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Intellectual Capital Reporting: Content approaches to data collection

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“Intellectual Capital Reporting: Content Approaches to Data Collection”

Abstract

Increasingly, researchers in the field of Intellectual capital (IC) need to be able to justify the specific research methods they use in the collection of the data. Of the various methods available to researchers seeking to understand Intellectual Capital Reporting (ICR), content analysis has proven a popular choice.

The aim of this paper is to review the use of content analysis in understanding ICR and to offer some observations on the practical utility of the method. We further examine several research method issues relating to the use of content analysis that have been discussed in the Social Environmental Accounting (SAE) literature, but not as yet in the Intellectual Capital literature, which we believe are relevant to investigations underway in the field of Intellectual Capital Reporting.

This paper reports on several developmental issues that we have confronted when using content analysis to examine the voluntary disclosure of Intellectual Capital items by various organisations in their annual reports. The paper also suggests two theoretical foundations for further investigation into the voluntary disclosure of Intellectual Capital by organisations and suggests why content analysis is well matched to both theories as a tool with which to collect the data to test likely research propositions.

Keywords

Intellectual Capital; Annual Reports; Content Analysis; Disclosure Instrument; Research Method; Stakeholder Theory; Legitimacy Theory.

“Intellectual Capital Reporting: content approaches to data collection”

1. Introduction

The research and published literature on measuring and reporting Intellectual Capital (IC) is growing rapidly (e.g. Cañibano *et al.* 2000, Guthrie *et al.* 2001). In an introduction to a special issue of the JIC on The Transparent Enterprise, Guthrie *et al.* (2003) state that the interest in Intellectual Capital has been driven by practice and most research has been empirically orientated or at least driven by practical considerations. They indicate that given it is a rather new field of investigation the area tends to be divided into several branches of research, each with its own set of problems to be addressed and with its preferred theories and research methodologies. Guthrie *et al.* (2003) identify a number of these branches, including the literature associated with Intellectual Capital Reporting (ICR). Within this branch there are several streams including the value relevance of specific IC indicators, e.g. research and development expenses (Lev & Sougiannis, 1996), the capitalisation of intangibles (e.g. Gu & Lev 2001) and the integration of IC data into decision relevant reports (e.g. Collier 2001; Mouritsen *et al.* 2001). The recent work on guidelines for IC reporting (e.g. Meritum 2001, DATI 2000, DMSTI 2003) has also placed a managerial perspective alongside an accounting perspective in the development of frameworks for identifying, managing and reporting on Intellectual Capital. What a number of these streams have in common is the use of the annual report or other forms of reporting as the representative measure of publicly available IC information.

One strand of research concentrates on what specifically is being reported in the annual reports produced by organizations. Several studies exploring this activity use content analysis as a research method to capture and organize the diverse empirical data for Australia (Guthrie and Petty, 2000; Guthrie, Petty, Ferrier, and Wells, 1999), Ireland

(Brennan, 2001), Italy (Bozzolan, Favotto and Ricceri, 2003), Sri Lanka (Abeysekera, I. & Guthrie, J., 2003; 2003, forthcoming, 2004, forthcoming) and Sweden (Olsson, 2001).

Of course there are many other research approaches being adopted to investigate IC that do not involve content analysis. For instance, Marr, Gray and Neely (2003) review research in the field of IC measurement, provide theoretical rationales of why firms measure IC and offer empirical evidence that supports the theoretical assertion that the measurement of IC is valuable.

We fully acknowledge the legitimacy of the various streams of research and the array of research methods being employed in the field of IC, particularly at this still nascent phase of development within the field. The measurement and management of intangibles is a diverse and expansive area and there is room for many different approaches. The focus of this paper, however, is on ICR and the application of content analysis as a tool that aids our understanding of the type of IC information that organizations are disclosing in their annual reports.

The paper is structured as follows. Section 2 presents a brief review of the academic research on ICR using content analysis. Section 3 outlines the research method objectives and defines the disclosure instrument. Section 4 introduces some of the research method issues. The paper concludes that content analysis is one of the more widely used research methods applied in investigating the frequency and type of intellectual capital reporting and therefore an understanding of method issues is very important.

2. Background on the use of Content Analysis as a Research Method in the Field of IC

Annual reports have been used by a number of researchers for understanding IC, as they are a good instrument to measure comparative positions and trends in reporting across firms, industries and countries. Much of the published research has relied upon annual

reports as the means to ascertain the status of the Intellectual Capital Reporting practices of firms (Abeysekera, 2002c; Bozzolan, Favotto, and Ricceri, 2003; Brennan, 2001; Guthrie, 1999; Guthrie et al., 1999; Guthrie, et al, 2003; Olsson, 2001) and between firms in different countries (Subbarao and Zeghal, 1997). Annual reports present the affairs of individual corporations in a compact and accessible manner. Further, they are regularly produced and offer an opportunity for a comparative analysis of management attitudes and policies across reporting periods (Niemark, 1995, pp.100–101).

Researchers in Australia were early adopters of content analysis as a method to examine organizational practices in managing and reporting IC. Guthrie and Petty (2000) carried out a content analysis of the annual reports of the largest Australian listed companies (by market capitalisation) in an attempt to understand the extent to which these companies report their IC. The research included a ‘best practice’ firm as a comparator organization. The analysis consisted of a frequency count and other simple descriptive statistics. The authors also carried out a number of interview case studies in an attempt to provide a greater understanding of how firms identify, manage, measure and report IC.

In analysing IC, the authors used a framework developed by Sveiby (1997), which categorises intangibles into three groups: internal structure; external structure; and employee competence. Using this framework, it was found that the key components of IC are poorly understood, inadequately identified, inefficiently managed and inconsistently reported.

