A New Performance Reporting for Sustainability Projects

Paola Demartini*, Mauro Paoloni*, Cristiana Bernardi* and Paola Paoloni**

According to the International Integrated Reporting Council (IIRC), an integrated report should display an organization's stewardship not only of financial capital, but also of the other “capitals” (i.e. manufactured, human, intellectual, natural and social). Given this premise, the present contribution endeavours to highlight the process leading to the preparation of an integrated report which simultaneously combines traditional financial measures with Intellectual Capital (IC) indicators and long-term sustainability factors. The investigation concerns a company operating in the Electronics and Defence field, which has developed a model for managing Intellectual Capital within a sustainability scenario. The theoretical paradigm underlying the research is Interpretivism; more specifically, the study adopts an “action research” perspective (Jönsson & Lukka, 2005; Suomala, 2009). A framework aiming at fostering a sustainability management strategy was elaborated and successfully applied to a set of specific initiatives that will be implemented by the end of 2013. Each single project was subject to measurement, evaluation and reporting through the Intellectual Capital lens. The adoption of the proposed model represents an innovation in support of the organizational system, since it enables the company to manage sustainability initiatives by measuring the related firm-specific intangibles functional to the creation of value. Moreover, it also offers a valuable tool concerning the company’s intangible assets disclosure. However, a single case study limits the generalizing of any of the outlined findings.

JEL Codes: M1 and M4

1. Introduction

The on-going transition to a global knowledge-based economy has dramatically emphasized the crucial role intangible assets – hereafter also referred to as Intellectual Capital (IC) - play in the value creation process of organizations. Much Intellectual Capital literature is concerned with uncovering the hidden value in intangible resources via direct measurement of its elements (Edvinsson & Malone, 1997; Lev, 2001; Sveiby, 2001). However, generally, interest in Intellectual Capital stops at its measurement, without explaining how information about IC works. According to Mouritsen & Larsen (2005), there is an additional management control agenda where information about IC is an input to management activities, i.e. to be able to understand the relationships existing between measurement on the one side and operational activities, strategies and context on the other.

* Business Studies Department, Roma TRE University, Rome – Italy
Email: paola.demartini@uniroma3.it
** University “N. Cusano” - Faculty of Economy

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Along with Intellectual Capital, another issue is currently at the centre of the international debate: Sustainability Management. Over the last decades, the concept of Sustainability has gained considerable recognition among academics and practitioners, and has consequently been subject to various interpretations. As per today, it is widely acknowledged that the implementation of sustainable strategies is a powerful management tool that enables companies to meet both growth and profitability goals, thus gaining an advantage over competitors in the long term. In the early 90’s John Elkington coined the term Triple Bottom Line (TBL); this concept was later revised in order to introduce an innovative accounting framework which incorporated the three dimensions of performance: economic growth, social responsibility and environmental sustainability (Elkington, 1997). Despite being a relatively young practice, Sustainability Reporting - also termed Corporate Social Responsibility (CSR) Reporting - has enjoyed considerable advancement over the past few years. From the beginning, much concern has been shown in the accounting literature for sustainability issues (Gray, 1992; Rubenstein, 1994; Milne, 1996, among others) and the topic is still experiencing substantial evolutionary tensions.

As argued by Eccles & Krzus (2010), “an integrated report is a single document that presents and explains a company’s financial and non-financial - environmental, social, and governance (ESG) - performance”. Recent studies have attempted to evaluate the potential of an integrated approach which aims to combine Intellectual Capital on the one hand and Sustainability Management on the other.

However, the way intangible resources might trigger the growth of firms within a sustainability framework is still a subject of controversy. Up to date, the extant literature on integrated reporting offers a significant range of contributions (Ghutrie & Petty, 2000; Cordazzo, 2005; Yongvanich et al., 2006; Guthrie et al., 2007; Pedrini, 2007; Polo & Vázquez; 2008; Oliveira et al., 2010; Cinquini et al., 2012; Demartini & Paoloni, 2013(a); Veltri & Nardo, 2013); nonetheless, the integrated reporting project is still in its infancy.

