IDENTIFICATION, MEASUREMENT AND FINANCIAL VALUATION OF INTANGIBLES: DIFFICULT AND RELATED TASKS

The management and valuation of intangible resources—also called intangibles—is undoubtedly a major business preoccupation. This is particularly true for knowledge-based resources, also known as intellectual capital (IC) (Hussi, 2004; Kaufmann and Schneider, 2004).

A company’s intangible resources often account for a greater proportion of its overall total resources than its tangible assets do. However, the value of most intangibles does not appear on financial statements, largely because the lack of transparency and the absence of a benchmark market make it difficult to value them (Lev and Zarowin, 1998).

Some authors see no need for explicit reports on the value of a firm’s intellectual capital, arguing that the market already does this by valuing its securities. This view would be correct if stock markets were continuously efficient, but this has proven not to be the case. Furthermore, the market always values the set of a firm’s intangibles, which means the problem of valuing them individually persists. Moreover, stock market valuations are not applicable to unquoted SME, being comparable listed companies hard to find.

In the 1990s, demands from the corporate world prompted academic research to seek ways of reflecting the value of intangibles in financial statements (García-Ayuso, Monterrey and Pineda, 1997; Lev and Zarowin, 1998; Lev, Sarath and Sougiannis, 1999; Lev, 2001b; Cañibano et al., 2002). Unfortunately, the problem has largely resisted efforts to find a solution.

The lack of an explicit valuation of intangible assets may encourage information asymmetries and inefficiencies on stock markets. Experience shows that when the value of intangible assets is included in the market analysis, forecasts on the future business performance improve, which highlights their importance in making the market efficient, reducing information asymmetries and thus the adverse selection risk.

Apart from the advantages for financial market performance to be gained from fuller information about a firm’s intangibles, detailed knowledge of such intangibles inside the company is also very important:

• For managers, shareholders and employees to know the true value of their company.
• To encourage the preservation, regeneration and strengthening of the firm’s intangibles, and thus help to increase present and future corporate profits.
• To show the firm’s guarantees when seeking new financing, either through debt or equity. True information about the value of intangibles reduces information asymmetries, making it easier to access financial resources in better cost conditions.
To negotiate the company value in mergers or acquisitions.
Where applicable, to compare it with the stock value and check to what extent this is due to the real value of the company or to “market feeling”.

There are two general procedures for intangibles valuation: value measurement and financial valuation (Andriessen, 2004a).

Value measurement basically includes two tasks: one is identifying and placing the intangibles in a structured order, i.e. discovering the type of intangibles in the company, the ones that generate basic competencies, the relationships between them and so on. The other involves looking for indicators that facilitate the development of the most important intangibles and comparing the company situation with other benchmark organizations. As these indicators are mainly ratios, the measurement of intangibles is basically non-monetary. Brooking (1996), Edvinsson and Malone (1997) Scandia Navigator, Kaplan and Norton (1997) Balanced Scorecard, Roos et al. (1997), Sveiby (1997) Intangible Assets Monitor, Joia (2000), Viedma (2001) Intellectual Capital Benchmarking System, Bueno (2003) Intellectus Model, Bounfour (2003) IC-dVAL Approach, Jacobsen, et al (2005) IC RatingTM Model, Sveiby (2005) and Nazari & Herremans (2007) Extended VAIC Model, have all made interesting contributions on these issues.

Financial valuation seeks to establish a monetary valuation of intangibles. There are several ways of arriving at this valuation. Unfortunately, they all have advantages and drawbacks, which means the search for methods and models for the financial valuation of intangibles that are both true and simple is by no means an easy task. Tobin (1969), Caballer and Moya (1997), Stewart (1997), Khoury (1998), Rodov and Leliaert (2002), Lev (2001a), Lev (2001b), Gu and Lev (2001), Andriessen and Tissen (2000), Nevado and López (2002), Andriessen (2004b), Roos et al. (2005), Rodríguez-Castellanos and Araujo (2005), Milost (2005), Rodríguez-Castellanos et al. (2007), Bose and Thomas (2007) and García-Merino et al. (2008) have all made contributions to this subject.

In recent years, the options methodology, originally conceived to value options on financial assets (Black and Scholes, 1973; Merton, 1973), has also been used to value other types of assets, including investment projects and tangible assets, leading to what are known as Real Options Approach (Dixit and Pindyck, 1994; Kogut and Kulatilaka, 1997; Luehrman, 1998; Amram and Kulatilaka, 1999). Furthermore, the underlying characteristics of these options can also be applied to knowledge assets, thereby facilitating their valuation as options (Bose and Oh, 2003). In fact, some elements of intellectual capital have obvious option characteristics. This is the case of patents, intellectual property, R&D, IT, flexibility of industrial organization, human resources management, etc. Contributions on this issue are in Pakes (1986), Damodaran (2002), Kossovsky (2002), Mitchel and Hamilton (1988), Newton and Pearson (1994), Bodner and Rouse (2007), Benaroch (2002), Nembhard et al. (2005), Bhattacharya and Wright (2005) and Jacobs (2007).

