KNOWLEDGE STRATEGIES AS AN INTEGRATED PART OF BUSINESS STRATEGIES

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Abstract. *The purpose of this paper is to explain knowledge strategies and what is their role in designing business strategies. Knowledge strategies represent a new concept in knowledge management systems. It became more important during the COVID-19 crisis when managers were confronted with the absence of knowledge and the lack of understanding of how to design them. Knowledge strategies do not replace business strategies; they constitute an integrated part. Thus, understanding the essence of knowledge strategies and their impact on business strategies is necessary for managers and stakeholders. We will discuss the generic knowledge strategies that can be implemented in any organization due to its vision and mission. These knowledge strategies can be conceived from the known-unknown matrix. We will discuss the following knowledge strategies: knowledge exploitation, knowledge exploration, knowledge acquisition, and knowledge sharing.*

Keywords: *knowledge dynamics, knowledge management, knowledge strategy, knowledge exploitation, knowledge exploration, knowledge acquisition, knowledge sharing*

Introduction

The concept of "knowledge strategies" is relatively new in the literature dedicated to knowledge management systems (Bratianu, 2022; Grant, 1997; Nonaka & Zhu, 2012; Spender, 2014). It integrates strategic thinking (Bratianu & Lefter, 2011) with knowledge management (Nonaka & Takeuchi, 1995, 2019). Knowledge strategies do not substitute business strategies but they are an integrated part of them. In the knowledge economy, knowledge strategies are at the core of business strategies that aim to reduce uncertainties (Spender, 2014) and increase the organizational knowledge entropy (Bratianu, 2019).

Strategic thinking is crossing the borders of an organization and looking for the opportunity space that is defined as "the company's market potential given its environment, including such factors as the demand for its products, the cost and availability of inputs, and the legal and legislative climate" (Spender & Strong, 2014, p. 10). Strategic thinking focuses on the business's future, but the future does not exist in operational management. Future does exist only in the mind of managers. It exists if the thinking mode is based on entropic, nonlinear, probabilistic, intelligent and creative thinking models. Entropic thinking is the most complex perception of time and of its direction from the past toward the present, and from the present toward the future. It allows changes to happen. Nonlinear thinking is opposing linear thinking that almost invaded our life and way of seeing entities and events. Nonlinear thinking is necessary

because knowledge and strategies are nonlinear entities and cannot be understood and measured in a linear framework. Probabilistic thinking is the answer to decision-making under the pressure of uncertainty. The future is unknown, and its major characteristic is the absence of knowledge. "Both uncertainty and absence of knowledge increase with the distance from the present time, making *strategic work* (Spender, 2014) more difficult. Logical thinking designed for a state of certainty cannot provide solutions for such a future. It must be integrated with imagination and creativity to yield better support for *strategizing*" (Bratianu, 2022, p. 1).

This is a conceptual paper. The aim of this paper is to explore the meaning of the knowledge strategy concept and to search for some generic knowledge strategies, strategies that can be applied to any organization. Also, we will argue that knowledge strategies constitute an integrated part of business strategies. Thus, the research question we try to answer is the following:

RQ: What are the main generic knowledge strategies and how are they perceived with respect to business strategies?

The structure of the paper is as follows: after this short introduction, we will present a critical literature review. It follows the methodology we used and the discussions. Finally, we present briefly some conclusions and the list of references.

Literature review

The classical way of explaining the concept of strategy is to consider the future as an extension of the present and strategic planning as an extension of the operational planning following a deterministic approach. "Here, strategy is a rational process of deliberate calculation and analysis, designed to maximize long-term advantage. If the effort is taken to gather the information and apply the appropriate techniques, both the outside world and the organization itself can be made predictable and plastic, shaped according to the careful plans of top management." (Whittington, 2001, p. 3). However, the environment is not static and does not advance in time according to a well-established formula. It is changing in an unpredictable way and very fast. Today managers discuss the volatile, unexpected, complex, and ambiguous (VUCA) world that induces many changes in organizations that should adapt continuously. The COVID-19 crisis demonstrated the difficulty in anticipating events (Bratianu & Bejinaru, 2021; Taleb, 2007; Thompson & Strickland III, 2001). The most important issue is uncertainty which is perceived differently by different people, in concordance with their education and culture. "Whereas in 'the West' uncertainty is usually considered a source of grief to be contained, in Confucianism uncertainty is a desirable quality. The most precious thing in life is its uncertainty, said Yoshida Kenko. In China, traditional ink drawings are valued for their fuzziness; in Japan, people love the asymmetrical features of traditional pottery" (Nonaka & Zhu, 2012, p. 34).

