Intellectual capital communication: evidence from social and sustainability reporting

Abstract: Purpose – The purpose of this study is to investigate the level and quality of intellectual capital information communicated through social and sustainability report for a sample of 37 Italian listed company over two years (2005 and 2006).

Design/methodology/approach – The study use the resource based theory to explain the relationship between corporate social responsibility and intellectual capital. Content analysis is applied through a multidimensional framework composed by three main disclosure profiles (time orientation, nature and type of information) which permits to analyse in depth the quality of intellectual capital information.

Findings – The results highlight significant and increasing presence of intellectual capital information in CSR reports which is communicated principally in non financial, quantitative and non time specific terms. Human capital is the most reported category followed by relational and organisational capital. The results indicate there are many similarities between the two typology of report contributing to the ongoing debate on corporate reporting practices.

Practical implications – The results suggest that the integration between IC report and CSR report is a plausible issue and that could be useful to enhance the transparency and the understanding of company processes and activities both for internal and external stakeholders.

Originality/value – Very few studies have analysed the intellectual capital in CSR report in a-theoretical and mono-dimensional way. Moreover the resource base theory has been scarcely applied to explain the disclosure of intellectual capital even if there are several similarities between the two perspectives.

Keywords: intellectual capital, disclosure, social and sustainability reporting, resource based view, corporate social responsibility

Article Type: research paper

The authors are grateful to James Guthrie for the discussion about the idea of this paper, to the participants at the "4th Workshop on visualising, measuring, and managing intangibles and intellectual capital" (Hasselt, 2008) and at the "XIII Workshop of AIDEA study group on communication to financial markets" (Bari, 2009). We are also grateful to Davide Rizzotti, Saverio Bozzolan and Michela Cordazzo for their comments on previous versions of this paper.

Introduction

In the last decade, in the field of intellectual capital (IC) research, most attention was placed on companies' intellectual capital voluntary disclosure (ICVD) analysis to assess companies attitude in reporting such information. In general voluntary disclosure is an important aspect of the overall company communication process because it permits to enhance the level of company transparency, to differentiate the company from their competitors and to generate positive financial and social effects. Voluntary disclosure can be defined as the information that is not required by laws or regulations or the information that goes beyond the minimum required in a mandatory area (Williams, 2008). This information can be made through public and/or private communication channels which have different recipients and different communication objectives. Public channels, such as annual report and accounts, interim reports, initial public offering (IPO), intellectual capital statement, environmental and social responsibility reports, inform a broad set of company stakeholders on economic, social and knowledge company profile. In the field of ICVD, within public channels, company annual report has been the most used document due to its high degree of credibility (Unerman, 2000; Abeysekera, 2006) and several research on that was made in static (Guthrie and Petty, 2000; Brennan, 2001; Bozzolan 2003; Oliveira *et al.*, 2006; Sujan and Abeysekera, 2007; Stenkamp, 2007), longitudinal (Williams 2001, Abeysekera and Guthrie, 2005; Vandemaele *et al.,* 2005; Sonnier, 2008) and international comparative way (Vergauwen and Alem, 2005; Guthrie *et al.,* 2006) in a wide set of different countries. However, as underlined by Parker (2007), after a decade of research, the analysis of intellectual capital is still one of the main topic for the ongoing financial and external research agenda due to the partial and incomplete picture of the company's overall ICVD communication process evidenced by research (Unerman *et al*,. 2007). The causes of this incomplete picture are the extensive use of annual report in most of these studies and the lack of transparency and methodological rigour (Beattie and Thompson, 2007). On the exclusively use of annual report for disclosure analysis some criticisms exist. Gray (2006b) states that annual report was intensely investigated and to forefront the research there is the need to focus on other types of report. Similarly Lev and Zambon (2003) claim that the relationship between IC statements and other types of company reports should be carefully explored and Striukova *et al.* (2008) empirically demonstrate that ICVD level in the annual report cannot be taken as a proxy for the overall picture of company ICVD level. At the moment the others public company reports analyzed to investigate ICVD have been the IPO prospectors (Bukh *et al.,* 2005; Singh *et al.,* 2008) and the social, environmental and sustainability report (Cuganesan 2006; Pedrini, 2007), hereafter comprised into CSR report. In particular social and sustainability reports are suitable public document to analyse company IC communication process. Regard this point Castilla and Gallardo (2008) hypothesize a convergence between social/sustainability report and IC report due to several points they have in common and also in the social responsibility literature has been widely shown the existence of a positive relationship between corporate social responsibility activities and IC (Branco and Rodrigues, 2006). In the last years there was a great attention to corporate responsibility issue in Italy (Tencati, 2006) and some research which investigate the presence ICVD in CSR report have been already carry out. These research were focused on CSR public administrations report (Del Bello, 2006) and were a-theoretical and mono-dimensional (Cordazzo, 2005). This study, relying on resource based theory to explain the relationships between corporate social responsibility activities and IC, aims at expanding and refining the empirical analysis of the ICVD in social and sustainability report addressing two research questions. The first one analyses the level of ICVD in the CSR report which is not well documented in the previous literature, especially the organisational and relational dimensions, while the second research question aims at analyzing the qualitative characteristics of ICVD. The research is based on a sample

composed by 37 social and sustainability reports of Italian listed companies content analysed over two year period (2006 and 2006). ICVD is analysed through a multidimensional framework composed by three main disclosure profiles (time orientation, nature and type of information) which permit to make same reflection on ICVD quality characteristics. The results highlight a well and increasing presence of ICVD in CSR reports which is communicated principally in non financial, quantitative and non time specific terms. Human capital is the most reported category followed by relational and organisational capital. The convergence of IC and social and sustainability reports in a voluntary and more comprehensive and integrated company report is a plausible topic but need to more investigated. Moreover the importance to investigate IC disclosure in a wide range of company reports to carefully understand the company IC disclosure process is also confirmed. At a more general level this study contributes to the understanding of IC company communication process which is a complex and multiform issue (Holland and Johanson, 2003; Striukova *et al.,* 2008; Nielsen and Madsen, forthcoming).
The paper is structured as follows: the first section analysis the relationship between corporate social responsibility and intellectual capital in a resource based view framework. The second section evidences the state of art of CSR in Italy and the third shows how the sample of CSR reports analysed has been constructed, the content analysis research method used and the framework applied to classify and analyse IC disclosure. Section four evidences the intellectual capital disclosure analysis and in section five the main findings are analysed and discussed. In the final section a summary of the work, its limitations and conclusions are provided.

The relationship between corporate social responsibility and intellectual capital

Heterogeneity of definitions of corporate social responsibility have been proposed in the literature (Secchi, 2007). In general it can be observed that the focus of corporate social responsibility activities (CSRA) is to make voluntary attention to social and environmental issues into company business behaviours in order to respond to societal problems (Gray, 2006a). In this view the aims of the companies that adopt social responsibility behaviours vary from the maximisation of the value of their shareholders to the capabilities to interact and to respond to the needs and requests of numerous and different categories of stakeholders that are capable to influence the companies value creation. Among the theoretical framework used to explain companies CSRA and their effects (McWilliams *et al.*, 2006) the resource based theory (RBT) claims that companies are composed by a heterogeneous set of resources and capabilities that are different and not perfectly mobile across companies. Company resources include tangible assets, such as the company’s financial assets, plant, equipment and raw materials and intangible assets, such as company's reputation, culture, and human capital. Capabilities are the skills that firms develop to reproduce and manage these resources.
When these resources and capabilities are valuable, rare, inimitable and non substitutable they can generate a sustainable competitive advantage (Barney, 1991; Hall, 1993). This theory has been used to explain the difference in firm performance in different circumstances and intangible resources have been considered the most influential to explain these differences (Villalonga, 2004). The role played by intangibles in RBT has been extensively analyzed (Barney and Clark 2007, Colbert, 2004; Wright *et al.,* 2001). Moreover the intellectual capital view of the firm can be considered as a mid-range theory of the more general RBT (Reed *et al.,* 2006). Recently the theoretical framework of RBT applied to CSRA was used in the field of management (Déniz and Pérez, 2003; Bansal, 2005; Branco and Rodriguez, 2006; Sirly and Lamertz 2009) and accounting literature (Toms, 2002).

