

Managing Knowledge Assets and Business Value Creation in Organizations

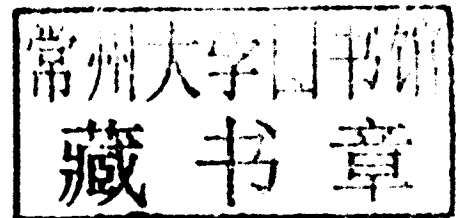
Measures and Dynamics



Managing Knowledge Assets and Business Value Creation in Organizations: Measures and Dynamics

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Preface

In today's fast changing and complex economy, the importance of traditional economic and production factors - considered the engine of a company's value creation mechanisms - is decreasing. Of course financial and tangible capital still represent fundamental economic and competitive factors, but they are not able alone to explain the success and value creation mechanisms of modern organizations. In today's economy two fundamental features of the business value creation need to be recognized. On the one hand there are organizations that have specialized themselves as creators of intangible value. These are the businesses that mainly operate in the service and creative industries, generating value from ideas and delivering services that respond to the new emergent customers' wants and needs. In addition, it is worth to notice that the importance of intangible value is not only related to the production of services, but increasingly the value of goods, i.e. tangible products, is tied to intangible dimensions that make the difference and qualify the products in terms of incorporated value added dimensions that are able to create experiences for consumers and more generally for stakeholders. On the other hand, the achievement of higher business performance depends on the organizational capacity to deploy and exploit knowledge-based resources. In fact the ability of an organization to transform inputs into outputs and generate positive outcomes in the economy is grounded in its owned and/or controlled capabilities. The generation of value and wealth depends by the level of performance that an organization is capable to achieve, that in turn are affected by how business processes are modeled and executed. Capabilities shape and influence the processes of an organization. Then recognizing that the knowledge assets are the building blocks of organizational capabilities it appears straightforward to understand why and how they matter for competitiveness. Therefore there is a fundamental link between managing knowledge assets and governing business value creation dynamics. In order to depict this relationship two metaphors are particularly powerful. On the one hand, the value of an organization can be interpreted through the metaphor of an iceberg. Only ten percent of an iceberg's mass can be seen rising to the sea's surface. The value of today's knowledge intensive organizations can be considered metaphorically as the iceberg's mass. Most of the value of an organization is tied to intangibles and knowledge assets that are basically 'invisible' since most of them are not accounted in the traditional balance sheets. This rises a first managerial challenge: How can we make the 'invisible' assets visible and accountable? How can we measure the knowledge assets so that the measurements are useful both for communicating the value of an organization and to support managers in managing organizational capabilities? On the other hand, the second metaphor describing the links between knowledge assets and company value creation is represented by a 'tree'. A tree in order to grow and produce fruits needs well developed roots that provide sap. Analogically knowledge assets can be considered the 'roots' of an organization. Their development affect organizational value creation capacity and business performance. This image allows to highlight

that knowledge assets are dynamic in nature and need to be managed in order to make sure that they drive the development of organizational capabilities. This stresses a further managerial challenge: How can we handle knowledge dynamics within organizations? How do we make sure knowledge dynamics contribute to business performance improvements?

The above managerial challenges represents critical issues to be addressed. To govern the value creation of today's business organizations managers need to assess the knowledge assets that build the value of an organization and affect its capacity to create value. The growth of new knowledge intensive businesses over the past few decades and the lack of success of those organizations which rely mainly on traditional assets in complying with new market rules show the importance of understanding the measurement and dynamics of knowledge assets (Barney, 1991; Grant, 1991; Rumelt, 1984; Wernerfelt, 1984). This book analyses these issues and provides theoretical and practical insights to help both scholars and practitioners to understand how to measure and manage knowledge assets so that they can support and drive organizational value creation dynamics.