Brennan (2001) carried out a similar study of technology and people focused companies in Ireland. The author analysed the annual reports of 11 listed companies and 10 private companies. Manufacturing companies were excluded although the author has stated that the manufacturing sector is the one with the most value added and with the greatest multiplier effect on the economy as a whole. The author used an identical framework to code data for the content analysis of annual reports as that used by Guthrie and Petty (2000) and reported results similar to the Australian study. However, the cultural and

other cross-country differences mean the findings of the study are not meaningfully comparable with Guthrie *et al.* (1999).

A recent study by Olsson (2001) examined the annual reports of the 18 largest Swedish companies, selected on the basis of market capitalisation in the Swedish stock market. She developed a list of five elements to ascertain the level of HC Reporting: education and development; equality; recruitment; selection of employees; and comments by CEOs about personnel. The study found that, in 1998, none of the 18 companies used more than 7% of reporting space to deliver HR information (as a proportion of total information) in their annual reports. Furthermore, the information that was reported was found to be highly deficient in either the quality or the extent of the disclosure.

3. Data collection and Evaluation using Content Analysis

This section discusses the data collection and evaluation methods used when performing content analysis. Method refers to the research process – the way in which data is collected, analysed and evaluated.

3.1. Research Methods Steps

The primary use of content analysis within the field of IC is to examine the annual reports of a sample of organizations to identify and compare the amount of financial and non-financial information pertaining to the organization's Intellectual Capital activities. The previous ICR research literature has identified at least three key steps to achieve this aim:

- a) Develop a disclosure instrument that includes all relevant Intellectual Capital elements for assessing the extent of information disclosure in annual reports.

- b) Apply the disclosure instrument, using content analysis, to the annual reports of a sample of organizations with a view to assess, quantify and compare the level of disclosure of Intellectual Capital elements;
- c) Investigate whether size, industry or other variables are relevant in explaining different IC reporting patterns.

3.2. Development of the Disclosure Instrument

Since the 1960's, researchers have sought to assess, compare and explain differences in the amount of information disclosed in company annual reports. In order to assess the standard of this disclosure, a number of researchers have quantified the level of company annual report disclosure by means of a disclosure instrument. A disclosure instrument is a list of items that could appear in a company's annual report and is used to assess and quantify the level of disclosure in annual reports.

Until recently few firms have attempted to measure and assess Intellectual Capital (Guthrie and Petty, 2000). There are currently several frameworks to choose from for measuring and reporting Intellectual Capital. An early attempt at providing such a model was made by Brooking in 1996. Brooking (1996) classified Intellectual Capital items into three major Intellectual Capital categories (Brooking, 1996, pp. 12–81, 129; Brooking and Motta, 1996). Subsequent authors modified Brooking's original framework (Australian Society of CPAs and The Society of Management Accountants of Canada, 1999, p. 14; Dzinkowski, 1999, 2000; International Federation of Accountants, 1998, p. 7). The development of a disclosure instrument commonly involves identifying potential items for the instrument based on the extant literature.

3.2.1. Intellectual Capital Frameworks

As previously discussed above, there are a variety of conceptual frameworks that can be used to classify and record IC. In our previous work (Petty and Guthrie, 2000) we

modified an existing framework and recently re-modified it (Guthrie, J., Petty, R., and Ricceri, F., 2003). The most recent framework is provided in Table 1, which outlines three major categories of Intellectual Capital: internal (structural/organizational) capital; external (relational/customer) capital; and human capital.

The framework for Intellectual Capital elements that was developed by Brooking (1996) and adopted and modified by the Australian Society of CPAs and the Society of Management Accountants of Canada (1999; p14) was combined with the Petty and Guthrie (2002) framework to produce a slightly modified structure with 3 main categories and 18 elements.

Table 1: Intellectual Capital Elements used in the Coding Instrument

1. INTERNAL CAPITAL	2. EXTERNAL CAPITAL	3. HUMAN CAPITAL
1. Intellectual Property	7. Brands	14. Employee
2. Management philosophy	8. Customers	15. Education
3. Corporate culture	9. Customer satisfaction	16. Training
4. Management processes	10. Company names	17. Work-related knowledge
5. Information/networking systems	11. Distribution channels	18. Enterpreneurial spirit
6. Financial relations	12. Business collaborations	
	13. Licensing agreements	

In general the three main categories are: 1) **Internal capital** includes the systems, networks, policies, culture, distribution channels, and other ‘organizational capabilities’ developed to meet market requirements as well as intellectual property; 2) **External capital** includes any of the connections that people outside the organization have with it, their loyalty, the market share, the level of backorders and so on; 3) **Human capital** includes the know-how, capabilities, skills, and expertise of the human members of the organization.

3.2.2. Elements of Intellectual Capital

In Annexure A we provide definitions, explanations and illustrations of the IC elements in the content analysis instrument. The examples are from annual reports examined in our most recent study (Guthrie, J., Petty, R., and Ricceri, F., 2003).

3.3. Size and Industry Effects

Recently, Bozzolan, Favotto and Ricceri (2003 forthcoming) found a significant size and industry effect on reported IC disclosures using Italian data. Previous research shows that in Social and Environmental Reporting (SER) *the size* of companies in terms of total assets and total sales is an important variable for most areas of *voluntary* reporting (Gray, Kouhy, and Lavers, 1995a, pp62; Kirkman and Hope, 1992).

