University of Groningen

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Reporting on Intellectual Capital

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Abstract

In today's knowledge-based economy intellectual capital (IC) is becoming a major part of companies' value. Being able to manage and control IC requires that companies can identify, measure and report internally on IC. As financial accounting rules ban full disclosure of IC in the annual report the external stakeholders lack information about companies' value, which may have as a consequence that stakeholders make wrong or bad decisions. To remedy this situation, new tools must be developed which enable managers to identify and measure a company's IC and to report on it within a consistent framework. The theory on IC is still in its infancy. The purpose of this paper is to contribute to the development of a reporting model on IC. The paper analyses the various reporting models recently being developed and used in practice. Moreover, the existing reporting models have been discussed in-depth with the management of three Dutch companies with a high degree of IC and with four financial analysts as external users of the information. The paper describes the findings of the discussions with the practitioners. Based on both the theoretical evaluation of the reporting models and the evaluation in practice the building blocks of an IC reporting model are described.

Introduction

Organisations' ability to collect, process and interpret information and to transform information into economic value is becoming more and more important. The quality of these processes is largely influenced by the knowledge and experience of organisations' participants. Knowledge and experience of people are becoming the most crucial resources through which organisations can deal with external and internal information in a structured manner. Teece (1998) argued that organisations' competitive advantages in today's economy are determined by the ability to replicate knowledge resources grounded in the expertise and experience of people. These resources are intangible and are described by the term 'Intellectual Capital' (Klein & Prusak, 1994; Edvinsson, 1997; Saint-Onge, 1998). Examples of intellectual capital (hereafter referred to as IC) are brands, patents, reputation and image towards customers, process technology and administrative routines and procedures. In many industrial branches intangible resources are the drivers behind the value of their products.

Despite the fact that it is increasingly recognised that IC creates value for companies, there are problems with formalising and capturing IC in such a way that these resources can be managed and controlled effectively. Companies poorly understand the relevant IC components and therefore, are not able to adequately identify, measure and report on IC within a consistent framework (Guthrie *et al.*, 1999). Moreover, IC does not (fully) appear in the traditional financial accounts, because the traditional financial accounting framework inadequately reflects the value and impact of intangibles (Cordon, 1998). These problems with internal and external reporting on IC have various consequences.

The failure to identify, measure, evaluate and report internally the value of relevant IC components leads to decisions in which the value of IC is not incorporated. As the value of investing in IC is not well understood, the use of companies' resources will be suboptimal. The ignorance of IC entails that it will not attract sufficient management attention due to which its value added capacities will not be fully exploited. One of the effects of not reporting on IC externally is that

investors lack information on the development of a company's intangible resources due to which investors' risk perception will be higher. Companies with large IC resources may have problems with finding funds on attractive conditions, as lack of information about investments in IC could lead to an underestimation of future earnings. The Dutch Ministry of Economic Affairs (1998) stated that these inefficiencies in acquiring funds slow growth and erode competitive advantage for companies in particular and for society in general.

Recently, some empirical research has been focused on identifying IC components and some models of IC reporting have been developed and used in companies (see *i.e.* Edvinsson, 1997; Sveiby, 1998; Johanson *et al.*, 2000). These models are internally focused. A few companies report in a structured way on IC externally, among which the company Skandia AFS, which published an annual report on IC for the first time over the year 1993. The International Accounting Standards Committee has developed a new accounting standard on intangible assets, which standard IAS 38 was approved in 1998. Although the IAS 38 provides for the disclosure of some IC elements in the annual report, most of the IC resources still remain undisclosed.

This paper aims at developing the building blocks of a reporting framework on IC, both internally and externally. In investigating the building blocks we will also discuss the problems which should be solved before being able to develop a reporting framework. As IC theory is still in its infancy it is not possible to develop a comprehensive reporting framework at the moment. The reporting models used in practice are valuable examples of attempts to understand and capture the IC concept. These practical experiences are important for developing IC theory. From these experiences we learn that reporting on IC requires an in-depth insight into the nature and components of IC and into its value to a company.

In the 1960s and 1970s researchers attempted to measure the value of people and to account for investments in human resources in the annual accounts. Flamholtz (1972) developed a model by investigating the variables that influence the services an individual contributes to a company during his period of being appointed in that company. He looked at characteristics of the individual and at organisational

characteristics. This research is also based on the idea that the content of an IC report should be determined by the components of IC and the variables that cause changes in the various IC components. In other words, reporting on IC, both internally and externally, is closely related to the activities and processes by means of which companies can create and improve their IC resources. This entails that both the internal and external report should be grounded in the management processes of IC resources.

In order to develop the building blocks of an IC reporting framework, we have carried out research at three Dutch, knowledge-intensive, companies. In-depth discussions have taken place with the managements of these companies about an IC reporting framework. Moreover, financial analysts representing the Dutch capital markets were asked to develop important IC indicators from the perspective of users of information.