Branco and Rodriguez (2006) used the RBV to explain why companies decide to engage in CSRA and disclosure. They explain that investments in CSRA generate both internal and external benefits. The internal benefits are associated with the development of new resource and capabilities related to know-out and company culture while external benefits are related to the improvement of stakeholder relations and company reputation. Instead Sirly and Lamertz (2009) underline that when CSRA have a central role in the company's mission, are visible to external parts and provide specific benefits generate a set of internal resources and assure an external defensibility which permit to the company to differentiate itself from its competitors. Therefore the company behavioural commitment to develop strategic CSR attributes is viewed as a specific strategic capability. Bansal (2005) identifies several reasons that can justify the application of RBT to CSR (investments in human resource, new research based opportunities through changes in technology, legislation and market force, etc.) and finds some positive correlations between resource-based variables (international experience, capital management capabilities, organisational slack) and CSRA. According with Branco and Rodriguez (2006) RBT contributes to analysis of CSRA because put in evidence how them and they influence company performance. Lastly also CSR perspective recognise the importance of intangibles in the company behaviours. In the CSR literature exists a set of studies which have analyzed, implicitly or explicitly, the relations between CSRA and intangibles. According with Barnett (2007) and McWilliams *et al.* (2006) intangibles play an important role in relation to the company's CSRA effects and these aspects interacting to influencing the company's value (Hillman & Keim, 2001).

More specifically CSRA have a set of positive effects on all the three IC categories i.e. human, organisational and relation capital [1].

In the human capital dimension the positive effects of the company's capability to engage in socially responsible activities promote employee engagement and wellness through training and evaluation programs, health and safety activities and in general generate a higher attention towards human capital issues. CSRA increase employees' motivation, commitment and loyalty to the firm and reinforce the relations and the trust between the company and their employees. Branco and Rodriguez (2006) underline how CSRA develop create a better work environments and employees competence and capabilities through training programs and job rotation opportunities. Fuentes-García *et al.* (2008) analyze the application of SA8000 showing how it improves the employees health and safety, the level of the trade union freedom and the equality among employees. Déniz and Pérez (2003) empirically show that companies which having the strategic capabilities to respond to human resource expectations based on CSR principles distinguish themselves from other organisations and enhance their level of profitability. Finally the attention to improve the human capital dimension through engage in CSRA increases the company reputation and improve its attractiveness to human resource (Greening and Turban, 2000).

The literature on organisational capital is more fragmented. The positive effects of CSRA are related principally with company culture, strategy and management process. Brammer *et al.* (2007) empirically demonstrate that CSRA impacts positively on company culture improving the level of organisational commitment. Post *et al.* (2002) explain that when companies decide to became more stakeholder oriented they must change their strategy. The stakeholder engagement requires a more opened vision of the strategy decision making process. This process entail that companies try to alight the interests of all the parties involved in order to find a common understanding. In doing so they enhance their knowledge, capabilities and the probability of a better future performance (Miles *et al.*, 2006). Other positive effects regard the implementation of quality, environmental, health and safety and internal control system (Jamali *et al.*, 2008) and the higher level of R&D environmental investments (Scott, 2005).

With regard to CSRA effects on relation capital, Branco and Rodriguez (2006) suggest that company with high CSRA profile may establish and improve useful relationships with customers, supplier, investors/bankers and consequently enhance its level of reputation. Bhattacharya and Sen (2004) and Bhattacharya *et al.* (2006) explained that CSRA positively influence the customer behaviours, enhance customer relationship and strengthen company brand. About the relationship with suppliers the benefits of CSRA are: a) the development of a cooperative strategy and fiduciary relationship with supplier; b) the improvement of supplier ethical and social profile and performance; c) the improvement of corporate reputation, that can lead to increase orders level (Mont and Laire, 2008). In relation to financial relationship CSRA enhance the company attractiveness for financial analyst and investors (Renneboog *et al.*, 2008) have a positive impact on company financial performance (Orlitzky *et al.*, 2003) and on firm value (Hillman & Keim, 2001). All these CSRA activities reinforce the trust between company and stakeholders and improve management operations. In doing so a social responsible company follows a path that allows to generate and attract new resources and capabilities that are related to the network of relationship to which the company belongs. Consequently it may reduces the dependency from the third parts owners of resources and capabilities (Dyer and Singh, 1998, Kinnie et al. 2005). The dependence by these third parts generates the need to disclosure in an open way company strategies related to these resources to create mutual benefits and to achieve mutual goal. In this respect, the disclosure of the CSR information can be a key mechanism to connect the company with its potential resource providers, focusing their attention on the company activities performed on the resources. Secondly, CSR report contains also intangibles information as consequence of the positive effects generated by CSRA on IC. As aforementioned, CSRA can contribute to the increase of company’s intangibles and intellectual capital even if in some cases the effects are embedded in the nature of CSRA and appear not so evident (Table 1). The disclosure is essential because it signals the value of investment in intangibles, otherwise unrealised by stakeholders (Toms, 2002). Therefore stakeholders became aware about CSRA and this enhance the visibility, legitimacy and reputation of the company itself. In this perspective corporate social activity is a resource that can be leveraged also by an informative disclosure that reinforce the company capabilities to gain a competitive advantage (Dawkins & Frass, forthcoming; Toms, 2002).

Table 1 - *Corporate Social Responsibility Activities and Intellectual Capital*

	CSRA Benefits	Impact on Intellectual Capital
Corporate Social Responsibility Activities		**Human Capital**
	Increase motivation Improve skills and competencies through training activities	Employee Training
	Increase loyalty Increasing employee safety and health Increasing employee benefits Attract qualified personnel	Employee wellness
		Organisational Capital
	Improvement of voluntary disclosure Improvement of quality of processes Improvement of internal communication system	*Management Process*
	Proactive risk management Increasing the level of company transparency	*Corporate Governance*
	Repositioning of brand name Rethinking competitive strategies Management of a set of stakeholder relationships	*Strategy*
	Changing in corporate culture Improving organisational commitment	*Culture*
	Improvement of environmental R&D activities	*R&D*
		Relational Capital
	Improve company reputation (social, financial, etc.)	*Brand Image*
	Acquire new clients Increase client loyalty Enlarge co-creation	*Customer*
	Improve company reputation Strengthen co-operation Improvement of supplier ethical and social profile and performance	*Supplier*
	Improve company reputation Increasing investors attention Increasing financial analysts attention Better market trust Access to ethical indices Improve company reputation	*Financial relationship*

(adapted from Pedrini, 2007)

From an empirical point of view point the analysis of ICVD within CSR reports have been only partially carried out. Cordazzo (2005) finds that IC information like employee training, customer satisfaction and supplier characteristics are communicated in the social and environmental report of a sample of Italian companies. Yet Cuganesan (2006) integrates IC and CSR perspective to examine human capital key performance indicators in a sample of Australian banks report findings some similarities and overlapping between IC report and CSR report about human capital information. Also Pedrini (2007) focuses the attention on human capital investigating which are the common elements between human capital accounting and the Global Reporting Initiative Guidelines 2002 in a sample of 20 international IC reports. His results show large overlap in the indicators used by the two framework to report on human capital. The main areas of overlapping regard the description of human capital characteristics, the measurement of quality and intensity of training program and the information on diversity and opportunity. His conclusions stress the importance to have an unique report which includes both kind of information to show the impact of company activity on corporate citizenship, IC development and their interrelationship. The relationship between IC reporting and CSR reporting is also investigated by Frey *et al.* (2008). Focusing on the analysis of Italian universities' practices of social reporting, they give a detailed insight of the methodology developed by one 'best practice' of their sample, to account both for the social and the intangible dimension of its activities. Even confirming a number of areas of overlapping between IC and CSR human capital disclosure, they stress how the concept of intangible assets is one of the major drivers within the value creation processes of such organisation.

