DESIGN DIFFERENCES IN INTELLECTUAL CAPITAL MODELS FOR SMALL AND MEDIUM SIZED ENTERPRISES. EMPHASIZING THE ROLE OF RELATIONAL CAPITAL

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1. Introduction

The worldwide interest in intangible elements that characterizes today's company production and market competition, such as patents, software, organization systems, company image and brands, etc., began in the 1980's with the work of Sveiby and Riesling (1986), but it exploded throughout the 1990s, when many practitioners first (such as Stewart, 1991; Bontis, 1996 and Saint-Onge, 1996) and academic researchers then realized that non material resources[1] represent the key source of a company's competitive advantage and contribute to value creation and business performance[2]. Since then research on intangibles has grown rapidly in numerous fields, including economics, accounting, organization science and strategic management, and it has given birth to different research streams such as organizational learning, knowledge management and intellectual capital.

In particular, accounting researchers' attention to intangibles arose when it became evident that the difference between market and book value of many successful listed companies could not be explained only by financial speculation, but it was due to some 'invisible' assets that market investors were able to recognize and evaluate even if not accounted in the balance sheet (Sveiby, 1997). So, in the search for explaining and measuring the com-

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The author would like to thank the two anonymous reviewers for their valuable comments and the participants of the 2nd Workshop on Visualizing, Measuring and Managing Intangibles and Intellectual Capital, Maastricht, 25-27th October, 2006, where an earlier version of this paper has been presented.

[1] Here we use the term *resource* as a synonym of *asset*. However, it is important to note that some authors prefer the term asset to show intellectual capital not as a cost for an organization, but as a source of revenue generation.

[2] See Petty and Guthrie (2000) for a description of major milestones of practice and research about intangibles.

pany market value due to these hidden determinants, researchers ended to emphasize the role of knowledge-based resources as immaterial factors that can differentiate organizations and lead to superior economic performance. From a theoretical point of view, this means that researchers' explanation of a company success has gradually shifted from the ownership of material and financial resources to immaterial resources, while at the operational level this has produced a proliferation of models and tools - different from traditional balance sheet - devoted to measurement of a firm's invisible capital.

As large listed companies do also small and medium sized enterprises (SMEs) should invest in intangible resources on which the competitive advantage can be build. In today globalized world smaller firms can no more compete on costs but have to base their business strategy on innovation and knowledge in order to survive in the long term. For this reason with this paper we try to understand if Intellectual Capital models and tools developed in the literature can also help the small firm's entrepreneur and his organization learn how to visualize, measure, manage and report intangibles.

The paper begins by reviewing literature and conceptual framework relating to Intellectual Capital studies. Then it analyses benefits and obstacles associated to the introduction of a model devoted to visualize, measure, mange and report intangibles in SMEs. In order to understand if and how current IC models should be improved to be profitably used in this type of firms, the paper examines IC studies focused on SMEs and their needs and characteristics. Since small firms' characteristics seem to ask for a greater attention to knowledge deriving from relationships, the paper proposes some specific guidelines that have to be accounted for when building an IC model in smaller organizations.

2. The intellectual capital (IC) concept and its main components

After the work of Stewart (1991), the term intellectual capital (IC) has been used worldwide as synonym for intangible or knowledge resources to identify the system of various immaterial components that a company can leverage and convert into value[3]. But intangibles, even if named differently, have been investigated already from many previous decades.

Buttignon (1993) observes that in the Italian accounting literature Besta has qualified patents and trademarks as complementary elements of a firm's capital already in 1920. Moreover, the sum of immaterial conditions

[3] According to Bontis (2001) the term intellectual capital was firstly conceived by J.K.Galbraith in 1969, but its use in business studies to identify company immaterial assets appeared only in the 1990s.

such as location, frequent customers, tradition and image that contribute to a company's profit have been studied under the name of goodwill since the beginnings of this discipline (Onida, 1971).

What differentiates first accounting studies, compared to modern researchers' perspective on intangibles, is their major emphasis on those elements as patents, copyrights and start-up costs, that can be evaluated in monetary terms and legally owned or controlled by a firm (Quagli, 1995). While immaterial elements that are accumulated in the organization through its people and action -such as experience, competence, technical abilities, image and reputation- have been confined in the discourse of organizational issues (Onida, 1954). This has led to the consideration of entrepreneur's and employees' qualities as personal capitals (Zappa, 1956) and has excluded them from measurement attempts of those elements that constitute the firm's capital.

Moreover, first authors have mainly focused on measurement and evaluation of intangible elements in order to integrate the information provided by annual reports with a list of immaterial company's stocks (Guatri, 1989; Quagli, 1995), while unfortunately their studies could say nothing about how or from what intangible assets were created, accumulated, and used to produce value. So many researchers started to claim the need for a more accurate definition of intangibles, in order to really understand in which areas they do operate and how they contribute to the company's success (Rullani, 1992; Corno, 1996).

Only in more recent times researchers have began to analyse employees' competence and also company's internal and external relations as resources that constitute the capital of the firm (Corno, 1996). After the work of Itami (1987) and the rise of the *resource-based view of the firm* (Wernerfelt, 1984) it became evident that organizational conditions and firm's relationships with the external environment are critical elements that can favour or hinder a company's competitiveness. Thus, also Italian researchers have moved to an enlargement of the concept and the list of resources that contribute to the production process including all elements and circumstances that qualify the functioning of the firm (Airoldi, Brunetti, Coda, 1994; Marchi, 2003).

Since then, many studies and definitions about intangibles have flourished both at national and international level. However, in international management studies the conceptual framework of Thomas Stewart (1991, 1994, 1997) which classifies IC into human, structural and market capital still prevails. In fact, the three types of capital, though sometimes named differently, recur in all scientific studies[4].

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[4] Sveiby (1997, p. 8 ss.), for example, classifies intangible assets using three categories: employee competence, internal structure, and external structure, which actually correspond to Human Capital, Structural Capital and Market Capital.

• *Human Capital* can be defined as employees' knowledge or employees' competence and capabilities. It includes explicit knowledge, skills, experiences, innovativeness and people's ability to perform tasks and meet goals.

• *Structural* or *Organizational Capital* refers to the knowledge that has been institutionalized or acquired by the company. Instruments and infrastructures that allow knowledge to be captured and shared, such as documents, databases, drawings but also organizational routines and culture, procedures and policies, they all constitute the structural capital of a company.

• *Market* or *Relational Capital* indicates the knowledge embedded in firm's relations established with external subjects. This category includes heterogeneous elements such as business collaborations and alliances, distribution channels, value chains as well as brands, firm's image, reputation and - most importantly - customer relationships.

Each IC dimension represents a different type of knowledge-based resource that can contribute to a firm's competitiveness and development. In fact, most authors view any given intangible asset as an embodiment of some form of knowledge, whether it is employees' know-how and know-what, firm's technical and organizational expertise, or the knowledge that can be found in customer relationships. They focus on knowledge because they believe that this is the key factor that provides innovation, creates business opportunities, gives power in the marketplace, and ensures a company's long-term value. Some authors even explicitly equate intellectual capital with knowledge and tend to use these concepts interchangeably[5].