The paper is structured as follows. Section 2 starts with a discussion of the definition of IC. We also discuss the various ideas about the components IC is composed of. This variety of ideas has led to various reporting models. We describe the similarities between these models. Further, we go into the problems with incorporating IC reporting into the traditional financial accounting framework. Section 3 describes the viewpoints of the managements of three Dutch knowledge-intensive companies on how to identify, measure and report on IC. Section 4 compares the theoretical ideas on IC reporting and the view from practice. Based on this analysis building blocks are developed for an IC reporting model. In section 5 some suggestions for further research are given.

Intellectual Capital: definition, components, and reporting

In recent practice several companies (see Edvinsson, 1997; Edvinsson and Malone, 1997; Mouritsen, 1998; Johanson *et al*., 2000) have started to develop management and control techniques to better understand their companies' IC resources. Managing and controlling IC implies that managers set up goals with regard to the development and usage of IC, motivate organisational participants to direct their activities towards

realising these goals and further that the activities and processes take place in a coordinated way. Information about the goals, the activities and processes and their results is crucial in managing and controlling IC. In order to be able to give this information, identifying, measuring and evaluating IC is necessary. To identify IC it should be clear what we are talking about, in other words, what is IC and what are the components of IC? Measurement of IC implies that we must know the object to be measured and the way of measuring this object. Being able to evaluate the outcome of the measurement requires a target against which the outcome can be compared. This target should be grounded in a company's strategy. A theory of the value of IC enables companies to answer these questions. Such a theory gives an insight into the variables which determine the value of IC to a company. The theory describes the driving variables in the IC creating processes and indicates how these processes can be facilitated. It is the task of a company's management to influence the driving variables and to facilitate the IC creating processes.

Below we will briefly discuss the recent debate on the definition of IC and its components. In the literature attention has been paid to the variables that determine the value of IC. We will give a broad overview of this debate. Further we will address the specific problems related to reporting on IC externally.

Definition of Intellectual Capital and its components
There is still a debate on the definition of IC. We do not intend to give an overview of this debate (for an in-depth discussion of the various definitions we refer to Johanson *et al.,* 1999). We only indicate its most relevant aspects. A well-known definition is the one proposed by Klein and Prusak (1994): 'IC is intellectual material that has been formalised, captured and leveraged to produce a higher-valued asset'. There are two problems with this definition: (1) it entails the concept intellectual material which is not clear; and (2) it limits IC to being formalised and captured, whereas there could also be not formalised and captured IC in the form of tacit knowledge and experience. Hall (1992) makes a distinction between IC as assets and IC as skills, where assets are formalised and captured IC (*e.g.* patents, trademarks, copyright, contracts, and databases) and skills or competencies are tacit knowledge (*e.g.* expertise of

employees, suppliers, and distributors). According to Edvinsson and Malone (1997, p. 3) IC 'is information, knowledge applied to work to create value'. In this definition they stress the value creating capacity of IC. Mouritsen (1998, p. 462) argues that IC is a matter of 'broad organisational knowledge, unique to a firm, which allows it constantly to adapt to changing conditions'. Haanes and Lowendahl (1997) claim that the knowledge within an organisation exists at both the individual and the organisational level. On the individual level IC includes knowledge, skills and aptitudes. On the organisational level IC includes client specific databases, technology, routines, methods, procedures and organisational culture.

IC seen as a firm's competencies (*cf.* Reich, 1991; Hamel and Prahalad, 1994; Roberts, 1998; Mouritsen, 1998) is in the first place internally focused and is strongly related to the experience and expertise of the firm's internal participants. The experience and expertise of the internal participants can create value, because the participants are part of an organisational system which furthers co-operation and co-ordination by means of which exchange of knowledge and creation of new knowledge are made possible. As claimed by Teece (1998) the focus must not only be on exchanging and creating knowledge, but in particular on how the knowledge is deployed and used. However, a firm's competencies are not only internally located and created, they can also be created by the environment. In more and more branches of industry the creation of knowledge is strongly related to the network of organisations the firm is part of. Due to the interactions between and the co-operation of organisations innovations occur. Firms cannot create value on their own but need the sources and knowledge of other firms, which can be located on both sides of the value chain. In such situations the IC of a specific firm depends on the characteristics of the network and the firm's place within the network (Arora and Gambardella, 1990; Van Rossum, 2000). The innovation, in other words the creation of value and growth, is a product of a network of organisations instead of a product of a single firm.

The internal and external focus of IC is also included in the reporting models that are used in practice, although the external focus is usually limited to the relation with the customers. In these models various IC components are distinguished. The

practice is that each author uses his own reporting model and his own naming of IC components (see *e.g.* Brooking, 1996; Edvinsson and Malone, 1997; Stewart, 1997; Edvinsson, 1997; Sveiby, 1998). Nevertheless, similarities can be determined between the various models of IC components. These models include at least the following components: (1) knowledge and experience embodied in people, either formalised (patents, copyrights, brands, etc.) or tacit (competencies of individual employees); (2) organisational systems and processes, such as internal processes, procedures and administrative systems; (3) innovation and technology; and (4) business relationships, such as those with customers, suppliers and strategic partners (reputation and image, customer loyalty, coordination procedures with suppliers, etc.).

