

The Danish Guidelines on Intellectual Capital Reporting

Towards A European Perspective on Human Resource Disclosures?

Gunnar Rimmel*

Pontus Blom, Emma Lindström & Oskar Persson

*correspondence address:

Gunnar Rimmel
School of Economics and Commercial Law at Göteborg University
Department of Business Administration
Financial Accounting Group

Box 610
SE-405 30 Göteborg

E-mail: Gunnar.Rimmel@handels.gu.se

Abstract

Currently, many academics assert that although several companies proclaim their employees as the company's most valuable resource only a few companies have utilised models and concepts of measuring human resources in their corporate annual reports. Various studies of the users of such information indicate a substantial difference between the type of information that corporations issue in their annual reports and the type of information that is demanded by the users of such reports. Since the concept of intellectual capital became a hot topic for management and accounting practitioners, the interest in reporting voluntary information about corporations' human resources has increased. In the early days of the IC movement the interest in reporting intellectual capital was widely driven by individual corporate attempts. Denmark might be an exception to the rule as the Danish Ministry of Science, Technology and Innovation sponsored a joint project by accounting researchers and corporations to develop guidelines to report intellectual capital. The focal point of this paper derives from a case study of five Danish corporations that issue intellectual capital statements that are prepared according to this reporting guideline. The paper discusses how these five corporations actually report intellectual capital and how such reports can be used for comparison over years within as well as across corporations. As there is currently a lack of standardisation on reporting intellectual capital and voluntary disclosure about human resources, the paper provides a discussion of the opportunities and threats for European member states were they to apply the Danish guidelines for intellectual capital reporting.

Keywords: Intellectual Capital, Intangible assets, Human Capital, Reports, Disclosure

1. Introduction

Many academics (Gröjer and Johanson 1997; Petty and Guthrie 2000; Guthrie, Petty et al. 2001; Mouritsen, Bukh et al. 2001) argue that although several companies state that their employees are the company's most valuable resource, only a few companies have utilised models and concepts of measuring human resources in their corporate annual reports. Various studies of the users of such information indicate a substantial difference between the type of information that corporations issue in their annual reports and the type of information that is demanded by the users of such reports (Eccles and Mavrinac 1995; Eccles, Herz et al. 2001; Rimmel 2003).

Since the concept of intellectual capital (IC) became a hot topic for management and accounting practitioners, the interest in reporting voluntary information about corporations' human resources has increased simultaneously (Rimmel 2004). In the early days of the IC movement, the interest in reporting intellectual capital was widely driven by individual corporate attempts (Rimmel 2002). Numerous reports (FASB 2001; Mouritsen, Bukh et al. 2001; Upton 2001; MERITUM 2002) have called for improved disclosure of intangibles and the development of new reporting models. In the Scandinavian countries, some corporations, spearheaded by the Swedish insurer, Skandia, started to develop IC reports to supplement their traditional corporate annual reports (Bukh, Larsen et al. 2001; Johanson, Mårtensson et al. 2001; Mouritsen, Larsen et al. 2001; Bukh and Johanson 2003). Denmark, as a country, has taken an interest in IC disclosure, whereas elsewhere corporations, rather than countries, have taken the lead. Therefore, Denmark might be an exception to the rule as the Danish Ministry of Science, Technology and Innovation (DMSTI) sponsored a joint project by accounting researchers and corporations to develop guidelines to report intellectual capital. However, it is not claimed that the Danish IC guidelines have been the only attempt to develop guidelines for IC reports, as there also are other initiatives, e.g., the Meritum-project (MERITUM 2002). According to Bukh and Johanson (2003), reporting intellectual capital in an IC statement is regarded as an integral part of knowledge management, which identifies and communicates corporate knowledge management strategy to stakeholders.

The focal point of this paper derives from a case study of five Danish corporations that issue intellectual capital statements that are prepared according to the Danish IC reporting guideline. The paper shows how these five corporations actually report intellectual capital and how such reports can be used for comparison over years within as well as across corporations. As there is currently a lack of standardisation on reporting intellectual capital and voluntary disclosure about human resources, this paper provides a discussion of the opportunities and threats for European member states were they to apply the Danish guidelines for intellectual capital reporting.

2. The Danish Guideline on Intellectual Capital Statements

In 1998, the Danish Ministry of Science, Technology and Innovation initiated the development of the first version of the Danish guideline based on experiences from 17 Danish corporations. Even though the stated aim was to develop an IC guideline, over a period of three years, the fundamental part of the conducted research was devoted to measuring and managing IC within the participating corporations, which actively started the construction of IC statements (Bukh, Larsen et al. 2001; Mouritsen, Larsen et al. 2001; Mouritsen, Larsen et al. 2001; Bukh 2002).

In 2000, the initial guideline was published in Danish, and then was translated into English and made available on the ministry's homepage without charge for everyone who might be interested. The Danish Ministry of Science, Technology and Innovation initiated a follow-up

project to test the IC guidelines on a larger scale. Around 100¹ Danish corporations and organisations of all sizes from the public and private sectors participated in this test during 2001 and 2002. This group included several large corporations that are publicly listed on The Copenhagen Stock Exchange. Based on the experiences from the test, a revised IC guideline *Intellectual Capital Statements – The New Guideline* was published in December 2002, first in Danish, and soon after translated into English and made available without charge at the ministry’s homepage (DMSTI 2003). In the report on the new guideline, the authors explicitly stated that IC statements are prepared for external publication.

The revised Danish guideline for IC statements provides *The Intellectual Capital Model* (see figure 1), which identifies four interrelated elements that should describe a corporation’s knowledge resources: employees, customers, processes and technologies (DMSTI 2003).

