

Building a Competitive Public Sector with Knowledge Management Strategy

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Chapter 17

Towards a Competitive Knowledge Management Strategy Approach in the University Setting: The Case of Ca'Foscari University of Venice

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ABSTRACT

The formulation of a competitive strategy requires an appropriate incorporation of knowledge contents for fostering the development of the competitive advantage. Visual artifacts, in the form of strategy maps, are generally considered useful for making the intertwining between different knowledge bases within the strategy making explicit. However, literature has not systematically analyzed the methods and tools for explaining how strategy making is enabled and constrained. Moreover, the public sector is a research field in which there is a call for a deeper understanding of strategic issues. In order to fill this gap, this chapter explores how strategy maps shape the strategy processes mobilizing knowledge across boundaries. Using the case study of Ca'Foscari University of Venice, a public body in the Italian University setting, the authors find that strategy maps function as boundary objects and can make strategizing a joint managerial practice.

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INTRODUCTION

One of today's most challenging tasks for organizations is to develop strategic innovation opportunities (Teece, 2010). Thus, strategy innovation is a growing stream of research that focuses extensively on value creation through the development of new sources of competitive advantage (Doz & Kosonen, 2010). Renewing competitive strategy is a complex task as it requires integrating in a coherent manner strategists' conflicting mental models (Fiol & Huff, 1992) and the internal and external knowledge bases (Drew, 1999). Indeed, what strategists decide is largely influenced by their different perceptual filters, which are unique, as they were formed through the specific ways of engaging with the world, and by the effectiveness of the knowledge exchange. This consideration leads to two specific requirements and supporting conditions discussed in the strategic literature for innovation strategy. On the one hand, the process of strategy formulation can be improved by using visual artifacts able to integrate and structure strategic thinking in order to conceptualize a shared strategic orientation (RS Kaplan & Norton, 2000). Visual artifacts make explicit people's mental models and thus can be used to correct gaps among strategists' perceptions in order to gain strategy coherence among all the members of the group (Nath & Sudharsan, 1994). On the other hand, since the process of strategy formulation is affected by the availability of different knowledge bases, there is a strong interaction between competitive strategies and knowledge management strategies (Zack, 1999). Consequently, the way to incorporate knowledge contents into analytical models for strategy-making becomes a strategic issue (Halawi, McCarthy, & Aronson, 2006). Literature on innovation strategy emphasizes the role of visual representation for supporting knowledge management and collaboration in multidisciplinary teams (Eppler & Platts, 2009). In particular, it has been demonstrated that the use of graphical representations supports both the abstraction and the

concretization of reasoning (Ewenstein & Whyte, 2009). The potential benefits of using visual representations for fostering innovation strategy have not yet been analysed extensively (McGrath, 2010). Moreover, few case studies that reflect on the mediating role of visual representation in the strategic decision-making for the public sector have been published (Irwin, 2002). This study aims to fill these gaps and explores the use of strategy maps for the formulation of new strategy within the executive board of Ca' Foscari University of Venice. More specifically, we analyze how strategic maps weave different mental models and knowledge bases into a coherent strategic intent both for the members of the executive board and for the external stakeholders. The Italian University setting is a particular research topic within the public sector domain. The large majority of Italian Universities are public bodies as they depend on other bodies, such as Ministries, to define the scope and architecture of their primary activities and are influenced by regulatory and legal frameworks that produce disciplining effects in corporate governance. Moreover, they acquire financial resources from government funds and the recent spending cuts put them in competition with one another for funding. A recent reform is stimulating a radical change in the management policies of this particular educational public body. Ca' Foscari University of Venice has been recognized by the Italian Government as a successful case of study because it was able to apply the recommended strategic changes and thus represents the ideal field for testing our research hypothesis. The following section presents the theoretical background within the literature of competitive strategy and knowledge management strategy, followed by a literature review within the field of strategy visualization. We give a special emphasis on the conceptualization of boundary objects to gain insights into the effective use of strategy maps in practice. Then the research setting is described and the case study presented with wide use of qualitative contents. Finally, the

concluding section discusses the results emerging from the case study and outlines implications for future research.

THEORETICAL BACKGROUND

Competitive Knowledge Strategy

The public sector is traditionally analyzed with special attention to the ways in which market failures are addressed and policies aimed at delivering public services are defined (Bozeman, 1987). However, the New Public Management line of thinking has posited an alternative perspective leading to the transfer of managerial theories and practices from the private sector to the public one (Hood, 1991). Thus, the understanding of the reasons that could explain differences in performances among public bodies has aroused the interest of some scholars and has become a research topic (Kay, 1995). To build on this research field, scholars explicitly refer to the notion of “sustained competitive advantage” (Mattwes et al., 2005). Most of these studies build on a market-based view of the firm (Porter, 1980) or, alternatively, on a resource-based view of the firm (Wernerfelt, 1984). Both these approaches provide a conceptual framework for defining the way to compete in a chosen industry but from different perspectives. The first encourages the identification of a desired product/market positioning, and thus the resources required to develop competitive advantage. The second starts with the identification of the firm’s unique, valuable, rare and inimitable resources, and thus the product/market positioning that better encompasses these resources. Literature has recognized that the most valuable resource to acquire a sustainable competitive advantage is organizational knowledge (Grant, 1996). According to a knowledge-based theory of the firm, the primary function of an economic organization is the development and deployment of knowledge (Spender, 1996). Sustainable competitive ad-