Whittington (2001) classifies all business strategies into four clusters on a bi-dimensional framework defined by processes and outcomes. For simplification, we present these clusters within a matrix shown in Figure 1.

Outcomes

Processes		**Profit maximization**	**Plural outcomes**
	Deliberate	Classical	Systemic
	Emergent	Evolutionary	Processual

Figure 1 – The matrix of business strategies
(Adapted after Whittington, 2001)

Classical strategies are based on deterministic thinking and the simple idea that the future is just an extension of the present time. The aim of those strategies is to maximize the company's profit and to increase the shareholders' return on investment. We get systemic strategies when we extend the deliberate strategy to embrace several outcomes. They are much more complex, yet based on the time metaphor of moving observer like in the previous case. *Evolutionary strategies* are designed based on the idea that time comes over us and we must respond as quickly as possible. They have only one outcome – profit maximization. Their evolution is determined by the changes produced in the external environment. *Processual strategies* are emergent but they are not restricted to profit maximization. They aim at creating sustainability within the external environment and with the community where the business is performed.

Porter (1985) developed the competitive advantage theory, focusing on analyzing the external market. From his perspective, there are some business strategies that can be considered by any organization. They are called generic strategies. Porter (1985) defined two clusters of strategies for the wide industry perspective: overall cost leadership and differentiation strategies. *Cost leadership* strategies imply mass production and measures to cut costs such that the company can achieve the lowest possible production cost for one product or category of products. That offers an immense competitive advantage. *Differentiation strategies* focus on the psychological needs of customers and on unique attributes to be identified for each product and service. That uniqueness is associated with some premium costs contributing significantly to the company's profit.

For Nonaka and Zhu (2012), strategies should be designed pragmatically, for real and specific situations to create value for the community. "Strategy is the art of accomplishing what we want to achieve. It is about situated judgment and collective justification, skillful persuasion and timely maneuver, decisive decision making and muddling-through, amid complexity, ambiguity and uncertainty" (Nonaka & Zhu, 2012, p. 79). The authors apply the wuli-shili-renli (WSR) logic from Confucian wisdom to design strategies. *Wuli* refers to the material-technical infrastructure while *still* reflecting the cognitive-mental framework. *Renli* represents the social-relational structure. Thus, "Pragmatic strategies based on WSR generate value efficiently, creatively and legitimately by getting fundamentals right, envisioning a valued future and realizing common goodness" (Nonaka & Zhu, 2012, p. 165).
Mintzberg (2000) explains that any realized strategy is composed of a deliberate component designed from the very beginning based on the available knowledge at that

moment, and an emergent component that is developing in time due to the changes produced in the external environment. The author remarks on the different schools of thought concerning business strategies, and schools that used different paradigms in designing them. Thus, Mintzber (2000) and Mintzberg, Ahlstrand, and Lampel (1998) consider the following strategy schools: the design school, the planning school, the positioning school, the entrepreneurial school, the cognitive school, the learning school, the power school, the cultural school, the environmental school, and the configuration school.

Knowledge strategies have the same general characteristics based on the same thinking models and business outcomes. However, they differ from business strategies because they are created based on the known-unknown matrix (Bratianu, 2022; Dalkir, 2005). We will discuss this basic matrix in the next sections.

Methodology

This is a conceptual paper. The methodology is based on a critical literature review, extraction of the most interesting ideas and build on them. We will analyze the known-unknown matrix and starting from it we will define the generic knowledge strategies to reduce uncertainty and the absence of knowledge. We will analyze the potential of these knowledge strategies and their limitations.