What differentiates these three dimensions of IC is the ownership of the knowledge (or, in other terms, the location where skills and expertise can be found)[6] and the process that developed it. Human capital includes individual knowledge owned by firm's employees that has been developed by single subjects through formal learning or by doing, while relational capital is based on knowledge held by external subjects (such as customers, suppliers, and partners), which is brought into the firm through informal employees interaction or formal communication channels. The only knowledge-based resources of this general category owned by the company are those that constitute its structural capital, as they are a product of employees' actions and ideas which remains embedded in organizational structures and processes inside the firm even when personnel leave.

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[5] In The Frame Project (2003) IC management is used as a synonym of knowledge management, and similarly Fontana and Caroli (2003, p. 52) use the term of "knowledge capital" as a synonym of intellectual capital.

[6] The principle of location is the most used among researchers perhaps because it has a pragmatic value. However, intangibles could be investigated also from other perspectives useful for identifying and classifying them, e.g. according to their purpose, the way intangibles are treated, the content, etc. (Diefenbach, 2006).

Researchers have differentiate the various dimensions or components of intellectual capital, in order to provide a clear map of company stocks of knowledge-based resources and to facilitate the management of groups of resources that constitute a company's intangible capital. Moreover, the reason for splitting IC into different capitals lies in the need to measure the influence of each one of these types of capital on the company's performance, which would be otherwise almost impossible to achieve using a holistic model (Joia, 2000). In fact, even conscious of the difficulty in providing objective estimates on the value created by each components, most authors agree that it would be much more difficult to measure the value effect of relationships between the components.

3. SMEs' standpoint toward intellectual capital visualization, measurement, management and reporting

3.1. Motives and obstacles toward the adoption of an IC model in SMEs

First attempts to visualize and measure intellectual capital's components for management and/or reporting goals have been developed in academia and by practitioners studying large international corporations (such as Skandia, Celemi, Rambøll and Dow Chemical) which rely heavily on knowledge workers who spend their time generating and converting knowledge into value for the firm and its shareholders (the so called 'knowledge organizations').

Nevertheless, this does not mean that other types of firms do not need continuous renewal through the introduction of innovative products and knowledge-based processes in order to survive in these turbulent times of continuous changes in technologies and customer preferences. Knowledge has become a relevant driver to business success in any kind of industry (Quagli, 1995) and also in the smaller organization intangibles can contribute to revenue generation by leading innovation, supporting competitiveness and increasing firm's efficiency[7]. Thus, small firms could benefit from the adoption of a model that systematically measures, manages and communicates the different types of IC they possess as well as larger organizations do.

Traditional motives given in support of the introduction of such a model

[7] Actually, the role of knowledge resources was first highlighted by Penrose (1973) studying small firms when she noticed that entrepreneurs' capabilities were determinant in influencing firm's strategic expansion. In other terms, the quality of the entrepreneur and his capability to activate and organize resources (both tangibles and intangibles) represent itself an immaterial resource that helps a firm to reach its goals (Bruni, Campedelli, 1993).

that systematically approaches non-material resources regard how it could (see Marr *et al.*, 2003):

- give a structured picture of knowledge available to a company;
- increase learning about intangibles;
- improve the strategy formulation;
- contribute to intangibles effective management;
- assist in diversification and expansion decisions;
- assess strategy execution;
- help in the definition of employees' compensation;
- improve communication to external stakeholders.

First of all, an IC model helps visualize the immaterial resources a company devotes to production process (*latu sensu*). In fact, an IC model represents an inventory of knowledge (competences, know how, abilities, methods, etc.) indicating who owns this knowledge and where it is stored. This is particularly helpful in large organization where knowledge is split and distributed across functions and departments, but it is important also in smaller firms since a knowledge inventory is a useful starting point for knowledge management initiative and an instrument to create internal visibility of the company's hidden intangible processes (The Frame Project, 2003).

Secondly, an IC model that measures intangibles can help small firms understand relationships between IC, competitive advantage, and profitability. Actually, as demonstrated by Huggins and Weir (2006), one of the most significant benefit of an IC model is its ability to promote learning of the different types and amounts of investments that drive the creation of stocks of immaterial resources and the ways in which stocks relate to value creation and performance.

For this reason, the introduction of an IC model helps identify the intangibles resources upon which the company can frame its strategy. The process of strategy definition does not consist just in identifying the competitive forces, opportunities and threats of the industry, but it also requires the identification of competences and resources that have to be developed/acquired and managed to successfully compete. This is especially important in small firms whose organization's behaviour is adaptive and short-term oriented because of their scarce influence over external environment (Marchini, vol. I, 1995). In fact, this type of firms are mainly preoccupied with seeking new market opportunities rather than improving their internal efficiency and effectiveness. On the contrary, an IC model can redirect an organization's attention to focus on intangible resources and also represent a driver toward a more long-term oriented strategy formulation[8].

[8] When competition is based on knowledge, long-term strategies become necessary because knowledge is a resource that usually requires time and investments to be accumulated and fully exploited (Itami, 1987).

At the same time, such a model can facilitate a better management of intangibles (immaterial resources do not produce value on their own but have to be effectively managed in order to be fully exploited) since it usually includes measures and indicators devoted to, evaluate and control the activities that have to be carried out to translate intangibles stocks into firm's competitiveness and financial performance.

In addition to this, an IC measurement model can aid the entrepreneur in decisions which bring firms and partners together and allow firms to share their knowledge. In fact, in diversification and expansion decisions an organization should be able to identify and measure its own IC as well as the IC of the potential partner or target company to effectively leverage intangible assets in alliances and acquisitions[9].

Other drivers for introducing an IC model have to do with the development of IC key performance indicators. IC indicators help entrepreneurs evaluate the execution of strategy because intangibles accumulation (e.g. employees' competences and attitudes) is related to the achievement of strategic goals such as customer satisfaction and financial performance. Moreover, indicators can be used as a basis for employees' compensation (usually in larger organizations) when the firm wants to drive personnel's behaviour toward customer satisfaction, suppliers' loyalty and other long-term objectives (on the contrary, purely financial measurement and evaluation encourage short-term thinking). This creates consciousness among employees that IC does matter and builds consensus on company's strategic objectives and priorities, influencing their behaviour toward intangibles accumulation and exploitation.

Lastly, an IC model can provide structured information to improve external reporting. Indicators or other measures inform firm's stakeholders about organization's ability to create future value in the capital and labour markets, completing its traditional financial disclosure.

Among the above mentioned motives, internally driven reasons to measure intangibles, which focus on the ability to develop and manage a business from an internal perspective, can be considered as the most important in SMEs, while external reporting is probably the least striking reason for a small firm to adopt an IC measurement tool. Firstly we have to consider that SMEs are usually reluctant to disclose any kind of information related to company's resources and performance and publish financial accounts only to meet the requirements of company and tax law. In fact, they see external reporting more as a cost (involving administrative and opportunity costs)

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[9] Edvinsson (1997) proposes his Intellectual Capital Index as an instrument to evaluate compatibility among firms in case of mergers and acquisitions, while Gupta and Roos (2001) use a case study approach to demonstrate how intellectual capital measurement can aid an organization's acquisition strategy.

rather than a benefit (Paoloni and Demartini, 1998). Secondly, SMEs do not bear the same external pressure as larger companies do toward voluntary IC reporting which is usually nurtured by investment funds, rating agencies, and international standard setting bodies (Burgman and Roos, 2007)[10].