Reporting on Intellectual Capital

The recently developed reporting models have in common that they try to give a picture of IC assets and resources which have the ability to create value, and which are not included in the traditional financial reporting models. The frameworks used for most of the IC reporting models (Brooking, 1996; Sveiby, 1997; Edvinsson and Malone, 1997) have various similar characteristics. First, the models take a managerial perspective by starting from the IC creating activities and processes. The models try to relate these activities and processes to the companies' strategy and give information about IC creation compared with companies' goals. Second, the reporting models are developed in accordance with the balanced scorecard framework (Kaplan and Norton, 1996), in such a way that the models focus on the various aspects of IC management. The models give a broad picture of the various IC components which are related to each other, but which are not combined into a bottom line figure. The models do not try to incorporate the information on IC in the traditional accounting framework. Third, the IC components are measured in different ways. All kinds of measures are used: non-financial, financial, qualitative, and quantitative measures and descriptions of activities and processes.

The models used by particular companies are developed uniquely and organisation specifically. The Danish model (The Danish Trade and Industry

Development Council, 1997) tries to give an insight into both the actual situation and into the development of the IC components compared to a company's strategic goals by means of flow indicators.

Internal reporting on IC is not framed by reporting guidelines. If companies want to include their IC report in the annual statement then they have to meet general accepted accounting standards. These standards are based on conventions and agreements, such as the matching principle, objectivity, consistency, precaution principle and the realisation principle. Subjective elements are eliminated. The main focus is on tangible resources, past events and transactions with tangible assets. The accounting standards cause some complexities when valuing IC. Roos *et al.* (1998) mention three complexities to the measurement of IC: (1) time delays; the flow of an investment in a particular aspect of IC can take its time to create its intended effects, for example, investment in training; (2) IC is not zero-sum; small investments can have an enormous impact and large investments may fail; and (3) IC assets are not only measured in financial terms; other measurements are used, such as numbers, hours, and ratios. Romer (1998) indicates that in the knowledge-based economy the relationship between costs and future cash flows is not always valid. Knowledge is not subjective to diminishing returns as is the case with physical assets. For example, an infinite number of people can use software. Further, knowledge is in many cases not subject to a reduction of value (no technical wastage). In the financial accounting framework it is mandatory to amortise even when the value is not declining. Moreover, only acquired goodwill can be included. Internally developed goodwill is not seen as an intangible asset.

We can conclude that the current financial accounting framework does not allow the disclosure of most of the IC components. This framework is based on financial measures. Some IC components concern processes which cannot be expressed in financial terms. Other IC components can be quantified, but it is not possible to do this in financial terms. Another difference is that the IC concept has an ex ante perspective, where the financial accounting framework is grounded in an ex post perspective. Also the boundaries of the frameworks differ: financial accounting

limits its descriptive objects to internal elements, whereas IC includes both internal and external elements.

Findings from practice

Although various reporting models on IC have recently been developed, we have seen above that there is no clear definition of IC nor a clear description of the various IC components and a clear definition of these components. We have also concluded that it is not possible to disclose all IC information in the annual accounts. Nevertheless, managers of knowledge-intensive firms have to manage and control their IC. Moreover, external stakeholders have to evaluate companies' value. In this section the research will focus on how managers of knowledge-intensive firms handle their IC and what are their ideas about IC. We are interested in questions, such as: what are the most important aspects of IC, by means of which processes and activities can IC be created, how can the results of IC creation processes and activities be measured and evaluated, what is the relation between the IC creation processes and companies' strategy and how can companies report on IC internally and externally? Furthermore, we have asked external stakeholders about their information needs regarding IC: what type of information do they want in their decision-making, how do they evaluate disclosure of IC information, and what are their demands regarding the quality of the information (reliability, standardisation, timing, format, etc.)? We use this information from practice for developing the building blocks of an IC reporting model, which is the main objective of this study. In this section we describe the findings of the study at three Dutch companies and the opinions of four financial analysts, who are external users of IC reports. We start with a description of how we have carried out the research in practice: the research method we have used, and the research process we have followed. We will also briefly introduce the three companies. Next we will discuss the ideas on the content of IC and the focus of IC management and measurement. We will also describe the demands the interviewed practitioners make on reporting on IC, and we will discuss the advantages and disadvantages of internal and external reporting on IC as mentioned by them.

Research method and research process

The authors of this paper have (actively and passively) participated in the PricewaterhouseCoopers (hereafter referred to as 'PwC') project team, which dealt with the Dutch Economic Affairs project in 1998/1999 to identify and value the intangible assets of three knowledge-intensive companies. The Ministry of Economic Affairs adopted this approach in view of the lack of publicly available information on IC. The main objective of the project was the development of an appendix on IC in addition to the annual accounts. The Ministry of Economic Affairs asked four auditing firms to develop, at their own discretion, such an appendix. As one of the asked auditing firms, PwC tried together with three Dutch companies to develop a reporting framework for external reporting. The objective of the PwC project team was to give external stakeholders the opportunity to gain a better insight into the cash flow potential and risk profile of knowledge-intensive companies. The project team developed a reporting framework based on the Skandia model with as IC components: human, customer, process and organisation capital (see Edvinsson, 1997). The definition of IC used was also derived from the Skandia model. In this model 'market value' (which is the market value of the equity) is divided into 'financial capital' (book value of equity from the balance sheet) and 'IC' (difference between market value and book value). Furthermore, in order to measure the IC components the project team used indicators. They used the types of indicators from the Danish model (what is there?, what is invested? and what objectives have been met?) and related these indicators to a company's strategy (Backhuijs *et al.*, 1999). The appendix was made for the three companies which were studied. Further, financial analysts were asked to mention important IC indicators from the perspective of users of this information.