vantage and performances are the results of the organization’s different knowledge bases, and thus of its different capabilities in generating and applying knowledge to business activities. As a consequence, scholars recognize that knowledge must be conceptualized as a competitive resource equivalent to other organizational resources and managed through a variety of supportive tools in order to maximize its productivity (Grant, 1996; Nonaka, 1994). This approach appears particularly valuable for knowledge-intensive organizations where managing knowledge is directly involved in the building of the pre-requisites for the achievement of competitive advantages and superior operational performances (Prahalad & Hamel, 1990). In order to analyze the particular interlacing between knowledge and strategy, Hansen et al. (1999) analyzed several consulting firms and revealed the existence of two distinct knowledge management strategies that are directly associated with different competitive strategies. Indeed, they recognized a first group of consulting firms that build their value proposition to the market on standardized-mature products. These firms demonstrate their reliance on the reuse of existing knowledge. For this group of consulting firms, the primary knowledge management activity is to make explicit individual knowledge and store it in order to efficiently mobilize knowledge repositories throughout the organization. The second group compete through customized and innovative products. These consulting firms direct their efforts towards the sharing of tacit knowledge and their primary knowledge management activity is to facilitate the social interactions for the exploitation of the tacit knowledge of their employees. However, Zack (1999, 2005) finds that, when analyzing firms that are not in the business of selling knowledge, the alignment between knowledge strategies and competitive strategies (i.e. how well these strategies complement and support each other relative to the firm’s overall strategic objectives) appears much weaker. Moreover, he argues that knowledge strategy is

not confined to the choice of how to exploit the existing (tacit and/or explicit) knowledge, but also includes the choice regarding how to create and acquire new knowledge. Nevertheless, despite the claim of an increasing number of scholars that there is a need to align knowledge strategies with competitive strategies (Bagnoli and Roberts, 2011), there is little research that allows for more precise conceptualizations concerning this topic.

The Alignment between Competitive Strategy and Knowledge Strategy

The success of prior studies in exploring the strategic role of knowledge management has led scholars to elaborate on the specific activities that characterize the strategic implication of knowledge management. Bierly et al. (2002) argue that knowledge strategy can be viewed as an organization's set of "strategic choices regarding two knowledge domains: (1) the creation or acquisition of new knowledge and (2) the ability to leverage existing knowledge to create new organizational products and processes" (pp. 278-279). They emphasize the ways in which knowledge management enables the creation of sources of competitive advantage and, consequently, recognize a strategic priority in knowledge management. The distinction of knowledge strategy into two macro typologies—knowledge exploration and knowledge exploitation—delineates the existence of a particular fit between knowledge and strategy. Indeed, knowledge exploration strategy emphasizes the generation of radical new knowledge, challenging the existing frame of reference, and thus engaging organizations in the generation of new ideas and solutions. To create radical new knowledge, organizations should invest in R&D activities for developing designed experimentation (Bierly & Chakrabarti, 1996), and encouraging internal training, team-working and on-the-job individual experimentation. Knowledge-exploration strategy entails on one hand higher costs and an increased risk for a firm because it may disrupt the rules and

routines within the organization, but on the other hand, it could lead to a more sustainable competitive advantage (March, 1991). Knowledge-exploitation strategy emphasizes the incremental enhancement of the existing knowledge, typically carried out within an existing frame of reference. This includes activities such as refinement, improvement, static efficiency, enhancement and amelioration. To enhance the existing knowledge incrementally, organizations should encourage learning "by doing" and codification processes for the formalization and diffusion of best practices. The knowledge-exploitation strategy is more likely to maximize profits in the short term, because its returns are less remote in time, less distant from the initial status quo of the firm, and more certain (Spender, 1992).

However, few organizations are successful at combining knowledge exploration and knowledge exploitation simultaneously, due to the limitations of their learning capacity (Levinthal & March, 1993). The strategic choice to focus more on either knowledge exploration or exploitation is argued to be influenced by the specific configurations of organizational internal knowledge bases and by the capability to absorb valuable knowledge from external sources (Cohen & Levinthal, 1990). Indeed, knowledge created within the firm is more valuable than external knowledge because it tends to be unique, specific, and more difficult for competitors to imitate (Zack, 1999). In contrast, knowledge acquired from outside the organization integrates limited internal knowledge bases but is recognized as especially complex to be absorbed. Indeed, to maximize the potential value of external knowledge, organizations should rely on "the ability to recognize the value of new information, assimilate it, and apply it to commercial ends" (Cohen & Levinthal, 1990, p.128). On the whole, knowledge strategy refers to a set of guidelines for the development and deployment of knowledge and includes the strategic choices regarding the exploration and the exploitation of internal and external knowledge. In this perspec-

tive, organizational knowledge is considered a strategic resource (Barney, 1991). Indeed, according to the knowledge-based theory, organizational knowledge becomes the most valuable and inimitable resource when it is useful to combine and coordinate the value chain activities in ways that are new and distinctive for the achievement of a competitive advantage. Then it is fundamental that organizations define a knowledge strategy for assuring that knowledge management efforts are driven by and are supporting the competitive strategy (Zack, 1999). The alignment between knowledge management strategies and competitive strategies is recognized as especially complex, as it is argued to require methodologies and tools for cognitive representation of knowledge, deliberately including the strategists' own mental models of knowledge (Nonaka, 1994). The following section illustrates some theoretical highlights within the research field of visual representation of strategic-decision making.

Visual Representations of Strategizing

The formulation of a coherent and comprehensive strategy is facilitated by providing structure to orientate thought, instill useful knowledge and overcome potentially conflicting positions (Gavetti & Levinthal, 2000). It has been demonstrated that artifacts, in the form of visual representations, play a supportive role in the strategy decision-making (Eppler & Platts, 2009). Recently, within the strategic management literature there is an emergent discussion on the methods and tools for the visualization of strategic contents and their legitimacy arises from the validated benefits of their application to the strategic-decision making (Jarratt & Stiles, 2010).