Prior studies in the SER literature (Cowen *et al.*, 1987; Patten, 1991, 1992; Roberts, 1992) have found that the *industry* in which companies operate in influences the amount of SER disclosures. Some industries are more likely to disclose in certain areas of social responsibility because they are subject to greater governmental pressure to provide such information (Cowen *et al.*, 1987). Cowen *et al.* (1987, p. 113) contend that consumer-oriented industries can be expected to exhibit greater concern with demonstrating their interest in social responsibility, as corporate image is likely to influence sales. Dierkes and Preston (1977, quoted in Cowen *et al.*, 1987 and Hackston and Milne, 1996) argue that companies whose economic activities modify the environment, such as those in extractive industries, are more likely to disclose information about their environmental impacts than are companies in other industries (Deegan and Gordon, 1996). The argument has been widely accepted, used, or supported by findings in prior research (e.g., Bubna-Litic and Leeuw, 2000; Deegan, 1998, 1999; Frost, 2001).

4. Research Method Issues

This section discusses several major issues related to the research method employed in ICR content analysis studies. First we explain why annual reports are used. Second, we describe the data source and discuss relevant issues related to the collection of data (recording unit and other coding rules). The third subsection discusses the effect of size and industry on ICR practices.

4.1 Annual Reports

All forms of data reaching the public domain can be considered to be part of the accountability-discharge activity of an organization, and thus, not only annual reports and specific IC and employee reports but also advertising, WWW, house magazines and press notices, for example, can be seen as part of corporate reporting (Gray *et al.*, 1995a; b).

Ideally, all communications by an organization should be monitored if one is to capture all corporate IC external reporting. However, there is a major practical problem with this as it is impossible to be certain that all communications have been identified (Gray *et al.*, 1995). Annual reports are a highly useful source of data, because managers of companies commonly signal what is important through the reporting mechanism. The annual report is viewed as a means by which corporations seek to establish an “image” in the public sphere. The standpoint adopted in this type of research is to view annual reports as a means by which a corporation locates and identifies itself with various external and internal stakeholders (Guthrie and Petty, 2000).

The vast amount of prior Social and Environmental Reporting (SER) research (e.g., Cowen *et al.*, 1987; Guthrie and Parker, 1989, 1990; Roberts, 1992; Neu *et al.* 1998) considers annual reports as a major medium for communicating social and environmental information to public. Campbell (2000) indicated that annual reports can be accepted as an appropriate source of a company’s attitude towards social reporting for two reasons: 1) the company has complete editorial control over the document (except the audited section); and 2) it is usually the most widely distributed public document produced by the

company. Annual reports are required by legislation and are produced on a regular basis by all companies, and this makes comparisons relatively easy (Tilt, 2001).

In line with the vast bulk of SER literature, ICR studies largely focus on the annual report. Not only is this justified on pragmatic grounds, but the annual report represents what is probably the most important document in terms of the organization's construction of its own social imagery (Hines, 1988; Neimark, 1992).

4.2 Content analysis

Content analysis of annual reports has been used, and held to be empirically valid, in the SER fields of research (Gray *et al.*, 1995b; Guthrie and Parker, 1990). As a technique for gathering data, it involves codifying qualitative and quantitative information into pre-defined categories in order to derive patterns in the presentation and reporting of information. Content analysis seeks to analyse published information systematically, objectively and reliably (Krippendorff, 1980; Guthrie and Parker, 1990; Guthrie, 1983).

Content analysis has been commonly used in the SER literature to evaluate the extent of the disclosure of various items (i.e. Ernst and Ernst, 1978; Guthrie and Mathews, 1985; Guthrie and Parker, 1990; Zeghal and Ahmed, 1990; Hackston and Milne, 1996). Content analysis is a method of codifying the text or the content of a piece of writing into various groups or categories based on selected criteria (Weber, 1988). It assumes that frequency indicates and serves as evidence of the importance of the subject matter (Krippendorff, 1980; Clarke, 1999).

For content analysis to be effective, certain technical requirements should be met. Guthrie and Mathews (1985) state that the selection of analytical characteristics has four distinguishing aspects. The first requires that the categories of classification be clearly and operationally defined. The second is objectivity, in that each category is precisely defined, so an item may be judged readily as either belonging or not belonging to a particular category. Third, the information needs to be quantitative, choices need to be

made regarding ways of identifying data into quantitative form. Finally, a reliable coder (ie. the researcher) is necessary for consistency.

4.2.1. Unit of Analysis

Content analysis requires the selection of a unit of analysis. According to Holsti (1969, p. 116) a recording unit is “the specific segment of content that is characterized by placing it into a given category”. In the accounting literature, in particular SER literature, a debate has arisen (Gray et al., 1995b) regarding the use of words, sentences or portions of pages as the basis for the coding and the measurement of the amount of information disclosed.

Sentences are preferred in written communication if the task is to infer meaning (Gray *et al.*, 1995b). Most SER content analyses use sentences as the basis for coding decisions. Using sentences for both coding and measurement is likely to provide complete, reliable and meaningful data for further analysis (Milne and Adler, 1999).

Another unit of analysis is the paragraph (which is defined as a collection of meaningful sentences). The paragraph method is more appropriate than word count in drawing inferences from narrative statements as we commonly establish meaning with paragraphs rather than through reporting of a word or a few words. Many studies using content analysis ignore charts, tables and photographs as these are too difficult to interpret and measure into reliable measures and have little value to the reader if not explained and contextualised within the surrounding narrative.

Usually the amount of disclosure is measured by counting the frequency at both the category and element levels. An organization’s overall index is calculated according to the total amount of information disclosed that was obtained. Disclosure indexes are often also calculated for each category.