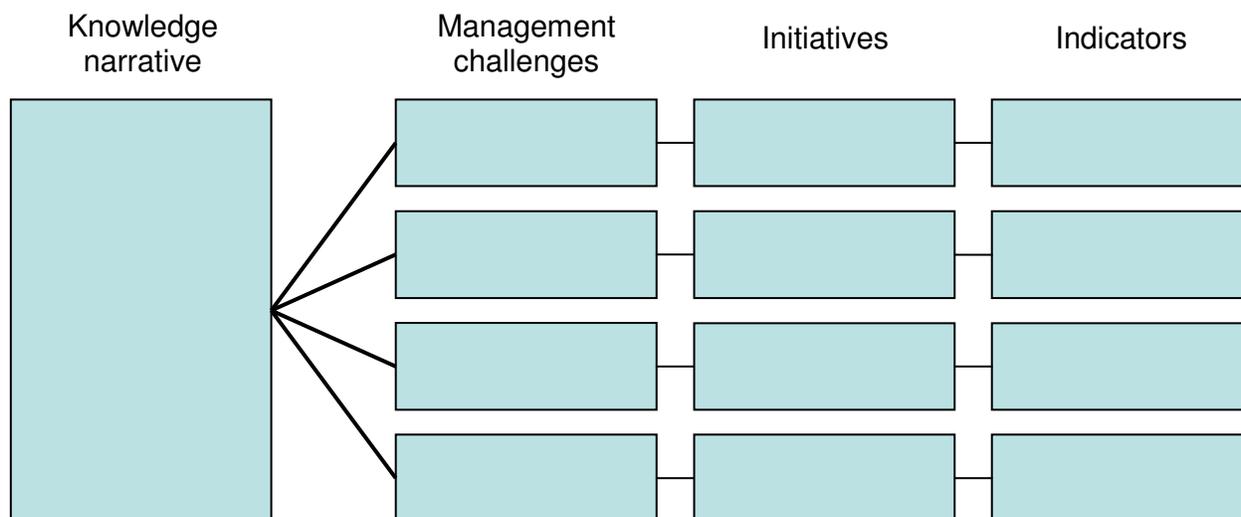


Figure 1 The Intellectual Capital Statement Model
Source: DMSTI (2003a)

The first element is a *knowledge narrative* that communicates the corporation’s aim to increase the value a user receives from the corporation’s goods or services. A set of knowledge resources is needed to create this so-called *use value*. The knowledge narrative shows which types of knowledge resources are required to create the use value the company wants to supply.

The second element is a set of *management challenges* that emphasize knowledge resources, which should be reinforced through in-house development or sourced externally. This element can be achieved by intensifying co-operation with innovative customers, by developing greater expertise in specific fields or by acquiring better insight into the company’s control processes.

The third element is a set of *initiatives* that are necessary to tackle the management challenges. These initiatives are concerned with how to compose, develop and procure knowledge resources and then how to monitor their extent and effects. The fourth element is a set of *indicators* that allow tracking of whether initiatives have been started or if management challenges are being met.

These four elements together represent the analysis of the company’s knowledge management in the IC statement.

¹ This number “around 100” is from the Danish Ministry of Science, Technology and Innovation report. However, when counting the corporations and organisations that are explicitly listed as contributors to the new guideline, the number only amounts to 63. There is no disclosure made about the other “around 37” corporations and organisations that participated.

3. Analysing Intellectual Capital Statements

However, the revised guideline did not proposed specific instructions of how to read, analyse or compare IC statements although such instructions could be useful to users of such IC statements (Bukh and Johanson 2003).

Following the revised version of the IC statement guideline, in 2003, the Danish Ministry of Science, Technology and Innovation published the report *Analysing Intellectual Capital Statements*. The intention of this report is to offer analysts a systematic method for reading and interpreting the information contained in IC statements (DMSTI 2003). The suggested systematic analysis method was developed by the Danish intellectual capital statement project that also developed the IC statement guidelines.

The report raised the question of whether intellectual capital statements can be systematically read and analysed in a way that is comparable with the reading and analysis of financial statements. The authors of the IC statement analysis report answered this question with a cautious yes, as the report's IC statement analysis method claims to have much in common with financial statement analysis principles (DMSTI 2003).

Evaluation criteria Knowledge resources	Effects	Activities	Resources
	What happens	What is done	What is created
Employees			
Customers			
Processes			
Technologies			

Figure 2 Analysis model for intellectual capital statements
Source: DMSTI (2003b)

In order for an IC statement to be systematically read, an analysis model for IC statements (see figure 2) was developed, which was based upon the existing IC statement model (see figure 1). Furthermore, three evaluation criteria, *effects*, *activities* and *resources*, were added, which should facilitate making the response to three questions about a corporation's knowledge management (DMSTI 2003). What happens? What is done? What is created? Each of the four main knowledge resource categories usually found in intellectual capital statements (employees, customers, processes and technologies) should be analysed by each of these three evaluation criteria, which then produces a 3 x 4 analysis matrix.

The model should be read and analysed by column. Analysing the *resources column*, users obtain information about whether the corporation's knowledge resource portfolio is competitive and sustainable in the future. This column should also present data about the corporation's possibilities for providing potential future employees with training, development and career prospects as well as data about customer relationships current state and change over time. Analysing the *activities column*, the user obtains information about management's ability to improve the organisation, employees and customer relations. This column should provide a source for examining employees' possibilities for progress and for how the corporation's customer relations have developed in order to analyse how big the risk is to the customer base. The *effects column* should serve as a base to examine if the corporation's knowledge

management structure and activities work to obtain a judgement about the corporation's stability. This column might contain measurements on employee or customer satisfaction towards the corporation and its products and services.

However, models like the Danish guideline aim to communicate a corporation's management and development of intellectual capital and not to portray a complete and detailed picture of the corporation by indicators. Consequently, the analysis model is considered as a source to examine management and its development of knowledge resources and not to provide unbundled information from indicators (Bukh, Larsen et al. 2001).