We will use induction and deduction to define the knowledge strategies starting from the known-unknown matrix, and abduction in evaluating the potential and limitations of each strategy.

Discussions

It became famous the answer formulated by Donald Rumsfeld, the former Secretary of Defense of the USA in a press conference in 2002, concerning news about the war in Iraq: "Reports that say that something hasn't happened are always interesting to me, because as we know, there are *known knowns*; there are things we know. We also know there are *known unknowns*; that is to say, we know there are things we do not know. But there are also *unknown unknowns* – the ones we don't know we don't know" (Rumsfeld, 2002, Press conference, italics added). These expressions "known unknowns" and "unknowns unknowns" generated many discussions and debates from journalists, writers, language experts, philosophers and people involved in economics, business, and politics. However, these expressions reflect the known-unknown paradox obtained when combining the level of awareness of what we know with the degree of knowns in the external world. The paradox can be understood if we enlarge the combinations by adding the concept of unknown-knowns and creating the known-unknown matrix (Dalkir, 2005). The known-unknowns matrix is constructed considering what an individual thinks he knows against what is known in his social context. The matrix is presented in Figure 2.

On the upper line, the concepts describe the situation of a given quantity of explicit knowledge and how an individual is aware of how much he knows. By difference, he will appreciate how much he does not know. These situations are very familiar because both are a result of our education. The bottom line of the matrix is more difficult to be understood because it combines explicit and tacit knowledge. The *unknown-knowns*

constitute the state in which an individual knows he has some experience in solving a certain problem (i.e. tacit knowledge), but he does not know how much this experience is. The most difficult situation is when thinking about the future and how unpredictable events can be. There is a clear absence of knowledge and the whole state of knowing can be described by the concept of *unknown-unknowns*.

	Known	**Unknown**
Known	Known - Knowns	Known - Unknowns
Unknown	Unknown – Knowns	Unknown - Unknowns

Figure 2 – The known – unknown matrix
(Adapted from Dalkir, 2005)

Analyzing each situation through the knowledge absence and the possibility of reducing it through a smart strategy, we propose the following generic knowledge strategies: knowledge exploitation, knowledge acquisition, knowledge sharing, and knowledge exploration. They are presented in Figure 3.

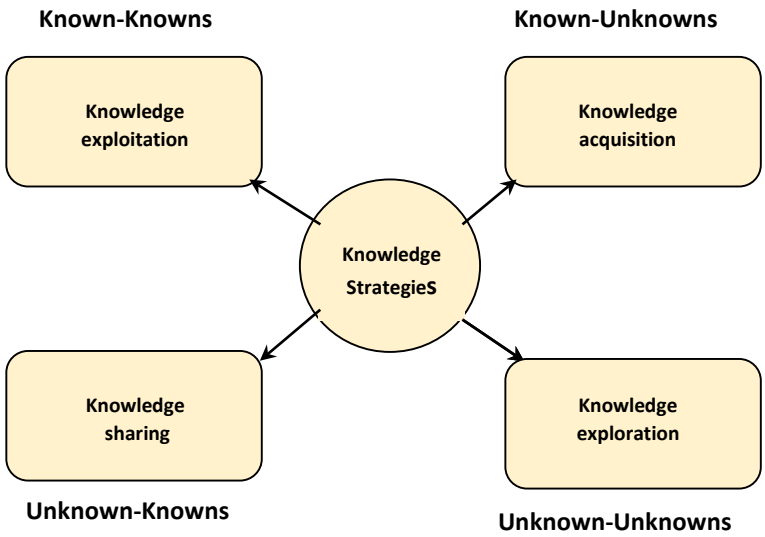

Figure 3 – The structure of knowledge strategies
(*Author's own research*)

Knowledge exploitation is the simplest strategy and it should be designed such that managers think of the best methods to use intangible resources efficiently. Many authors discuss intellectual capital that contains all those intangible resources. Knowledge exploitation will refer to Intellectual capital exploitation (Andriessen, 2004; Bratianu,

2007, 2014; Edvinsson, 2002; Sveiby, 2001). The main barrier to understanding knowledge as a strategic resource and deploying it efficiently is that knowledge is a nonlinear entity, and many managers consider it linear. Nonlinearity requires different methods of exploitation and efficient use (Bratianu & Vasilache, 2009). Also, when we think of knowledge from a managerial perspective and decision-making events, we should consider it a spectrum of rational, emotional, and spiritual knowledge (Bratianu, Prelipcean & Bejinaru, 2020; Bratianu et al., 2020; Damasio, 2003, 2012).

