



Strategic knowledge management—Insights and pitfalls



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1. Introduction to strategic knowledge management

Strategic knowledge management (SKM) can be thought of as the concept of strategically codifying and personalizing aspects of knowledge (explicit and tacit) across an organization for increasing overall performance. Related studies reveal that the management of strategic knowledge invariably demands ‘codification’ (capturing valuable know-how in documents/systems and fostering people-to-documents link) and ‘personalization’ (fostering people-to-people connection and linking to timely experts) (Hansen, Nohria, & Tierney, 1999; Li, Chai, & Nebus, 2013; Liu, Ray, & Whinston, 2010; Wallace, Van Fleet, & Downs, 2011).

Codification in SKM can be supported via online information infrastructure such as intranets, organizational wikis, shared databases, document management systems, and enterprise information portals. Today, even a modest organization intranet can contain tens of thousands of web pages. It is too often the case that employees are drowning in information, yet starved of accessible and timely codified knowledge (Brown & Duguid, 1991; Kimble & Bourdon, 2008; Reihlen & Nikolova, 2010). A codification strategy should thus be underpinned with effective organization-wide knowledge taxonomies and related search technologies to enable individuals to locate relevant and related content in an efficient manner across a variety of systems and repositories in the organization for higher work productivity (Hansen et al., 1999; Nicolas & Cerdan, 2011; Xu and Quaddus, 2005).

Personalization in strategic knowledge, on the other hand, can be supported by something as simple as an email (and/or a messaging tool) to more advanced applications such as expertise registers organizational *Yellow pages*, online forums, discussion groups, blogging and even social networking applications (*Facebook, Skype, GTalk, Twitter, Instagram, Pinterest, ResearchGate, Google plus* and

hangout, LinkedIn, WhatsApp etc.) in the modern era. These types of applications enable the exchange of insights, opinions, experiences and expertise between users, employees, customers and suppliers. However, for such personalization applications to flourish, an open knowledge sharing culture is essential (Brown & Duguid, 1991; Nonaka, 1994; Nonaka & Takeuchi, 1995). Executives can play a key role in this, educating skeptics that such activities can underpin a personalization strategy to increase innovation capacity as opposed to being seen as time-wasting activities.

In general, strategically managing knowledge is often considered central for enhanced work productivity and innovation capacity in organizations. A recent study illuminated the concept of SKM, which “is concerned with harnessing know-how that is comparatively non-replicable so as to influence environments as well as to respond to them” (Venkitachalam & Willmott, 2015, p. 345). Other studies have highlighted the importance of executives’ responsibility to emphasize on codification and personalization at the same time for improved organizational performance (Chai & Nebus, 2012; Desouza & Evaristo, 2004; Kumar & Ganesh, 2011; Venkitachalam & Willmott, 2015) instead of fixating on a particular strategic knowledge emphasis (e.g. Hansen et al., 1999). Despite such extensive literature on SKM, a conceptual understanding on the equivalent emphases between codification and personalization in SKM seems lacking. In this paper, we investigate the critical question of – *why should organizations emphasize equivalence between codification and personalization in strategic knowledge management?*

2. Significance of strategic knowledge in organizations

In this paper, we base our arguments by analyzing particular organizational examples from the existing literature that is pertinent in the context of this study. For a start, we consider the case of Xerox Corporation as a point of departure and how their management team could have tackled the high-risk SKM pitfall of low work productivity. Xerox Corporation provides a relevant case of how strategic knowledge contributed to constant innovations in

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the technology space (Chesbrough, 2003; Chesbrough et al., 2014; Helfat & Quinn, 2006; Popadiuk & Choo, 2006). Loutfy and Belkhir (2001) argued that although Xerox contributed to many breakthrough technological innovations, they often did not profit from them. Some of those knowledge-based innovations like the desktop workstation, ethernet LAN, windows graphic interface, handwriting recognition, thermal inkjet, image capable networks, liveBoard, HR flat panel display and 3D info visualization (i.e. all these disruptive technologies created between 1970 to 1990) were just not translated to businesses or products by Xerox (Loutfy & Belkhir, 2001).

Generally innovations in organizations emerge from knowledge creation and sharing using strong social networks that a personalization strategy seeks to achieve (Nicolas & Cerdan, 2011; Popadiuk & Choo, 2006). Loutfy and Belkhir (2001, pp. 21–22) also argued “markets put more value on the people who can develop and extend intellectual assets than on the assets themselves”. However, we think Xerox placed ‘overemphasis’ on relentless creation of knowledge in different computing and copying technologies resulting in high organizational knowledge growth. This can often lead to what we term as ‘knowledge proliferation’ contributing to high capacity of delivering some radical innovations, but most of it remains as Loutfy and Belkhir (2001, pp.22) puts it as “... great technologies or ideas that are not enough by themselves. Unless a self-driven and passionate team is ready to dedicate itself completely to the project, the entire undertaking grows to nothing more than a stillborn entity”. In this regard, we argue that better synergy could have been realized if there had been SKM implementation in the case of Xerox. In principle, the presence of SKM could have helped Xerox executives to understand the value of investing more on codification (i.e. more knowledge structuration by restricting the proliferation of innovative knowledge). In essence, this means focusing more on how to efficiently commercialize existing firm knowledge into some meaningful value creating market friendly products. SKM could also have helped Xerox progressively to achieve equivalence on the twin objectives of innovation capacity and work productivity (i.e. through effective personalization and codification respectively), instead of giving almost exclusive attention to innovations that were not translated into revenue-earning products for the firm.