The purpose of this paper is to highlight, in practice, the process leading to the preparation of an integrated reporting document, based on the interconnected key content elements of Intellectual Capital and Sustainability Management. In our investigation we focus on the IC measurement of a high-tech entity, which operates in the Electronics and Defence field. This business can be classified as a Knowledge Intensive Business Service (KIBS) (Hipp & Grupp, 2005). KIBS provide knowledge intensive inputs to the business processes of other organizations; their core competencies reside in the capability to combine – in a new body of knowledge – codified scientific and technical knowledge, with tacit knowledge based on extensive experience (Nonaka & Takeuchi, 1995).

From a methodological point of view, the investigation is the result of an on-going research project carried out together with the management of the analyzed company, that is, it takes an “action research” perspective.

The paper proceeds as follows. In Section 2 a literature review is presented; Section 3 outlines the research methodology, whereas the findings of the analysis are presented in Section 4. Finally, discussion and conclusions follow in Section 5.
2. Theoretical Framework

Several studies have examined the points of convergence between IC and CSR/Sustainability reporting in different ways. Consistently with the suggestion of Zambon (2003), Cordazzo (2005) found an overlap between many elements of environmental and social reports and IC components in a sample of Italian listed companies. Guthrie et al. (2007) developed an extended performance reporting framework - which is characterized by both Corporate Social Responsibility and Intellectual Capital issues - in relation to a specific Australian industry. Pedrini (2007) examined the convergences existing between Sustainability and IC statements as well as the opportunity to combine the two reports into a global one; in this case, however, attention was only paid to Human Capital, as in the study by Polo & Vázquez (2008). The study conducted by Oliveira et al. (2010) proposed an index in order to analyze IC disclosures in the sustainability reports of Portuguese firms.

Further studies have attempted to evaluate the integration potential of IC and Sustainability Management (Cinquini et al., 2012; Demartini & Paoloni, 2013 (a); Veltri & Nardo, 2013); within this stream of research, a valuable and analytical contribution is provided by Mertins & Orth (2012). Their analysis highlights that an adequate management approach which points out the effective contribution of intangible resources to a sustainable development is not available yet; as a consequence, a preliminary draft model for an integrated perspective is suggested. The Authors outline six steps for the implementation of a Sustainability Management System, emphasizing the importance of a benchmark analysis and recommending the development of a more robust set of indicators in order to facilitate external communication.

In the light of what has been said above, it is evident how the idea of an integrated approach to Intellectual Capital and Sustainability Reporting is gathering momentum, since it is perceived as an essential determinant to the future of business growth and success (Paoloni et al., 2013).

Within this context, the International Integrated Reporting Council (IIRC), set up in August 2010, brings together “leaders from the corporate, investment, accounting, securities, regulatory, academic, civil society and standard-setting sectors” (IIRC, 2010), seeking the development and worldwide adoption of an integrated reporting system. For this purpose, in September 2011 a document (known as The Draft) was issued with the aim of gaining international participation - through the use of discussion papers and questionnaires - in defining the framework guidelines; the Council would therefore be provided with a structured feedback on the key elements necessary for the implementation of an integrated report. However, the possibility to combine IC and sustainability perspectives into the company’s management has not to our knowledge been researched in any study as yet.

This paper aims at filling the aforementioned gap by highlighting how an high-tech company has developed a model of IC management coherent with a sustainability framework. In our research, an interventionist approach (Dumay, 2010) to researching and implementing an IC-Sustainability framework has been followed.
3. Research Methodology

3.1. Research Propositions

In our study we follow an interpretative approach (Crotty, 1998) and we argue that social practices, including management accounting, are not natural phenomena; rather, they are socially constructed and they can be changed by the social actors themselves. More specifically, we suggest that accounting provides a set of meanings or a language that is drawn on in organizations, but which is itself an outcome of organizational activities. As such, it provides organizational participants with a system of relevance (or a set of meanings) that they can use to make sense of their organizational activities.