Knowledge exploitation strategy works very well if and only if there is a nonlinear integrator able to integrate individual knowledge into a whole we call organizational knowledge (Bolisani & Oltramari, 2012; Davenport & Prusak, 2000; Kodama, 2011). These integrators can be managers, organizational culture, and leaders because they can deal with all three fields of knowledge (i.e., rational, emotional, and spiritual). The knowledge exploitation strategy creates a common understanding of available knowledge through codification. "Knowledge codification implies transforming cognitive, emotional, and spiritual knowledge into messages that can be understood by all employees of a certain organization. It occurs inside the organization, but its consequences should be observed in internal and external environments" (Bolisani & Bratianu, 2018, p. 153).

Knowledge exploitation strategy requires managers a good understanding of the knowledge distribution throughout the company, and its impact on knowledge entropy (Georgescu-Roengen, 1999; North & Kumpta, 2018). Managers can use knowledge mapping to know who knows what in the organization. "A knowledge map portrays the sources, flows, constraints, and sinks (losses or stopping points) of knowledge within an organization" (Liebowitz, 2005, p. 77).

Knowledge acquisition strategy constitutes the answer to the situation of *known unknowns.* Knowing what they know, and evaluating the knowledge gap between what is known and what it should be known, people decide to buy knowledge through different procedures such that they can bridge the gap. Knowledge acquisition is an alternative to knowledge creation because it is fast and sometimes easier to implement in the organization (Chaston & Mangles, 2000; Hoe & McShane, 2010). When SMEs do not have enough time or financial resources to create their own knowledge in concordance with their needs, knowledge acquisition is used mostly by SMEs.

Knowledge acquisition refers only to explicit knowledge because emotional and spiritual knowledge cannot be purchased. They can be generated only inside the organization due to the nonlinear integrators (Nussbaum, 2001; Simon, 1987). Knowledge acquisition can be done by purchasing books, journals, experts' reports, software programs, databases, patents, and other documents needed to increase the knowledge level in the organization. Also, knowledge acquisition can be done by purchasing services from consulting companies, training programs from specialized companies, and hiring experts and talented people with a high level of explicit and tacit knowledge (Liu, 2020; Massingham, 2020; Milton, 2007).

Knowledge acquisition can be realized in organizations by extracting knowledge from experts, especially those who leave the organization due to retirement. They leave the organization with a high level of expertise concentrated in their explicit and tacit knowledge. That leads to a knowledge loss that may have an important impact on the

business's evolution. Extracting knowledge from their expertise is called in literature *knowledge capturing*, a procedure used also for creating expert systems (Clark et al., 2008; Eucker, 2007).

Knowledge loss can be critical when a significant percentage of people retire or leave the company almost simultaneously. DeLong (2004) describes a knowledge critical situation at Boeing when there was such a situation and there was no strategy for knowledge retention. "After Boeing offered early retirement to 9,000 senior employees during a business downturn, an unexpected rush of new commercial airplane orders left the company critically short of skilled production workers. The knowledge loss from veteran employees combined with the inexperience of their replacements threw the firm's 737 and 747 assembly lines into chaos" (DeLong, 2004, p. 19). A similar situation happened at NASA due to bad top management decisions for early retirement plans (Mahler & Casamayou, 2009).