Unerman (2000) has usefully presented arguments for measuring the volume of SER disclosures in terms of the proportion of a page, measuring in terms of words, sentences or paragraphs because these measurement techniques ignore any non-narrative SER

disclosures (i.e. pictures, chart). While Wilmshurst and Frost (2000) excluded pictures in their analysis, they indicated that this was a limitation because pictures might be used by management to impress on stakeholders their approach towards the management of environmental issues. However, there are complications in measuring pictures. Wilmshurst and Frost (2000) argue that a picture may be worth a thousand words and to measure pictures based upon an unweighted word count is highly subjective. It can also be argued that different people may obtain a different message from the same picture; and some pictures cannot deliver the intended message without surrounding text. Therefore, some pictures are there to make the text more convincing and readable. These arguments complicate the debate as to the weight that should be used to determine what amount of disclosure a picture is equal to. Due to the measurement difficulties in quantifying pictures a previous study by Guthrie *et al.* (2003), excluded pictures and coded the disclosures using paragraphs as a basis for coding and measurement.

4.2.2. Data Capture

The Intellectual Capital information collected from the reading and analysis of annual reports is coded onto the coding sheets. Each occurrence of an element is coded by the section under which the item appeared in the annual report. The report is divided into five sections: the vision/strategy section, the director's section, the business/operational section, the financial section, and the other sections. Coding is also driven by the disclosure type qualitative vs quantitative and incidence of occurrence (i.e. number of paragraphs). The paragraph count reveals the space allocated for a given element since each 'story' is competing for its right of space in the annual report.

4.2.3. Reliability and Validity of Content Analysis

Content analysts need to demonstrate the reliability of their instruments and/or the reliability of the data collected using those instruments to permit replicable and valid inferences to be drawn from data derived from content analysis (Guthrie, 1983; Milne and Adler, 1999).

According to Milne and Adler (1999), reliability in content analysis involves two separate issues. First, content analysts can seek to attest that the coded data set that they have produced from their analysis is in fact reliable. This is usually achieved by using multiple coders and reporting that the discrepancies between the coders are few. Alternatively, researchers can demonstrate that a single coder has undergone a sufficient period of training and the reliability of the coding decisions on a pilot sample are shown to have reached an acceptable level. Another factor to consider is the reliability associated with the coding instruments themselves. By establishing the reliability of particular coding tools, (i.e. ensuring well-specified decision categories with well-specified decision rules) content analysts can reduce the need for multiple coders.

Krippendorff (1980; pp 130-2) identifies three types of reliability for content analysis: stability, reproducibility and accuracy. Stability refers to the ability of a coder to code data the same way over a period of time. Reproducibility measures the extent to which coding is the same when multiple coders are involved, and the accuracy measure involves assessing coding performance against a predetermined standard.

Guthrie *et al* (2003) report on several methods to increase reliability and validity in recording and analysing data. First, the disclosure categories were selected from well-grounded, relevant literature and were clearly defined. Second, a reliable coding instrument with well-specified decision categories and decision rules was established. Third, the coders underwent a sufficient period of training and the reliability of the coding decisions on a pilot sample was shown to have reached an acceptable level. Usually there is no attempt to distinguish between voluntary and mandatory disclosure unless there is a law or listing requirement supporting the need for mandatory disclosure of any of the IC elements.

4.2.4. Quality of Disclosures of the Information

The amount of disclosure only tentatively indicates the extent of management's concerns or the level of public pressures to which the organizations are exposed. It does not readily

reveal the issues that are of concern to relevant stakeholders organization. In the SER research, it is recognised that the quantity of disclosure does not indicate what is actually being disclosed (e.g., Wilmhurst and Frost, 1999). Many prior studies in the SER literature, which examined both the amount of disclosure and the quality of the data disclosed (Deegan and Gordon, 1996; Deegan and Rankin, 1996; Gray *et al.*, 1995b; Guthrie and Parker, 1990; Hackston and Milne, 1996; Wiseman, 1982), have defined the quality aspect of disclosures.

Deegan and Gordon (1996) and Deegan and Rankin (1996) examined news of the disclosure. Guthrie and Parker (1990), focusing on “what was said and how it was said”, examined theme, evidence (monetary, non-monetary, declarative, none), amount, and location. Gray *et al.* (1995b) examined themes, evidences, amount, auditable, and news. Hackston and Milne (1996) examined the amount of disclosure, themes, news and evidence.

To mitigate information loss from considering only the quantum of information disclosure we favour an approach that examines theme, amount, evidence or forms of disclosure, and location. Studying the quality of disclosure by examining the relative emphasis on each theme, whether the disclosure is quantified or not, and the location of disclosures (chairman’s or directors’ section and operational review section) is the approach most likely to yield meaningful results. This not only provides a description of disclosure practices of organizations, but also indicates the key issues that need to be focused on in subsequent in-depth investigations on how these organizations identify, measure, and report their IC.

4.3. Limitations of Content Analysis

There are several limitations associated with the use of content analysis (Gray *et al.*, 1995b; Milne and Adler, 1999; Unerman, 2000). The major limitation of content analysis is the subjectivity involved in the interpretation of what it is (Deegan and Rankin, 1996 ;

Wilmshurst and Frost, 2000). Milne and Adler (1999) emphasised that in order for valid inferences to be drawn from content analysis, the reliability of both the data and the instrument must be achieved.

There is also the problem that stems from unduly emphasizing quantity over quality of disclosure. This usually results in information loss and can be mitigated by examining the quality and type of data communicated (Gray et al, 1995b).

5. Research Theory

This section introduces the theoretical lines of enquiry that may benefit from the application of content analysis as an approach to data collection and analysis

5.1. Stakeholder Theory

According to stakeholder theory, an organization's management is expected to take on activities expected by the stakeholders and to report on those activities to the stakeholders (Clarkson, 1995, p.103). The theory suggests that all stakeholders have a right to be provided with information about how organizational activities impact them (for example, through pollution, community sponsorship, provision of employment, safety initiatives, etc) even if they choose not to use the information and even if they cannot directly play a constructive role in the survival of the organization (Deegan, 2000). Stakeholder theory ascribes organizationan accountability to organizations which extends beyond their economic or financial performance. It suggests that they will elect to voluntarily disclose information about their intellectual, social, and environmental performance, over and above their mandatory requirements.