However, when focusing on SMEs, we have to consider that this type of firms probably face additional obstacles that can hinder the introduction of an IC model. In fact, even if they adopt a knowledge-based strategy, SMEs are not so prone as larger firms to implement a specific IC measurement model because of:

- small firms' underestimation of the role of intangible resources which are not perceived as relevant as other resources to company success (see Huggings and Weir, 2006);

- fear of giving away a firm's competitive advantage as IC maps, processes and indicators describe the company's ability to create value and the value proposition itself (from an entrepreneur's point of view it is dangerous to disclose what causes different efficiencies among companies);

- SMEs' lack of time and financial resources necessary to create an IC model. Launching and setting up an IC model for management and/or reporting purpose is quite a demanding task since it needs years to be developed, it has to be tailored to the specific business model and it needs both entrepreneur's and personnel's involvement in the building process to be effective (Nordika Project, 2001). Moreover it usually requires a dedicated knowledge officer or an employee dealing exclusively with issues of knowledge and also the creation of databases, manuals or other knowledge repositories;

- SMEs' difficulties in running an IC model and, in particular, in measuring and interpreting the numerous IC indicators suggested by the literature (the famous Skandia model recommends more than 100 indices) because they cannot usually afford the cost of maintaining a complex information system[11] nor can rely on experts capable to interpret and adjust[12] casual relationships between IC indicators and firm's economic performance.

While the first two obstacles seem to be related to entrepreneurial and organizational culture, the last ones depend mainly on the design of the IC model - what it measures and how complex the system is.

This means that first problems could be probably overcome through

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[10] Guthrie *et al.* (2006) have demonstrated that company size, even among listed companies, is negative related to IC disclosure.

[11] In general, complex and formalized information systems, besides being too expensive, are not suitable for SMEs since they tend to be too much bureaucratic for small firms that base their competition on strategic and organizational flexibility (Marchini, vol. I, 1995).

[12] Since an effective IC model should be tailored according to the company's business model and its business environment, IC indicators and relationships should be adjusted each time the company changes its strategies or there are new competition rules in the industry.

learning and educating entrepreneurs in this area. In particular it is fundamental to let entrepreneurs understand benefits associated with the adoption of a model for measuring intangibles, their value creation potential and how they are used. Then, it is important to explain that, as demonstrated by researchers, intangibles measurement and consequent reporting has no real risks since knowledge-based resources have many inherent characteristics that prevent imitation, such as their tacit nature, a strong linkage to the company (knowledge resources are often specific), and the fact that they have been accumulated over years through contingent previously developed activities (Itami, 1987; Vicari, 1989).

On the contrary, objective problems can be solved modifying the characteristics of existing IC models which usually consider all types of firms as equal. Without necessarily creating new tools for IC visualization and measurement in SMEs, such obstacles can be solved through verifying how existing IC models can be easily adapted to SMEs' needs of simplification without losing their informative value (measurement should be mean fully for management goals).

Assuming that also small firms' entrepreneurs are or will be soon aware of the importance of the process of IC management for the future of their companies, we now try to understand if existing IC models that have been developed in the literature can be helpful for smaller firms too. As a consequence, in this paper we analyse and try to match studies that belong to two different research fields: intangibles and small business, in order to explore and compare the characteristics of IC models and tools proposed in the international literature with small enterprises specifics and needs. The aim is to overcome the general approach adopted in most studies on intangibles without tending to a predetermined model but trying to discern different possibilities of IC visualization and measurement in small firms according to a positive approach (Ferraris Franceschi, 1978).

3.2. Suitability of current IC models to SMEs' specifics and needs

There is a plethora of models and tools proposed by international practitioners and academic researchers to supplement traditional double-entry accounting methods in exploring intangibles. They can differ from each other for assumptions (about what is knowledge and how it works) on which the model is based, IC components examined, goals, measured objects, characteristics of IC indicators and measurement (calculation) methods.

Without aiming to be exhaustive, it is possible to present IC models classifying them according to three main criteria.

Consistent with the stage of advance, there are models that:

- provide an overview or a configuration scheme of intangibles;
- concentrate on the measurement of intangibles.

Since intangibles must be first identified and understood, before being measured, some research efforts have focused primarily on how to visualize immaterial resources (the *Skandia Value Scheme* proposed by Edvinsson in 1993 or Stewart's *Radar* are example of IC schemes useful for raising consciousness about IC and its dimensions[13]). However, the majority of IC models is concerned about intangibles measurement - which automatically implies intangibles identification - and offer different tools and techniques to quantify company's intangibles.

Also the purpose of the model is relevant. Many characteristics (as categories of objects measured, type of indicators and measurement method) change if the measurement model is designed to[14]:

- disclose firm's invisible capital to external stakeholders;
- manage intangibles.

In the first case models tend to represent and measure IC as separated categories or stocks of resources of an invisible balance sheet (Sveiby, 1997), while IC management models are more concerned about understanding how processes and activities nurture the accumulation of knowledge resources (e.g. Meritum, 2001) and try to measure both resource inputs, activities and outputs.

Another important distinction is between:

- financial models, which estimate in monetary term the value of IC at a point in time;
- non financial models, in which prevail qualitative indicators of IC stocks and flows.

Belong to the first group the *Market-to-book-ratio*, the *Return on Asset* (ROA), *Lev's Residual Income Model*, the *Economic Value Added* (EVA), and *Tobin's q* model, to name a few. These models can be classified according to the method of calculation (i.e. the cost of IC replacement or market value or cash flow/earnings producing capability of the asset) and according to the aggregation level of information provided (a single corporate IC value-index or the value of different IC components)[15]. Unfortunately, the majority of them measure IC contribution to a company's value without explaining

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[13] In the case of Scandinavian firm Skandia, Edvinsson has then explored intangibles measurement with two other tools: the Navigator and the Intellectual Capital Index (Edvinsson, 1997).

[14] Characteristics change according to the goal attributed to IC measurement model: evaluation for external reporting or for internal management of immaterial resources. In fact, in order to be meaningful and effective, objects as well as IC indicators should be designed on the basis of the different type of users (e.g. external stakeholders or managers) and their information needs. However, many authors have proposed IC measurement models which are supposed to be useful for both internal and external users, as the Meritum Guidelines published in 2001 and the Skandia Navigator developed by Edvinsson in 1997.

[15] Belong to this group also most evaluation methods proposed by Italian researchers to measure single intangibles elements. See for example Bugger (1989) and Guatri (1989).

the processes by which intangibles create value (Sudarsanam *et al*., 2006)[16].

Among non financial models, we can cite the Sveiby's Intangible Asset Monitor (IAM) and the Balanced Scorecard (BSC) of Kaplan and Norton (1992). Compared to financial models, they tend to be more process orientated and qualitative because, while the firsts are designed to help analysts or investors in calculating the financial value of a firm, non financial models are aimed at gaining insights that can help managers better run their organization. For this reason they are more concerned with understanding the value creation process. This does not exclude measurement. They also display some financial figures, but the principal metrics is qualitative and quantitative in nature: i.e. inputs and outputs of knowledge processes are measured in terms of number of patents, education level of employees, increase in company's reputation and turnover, etc.

Most of these models have been developed on the basis of the experience of large organizations and usually serve only one organization: the one it was designed for or that designed it (Bontis, 2001). As emerges from Brennan and Connel's (2000) IC literature review smaller firms are almost totally ignored. Exceptions are represented by some research projects sponsored by public institutions - such as those undertaken by the Danish government, NORDIKA, FRAME, and the Meritum project - which have included few examples of small firms (usually consultancy) among company samples under investigation[17].

