Building Sustainable Intellectual Capital: Insight from a Company Included in the Dow Jones Sustainability Index

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Purpose – This study concerns an international company leader in electronic and information technologies, which has developed an Intellectual Capital (IC) reporting system to manage sustainability projects and meet the stringent criteria required for inclusion in the Dow Jones Sustainability Index (DJSI).

Methodology – The study has been conducted in light of interventionist research. Data were gathered from in-depth interviews with managers, as well as from group discussions.

Findings – The research highlights that identifying, measuring and monitoring firm-specific intangibles functional to the creation of sustainability performance can be regarded as an effective way to support general management. Furthermore, the design and implementation of an IC reporting system to manage sustainability projects can also be deemed to have a positive impact on the assessment process companies are subject to for inclusion in the DJSI.

Practical Implications – This paper adds to the discourse on the third stage of IC research, based on a critical and performative analysis of IC practices in action. In doing so, it improves the relevance and usefulness of the IC concept for business organisations.

Keywords – Corporate Sustainability, Intellectual Capital, Dow Jones Sustainability Index, Integrated Management Control System.

Paper type – Extended Abstract.

1. *Introduction*

The construct of Intellectual Capital (IC)—defined by Stewart (1997) as knowledge, information, intellectual property and experience that can be exploited in order to generate wealth—offers a means to visualise, assess and measure the knowledge accumulated within the firm (also referred to as 'intangible resources' or 'intangible assets)' (Cuozzo *et al.*, 2017).

In contemporary research, however, IC should also encompass social and environmental knowledge to be managed for the purposes of meeting social requirements, improving business competitiveness and enhancing corporate performance (Dumay, 2016). Based on these remarks, our research addresses the design of a management control tool that aims to promote sustainability within a company by measuring and reporting strategic intangible resources embedded in organizational settings.

From a methodological point of view, the study was carried out in the light of interventionist research. More specifically, the focus of attention was on a leading Italian organisation in electronic and information technologies, whose holding company, listed on the FTSE MIB and also on the NYSE, was admitted for the first time to the Dow Jones Sustainability Indices (DJSI). Due to the competitive environment, over the last few years, the company's top management has shown an interest in enhancing the company's IC potential. To this end, an organizational unit—entirely devoted to promoting product innovation, managing patents and trademarks, strengthening staff competencies and enabling social and academic relationships—has been set up. The company's management also expressed an interest in adopting an IC measurement system, allowing the authors to collaborate in a project on the management of intangible resources.

Our research contributes to the literature in several ways. First, defining sustainable IC is an important stepping stone. In fact, a sustainable IC map is a means that allows a company's managers to identify the extent to which they accept social and environmental responsibility, by clearly showing how they accumulate and use knowledge for sustainable development.

Second, the effective integration of sustainability into strategic management is still an underexplored topic (Crutzen & Herzig, 2013). To date, only a few empirical studies have investigated how management control systems have been practically deployed to promote corporate sustainability (Perego & Hartmann, 2009; Henri & Journeault, 2010; Riccaboni & Leone, 2010).

Finally, this paper adds to the discourse on the third stage of IC research (Guthrie *et al*. 2012; Dumay & Garanina, 2013, Guthrie *et al*. 2018) by addressing how a high-tech company has successfully adopted an IC

perspective to manage specific initiatives in line with sustainable management; in so doing, the article highlights the relevance and usefulness of IC for business organisations.

2. *Methodology*

This study was conducted in the light of 'action research'. In action research, researchers collaborate with the business (commonly referred to as a host organisation), developing solutions and simultaneously elaborating theory (Dumay, 2010; Jönsson & Lukka, 2005). Action research traditionally «involves a collaborative change management or problem-solving relationship between researcher and client aimed at both solving a problem and generating new knowledge» (Coghlan & Brannick, 2010: 44). This approach to research studies the resolution of organisational/social challenges together with the people who have direct experience of the challenges themselves. This process involves observing processes and outcomes, analysing findings with the help of relevant literature.

The main benefit for the researcher is the ability to gain insights into the implementation of new management innovations within organisations. For practitioners, the benefit is to gain the assistance and knowledge of academics as a resource in the implementation process (Dumay, 2010). Therefore, action research contributes to both research and practice.

3. *A Sustainable Intellectual Capital Map*

According to the majority of the literature, IC is categorised into three sub-components, namely Human Capital, Structural Capital and Relational Capital (Saint Onge, 1996; Stewart, 1997; Sveiby, 1997; Roos *et al.*, 1997; Bontis, 1998).

As firms adopt different approaches for accumulating and utilising their knowledge, researchers agree that the quality and quantity of single IC components are 'firm-specific' factors (Edvinsson & Sullivan 1996; Bontis, 1998; Guthrie, 2001; Youndt *et al.*, 2004).