Visual strategizing is an approach to make strategy concrete and negotiable, which supports a holistic understanding of the dynamic interaction between internal tensions and external pressures and the development of a systematic, coherent and

coordinated formulation of strategy (Hendry & Seidl, 2003). The potential benefits that the visual representations of strategic content can provide are typically bundled in three categories: cognitive, social, and emotional (Eppler & Platts, 2009). According to a rational approach to strategic planning, it has been claimed that visual representations have a positive impact on problem solving and problem finding by providing structure and focus to individual and collective thought (Gilmore & Camillus, 1996). Thus, visualization facilitates the compression of a large amount of data and information (Vessey, 1991), the identification of relevant cause-and-effect links (Card et al., 1999), the elicitation of more exhaustive comparisons among multiple options (Lurie & Mason, 2007), the enlargement of working memory (Norman, 1993), as well as the sequencing of mindsets dispersed in time and space (Shepard & Cooper, 1982). These benefits are conducive to providing objective, structured and analytical features to strategic-decision making by supporting a convergent development from the analysis phase to the implementation phase, when representations are outcomes of an abstract thought process (Jacobs & Heracleous, 2007). The problem with this rational approach to strategy formation is that it gives only a partial view of the role that visual representation plays as it emphasizes a static conception of strategic-decision making and keeps the generative mechanisms of strategic thinking in the dark. With the widespread adoption of a practice-based approach to strategy (Whittington, 1996), there is a possibility to redress this imbalance by drawing attention to the active role of visual representations and thus demonstrating that they are much more than an effective means for strategists to provide structure to strategic problems and to overcome their cognitive limitations (Kaplan, 2011).

The strategy as a practice approach refers to the "inherent inseparability" (Orlikowski & Scott, 2008, p. 434) of the social and material dimensions of the strategizing process and recognizes strategy as a social accomplishment situated in

practical activities where material objects, such as visual representations, can be crucial for strategy making (Spee & Jarzabkowski, 2009). From this perspective, the interaction between human beings and objects guide the advancements in the strategic-decision making, mobilizing knowledge bases between internal and external boundaries and moving strategists to step between exploitation and exploration of knowledge (Whyte, Ewenstein, Hales, & Tidd, 2008). In this manner, the strategizing process becomes pervasive across organizational boundaries as it is reconfigured as a part of this knowledge development and deployment grounded in practice (Hodgkinson & Wright, 2002). Thus, strategizing takes the form of an emergent process situated in and between social practices where “meanings are negotiated and knowledge becomes constructed and validated” (Whyte, Ewenstein, Hales, & Tidd, 2008, p. 75).

Like any other material object, the visual representations of strategic content can assume diverse cognitive functions in the development of knowledge for strategic purposes (Law & Singleton, 2005). They function as “technical objects” (Ewenstein & Whyte, 2009) when they offer a structure for analysis and hold the ongoing strategizing process stable, through a rational representation of the strategy and knowledge contents and the reduction of the cognitive limitations of strategists. Strategy is the deliberated and validated outcome of an analytical process in which the visual representations focus on key issues and make explicit useful strategic knowledge reducing the complexity inherent in the pooling of multiple knowledge bases. They act as “epistemic objects” (Rheinberger, 1997) when they stimulate an ongoing transformation of the strategizing process redirecting it towards an “elaboration and extension of what is already known” (Bharadwaj, Clark, & Kulviwat, 2005, p.353). Strategy is a flux conducted by an exploratory reflection always open to transformation, undefined and undetermined and thus characterized by an “unfolding ontology” (Knorr-Cetina, 2001, p.182). The inde-

terminacy of strategy as a practical activity (Chia & Holt, 2006) makes it possible to recognize the epistemic role of visualization tools that generate questions, enrich reasoning and open new avenues for further explorations. This emphasis on the unfolding character of the strategizing process focuses on the tacit knowledge of how things are done and facilitates the interaction between strategizing and knowing as practical activities. At the same time, visual representations may be used as “boundary objects” (Star, 1989) when they allow different strategy leaders involved in a strategic task to negotiate potentially conflicting views on competitive strategy and environment through the mediation of meanings. Strategy is an activity performed individually and collectively within distributed cognitive systems (Tsoukas, 1996) that are shaped by (and shape) strategists’ mental models. As a result of collective cognitive structures, strategy arises from the mediated alignment of the individual frames of reference through the translations of the strategy contents across knowledge boundaries (Carlile, 2004). As cognition is distributed across organizational levels through the mediation of material and symbolic artifacts that mobilize tacit knowledge, the strategizing process is a mediated activity framed by the view and mental models of strategists. This engagement allows strategists to make sense of their world and occurs in a dynamic way due to the ongoing variations in the cognitive structures. In sum, strategy and knowledge are a negotiated phenomenon, reflecting sense-making and the dissipative and distributed nature of cognition (Marshall & Rollinson, 2004).

In addition to cognitive benefits, the graphic representations of strategy contents also provide social and emotional benefits. Social benefits refer to collaboration and communication among strategists. By eliciting the diverse strategic perceptions and assumptions, visual representations facilitate the mutual understanding of these different views (Bechky, 2003), the coordination of dispersed knowledge bases useful for strategic-decision

making (Morgan, 1986) and provide a common language for strategy discourse (Barry & Elmes, 1997). Typical emotional benefits regard the motivation and the involvement of all the strategy leaders in the strategizing process (Buzan, 2003).