A theoretical analysis of the possible convergence of the above mentioned reports is made by Castilla and Gallardo (2008). They assert that today IC plays a more central role in the value creation process of the companies compared to the social aspect of the business. Considering that both are voluntary report they argument for an integration of social information into IC report on the following basis:

- the use of the same methodology to construct the reports. Both reports use a set of indicators with a narrative sections to describe their object. This technical similarities could reduction the high company voluntary report preparation costs.
- the elimination of information redundancy to the stakeholders cause due to the proliferation of several similar framework;
- a better use of social and IC information both for internal and external purpose. In particular the social information will start to be used also for management purpose and not only for public disclosure;
- the possibilities to show the interrelationship between the two aspect and to have a deeper understanding of the company activities and processes.
- the existence of common and overlapped elements in both the reports especially for human capital and relational dimension;
- the existence of a main common purpose of IC and CSR reports which are both oriented to build a better corporate image.

As pointed out so far there are several link between CSRA and IC and some similarities between IC and CSR report. The potential convergence of them in a unique report is an important issue that must be further explored to deeply understand if it is a really plausible issue (Lev and Zambon, 2003). Moreover an important confirm of the presence of ICVD in wide set of company reports is given by Striukova *et al.* (2008). Their analysis underling the importance of analysing ICDV in a broad range of corporate reports in future IC studies due to the facts that "*the pattern of ICDs in the annual report cannot be taken as a proxy for the overall pattern of corporate ICDs*".

State of the art of CSR in Italy

During the last years in Italy there was an increasing attention to corporate responsibility issues. A interesting picture of the ongoing activities on CSR in Italy is provided by Tencati (2006). The development of CSR attitude by Italian companies has been influenced by economic and historical reasons, such as the predominance of SMEs, the role of local districts, the important role played by labour unions and the importance of the cooperative movement. In particular Italian approach to CSR is composed by a widespread network of private, public and corporative association initiatives that induce the companies to engage in CSR activities using several different tools (Tencati *et al.,* 2004). In Italy an important difference exist between CSR profile and activities implemented respectively by SMEs and by large companies. As showed by Perrini *et al.* (2007) and Russo and Tencati (2009) large companies have more formal CSR strategies compared to micro, small and medium sized enterprises. This latter group is well aware with the meaning and the importance of CSRA but at the same time they have more difficult to formalize their CSR strategies and to use the wide set of CSR instruments due to the large investment of resource required. They adopt what is often called "sunken CSR" or "silent CSR" (Russo and Tencati, 2009) i.e. their CSRA are based on informal mechanisms integrated, in different ways, into firms' corporate strategies. Instead large firms adopt more CSR formal instruments because they have time and money to invest but also because formal CSR instruments permit to acquired better visibility to the public and to the media and to have an instrument that facilitate the communication within the firms and to their stakeholders. As showed by Perrini *et al.* (2007, pp. 295) social and environmental reports, ethical codes and standard CSR setting CSR are the main formal instruments used by Italian large firms to implement and voluntary inform their stakeholders about CSR strategies and long term value creating process. The attention of Italian large companies to CSR activities is also confirmed by the results of the *KMPG International Survey of Corporate Responsibility Reporting* (2005, 2008) which showed a constant growth of the number of Italian companies that published a CSR report (31 in 2005 to 65 in 2008). The majority of them publish a separate CSR report while the other companies publish CSR information into their annual report and only a smaller part of them combines responsibility report with the annual report.

To conclude the analysis of the state of art of CSR in Italy, and in according to the methodology developed by Gjølberg (2009) Italy has a medium-low score in two CSR (CSR practices and CSR performance) indexes identified, meaning that the CSR attention by the large companies in Italy is very low compared to the rest of the countries analyzed in the study. These lower positions are probably linked to the economic structure of Italian industries composed largely part by micro, small and medium sized enterprises and only in a small part by large companies, with the former that are not captured by the variables used to construct the two indexes. So the two indexes give a partial picture of overall state of CSR in Italy. They however underline that Italian large companies, despite the growth attention to CSR in the last years, have to improve their CSR profile in order to acquire more credibility abroad.

Research Methodology

Sample selection

The sample of this study consists of 37 social and sustainability reports published by a set of Italian companies listed to Italian Stock Exchange and analyzed over a two year period (2005 and 2006). In total, along the two-years, 74 social and sustainability reports were identified and analysed through the methodology of content analysis. The attention was made on listed companies for two reasons. The first one was underlined in the previous section when it was explained that Italian large companies use more formal CSR instruments, like social report or ethics code, to disclosure their CSR activities to their stakeholders; in this sense large companies allow to study the ICVD in a formal and official company's document. The second reason derived by the analysis of previous ICVD studies. In all of them the sample is composed by listed companies and in order to compare in a better and more coherence way the results of this study with those of previous research, the focus was made on listed company. An analysis of the companies' web site was made to identify which companies published a social or sustainability report and it has permitted to identify 32 companies with a separate CSR report and 5 companies with CSR information integrated into annual report.

Out of the 37 companies sampled, 18 are financial companies, 11 operate in the services sector and the remaining 8 in the manufacturing sector.

Content analysis methodology

Content analysis is defined by Krippendorff (2004) as "*a research technique for making replicable and valid inferences from data to their context*". It permits to classify quantitative and qualitative information into well-specified grid of categories to understand company communication behaviour with regard to a specific theme. Guthrie *et al.* (2004) point out that content analysis permits to analyse company published information systematically, objectively and reliably even if the success of the process depends on the reliability and validity of the procedures employed (Beattie and Thompson, 2007; Gray *et al.*, 1995). Recently the use of content analysis in the ICVD studies has been criticized for its lack of transparency in providing the necessary information to enable other researchers to understand how the content analysis has been conducted. Beattie and Thompson (2007) stress that different results can be caused by a low level of transparency regarding the detailed coding rules used to allocate information to IC categories and by the absence of an established and comprehensive IC framework. Also Abeysekera (2006) and Steenkamp (2007) point out the difficulty of comparing ICVD studies and states that the main limitations are the operational definitions of IC items in the coding framework, the level of detail on which IC items are examined and the differentiation in the companies samples.

This study applies Weber's (1985) scheme to develop a reliable content analysis process (see appendix B). As a first step the recording units have been defined. Many of the previous studies have chosen the sentence as a recording unit (Cerbioni and Parbonetti, 2007; Guthrie and Petty, 2000) because, as Milne and Adler (1999, p 243) pointed out, "*using sentences for both coding and measurement seems likely, therefore, to provide, complete, reliable and meaningful data for further analysis*". In agreement with Milne and Adler's (1999) observation we use sentence as one of recording unit of the study. Moreover Unerman (2000) points out that if the content analysis study does not take into account graphics, charts or photographs it probably shows an incomplete representation of the document analysed. Therefore we decided to choose also graphics, charts and table, but not the photographs as recording units. The photographs have not been taken as a recording unit because their analysis is considered too subjective to measure (Guthrie *et al.*, 2004).

The second step was the definition of IC categories, intangible elements and intangible attributes. The IC framework of this research is composed of three different levels (main categories of IC, intangibles element and intangibles attribute) to ensure a better completeness and validity of content analysis.. According to Beattie and Thomson (2007) there are no general theoretical guidelines to define the boundaries between each category and to classify a specific intangible element into a category and as consequence the literature proposes several frameworks to identify and classify IC. According to Striukova *et al.* (2008) most of previous ICVD studies have used Sveiby's (1997) IC classification scheme to conduct empirical content analysis. Due to the trouble to compare ICVD studies results and with the aim to facilitate the comparison of that with the previous literature, this study follows the same way and uses Sveiby's (1997) IC classification scheme to define the main categories of IC framework. More in detail Sveiby's scheme divides IC in three main categories that are human capital (employee competence), organisational capital (internal structures) and relational capital (external structures) each of them is composed by a sub-set of specific intangible elements [2]. The choice of intangible elements was based on the analysis of ICVD literature that use Sveiby's IC classification scheme (Abeysenkera and Guthrie, 2005; Bozzolan *et al.*, 2003), that refine the intangible elements of Sveiby's IC scheme (Roslender *et al.*, 2006) that summarize and analyse the framework used in previous ICVD empirical studies (Beattie and Thompson, 2007) and that applied a more transparent coding rules (Guthrie *et al.,* 2007; Li *et al.*, 2008). Totally 16 intangible elements were defined [3]. To conclude the operational definition of IC framework a more accurate sub-classification for each of 16 intangible elements identified was made. As Gray et al. (1995) pointed out, an accurate definition of the sub categories of the content analysis framework permits to identify more exactly the kind of information to be searched into the document analyzed and therefore to reduce the implicit subjectivity of the above research method. So through an inspection of IC literature, that used more detailed IC framework, (Abeysenkera and Guthrie, 2005; Bukh *et a*l., 2005; Li *et al.*, 2008) 66 intangible attributes were identified and after split for each of the 16 intangible elements (see appendix C). As a third point a check of IC framework was made.