Likewise, Helfat and Quinn (2006, pp. 86) noted that “The history of Xerox Palo Alto Research Centre is fascinating and Chesbrough tells it well. Although this research lab created path-breaking innovations, the company that funded it, Xerox Corporation, failed to commercialize many of these innovations”. While Henry Chesbrough argues that the commercialization failure was due to their ‘closed innovation’ strategy, we argue that Xerox was faced with high innovation capacity for ‘mere proliferation of innovative technological knowledge’ (i.e. computing and electronics) and hence struggled to emphasize equivalence in SKM. As evident, ‘knowledge proliferation’ is a case of extreme creation and propagation of knowledge resulting from the benefit of having a culture that promotes organic chaos. IBM is another organization where they have developed numerous patents in the information technology space creating ‘knowledge proliferation’ but not all of the patents have been translated into products.

Similarly, strategy-consulting organizations like McKinsey, BCG, Roland Berger and Bain & Co often follow personalization with some codification in support (Hansen et al., 1999) of their SKM. Strategy making is quite unique to each client’s context and the creation of knowledge by consultants is so critical in determining the competitive advantage of clients’ business in their respective industry and business contexts. This is especially true when external environments are buoyant and clients (and their consultants) need to constantly adapt to those turbulent environments through creation of new knowledge (Venkitachalam &

Willmott, 2015; Xu & Quaddus, 2005). Strategy-consulting businesses thereby extensively rely on consultants’ tacit knowledge to solve clients’ problems and often invest on building strong knowledge networks or communities of interest to develop people-to-people connections. Yet, they can be stuck with overwhelming amount of insights, multiple perspectives and suggestions leading to the pitfall of ‘knowledge proliferation’. Presence of strong social networks can be an enabling driver for organizations in this sector because of the need for constant ideas and these ideas can be generally sourced from individual tacit knowledge residing in the minds of employees, client staff and industry experts (Polanyi, 1962; Popadiuk & Choo, 2006; Tsoukas, 2003; Wenger, 1998). However, when key consultants and deep smarts leave the organization, there creates a gap in the available competencies, expertise and the organizational context is changed considerably.

Therefore, whenever organizations are faced with ‘knowledge proliferation’, they often struggle to find ‘harmony’ between what and how much knowledge to codify (“structuration”) and how much knowledge to personalize (“proliferate”). IBM and Xerox’s PARC phenomenon, and consulting firms are cases in point where they have generated knowledge in different technologies, but did not advance the knowledge or develop those into products or services in the marketplace (see Tushman & Anderson, 1997; Tushman & O’Reilly, 2002). In fact, competitors and new entrants in the IT sector around late 70s or even recent years (e.g. Google buying YouTube) acquired and developed those technologies to create products and even industries.

In contrast, organizations like Deloitte, PwC, KPMG, EY, Accenture and others have high capital investments in information infrastructures (e.g. intranets, global knowledge portals, content management systems and applications) and are heavily focused on capturing, categorizing, storing and reusing organizational knowledge (Reihlen & Nikolova, 2010; Wallace et al., 2011). Their main objectives are often the effective re-use of knowledge codified from past and present client projects and best practice solutions by strongly emphasizing on people-to-document connections and artifact networks. These firms codify their learning from a specific client engagement on a global knowledge portal and re-use it for a similar client setting elsewhere (Nicolas & Cerdan, 2011). The portal thus sophistically supports most of the consulting organizations’ approach to SKM resulting in an overwhelming amount of codified knowledge. Nevertheless, we argue that overemphasized codification efforts can result in ‘knowledge structuration’ and in this process dilute the purpose, meaning and contextual relevance of knowledge work in such situations. We further suggest that such ‘knowledge structuration’ (i.e. extreme codification that can be considered as ‘information end’) can impede idea generations, novel insights and radical innovation due to hyper controls and structures in the organization. This could lead to so many ideas lost/knowledge leakages.

3. Strategic knowledge management—insights and pitfalls

The explanations in the previous section on the conceptualization of managing strategic knowledge through different case examples provide three insights and two pitfalls that an organization must be aware of. The three insights can be described as follows.

Insight 1 – An exclusive emphasis on codification or personalization runs the risk of ‘knowledge structuration’ or ‘knowledge proliferation’ respectively in an organization’s SKM.