The qualitative research approach underlying our investigation is Interpretivism, according to which sociological phenomena cannot simply be observed but must also be interpreted by the researcher. Interpretivism posits that there is not one absolute reality: different possibilities are generated by the perspective adopted to interpret the facts (ontological dimension). Moreover, there is no separation between researcher and subject, since the process of understanding derives from deductive-inductive development (epistemological dimension) (Ryan et al., 2002, p.34).

The selection of a company belonging to the Aerospace and Defence sector is consistent with our research aims since this field comprises high-tech global firms whose products and services result from investments in financial, human, structural and relational capital. More specifically, we focussed on the case of a large company leader in systems integrators whose headquarters are located in Italy. In recent years the company’s Top Management has demonstrated its interest in enhancing the IC potential through the realization of an organizational unit entirely devoted to promoting product innovation, increasing patents and trademarks, strengthening personnel competencies and enabling communities and academic relationships.

Moreover, the company’s Top Management has expressed its willingness to adopt an IC measurement approach. This allowed us to be involved in a project aiming to identify, measure and manage intangibles resources. Our analysis also offers a picture of how managers can intervene in processes of knowledge development, sharing and application within the firm. Accordingly, we suggest that:

Proposition 1
Working together as a research team in the attempt to implement an IC approach into the company’s management system could be useful for researchers and practitioners alike.

Proposition 1.a
Researchers could increase their comprehension of the managers’ evaluation of IC framework usefulness.

Propositions 1.b
Practitioners could increase their knowledge of IC tools developed by academics, meanwhile improving awareness of how these fit the company’s needs.

As a consequence, the definition of our role as researchers within the company was of extreme importance: figures driven by “action research” principles, not just observers of the phenomena, nor mere consultants.
3.2. Action Research

Action research attempts to combine the process of research and action based on what Shein (1987) describes as a key assumption – that one can never really understand any human system without trying to change it. Thus, a key aim of action research is to increase both researchers’ and practitioners’ understanding. Reason & Bradbury (2006, p. 1) define action research as a process that “…seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people”.

The researcher is intended to act in concert with the host organization: he/she observes the whole process and the related outcomes, and analyses findings in view of the relevant literature. This methodology not only reflects upon the observations of the researcher, but also on the impact the interventions have within the organization. The main benefit for researchers is the ability to develop insights into the implementation of new management innovations in organizations; for practitioners the benefit is to gain the assistance and knowledge of academics as a resource in the implementation process (Dumay, 2010).

There is not an agreed set of methodological protocols, or rules, shared by all researchers; however, action research usually begins with the establishment of initial contact between the researcher(s) and the representatives of the organization. During the entry stage of the action research process, either the organization or the researcher(s) can take the initiative in presenting the problem.

Diagnosis is a pivotal stage in action research, as the researcher(s) may introduce to organizational members conceptual schemes and/or theories that enable them to reinterpret how they perceive their situation. The ultimate goal is to develop a conscious understanding among organizational members and to co-determine and plan possible interventions.

Next, the findings of our analysis will be summarized following the above-mentioned stages of action research.

4. Analysis and Findings


Players in the Aerospace and Defence sector are generally large, integrated multinational companies that are highly diversified in terms of both the products they manufacture and their geographical location. Overall, market rivalry within this sector is strong: since the degree of work specialization is very high, expertise and knowledge are crucial determinants of firms’ success. Moreover, companies operating in the industry are compelled to adhere to strict regulations involving national security, export restrictions and licensing, accounting rules and safety requirements.

The analyzed entity, entirely owned by an Italian listed multinational company, designs and develops large systems for homeland protection, systems and radars for air defence, battlefield management, naval defence, air and airport traffic management, coastal and maritime surveillance.

It is interesting to underline that the holding company has been recently included in the Dow Jones Sustainability Index (DJSI). Therefore, the Management of all the controlled
operating companies is involved in implementing new initiatives in line with sustainability thinking.

Considering the strategic sector within which the company operates, detailed information about the analyzed entity – not relevant in order to discuss our findings - is not provided.