Four researchers have conducted the methodology. In particular two researches have defined the IC framework and two researches have made independently the content analysis. As in several prior ICVD research the practice of counting and transcribing the instances of disclosure was adopted to facilitate research comparisons. Two different coding schemes of content analysis were given to each researcher to facilitate the registration of IC instances. The first one is a multidimensional scheme which used to classify the intangible elements on the basis of their quantity and quality profile. The second is a quantity scheme used to classify the intangible attributes. For each of two years one multidimensional scheme and a quantity scheme were used for each company. A sample of 6 social and sustainability reports has been checked by two researchers. During the first two rounds of checks some ambiguities in the identification of intangible elements and intangible attributes were identified by the two testers, so that the coding framework was updated in agreement between the four members of the research group. The up-dated framework was assessed by a new check by the same two authors on the same samples after three weeks. After this third check a reliability assessment of IC framework was done using Krippendorff's alpha that showed an acceptable reliability value of 0.82 (Milne and Adler, 1999). Then the rest of the sample of social and sustainability reports was divided between two researches which made the content analysis. At the end of the analysis the overall results were checked independently by the other two researchers to assure an higher level of data reliability.

Features of the report analyzed

Not all the sections of social and sustainability reports were analyzed. In particular corporate governance, environmental, community and public administration sections were excluded. Corporate governance section was excluded because there are specific studies that analyzed the relationship between corporate governance and IC disclosure (Cerbioni and Parbonetti, 2007; Li *et al.*, 2008). Moreover it is a mandatory communication for the listed companies and therefore it is outside the boundaries of this research. About the analysis of environmental, community and public administration sections little evidence was found in the previous ICVD literature (Beattie and Thompson, 2007). Moreover the aim to have a IC framework as comparable as possible with the previous ICVD research caused the exclusion of the above sections from the content analysis. Finally, this study doesn't take into account the amount of space (proportion of an A4 page) in the CSR report devoted to a particular issue because the aim of the research is to analyze the frequency and the quality of ICVD and not to calculate how much space is devoted to ICVD in these kind of reports. Differently from the annual report in the voluntary reports there isn't the need to weight carefully how much space must be allocated to each specific issues. Such kind of reports are voluntary documents and the company can choose the length and type of the information communicated in a more freely way.

Identifying and quantifying of ICVD

The methods to analyze ICVD have changed through research in time. They have passed from mono-dimensional to multidimensional analysis following the line of debate on disclosure quantity and quality evolved in the field of market based accounting research. First studies on ICVD analyzed only the presence of IC information in the annual report (Brennan, 2001). Subsequently more refined methods were developed and ICVD has been analyzed by a quantity disclosure index used as a proxy of disclosure quality (Bozzolan *et al.*, 2003; Bukh *et al.*, 2005). Lastly the recent study of Cerbioni and Parbonetti (2007) applies a multidimensional approach to test the characteristics of ICVD. This approach considers the disclosure as a complex process and requires more sophisticate analysis to investigate quantity and quality of disclosure. However accounting literature do not make a clear distinction between quantity and quality. In general it is assumed that the quantity of information disclosed influence the quality of disclosure and, as a consequence, measures of disclosure quantity are used as proxy for disclosure quality. On this point a debate is opened and different framework has been developed to better evaluate company disclosures (Beretta and Bozzolan, 2008; Hammond and Miles, 2004). One of the most influenced framework used to analyse disclosure quantity and quality was developed by Beattie *et al.* (2002; 2004; then BMF) [4]. This framework is based on the Jenkins report (AICPA, 1994) which proposed a comprehensive model of business reporting. BMF's framework used three dimensions to measure the disclosure quality: (1) the type of measure dimension which analyse quantitative versus non quantitative information, (2) the nature dimension which analyse financial versus non-financial information and (3) the time dimension which analyse historical, forward-looking and non-time specific information of the items disclosed. As underlined by Beretta and Bozzolan (2008) this framework offers a complete and richer descriptive profile of the firm's quality disclosures compared to the mere count of the disclosed items. BMF's framework considers also the spread of disclosure among topics (i.e. IC categories) and sub-topics (i.e. intangibles element) and the number of non-empty sub-topics as usefulness proxies to complete the analysis of disclosure quality [5]. To complete the analysis BMF's framework developed a synthetic disclosure index through which the sampled companies can be ranked in terms of disclosure quality. In this study, according with the most recent literature on disclosure as a complex and multidimensional process (Beretta and Bozzolan, 2008), the BMF's descriptive framework and the Herfindahl index among IC categories and intangibles element are used to analyze the presence (i.e. frequency) and the quality of ICVD in the social and sustainability report.

Results of IC disclosure analysis

This section provides the results of ICVD analysis. It starts with the descriptive discussion of ICVD over the two years, followed by a descriptive analysis of the disclosure by type and it concludes with the analysis of the interaction between IC categories and quality analysis.

ICVD over the two years

Table 2 indicates the results of the research in terms of descriptive statistics of IC categories and intangible elements. It shows that ICVD is communicated by the social and sustainability reports. The 2-year study indicate that companies reported an overall increase of IC disclosure with a rate of 8.0% . In 2005 the most reported category was human capital which increased over the two years with a rate of 6.5%. The relational capital was the second most reported category and it increases with a rate of 5.2%. The last reported was organisational capital which evidence the best increase over the two year with a rate of 15%.

In the category of human capital for 2005 and 2006 "employee wellness" was the most reported intangible element followed by "employee training" while the less reported has been "employee skills". In terms of intangible attributes the most reported were the "description of training programs and activities" and "staff health and safety" for both the years followed by

"employee agreements" and "staff breakdown by gender" for 2005 and by "rate of staff turnover" and "employee agreements" for 2006.
About relational capital category in 2005 and 2006 "customer" was the most reported followed by "distribution channels" in both of the years. The less reported was for the year 2005 "relationship with university and research centre collaboration" and for 2006 "business collaboration". In 2005 the most reported intangible attribute has been "customer satisfaction" followed by "meeting with financial stakeholder" and "description and typology of distribution channels". In 2006 the reported level of intangible attributes is changed; the first is "typology and number of customers", followed by "annual sales per segment or product" and by "number and geographic diversification of distribution channels".