To measure and financially value intangibles, first they have to be identified and listed. In most of the works on intangible referred to above, general models are used to identify intangibles in companies and organizations. While acknowledging the undeniable value and usefulness of such models, preparing a comprehensive list may be very difficult and ultimately unrewarding; differences in competitive capabilities would lead to differences in key intangibles from one company to another. Some important intangibles that enable the company to obtain competitive advantages should almost certainly not be individualised, being the result of a combination of a number of elements. The identification, measurement and financial valuation of intangibles must be considered related tasks. It is essential to try to establish a framework that benefits from the progress made in each one, by interrelating them.
As can be seen from the above statement, the literature on intangibles has grown steadily in recent years. However, developments have not been entirely satisfactory, and more work is needed on models and frameworks that take account of the interrelation between the identification, measurement and financial valuation of intangibles, as well as on methods that have practical utility in business management.

AIM AND STRUCTURE OF THE BOOK

The aim of this book is to highlight the importance of intangible resources in business management, and the need for a strategic analysis that enables them to be identified and then assessed, that is, measured and valued. This book also contributes to show the difficulties involved in the identification, measurement and financial valuation of intangibles and the possible solutions to them. These solutions come as developing new models and frameworks for managing and assessing a firm’s knowledge and other intangibles. This book contains 16 chapters, gathered under three section headings, corresponding to each of the three aspects previously exposed as the most relevant ones for the aim of this book: identification, measurement and financial valuation of intangibles. These three aspects are closely related between themselves; in fact, each of the chapters of this book makes contributions to more than one of the aspects or even to the three ones. The criterion used to include them in each of the section headings was to estimate the aspect in which they contribute in a more relevant way.

In Section 1, Identifying Intangibles, new perspectives for the identification and analysis of the business intangibles are exposed, also the identification of specific intangibles and the difficulties to identify them under particular conditions are studied in depth.

Section 2, Measuring Intangibles, contains, on the one hand, new approaches for intangibles measurement; and, on the other hand, the analysis of implementation experiences on intangibles measurement in specific companies under particular circumstances.

Section 3, Financial Valuation of Intangibles, includes critical analysis of the methods for the financial valuation of intangibles developed to the present time, as well as proposals of new approaches to overcome the detected limitations of the formers. This section also contains the analysis of a specific aspect of the financial valuation: the risk, an analysis of the motivations to carry out the valuation process, and a proposal of a generic method to select the specific methods for the measurement and valuation of intangibles depending on the particular circumstances of the companies.

Section 1 contains four chapters, as summarized below.

Chapter 1 presents a dynamic model of the organizational intellectual capital, based on a new concept of integrators. Among the most important integrators the author emphasizes leadership, management, processes and organizational culture. The new structure is based on knowledge, intelligence and values as independent basic building blocks.

Chapter 2 proposes a new framework, named knowledge flow audit, for identifying and managing the dynamics of IC trough the analysis of knowledge flows. In addition to the theoretical and conceptual contributions, this chapter introduces an empirical setting for testing the proposed framework.

Chapter 3 links the knowledge-based view with the intellectual capital view of a firm to underline the relevance of the relational capital in knowledge acquisition and transfer processes as well as its influence on the firm’s value creation. To accomplish this aim, the authors use a qualitative research approach based on a multiple case study and an in-depth analysis of six knowledge-intensive firms.
Chapter 4 poses the identification of critical intangibles under a specific circumstance: the company succession through an external takeover. The analysis relies on the hypothesis that a potential external successor will only be interested in those companies offering promising prospects in the form of valuable intangibles. The findings of interviews with eight external successors highlight those intangible assets that are regarded as critical in the external succession process.

In Section 2 there are six chapters, as summarized below.

Chapter 5 aims to provide the foundations of a new measurement system, grounded on the dynamic capabilities approach, to show whether a company has the right combination of resources (both tangible and intangible) in order to foster effective and efficient innovation, as well as the degree of mastery achieved in the combination and orchestration of those resources, the outputs obtained and their influence on value creation and on competitive advantage.

Chapter 6 proposes a paradigmatic shift in measurement of Intellectual Capital where the fundamental base is the relational–semiotic condition of human organizations. The author, through the process named NETOUT, seeks reducing incoherence through the participation in decisional modeling and transferring repulsion interactions to organization areas that re-signify the conflict. The resulting configurations are a Production Cognitive Capital and constitute a measurement of Intellectual Capital.

Chapter 7 seeks to contribute to a better understanding of the concept of knowledge productivity—defined as the process of knowledge-creation that leads to incremental and radical innovation—in order to support management in designing policies for its enhancement. The authors combine the two main elements of the concept in a conceptual framework—the knowledge productivity flywheel—that appear to be an effective model for supporting initiatives that aim for enhancing knowledge productivity.