Stakeholder theory has an ethical (moral) or normative branch, and a positive (managerial) branch. The ethical branch argues that all stakeholders have the right to be treated fairly by an organization and that managers should manage the organization for

the benefit of all stakeholders (Deegan, 2000). The positive branch argues that a stakeholder's power to influence corporate management is viewed as a function of the stakeholder's degree of control over resources required by the organization (Ullmann, 1985). The more critical the stakeholder resources are to the continued viability and success of the organization, the greater the expectation that stakeholder demands will be addressed. Thus, the positive version of stakeholder theory predicts that management is more likely to focus on the expectations of powerful stakeholders, that is, those who control resources (Deegan, 2000). This theory can be tested in a host of ways using content analysis. The various interest groups deemed to have an interest in controlling certain aspects of an organization can be efficiently communicated with via the annual report. Content analysis can be used to test whether this is happening with items of intellectual capital. Are companies responding as stakeholder theory might predict they would in offering a voluntary account of their intellectual capital and the value of their intangible assets? That is a question that has already been answered in a preliminary way (Petty, 2003) but more work is needed to form a conclusive opinion.

5.2. Legitimacy Theory

Legitimacy theory is closely linked to stakeholder theory. It posits that organizations continually seek to ensure that they operate within the bounds and norms of their respective societies. Adopting a legitimacy theory perspective, a company would voluntarily report on activities if management perceived that the particular activities were expected by the communities in which it operates. Legitimacy theory relies on the notion that there is a 'social contract' between the company and the society in which it operates. The social contract is used to represent the multitude of expectations that society has about how the organization should conduct its operations. These societal expectations are not fixed, but rather change over time, thereby requiring the company to be responsive to the environment in which it operates (Deegan, 2000).

Lindblom (1994) proposes that if an organization perceives that its legitimacy is in question it can adopt a number of strategies. Lindblom (1994) identifies four courses of

action that an organization can take to obtain, or maintain legitimacy. The organization can: seek to educate and inform its 'relevant publics' about (actual) changes in the organization's performance and activities; seek to change the perceptions of the 'relevant publics' – but not change its actual behaviour; seek to manipulate perception by deflecting attention from the issue of concern to other related issues through an appeal to, for example, emotive symbols; or, seek to change external expectations of its performance.

According to Lindblom, the public disclosure of information can be used by a company to implement each of the above strategies. Certainly, this is a perspective that many empirical studies of SER have adopted to explain these voluntary disclosures.

Therefore, based on legitimacy theory, organizations must continually appear to be operating in a manner that is consistent with societal values (Guthrie and Parker, 1989, 1990). Where there is a threat to legitimacy, organizations must seek to ensure that they are perceived as operating in accordance with societal value. This can be done through communication. As Lindblom (1994) suggested, organizations may use disclosure to demonstrate management's concerns for, and response to, societal values, or to divert community attention from the prevailing negative impact of organizations' activities. That is, legitimacy theory suggests that in response to increasing public concerns, organizations would increase its communication addressing the concerns of their stakeholders. A number of prior studies examined the voluntary annual report disclosure and viewed social and environmental disclosures (SEA) as a method that organizations use to respond to public pressure (Deegan and Rankin, 1996; Guthrie and Parker, 1989, 1990; Neu *et al.*, 1998; Patten, 1991, 1992; Walden and Schwartz, 1997). Therefore, based on the legitimacy perspective, organizations that disclose more information are seen to be those that are exposed to higher public pressures to report on those issues of concern to various stakeholders, which in turn also reflects the level of management concern on those particular issues.

Legitimacy theory is closely tied to the reporting of intellectual capital and the use of content analysis methods as a measure of such reporting. Companies are more likely to report on their intellectual capital if they feel it will legitimise their status within certain groups. Intangible rich companies are more likely to have a need to do this as they cannot legitimise their status via the hard assets that are recognised as symbolic of traditional corporate success. The extent of intellectual capital reporting is, at this juncture, best measured using content analysis. Thus, legitimacy theory, intellectual capital and content analysis are entwined.

6. Summary and Conclusions

Content analysis is one of the more widely used research methods applied in investigating the frequency and type of intellectual capital reporting. It is a method in need of further refinement and development if research advances are to be made in the field of ICR. Consistency in application and framework, and understanding the limitations of the method is key to generating meaningful results. Many of the existing studies using content methodology are not able to be meaningfully compared because of the use of inconsistent data collection instruments. In some cases, the context and location of the work makes this inevitable. In others, a consensus on investigative approach would enhance the external validity of the findings.

Use of the paragraph method is generally preferred to the sentence or word methods, but this observation may be contingent on investigative context in some cases. There is scope for extending content analysis to capture pictorial information. However, we find current attempts to do this too subjective.

Theory development is also vital to evolving the body of work into ICR. Stakeholder theory and legitimacy theory present two options for researchers that are compatible with the use of content analysis techniques.

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8. Annexures

Annexure A: Definitions and Examples of Intellectual Capital elements in the coding instrument

THE IC FRAMEWORK

The IC frameworks represent the coding schema to classify information. The use of a framework in the coding of the annual reports allows researchers to identify how IC components are visualised, valued and understood within the organisation. For the framework to be effective in classifying information, the main IC categories and elements that play a critical role in the value creating potential of organisations have to be identified. As discussed above, within the IC literature most of the commonly used frameworks (Brooking, 1996; Sveiby, 1997; Edvinsson and Malone, 1997) identify three value relevant IC categories: internal capital; external capital; and human capital. Each category is then split into elements (19).