Table 2 – *Descriptive Statistics of IC categories and intangible elements*

	Total Frequency		**Mean**		**Median**		**Std. Dev.**	
	2005	*2006*	*2005*	*2006*	*2005*	*2006*	*2005*	*2006*
Employees characteristics	288	358	7.8	9.7	6	9	4.78	4.92
Employees training	489	475	13.2	12.8	11	11	7.51	7.32
Employees skills	92	74	2.5	2.0	2	2	1.41	1.43
Employees wellness	697	761	18.8	20.6	18	19	8.59	10.29
Human capital	***1,566***	***1,668***	***42.3***	***45.1***				
Intellectual property	175	98	4.7	2.7	1	0	6.87	6.15
Information systems	107	72	2.9	2.0	2	1	2.88	2.00
Corporate culture and management philosophy	273	360	7.4	9.7	6	7	5.31	7.12
Management processes	289	455	7.8	12.3	6	8	6.44	1.11
R and D activity	130	135	3.5	3.7	1	0	4.83	5.84
Organisational capital	***974***	***1,120***	***26.3***	***30.3***				
Distribution channels	243	268	6.6	7.2	4	5	7.09	9.23
Business collaborations	94	59	2.5	1.6	1	0	3.59	3.05
University and Research Centre collaboration	87	73	2.4	2.0	1	0	2.72	3.10
Brand imagine	141	155	3.8	4.2	3	3	4.18	4.37
Customers	561	682	15.1	18.4	14	18	10.65	10.79
Suppliers	215	212	5.8	5.7	5	5	4.87	4.84
Financial relations	201	174	5.3	4.7	5	4	3.06	3.42
Relational Capital	***1,542***	***1,623***	***41.7***	***43.9***				
	4,082	**4,411**	**110.3**	**119.2**				

In the organisational capital the category "corporate culture and management philosophy" was the most reported for 2005 followed by "management processes", in 2006 instead the two intangible elements exchanged their position. Finally the last reported was "information system" for both the years. The attributes most reported were "corporate culture statements" for both the years followed by "patents, copyrights and trademarks" in 2005 and by "company strategy description" and "performance measurement systems" in 2006.
The analysis evidences that the IC disclosure change over the two years in particular at both intangible elements and attributes level. Over the years information on company strategy, customer characteristics, employee turnover, supplier policies and distribution channels, etc. tend to increase and instead description of IT facilities, staff breakdown by education,

typology and number of university and research centre collaboration tend to decreasing. A last consideration regards the dynamics of ICVD spread between IC categories and intangible elements. The H index for IC categories is 0,347 in 2005 and 0,343 in 2006, it shows a little increase of the spread in 2006 which means that the companies communicate ICVD in a more balanced way between the three IC categories. This trend is caused by the high increase of organisational capital disclosure frequency in 2006 that contribute more on the total ICVD.
Instead different results are showed for the intangible elements. The H index is 0,092 in 2005 and 1,00 in 2006 so there is a decrease of the balanced spread of disclosure among the intangible elements. It seems to suggests that the companies of the sample understood that some intangible elements they found are more important in disclosure process and consequently they focused on that improving their disclosure. This last evidence is in line with the results of Youndt *et al.* (2004) which found that companies tend to make investments only on IC dimension and their linked intangibles elements that are most needed, and therefore, targeted for development. Additionally, they show that only a relatively small number of organizations posses high levels of all three IC categories and hypothesize that can be very difficult and complex task the developed of multiple categories of intellectual capital.
Finally the mean frequency of IC disclosure varied by sector (table 3). The highest level of ICVD is shown by the service sector, with a mean over the two years of 128 disclosures per company. It is followed by financial sector with a mean of 112 disclosures per company, and by manufacturing with a mean of 102 disclosures.

Table 3 – ICVD mean frequency for company by industry

	Service		**Financial**		**Manufacturing**	
	2005	***2006***	***2005***	***2006***	***2005***	***2006***
Human capital	43.64	50.5	46.3	43.1	31.9	42.2
Organisational capital	31.64	43.3	21.0	20.6	30.9	34.1
Relational Capital	41.73	45.5	46.7	46.4	30.2	36.0
Total	***117.00***	***139.3***	***114.0***	***110.0***	***93.00***	***112.3***

Quality analysis of ICVD
One way analysis
One way analysis (table 4) shows that IC disclosure is communicated principally in non financial, quantitative and non time specific terms. The sum of 2005 and 2006 frequency shows that in time dimension area the majority of disclosures are non time specific (on average 77%) i.e. information reported to the year of the report. There is a quite high level of historical information (on average 20.2%) but only a few highlights of the communication of forward looking information (on average 2.8%). Overall there is an increasing trend over the years in all the three sub-areas, in particular for forward looking information. In financial/non financial area the non financial information are the most reported (on average 88.4%) and it evidences a heavily unbalanced disclosure between this two categories. As in the previous area there is a positive trend over the years. In quantitative/non quantitative area the disclosure can be considered more balanced between the two areas (on average respectively 61.5% and 38.5%) with a particular attention towards the communication of quantitative information which register an increasing of 16.1% over the two years while non quantitative information showed a decrease (-3.6%).
Two way analysis: time x nature
The most common mix is NTS/NF which accounts for 70.6% in 2005 and for 69.2% in 2006 which evidences a very high unbalanced level of disclosure inside the area It is interesting to note that overall the forward looking information are communicated essentially in non

financial terms and this mix show an increasing rate of 30.9%. Moreover the historical information are more reported in both financial terms (on average 4.3%) and non financial terms (on average 15.9%) compared to the forward looking information (on average 0.2% and 2.6%) which show an extremely low level of disclosure.

Two way analysis: time x type of measure

In this area the overall level of disclosure is better spread between the various mix. In 2005 and 2006 the mix most reported is NTS/Q (40.5% and 42.1%) followed by NTS/NQ (37.5% and 34%). It is interesting to note that over the years the mix NTS/NQ tend to decreasing (-2 %) while the mix NTS/Q tend to increasing (12,3%). Moreover in this area the forward looking information are less reported in quantitative terms compared to quantitative historical information (on average 0.7% vs. 19.4%). The mix H/NQ shows a rate of decreasing of -74.1% while the mix H/Q shows an increasing rate of 21.7%.

Two way analysis: nature x type of measure

In this area the disclosure is concentrated in two mix that are non financial/quantitative (on average 49.9%) and non financial/non quantitative (on average 38.5%). The combination F/Q shows overall a level of disclosure of 11.6% while mix F/NQ in practice doesn't report any items. Over the years the mix NF/Q and F/Q tends to increase (18.4 % and 6.7%) while the mix NF/NQ registers an decreasing level of disclosure of -3.7 %.

Three way analysis

The majority of the disclosure is reported in two combinations: non time specific/non financial/quantified (on average 35.7%) and non time specific/non financial/non quantified (on average 34.3%). Moreover mix H/NF/Q (on average 15.1%) and NTS/F/Q (on average 7.1%) shows a good level of disclosure while the other mix remains under the percentage of 4.5%. H/NF/Q is the mix with the highest increase over the two years (23.6) while the mix H/NF/NQ has a highest decrease (-74.1%).

Interaction between IC category and quality analysis

Powerful insights emerge from linking the IC category and quality analysis together (table 5). Human capital disclosures over time is communicated essentially in non time specific (74%), quantitative (71.6%) and non financial (89.7%) terms. Moreover the level of forward looking disclosure is extremely low (1.3%) while the level of historical information (24.7%) is the highest between the three IC categories. In two ways analysis the most reported mix is NF/Q (61.3%) followed by NTS/NF (67.8%) and by NTS/Q (46.6%). In three ways analysis the highest mix is NTS/NF/Q (40.4%) followed by NTS/NF/NQ (27.4%). About intangible attributes "employee wellness" is expressed in NTS/NF/NQ (35%) terms and in NTS/NF/Q (31.5%) while for "employee trainings" the preferred mix of disclosure is NTS/NF/Q with an average of 38.8% followed by NTS/NF/NQ mix with 32.7%.

Relational capital disclosures over the years are predominately communicated in non time specific (76.7%), quantitative (74.2%) and non financial (85.4%) terms as in human capital category. In three ways analysis the predominant category is NTS/NF/Q (43%) followed by NTS/NF/NQ (24.7%). The level of financial quantified information (16.8%) is the highest disclosed of the three IC categories while the level of forward looking disclosure is extremely low (1.2%). About intangible elements "customers" is most reported in NTS/NF/Q (53.4%) term followed by H/NF/Q (22.5%). Also "distribution channels" is communicated essentially in historical and non times specific/quantitative/non financial (62.8%) terms. Yet this intangible elements shows a good level of financial quantify information (20.5%).