Three companies have co-operated in the research activities: two quoted companies, 'Trans' and 'Parency', and one non-quoted company, 'Capital' (due to confidentiality reasons the company names are fictitious). The PwC project team has chosen these companies due to their focus on investments in IC such as respectively knowledge of people and customer relations at Trans, research and development and knowledge of sales personnel at Parency and high-tech investments co-produced with

suppliers at Capital. Trans is a listed company on the Amsterdam Exchanges in the professional service industry and Parency and Capital are industrial product companies, of which Parency is also listed in Amsterdam.

The project team has organised meetings with the top management of the three companies. Multidisciplinary teams with chief officers of control, financial accounting, strategy, research & development, investor relations and personnel affairs have participated in the study. On average six workshop rounds of approximately three hours with two or three persons were held at each separate company. First, the project team brainstormed with the teams of the companies about the long-term market value (derived from the market capitalisation of Trans and Parency and a discounted cash flow analysis of Capital) and the book value of the equity. The meetings were intended to encourage reflection on IC by asking questions, such as: which components of IC could explain the difference between market value and book value, what are the most important aspects of IC, by means of which processes and activities can IC be created, how can the results of IC creation processes and activities be measured and evaluated, what is the relation between the IC creation processes and companies' strategy and how can companies report on IC internally and externally?

After brainstorming about the influence of strategy on IC and the interdependency between components of IC, a brief description of the strategy and the interrelationship between the different components of IC was made as a basis for the identification of the important indicators to be used by the company. Following a long list of relevant indicators drawn up from three different sources (recent pilot-project, analysts and the companies), the identified indicators for the different components of IC were divided into different types of indicators. A classification was made of the indicators based on their degree of importance, their degree of measurability and the interrelationship of the different components of IC. By using the selected indicators the companies generated information from within the company in order to fill in the reporting model and to write an explanation about the development of IC.

In addition to the providers of information on IC, also the users of this information have co-operated in the project. Four financial analysts (ABN AMRO, HSBC, Kempen & Co and Staalbankiers), as representatives of the Dutch capital

markets, were asked about their information needs regarding IC: what type of information (indicators) do they want in their decision-making, how do they evaluate disclosure of IC information, and what are their demands regarding the quality of the information (reliability, standardisation, timing, format, etc.)?

Intellectual Capital definition and components
In the literature as well as at the companies confusion arose regarding the precise definition of IC and its components. At the companies confusion also arose on the precise meaning of IC. Trans, Parency, Capital and the analysts emphasised the contribution of IC to long-term growth possibilities. A definition of IC as the difference between market value and book value provoked criticism. Trans and Parency questioned the efficiency of capital markets. Furthermore both listed companies argued stock prices fluctuate too much because of certain sentiments or the issues of the day, when nothing really changed regarding the value of their tangibles and intangibles.

The management understood the categorisation of IC as presented in the Skandia model, but stressed the importance of the network with suppliers. The discussions at Parency and Capital on the categorisation of the indicators showed the importance of supply chain management. According to the companies' management, the network will create relatively more and more value for their company in the future. Companies in the network will become more dependent on each other. Suppliers are closely involved with the core processes of the company, due to e.g. just-in-time deliveries, strategic alliances and co-makership. In the Skandia scheme all indicators related to suppliers are included under process capital. The importance of the network with suppliers justifies a separate category.

The companies stressed the importance of the interrelationship of the different components constituting IC. The companies considered this interrelationship to be of considerable significance when forming an opinion on the value of IC. Understanding the processes of the development of IC components is of utmost importance for the companies. The management stressed that the interrelationship between the components determines the real value of IC. This interrelationship is also

the key element of the IC management model of Saint-Onge (1998). They argue that the value for the company does not arise directly from any one of its IC elements, but only from the interaction between them. Hence, the greater the interaction of the categories of IC, the greater the value produced.

Trans stressed the interrelationship of customer capital with human capital. A good employee attracts good customers and having good customers draws good people. Organisational capital as the sum of innovation capital and process capital has a supportive role in the interplay between customer capital and human capital. The relationship between innovation capital, as part of organisational capital, with customer capital was identified as the most important relationship at Parency. Product innovations from the research & development department are put on the market by a strong sales department. The former is worth nothing without the latter. At Parency, human capital is the bearer of knowledge in the interplay between research & development and the sales force. Capital mentioned the importance of human capital as the binding factor between the various components constituting IC. In the interplay between the components all companies do stress human capital as the pivot of IC.