In the following paragraphs a description of each category as well as definitions and examples of the included elements will be provided.

8.1.1. Internal Capital

Internal capital includes properties derived from the mind that has protection in law (*intellectual property*) as well as *infrastructure assets* owned/used by the organisation. The latter consists of: systems and processes used in the organisation's day to day activities; values that guide the behaviour of individuals and of the entire organisation; and innovative projects that have been undertaken (some of which can also be considered as intellectual property). Elements of this category can be developed internally or acquired.

A. Intellectual Property

Intellectual property includes patents, copyrights and trademarks. Each of these will be described below.

A patent is an exclusive property right granted by the state to its inventor for a limited period that excludes others from copying, making or selling that invention during that time period. It is a 'keep off' sign to others from the inventor (Brooking 1996:36-37), but protecting the invention worldwide can be time consuming and expensive (Lang 2001).

Trade secrets are a viable alternative to patents because patents can be "invented around" at an affordable cost (Brooking 1997:40). However, trade secrets are viable only if technology can be kept as a secret after a production is released to the public (Teece 1986). Where a firm has access to complementary assets unique to the innovation, the

firm can charge a premium for the value they add to the innovation (Edvinsson & Sullivan 1996).

A trademark TM is non-registered trademark and R is a registered trademark. TM states that the owner believes he or she is the only one using it. Since it is not registered the owner may or may not have the legal right to stop others from using it (Choy 2001:35). Trademarks can be a name, logo, a picture or a combination, and can also be used for associated with the firm or its products. This intellectual line item also includes service marks. Service marks distinguish one service company from another (Brooking 1996:40).

Copyright, as trademark, may or may not be legally protected. The © symbol must be used in some overseas countries to get legal protection, although it is not compulsory in Australia (Choy 2001:35). This legal protection is offered to an expression of an idea, expressed in some tangible form such as in writing, as the protection is not for the idea itself. It can be sold, distributed or licensed to generate wealth (Brooking 1996:38).

An example from annual reports in the sample:

“Amcor Flexible Europe recently announced the first commercial application of Amcor FlexCanTM – a new unique stand-up flexible container, which is easy to open and reclose.” (Amcor, 2002:25)

B. Management philosophy

Management philosophy is the way the leaders of an organisation think about the organisation and its employees. The management philosophy has a substantial effect on the organisational culture (Brooking 1996:62), and mission statements can have either a positive or negative impact on performance depending on whether employees remember, understand, commit, and promote its shared values (Bart 2001).

An example from annual reports in the sample:

“We have a very comprehensive approach to “doing the right thing” in the eyes of our peers, customers, shareholders, the community, regulators and the law. We believe that doing the right thing creates a positive work environment and great customer experiences, builds our reputation and relationships and help us to reduce risk.” (Westpac, 2002: 46)

C. Corporate culture

Corporate culture comprises of the values, rites and rituals that are recognised and shared by the employees of a company. Examples of types of cultures include: high risk/high reward, family based, team based, customer focussed, etc. (Brooking, 1996, p.67).

An example from annual reports in the sample:

“There is greater recognition for jobs well done. In the past year, 24 of our most dedicated and innovative people were recognised as CSR Heroes” (CSR, 2002:24).

“If there is a challenge now, it is to continue growing while retaining our reputation for service quality and our unique company culture. By focusing on doing what we do well, and doing it more efficiently in more places, we are confident that this balance can be achieved” (St George, 2002: 16

“The Macquarie culture is represented by the way in which we act and work together. The values to which we aspire can be summarised in six principles: integrity; client commitment; strive for profitability; fulfilment of our people; teamwork; highest standards” (Macquarie Bank, 2002: 5)

D. Management processes

Management processes can be defined as any management (but not technological) activity that contributes to the creation of organisational capital (Roos, Roos, Dragonetti & Edvinsson 1997:49). Management mechanisms are put in to place to turn management philosophy into practice, and to implement best practice. Therefore, management processes refers to those mechanisms that implement the management philosophy of the company, including: systems, policies, procedures and staff suggestion boxes. (Brooking, 1996, p.75).

An example from annual reports in the sample:

“We have had health and safety related key performance indicators for some time but now, for the first time, business risk management targets will form part of management’s personal performance measurement” (Brambles,2002: 6)

“Business cells are being benchmarked against good performers in similar businesses, both inside and outside the CSR group. People are being individually assessed against key performance measures” (CSR, 2002: 24)

E. Information and networking systems

Information and networking systems are those both manual and technology based systems in place to maintain management, share and disseminate information, as well as to network people, in order to gain access to information.

Information systems provide the means to implement many management processes. The quality of IT solutions can impact on efficiency, customer care, employee satisfaction etc. (Brooking, 1996, p.75).

Network systems are information systems that have the ability to network with other systems in order to gain access to customers and suppliers and information from other databases (Brooking, 1996, p.77).

Businesses are expected to become increasingly reliant on information systems to capture and report transactions, and also to track, build, and share the collective knowledge of the organisation. However, the challenge is to design performance management systems that include measuring innovation and employee involvement (Stivers et.al. 1997).

An example from annual reports in the sample:

“The implementation of the Bunnings back office systems across the whole network has been successful. Further efficiencies will arise from adopting the Bunnings point of sale system in all Australian stores by November 2002. At the completion of this rollout, all Australian retail stores will be operating on the one technology platform” (Wesfarmers, 2002: 13)

F. Financial relations

Financial relations refers to a relationship between the company and investors, banks and/or other financiers. Favourable relationships are an asset because they can provide the company with financial backing when needed. (Brooking, 1996, p.80).