The situation has remained unchanged also in recent years. From a personal review of all articles published in the Journal of Intellectual Capital from 2000 to the first volume of 2007, we have found only two contributions clearly devoted to the analysis of SMEs' intellectual capital: a case study regarding a family-owned small firm that used the ISO 9000 quality management system standard as a mapping tool for intellectual capital analysis (Heng, 2001)[18] and a review of IC reporting practices among Nordic SMEs operating in the IT industry (Claessen, 2005). In addition to them we can cite another research paper specific on SMEs which has been conducted by the Intellectual Assets Centre of Scotland (Huggings, Weir, 2006).

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[16] In other words, we can say that they are static in nature. There are also additional drawbacks to these models. First of all, market-based models are applicable only to listed companies. Secondly, since cash-flow calculations are based on the comparison of the earnings and costs that intangible creation and utilization involve, these models are incoherent with the view of knowledge as an asset instead of a cost.

[17] However small firms are never targeted as the main audience. For details see: Agency for Trade and Industry (1999), Nordika project (2001), Meritum (2001), The Frame Project Nordic Industrial Fund (2003) and www.vtu.dk

[18] The ISO 9000 standard can be considered just as a starting point to facilitate the visualization of IC, since it has many limitations when used as IC model. Most importantly, it does not capture employees relations, nor the knowledge related to markets and customer base.

However, some useful insights can be drawn from these few studies as well.

In particular, they all confirm the inappropriateness of 'standard' IC models for small and medium sized enterprises because of their complexity and the huge amount of financial and human resources required. In short, SMEs find simple IC models more helpful. Moreover, it emerges that a significant external help, also in terms of institutional financial support, is necessary to convince small firms to participate, since they would otherwise not have the resources to start on their own (Claessen, 2005)[19].

Secondly, these studies demonstrate that small firms have a greater interest in visualizing and understanding how to leverage their immaterial resources to create value than in calculating and disclosing the value of company's knowledge in financial terms[20]. Small firms do not ask for an external reporting instrument which demonstrates the actual stock of knowledge that exists in an organization at a particular point in time but they rather need a managerial measurement tool that helps them visualize, accumulate and exploit immaterial resources[21]. For this reason financial models that offer a static view of knowledge-based resources, without questioning if and how the firm manages these resources to enhance competitive advantage, are less appreciated[22]. For example, a much more useful instrument for SMEs is the activity-based IC model developed by Bygåds *et al.* (2004) on the basis of the experience of a small Norwegian consulting firm. This model conceptualises knowledge as something that one does (as activities and processes) and not as something that one has (as a repository), in order to allow firms to understand how intangible resources are mobilised into practical everyday organizational activities.

Thirdly, many intangible asset models can be criticized because they tend to focus more on human and organizational capital (Hurwitz *et al*., 2003)[23] often ignoring that intangibles also include business agents and social periphery which heavily contribute to small business knowledge de-

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[19] Huggings and Weir (2006) ask for a tailored approach devoted to the enlargement of innovative capacities of SMEs because the majority of these important economic units - besides having few resource to develop an IC model - have usually never heard about IC

[20] Johanson *et al*., (2001) found that even when a small firm adopts an IC model the precise calculation of company's IC financial value is not considered an important issue, because the entrepreneur regards the IC report more as a device to communicate his appreciation of intangibles to employees and to guide their behaviour.

[21] Using Andriessen's (2004), we can say that we are more concerned with the "what" question about intellectual capital trying to define and classify intellectual capital in terms of its central dimensions because a categorization is fundamental to improve internal awareness and management.

[22] This characteristics primarily concern pioneering IC models such as Skandia Value Scheme and IAM, which are focused more on understanding and measuring IC stocks and their trend rather than actions contributing to knowledge development since their aim is limited to disclosing firm's intangible stocks to external stakeholders (Chiucchi, 2004).

velopment (Green, Ryan, 2005). In the case of small firms, innovation is not the result of an internal research lab experiment. Moreover the founder's and employees' knowledge are valuable mainly at the earliest stages of the firm, while they are usually not enough to sustain a long-term progress and to produce radical innovations. Many product and process developments derive from external actors and co-evolution with other businesses (Huggings, Weir, 2006). Business relations, especially those with expert companies that provide services to other companies, such as IT services and financial or management consultancies, have been found to be common vehicles for the diffusion of innovations from larger firms to SMEs in many countries (Organization for Economic Co-operation and Development, 1999) and a facilitator of new knowledge creation (Smedlund, Toivonen, 2007).

To summarize we can state that an IC model for SMEs should be simple, measure intangibles with the aim to improve their management and adequately monitor knowledge accumulation related to external actors.

4. Emphasis on SME's relational capital

4.1. SMEs' reliance on external relationships for knowledge accumulation

Among the above mentioned characteristics that have to be accounted for when building an IC for SMEs, particular emphasis is given to monitoring the relational dimension that IC literature has failed to deeply explore (see par. 4.2.) while it seems that relationships are the most important vehicle through which SMEs can efficiently and effectively source new ideas, knowledge, and additional abilities necessary to innovate and compete in this turbulent era.

On one hand, small firms have difficulties attracting human capital (Aldrich and Auster, 1986). Experts, managers and professional employees usually prefer to work in larger companies where they can benefit from adequate remuneration, career improvements, and training programs (Brunetti and Corbetta, 1996). In addition to this, small firms do not look appealing because of traditional entrepreneurial practices of concentrating all

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[23] Human Resource Accounting models (HRA) as well as the Value Added Intellectual Coefficient (VAIC) developed by Ante Public are examples of control tools designed to monitor and measure the intellectual capital performance of the firm, which unfortunately consider only human capital. Also the well known Balanced Scorecard carries some limitations in this area, since it mainly considers knowledge and innovation to be the result of internal R&D activities that must be kept secret from external actors and ignores a company's embeddedness in a network of suppliers, local communities, alliance partners, unions, etc. that supports the exchange of innovative ideas and knowledge (Voelpel *et al.*, 2006). Only in recent times Kaplan and Norton (2006) have stressed the possibility of incorporating additional or different perspectives in their BSC, including external relationships.

decision-making at the top and controlling employees work directly, while creative and innovative people are usually intolerant of authority[24]. Lastly, human capital injection through mergers or acquisitions can be considered very rare among smaller firms whose proprietors prefer to keep the organization small and renounce additional revenues rather than loosing or delegating their control as the organisation grows (Marchini, vol. I, 1995).

On the other hand, small firms lack structural capital. Small firms do not usually have infrastructures that allow knowledge to be stored and shared either because of entrepreneurs tendency to manage the company without any written manual or document related to equipment, day-to-day operations, and strategies, or because of the cost of creating and maintaining databases, patents, and administrative systems. Moreover, organizational routines and informal instruments which help knowledge transfer cannot produce significant innovations, since the leverage effect of knowledge internal sharing[25] is limited by the small number of employees and firm's activities[26].

This means that most of the future small firms' competitive capabilities are embedded in the organization's ability to capture external knowledge (Cohen and Levinthal, 1990). As suggested by several studies, in today's competitive arena, characterized by high rapid changes in customer needs, production and organization techniques, no firm -small as well as large ones- will have enough time to develop autonomously the different skills and abilities that the market requires each time (Cavalieri, 2000; Ferrero, 2001). Thus, especially SMEs need to establish relationships with external parties, including customers, suppliers, commercial advisors, competitors, service organizations[27], knowledge institutes, and government agencies, who may be sources of inspiration and/or may contribute to the implementation of innovations (Julien *et al*., 2002; de Jong1 and Hulsink, 2005)[28].