According to the authors of the IC statement analysis model, this method has two significant qualities as it provides actual insight about how corporations gain knowledge resources and it permits an objective evaluation of corporations' knowledge management (DMSTI 2003). Bukh and Johanson (2003) outline that the intention of systematic reading is to assist users of IC statements, so that these users do not have to base their analysis on corporations' individual approaches.

One might wonder, however, if the IC guideline's loose instructions regarding corporations' presentations of their knowledge, management challenges and indicators do allow systematic reading and comparison.

4. Data and Method

The data used in this study cover IC statements of five Danish companies listed on The Copenhagen Stock Exchange. The Danish Ministry of Science, Technology and Innovation had published a list on their homepage of "around 100" companies and organisations that utilized the IC guideline. The final sample for this study consists of the companies Carl Bro Gruppen (consulting engineers), Coloplast A/S (consulting engineers), COWI Rådgivande Ingeniører A/S (consulting engineers), Dansk International Efteruddannelse - DIEU (management training course provider) and KMD (public sector IT provider).

Coloplast and COWI were chosen because the report on the IC statement analysis model used these two companies as examples of how to apply the analysis model. However, instead of just using the data provided in the IC statement analysis report, the IC statements from COWI and Coloplast were examined independently, without looking at the numbers and figures provided. This has been done purposely, as the intention was to examine if it would be possible to reproduce the numbers and figures that were taken as example in the DMSTI IC statement analysis model report (DMSTI 2003). Additionally, three companies, Carl Bro, DIEU and KMD, were selected since they had been frequently cited as good examples for well-documented IC statements in the ongoing debate (e.g., Grøjer and Johanson 1997; Mouritsen, Larsen et al. 2001; Mouritsen, Larsen et al. 2001; Bukh 2002). The selection criterion for this study was not to achieve an objective representation of the companies listed on DMSTI's homepage by statistical means.

One deficiency in the collected data occurred regarding one of COWI's IC statements. One might assume that companies that have put an effort into the development and publication of IC statements make these reports as available as traditional corporate annual reports. This assumption has been proven being wrong. Many telephone calls and e-mails were made to obtain one of COWI's IC statements, but without success. However, although one of the COWI IC statements is missing, it was still considered valuable to present their results for the reason that COWI showed an interesting approach presenting IC.

The presentation of the empirical data is presented in two steps. In the first step, there is a presentation of the five corporations' intellectual capital statement models. This step has been considered useful in order to give a good overview about how the corporations applied the IC guideline intellectual capital statement model (figure 1). In the second step, all indicators from

the IC statements are placed into the model according to the IC statement analysis model. Here, a short statement about the general impression on the IC statement coherence is presented. The analysis of the empirical data is made according to the evaluation criteria resources, activities and effects (see figure 3). If the suggested analysis model is a useful tool for systematic reading of IC statements of the selected Danish companies, the outlined items should be fulfilled or answered.

Resources	Activities	Effects
√ Are the company's knowledge resources competitive?	√ Evaluate management's ability to develop employees, the organisation and customer relationships	√ Assessment of how the company's knowledge management is working and corporate stability
√ What can the company offer potential employees in terms of development opportunities?	√ Evaluate employee's development opportunities	√ Assessment of employees' satisfaction
√ What customer relations does the company have and how did these change over time?	√ Evaluate how customer relationships have developed and the risks to the customer base	√ Assessment of customers' satisfaction with company's goods and services
√ = fulfilled X = not fulfilled		

Figure 3 Applied analysis model

The applied analysis model builds upon DMSTI's suggested model (DMSTI 2003). The answers presented in the sixth section are based on the analysed IC statements over a period of two to four years. Finally, a general analysis about the findings is made, with emphasis on relevance, comparability over time, comparability between corporations and understandability.

5. Five Presentations of the Intellectual Capital Statement Model

In order to understand if a systematic reading is possible, simplified graphic models of those intellectual capital statement models that the five companies presented in their IC statements are illustrated. The purpose here is to give a glimpse of the large assortment of IC models that the companies offered.

Carl Bro

On one page Carl Bro illustrates its indicators in a ratio grid to explain how well the company has succeeded in following up on its challenges. This model does not interlink from indicators to initiatives to challenges. In addition to its ratio grid, Carl Bro annually conducts an employee-satisfaction survey, which also is integrated in the grid. Nevertheless, in 2002 Carl Bro has changed the routine of measuring its knowledge resources. This company does not comply with the outline suggested in the IC guideline.

Carl Bro's ratio grid for year 2002									
2001/2000	2002	97/98	98/99	99/00	2001	2001	2001	2001	Goal
Capital resource	resource	Total	Total	Total	Total	Region, DK	Industry, Marine & Environ.	UK, Irland	4 years ahead
Human	Customers								
Customer	Employees								
Image	Environment								
Innovation	Owners								
Process									
IT									

Coloplast

Coloplast has not developed a model as suggested in the IC guideline. Instead, a table was assembled, which is limited to the illustration of all indicators. The indicators are divided into four different areas: customers, employees, society and shareholders. The table fits on one page, is well arranged and is easy to understand. In the table there is one column showing which unit each indicator has measured. The indicators are provided for a period of five years. This IC model makes a note available regarding about its facilitator or result as well as notes to the page where the explanatory text can be located. The only problem for the user is that these page notes do not agree with the previous year's report.

Coloplast's model 02/03

Area	Indicators	Unit	5 years	Goal	Facilitator	Result	Page number
Customers		(Example:					
Employees		%, nr,					
Society		index,					
Shareholders		DKK)					

In the beginning of its IC statement, Coloplast explains that this statement illustrates the strategies and management goals that have been the follow-up to the facilitators and results. Consequently, they do not comply with the concept of DMSTI's model. Despite this, the announced strategies and management goals have not been illustrated. Only the facilitators and results have been described. During the past years, the IC statements of 00/01, 01/02 and 02/03 are identical whereas the 99/00 IC statement has almost nothing in common with the other reports. However, in the 99/00 IC statement Coloplast did comply with the DMSTI model and interlinked management challenges, initiatives and indicators, which have been illustrated with numbers of the current year, the past year as well as future objectives.