An example from annual reports in the sample:

“The Nine Network and Macquarie Bank were key supporters of the fund, which will finance various Nine film and television drama projects.” (Publishing and Broadcasting Limited, 2002: 30)

8.1.2. External capital

External capital concerns the relationship an organisation has with different external stakeholders (customers, partners and retailers, suppliers, and so forth.). It consists of several elements including: customer, distribution channels, business collaboration, franchising agreements, and so forth. “The tenuous nature of the supplier-firm-customer nexus complicates the measurement process. Hence the economic value of these relationships is at present not determined by any generally accepted definition and measurement system.” (Guthrie and Petty, 2001). The management of the relationships with different stakeholders is a critical factor in building a favourable environment in which to exploit the value creating potential of the organisation.

G. Brands

Brands are powerful reminders to customers to buy the products and services of one company in preference to another. Brands can be classified as product, service or corporate brands. Product brands are used to distinguish one brand from another, for example, Coca-Cola from Pepsi. A service brand refers to a company's level of service and can be in relation to its quality, efficiency, reliability, or friendliness etc. Corporate brands are where a company name has value in the market place, for example IBM and General Motors (Brooking 1996, p.p. 20-21).

An example from the annual reports in the sample:

“By December 2002 all Hardware houses stores in Australia and New Zealand will carry the Bunnings name. All BBC traditional stores will have been rebranded while the “Benchmark” brand will continue in New Zealand” (Wesfarmers, 2002: 13).

H. Customers

There are several types of customers and some types of customers are typically more valuable than others. Therefore it is important for the organisation to understand the value of its customer base as an asset. Brooking (1996, p.24) identifies five types of customers throughout the sales cycle, they include: suspect, prospect, champion, customer and evangelist. A suspect is a person or organisation, is one that appears to be a target for the products or services of a company. A prospect is a person or organisation that fits a pre-determined formulated profile for a potential customer. A champion is an individual inside the profiled organisation who works to help the sale of an external company's products and services. A customer is an individual who has purchased products or services. An evangelist, the most valuable type of customer, is an individual inside a customer organisation who actively promotes the products and services of the external company.

Other important information when considering customers is: the number of customers (as well as its increase and decrease), and the extent of market share held in relation to the total market share for that product or service. The increase in sales or volume in absolute terms does not indicate the increase in market share or number of customers.

An example from annual reports in the sample:

“With assets of \$55 billion and 2.6 million customers, we are placed between the four majors and the country's smaller regional banking groups and enjoy considerable strategic freedom for our future plans” (St George, 2002: 12).

I. Customer satisfaction

Customer satisfaction is the customers' after-purchase judgement or evaluation of a specific product or service. The benefits are associated with increased market share,

economic returns, profitability, customer loyalty and less reliance upon price based competition (Stank, Daugherty & Ellinger 1997). Customer satisfaction is related to the customer loyalty (Johanson et. al. 1999). Customer loyalty is that which leads to repeat businesses as a percentage of the customer base (Brooking 1996:26-27). This line item includes both customer satisfaction and customer loyalty. The customer satisfaction has at least one of the three measurable characteristics, they are: loyalty represented by retention rates; increased business by increase in revenue; and insusceptibility to rival's tactics and be price tolerant (Stewart 1997:240). Also customer satisfaction refers to the customers' perception of quality and other attitudes about the company (Sveiby, 1997, p182).

An example from the annual reports in the sample:

"Customer satisfaction measured at 67%, June 2002, up from 40% in 2001-2002"
(Telecom, 2002: 13)

J. Company reputation

Company reputation is the image of the firm as perceived by various stakeholders. The resource-based view states that firm's reputation is a resource that leads to competitive advantage. A definition of reputation is that it's the evaluation of a firm by its stakeholders in relation to their affect, esteem and knowledge.

An example from the annual reports in the sample:

"At the end of October our achievements were further recognised with Westpac rated number one among the top 100 companies in Australia in the Good Reputation Index for 2002" (Westpac Bank 2002:15).

K. Distribution channels

Distribution channels are the appropriate mechanisms for getting products and services into the market. They can include direct sales, retail, dealerships, the web etc. (Brooking 1996:30). Distribution channels are one of the key elements to create value in most firms. The relationship between manufacturers and distributors should be interdependent to create value to both parties (Giroud 2000; Saint-Onge 1998).

L. Business collaborations

Business collaborations are a firm's partnership with another firm (Brooking 1996:31). The ability to collaborate easily is an asset as it enables partners to pursue an opportunity together that they may not have been able to pursue independently (Brooking, 1996: 31). Alliances can be equity or non-equity based (Chan, Kensinger, Keown & Martin 1997). An analysis of intangible resources indicate that firms enter into co-operation agreements to establish medium and long-term relations to obtain technology and exchange

information (Fernandez, Montes & Vazquez 2000), and by pooling their resources, both small and medium size firms can take advantage from synergy (Chetty & Holm 2000).

An example from the sample annual reports:

“Our focus since august 2001 has been on gaining the full benefits of the merger between Brambles Industries Limited and the support service businesses of GKN plc. The merger produced a high-quality portfolio of businesses with strong growth records, experienced management teams and exciting potential.” (Brambles, 2002: 8)

M. Licensing agreements

Licensing agreements give a party the right to sell products, services or technology to other parties as per the conditions set out in the agreement (Brooking 1996:33). They include both licensing and cross-licensing agreements. Cross licensing provide firms active in R&D to protect against inadvertent infringement and the right to use licensee’s patents (Grindley & Teece 1998).