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[24] Sveiby (1997) points out that also large firms could find problems in hiring professionals because this type of people do not like working in highly structured and bureaucratic companies.

[25] Different from traditional resources that depreciate with use and exchange, knowledge produces new knowledge and increasing returns the more it is exchanged with another party and it is articulated in different activities (Nahapiet and Ghoshal, 1998).

[26] This means that the implementation phases described by Edvinsson (2000) with regard to Skandia's experience of maximising the IC growth curve are not applicable in small organizations. After the visualization of intangibles (phase one), small firms face difficulties both in adding human capital and in transforming human capital into structural capital (phases two and three).

[27] According to Ordanini (1999) the most important relations are those established with companies and organizations that provide services in R&D, marketing, strategic consultancy, and information and communication, because they actively contribute to the development and recombination of specific knowledge.

[28] Sveiby (1997) reminds that even when innovation seems to be internally developed it still has an external component because its formation is generated by customer requests or external pressures. For example, meeting with customers stimulates creativity because customers provide continuous training for employees, encouraging the development of new competences and energy needed to trigger innovation.

As such, alliances, partnerships, and other forms of interfirm relations represent an effective choice for gaining, leveraging, or developing new knowledge resources (Ciambotti, 1995; Morowery *et al.*, 1996) which is much more efficient than both the internal process of knowledge development (i.e. investments in R&D) and market transactions (Kogut and Zander, 1992). While a simple transaction can provide only a limited amount of information, such as the price of a product or the cost of credit, relationships are much more valuable because they allow firms to access additional information about expected product features, required level of quality, technical innovations, financial conditions, etc., which can be used to satisfy and retain firm's stakeholders. Moreover, relationships contribute to the profitability of the firm because knowledge acquisition from customers, suppliers or partners does not necessary entail a monetary payment when they are established under a logic of reciprocal learning (Morowery *et al.*, 1996; Lorenzoni and Lipparini, 1999).

Consequently, in this paper we decided to put a greater attention to one of the three IC dimensions: *Market or Relational Capital* when discussing if and how current IC models should be improved for application in SMEs.

This does not mean that we believe that the value from close customer relationships is more important than the value derived from individuals' knowledge and skills. In fact, as conceived by most IC authors (Stewart, 1997; Sveiby, 1997; Edvinsson, 1997), we argue that all three elements of IC are important and have to be nurtured in order to sustain firm's growth, leadership, and value creation. Innovation is not only about creating the conditions needed for new ideas to emerge, but it also requires the organizational support to transform those new ideas into marketable products that can satisfy customers' needs. Thus, there is a mutual reinforcement among human, relational, and structural capital and value is created through the continuous combination of these three different forms of capital. For example, a loyal customer base cannot last for decades if the firm does not innovate its products as other competitors do and, similarly, a small group of brilliant and innovative engineers will not be able to improve a firm's competitiveness if they do not interact with customers or if internal infrastructure hinders any kind of knowledge exchange[29].

4.2. Analysis and conceptualization of relational capital

From an analysis of the IC literature, it appears that most studies focus primarily on the human and structural dimensions of intangibles, paying

[29] A recent study of 90 Dutch firms (Copenhagen, 2000) has demonstrated that most successful firms (in terms of innovation) are those that combine investments in all three types of knowledge (Human Capital, Relational Capital, and Structural Capital).

only residual attention to the relational aspect.

This lack of interest in relational capital is probably rooted in the assumption of early IC models which derived all firm's intangible assets from the organization's personnel[30] and configured IC as the sum of human and structural capital (Sveiby *et al*., 1990; Edvinsson and Malone, 1997). In fact, many scholars have begun to analyse firms' knowledge-based assets from a human capital perspective[31] because knowledge is mainly embedded or developed by individuals, who convert information into new products, models, and processes and who contribute to the development of company's image and competences. In this sense managers' and employees' competences, skills, and expertise all represent the fundamental source of innovation and renewal (Edvinsson and Malone, 1997). On the contrary, relational capital was considered to be «unthinking capital» that supports the much more important human capital (Edvinsson and Malone, 1997) without which the cause for building relationships with other firms would not exist (O'Donnel *et al*., 2003).

Researchers demonstrated a great interest also to all elements of structural capital which embed human knowledge and allow firms to use and reuse this knowledge for value creation such as databases, information systems, manuals, procedures, organizational mechanisms and patents. In particular, scholars of accounting and professional standard setting bodies have concentrated their research and measurement efforts mainly on patents, software, licence, industrial formulas, design rights, and trademarks, because these elements represent intellectual material that has been formalized and captured and consequently the only type of knowledge that can be owned and traded by the firm and which is easier to identify, evaluate and list in the balance sheet).

These «mechanisms and structures of the organization» that allow human knowledge to be shared and leveraged by a firm's departments and functions (Bontis, 1998, p. 66) have also obtained the attention of many organizational researchers. Since researchers with this orientation believe that collective and informal knowledge (such as knowledge embedded in routines and procedures) is the most secure and strategically significant factor in creating organizational advantage and a firm's competitiveness (as theorized by Nelson and Winter's evolutionary theory of the firm in 1982), they have contributed to the emphasis on the tacit knowledge that

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[30] For example, according to Sveiby (1997, p. 29), «employee competence is not merely one of the tree intangible assets of an organization, it is the source of the organization's internal and external structures».

[31] Since Becker in 1964, economists have studied the concept of human capital for some decades. The analysis gained prominence first in microeconomics and later in macroeconomics, which brought about a definition of human capital as a major tool for enhancing economic development.

emerges from employees' interaction and is embedded in the internal social structure of the firm.

With regard to the third dimension, we can state that relational capital has been firstly and more deeply analysed in industrial economics and the field of relationship marketing, whose authors suggest that companies achieve higher profitability by building long-term relationships with their clients (Christopher *et al*., 1991; Webster, 1996). In fact, according to them, the longer a customer remains with his supplier thank to a stable relation, the more the profitable this customer become.

Influenced by relationship marketing studies, early contributions to the IC field that dealt with relational capital represented it as a resource that a company obtains primarily through interactions with its clients. In fact, the core components of this external resource are recognized in:

- a loyal customer base and
- the knowledge that a firm gains when it establishes a relationship with clients[32].

This happens because the more numerous, stable, and trust-based relations with clients are, the more a company can rely on stable profits from loyal customers and the higher the propensity of these external subjects to share their information and knowledge with the organization[33].

In particular, the valuable knowledge embedded in customers is considered the most important of the two components of relational capital, since it is the key factor that allows firms to survive in the long-term (Edvinsson, 1997), although customers' knowledge is the most difficult resource to acquire because it is usually not codified and it depends on subjects external to the organization. In fact, this knowledge is based on ideas, information, or expertise owned by customers (and other external relevant subjects) and is developed by the firm only after a deeper confrontation and interaction with external subjects and their needs.

Customers represent the central element of relational capital because IC

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[32] Brand names, trademarks, and the company's reputation or company's image are also included. Even if some of these elements can be considered structural capital because are protected by legal rights and can be traded by the firm, they depend on external subjects, who can contribute positively to (or downgrade) a company's reputation and trademark's value if relationships are (not) constantly nurtured (Sveiby, 1997, p. 11).