Insight 2 – The absence of equivalence between codification and personalization in SKM results in fragmented and uncoordinated efforts with no real organizational outcomes linked to work productivity and innovation capacity.

Insight 3 – Executives should continuously realize the need to emphasize on equivalence (or congruence) between codification and personalization aspects of SKM in order to keep enduring work productivity and innovation capacity in organizations.

As for the *first pitfall*, we argue that when managers follow an SKM approach that is overriding on codification, it is likely to shackle future innovation because of a highly structured and centralized environment where knowledge is generally represented as procedures, policies, guidelines, best practices, templates, exemplars and standards instead of fostering opportunities to innovate radically in a more organic and vibrant environment. This we term as high-risk pitfall of 'knowledge structuration' leading to high work productivity but low innovation capacity.

The *second pitfall* can occur when organizations are over-reliant on personalization to create an open sharing culture receptive to know-how and perspectives from all actors. Here, the importance of establishing relevant systems, structures and work routines are often overlooked and fail to effectively capture the wealth of ideas, insights and work experiences of employees before they retire or move out of the organization. This we term as high-risk pitfall of 'knowledge proliferation' leading to high innovation capacity but low work productivity.

Additionally, there is often an erroneous belief in many organizations that they are already achieving harmonious SKM (i.e. effectiveness of codification and personalization of their knowledge). Yet, a simple 'blackout test' can determine if any serious progress has been made to strategic knowledge management. The logic of the test is as follows. In terms of codification, what would be the effect if (theoretically) the organization's portals, intranets, search engines and document management systems or its infrastructure was shut down? If it would be largely business as usual, the organization is yet to embark on its SKM development towards organizational performance. For example, in highly knowledge-intensive organizations (whether it is in IT, law, consulting, hospitality, education, advisory or financial services sector) where knowledge codification and reuse are extremely important, a simple information infrastructure 'blackout test' can have huge implications in overall day to day work productivity.

Similarly, in terms of personalization, the 'blackout test' can reveal how reliant the organization is on the knowledge of a few key players and deep smarts (e.g. subject or area specialists, expert consultants, scientists, engineers or experienced and highly skilled employees). What would happen if they all resigned or moved elsewhere at once? In fact, a personalization blackout can severely affect the innovation capacity and future competitiveness of the organization. In the end, we argue managers should always aim to develop *strategic equilibrium between structuration and proliferation of knowledge* to sustain high employee productivity and high innovation respectively in organizations.

Finally, we argue that executives should perform audit checks on their organization's knowledge repositories, collaboration and social networks to track its progress. These can be thought of as road signs that the informed manager should take into account in steering the organization towards its knowledge destination (i.e. codification-personalization harmony in SKM to enable sustained work productivity and innovation capacity). A recent study of a government organization engaged in economic analysis and statistical research, based in the Oceania region, notes how an integrated approach to SKM, involving an harmonious balance of codifying and personalizing ways of managing knowledge, was achieved over many years (Venkitachalam & Willmott, 2015). Specifically, it is argued that the organization's "competitiveness depended on continuous knowledge creation accomplished through a culture of openness in sharing of ideas and insights between experts working in different specialist fields and functions. This has been led and supported by senior managers who, by renewing and updating

the processes integral to the strategic management of knowledge, have been proactive in the dynamic balancing of personalization and codification" (p. 355).

4. Concluding remarks

We believe that the three SKM insights and two pitfalls will be useful for executives to reflect and better prepare for sustaining innovation capacity and work productivity in their organization. The conceptual arguments are based on analyzing certain examples of why organizations need to put greater emphasis on the equivalence between codification and personalization in the context of strategic knowledge management. We also argue that SKM initiatives that prodigiously focus on either codification or personalization can lead to pitfalls despite plenty of managerial interventions. We further believe that the proposed ideas will be worthwhile considerations for managers responsible for innovation, strategy and IT divisions of the organization to determine whether its organization's knowledge engine is running smoothly, and if not, where to direct their energy to yield long term and robust outcomes.

In summary, organizations are prone to substantial loss of know-how and know-what, onerous re-invention, and considerable wastage of resources (i.e. employee time and capital spent on both improving work productivity and enhancing innovative capacity due to inadequacies in SKM) when codification and personalization norms are absent. For example, manufacturing organizations (e.g. automobiles, steel, textile, glass, and aircraft) can face questions of how to increase work productivity by improving plant safety, reduce production breakdowns and manufacturing inefficiencies without losing track on enhancing innovation capacity. On the other hand, in start-up and small-sized organizations, there is often over-reliance on personalization to share tacit know-how and experiences among the founders and their small team for the purpose of enduring innovation capacity. Even so, it could draw attention away from the need of a relevant information infrastructure to support work productivity. Therefore, executives need to develop an informed understanding of what types of organizational knowledge (and how much) can be 'structured' and/or allowed to 'proliferate' in order to sustain both work productivity and innovation capacity toward a harmonious conceptualization of an organization's strategic knowledge management.

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