Trans, Parency and Capital see a series of indicators as a useful quantifiable measure to support the processes of knowledge creation. The series of general indicators of Trans, distinguished by four components of IC are given in Appendix I. The companies see relatively few indicators suffice in giving a complete view of their IC. About 20% of the indicators would be general indicators (primarily indicators in human capital), 50% relevant within the industry of the company (mostly customer capital) and roughly 30% idiosyncratic to the company (especially process and innovation capital). Parency and Capital extensively use co-makership to develop products, which is reflected in the more extensive use of indicators in process and innovation capital compared to Trans.

Intellectual Capital reporting
The providers of information, Trans, Parency and Capital, observe a scorecard reporting framework as a meaningful pro-active instrument, but it is in need of refinement for a better implementation. The providers of information agreed on the

fact that financial accounting does not capture most components of IC. The financial analysts are primarily interested in flow indicators as a supplement to the information presented in the financial statements, which show the investments in IC. With those figures they can then judge the effectiveness of the company.

The developed reporting framework with Trans, Parency and Capital was designed to identify and name the important IC from an IC managerial perspective. All indicators are derived from the strategy of the company. The framework addresses the importance of strategy in its relationship to the value of IC. IC only becomes important when seen in its context. The context is the long-term vision of the company translated into strategy. In the strategy of the company the importance of the various IC components and their interrelationship are described. Important stock- and flow indicators of intangible resources are therefore merely derivatives of the strategy of a firm.

The findings from practice show developing a scorecard and indicators that are derived from a company's strategy is a time-intensive, costly process and currently there is limited availability of information for generation of indicators. There is a need for reliable procedures to develop indicators, especially when budgets are linked to a scorecard. The indicators need to be well-defined to establish a reporting framework, which can be used throughout all levels of the company. Parency is engaged in activities of a different nature and is unable to present a clear image on a consolidated level. In order to obtain a clear insight, Parency has to be divided into various segments (e.g. divisions or product categories).

The financial analysts do not see the difficulty of aggregation of indicators as an issue of importance, because consolidation filters a lot of information. The financial analysts want information on the level of business units to know what is really going on. They want user friendly information which gives a transparent view of the company. They advocate standardisation and reliability of information through new rules implemented in external reporting in order to be able to benchmark. Although, the financial analysts rank the harmonisation of current financial accounting rules with a higher priority than new accounting on IC.

For a possible future harmonisation of the 'Intellectual Capital accounts', the users and providers of information see the importance of independent external bodies, similar to auditors, who can warrant the reliability of the information on IC.

Intellectual Capital disclosure
The relevance of the subject and whether or not implementing the reporting model for external and internal use were discussed with the board of directors of the companies. Also the financial analysts mentioned their arguments in (dis)favour of disclosure. The advantages and disadvantages mentioned in recent practice (Sullivan, 1998; Lev, 1998; Upton, 1998; Wallman, 1998; Danish Ministry of Economic Affairs, 1998; Dutch Ministry of Economic Affairs, 1998) are compared and analysed with the pros and cons mentioned by the managements of the companies. Table 1 mentions the advantages and disadvantages of internal reporting and table 2 shows the benefits and drawbacks of external reporting on IC.

Table 1   Advantages and disadvantages of internal reporting on IC

Advantages
1. Helps managers to manage the company's IC, which leads to better decisions
2. Assesses effectiveness of the company's IC utilisation
3. Reports of current and future income from IC
4. Relates employee contributions to IC to profit
5. Aligns IC resources with strategic vision
6. Quantifies report to Board of Directors
7. Shows relationship of categories of IC

Disadvantages
1. Increases cost by means of new rules and bureaucracy
2. Creates risks by presenting opportunities to their employees which in time cannot be accomplished
3. Increases audit complexity

The advantages of reporting for internal purposes as discussed in the literature (Table 1) and the empirical observations correspond with each other. The only exception is that the companies do not see that reporting on IC improves the insight into the relationship between the contributions employees make to IC and the company's profitability (advantage 4). Reporting on IC is generally seen as an important tool to improve decision-making. Furthermore, the IC report enables the company to better assess the effectiveness of its IC utilisation. It also shows better the interrelationship between the IC components, and their relation with strategy, and it gives an insight into the current and future cash flows from IC.

Quantification of the report to the Board of Directors and the ability to make the interrelationship of the components visible were key issues at the two listed companies. Currently, at Trans and Parency the report to the board of directors is descriptive with qualitative information. The companies therefore see it has an advantage that the report can also include quantitative, non-financial information such as ratios, numbers and hours.

All companies cited the cost aspect as a disadvantage. The gathering of information requires a lot of time and effort. Information systems like Enterprise Resource Planning (ERP) and 'data-mining' software may eventually lead to lower additional cost for reporting on IC. The companies did not bring up the danger of presenting opportunities to their employees that cannot be accomplished nor did they mention the increase of audit complexity (disadvantages 2 and 3). They did not see this as a burden for internal reporting.