[33] Although usually considered together, these two core components reflect a different perception of the nature of relational capital. Researchers focused more on customer base, brands, and firm's image tend to regard IC as an output of the firm's value creation process. In other words, IC is something "tangible" that embeds an organization's knowledge, skills, and processes. Thus, relational capital has a value in itself. On the contrary, those who emphasize the knowledge component, view IC as an input that can contribute to the value creation process and, consequently, define relational capital as external knowledge that has the potential to create value in the future, but it has to be converted into something valuable such as a product or a service.

studies are still based on rules of industrial economy: businesses must create value for customers and shareholders for survival (Abeysekera, 2001). In fact focusing on customers and how to obtain better knowledge of their needs, preferences, attitudes, and behaviours can be easily translated into additional sales and higher prices. Relations with clients and distribution channels seem to be the most important because they can be associated with market share goals, revenues and profits. On the contrary, the knowledge derived from production agreements with suppliers, or acquired through other types of relations, is more difficult to correlate to a firm's earnings.

Some authors' preference for customer relationship analysis is demonstrated also by the terminology adopted. Most of them define the third IC dimension as customer capital (Edvinsson and Malone, 1997) which is only a specific element of the wider relational capital of a company. Moreover, those few researchers such as Steward (1997) and Sveiby (1997) who make an effort to enlarge this dimension, actually include only supplier relations in the form of alliances and partnerships, excluding other firm's stakeholders and usually do not go beyond a theoretical approach, providing very few examples and value indicators for supplier relationships.

Significant progress in the enlargement of the concept of relational capital has been provided later by Bontis (1996, 1998) and Roos *et al.* (1997). Bontis underlines that external capital also includes knowledge embedded in the government and related industry associations as well as suppliers, while, in their IC-index, Roos *et al.* emphasize the importance of all types of a company's relationships - adding alliances with partners and other stakeholder relationships to the former categories.

Also the Intellectus Model (CIC, 2003) and the 4-Lef Model[34] study this dimension in depth. They represents a great advance in the conceptualization of the external relationships category since they go beyond the analysis of customers and business partners who have direct financial transactions with a company (Martin de Castro *et al.*, 2004). In fact, they take into account the interrelations with all agents operating in the environment, including research centres, public institutions, non profit agencies, and communities, which constitute an additional fourth IC dimension sometimes named social capital or strategic alliance capital - recognizing the fact that networks are increasingly important business factors in the new economy.

[34] See Leliaer *et al.* (2003) for a description and application of the model.

5. A proposal for a different approach to intangibles visualization and measurement in SMEs

5.1. Integrating the study of relational capital with new perspectives of analysis

In order to describe appropriately the knowledge resources that small and medium sized firms can draw from relationships, we believe that a wider concept of relational capital and a multidisciplinary study approach should be adopted.

First of all, we think that the concept of relational capital should include all stakeholder relations, both inside and outside the industry, and not only those with customers and suppliers. This means that relationships with partners, distributors and competitors, as well as with universities, research institutes, trade associations and local institutions, all contribute to the survival and development of a company as these external subjects equally hold useful knowledge resources. In a similar way, even social activities established with the local community and relationships with informal parties like friends and relatives can be included in the set of intangibles that compose intellectual capital due to their ability to increase a firm's capacity to develop, share, and manage knowledge (Bueno *et al*., 2004). Actually, it is reasonably well established in the literature that SMEs operate through their relationships and their extended networks, relying on social capital, rather than market forms of power and governance (Birley, 1985; Larson, 1992), and even in today's computerized, interconnected, and global world, social networks do not seem to loose their importance[35].

Secondly, we believe that a revision of the concept of relational capital is necessary because of the entrepreneur's central role in small organizations. Since in small firms the entrepreneur and a few other key subjects (usually family members) are the principal, if not the only, points of contact with the market and considering that researchers have recognized a strong identification between the company and the owner-entrepreneur (Marchini, vol. I, 1995; Kets de Vries, 1996), it is highly probable that small firms' relational capital is based on or influenced by an entrepreneur's personal relationship network[36]. Many researchers have demonstrated that personal

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[35] According to Fukuyama (2001) and Porter (2000), social ties represent a resource as much more important as economic activities and business competition become more complex and globalized.

[36] Fuller and Lewis (2003) and Barbosa and Fuller (2005) have demonstrated that owner-managers conceive and construct the company's relationships with domestic-based customers and key contacts in foreign markets personally. Julien *et al.* (2002) sustain that SME networks are essentially an entrepreneur's personal networks which usually include relationships with relatives, friends, college fellows, and other entrepreneurs associated with the same sports club, guild, or industry confederation.

networks of owners-managers are central to the entrepreneurial process (Aldrich and Dubini, 1991; Aldrich and Zimmer, 1986; Dubini, 2000), because through these networks entrepreneurs can mobilize and combine material and non material resources that are otherwise unavailable or difficult to acquire (Salvato, 1999; Beretta Zanoni, 2005). This means that innovation and company competitive advantage also depend from entrepreneur's ability to build and nurture a network of relationships (Julien *et al*., 2002; Marti, 2006). Moreover, it has been demonstrated that a company founder's personal relationships influence the firm's internationalization in several ways (Madsen and Servais, 1997; Barbosa and Fuller, 2005). As well, the start-up phase of a business no longer depends solely on the entrepreneur's attitude toward risk, but it is also a function of his or her attitude and ability to obtain the support of potential resource suppliers and the approval of future clients (Walker *et al*., 1997; Parente, 2004)[37].

By way of summary, we propose:

- to analyse company relations with all possible stakeholders and of any type (even relations with informal parties that are non economic in nature);
- to observe entrepreneurs' personal relationships with external agents.

To reach our goal and enrich our comprehension of this IC component, we decided to have recourse to social capital theory and psychological studies which can help understand nature and origin of social and individual relationships, how to identify and classify these relations and how social and personal relationships relate to the process of knowledge accumulation and exploitation. In addition to this, it is important to note that social capital theory and psychological studies can also provide tailored instruments to measure social and personal relations, which are difficult to assessed with more traditional IC models.

About social capital theory, considered in both economic and sociological studies, we can mention that it was historically concerned with the examination of social relationships (relations built and collectively owned by a social unit that create a sense of confidence and mutual obligations among members) as a resource that aids the conduct of social affairs (Bourdieu, 1986; Coleman, 1988; Putnam, 1995), without specifically addressing the world of business. In particular, early usage of social capital explained how individuals exploit relationships based on social (family or community) ties and common values to obtain access to education and work (Coleman,

[37] The impact of social ties in entrepreneurship development has been explored especially in black and ethnic business studies (Butler and Kozmetsky, 2004). For example, authors as Basu (1998) and Werbner (1990) have noticed that 'soft' variables play a key role in many Asian small businesses and have included social networks in the so called 'munificence' of the environment (Specht, 1993; Castogiovanni, 1991), which represents the extent to which an environment can support a new business and allow it to grow.

1988). Later research explored different levels of supportive relationships based on reciprocal trust: from the level of the individual to the organizational level, across organizations, and at community level[38]. Lastly, attention has been devoted on the influence of social capital on firms' economic performance, until to the point of reviewing business networks and value chains according to social capital theory (Baker, 1990; Maskell, 2000).