The first step in managing IC is the visualisation of those intangible resources existing in the business that must be reinforced or acquired to support the strategic objectives of the company (Roos, 1998; Mouritsen *et al.*, 2001; Marr *et al.*, 2004). Accordingly, we claim that, for companies competing in challenging and turbulent environments, where the call for

social and environmental responsibility is increasingly pressing, the IC map must be revised in light of the concerns mentioned above.

A few authors have included environmental and social concerns into the IC framework for managerial purposes (Parisi & Kai, 2008; Lopez *et al.*, 2001; Huang & Kung, 2011; Chang & Chen, 2012; Wasiluk 2013; Dameri & Ricciardi, 2016).

Lopez *et al.* (2011: 21) define sustainable IC as the sum of all knowledge that an organization is able to leverage in environmental management to gain competitive advantage. While Lopez *et al. focus* on how companies manage knowledge on environmental issues to gain competitive advantage, in our study, we propose to integrate it into the mainstream definition of IC (Stewart, 1997). Accordingly, we deem that IC can also include social and environmental knowledge, information, IC property and experience.

Therefore, we posit that the constructs of the three IC pillars (Bontis, 1999; Johnson, 1999) should be revised in order to include knowledge concerning social and environmental issues.

Human Capital should also include the employees' knowledge, skills, attitude and behaviour toward social and environmental issues. These elements can be leveraged with specialised training, personal development or job experience.

Structural Capital can be organisational and technological. The organisational side also refers to all policies, processes, procedures and routines implemented within the organisation to meet social and environmental standards required by laws, norms and standard setters, on a mandatory or voluntary base. The technological side should also encompass intangibles and accumulated knowledge related to the introduction and development of 'green' and 'recycling-oriented' production processes, eco design, greener plants and machinery, new ecological products, etc.

Accordingly, Relational Capital also deals with the company's knowledge and information exchanged with its supply chain with respect to social and environmental requirements. Furthermore, Relational Capital has to do with the company's links to the market and the environment (i.e., green or ecological brands, labels or certifications, the company's reputation within the communities in which it operates and the social relationships it entertains).

As environmental and social issues are becoming an important theme in strategic planning, we support the view that the IC map should also visualise, among others, the knowledge-based resources a company should acquire to create value over time.

4. *Discussion and concluding remarks*

In recent years, the commitment to corporate sustainability has been gaining momentum worldwide. Increasingly, stakeholders have become more vocal in their demands for greater transparency and accountability, and additional evidence is being requested of businesses on their sustainability. As a consequence, companies have started seeking effective ways to align sustainability and business strategies, to translate social and environmental performance into long-term shareholder value.

The assessment process companies are subject to for inclusion in sustainability indices is built on a wide array of financially relevant sustainability criteria concurrently covering the economic, environmental and social dimensions. Within this context, intangible resources and capabilities are broadly recognised as the most influential sources of value creation and competitive advantage. Therefore, it seems reasonable to posit that the evaluation of the firm's IC represents a promising starting point for the incorporation of social and environmental dimensions into the general management system.

Building on the seminal works of Surroca *et al.* (2010), Perrini *et al.* (2011) and Ling *et al.* (2015), we argue that intangibles can be regarded as the mediating variables between sustainability management and corporate financial performance. Accordingly, together with the company's professionals, we developed a management control tool that enhances sustainability performance by measuring and managing the firm's IC (such as skills and competencies, knowledge and innovation, values, legitimacy, trust and reputation). More specifically, we posit that accounting for CSR activities through firm-specific intangibles allows managers to be aware of which performance drivers can lead to improved financial and non-financial outcomes.

Commitment to sustainability is not only communicated externally to financial analysts but also internally (by progressively including sustainability principles in organisational culture).

Our management control approach is different from others (i.e., sustainability evaluation, sustainability balance scorecards) because it is grounded in intellectual accounting (Guthrie *et al.*, 2012). In other words, it addresses how social and environmental initiatives can contribute to increasing a company's IC stocks and, by means of these processes, how these might have a positive impact on corporate performance. In line with the IC-performative research stream (Mouritsen, 2006), we recognise that IC is a representation of knowledge-based resources, the transformative qualities that emerge in application. Thus, IC measurement is a 'convention' useful for managers

to gain awareness of the challenges ahead and the main knowledge-based resources to be mobilised. Based on these premises, in our management control model, the links between social/environmental initiatives and IC stock (and between IC stock and corporate performance) should not be intended as direct causal relationships, but rather as relationships whose influence emerges only in good practice (Mouritsen & Larsen, 2005).

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