Table 2   Advantages and disadvantages of external reporting on IC

Advantages

1. Increases transparency to capital markets, which leads to a lower weighted cost of capital and therefore to a higher market capitalisation
2. Helps creating trustworthiness with employees and other important stakeholders
3. Supports the long-term cision via propagation of a long-term perspective
4. Lends itself for use as a marketing tool

Disadvantages

1. Outlines sensitive company information useful for competitors
2. Leaves room for manipulation of information, so only 'positive' information may be presented
3. Creates user liability risks by presenting future-oriented information which cannot be substantiated
4. Increases cost by means of new rules and bureaucracy in the organisation
5. Creates tax consequences if included on the balance sheet
6. Decreases degrees of freedom for management
7. Creates high expectations

Trans and Parency do not agree on the creation of a higher market value by means of external reporting on IC (advantage 1). According to the listed companies increased transparency will lead to a more well-founded ('fair') value rather than higher market value. Offering more information on IC is interpreted by the financial analysts as a sign of strength compared to competitors, and also as a sign of commitment of a company's management to realising their goals. Furthermore, the companies see an IC report as a tool that visualises the long-term vision and growth potential.

The three Dutch companies do not see shareholders as the most important stakeholders, but just as important as employees, suppliers and customers. Creating trustworthiness to stakeholders is just as important, or even more important, as

increased transparency for shareholders. All three companies do recognise the marketing function of an IC report to the external stakeholders.

Disclosing sensitive company information to competitors is a serious burden for Trans, Parency and Capital. Trans, Parency, Capital and the financial analysts predict manipulation opportunities within the reports on IC. Good news might be presented, and definitions may be continuously changed. Also indicators could be added, left out or redefined to show a positive image of the company. An example: 'If analysts value overhead costs as negative and marketing expenditures as positive investments, then it is easy to shift part of the overhead costs to marketing expenditures.'

The liability risk involved in presenting future-oriented information was not stressed (disadvantage 3). It is possible that the American authors (*e.g.* Sullivan, 1998), who stress this disadvantage for external reporting, operate in environments which do not match the Dutch situation. The increased cost aspect and the tax consequences of external reporting were stated as relevant at all companies.

Parency mentioned two additional disadvantages of external reporting on IC: a decrease in the freedom of management and the creation of higher expectations (disadvantages 6 and 7). Trans and Capital do not consider these issues as an disadvantage. The management at Parency rather adapts quickly to new conditions. Furthermore, the company is unwilling to present too much information. Parency is afraid of creating high expectations to shareholders, and other stakeholders, because sometimes failures happen. According to Parency, the capital market sometimes overreacts to failures. Failures do not always have to be bad for a company due to new learning experiences gained.

The companies do not intend to report on IC for external purposes, because the disadvantages mentioned outweigh the advantages. Trans does intend to report on IC for internal purposes. Trans might be willing to report for external purposes after they have gained internal experience for at least three consecutive years.

Building blocks of an IC reporting model

From the discussions in section 2 and 3 we can conclude that both researchers and practitioners are aware of the importance of IC for value creation. Thus, IC is a relevant concept to pay attention to. In order to manage and control IC within companies identifying, measuring and reporting internally on IC is required. Knowing how to identify, measure and report on IC is also needed for being able to give an insight into the value creation capacities of IC to the external stakeholders. Below we discuss the building blocks of an IC reporting model. We start with discussing the main assumptions which underlie such a model. Then, we develop the building blocks of the content of an IC report. We deal in particular with the requirements an external IC report should meet, and with its consequences for the characteristics of such an external report.

Underlying assumptions

What are the main assumptions which should underlie the reporting model? Both the literature and the results from practice indicate that a managerial perspective is required. Both resources argue that information should be given about the value creation capacity of companies. This capacity is determined by the ongoing activities and processes within companies, by the knowledge and experience of the internal participants throughout the company and by the way a company's management is able to deploy and use this knowledge and experience. So, an IC report should give information about these aspects. This requires an in-depth understanding of these aspects and of their effects on a company's value.

As an insight is needed into the role of IC in the value creation capacity of companies the reporting model should be based on cause and effect relations. Information should be given about the variables which cause changes in the IC resources. The model should allow incorporating flow and effect information.

Managing IC should be part of a company's strategy. A company's strategy makes clear which IC components are of interest for the company and what their relations are with the other resources a company has. Both researchers and

practitioners stress the intertwinement of IC and the other resources. Managing IC should be embedded in the management process of formulating goals, planning and carrying out actions, measuring the outcome of the actions, evaluating the outcome against the targets and revising goals/formulating new goals (usually this is an iterative process). This entails that a reporting model should incorporate a company's strategy, and should give information about the embeddedness of IC in the management process.

Embedding IC in a company's strategy and in the management process stresses the forward looking perspective of the IC concept. The concept is concerned with the development of competencies and processes of knowledge creation. Valuing IC incorporates valuing organisational learning and competence enhancement, thus valuing the sources which will create future financial results. The reporting model should take the forward looking perspective as a starting point.