RESEARCH QUESTION AND METHODOLOGY

Research Question

This intertwining of knowledge management and sustainable competitive advantage set out in strategic-decision making, with shared judgments as to the adequacy of the initiatives to put in action, emerges as a highly specific intellectual concern. Moreover, the boundary-object literature is relevant to strategic concerns as it serves to understand strategy making as a knowledge generation process (Kaplan, 2011). Indeed, it has been demonstrated that boundary objects make the interactions among multiple layers of organizational members possible and concrete, facilitating the alignment of diverging views on strategic issues (Jarzabkowski, 2004). However, there is a lack of empirical research about the incorporation of boundary objects into strategy making both for the private sector and the public sector (Spee & Jarzabkowski, 2009). This gap creates an interesting research field especially within the University setting. Indeed, given that Universities are public spaces in the knowledge society whose superior performance depends upon the effectiveness of the processes of production and transformation of knowledge, the interrelation between knowledge and strategy appears even more explicit, to the extent that managing knowledge is, at one and the same time, a strategic content that must be explicitly taken into consideration and a supportive tool useful for shaping a unified approach to the process of strategy formation (Zack, 2005). Moreover, it has been noted that strategy formulation in the University setting is a complex task because

“many important decisions emerge from collective and interacting processes” (Hardy, Langley, Mintzberg, & Rose, 1983, p.412). This becomes even more relevant when Universities are public bodies. In this context, the strategic objectives and the scope of action refer to a public interest and the strategizing process occurs with a strong emphasis on collective and interactive decision making because of the required interaction of internal and external stakeholders.

Thus, we aim to provide new insights into the use of visualization methodologies and tools as boundary objects, with special attention to the mobilization of knowledge for the development of a shared competitive strategy within the context of the strategy formation in the University setting. Our research objective and methodology is consistent with a recent call for empirical research about the use of objects for strategic activities (Vaara & Whittington, 2012). Indeed, we explore how visual representations, in the form of strategy maps, frame and align the different mental models of the members of the executive board of Ca’Foscari University of Venice enabling competitive strategy formulation.

Research Method

The methodological approach for this research was inductive and directed to understand how the members of the executive board intervene in the identification phase of the decision making process (Hardy et al., 1983). The identification phase regards the recognition of a problem (problem finding) and it represents the first strategic activities to put in place for initializing a strategy reshaping. The problem analyzed was the refocusing of competitive strategy and how it has been socially developed by discursive practices and materially mediated by the resulting strategy maps. The literature on strategy-making compares the accomplishment of strategy work to a discursive process (Mantere & Vaara, 2008), where discourse is “also the medium through which interpreta-

tions are developed and expressed and strategic actions initiated, authorized and acknowledged” (Hendry, 2000, p. 957). Consistent with taking a discourse perspective, the different mental models of the members of the executive board were captured in a strategy map in order to facilitate the elicitation process (Eden, 1992). A strategy map can be defined as a graphic expression of the dynamic cognitive structure of a decision-making, continuously enacted and negotiated by individuals (Bougun, 1992). As stated by Irwin (2002), a strategy map enables individuals to see the development of the strategy making (from objectives to activities and results) and to fit it into a comprehensive picture. Strategic mapping is a useful way to orientate the strategic activities into a coherent organizational strategy. The interactive process of strategizing followed the steps as shown in Figure 1 (see Table 1).

Main steps in the strategizing process:

1. Understanding the need to change the way for the formulation of strategy.
2. Identifying the strategic challenges both internal and external.

3. Drafting strategic thinking at individual level.
4. Visualizing the strategy contents into a map and reflecting on them.
5. Debating the strategy contents with staff and external stakeholders.
6. Revising the strategy contents and reflecting on them interactively.
7. Generating competitive strategies agreeing with stakeholders.
8. Capturing the new competitive strategies in a plan and making it public.

This emphasis on the interactive aspects of strategy formulation makes it possible to shed light on strategy making as a socially constructed process by multiple actors and offers the ideal field study for understanding the cognitive benefits of strategic visualization tools and techniques. Indeed, the resulting strategy maps provide structure and direction to strategic thought by drawing the boundaries of the cognitive frames of each board member. Such boundaries help people to navigate their intellectual process having a frame of reference through which to confirm their claims, share interests, concepts and thoughts with others and change thinking as a result of a

Figure 1. The triangle-shaped framework informing this study

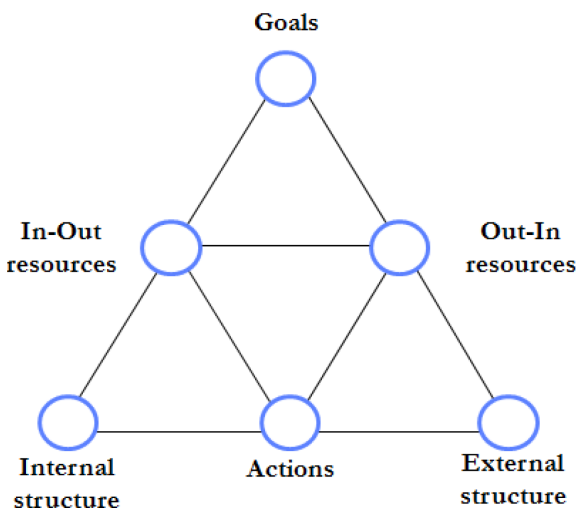


Table 1. Ca’Foscari University of Venice at a glance

Variables	Contents
Enrolments	18.939
First year students	More than 4.000
No. of full professors	151
No. of associate professors	179
No. of lecturers, readers and post-doc	197
Staff	526
Undergraduate courses	30
Graduate courses	15
Academic departments	8

“cathartic experience” (Eden, 1992, p.261). Thus, knowledge strategy-formation falls inside the maps as elicitation of cognition of the individual board members and, at the same time, outside the maps as an interactive process mediated by an artifact (the map) that functions as boundary object (Kaplan, 2011).