4.2. The Entry Stage

The entry stage of the research begins with the identification of the problems perceived within the organization, i.e. the problem identification: it then goes on with the recognition of “the client/stakeholder” figure, and the agreement on who, how, where and when will take part in the research. The first issue is the identification of the main users of IC information, which in the analyzed case study was identified is the company’s Top Management. Although the disclosure of IC information to external stakeholders is a further important aim, it was not included here since the entry stage mainly focused on the managerial decision-making process.

The team was composed of three professionals involved in the project and three academics. During the entry stage, the researchers introduced the IC conceptual schemes and related theories to organizational members (thus enabling them to reinterpret how they understand their company); the main role of practitioners was the assessment of their effective usefulness in practice.

The main goal of the research group, supervised by a Senior Professor, was the proposal to the company’s Top Management of a model for the measurement and management of the company’s intangible assets within a sustainability framework.

4.3. Diagnosis

Diagnosis constitutes a pivotal stage in action research; it implies a clear understanding of the organizational context as well as an accurate analysis of the practical problems and of the faced challenges. Diagnosis also entails the proposal of ideas concerning organizational changes.

In this case, “researchers” and “practitioners” create a model to evaluate the measurement and management of the company’s intangible assets, which can be integrated into the managerial practices in order to support the firm’s decisions.

4.3.1 Visualizing the Company’s Intellectual Capital within a Sustainability Framework

All the information gathered about the sector and the company profiles helped us understand why it is vital for the company to focus its attention on intangible resources. In fact, growing competition in innovation and new technology forces this company to increase both intangible stock and the effectiveness and the efficiency of its use.

The first step of the process involves the mapping of the available intangible resources that must be reinforced or acquired in response to management’s suggestions and that support the strategic objectives of the company (Demartini & Paoloni, 2013 (b) (Figure 1).
Next, in order to integrate the aforementioned IC visualization of the company with sustainability categories, the main aspects that are monitored by the Dow Jones Sustainability questionnaire have been highlighted (SAM, 2012) (figure 2).

Afterwards, each project launched by the company that has an impact on IC undergoes calculation, evaluation and reporting. Even in this case, the traditional vision of IC is adopted in the three areas represented by Structural Capital, Relational Capital and Human Capital.
A key performance indicator approach to Intellectual Capital reporting has the consequence of providing for a broadening out of the account rather than simply offering financial valuation. In a complementary way, embracing a narrative approach has the effect of providing more detail of management’s thinking as it underpins value creation. On the one hand, the application of the model represents a managerial innovation for the company single unit whereas, on the other, it offers an important reporting tool for the whole firm.

4.3.2 A Process for the Identification, Measurement and Management of Intangible Capital

This process follows an annual cycle: starting from the strategic planning of the intangible resources, it then develops into different stages, as shown in Figure 3. The circular process means the results return to the firm’s management through a feedback report that can be used in order to make changes where necessary.

**Figure 3 - Intellectual Capital Process within a Sustainability Framework**

Specifically, the stages are the following:

1) Identification of the main initiatives that have a significant impact on IC and analysis of their related expected benefits;

2) Intellectual Capital Measurement: it implies the identification of the relevant resources to be reinforced and/or acquired. These resources support the strategic aims of the company. This activity identifies and controls the firm’s initiatives that have the biggest impact on IC and are measured by the use of performance indicators;

3) Implementation of initiatives and data gathering;

4) Reporting: a document containing the results of the measurement and assessment activity of the projects to be sent to the firm’s Top Management at the end of the year.

This is a process approach, which goes beyond the company’s functions since it works transversally within the firm. Such a mechanism will be successful only if there is general awareness about the central role intangible resources play within a highly competitive and technological sector.
4.3.3 How the Process Works in Practice

Our pilot project concerns the implementation of the proposed model to the specific challenges that the company planned for 2013 in line with Sustainability management, namely: *Life Cycle Assessment (Eco Design); Eco Recycling; Green Communication; Age Diversity Management; Green Procurement and Charity & Welfare.* In the following, we will concentrate only on the first of the aforementioned initiatives: *Life Cycle Assessment (Eco Design) - LCA.*

The aim of LCA is to carry out a feasibility study (concerning methods, timing and costs) on the implementation of an environmental impact assessment with respect to the company whole-life production process - Identification of a case study and project development.