Organisational capital category is predominantly communicated, on average, in non time specific (81.7%), non quantitative (73.4%) and non financial (91%) terms and compared to human and relational capital there is a low level of quantitative disclosure (26.6%). This is cause by the high weight on overall organisational capital disclosure of "company culture and management philosophy" which is essentially communicated in non quantitative terms

(29.6% on the overall organisational capital disclosure). Instead organisational capital forward looking information are the most reported (7.6%) compared with FL information of human and relational capital. In 2006 there was a great attention by the companies to communicate more quantified “business processes information” (+ 10.6%). R&D activity are expressed essentially in a narrative ways (NTS/NF/NQ) while intellectual propriety information have a good level of disclosure communicated in NTS/F/Q (on average 30%).

Table 4 – *Distribution of ICVD per quality and year*

		2005	2006	Total	% Var. 05/06
One way analysis	***Time dimension***				
	Historical	796	917	1,713	15.2
	Forward-looking	101	136	237	34.7
	Non-time specific	3,185	3,358	6,543	5.4
	Nature				
	Financial	475	508	983	6.9
	Non-financial	3,607	3,903	7,510	8.2
	Type of measure				
	Quantitative	2,415	2,804	5,219	16.1
	Non quantitative	1,667	1,607	3,274	-3.6
Two way analysis	***Time X Nature***				
	Historical/financial	169	195	364	15.4
	Historical/Non financial	627	722	1,349	15.2
	Forward-looking/financial	4	9	13	125.0
	Forward-looking/non financial	97	127	224	30.9
	Non time specific/financial	302	304	606	0.7
	Non time specific/non financial	2,883	3,054	5,937	5.9
	Time X Type of measure				
	Historical/quantitative	742	903	1,645	21.7
	Historical/non-quantitative	54	14	68	-74.1
	Forward looking/quantitative	18	42	60	133.3
	Forward looking/ non quantitative	83	94	177	13.3
	Non time specific/quantitative	1,655	1,859	3,514	12.3
	Non time specific/non quantitative	1,530	1,499	3,029	-2.0
	Nature X Type of measure				
	Financial/quantitative	475	507	982	6.7
	Financial/non quantitative	-	1	1	100.0
	Non financial/quantitative	1,940	2,297	4,237	18.4
	Non financial/non-quantitative	1,667	1,606	3,273	-3.7
Three way analysis	Historical/financial/quantified	169	195	364	15.4
	Historical/financial/non-quantified		-	-	
	Historical/non financial/quantified	573	708	1,281	23.6
	Historical/non financial/non quantified	54	14	68	-74.1
	Forward looking/financial/quantified	4	9	13	125.0
	Forward looking/financial/non quantified	-	-	-	
	Forward looking/non financial/quantified	14	33	47	135.7
	Forward looking/non financial/non quantified	83	94	177	13.3
	Non time specific/financial/quantified	302	303	605	0.3
	Non time specific/financial/non quantified	-	1	1	100.0
	Non time specific/non financial/quantified	1,353	1,556	2,909	15.0
	Non time specific/non financial/non quantified	1,530	1,498	3,028	-2.1

Table 5 – *Analysis of ICD 2005/2006 by intangible elements/quality interaction*

CODE	Human Capital	Year	H/NF/NQ	NTS/NF/NQ	FL/NF/NQ	H/F/NQ	NTS/F/NQ	FL/F/NQ	H/NF/Q	NTS/NF/Q	FL/NF/Q	H/F/Q	NTS/F/Q	FL/F/Q
AA	Employees characteristics	2006	1	10	0	0	0	0	111	221	5	5	5	0
		2005	0	4	0	0	0	0	94	176	2	6	6	0
AB	Employees training	2006	0	147	2	0	0	0	76	193	3	20	33	1
		2005	3	168	6	0	0	0	73	181	2	20	35	1
AC	Employees skills	2006	0	23	1	0	0	0	17	33	0	0	0	0
		2005	0	25	2	0	0	0	21	42	2	0	0	0
AD	Employees wellness	2006	0	242	0	0	0	0	145	262	4	43	65	0
		2005	6	268	12	0	0	0	122	197	0	35	57	0
	Organisational Capital	**Year**	**H/NF/NQ**	**NTS/NF/NQ**	**FL/NF/NQ**	**H/F/NQ**	**NTS/F/NQ**	**FL/F/NQ**	**H/NF/Q**	**NTS/NF/Q**	**FL/NF/Q**	**H/F/Q**	**NTS/F/Q**	**FL/F/Q**
BA	Intellectual Property	2006	0	47	0	0	0	0	0	3	0	15	33	0
		2005	2	100	0	0	0	0	3	7	0	14	49	0
BB	Information and Networking systems	2006	0	48	3	0	0	0	4	7	0	4	5	1
		2005	5	83	7	0	0	0	3	5	0	1	2	1
BC	Company culture and management philosophy	2006	0	275	74	0	0	0	0	4	5	0	0	2
		2005	1	246	25	0	0	0	0	1	0	0	0	0
BD	Processes Management	2006	6	213	10	0	0	0	73	127	10	7	8	1
		2005	29	152	16	0	0	0	33	48	2	4	5	0
BE	Research and development	2006	0	98	0	0	0	0	3	15	0	7	12	0
		2005	0	96	0	0	0	0	3	12	1	7	10	1
	Relational Capital	**Year**	**H/NF/NQ**	**NTS/NF/NQ**	**FL/NF/NQ**	**H/F/NQ**	**NTS/F/NQ**	**FL/F/NQ**	**H/NF/Q**	**NTS/NF/Q**	**FL/NF/Q**	**H/F/Q**	**NTS/F/Q**	**FL/F/Q**
CA	Distribution channels	2006	0	36	1	0	0	0	41	133	2	18	35	2
		2005	1	36	3	0	0	0	35	112	3	20	32	1
CB	Business collaborations	2006	5	51	0	0	0	0	0	1	0	0	2	0
		2005	1	78	0	0	0	0	1	6	0	0	8	0
CC	University and Research Centre collaboration	2006	0	63	0	0	0	0	2	6	0	0	2	0
		2005	0	78	1	0	0	0	1	2	0	0	5	0
CD	Company reputation	2006	2	78	0	0	0	0	23	50	1	1	0	0
		2005	1	45	0	0	0	0	19	76	0	0	0	0
CE	Customers	2006	0	91	0	0	1	0	155	362	1	26	44	2
		2005	3	74	8	0	0	0	125	302	2	17	30	0
CF	Suppliers	2006	0	61	3	0	0	0	40	86	0	8	14	0
		2005	2	55	2	0	0	0	32	93	0	12	19	0
CG	Financial relationship	2006	0	15	0	0	0	0	18	53	2	41	45	0
		2005	0	22	1	0	0	0	21	80	0	33	44	0

Discussion

The presence of ICVD in the CSR report evidences that the firms use also this kind of report to communicate their IC information reinforcing the conclusion of Striukova et *al.* (2008) which asserted that annual report cannot be taken as proxy for the overall pattern of company IC disclosure. As shown in table 6 the mean value of IC disclosure is higher compared with the majority of the recent annual report studies.