CONCEPTUAL BACKGROUND

With the aim to provide conceptual and operative approaches to manage knowledge-based resources within organizations over the past few decades many research contributions have been developed. In particular at the beginning of the 90' the attention was paid on rising the awareness of the importance of knowledge as a strategic resource and source of competitive advantage (Barney, 1991; Grant, 1991; Prahalad & Hamel, 1990; Rumelt, 1984; Wernerfelt, 1984). Gathering insights from the organization theory on organizational learning the focus was mainly on clarifying what is knowledge and what are the knowledge-based management processes. The concept of knowledge was clearly distinguished from the information one stressing its cognitive and interpretative nature. On the line of these studies a working definition of knowledge can be provided as follows: "knowledge can be defined as an abstract concept that is consciously or unconsciously built by the interpretation of a set of information acquired through both experience and meditation on the experience itself, and that is able to give its owner a mental and/or physical ability in an 'art' " (Albino et al., 1999). This interpretation stresses that knowledge has three main characteristics: the structural, the process and the functional characteristic, that are tightly interconnected. From a structural standpoint, knowledge is made by information. However, knowledge is not a simple aggregate of information. Information can be seen as a structural set of data that are aggregated on the basis of a specific rule or algorithm, and as such an information is neutral, i.e. independent from the owner (individual or organization). While, knowledge is a set of information associated to a meaning by an individual or organizational interpretation process (Huber, 1991; Johnson-Laird, 1993; Kim, 1993; Kolb, 1984; Polanyi, 1962, 1966; Weick, 1979). This represents the process aspect of the knowledge. The interpretation process concerns new or existing information by which both individuals and organizations develop new knowledge (Daft and Weick, 1984). Therefore, analyzing the concept of knowledge it is necessary to separate the simple information from information associated to a meaning, that is the knowledge. Finally, from a functional point of view, all the knowledge owned by individuals or organizations defines their skills and competencies, and enable them to carry out tasks. The distinction between knowledge and information is useful not only for conceptual reasons, but it has fundamental practical implications as it stresses that managing information, for example through ICT, is not equal to managing knowledge which is basically a human-based activity. This has showed the importance of

knowledge workers (Drucker, 1999) as key actors in creating and managing knowledge for the execution of business processes as well as it has clarified the role of ICT as a supporting infrastructure to manage information in order to facilitate knowledge management processes.

Over the 90' the analysis of the interpretation of knowledge was also integrated by an in depth investigation of the forms and features that knowledge can acquire within an organization as well as of how the different knowledge characteristics can affect management and business processes. Many dichotomy classifications had been introduced, but probably the most important one distinguishes tacit from explicit knowledge (Nonaka, 1991, 1994) pointing out the importance for a learning organization of managing the processes grounding the generation, socialization, codification and diffusion of knowledge. Further, the analysis of the characteristics of knowledge was integrated by an investigation of the processes for its management, recognizing that organizational knowledge can be generated, transferred, shared, codified, stocked, mapped and combined (Marr and Schiuma, 2001).

Although the studies on knowledge and knowledge processes provided important managerial insights both for operational and strategic purposes, they were lacking in terms of practical tools for measuring knowledge resources. As a result of this limitation, starting from the mid 90' the concept of intellectual capital has been introduced in the management literature with the aim of identifying and classifying those intangible and knowledge resources that create value for an organization (e.g., Stewart, 1995; Edvinsson and Malone, 1997; Sveiby, 1997). This interpretation can be considered as an 'umbrella concept' because basically it attempts to synthesise into a more holistic and manageable construct the intangible and knowledge resources characterising the working mechanisms and the success factors of an organization as identified by the management literature (Carlucci and Schiuma, 2007). Basically the intellectual capital has been proposed as a conceptualisation that better answers to the managers' need to have an operative notion of company's cognitive and intangible resources. Initially it was proposed by practitioners with the aim to group and represent the overall intangible assets that are not included in the traditional balance sheets as well as to allow the assessment of the differences between the market value and book value of today's knowledge-intensive firms. Nowadays its use is quite spread. However, it is important to note that the use of the intellectual capital construct is characterised by some ambiguity. First, both in the literature and in practice concepts such as invisible assets (Itami, 1987), intangible assets (Hall, 1993; 1992), intangible elements (Carmeli and Tishler, 2004), knowledge assets (Spender and Grant, 1996; Teece, 1998), knowledge-based resources (Wiklund and Shepert, 2003) as well as social capital (Nahapiet and Ghoshal, 1998), human capital (Hitt et al., 2001), and so on, are sometime used as alternative and overlapping concepts. Second, although researchers and practitioners are using the same concept (i.e. intellectual capital), they have different views and interpretations due to the diverse background and experiences. In other words, it is missing a common platform for analysing intellectual capital.