As this project is ongoing, the following analysis concerns only the IC Measurement activity. The Intellectual Capital Measurement model implies the identification and use of a tailor-made measurement system. The performance indicators used in order to monitor the Life Cycle Assessment (Eco Design) initiative can be categorized as follows:

- **effectiveness indicators** (to monitor if the organization reached the planned goals);
- **efficiency indicators** (to monitor related costs);
- **indicators to measure the impact of Life Cycle Assessment (Eco Design) initiative on the company's IC**;
- **indicators to measure financial performance.**
Table 1 – Indicators for Life Cycle Assessment (Eco Design) initiative

<table>
<thead>
<tr>
<th>EFFECTIVENESS AND EFFICIENCY INDICATORS OF THE INITIATIVE</th>
<th>EFFECTS ON FINANCIAL PERFORMANCE (SHORT AND MEDIUM/LONG TERM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFFECTIVENESS</td>
<td>REVENUE GROWTH</td>
</tr>
<tr>
<td>Indicators with respect to the fixed goals</td>
<td>• Increased revenues (greater value in use for customers) in the medium/long term</td>
</tr>
<tr>
<td>EFFICIENCY</td>
<td>• Capitalization of patent and environmental certifications (ad hoc evaluation)</td>
</tr>
<tr>
<td>Incurred vs estimated costs</td>
<td>• Reduction of volumes, packaging, transport and energy costs (€ or %) in the medium/long term</td>
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<table>
<thead>
<tr>
<th>IMPACT ON INTELLECTUAL CAPITAL</th>
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<tbody>
<tr>
<td>STRUCTURAL CAPITAL</td>
</tr>
<tr>
<td>PRODUCT INNOVATION</td>
</tr>
<tr>
<td>• R&amp;D costs (*)</td>
</tr>
<tr>
<td>• collaboration with external partners in the R&amp;D field (n. *, and €)</td>
</tr>
<tr>
<td>• new products / “green” components to be included in the database of the company (n. <em>, and % of costs and revenues) (</em>)</td>
</tr>
<tr>
<td>HUMAN CAPITAL</td>
</tr>
<tr>
<td>COMPETENCE</td>
</tr>
<tr>
<td>On-the-job-training (n. of hours)</td>
</tr>
<tr>
<td>SKILLS</td>
</tr>
<tr>
<td>Number of employees who acquired specific skills (e.g. use of specific tools, knowledge of regulatory requirements)</td>
</tr>
<tr>
<td>RELATIONAL CAPITAL</td>
</tr>
<tr>
<td>SUPPLIER RELATIONSHIP</td>
</tr>
<tr>
<td>Number of suppliers that meet “green” requirements *</td>
</tr>
<tr>
<td>Required standards for suppliers (e.g. audit)</td>
</tr>
<tr>
<td>Training initiatives addressed to suppliers (N. * and €)</td>
</tr>
<tr>
<td>CORPORATE BEHAVIOUR</td>
</tr>
<tr>
<td>Number of employees involved in the project</td>
</tr>
<tr>
<td>RELATIONS WITH THE SCIENTIFIC COMMUNITY</td>
</tr>
<tr>
<td>Number of collaborations and economic value of collaborations</td>
</tr>
</tbody>
</table>

(*) Key performance indicators relevant for the Dow Jones Sustainability Index (DJSI) questionnaire
Indicators will be defined by personnel in charge of specific initiatives with the support of experts on intangibles management control, whose task is to gather data for management reporting. Possible indicators - useful for Life Cycle Assessment (Eco Design) project - are listed in Table 1.

5. Discussion

5.1. Main Remarks

The opportunity to be involved in a research group allowed us to follow the process of choosing a useful IC approach/tool. As this project is ongoing, the following discussion considers only the first step of the diagnosis phase; discussion on the implementation of the pilot project will follow next year.