COWI

COWI states they have participated in the development of the IC statement model, but they nevertheless do not apply the IC statement model. Indeed, it is difficult to see in which way they tried to adopt the IC guideline, as they use neither the suggested expressions nor the structure. While they present a kind of model, which does appear to have similarities with the DMSTI IC statement model, they introduce different knowledge resources.

COWI's model

	Resources			Processes			Results	
	02/03	01/02	00/01	02/03	01/02	00/01	02/03	01/02
Clients & Markets								
Organisation								
Employees								

In addition, this model utilises arrows to indicate whether a goal has been met. Still it appears that this feature lacks usefulness, since they are not explained. COWI's IC statement also includes several of diagrams to illustrate selected ratios.

DIEU

On the first pages of the IC statement 00/01 DIEU outlines the intellectual capital statement model and illustrates seven management challenges, initiatives and indicators to be measured and evaluated. The rest of the report is divided into chapters that explain each management challenge

in detail. These chapters also include tables with indicators for each area. Finally, the management challenges, on which the company has focused during the past year, and their goal achievement have been examined.

DIEU's model 2000/2001



However, in the IC statements 01/02 and 02/03, DIEU no longer illustrates its management challenges, initiatives and indicators in a model like the one used in the statement for 00/01. These are now presented in narrative style, although ratios are still illustrated in tables representing each area. Nevertheless, these ratio tables are inconsistent with regard to time periods. Sometimes data is provided for two years and occasionally for five years without explanation. The same inconsistency could be observed for the set goal for some indicators. In addition, no explanation is given to show how the goals have been achieved. The tables just illustrate that results have changed but there is no text provided, which might explain the reason for these changes.

KMD

On an overall level, the IC statement that KMD published in 2002 is quite extensive but a summary on a single page is absent. Nonetheless, KMD did not apply the IC statement model that DMSTI suggested. Their own model has been developed instead, which is divided into several partial models, which are spread out in KMD's IC statement. The DMSTI framework and terms have been partially applied. KMD's model is structured in such a way that goal achievements are outlined whenever indicators are presented. Furthermore, initiatives for the current year are described as well as the planned efforts for the years to come. The model utilises the categories of employees, customers, processes and technologies. Instead of making a division into classes of their own, the categories are presented as an integral part of management challenges. KMD illustrates results using pie charts and bar charts. However, such diagrams are difficult to analyse, as KMD does not present exact numbers and values sometimes are not proportional.

KMD's model 2002

Strategic goal: e.g to achieve markets best customer satisfaction
 Strengthen customer orientation and customer relations
 (which earlier have been presented as management challenges)

Goal and action 2002	Efforts 02 & 03	Goal 2003
Indicator	Future initiative	Future goal

The models that KMD presents in the IC statements for the years 2002 and 2001 are the same whereas the model for the year 2000 is a little bit different. In the 2000 statement, management challenges and indicators are interlinked with initiatives. However, the diagrams of the 2000 statement are not quite comparable, since the scale changed from a maximum of 4 points in 2000 to 5 points in 2001 and 2002.

Coloplast

	Effects	00/01	01/02	02/03	Activities	00/01	01/02	02/03	Resources	00/01	01/02	02/03
Employees	1 Employee satisfaction	3.71	3.83	3.87	1 Employee turnover in %				1 Internally recruited managers			
	2 Absence, fulltime	2.1	2	1.6	Turnover per fulltime employees	9	6.8	6.6	Denmark	64	67	65
	Absence, temporary employees	6.3	6	5.6	Turnover per temporary employees	15.7	16.3	14	abroad	54	51	52
	Absence, employees abroad		2.7	2.5	Turnover per employees, abroad		20.9	24.5	2 Turnover per employee (1000 DKK)	958	1020	
	3 Spontaneous applications, fulltime	677	1441	1679	2 Employee satisfaction (times measured)				3 Profit per employee (1000 DKK)	45	55	45
	Applications, temporary employment	2335	2909	2395	Denmark	1	1	2	4 Income per employee (1000 DKK)	165	169	161
	3 Applications, abroad		2585	4688	abroad	6	8	9	5 Revenue per employee (1000 DKK)	1021	1157	982
	4 Incidents, number	46	59	54	3 Job rotation				6 Teams self-managed, number	65		
	Incidents per million working hours	15	17	14	Denmark	16	16	13				
	5 Employees after trainee program	5			abroad		5	11				
				4 Training days per employee		4.4						
				5 Training expenses per employee		6855						
				6 Trainees		18						
				7 New employees		432	1312	518				
Customers	Effects	00/01	01/02	02/03	Activities	00/01	01/02	02/03	Resources	00/01	01/02	02/03
	1 Complaints	94	100	104	1 Cooperation with health consultants (index)	100	136	116				
	2 Customer satisfaction, in %	97.8	97.6	97.1	2 Customer satisfaction (times measured)	19	16	20				
Processes/ organisation	Effects	00/01	01/02	02/03	Activities	00/01	01/02	02/03	Resources	00/01	01/02	02/03
	1 Complaints from neighbours	3	1		1 Patents filed	23	28	35	1 Patent rights	180	217	244
	2 Environmental effects, production waste	112	100	83	2 R&D expenses, in %	3.9	3.7	3				
	Environmental effects, organic components	110	100	96	3 Development projects	46	72	55				
	Environmental effects, electricity consumption	109	100	93								
	Environmental effects, water consumption	114	100	94								
3 Shareholder value added, in %, 1 year	57.8	-2.7	1.1									
Shareholder value added, in %, 5 years	22.3	17.3	14									
4 Economic society contribution	708	928	1052									
5 Delivery reliability	97.9	95.8	96.6									
Technology/ products	Effects	00/01	01/02	02/03	Activities	00/01	01/02	02/03	Resources	00/01	01/02	02/03
					1 Environmental control system improvements	5	2		1 New product's turnover contribution, in %	23,9	29,5	30,5
				2 Quality control system improvements	0	0						

Coloplast is consistent in presenting identical indicators year after year, with only a few exceptions. Regarding employee indicators, those are presented in monetary values rather than as narratives about knowledge resources.