The lack of clarity about the meaning of the different concepts and the way they are used is a major limitation both for theory and practice. In fact, in order to develop a theory and/or theoretical implications about the role and the relevance of intangible and knowledge assets, it is necessary to ground the studies on a clear understanding of the concept, which represents the fundamental unit and share of analysis. Particularly, the clarification of the intellectual capital concept is useful not only for theoretical reasons, but mostly because a better understanding of roots, components and nature of intellectual capital is at the basis of management actions. Managers perceive competitive context and define their actions also on the base of their mental models, schemes, beliefs and points of view about internal and external firm's success factors. Especially the way to conceive intangible resources or capital affects

the way by which managers develop and deploy this kind of resources in defining and performing the firm's strategy. In such a prospect, it is fundamental to clarify the conceptual perspective proposed in this book. Specifically recognizing the knowledge-based nature of intellectual capital components, they are interpreted as organizational knowledge assets. The adoption of the concept of knowledge asset allows to consider as knowledge resources not only the organizational intangible assets, but also those tangible assets incorporating knowledge and at the basis of organizational competences. This means that an analysis of organization intellectual capital dimensions which disregards the tangible resources represents a relevant limitation, since the competences of an organization are the result of the summa, the coordination and synergetic integration of tangible and intangible assets. Moreover, the nature and the properties of the tangible resources influence the exploitation and the development of intangible ones. According to this perspective, intellectual capital is interpreted as "the group of knowledge assets that are owned and/or controlled by an organization and most significantly drive organization value creation mechanisms for targeted company key stakeholders" (Schiuma et al., 2008). Whilst, a knowledge asset can be interpreted as any organization resource, both tangible and intangible, made of or incorporating knowledge which contributes to define company's value as well as provides an ability to carry out business processes (Carlucci et al., 2004; Marr and Schiuma, 2001; Marr et al, 2004).

Therefore the knowledge assets construct is adopted in this book as a key concept to understand how intangible and knowledge resources, which build the intellectual capital of an organization, affect organizations' business performance and value creation. In the last decade, this has been the main focus of scholars engaged in the investigation of the knowledge-based foundations of companies competitiveness, so this book intends to outline some of the main results of the different research efforts.

KNOWLEDGE ASSETS: STRATEGIC RELEVANCE AND WORKING MECHANISMS

Nowadays it is widely recognized that to survive and prosper in the 21st century business landscape, organizations need not only to manage traditional tangible and financial assets, but they have to be able to develop, employ and deploy their knowledge assets. Indeed, knowledge assets represent key sources of competitive advantage (Grant, 1991; Teece, 2000a; 2000b). In this regard, strategic management theories such as the Resource-Based View (Barney, 1991; Rumelt, 1984; Wernerfelt, 1984), the Competence-Based View (Prahalad & Hamel, 1990) and the Knowledge-Based View (Grant, 1996, 1997) have argued that a company's sustainable competitive advantage results from the possession of resources that are hard to transfer and accumulate, inimitable, not substitutable, tacit in nature, synergistic and not consumable because of their use. As a result, knowledge assets can be recognized as strategic organizational resources and sources of competitiveness, business performance improvements and organizational value creation. On the basis of this fundamental assumption, it is critical for managers to assess and manage organizational knowledge assets to drive and affect organizational value creation capacity. This is the focus of this book, and the different collected chapters are aimed at shedding light on the challenges and approaches for measuring and managing knowledge assets so support business value creation. The investigation of this topic requires a clarification not only of the strategic position occupied by the knowledge assets as strategic resources and sources of value of an organization, but also an understanding of how knowledge assets work to create value. In this regard it is important to stress that knowledge assets operate as bundles of resources. Many scholars have commented on the relevance of the way organizations combine resources, averring that knowledge assets contribute to

create value not only by themselves but by their dynamic interactions (e.g. Roos et al., 1997a; Teece et al., 1997). Knowledge assets are not static but dynamically interact with each other to be transformed into value (Teece et al., 1997). Therefore, managers need to better understand how taking into account the interdependencies among knowledge assets in combining them to create value. Carmeli and Tishler (2004) underline that the “interaction amongst elements is complementary in that the value of one element is increased by the presence of other elements” (p. 1261). The same authors argue that intangible resources have a positive effect on organizational performance, and, particularly, the interactions among knowledge resources enhance organizational performances. But the contribution of knowledge assets to performance improvements is strictly related to its management. Levering knowledge assets for value creation greatly depends on its continuous development and management.

THE AIM OF THIS BOOK

This edited book focuses on the theory, models, approaches, methodologies, tools and techniques for measuring and managing organizational knowledge assets dynamics which support and drive business value creation. The aim of this collection is to provide an advanced state of the art understanding of the links between knowledge assets dynamics and the improvement of organizational value creation capacity.