The IC perspective considers the Human, Structural and Relational capital as assets of the company and, therefore, examines how they can be best developed according to the managerial strategy. Sustainability responds to the expectations of the stakeholders by demonstrating ethical behaviour and respect for social values and issues and aims to develop and maintain a social justification for the company.

Consistently with Orth & Kohl (2012), we deem that more focus should be placed on the concept of how integrated thinking is embedded within an organization, rather than concentrating only on the content and the features of the company’s voluntary disclosure such as IC Statement, CSR Statement or, alternatively, an Integrated statement.

In our case study, Top Management awareness of the usefulness of integrating IC and corporate social responsibility perspectives into the company’s management system and communication process was only at the first stage.

In regard to proposition 1 - Working together as a research team in the attempt to implement an IC approach into the company’s management system could be useful for researchers and practitioners alike - the application of the model represented an organizational innovation that contributed to the company’s managerial system, while researchers had the opportunity to deeply investigate the matter.

To date, the main critical factor arising from the process is the accurate identification of the actors involved in the decision-making process: different actors can indeed influence the selecting process and its implementation. Therefore, we classified different players by taking into account the following perspectives:

1. the power they have in the choice of a suitable IC approach for the company (decision maker(s)) - i.e. the managers of the holding company/CEO/CFO/Board of Directors/etc. - and members of the IC research group - i.e. the company’s managers/consultants/academics;

2. whether they are the users or the providers of IC information.

The identification of the decision makers’ aims is the starting point of the research group agenda. This is a critical stage since the decision maker(s) could have several goals which can be achieved through different IC approaches/tools. Therefore, the research group
should first help the decision makers highlight their aims, and then map the information users and their needs. The critical aspect of the model selection is that decision makers are not involved in the building of a common set of meanings. As stressed in the introduction, we argue that social practices, including management and financial reporting, provide a set of meanings that is drawn on organisations.

5.2. Some Suggestions

In order to overcome this obstacle, some suggestions are proposed. Firstly, it is necessary that the research group plans intermediary outcomes destined to decision maker(s) so that understanding of the project is gradually achieved. Then, the decision makers’ feedback on intermediary outcomes can allow the research group to fine tune expectations. This trial and error process is time consuming but means that there is more likelihood of the process being endorsed and that IC management practices will be implemented within the firm. Furthermore, it is important to distinguish IC information users from providers. While the attention on the former is fundamental in order to analyze informative needs, attention on the latter is even more crucial because providers are involved in data gathering. Thus the research group should identify information owners and procedures to collect figures within the firm. From an organizational point of view, this implies a strong commitment from the company’s management (the CEO, in our case study), so that the information owners actively collaborate in providing information.

The critical aspect of the model application concerns the collection of information. The process mentioned above provides a comprehensive view of IC practices within the company, but to make it work the cooperation of all owners of the information is requested. Retrieving data involves identifying such individuals, which is not always easy in a big business reality; it also implies interfacing with the various parties to obtain all contributions. This is not straightforward since the model is still at the experimental stage and not yet widely accepted in the business management system.

To overcome these obstacles that might impede the implementation of IC management procedures within the firm, we suggest pilot projects are a good starting point: personnel involved in day-to-day activities has the possibility to deal with emerging problems and opportunities as soon as they arise. The chance that a new reporting system is effective relies also on its “value in use” as perceived by the “owners” of the information. Despite the critical aspects of the model, there are also many advantages. Thanks to the holistic view of the entire IC in the company, through the approach based on the monitoring of initiatives, it was possible to implement actions identified in the feedback to support the management of these projects, bridging the inefficiencies that would otherwise remain.

Finally, we think that, as researchers, our contribution to IC management in practice is to inform the IC research community on corporate best practices, highlighting both difficulties and opportunities. This can increase the firm’s visibility and consequently legitimize implementation within the firm.

As always, the observations and conclusions reached here are limited to this case and are based on the Authors’ interpretations of facts. Therefore care should be taken in generalizing any of the outlined findings.
The Authors’ future research will continue to monitor the way in which the company manages, measures and reports on its IC. This type of longitudinal research should continue to provide insights into managing, measuring and reporting IC over time.

References