COWI

	Effects			Activities			Resources					
	00/01	01/02	02/03	00/01	01/02	02/03	00/01	01/02	02/03			
Employees	1 Employee satisfaction in %	68		67.7	1 Training as working hours in %	1.1	0.8	0.6	1 Number of employees	1581	1643	1972
	2 Sickness leave in %	2.6	2.7	2.5	2 New employees in %	17	17	31	2 Average age	42.1	42.5	43.6
	3 Employees owning COWI shares. in %	70	62	48	3 Employee turnover in %	11	13	11	3 Length of education. years	6.7	6.6	6.4
	4 International travelling experience on COWI. in %	6.4	6.3	6					4 length of education written down to 50 % after 35 years	4.6	4.5	4.3
Customers	Effects			Activities			Resources					
	1 Media exposure. mill. number	131	110	149	1 Lectures per 100 employees. number	13	10	13	5 International travelling experience in COWI. in %	26	28	21
	2 Client inflow. in %	24	16	32	2 Professional publications per 100 employees.	6	11	10	6 Emolovees with highest education. e.a. PhD in %	4.7	4.7	4.1
3 Client outflow. in %	8	19	19					7 Higher education. technical. in %	56	55	52	
Processes/ organisation	Effects			Activities			Resources					
	1 Costs attributable to external faults. in %	0.3	0.1	0.4	1 Interdisciplinary cooperation. technical. in %	16	16	18	8 Higher education. natural sciences. in %	4	5	5
	2 Rankina by engineering students. number	2/2	5/1	3/2	2 Interdisciplinary cooperation. natural sciences. in %	50	51	55	9 Higher education. social sciences. in %	10	9	9
	3 Rankina by business and social sciences students. number	50/13	36/11	30/3	3 Interdisciplinary cooperation. social sciences. in %	44	45	46	10 Other higher education in %	5	4	4
	4 Development activitv. externally financed . in %	4.2	6.5	5.9	4 Trade within COWI aroup. in %	2.7	3.5	6.4	11 Average years of work experience	16.2	16.1	15.4
5 Development activitv. internally financed . in %	1.7	1.2	0.9	5 Job rotation within COWI aroup. in %	1.1	0.7	0.6	12 Seniority in COWI. years	9.8	9.7	9.7	
Technology/ products	Effects			Activities			Resources					
				6 Long-term postinas	2.8	2.8	6.4	13 Project management capacity. all projects. in %	57	61	58	
				7 Quality audits completed per 100 employees	5	5.7	2.3	14 Project management capacity. maior projects. in %	37	37	35	
								15 Project management capacity. international projects. in %	27	26	24	

COWI focuses strongly on visualising its knowledge resources. However, they do not issue a single indicator on technology. They report their indicators very consistently during all reporting years. Only one indicator was missing in the statement 01/02. However, as mentioned earlier, only two IC statements have been made available. The IC statement 00/01 is missing, which is why this consistency might not be true.

	Effects			Activities			Resources		
	2000	2001	2002	2000	2001	2002	2000	2001	2002
Employees	1 Employees who quit voluntarily, in %		4,56	1,75					7
	2 Employees' satisfaction with job challenges, in %		85	87			accomplished		
	3 Employees' satisfaction with superior, in %		76	82			not accomplished		
	4 Employees' satisfaction with development possibilities, in %			91,6					
	5 Project leader's satisfaction with tasks, in %		89	89					
	6 Customer satisfaction with KMD's employees (1-5)	3,9	3,99	4,1			0,8	0,9	
	7 Customer satisfaction with KMD's service minded staff (1-5)	3,7	3,85	4,17					
	8 Customer satisfaction with KMD's EDB knowledge (1-5)			3,96					
Customers	1 Customer satisfaction with product development within promised timeframe	2,1	2,48	2,72					
	2 Customer satisfaction with finished product when marketed	2,55	2,73	3,04					
	3 Customer satisfaction with KMD's courses			4,1					
	Customer satisfaction with KMD covering municipality's demand			3,71					
	1 Number of focus group meetings with key companies and major corporations								<100
	2 Number of focus group meetings with other companies								<50
	3 Continuous quarterly follow-up of customer satisfaction per product area						partially accomplished		
	4 Eradicate problems reported from Helpdesk						accomplished		
Processes/organisation	1 Employee satisfaction with KMD in general	3,7	4,06	4,15					
	2 Delivery reliability, in %		95						
	3 Customer satisfaction with KMD's adaptation to new or changed legislation to IT		3,45	3,87					
	4 Increase in KMD's course assortment, in %			10					
	5 Ranking of IT-businesses by potential employees with years of experience, ranked place								21
	6 Ranking of IT-businesses by engineer and natural sciences students, ranked place								54
	7 Ranking of best employer by Oxford group, ranked place years of experience, ranked place								13
	8 Image rating by Media Viewpoint, ranked place	3							21
Technology/products	1 Customer satisfaction with KMD's products	3	3,24	3,4					
	Customer satisfaction with products' flexibility and adaptation			3,23					
	Customer satisfaction with KMD's system, in %			78					
	Customer perception of usability with KMD's system	3,01	3,36	3,67					
Activities	1 Annual focus group meetings with IT solution focus group								<2 times/year
	2 Product renewal in % of total development resources						44		
	1 Helpdesk accessibility, in %							79	85
	2 Service contracts for KMD's IT-solutions, in %								<8
Resources	3 Initiated strategic partnerships								15
	1 Project leader who stated NCB-standard certification								7
Resources	2 Established competence models for KMD's professions and jobs							mainly accomplished	
	3 Average median age							40-44	
Resources	4 Average years with KMD, median							14-okt	
	6 Adaptation of employee training to organisational development							not accomplished	
Resources	7 Number of variables measuring customers' satisfaction with course							3	6
	7 Lecturer satisfaction							59	81
Resources	8 Customer satisfaction with KMD's EDB knowledge (1-5)							not PLUS	82
	7 Number of variables measuring customers' satisfaction with course							3	6
Resources	7 Number of variables measuring customers' satisfaction with course							3	6
	7 Number of variables measuring customers' satisfaction with course							3	6