RESEARCH CONTEXT AND DATA ANALYSIS

Research Context

The Italian University setting is qualified by a large presence of public bodies. According to Bozeman’s model of publicness (Bozeman, 1987), Ca’Foscari University is a public body because: (1) it is owned collectively and then it pursues public interests; (2) it is funded largely by government financial sources and then it depends on taxation; (3) it is controlled by political forces that influence most of the management of the organization but, at the same time, they assure a discrete autonomy to the board of executives regarding strategic and policy deliberations.

The choice of the University setting as research field is threefold. First, the strategy formation in the University setting is a complex task because Universities are “loosely coupled organizations” (Weick, 1976) in which decision-making is articulated in several patterns that correspond to three organizational levels of control (Hardy et al., 1983): individual professors, central administrators and organizational members and experts. Some strategic decisions tend to fall into the realm of the professors (e.g. teaching and research methods), others into the realm of administrators (e.g. budget reallocation). However, many decisions are determined through interactive processes that involves different levels of control and experts, as in the case of decisions concerning the strategy formulation. Second, in the last three years, the Italian University setting has been subject to a

comprehensive transformation in the context of a wide-ranging governmental reform (Law number 240/ 12-22-2010) that has imposed a radical change in organizational behavior. For example, the allocation of financial resources from centre to periphery responds now to an objective evaluation of the quality of the primary activities, then Universities are in competition with one another for funding. The push towards the accomplishment of financial and non financial objectives of organizational performance imposed by government agencies, has led executive boards to a more significant and well-defined formulation of the ways in which to compete. In sum, the formulation of different competitive strategies has become a critical strategic issue also in the University setting. Third, in the context of this radical change within the Italian University setting, governmental agencies have designed the mechanisms for the objective measurement of the effectiveness of University change management. Every year, The Ministry for Education, University and Research (MIUR) issues a paper in which the 55 public Universities are listed in order of excellence, with the Universities that have a highest educational and research quality index coming first, followed, in a descending order, by those with a lower quality index. High-ranking Universities have a greater amount of financial resources than those that occupy the last positions (see Table 1).

Data Collection and Analysis

In order to investigate the benefits of strategy maps as boundary objects in the context of the discursive practices that shape strategy inside the board of the executive of Ca’Foscari University of Venice, we collect and analyze data through ethnographic techniques (Tsoukas, 2006). With the use of ethnographic techniques, the researcher is immersed inside the field where activities are made by members involved in the practices of strategy formation. To get closer to the context of the strategic activities, we collected data physi-

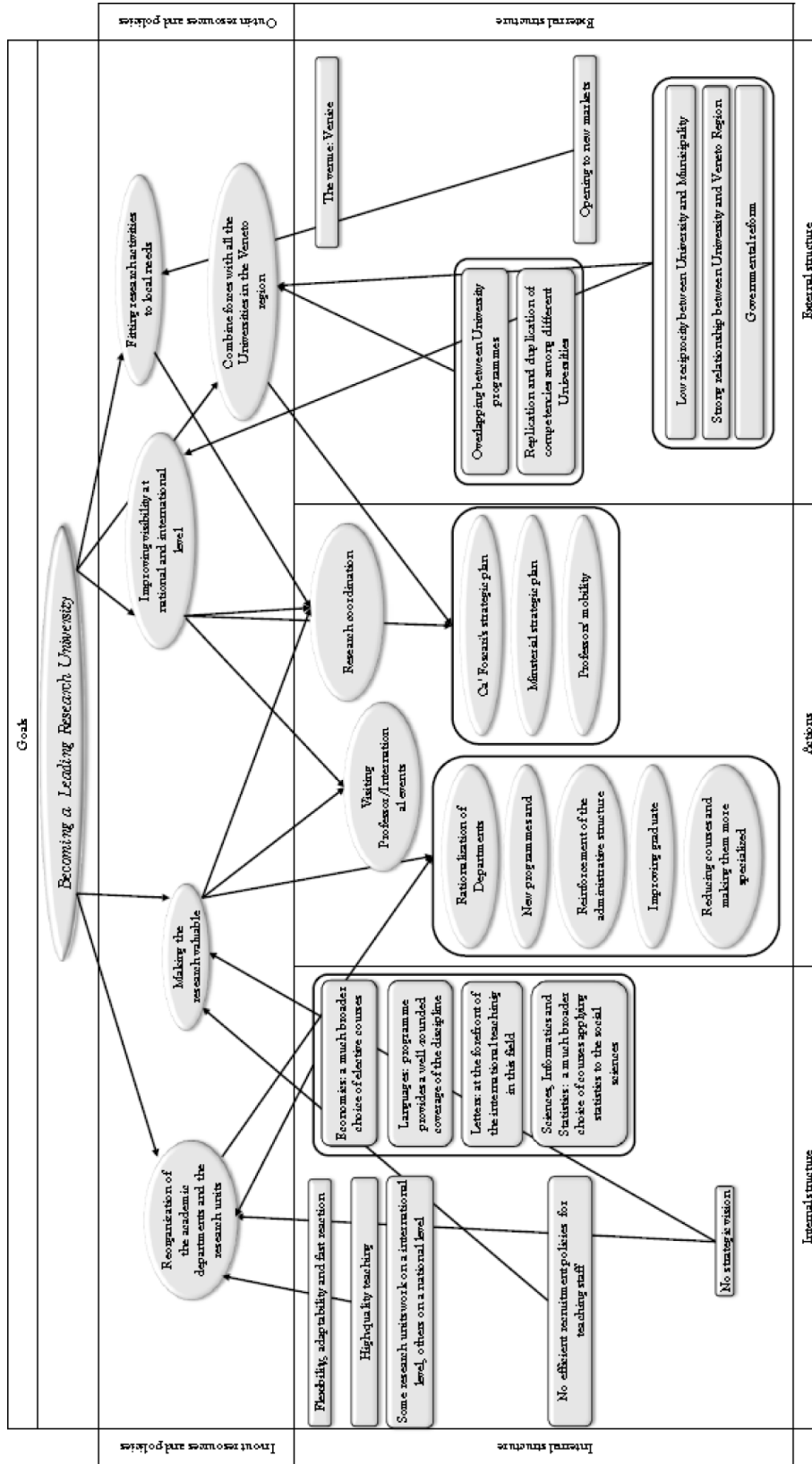
cally on the research field by participation at board meetings, interview sessions with members of the board, collection of related documentation and email exchanges. More specifically, data were collected over ten months in 2010 and included a double interview section with the members of the executive board of Ca'Foscari University of Venice: The Rector, the five Pro-Rectors, the four Faculty Deans, the President of the Committee of Department Heads, the Head of the Administration Office. All the interviews were recorded and transcribed in order to enrich the detailed notes regularly taken by researchers from interviews and formal and informal meetings. The first interview session of approximately two hours was accomplished by conducting a semi-structured interview that was articulated around the strategic dimensions of the SWOT template for conceptualizing the fit between internal and external assessments (Venkatraman & Camillus, 1984; Hill & Westbrook, 1997). More specifically, for obtaining a more holistic view of the formation of strategic thinking, we decided to use the four GRASP questions model: goals, value-driving resources (or policies), actions and structure (Ritchie-Dunham & Puente, 2008). These variables are set out in a hierarchy, making a triangle-shaped connection among them, as shown in Figure 1.