Table 6 – *Comparison of ICVD frequency mean value of some recent studies*

	This study 2005	This study 2006	Bozzolan et al. (2003)		Guthrie et al. (2006)		Steenkamp (2007)	Oliveira Et al. (2006)	Sonnier et al. (2008)	Vandemaele et al. (2005)		
Country	IT		IT(is)	IT(nis)	AUS	HK	NZ	PT	USA	NL	SW	UK
Document analysed	CSR Report		Annual Report		Annual Report		Annual Report	Annual Report	Annual Report	Annual Report		
ICD category												
Human capital	*42.3*	*45.1*	*17*	*7*	*3.3*	*4.6*	*25.2*	*26.6*	*9.2*	45	61	35
Organisational capital	*26.3*	*30.3*	*27*	*9*	*13*	*3.7*	*7.7*	*30.1*	*0.7*	44	50	34
Relational capital	*41.7*	*43.9*	*40*	*17*	*15.3*	*4.9*	*11.9*	*33.3*	*17.8*	66	66	52
Total	***110.3***	***119.2***	***84***	***34***	***31.6***	***13.2***	***44.7***	***90***	***27.7***	***155***	***177***	***121***

In CSR report the ICVD, compared with ICVD in annual report, gives a broader and more transparency view of the company value creation process because the disclosure is more balanced between human and relational capital (Abeysekera, 2006). Differently from previous annual report research (Abhayawansa and Abeysekera, 2008) human capital is the most reported category and it is viewed as an asset that the companies try to manage and engage through disclosure and a clear and consistent communication process to built mutual trust and good relationship. Regard the high frequency of human capital Perrini (2006) asserts that human capital relationship is an essential topic of CSR reporting because employees are one of the primary company stakeholders. (Déniz and Pérez, 2003). This high presence of human capital in CSR reports confirms the narrow view of traditional financial reporting and its negative impact on the disclosure of key intangibles of the company success (Colbert, 2004; Wright *et al.*, 2001). According to Holland and Johanson (2003) the inability of traditional financial reporting to report a well developed set of human capital information is cause by three factors: a) the inability of capital market actors to understand the importance of certain intangibles; b) a problem of validity and reliability of HC information and C) a lack of ownership of intangibles related to people which can cause the risk of losing this competence and as consequence can cause some distortions in the company evaluation by financial analysts. As shown, CSR report permits to go over the limitation of traditional financial reporting about the problems of HC disclosure information providing a higher level of transparency and reputation thank to which enhance the relationships with employees.

Relational capital confirm its presence also within CSR reports. The finding show the importance that companies give to stable relationship with customers and suppliers and the key role played by distribution channels. It is interesting to note that some intangible elements disclosed, such as distribution channels, business collaborations, university and research centre collaboration and also some customer attributes are not a traditional CSR-related issue. This observation leads to think that companies use CSR report to communicate a wide set of intangibles information in order to show the network of relations to which the company belongs. These relations are the relationship related to investment of the companies that must be managed and increased to access to new resources, information and knowledge. In this sense the ICVD in the CSR report are mechanisms that permit to reinforce the reputation of the companies and the trust between the companies and their partners on which the relations are based (Castaldo, 2008). Finally the organisational capital dimension is the category less reported. However the % level of OC on total ICVD compared with the annual report research is similar (table 6). In this category the link between CSRA and IC influences the disclosure level of "corporate culture and management philosophy" and of some intangible attributes of "management process". Differently R&D activity, intellectual property, information and networking systems and some other intangible attributes of "management process" are not so strictly connected with CSRA, therefore the presence of these OC information confirms once again that companies use also the CSR report to disclose IC information. The presence of these information tends to increase the usefulness of CSR reports and their usability by the stakeholder to have more information on which to evaluate company profile and the nexus among the various activities.

An interesting and differently point compared with previous research is that IC information is communicated mainly in quantitative terms both financial (on average 11.6%) and non financial (on average 49.9%). Previous studies show a tendency to communicate discursive information. Guthrie *et al.* (2007) found that "*nearly 90% of IC information disclosed is expressed in discursive rather than numerical terms*", Striukova *et al.* (2008) show that on average the 80% of the disclosure is expressed in narrative and discursive form. Also Oliveira *et al.* (2006) show that Portuguese companies disclosure the 81.1% of their information in qualitative and this tendency is confirmed also by Sujan and Abeysekera (2007) which show as the 73 % of IC information is reported in qualitative terms. Only the study of Hyon Ju Kang (2006) shows that the majority (on average 65.19%) of a sample of 170 international companies operating in the top emerging financial market reported IC voluntary disclosure, through their annual report, in quantitative terms both financial (on average 48.44%) and non financial (on average 51.58%). Also previous studies focussed more broadly on disclosure than IC shows that companies tend to communicate prevalently non quantitative information. Beattie *et al.* (2004) found that 78% of disclosure in their study was non quantitative and Boesso and Kumar (2007) showed that the qualitative information is 58.2% of the total voluntary information disclosure. The high rate of quantitative information and their increasing over the years highlight that companies put increasing attention to the quantitative measurement of their IC especially for human and relational capital. Moreover it is acknowledged that there are constraints in quantifying some intangible elements and attributes, such as corporate culture and management philosophy, which in many instances have only qualitative form. This great and important difference with the results of ICVD annual report studies is probably caused by the object of annual report that is basically oriented to inform on the more traditional financial results and therefore it is not so oriented to extend, in a more quantitative way, the disclosure on other activities of the companies; to them is dedicated only a smaller and descriptive part of the amount of the annual report space is dedicated. Moreover as Johanson (2003) and Mouritsen (2003) explain and Orens and Lybaert (2007) empirically demonstrate there are several barriers (i.e. knowledge, uncertainty, cultural, ownership and management problems) that reduce the capabilities of capital market agents to understand and use IC information. This can induce the companies to disclose through their annual report low level of IC information, not sufficient to financial analysts to make efficient analysis (Garcia-Ayuso, 2003). Lastly, the presence of quantitative data can increase the possibility to do temporal and spatial comparative assessments and the balanced presence of qualitative information enhance the communicative potential of the numbers (Mouritsen *et al.*, 2001). In terms of time orientation the results show an extremely low level of forward looking (FL) information. Due to the impossibility to compare these results with similar research in IC field the comparison will be made with previous studies focussed on FL disclosure more broadly than IC. The results of this study compared with others show a lower level of IC FL information. The sample of companies reported on average over the years 3.3 (2.8%) IC FL information each one. Instead Robb *et al.* (2001) find that USA, Canadian and Australian companies disclosure on average 58.5 non-financial FL information in their annual report and Beattie *et al.* (2002) show that UK companies reported on average the 14% of the total amount of disclosures in FL terms in their annual report. Also Linsley and Shirives (2006) show that UK companies in their annual report reported on average 27, 47 FL risk disclosure. Finally Beretta and Bozzolan (2008) find that Italian listed companies on average reported 75.1 FL information in their annual report. The comparison shows a low tendency of the companies to communicate IC FL information probably because they don't want to reveal to competitors their future IC management and development strategies considered them as sensitive information. Moreover the low presence of IC FL information can be cause by the fact that CSR reports are more oriented to report the activities performed by the companies to develop a set of relationship with their stakeholders instead of what the companies are intentioned to make in the near future (Cuganesan, 2006). The low presence of IC FL information can be considered the most critical aspect of IC information in the CSR reports due to the important role played by FL information in the accountability process (Hooks *et al.*, 2002) and in the decision making process (Orens and Lybaert, 2007).

Conclusions

This study contributes to ICVD analysis across the full range of company reports and it extends and refine the results of the previous studies on ICVD into CSR report. This aim is addressing analyzing ICVD in a multidimensional way and over two years in a sample of social and sustainability reports published by Italian listed companies. The results show a high and increasing presence over time of ICVD with a great emphasis on HC disclosure, which is the most reported category, followed by relational and organisational capital. The ICVD quality analysis evidences that disclosure is mainly in non financial, quantitative and non time specific terms and that forward looking information has the lowest level of disclosure.

The results confirm also the relationship summarized in table 1 between CSRA and IC and the key role played by the disclosure in the CSR process. The analysis empirically confirm the importance of the link between CSRA and IC development: CSRA have a positive impact on IC management because they contribute to generate and reinforce the intangible resources and company capabilities. CSRA can be viewed as the set of strategies and behaviours thanks to which companies develop and preserve the relationship with the different stakeholders which are the key sources of the firm value (Branco & Rodrigues, 2006) and, at the same time, the total or partial owners of a large part of intangibles on which the company generates its competitive advantage. In explain these relationships Resource Based Theory is an useful framework that emphasises the importance of intangibles resource and capabilities and explain the relationship between the two areas: the CSRA generate intangibles, which characteristics are in line with the RBT principles, whose disclosure signals the value of intangibles to the stakeholders. The disclosure, at the same time, becomes a company capability that reinforces CSRA and generates company reputation and credibility, i.e. intangibles through which the company manage its stakeholders relationships. There is therefore a positive liaison among CSRA, intangibles management and disclosure process in which each part is mutually dependent and reinforces.