KMD is very inconsistent in its measuring and illustration of indicators. Only a few indicators are available for all three reporting years. No indicators are provided for technology activities and resources. Indicators illustrating customer resources are also missing.

7. Evaluating the IC Statements

After transferring the IC statements to the analysis model, as suggested by DMSTI (2003), the empirical data is evaluated according to the evaluation criteria resources, activities and effects (see figure 3).

Carl Bro

	Resources	Activities	Effects
√	Information about academic education and international experiences	√ Management's development is clearly stated	√ Knowledge management activities are stated; with some imagination, it is possible to trace stability
X	No information about future education possibilities	√ It is possible to trace the employees' development possibilities	√ Employee satisfaction is measured
√	Some information about customer relations	X No ratios made available on customer relations	√ Customer satisfaction is measured as well as customer loyalty, but they are diminishing over the years

A few indicators are eliminated, e.g. image survey and ideal company index. On the other hand, some new indicators have been added, e.g., personal turnover. Carl Bro reviews very few activities, which one might have reservations about, since the issued results should be a natural turn out from activities. Due to the missing IC statement for the year 2002, which was caused by organisational restructuring, there are no possibilities to compare this year for Carl Bro with the other reporting companies.

Coloplast

	Resources	Activities	Effects
X	Competitiveness is unclear	√ Management's ability to improve is visible in a number of indicators	√ Knowledge management activities and structure are available and stability is distinguishable
X	Development possibilities for employees are not presented	√ Employees' development possibilities are clearly stated	√ Employee satisfaction is measured
X	Customer resources are absent	√ The development of customer relations are integrated in some indicators	X Customer satisfaction is measured with some undisclosed factors, but they are diminishing over the years

The issued indicators have not changed during the years and therefore allow comparison over years. However, neither are effects from technology nor from customer provided.

COWI

	Resources	Activities	Effects
√	Much information about employees and processes	X No specific information about employees or customers, but much information on processes	√ Information about activities regarding processes but not on customers or employees
√	Possibilities to draw on experiences are presented	√ Very restricted information	√ Employee satisfaction is measured for two of three years
√	Detailed information about the customer base and its development is made available.	X Information about customers is absent	X Customer satisfaction is not measured

Only one indicator on employee satisfaction is missing in the COWI's IC statement 01/02. All other indicators are provided consistently and therefore they permit comparison over years. Information on technologies and products is missing.

DIEU

Resources	Activities	Effects
√ Much information about employees' education, nothing else	√ Good information on managing employees and processes, but not on customers	X Only satisfaction indexes, nothing about management activities. Stability is not obtainable
X No information about training possibilities	√ Good information about employees' training and development possibilities	√ Employee satisfaction is measured with many items
X No information about customers	X No information about customers	√ Customer satisfaction is measured with many items

DIEU has not eliminated a single indicator. In fact, the number of indicators increased during the years, especially in the employee section. There is no indicator available on technologies or products, which DIEU explains by the fact that it is a knowledge company.

KMD

Resources	Activities	Effects
X It is not possible to obtain facts regarding competitiveness	X Information on management's ability is not provided annually. Stability can not be analysed	√ Activities are available, but not achievements. Stability regarding customer base is given
√ Insufficient information about development possibilities	X Information on development possibilities is not provided annually	√ Good information about customer satisfaction for the past two years
X No information about customer relations	X No information about customer relationship	√ Much information issued using many factors

KMD changes strategies and indicators from year to year. This causes significant difficulties for a comparison over the years. No information is given about resources regarding customers or technologies. KMD does not provide any information about technology activities either. It appears that the company focuses strongly on customer satisfaction but no resources are examined.

8. Conclusions

On a general level, it can be stated that through applying the DMSTI analysis model to IC statements, it is possible to obtain information about corporations' intellectual capital. However, it also has to be acknowledged that the analysed IC statements in this study clearly showed that they do not provide sufficient information for every section to allow operate the analysis.

In many cases, valuable information was very limited, sometimes reduced to a single indicator, or was even un-usable. The empirical data of this study also clearly illustrates that the corporations tend not to utilise indicators in the same way, as sometimes identical indicators have been utilised for different parts. Overall, it can be observed that once corporations issue information on indicators, they will use these consistently and will provide this information annually. The only exception in this study was KMD, which changed its strategies and indicators almost annually.

Consequently, it has to be recognised that none of the examined IC statements complies with the IC guideline that DMSTI (2003) proposed. The analysed corporate IC statements are far from being consistent in their reporting, as structure and indicators vary widely over the years.