Content of the IC report
With regard to the content of the IC report the following building blocks turned out to be important.

First of all, the concept of IC should be clear. In order to develop a theory on the value of IC the debate about the definition of IC (see section 2) should lead to a generally accepted definition. This will not be an easy task as long as each researcher uses his own definition. Nevertheless, both for theoretical considerations and for practice a general accepted definition will raise the level of the discussion, which will in turn enhance the acceptance of the IC concept.

For the same reasons also the components of IC should be clearly described and defined. Although each author also uses his own model of IC components, similarities still exist. It must be possible to develop a broad model on a high level of aggregation which includes the various IC components. As described in section 2 the broad model could include the following components: (1) knowledge and experience embodied in people, either formalised or tacit; (2) organisational systems and processes supporting IC creation; (3) innovation and technology; and (4) business relationships (business network and customers network). The interviewed

practitioners observed these broad IC categories as being the most important ones. For internal purposes each company can develop its own more detailed model. As we have seen in the research in practice, part of the information about IC is of a general level, part is industry specific and part is company specific. So, each company should develop its own specific content of the IC report within the same broad framework. Although each company will use its own specific IC report this does not entail that companies should not worry about the definitions of their specific IC (sub)components used. On the contrary, companies should define their specific components precisely in order to bring about that throughout the company the same concepts are used and the information can be compared.

This also holds for the way of measurement. The existing IC reporting models use indicators for measuring the status of the various IC components. The Danish model (The Danish Trade and Industry Development Council, 1997) also uses indicators for measuring the development of the components and the effects of the activities and processes in relation to the goals. As this model uses flow indicators and has a forward looking perspective it is more in line with the underlying assumptions as described above. The indicators should be defined precisely, so that measuring can take place in a reliable way and the discussion will focus on the outcome of the measurement process and not on the way of measuring as such. This does not alter the fact that developing an IC measurement system is very helpful in understanding the role of IC in the value creation processes, as was experienced by the managements of the three Dutch companies.

The research in practice shows that relatively few indicators can give a comprehensive picture of the value creation capacity of IC. But we should be careful with this conclusion. The research in practice was directed at external reporting on IC and only the top management had been interviewed. Researchers (Johanson *et al*., 2000) argue, on the contrary, that a model of interrelated indicators that is able to measure the contribution of IC to the future value of the company will be complex. They assert that the existing IC reporting models are too general to capture the complexity of interrelated indicators. Learning processes throughout the company demand a profound investigation of causes of IC creation. Reporting on IC internally

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should meet the demands made by the participants throughout the company, both from a learning point of view and from a decision-making perspective. General models cannot capture such demands.

The interviewed practitioners stress the intertwinement of the various IC components. They consider the component 'knowledge and experience embodied in people' as the pivotal component, which relates the other components to each other. This component determines the results of the other components. So, the IC reporting model should pay attention to the close relationship between the components. This can be realised by giving information about the variables that drive IC value creation. These variables will be grounded in the various components and so the intertwinement of the IC components will be disclosed.

The researchers and the practitioners are of the opinion that the IC measurement system should use various measures: financial, non-financial, quantitative, qualitative and process descriptions. The measurement system should give a broad insight into the value creation capacity of IC and this cannot be realised by using one bottom-line figure. Quantitative information, either financial or non-financial, has the advantage of being perceived as more objective. So, trying to quantify IC information as much as possible is important. Nevertheless, much IC information is not suitable for quantification. A very important IC component is tacit knowledge and experience. Tacit knowledge is personalised knowledge which cannot be expressed in words and numbers. As tacit knowledge cannot be made explicit, it can only be shared by working closely together in a master-apprenticeship relationship. As Nonaka (1994, p. 16) argues 'tacit knowledge is deeply rooted in action, commitment, and involvement in a specific context'. Nonaka describes the processes of knowledge creation within organisations and the organisational conditions for such processes. He distinguishes four modes of knowledge creation, which requires different ways of acting and conditioning. For example, transmission of tacit knowledge to other people requires interaction between individuals and some form of shared experience. Sharing each other's thinking processes is extremely difficult. This can be stimulated by 'the building of a "team" or a "field" of interaction. This team or field facilitates the sharing of members' experiences and

perspectives' (p. 20). Giving an insight into how a company deals with tacit knowledge requires information about how the company supports tacit knowledge creation processes and about how the company is able to disseminate this knowledge throughout the company.

The practitioners emphasise the role of network relations, in particular the relations with suppliers, as an important IC component. The existing IC reporting models do not explicitly include this component. Literature on network relations discusses the way these relations can be managed and which factors influence the position within the network. It also deals with the influence of networks on the innovation capacities of companies. Research findings from this body of knowledge should be included in IC research. Trust is a crucial concept in setting up interrelationships between independent companies and in managing these interrelationships (see *e.g.* Sako, 1992; Van der Meer-Kooistra and Vosselman, 2000). Trust can be created in mutual adaptation processes that take place when parties co-operate with each other during a longer period. The existence of trust between parties is an intangible 'asset' that furthers the value of the co-operation and thereby the value of the co-operating companies.