Consequently the study sheds light on the issue of the possible integration between social and sustainability report and IC report in a more strategic perspective. The integration of different forms of disclosure and company reports is considered the aspect will dominate the future of

corporate reporting (Williams, 2008) and the goal is not simply to provide more disclosure and information as possible but to convey greater understanding of the company dynamics both from management and external reporting point of view (Nielsen & Madsen, forthcoming; Bhimani and Soonawalla 2005). As pointed out in section one there are several good points that justify the integration of these two kind of reports and for Del Bello (2006) exists two possible level of integration: a) a weak integration with a set of common set of indicators between the two kind of reports and b) a strong integration between the two documents which generate a new type of company report. Evidences suggest that through CSR report the companies increase their IC transparency level and go over some inadequacies of traditional financial statements to report some typologies of IC information. The transparency on these information have several positive effects on the company. As showed, through disclosure the company communicate their CSR behaviour, signal the value of investments in intangibles, create new intangibles and reinforce their stakeholders relationship.
The CSRA involve the management of a well set of intangibles in a perspective oriented to gain a competitive advantage, which may be reinforced when the positive effects of the relationships among CSRA, intangibles and disclosure are clear. In this strategic view the integration of the reports becomes more important for the effectiveness of the company value creation process disclosure, based on intangibles and generated by corporate social responsibility activities. The problem here derives by the voluntary and controversial nature of both kind of reports and in particular of CSR report, that are usually create to legitimate the company (bad) behaviours in the society (Guthrie and Parker, 1989). This point could be forefront if company overcomes the concept of CSRA and "a good disclosure profile" as only a "nice dress" and consider it as an instrument to understand the company more in deep. In the opposite way the integration of the two report will only be another well dress of some "illuminate" companies in our (un)sustainable society (Gray, 2006b).
About the study limitations the problems of the quantification metric used and the subjective understanding of the issues among the researcher are the two content analysis related limitations of this study. A third limit regards the use of social and sustainability report as source to investigate ICVD. A potential lack of reliability may be ascribed to the information contained in these kind of report (Galli and Baldon, 2005), however a rhetorical and marketing use has been also demonstrated for other company reports such as the annual report (Stanton and Stanton, 2002). Lastly a fourth limitation is the little dimension of sample analyzed which does not permit to generalize the results and the absence of statistical analysis. To conclude, the findings confirm the importance to analyse a broad range of company reports to really understand the overall IC company communication strategy and, at a broad policy level they can potentially help the regulatory developments both in the area of IC reporting and in other areas of corporate reporting. About future research, in addition to the deepening of an international comparison of ICVD in CSR report and annual report, the investigation on the awareness in companies about the linkages between CSRA, IC and ICVD could provide more insights on the possible future development in external voluntary reporting.

Notes

1. We reclassified the positive effects of CSRA on intangibles according with Sveiby's (1997) IC classification with the aims to have a coherence between theoretical and empirical part of this research which in turn used the above mentioned IC classification.

2. In general terms “intellectual capital” can be defined as the knowledge-based resource of a company. It is composed by a set of stock and flow knowledge resource. The former are resource that exist at a particular point in time, the latter instead interact with other intellectual and physical resource to get to company’s target. For a definition of employee competence, internal structure and external structure, organizational see Guthrie and Petty (2000, pp. 243-244).

3. See the appendix *“Definition and nature of information”* in Li *et al.* (2008) pp.155-159 and appendix A in Guthrie *et al.* (2007) pp. 103-115 for an accurate definition of intangibles element used in this study.

4. BMF’ framework has influenced the logic and the research design of the works of Boesso and Kumar (2007); Cerbioni and Parbonetti (2007); Beretta and Bozzolan (2008). For more references about the influence of BMF’ framework see Beattie *et al.* (2004), pp. 221.

5. The spread of disclosure is measured using the Herfindahl index (H) which is a concentration measure. The H index has a maximum value of 1 when all the items disclosed fall into a single category and a minimum value of $1/n$ when the items disclosed are spread evenly; so the higher the H index, the poorer the spread.

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APPENDIX A Content analysis rules

- Code for sentences (do not code for word and paragraphs).
- Code for graphs, tables and indicators.
- Do not code for picture.
- Do not code if concept is implied.
- Do not recount the same information on intangible elements or attributes.
- If a disclosure is too vague in its reference to IC, then it shall not be recorded as a IC disclosure
- If a concept can be insert into two different intangible elements or attributes apply the dominance principle i.e. insert the concept in the area which seems to be more closely linked and more emphasised with the information analyzed
- One sentence is coded as one frequency.
- Inside the tables one year is coded as one frequency.
- One graph is coded as one frequency.
- One indicators outside the tables is coded as one frequency.
- Do not analyze corporate governance, environmental, relations with community and relations with public administration sections.
- Do not care about the guideline used by the companies to development the report (GRI, AA1000, Italian guideline for social report, etc.) because more guidelines are used at the same time by the majority of the companies.
- Quantitative information: facts and claims that are represented by numbers.
- Qualitative information: facts and claims presented in narrative, not numerical form.
- Historical information: facts and events referred to the previous years compared with the year of the report analyzed.
- Non-time specific information: facts and events referred of the year of report analyzed.
- Forward looking information: fact and events referred of next years compared with the year of the report analyzed.
- Financial information: facts and claims that are represented by monetary numbers.
- Non financial information: facts and claims presented in not monetary numbers/form e.g. time, quality, %, quantity.

APPENDIX B Typology and frequency of intangible attributes

See the appendix *"Definition and nature of information"* in Li, Pike, Hannifa (2008) pp.155-159 for an accurate definition of each intangible attributes used in this study.

	2005	**2006**
Human Capital	**TOTAL**	
Employees characteristics		
Staff break down by age	43	46
Staff break down by seniority	28	36
Staff break down by gender	68	67
Staff break down by job function	60	63
Rate of staff turnover and comments on change in number of employees	57	98
Efficiency employee index	32	48
Employees training		
Number of education programs	23	5
Description of training programs and activities	409	408

Education and training expenses	57	62
Employees skills		
Staff break down by education	57	45
Competence development program	35	29
Employees wellness		
Staff health and safety	187	243
Absence	29	40
Pensions	13	7
Carrier opportunities	34	42
Value added per and to employee	61	64
Insurance police	23	15
Recruitment police	21	23
Employee agreements	92	74
Employee company social activity	65	69
Employee satisfaction	37	30
Diversity and equal opportunities	50	58
Employee litigations and legal actions	30	30
Benefits	55	66
Organisational Capital		
Intellectual Property		
Patents, copyrights and trademarks	175	99
Information and networking systems		
IT system	57	58
IT expenses	4	9
Description of IT facilities	46	5
Company culture and management philosophy		
Corporate culture statements	184	185
Company strategy description	89	175
Processes Management		
Quality standard	80	93
Environmental standard	52	41
Performance measurement systems	47	127
Incentive and remuneration systems	45	66
Risk management	41	61
Communication system	24	66
Research and development		
Statements of policy, strategy and/or objectives of R&D activities	102	107
R&D investments	19	17
Patents and Patents pending	9	11
Relational Capital		
Distribution channels		
Description and typology	107	98
Number and geographic diversification	84	105
Economic performance	52	65
Business collaborations		
Alliance and partnership	86	58

License and franchising agreements	8	1
University and Research Centre Collaboration		
Typology and number	81	65
University and Research Centre donations	6	8
Company Reputation		
Financial reputation	62	66
Social reputation	31	28
Environmental reputation	2	6
Brand Imagine	46	55
Customers		
Typology and number of customers	90	154
Sales break down by costumer	21	22
Annual sales per segment or product	70	106
Description of customers involvement	45	78
Customers satisfaction	127	100
Market share	8	20
Market share by segment/product	54	61
Dependence on key customers	5	6
Geographic diversification	58	62
Customer litigations and legal actions	83	73
Suppliers		
Number of suppliers and geographic diversification	89	83
Contractual relationship and supplier policies	72	92
Certified quality of supplier	31	18
Supplier satisfaction and retention	23	19
Financial relationship		
Meeting with financial stakeholder	123	96
Value added to investors and shareholder	78	78