Knowledge sharing is one the most used strategies to stimulate the conversion of tacit knowledge into explicit knowledge through externalization (Nonaka & Takeuchi, 1995), and to share that knowledge with other employees. Knowledge sharing results from a personal willingness to offer the other employees something out of our experience and expertise (Cyr & Choo, 2010; Jashapara, 2011; Morone & Taylor, 2004; Nesheim & Gressgard, 2014). Although it looks very simple and attractive, knowledge sharing is a process that depends on the psychological climate of the organizational context. If a company stresses individual competition, people will be reluctant to share their knowledge, preferring the knowledge-hiding attitude (Bai, 2020; Ruparel & Choubisa, 2020). If an organizational culture is based on collaboration, like in Japanese companies, then the knowledge-sharing strategy is developed up to its upper limits (Nonaka & Takeuchi, 1995, 2019). Regardless of the capacity of organizational culture to stimulate knowledge sharing there is an inertial effect mixed up with some other psychological beliefs that create the stickiness phenomenon (Szulanski, 2000; Szulanski & Jensen, 2004).

Intergenerational learning is a useful method of performing knowledge sharing (Bratianu & Leon, 2015; Bratianu et al., 2011). This method is indicated especially in those organizations where employees can be structured into age layers. One good example is a university, where there are such age layers because of the academic promotion pyramid: university assistants, lecturers, associate professors, and full professors. Knowledge sharing between age generations is a very efficient method of knowledge transfer and improving knowledge distribution throughout the organization. The knowledge-sharing strategy does not lead to knowledge creation, but to a change in knowledge distribution such that an increase in organizational knowledge entropy (Bratianu, 2019).

Knowledge exploration strategy is designed to answer the unknown-unknowns situation. It is a strategy for stimulating knowledge creation, reducing the absence of knowledge during economic crises, and for the desirable future when defining strategic objectives. "The essence of exploration is experimentation with new alternatives. Its returns are uncertain, distant, and often negative" (March, 1991, p. 85). Knowledge creation should be considered at the individual, team, and organizational levels. Nonaka and Takeuchi (1995) developed the SECI – Socialization, Externalization, Combination, Internalization – model by considering the conversion of tacit knowledge into explicit

knowledge, of explicit knowledge into tacit knowledge, and sharing knowledge in both forms.

Knowledge exploration leads to innovation, which is a key process sustaining a competitive advantage for firms and countries (Khazanchi et al., 2007; Newell et al., 2009). As Florida (2007) demonstrated, knowledge creation impacts not only organizations but also society and its social structure: "I call the age we are entering the creative age because the key factor propelling us forward is the rise of creativity as the prime mover of our economy. Not just technology or information, but human creativity" (p. 26).

Conclusions

This paper aims to identify the most adequate knowledge strategies to answer the specific situations described by the known-unknown matrix. Based on a critical literature review and a conceptual analysis, we could define four generic knowledge strategies, i.e. strategies that knowledge managers can implement in any organization. For the situation of *known-knowns,* the best strategy is *knowledge exploitation* that can make use efficiently of all organizational knowledge and organizational intellectual capital. The success of this strategy consists in knowing the importance of different fields of knowledge and their distribution within the whole organization – who knows what. On the same logic, if managers know what they know, they could know what they do not know regarding some objectives. To answer this known unknown situation, managers should develop *knowledge acquisition* strategies.

Is more difficult to answer the situation of unknown-knowns because we have to consider both explicit and tacit knowledge here. Access to tacit knowledge is much more difficult due to its unconscious nature and manifestation. The best strategy for this situation is *knowledge sharing*. However, knowledge sharing results from a personal decision based on people's willingness to share their experience and expertise without a clear economic gain. Knowledge sharing depends on the organizational culture and the pressure of competition in a given company. When competition is fierce, people tend to hide their knowledge to not lose their professional power.

The most complex situation is for *unknown-unknowns* when managers have almost no knowledge about the objective they want to create in the future. That is a situation associated to economic crises when the absence of knowledge is high. The best strategy for such kind of situations is *knowledge exploration*. The knowledge exploration strategy stimulates knowledge creation and innovation. Knowledge creation reduces the absence of knowledge and of uncertainty. Innovation in its newer form of open innovation contributes to new product development, thus achieving a competitive advantage.

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