Then, following the Kaplan and Norton model, the strategic content was visualized in a strategy map, in order to make visible the direct connection between goals, resources (or policies), structure and action (Kaplan & Norton, 2000). An example of a strategy map is provided in Figure 2.

The form of the boxes indicates whether the item represented refers to an actual situation (rectangles) or a decision about what policies (resources and actions) should be adopted for pursuing the strategic goal (ellipsis). The location of each boxes in one of the three horizontal sections (goals, resources and structure) indicates the issue domain with which the item is associated. The section dedicated to "action" is located at the centre of the map between the "internal

structure" and "external structure" areas. In this way the triangle-shaped connections between goals, resources, structures and actions are maintained. The arrows indicates the existence of a "means-end chain" between items and the direction follows a double ordering: bottom-up and top-down. The bottom-up arrows link the boxes located in one of the two "structure" areas with the boxes of the "resources" section. These types of arrow move towards a more general understanding of the effects of the internal and external structure on the strategic resources and policies that can be adopted for the future. The top-down arrows link the box dedicated to the organizational goal to the items summarizing the strategic resources and policies. These arrows are a simple but intuitive conceptualization for making sense of the abstract link between goal and resources. As stated by Langley (1999), different types of mapping have long been used by organizations to plan, understand and represent disparate organizational processes (budgeting, business process reengineering, scenario planning, and so forth) because they are a useful tool for the decision-making. At the same time, literature discussed the role that the visual artifacts can play for the organizational activities, ranging from abstract objects to the more concrete, such as drawings and charts, timelines, Gantt charts, visual prototypes, and so forth (Ewenstein & Whyte, 2009). This interest in visual artifacts reveals their centrality into the processes of organizational learning and knowing. In the existing literature the usefulness of visual artifacts in problem solving is acknowledged and emphasis has been placed on their role as mediating objects between different epistemic communities within organizational knowledge practices (Carlile, 2004). The representational capacity of the visual strategic mapping is discussed on a general level but we know little about how it acts. It is recognized as one of the most useful approaches for the conceptualization of the critical elements of strategy making and for achieving a bigger picture of the complex

Figure 2. Strategy map: an example



activities which enable an organization to pursue its goals (Irwin, 2002). The focus of the literature is on the structure and functioning of the strategy maps, with special emphasis on the creation of a common language which stimulates a self-reasoning and an interactive debate able to integrate different knowledge bases for the generation of new strategic contents (Kaplan & Norton, 2000). While the vast majority of the strategic tools try to encourage the formulation of a strategy in advance (they presuppose that a strategy can be successful if planned in advance), the visual strategic mapping stimulates the achievement of new insights about the organization and the external environment allowing a proactive and emergent strategic behavior, in the light of new information and opportunities (Irwin, 2002). Thus, strategy maps are considered useful tools to visualize strategy and make the epistemic nature of the strategy-making evident (Vaara & Whittington, 2012).

The second step of the interview session was directed to have a feedback from each board member in order to discuss and validate all the strategic conceptualizations reported in the map. After validating the 12 strategy maps, a four-phase plenary session was organized, where the strategy decision-making took place as a social and interactive discursive process (Jarzabkowski & Seidl, 2008). With the aim to give more emphasis to the interactive process and to better understand the use of the strategy maps as boundary objects, we decided to use a content analysis software (Atlas.ti qualitative data analysis). The interview transcripts, the field notes and the strategy maps were coded and then processed by the software following the GRASP model. As a consequence, we identified three conceptual combinations (Ward, 2004) corresponding to the three main strategic themes (Kaplan & Norton, 2006) that have been used as mindset to facilitate moving away from 12 different strategy maps and moving towards the creation of the joint organizational strategy map, where the new competitive strategies were elicited.