Favourable contracts are obtained by a company because of some unique market position they hold. For example, a cut rate advertising price due to the buying power of the biggest spenders on advertising. (Brooking, 1996, p.33).

Licensing agreements encompass agreements which give an external party the right to sell the company’s products or services (Brooking, 1996, p.33). A franchising agreement is a contractual license granted by one person (the franchiser) to another (the franchisee) which entitles the franchisee to carry on a particular business using a specific name belonging to the franchiser. The agreement obliges the franchiser to provide the franchisee with assistance in carrying out the business and requires the franchisee to periodically pay the franchiser consideration for the franchise (Brooking, 1996, p.32).

An example from the annual reports in the sample:

“The Lloyd’s reform processed markedly during 2002 with the implementation of the franchise model and a series of ancillary changes designed to speed up the modernisation of the market including the structure, accounting practices, and overall performance.” (QBE Insurance Group, 2002: 32)

8.1.3. Human Capital

Human capital refers to an individual’s education, skill competence, and so forth. The characteristics of human resources are critical in determining the knowledge creation capacity of the organisation as well as the quality and length of the relationships with external stakeholders. From a value-based perspective, they should be measured and placed within the balance sheet (Guthrie and Petty, 2001) but, as in the case of external capital, human capital cannot be “owned” by the organisation even if it is in their “possession” for the period in which the individual is working in the company.

N. Employee

Some argue that employees are the most important assets because knowledge and expertise lies within them (Dzinkowski 1999(a); Lank 1997). A part of the success of knowledge strategy depends on the people in the firm (Morrissey 1998). As firms drive towards a virtual structure, the managers need to follow a different strategy to harness the knowledge of their workforce (Handy 1995).

This concerns employee characteristics that can be grouped into several dimensions a) personal data: employee numbers, gender, and average age; b) economic contribution: value added per expert, revenue per non-administrative staff:

An example from annual reports in the sample:

“ARG employs over 1000 staff. About 850 are located in Western Australia where ARG operates on more than 5.000 kilometres of standard and narrow gauge track.”
(Wesfarmers, 2002: 25)

O. Education

Education refers to the education received from a formal establishment between the ages of four and eighteen. This refers to the general education a person has received and could be primary or secondary education (Brooking 1996:47-48). It is also the exposure to new knowledge, concepts and ideas in a structured way to increase knowledge or modify attitudes and beliefs (Mayo & Lank 1994: 51). It contains any information discussed other than those shown as measurements in growth/renewal ratios: average education level. Education does not prepare the individual for any job in particular but includes such things as mathematics, history, geography, artistic and creative pursuits etc (Brooking, 1996, p.p.47-48)

Vocational qualifications are designed to provide specific work related skills to an individual for a particular job. Vocational qualifications can be gained in a wide variety of fields including: engineering, accounting, management, computing, hospitality etc (Brooking, 1996, p.48).

An example from annual reports in the sample:

“The agribusiness division’s long term future] was highlighted by our recruitment this year of 32 young people with farming background and agricultural qualifications.”
(National Bank, 2002:28)

P. Training

Training refers to programmes designed to foster worker participation in decision making and changes in average years of education of workforce incorporating achievement associated with training programmes. (GRI, 2000, p.34).

An example from annual reports in the sample:

“Cell managers are trained in skills needed to manage key areas: safety, environmental protection, leading and developing people, marketing, strategy finance and operations. Potential cell managers are also being trained, to ensure continuity in managerial succession” (CSR, 2002: 24)

“That’s why we have developed a unique workshop and interactive learning experience called “Financial First Steps” to give our new recruits and young staff greater confidence in money matters” (Westpac Bank, 2002:21)

Q. Work-related knowledge

Work-related knowledge refers to the body of knowledge individuals possess about a particular topic (Brooking, 1996, p.41). Work related knowledge frequently comes as a function of understanding and doing a job in a particular field. It comprises three types of knowledge: tacit, explicit and implicit. Tacit knowledge is a special knowledge possessed by individuals but is extremely difficult to explain or document. It is important for organisations to know who has tacit knowledge and ensure that they are treated as a valuable asset to the organisation. Explicit knowledge is well organised in the mind of the individual and may easily be documented as manuals or procedures. Implicit knowledge is knowledge which is hidden in the operating procedures, methods and culture of the company. Identifying and transferring this type of knowledge from one person to another can be very difficult as often the individual is unable to explain why they know that a certain process works (Brooking, 1996:51-52).

Work-related competencies are a merged set of skills, creative profiles, personality attributes and vocational qualifications. Examples of work related competencies include: the ability to design a marketing strategy, the ability to manage a project and the ability to sell a particular product. By focussing on work related competencies instead of jobs, teams of individuals can be pulled together to suit a client need or an emerging market situation (Brooking, 1996: 55-56).

An example from annual reports in the sample:

“The team offered a well balanced mix of financial, technical, marketing, operational and strategic management capabilities that proved invaluable in a year when global steel prices were at, or about, historic lows” (BHP Billiton, 2002:26).

“Many of our experienced staff have learned how to get things done for customers, by bypassing the apparent hurdles and administrative mazes that can get in the way of a speedy solution. They have also developed skill to mix high tech with high touch” (Westpac Bank, 2002:21)

R. Entrepreneurial spirit

There is a direct relationship between how innovative a firm is and its increase in intellectual capital (Brooking 1996:154). Innovation is putting new ideas into practice to achieve commercial success (Molyneux 2000). All innovations are inventions (ASCPA

and CMA 1999:70). The best innovators are those who can take an idea in one context and apply into new situations (Hargadon & Sutton 2000). The interpretive process and schemes need to be managed to shape and frame how people make sense of their work (Dougherty 1992).