.
- ◆ Customer support: shows firm capacity for closeness to potencial and real customers.
- ◆ Administrative processes: reflect the efficiency in attending enquiries.
- ◆ Innovation: gathers information on investment in product and process development, number of new services /products, etc.
- ◆ Quality improvements: assess accreditations and certifications in the firm. It includes indicators from number of ISO 9000 certifications to number of employees with formation on total quality and number of improvement projects.
- ◆ Knowledge-based infrastructure: it measures the utility of firm's Intranet and databases. Examples of indicators are number of best practices on the Intranet, % of updated knowledge documentation on the intranet and so.

Relational capital area

In early reports we found that some firms used the term customer capital. Customer capital is the knowledge embedded in the marketing channels and customer relationships that an organization develops through the course of conducting business (Bontis, 1999).

However, firms replace this term with the term relational capital later. It is a broader term that encompasses not only the value of customer relationships but also the value of relationships with shareholders, government, partners and so.

This area is comprised of three main sections: 1) client profile, 2) customers, image and stakeholders, 3) diffusion and networking and 4) intensity, collaboration and connectivity.

Conclusions

Managers of firms operating in Asia and The Middle East are very interested in knowledge management and intellectual capital measuring and reporting in Europe. Most of the surveyed firms in Asia and The Middle East declared they were not working on these issues currently but they hoped to do it in the short run. Most advanced firms are very involved only in knowledge management strategies but not in the measuring and reporting of intellectual capital. However, all turn their eyes towards Scandinavian and Spanish firms to learn how to build this new type of report.

From a trans-continental approach, we could not highlight important differences among intellectual capital reports elaborated in Asia, Europe or The Middle East. Most firms classify their intellectual capital into human capital, relational capital and structural capital. The number of indicators for each area varies across firms but the same key indicators are included in all reports. However, firms with more experience in the reporting of intellectual capital –such as Danish, Spanish and Swedish firms– provide more comments about their experiences on knowledge management and intellectual capital in their intellectual capital report. For instance, they provide more insights on reasons for reporting IC, hindrances and avenues for further research.

It is clear that more indicators could be added to the above mentioned ones. For example, indicators of training effectiveness should be incorporated. However we should state that firms explicitly declare that their list of indicators for intellectual capital is not fixed. These indicators are reviewed constantly, some are deleted and others are added. The intellectual capital report is a new strategic tool that is still in development.

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