Main Findings

The data revealed that the interactive representation of strategy knowledge plays an active role in the strategy decision making of the executive board of Ca' Foscari University of Venice, a peculiar public body in the Italian University setting. Within the executive board, strategy formation was achieved through little interaction in a relatively formal and hierarchical context, with the involvement of a restricted community of strategists. The introduction of the visual mapping approach allowed the board members with different perspectives to make sense of the strategy formation and to highlight the multi-dimensional nature of the process itself. Strategy maps as visual artifacts evolving over time, made possible the emergence of a plurality of intersubjective relations, which stimulated an evolution of knowledge taking place through an active interaction between board members and artifacts. Analyzing the data obtained from the application of the GRASP framework for the elaboration of the strategy maps, we recognized that visual representation of the strategy knowledge formation provided an effective tool for emerging differences in the executive board members' strategy orientations and for understanding how the reflective practices took place in addressing the reshaping of the University's competitive strategy. We confirm that visual representations in the form of strategy maps can function as boundary objects because they represent the bridge between different cognitive structures and facilitate the mobilization of internal and external knowledge contents, leading to a more holistic and interactive development of the strategizing process. More specifically, the use of strategy maps in the empirical setting revealed the cognitive benefits of the visualizing approach, especially the representation of the current and future desirable organizational competitive context, that allowed the knowledge to be diffused inside the executive board for the formulation of a new and comprehensive organizational competitive strategy. Indeed, making

the strategic cognitive structures visible to all the members of the executive board facilitated both the exploitation and the exploration of knowledge relevant for strategic purposes. In our study, the exploitation of knowledge focused on the efficient way to rationalize the strategic decision making, with a strong emphasis on the representations of structured strategic problems and relatively distinct perceptions of the internal and external knowledge contents. Such representations, derived from stable and structured cognitive frames of reference embodied in the explicit knowledge of the way strategists see the internal structure and the environment, were shaped and then revisited working on the reflective data that provided specific aspects of the “means-end chain” of the interlacing between knowledge and competitive strategy. The categorization of reflective data for the formalization of a strategy map was useful to negotiate and integrate the specific cognitive structures underpinning the strategizing process and to draw the executive members into the strategy change process, thereby contributing to make change a possible and concrete thing. Under this reflective and rational representation of the strategy practices, we recognized the role of the strategy maps as technical objects because the knowledge strategy formation was framed incorporating reflections from different perspectives and analyzing the consistency of the strategic conceptual combinations of each member. They emerged from negotiation activities directed to align the gaps between knowledge and strategic objectives and thus represented the first step to take for the adjustments of organizational structure in order to gain a better competitive position in the environment. The exploration of knowledge was manifested where the members of the executive board tried to make sense of unstructured internal and external situations with the aim to gain insights in addressing the identification of emerging opportunities and make the strategic shift possible. The envisioning of unstructured alternative ways to gain a competitive advantage

in the short and medium term, was conducted through an explorative practice of knowing where people challenged the existing frames of references and priorities. Here, the strategy formulation was encouraged by a continuous engagement in the learning process that provided a shared sense-making around the new modes of actions by making the outcome of the reflexive practices visible and open to other members for discussion inside the executive board. This mode of strategy formation in a situated knowing process proved useful to enable knowledge generation to move outside routine-based practices and to break down the political factors that constrain most of the decision outcomes. The enactment of this dynamic knowledge context, where people focused their collective cognition around the search for opportunities able to prioritize the engagement into a radically new perspective, was forged by an evolutionary sense making of the desirable future for the University. Visual representations played a central role in the development of this evolutionary process and we appreciated their functioning as epistemic objects, since the strategy knowledge formation was conducted around the strategy maps and guided by the fundamental questions stimulated by the conceptual combinations represented in the maps. This approach is focused on the tacit knowledge of the relevant processes and activities opposed to the explicit knowledge of strategy. Indeed, while the classical perspective on strategy is based on a rational and linear view of the strategy formulation (planning, implementation and control) and on the priority of knowledge codification, the practice perspective involves the application of an incremental, adaptive and processual logic, where strategy is an emergent phenomenon that can be practiced very differently (Jarrat & Stiles, 2010). This alternative approach views the formation of strategy as a continuous process, where learning capabilities challenge the dominant logic and refine strategies incrementally in the light of the new generated knowledge. The strategizing process, guided by

the key questions incorporated into the maps, is always open to transformation and based on reflexive practices. Thus, competitive strategy is framed around learning and knowledge activities as new insights were revealed and traditional routinized strategic activities transformed into more adaptive and opportunistic practices (see Table 2).

Three competitive knowledge strategies perspectives arose from data analysis as a evident result of the application of the interactive visual representations proposed in our study: the reshaping of the current business model, the reinforcement of internal capabilities and the change in the corporate governance. Each perspective was developed through interactive reflexive processes mediated by the visual representations of the knowledge and strategic contents, where the individual and collective strategic thinking was synthesized and adjusted to address the incrementally evolutionary nature of the social reflexive practices.

Competitive Knowledge Strategy as the Reshaping of the Current Business Model

Consistent with the SWOT framework, the emphasis on the interaction between the internal structure and the external environment stimulated

a systematic and organic analysis of the current dominant business model and the identification of the emerging opportunities for facilitating the organizational adjustment. The strategy maps were a supporting tool for reflective practice as they framed thought around the strategic priorities making the identification of the main knowledge and strategy gaps possible. The usefulness of strategy maps was evident in making the recognition of the changing nature of the external environment self-evident and providing the basis for the generation of new competitive avenues able to challenge the traditional dimensions for competing. The awareness of the gap between the current and future situation was particularly interesting because it involved people in recognizing core strengths and weaknesses and extended the temporal dimension of their strategic thinking. A long-term perspective of the reflexive practices was acquired and this contributed to identify knowledge gaps to be filled for leading to change in the current business model.