Measuring and managing knowledge assets has become a cornerstone of the development of new business models and a remarkable topic on the research agenda. Traditionally companies have measured economic, financial and operational performances, while disregarding the intangible and knowledge dimensions of their business. As a result, the value incorporated in a company as well as the company's capability to create value have been usually underestimated. Nowadays, successful companies are those that continuously innovate, take advantage of new technologies and utilize the skills and know-how of their employees, rather those companies that leverage their physical assets. In this context, knowledge assets represent the key value drivers in global business. They need to be assessed and managed. In particular, the assessment of knowledge assets plays a fundamental role in global business both to manage the value creation capabilities and to disclose and communicate the value of the company's components.

Lately, academics and practitioners have been interested in analyzing the role of knowledge assets as key value drivers. Particularly important is the understanding of the mechanisms by which knowledge assets take part in achieving business performance objectives and, more generally, in the organization's value creation. This is a key issue since managers and decision-makers are showing an increasing awareness that business performance depends on the development and management of knowledge assets dynamics. Consequently there is growing need to better understand how to identify, assess, combine, manage and deploy organizational knowledge assets in order to improve business performance and, as a result, to support the development of organization's value creation capacity. In such a prospect, it is of great relevance to gather studies providing insights about how to measure and manage, according to a strategic as well as a managerial point of view, knowledge assets dynamics which influence and drive the value creation capacity of private and public organizations.

This book aims to provide contributions about the improvement and the refinement of approaches, methodologies, tools and techniques for measuring and managing organizational knowledge assets dynamics. In particular, it aims to provide a substantial contribution to the area in terms of theory, methodology and application, to replicate, support and challenge existing studies as well as to offer new applications

of existing theory and approaches to drive organizations towards a better measurement and management of knowledge assets dynamics to support organizational performance improvements.

CONTENTS OF THE BOOK

The chapters of this book gather the research results of a group of scholars that have been significantly involved in shaping the research field of measuring and managing knowledge assets and intellectual capital to support business performance improvements. The main focus of each chapter is as follows:

Chapter 1. “*The Problems and Challenges of Researching Intellectual Capital*” is an introductory chapter by a leading internationally recognized scholar who has inspired the research field of strategic knowledge management with his seminal works on the conceptualizations of knowledge assets into organizations. JC Spender challenges readers with reflections about IC research. His goal, for our benefit, is to uncover some of the tensions characterizing the field of ‘intellectual capital’ and ‘knowledge assets’.

Chapter 2. “*Managing and Measuring Knowledge Assets Dynamics for Business Value Creation in Organizations*” aims to present the relevance of measuring and managing knowledge assets dynamics as a key strategic management challenge for managers looking for new ways of driving organizational value creation. In particular, it introduces three fundamental management processes affecting the knowledge-based strategies for business value creation. They are: identification and measurement of knowledge assets, mapping knowledge assets, and managing knowledge assets flows.

Chapter 3. “*Knowledge Assets and Value Creation Dynamics*” aims to clarify the conceptual foundations explaining how knowledge assets as strategic resources contribute to shape the organizational value creation dynamics. In particular, attention is given to the dynamic nature of knowledge assets and how they contribute to firm performance.

Chapter 4. “*Ethos as Enablers of Organizational Knowledge Creation*” takes a closer look at the relationships between knowledge creation and operation performance improvements in Nissan Motor Company. It aims to clarify the enablers related to embodied knowledge affecting knowledge creation. In particular it focuses on the role of ethos, which is distinguished at three levels of analysis: individual, team and organization.

Chapter 5. “*A Knowledge Assets Mapping Methodology to View Organizational Knowledge-Based Value Creation Dynamics*” explores the mechanisms through which knowledge assets contribute to organizational value creation. The chapter presents a methodology based on mapping visualization with the aim of assessing the cause-and-effect mechanisms that characterize the relationships between knowledge assets value drivers and business performance.

Chapter 6. “*Why Measure Knowledge Assets? The Benefits for Organizations*” addresses the fundamental issue of reasons grounding the implementation of measurement systems aimed at measuring knowledge assets. This chapter discusses whether companies are truly realizing benefits against the cost of spending time in creating, collecting and analyzing knowledge asset measures.