Of much greater concern for DMSTI and the participating researcher should be the observation made in this study that the examined corporations' reporting became poorer as far as compliance with IC guidelines. Although not in compliance, the models, as shown in section 5, that the corporations developed have some similarities in form and structure with the model that DMSTI proposed to allow systematic reading of IC statements. Still, the information contained in the narratives that the corporations have published to illustrate the condition of their business and organisation is often loosely coupled and interlinked. In some reports, one could obtain much more information about the corporation's future than about their current situation. A number of IC statements also mixed historical development with future actions interlinked with the IC model they presented. All of these observations might be regarded as an outcome of the IC guideline's vague formulation for how to present the future, history and present situation. The question is the following: Does the information included in IC statements meet the desirable characteristics, which are the common criteria for analysing financial information, of relevance, comparability and understandability?

Relevance

One of the main arguments in favour of IC reporting is that it provides a better understanding of corporations' knowledge resources (e.g. Bukh and Johanson 2003). IC statement reporting has come a long way, from the numerous descriptions of the success stories about the superiority of knowledge-based corporations (e.g. Brooking 1996; Edvinsson and Malone 1997; Sveiby 1997) to the IC statement guidelines of DMSTI (2003) and the Meritum-project (MERITUM 2002). It has to be recognised that the IC statements in this study do not provide a clear picture of the corporations' knowledge resource. In some cases, the information given is very minimal and appears more to disguise than to enlighten understanding. Even in the early stages of the IC movement, Sveiby (1997) pointed out the difficulty of comparability of information about knowledge assets as one of its main problems. The study brings to light that this problem is critical and still exists.

Comparability

From traditional financial statement analysis (e.g. Sutton 2004), one can assert that assessing a corporation's performance requires comparisons. In order to make valid comparisons information is needed which is consistent over time and across corporations.

Taking a closer look at the comparability over time, this study makes clear that significant changes in form and structure are quite common in the analysed IC statements over time. Due to these frequent changes, the possibility of conducting a proper analysis over time diminishes as such changes normally are not commented upon in the statements. In some cases, the use of diagrams and graphs illustrates the development of some indicators very clearly. However, it was observed that some companies changed scalings or composition of figures over the years, which makes comparison almost impossible. Indeed, the use of figures normally makes it easier to obtain information about the development of indicators. But then again, in many cases, corporations tend to be very vague about strategy development or value creation, which is the articulated purpose of the IC guideline (DMSTI 2003). According to Bukh (2002) the external users of IC statement are mainly interested in information about strategy, actions and value creation. Taking this into account for the analysed IC statements, the corporations have not really managed to make this kind of information comparable over time and it is not getting better when considering the mixing of historical developments with planned future actions.

Johanson (2003) pointed out that comparability of specific items in reports is best achieved by applying an existing standard, or, if absent, an agreed-upon framework, that allows external users to see the similarities and differences of these specific items. DMSTI's IC guideline is

voluntary and therefore there is no way of sanctioning divergence from the suggested structure, such as exists in the framework of mandatory accounting standards. The DMSTI project group consciously decided to leave the IC guideline open to the corporations' own reflections about how to form an IC statement (DMSTI 2003). Accordingly, it is not very surprising that the IC statements vary significantly in form and structure and one could not state that a standard for IC statements has been achieved. The application of DMSTI's analysis model (DMSTI 2003) demonstrated that a comparison across corporations is at present not really feasible. DMSTI's advice to the corporations about the indicators that should form the basis for analysing initiatives and management challenges is to provide indicators that are relevant to the corporations' organisation. This leads to a large array of indicators that corporations use to describe their knowledge resources in the IC statements. Therefore, it is not possible for the interested external user to make a proper comparison of IC indicators across corporations, which could provide a clear picture of the performance of one corporation's IC strategy and development to another one.

Understandability

It is worth mentioning that none of the analysed corporations explained in their IC statements what IC reporting is, which could be an understandability challenge for users who are not very familiar with such statements. Eccles and Mavrinac (1995) mentioned that every corporate report made available to external users should be pedagogically formed by providing explanations in text in addition to clear figures and models. The analysed IC statements evidence the contrary. Instead of being pedagogically formed, text is often difficult to understand. There is a large amount of text, which does not explain certain outcomes or figures but contains additional information. Indeed, understandability is necessary in order to avoid misunderstandings. The readability of the analysed IC statements was not very high, which makes it even more difficult for the interested user to understand IC statements.

9. Concluding Remarks

The conclusions from this study can be perceived as being devastating but one should not forget that these are still the early stages of IC reporting. Despite the findings of this study, one can still argue in favour of IC guidelines and reporting knowledge resources in IC statements. Going beyond the hype of the IC movement's early days, IC guidelines provide an important option for corporations to enhance traditional corporate reports in order to provide a broader context of the composition of their knowledge resources. One can point to the fact that it is voluntary for corporations to produce IC statements, which might cause the problem of the large variations among the analysed IC statements. On the one hand, this is quite true but on the other hand, it is not the fact of the voluntary compliance but rather that the IC guidelines do not clearly communicate the benefits of complying with the proposed IC model.

However, all of the analysed IC statements do provide much information on human capital. Bukh and Johanson (2003) referred to human resources as being one very important contributor of corporate value creation. It is commonly assumed that in traditional corporate annual reports the disclosure about human resources is rather limited, since accounting standards demand very little information about human resources as mandatory disclosures. However, most recent studies (e.g. Rimmel 2003) showed that the amount of voluntary human resource disclosure has increased over the past five years. In comparison with the amount of information provided in IC statements, human resource disclosures in corporate annual reports are rather modest. That is the strength of IC statements since they are not governed by boundaries of traditional corporate annual reports. They can easily expand the

number of human resource indicators and illustrate their importance by presenting them interconnected with other knowledge resources, such as structural capital.