Competitive Knowledge Strategy as the Reinforcement of Internal Capabilities

The use of the strategy maps provided insights into the internal structure where the strategic intent occurs. In the search for a better alignment of the internal organization with its changing environ-

Table 2. Strategy maps as visual artifacts: a short summary of findings

Field of Action	Benefits	Knowledge Production	Functions
Representation	Collecting key strategic concepts from inside-out and outside-in perspectives Making the decision making self-evident and concrete Focus on the decision making in order to structure strategic problems	Codification and exploitation of knowledge contents Structuring and focusing of knowledge processes	Technical object
Negotiation	Making the alignment of different views self-evident and conducive to shared meanings Facilitating debate and discussion on key strategic problems Facilitating a collective understanding of structured problems	Knowledge mobilization across boundaries Converging knowledge to key strategic problems	Boundary object
Discovery	Facilitating the sense-making of unstructured, uncertain and ambiguous problems Making the exploration of emerging patterns visible Collective identification of emerging patterns	Knowledge translation and transformation Exploration of new knowledge	Epistemic object

ment, the members of the executive board extended their reflective practice to the operational contexts within which to make the new strategic directions possible and concrete. Some limitations in the core knowledge were identified and the activities to address those limitations emerged as an important strategic topic. The engagement in the reconfiguration of the current business focused the strategic attention to the options for leveraging and developing the scope of the internal knowledge bases, encouraging a critical perspective on the ways through which knowledge is generated, shared and acquired from external sources. This observed knowledge gap was formalized in the organizational strategy map and was useful for extending the strategic discourse to the reconfiguration of internal core capabilities.

Competitive Knowledge Strategy as the Change of Corporate Governance

In addition to the envisioning of an alternative business model and to the reconfiguration of available knowledge bases for addressing the gap between the current and the desirable state, the members of the executive board employed reflective strategic discourse to explore alternative ways to discipline the development of the strategy formation. The changing and evolutionary nature of the competitive advantage becomes a critical issue for strategy work particularly in dynamic environments, where organizations compete for growth and funding. While recognizing the need for a strategic and organizational dynamism, strategists engaged in reflective practices to encourage the move from a “loosely coupled organization” to a “holistic and integrated organization”, where decision-making appears as an interactive process under the control of the joint strategic intent and not of the professors or the administrative fiat. To have a strategic intent originated by an interactive reflective practice, ensures that all the organiza-

tional levels of control continue to engage with the accomplishment of strategic goals in their strategic and operational activities.

FUTURE RESEARCH DIRECTIONS

New Public Management refers to the application of the managerial tools and techniques for the private sector to the public sector. Despite the criticisms of this approach, which raise doubts about the effectiveness of this application, we argue that the move towards new supportive tools should be potentially relevant to the managing process for the public sector. While some managerial practices may have common features for both the private sector and the public sector, their influence depends on the way through which they are applied to practical activities. In the strategic management literature there is a widespread debate around the use of some material objects in the strategic-decision making for private sector firms. The main focus is around the impact of those strategic tools for the enrollment of strategy formation and there is a need to explore new advances in this fresh research topic. This study seeks to contribute to fill this gap investigating the use of visual representations in form of strategy maps in the strategy formation inside the executive board of a peculiar public body, the University setting. We argue that this emerging field of research can be properly explored also for the public sector, as our study seeks to demonstrate.

CONCLUSION

This study aims to investigate the use of interactive strategy maps in the strategy knowledge formation in the University setting. Universities are a peculiar public body where strategy work is about the alignment between knowledge management strategies

and competitive strategies. It has been noted that the potential benefits of the visualization tools and techniques is threefold: cognitive, social and emotional (Eppler & Platts, 2009). In particular, we draw attention to the cognitive benefits of strategy maps, emphasizing that they allows strategists to make strategic reasoning more explicit, holistic and interactive. Our findings suggest that strategy maps are material objects that play a central role in the reflective practices of people involved in a strategy work as they shape a holistic combination and an innovative generation of the strategic contents. As a consequence, the material object interacts actively with the strategist, stimulating a recalibration of the reasoning and facilitating a more deliberate and rational choice. Moreover, we find that the use of visual representations produces impacts not only on the efficiency of decision making, but also on the individual and organizational learning moving from exploitation to exploration of knowledge. Indeed, strategy maps enable interactive sense making around ill-defined and unknown problems allowing a cognitive shift from structured to unstructured reflective practices and moving from stability and order to dynamism and change. Through the application of strategy maps to decision making in a public body, we appreciate the potential benefits of visualization especially as tool able to reinforce interactive and collective reasoning for making strategic change explicit and concrete. Making the change a deliberate choice makes it possible to focus the strategic reasoning on the ways to compete by challenging the current business model and emphasizing the strategic role of knowledge management.

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KEY TERMS AND DEFINITIONS

Boundary Object: A material object that allows the translation of knowledge from one organizational side to another.

Competitive Strategy: The way through which an organization competes in its environment.

Knowledge Exploitation: The effective use of the available knowledge for value generation.

Knowledge Exploration: The search for new knowledge that moves the organization towards new patterns.

Knowledge Strategy: The way through which an organization manages its knowledge bases for strategic purposes.

New Public Management: Research approach that sustains the feasibility of the translation of managerial tools and practice from private sector to public sector.

Strategy Map: A methodological and managerial tool for making the strategic reasoning explicit and concrete.