Chapter 7. “*Intangible Assets: Measurement, Drivers, and Usefulness*” proposes an economic approach to estimating the value of intangible assets that are not recorded on the firm’s balance sheet. The chapter shows how investments in R&D, advertising, brands, and information technology drive intangible capital and corporate value. The proposed approach is particular useful for investors seeking information on future performance of intangible-intensive firms.

Chapter 8. “*Measuring Dynamic Knowledge Flows: Implications for Organizational Performance and Competitive Advantage*” discusses how different kinds of knowledge affect competitive advantage as they exhibit qualitatively different dynamic properties and behaviors. The dynamics of knowledge are described in terms of flows from where and when knowledge is to where and when knowledge is needed. The research described in this chapter builds upon and extends Knowledge Flow Theory to conceptualize and illustrate a scheme for measuring dynamic knowledge flows.

Chapter 9. “*ORCI: A Validated Method for Measuring Dynamic Intellectual Capital*” focuses the attention on how to assess organizations’ dynamic capabilities or “renewal capital”. For this reason the ORCI (Organizational Renewal Capability Inventory) method for measuring dynamic capabilities is presented, illustrating how this method can be used for developing organizational ability for continuous learning and innovation.

Chapter 10. “*Measuring Knowledge Assets within Organizations: An Individual-Level Perspective*” provides a twofold contribution. On the one hand it develops a model for assessing and valuing intellectual capital that specifically focuses on the knowledge assets possessed by company’s employees. On the other hand it explores the effect that intellectual capital dimensions have about two individual job attitudes such as job satisfaction and turnover propensity. An empirical investigation is presented on the basis of a two-year survey on all the employees of a leading company in the Italian food product market.

Chapter 11. “*How Knowledge Assets are Transformed into Value: The Case of Knowledge Flows and Service Productivity*” concentrates on exploring the knowledge asset value creation in the context of a specific type of business activity, services, and a specific value creation aspect, productivity. The knowledge asset value creation dynamics are described through the conceptual category of knowledge flows. The fundamental argument is that the recognition and management of knowledge flows facilitate productivity improvement.

Chapter 12. “*Knowledge Asset Dynamics and Firm Performance: Empirical Evidence from the IT Industry*” assumes that in today’s business environment firms are essentially different and compete on the basis of their specific physical, human and organizational resources. This means that it is key to understand the relationships between resources, capabilities, competitive advantage, and profitability. Through a case study research in the IT sector, this chapter provides empirical evidence as regards such interdependencies and analyze the effects of knowledge asset dynamics on firm’s performance and value creation mechanisms.

Chapter 13. “*IC Management: Explaining the Gap between the Theory and Practice*” aims to understand why companies do not apply models that are commonly known in the IC literature. This provides insights about the gaps between theory and practice. Four main research questions are investigated: the importance of IC and its management, the applicability of IC management models, the suitability of typical general management approaches for IC management and factors affecting the application of IC management models. The empirical analysis is carried on the basis of a large amount of quantitative data from the financial statements of companies and case studies in which action research was used.

Chapter 14. “*Developing an Effective Knowledge Management System*” analyses how organizations can develop dynamic and effective KM systems organizations by re-thinking how knowledge is created and shared around their core business processes. Focusing on inter/intra organizational collaboration, the chapter investigates the relationship between four key components: knowledge strategy, core process optimization, core process performance, and knowledge barriers. This chapter explains why these components are important, the relationship between them, and how they relate to each other in terms of

helping to define an effective knowledge management system. The findings presented are based on data collated within, and across, IBM's Integrated Supply Chain.

Chapter 15. “*Managing Intellectual Assets in Small Knowledge-Intensive Organizations*” focuses on how small KIBS (Knowledge-Intensive Business Service) firms manage their knowledge-based processes, or what are termed ‘intellectual assets’. It finds that approaches to the strategic management of intellectual assets vary significantly according to the size and type of KIBS firm. Differences in these approaches impact the development of effective innovation processes, with resource deficiencies in smaller firms constraining their innovation capability. It is concluded that small KIBS firms face particular challenges in managing the innovation process and establishing sustainable knowledge management practices, and may benefit from targeted policy intervention.

Chapter 16. “*Knowledge Assets and Value Creation: A Territory-Based Perspective*” investigates the relevance of knowledge assets as strategic resources and sources of territorial value creation dynamics. For this reason, according to a knowledge-based interpretation of the territorial strategic resources, the authors present the Knoware Tree as a framework to identify and classify territorial knowledge assets.

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