When applied to IC research[39], social capital theory can facilitate the understanding of the overall pattern of connections between actors and explain the success of an organization (as social unit) to the actual and potential immaterial resources that are incorporated in or can be obtained through a network of relationships. In particular, social capital theory can help understand how small firms can mobilize intangible resources as information or solidarity solving their traditional problem of access to production factors and mitigating the imperfections of information in the market (social networks provide credibility and support that compensate risks normally associated with any business activity)[40].

With reference to psychological studies, it is interesting to note that they have been used mainly to predict the propensity for entrepreneurship from the analysis of personal traits such as locus of control, need of achievement, self-esteem, tolerance for ambiguity, risk propensity, etc (Marchini, vol. I, 1995).

Differently, in this analysis we consider psychological contributions because we believe that they can explain an entrepreneur's and his company's behaviour toward development and utilization of external relationships alongside considerations of economic rationality. In the IC literature, at the moment, the influence of an entrepreneur's characteristics on the formation of firm's relationships and their use to gather knowledge has been studied only in connection with SMEs' internationalization processes (Andersson, 2000) and start-ups (Greene *et al.*, 1997). However, we believe that these studies can provide a more extensive knowledge support in understanding:

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[38] Putnam (1995) analyses relationships at the societal level and theorizes a correlation between the degree of social capital in a region and its economic performance.

[39] First attempts to include social relationships in the IC discourse have been carried out by Sveiby (1997) who has considered social capital only at the individual level, as relationships created at work or in social life which improve the competence of a single person, Nahapiet and Ghoshal (1998) who have explored the application of the social capital concept at the firm's organizational level studying intra-firm relations, and by Pennings *et al.* (1998), Bontis (1998), McElroy (2002) and Bueno *et al.* (2004), who have considered potential clients and business network relations (inter-firms relations) as a form, or subset, of social capital

[40] For our purposes, it is important to note that research has demonstrated that social ties, by promoting collaboration and reducing transaction costs help firms: obtain information, knowledge and innovations from the market (Ingram and Roberts, 2000; Ahuja, 2000); reach market and business opportunities otherwise inaccessible (Mulholle, 1997) and improve consensus with surrounding organizations and obtain the support of public administration (Lazerson, 1995). However, for a complete list of all social capital functions see Swart (2006).

- how an entrepreneur's profile (attitudes, value and personal traits) influences the amount and type of relations established, since there are subtle subjective elements that can block or facilitate the formation of an entrepreneur's attitude toward relationship building (personal traits influence an entrepreneur's positive or negative perception of external environment and consequently his attitude toward relationship development)[41], the same elements that can explain entrepreneur's preference for social and informal relations rather than economic and formal agreements;
- the way an entrepreneur internalizes incoming information from personal relationships to build knowledge (according to the different meaning and interpretation that entrepreneurs attach to relationships, the information derived from relationships can constitute or not a source of further opportunities for generating knowledge[42]);
- an entrepreneur's propensity to transform his or her personal contacts and networks into an organizational shared asset (some could be more personally orientated than others and be aimed to improve their individual knowledge rather than the organization's knowledge)[43].

5.2. Guidelines for relational capital analysis in SMEs

Behind every IC model and its different contents, scope and form there is a specific conceptual framework on what intangibles are, can be classified and how they work to create value. In fact, the conceptual framework embodies the assumptions on which the design and implementation of the model are based.

As we find more appropriate to adopt a more extensive and entrepreneur-centric concept of the IC component that represents the relational dimension, it is consequential that also the model devoted to manage and report intangibles should be adjusted when dealing with SMEs.

Focusing solely on the relational dimension, we recommend three steps to follow in the design of an IC model in order to aid SMEs to become aware of and systematically leverage the value creation potential embed-

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[41] See Minguzzi and Passaro (2001); Mancino *et al.* (2005).

[42] An important problem with small firm entrepreneurs is that they can see relations with market transaction 'lenses', just as a mean for doing an additional sale (Varaldo *et al.,* 2006), while they should establish relations with the aim to capture additional knowledge useful to create or improve company's value.

[43] This last aspect is very important because if relational capital depends on one or few individuals, there is the risk of a significant loss of intangible assets in case of the entrepreneur's removal or death. For example, Fortezza (2006) observes that client's knowledge is usually relevant in small firms but it never becomes an organizational shared asset because small entrepreneurs keep their knowledge as tacit and personal. Thus, where formalization is rare and employees are devoted mainly to internal production processes, this could result in a shortfall of external relations.

ded in all type of relationships established with different stakeholders[44].

1. Define an extensive stakeholder map and describe relationships associated to each external agent, including social relationships and relationships 'owned' by the entrepreneur and his family at a personal level.

2. Push the entrepreneur to assert his vision, strategy and strategic objectives in order to identify those relationships that are more valuable than others in providing access to knowledge relevant for value creation and contributing to the achievement of firm's goals.

3. Chose indicators to measure both intangible resources and actions devoted to the development of intangible resources taking in to consideration time and efforts spent by entrepreneurs, founders, and family members in building, maintaining, and developing relationships with external agents.

The first fundamental step to carry out consists in visualizing the firm's relational capital. Visualization can be done through text, tables or maps which help understand and communicate to the organization the composition of existing relationships and how varied, complex and extensive available knowledge resources are. In this phase the adoption of a more comprehensive concept of relational capital and a multidisciplinary approach involves an extension of the scope of analysis. In fact, to really map all actual and potential knowledge resources, an effective IC model has to consider all SMEs' relationships even those which do not seem to have a direct contribution to revenue or profit maximization as social or friendly relations established by the entrepreneur at an individual level.

Moreover, the inclusion of social and personal relationships asks for different classifications of resources and activities that sustain knowledge development. For example, it is desirable to distinguish business relations from social relations. The first relations, which constitute the relational capital *strictu sensu*, are those established with 'close' stakeholders which shape the specific industry where the firm operates such as customers, suppliers, and allies, who usually have a direct and strong impact on firm's short-term results (either in positive or in a negative direction). The latter constitute the extended relational capital which also includes those relations established with the larger community, trade unions, public administration and similar that build up the general environment and are linked to the firm in a less direct way although they can strongly influence long-term firm's outcomes.

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[44] In the IC literature we can already find some attempts to identify and manage resources different from traditional customer relationships located in a firm's external environment. The most interesting are the Social Capital Benchmarking System (Viedma Marti, 2004) and the model proposed by Martin de Castro *et al.,* (2004). The first provides SME managers access to social capital management in a systematic and organized way, especially in cases where small firm belong to industrial districts, while the second is valuable especially for its practical suggestions on how to analyse the bulk of existing relationships.

Another useful type of classification is based on the structure of the relationships and the normative implications attached to the various structural configurations. Drawing from social capital theory, we can distinguish relationships characterized by strong and dense ties, frequent communication, and also emotional closeness between agents from relationships characterized by weaker ties and differences among members (Granovetter, 1973; Coleman, 1988). While strong ties have been demonstrated to produce higher societal returns on relational investments because associability and coordination are easier, weak ties are more difficult to manage because they involve more superficial contacts among parties. However weak ties enhance more creative action and foster the expansion of knowledge architectures. In other terms, it would be possible to visualize and monitor those relations (strong) that enable or implement entrepreneur's ability to innovate and provide any missing capital from the relations (weak) that expand the entrepreneur's knowledge and are potentially conductive to radical innovation (Ahuja, 2000).

By classifying relationships through which to obtain a different information, resource or ability, it is possible to assess the diversity of an entrepreneur's and a firm's network which is generally believed to be beneficial for the purposes of innovation as much as more diverse the network is.