The practitioners argue that disclosing IC information on a consolidated level is less worthwhile if the specific company consists of various product-market combinations. The IC value creating capacities differ per PMC to such a degree that consolidating the information decreases its relevance dramatically. So, segmentation of the information strengthens the transparency of the information.

Above we have described the building blocks of the content of an IC report. In general we have made no difference between reporting internally or externally. Nevertheless, where we discussed the description of organisational processes and procedures it may be clear that we were more focused on internal reports. The external report will contain less detailed information and will focus more on the results of activities and processes. An important difference between an internal report and an external one is that the internal report does not need to follow general guidelines. Each company can develop its own reporting model based, as we have argued above, on the broad IC framework. Moreover, companies can report on IC to

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various organisational levels and, therefore, can develop specific internal IC reports geared to the specific information needs of these levels. Some researchers (*e.g.* Mouritsen, 1998) stress the learning perspective of IC, which makes continuous adaptations to changing conditions possible. Learning processes cover the whole organisation and involve all internal participants. Learning is not only a matter of management. Therefore, when learning is important reporting on IC to various organisational levels will make sense.

Reporting externally

Reporting externally on IC has its own requirements. The external stakeholders expect that they can compare the companies' reports. This requires standardisation of the information. They further expect that the information is reliable and objective and that possibilities of window-dressing and subjectivity are ruled out. The quality of the information (including standardisation, reliability, objectivity) can be guaranteed by demanding an independent assessment of the information.

There exist big differences between the underlying assumptions of an IC reporting framework and those of the traditional annual statement. The traditional financial accounting framework is based on a backward looking perspective, and only uses financial measures, which allows calculation and a bottom-line result. The assumptions underlying the IC reporting framework are in conflict with the financial accounting standards. Therefore, including the IC report in the annual statement is not possible. The interviewed managers are afraid to disclose too much IC information to the external stakeholders. They fear that their competitive position will be violated. As the information is about future value, the interviewed practitioners also fear that they could create great expectations which sometimes will not be met. Information manipulation can occur as long as there is no standard IC reporting framework and surveillance by independent bodies is not required.

Suggestions for further research

Given the exploratory nature of this paper no firm conclusions can be drawn regarding IC theory. Therefore, further research is required. This research should address the following aspects.

As we have seen the IC concept is still a diffused one. Each author uses his own definition of the concept. As the research on IC should lead to application in practice and, thus, must be supportive to the managers of knowledge-intensive firms, it could be recommended that the researchers should concentrate on the similarities between the various ideas so that this can bring about a generally accepted definition of IC and of its components, and can lead to a broad reporting framework. Research is needed into how the participants throughout a company can be informed about how IC can strengthen the value creation capacity and about what the specific value drivers are. How can the IC reports be geared to the specific information needs, when continuous learning is important. This requires in-depth research within companies.

The various IC components are closely related and are also intertwined with other resources a company has. This interrelationship should be further investigated in order to be able to get a comprehensive insight into the cause and effect relations of the IC value creation capacity. Specific attention should be paid to the influence of network relations, where ever more companies focus on their core activities and outsource non-core activities to independent partners in their network. Companies in a network are becoming more and more dependent on each other, and being able to manage these interrelationships influences to a large extent the value creation capacity.

Practitioners are afraid of disclosing too much IC information to the outside world as this information gives an insight into their competitive advantages. They also argue that IC information can easily be manipulated. Therefore, they prefer to start with improving their internal reporting on IC. The external users of IC reports demand standardised and reliable information. The financial analysts have other accounting priorities than external reports on IC. Our study in practice shows that at the moment both the providers and users of IC information are not willing to put

much effort in reporting on IC externally. Nevertheless, a problem with regard to reporting on IC externally is that the underlying assumptions of the traditional accounting framework differ from the ones of an IC report. Researchers should study these conceptual differences and should suggest ways of solving them.

Appendix I   Overview of IC indicators of Trans

	'What is there?'	'What is invested?'	
Human Capital	* Competence matrix * Number of professionals * Number of total staff * Number of temporary employees	* Training per member of staff * Informal activities per member of staff * Recruitment & Selection per newly recruited member of staff	* Reputation among targeted group of employees * Productivity of staff deployment * Number of contracts turned down with regret * Staff satisfaction * Staff turnover
Customer Capital	* Service-based sales spread * % of key-clients	* Marketing expenditures as % of sales * Number of quotes issued * Number of contracts won * Deployment of customer co-ordinators	* Sales growth * Customer satisfaction - key-clients - other clients * Reputation
Process Capital	* Average throughput time of invoicing * Average throughput of monthly reporting	* Expenditure on IT per member of staff * Expenditure on quality systems	* Quality of key-processes * Overall quality rating * Efficiency ratio internal organisation
Innovation Capital	* Current innovation areas * Number of staffing employees currently deployable in innovation areas	* Expenditures on internal development in support of innovation areas * Internal training in support of innovation areas * Total expenditures as % of sales	* Sales achieved in innovation areas * Contribution to Innovation Capital made by completed acquisitions

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