Chapter 8 describes the process of how a results-based framework was applied to measure the knowledge-based assets value contribution to CRTI (a networked science and technology program to counter terrorism threats). The authors use a combination of qualitative, quantitative and anecdotal assessment techniques and employ a map to visualize the results evaluation. The authors also discuss the strengths and weaknesses of the approach and present specific examples from CRTI to illustrate how this method can be used by other organizations.

Chapter 9 provides a comparative analysis of the most significant European experiences in managing and reporting Intellectual Capital in higher education institutions addressing two main issues: the identification of the benefits and obstacles of implementing IC frameworks in these particular institutions and the reflect on the degree of standardization of indicators necessary to allow comparability.

Chapter 10 is centred in KM performance evaluation approaches. First, the authors review the literature on this subject and classify the main methods currently used. Then, the practical experience of a multinational company is discussed, with the purpose to describe the problems that practitioners face in their daily experience. Finally, insights into the possible improvements of KM performance measurement are provided.

In Section 3 there are six chapters, as summarized below.

Chapter 11 details a performance-based theoretical model of intangible assets valuation (E-BRAIN). Using systems engineering and organization memory (cognition) as the foundation for its structure, E-BRAIN identifies the path from intangible key performance indicators to performance measurement. The author claims that the model offers a set of metrics by which business leaders can account for intangible factors that affect value creation in the knowledge era.

Chapter 12 considers the strategic management of intellectual capital, balancing the need to develop knowledge assets against the need to protect them. The authors develop metrics for assessing the level
of intellectual capital, the degree of knowledge management necessary to compete in an industry and the threat from the competitive intelligence activity.

Chapter 13 offers a practical guide to the structure, taxonomy, measurement and use of intellectual capital (IC) in business. It traces the roots of IC and exposes and explains the remarkable lack of consensus that has been allowed to develop over the years and the methods used to try to measure it. Through a case study, the chapter introduces a practical means of measuring IC and modelling businesses predictively connecting soft issues such as human capital and relationship management with hard financial output. This chapter offers a number of areas for future research and case study.

Chapter 14 analyses the potential impact of financial risks on the valuation of intangibles from a theoretical and heuristic approach. The authors consider four types of financial risks for the analysis of three principal types of intangibles (resource, capacity and asset), six additional examples of intangibles and eleven categories of valuation methods. The authors claim that the results obtained are coherent with the literature as the common examples of intangibles valuation use the recommended methods according to the lower impact of financial risks.

Chapter 15 analyses the companies’ view about the financial valuation of intangibles relevance and its influence on business performance. The results show that the companies that are interested in the financial valuation of the intangibles, especially for internal motivation, perform better; however, this improvement is not statistically significant. Otherwise, the companies that are more interested in the valuation of their intangibles for external reasons need to provide information to stakeholders about their ability to generate income.

Chapter 16 proposes a model, referred to as a conceptual design, for a system to (i) provide management support to the process of selecting and customizing an appropriate method (or combination of methods) for assessment of intellectual capital, (ii) utilize past knowledge and expertise to accelerate and improve decision-making, (iii) promote synergism through integration of methods, and (iv) manage the evolving body of knowledge concerning the assessment of IC.

**FINAL REMARKS**

This book deals jointly with the three essential features in the literature on intangibles, i.e. identification, measurement and financial valuation, and their inter-relations. This enables readers to overcome the conceptual division in watertight compartments that current literature offers. It also publicizes the progress made in the three fields and the new valuation and management models and frameworks currently being proposed.

Up to the present time, current literature lacks any work that synthesizes the three approaches included in this proposal, i.e. the identification of intangibles with a strategic approach, the measurement of intangibles and, finally, the financial valuation of intangibles in an organization. To that end, we consider this book to be unique and a major contribution in this field.

The objective of the editors while compiling this book was to include the most advanced researches in each issue. But simultaneously, we also sought the book be applied, that is, to be useful for business management by proposing models that can be applied in firms and which take account of their needs and requirements. Beforehand, these two objectives appeared to be difficult to achieve. However, we do believe we have totally achieved our purpose for this study. The search for applicability in the methods and models proposed makes the book of enormous interest not only for researchers in the field, but also, and specially, for executives and practitioners.
Therefore, we consider this book to be of great utility for:

- Executives and practitioners interested in learning about the models and frameworks proposed for identifying intangibles, measuring and financially valuing them, and the advantages for management the models might provide.
- Academics seeking to exchange ideas about new challenges and perspectives in identifying, measuring and valuing intangibles and trying to innovate in their fields of research, by finding new management frameworks in the knowledge economy.
- MBA students who want to compare and analyze the old and new paradigms on identifying, measuring and valuing intangibles within companies.
- Doctoral students researching the identification, measurement and valuation of intangibles.

For all of them, we hope the reading of this book is a source of satisfaction, findings and stimulation to seek new models and methods that allow progress to be made on the task of intangibles management, which is the fundamental source of wealth in the knowledge economy. Improving the intangibles management will lead, as a last resort, to improve human welfare.

REFERENCES