However, saying that all type of relations must be mapped does not mean that value generated from relations should be taken for granted[45]. For example, a cooperative relationship with the local authorities cannot be assumed to be a value generator in every moment and every industry. Depending on the firm's strategy and on the predominant metrics of the industry, particular relations will turn out to be essential while other will be less relevant. This differentiation between one type of relation or network and another in terms that might ascribe different level of value is important since it helps firms focus on ensuring the health and strength of only most valuable networks (McElroy, 2002). As a consequence, when developing a IC model, a precise boundary must be drawn between relations that should be nurtured with specific actions and relations that should be just monitored.

For this reason the second step of the IC model building process represents the most important and critical phase. It concerns the detection of strategic objectives from entrepreneur's vision which is usually the outcome of an intuitive and unstructured process (Marchini, vol. II, 1995). Only after the identification of strategic goals it is possible to highlight the immaterial resources that are most relevant to the firm's survival (called

[45] Caddy (2001) warns that some IC resources may have negative value consequences creating the so called 'orphan knowledge' without utility for the firm's competition.

key or critical resources) and the activities affecting these resources that have to be carried out.

In this phase dealing with SMEs involves a more extensive use of the autobiographical method (instead of formal surveys or structured interviews) and other tools of analysis derived from psychological studies to capture relevant information for the IC model building process. Since entrepreneur's vision and firm's goals are usually kept undisclosed and not formalized in SMEs, the act of narrating entrepreneur's life history and company's stories better allows the recognition of strategic objectives and individual paths of the entrepreneur and other key company subjects toward knowledge accumulation. In other terms, narration represents the space for sense-making of entrepreneur's actions according to a continuous chain of causality. Moreover, the inclusion of entrepreneur's individual and social relationships (that can be built for personal goals or casually established)[46] can lead to detect unexpected sources of knowledge which is relevant to the achievement of firm's objectives. These are undirected relations that become visible in their contribution to value creation process alongside with directed relations that entrepreneurs establish with the specific aim of supporting firm's innovation process[47].

Lastly, the third phase regards how indicators should be constructed in order to help entrepreneurs keep track of these intangible resources and evaluate the effectiveness of activities that are assumed to increase intangibles. Even if this phase is the most context-specific as indicators have to reflect how the particular organization develops and uses knowledge to create value in order to be useful for management purposes, it is possible to provide some general guidelines. Firstly, in SMEs indicators should be few in number and easy to measure in order to keep the IC model as simple as possible. Secondly, it is important to remind that indicators should take into consideration also time and efforts spent at individual level by entrepreneurs and family members (which usually fall out from organizational costs and thus excluded from measurement) in building and maintaining relationships with external agents because of their central role.

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[46] An interesting example is represented by entrepreneur's participation to educational activities at Universities, such as a guest lecture, which could be an interesting opportunity both to get in contact with and attract the best talents available in the territory and to capture new information or knowledge at almost no cost.

[47] It is important to note that, compared to other guidelines (e.g. Meritum, 2001), we suggest to identify the critical intangibles only after the first phase of data-gathering. The rationale is that if the process of collecting information about intangibles is strictly limited from its beginning to what the entrepreneur believes useful to attain specific business goals, it would be almost impossible to detect relations with external agents that can provide unexpected advantages or resource useful to face changes in the competitive environment that make inadequate the current strategy.

6. Basic remarks and conclusion

After a revision of the mainstream IC literature, in this paper we have focused on two main salient aspects that characterize SMEs and have to be taken into account when building a model for intangibles management: their heavy reliance on business and social relationships for knowledge sourcing and the central role of the entrepreneurial figure.

This has brought to focus on the relational dimension of IC and to assume that the concept and analysis of relational capital should be broadened to include all external subjects with whom the company can establish a linkage. In fact, if innovation is about the combination of different sources of knowledge, it is important to consider additional external links with universities, research centres, the administrative and political system, trade associations, social groups, etc., because they could also contribute to the identification and development of new business areas and solutions. In addition to this, SMEs characteristics have conducted to assume that relational capital should be seen as a resource that strongly depends on entrepreneur's attitude and capability to build relationships with external subjects also at a personal level.

Coherently with these assumptions, we have suggested to adjust traditional IC models that have been mainly developed studying large corporations, providing some specific guidelines for SMEs that have to be tested with future esamination.

Following these guidelines we expect to find that entrepreneurs will become aware of all the different pools of knowledge that can be exploited to improver their competitiveness even those that belong to the personal sphere. Moreover, since they should be able to identify the critical relations on which the firm have to focus and invest in order to attain strategic goals, the IC model will help in making decisions about what actions firms must perform to maintain or develop the competitive advantage. Additionally we think that after the adoption of such a knowledge map, entrepreneurs will be more prone to institutionalize their personal relationships and convert tacit knowledge flows derived from social and personal relations into structural capital. This would be a very important step toward IC accumulation because only when external capital is embedded and transformed into structural capital companies can use this knowledge anywhere in the organization, even when certain firm's key subjects leave. Lastly, since the IC analysis begins with the entrepreneur and his relationships, we think that the issue of intellectual capital and related measurement efforts could be more easily introduced inside SMEs, where entrepreneur's involvement and commitment is fundamental to allow the system working.

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Riassunto

Lo studio presentato si propone di valutare le caratteristiche degli strumenti e tecniche di analisi del Capitale Intellettuale proposti dalla letteratura internazionale in relazione alle specificità delle piccole e medie imprese (PMI), allo scopo di comprendere se sia necessario costruire un modello di gestione delle risorse immateriali diverso da quelli esistenti per questa particolare tipologia di aziende.

A differenza dei precedenti studi, questo lavoro focalizza l'attenzione sul capitale relazione o capitale esterno (una delle tre dimensioni che costituiscono il modello di analisi del Capitale Intellettuale sviluppato da Stewart) poiché nell'attuale arena competitiva le relazioni contribuiscono in modo significativo alla sopravvivenza delle PMI, sia riducendo i costi di transazione che facilitando la condivisione e la creazione di conoscenza. In particolare, qui si propone un concetto più ampio di capitale relazionale che include, oltre alle relazioni con i clienti, anche quelle con fornitori, partner, concorrenti, distributori, dipendenti, associazioni di categoria, istituzioni locali e la più ampia comunità di riferimento. Inoltre, viene enfatizzato il ruolo centrale dell'imprenditore e della sua famiglia nel definire il capitale relazionale della piccola impresa, in virtù della forte influenza dell'imprenditore nel definire la struttura, la strategia e la rete di relazioni aziendali.

Abstract

The goal of this paper is to evaluate the characteristics of Intellectual Capital tools and techniques proposed by international literature in relation to the specifics of small and medium sized enterprises (SMEs), in order to understand if it is necessary to build a different model for intangibles management in this type of firms.

Compared to previous studies, this paper focuses on relational capital or external capital (which is one of intellectual capital's three main dimensions in Stewart's model of analysis) because it is a widely shared opinion that in the current competitive arena relationships sustain the survival of SMEs both reducing transaction costs and contributing to knowledge sharing and building. In particular, this paper proposes a more comprehensive concept of relational capital which includes relations with suppliers, partners, competitors, distributors, employees, trade associations, local institutions and the larger community besides traditional customer relationships. Moreover, it emphasizes the central role of the entrepreneur and his family in defining a small firm's relational capital because of the strong influence of the entrepreneur on the company's structure, strategy and network.