This is a great opportunity but a threat as well. Bukh and Johanson (2003) stated that the complexity of indicators needs further investigation, as it unclear how the productivity of one resource might be improved by investments in another resource. Therefore, this interdependence complicates the analysis of IC statements. Mouritsen et al. (2001) assert that analysing IC statements is different from analysing numbers in a traditional financial statement analysis. In their view there are no traditional ways to read and interpret IC statements and that is why DMSTI developed the analysis model to enable systematic reading. However, one need not agree with the Mouritsen et al. (2001) claim that this makes the comparison of different corporations' IC disclosure difficult. This study clearly showed that IC statement could be analysed by utilising DMSTI's analysis model.

The days of the individual corporate attempts to develop individual IC guidelines are certainly over. Many IC guideline proposals have been made but only a few have been adopted on a larger scale. In comparison to other guidelines, the Danish guideline has tackled the reporting issues from quite a pragmatic point of view. Since this guideline does not contain elements specific to Danish corporations, these guidelines could be easily adopted by corporations from other countries. Although these guidelines certainly will undergo some further adjustments, they are the first step in the right direction.

References

- Brooking, A. (1996). *Intellectual Capital: Core Asset for the Third Millennium Enterprise*. London, UK, International Thomson Business Press.
- Bukh, P. N. and U. Johanson (2003). "Research and knowledge interaction: Guidelines for intellectual capital reporting." *Journal of Intellectual Capital* 4(4): 576 - 587.
- Bukh, P. N. and U. Johanson (2003). "Research and knowledge interaction: Guidelines for intellectual capital reporting." *Journal of Intellectual Capital* 4(4): 576-587.
- Bukh, P. N., H. T. Larsen, et al. (2001). "Constructing Intellectual Capital Statements." *Scandinavian Journal of Management* 17(1): 87-108.
- Bukh, P. N. D. (2002). "The Relevance of Intellectual Capital Disclosure: A Paradox?" *Accounting, Auditing & Accountability Journal*.
- DMSTI (2003). *Analysing Intellectual Capital Statements*. Danish Ministry of Science, Technology and Innovation. Copenhagen: 21.
- DMSTI (2003). *Intellectual Capital Statements - The New Guideline*. Copenhagen, Denmark, Danish Ministry of Science, Technology and Innovation.
- Eccles, R. G., R. H. Herz, et al. (2001). *The Value Reporting Revolution: Moving Beyond the Earnings Game*. New York, USA, John Wiley & Sons, Inc.
- Eccles, R. G. and S. C. Mavrinac (1995). "Improving the Corporate Disclosure Process." *Sloan Management Review* 36(4): 11-25.
- Edvinsson, L. and M. S. Malone (1997). *Intellectual Capital - The Proven Way to Establish Your Company's Real Value by Measuring its Hidden Brainpower*. London, UK, Piatkus Publishers Ltd.
- FASB (2001). *Improving Business Reporting: Insights into Enhancing Voluntary Disclosures*. Norwalk, USA, Financial Accounting Standards Board.
- Gröjer, J.-E. and U. Johanson (1997). "Current Development in Human Resource Costing and Accounting: Reality Present, Researchers Absent?" *Accounting, Auditing & Accountability Journal* 11(4): 495-505.
- Guthrie, J., R. Petty, et al. (2001). "Sunrise in the Knowledge Economy: Managing, Measuring and Reporting Intellectual Capital." *Accounting, Auditing & Accountability Journal* 14(4): 365-382.
- Johanson, U. (2003). "What are capital market actors ambivalent to information about certain indicators on intellectual capital?" *Accounting, Auditing & Accountability Journal* 16(1): 31-38.
- Johanson, U., M. Mårtensson, et al. (2001). "Mobilizing Change Through Management Control of Intangibles." *Accounting, Organizations and Society* 26(7-8): 715-733.

MERITUM (2002). *Guidelines from Managing and Reporting on Intangibles*: available at: www.eu-know.net.

Mouritsen, J., P. N. Bukh, et al. (2001). "Reading an intellectual capital statement: Describing and prescribing knowledge management strategies." *Journal of Intellectual Capital* 2(4): 359-383.

Mouritsen, J., P. N. Bukh, et al. (2001). *Guideline for videnregnskaber: en nøgle til videnledelse (A Guideline for Intellectual Capital Statements - A Key to Knowledge Management)*. Copenhagen, Danmark, Erhvervsfremme Styrelsen (The Danish Agency for Trade and Industry).

Mouritsen, J., H. T. Larsen, et al. (2001). "Reading an intellectual capital statement: Describing and prescribing knowledge management strategies." *Journal of Intellectual Capital* 2(4): 359 - 383.

Mouritsen, J., H. T. Larsen, et al. (2001). "Intellectual capital and the 'capable firm': narrating, visualising and numbering for managing knowledge." *Accounting, Organizations and Society* 26(7-8): 735-762.

Petty, R. and J. Guthrie (2000). "Intellectual Capital Literature Review: Measurement, Reporting and Management." *Journal of Intellectual Capital* 1(2): 155-176.

Rimmel, G. (2002). *The Practice of Human Resource Disclosures - Some Evidence from Information, Providers and Users*. Financial Reporting & Business Communication Research 6th Annual Conference, Cardiff, Wales.

Rimmel, G. (2003). *Human Resource Disclosures - A Comparative Study of Annual Reporting Practice About Information, Providers and Users in Two Corporations*. Dissertation, Sweden, School of Economics and Commercial Law at Göteborg university.

Rimmel, G. (2004). *Users' Perception of Human Resource Disclosures - A Comparison of Annual Report Users of Two Corporations*. presented at European Accounting Association, 27th International Annual Congress, Prague, Czech Republic.

Sutton, T. (2004). *Corporate Financial Accounting and Reporting*, FT Prentice Hall.

Sveiby, K. E. (1997). *The New Organizational Wealth: Managing & Measuring Knowledge-Based Assets*. San Francisco, USA, Berrett-Koehler.

Upton, W. S. (2001). *Business and Financial Reporting: Challenges from the New Economy*. Norwalk, USA, Financial Accounting Standards Board.