

A NORMATIVE MODEL OF KNOWLEDGE MANAGEMENT EFFECTIVENESS

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ABSTRACT

No shortage of frameworks exists to describe the organizational features, management practices and strategic intents of knowledge management (KM). To reduce the complexity of that landscape, this chapter presents a normative model of knowledge management effectiveness that identifies the most influential factors from among the manipulable sets of organizational attributes and measurable variables that may promote strong KM capabilities. It defines the scope of this normative model as well as its components, beginning with a description of knowledge management and a discussion of its associated capabilities. The chapter proposes a multidimensional definition of KM effectiveness; examines the values, structures, and resources that comprise KM capabilities; and posits that collaboration and commitment processes serve as the mechanisms through which KM capabilities become effective.

To appear in: *The Handbook of Research on Knowledge Management: Adaptation and Context* (2015), Anders Örténblad (ed.), London: Edward Elgar

A normative model of knowledge management effectiveness

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Introduction

No shortage of frameworks exists to describe the organizational features, management practices and strategic intents of knowledge management (KM). These models have been developed based on data from organizations in a variety of industries, economic sectors and geographic locations. Since the field of KM emerged in the mid-1990s, a continuous stream of research on success factors and inhibitors has produced general guidance for practitioners working to improve how their organizations manage their intellectual assets. Indeed one comprehensive review identified 160 approaches to the subject developed between 1995 and 2003, after which publication of new descriptive and proscriptive models had dropped off substantially (Heisig 2009). A more recent literature review by Matayong and Mahmood (2013) suggests that no convergence in analytical approaches to KM has yet occurred.

Proposed KM models commonly offer comprehensive descriptions of the variables and their interactions that can influence different outcomes, and these have been the basis of empirical research to demonstrate causal links (*e.g.*, Kulkarni, *et al* 2006; Nejatian, *et al* 2013). But it is a long way from identifying correlations and covariances that meet a minimal threshold of statistical significance to devising action plans for those working to manage knowledge effectively. Practitioners can benefit from understanding the complexity they face and having a big picture awareness of the conditions that may enable or hinder their efforts (Antonacopoulou and Chiva 2007). But at the same time, they need a means of simplifying the landscape to make decisions more easily about where to begin and what to do. This is where a *normative* model can prove useful.

To be valuable as a theoretical statement, a normative model of KM effectiveness must explain why KM succeeds in some organizations and not others. It should provide insight into how organizations that effectively apply KM differ from those that are less adept at it or, perhaps more importantly, do not recognize the value of allocating resources to KM activities at all. Such a model goes beyond depicting what KM is and how it happens. It identifies the most influential factors from among the manipulable sets of organizational attributes and measurable variables that may promote strong KM capabilities. In so doing it provides guidance to practitioners about how to prioritize their efforts.

The approach to defining the normative model of KM effectiveness presented in this chapter is inspired by Hackman's (1987) seminal model of work group effectiveness. His definition of a normative model readily applies in the case of KM:

While based in part on findings from descriptive research, the normative model is essentially a theoretical statement in which existing knowledge is reconfigured to make it more useful in improving work group effectiveness. (Hackman 1987: 322)

Accordingly, the proposed normative KM model draws on a rich body of extant research findings. It also views KM through a lens that sees organizations as *complex and dynamic social systems*, an understanding of which is necessary to successfully implement action plans. Two salient points stand out here. First, the groups, functions and processes that comprise any organization are interrelated and interdependent, and as a result outcomes are probabilistic and characterized by equifinality (*i.e.*, there can be multiple routes to the same result). Second, organizations are adaptive, but the consequences of any particular decisions can create unintended constraints on the range of future strategic choices, which can make it difficult to specify optimal solutions *ex ante* (Sydow, *et al* 2009). For these reasons, the premise of the model is that certain conditions can *only increase the likelihood* of the desired outcome; their presence *does not guarantee direct causation*.

Scope of the Normative Model

Any explanation of a phenomenon should delineate what is included and what is not. It is important to define the scope of this normative model as well as its components, beginning with a description of knowledge management and a discussion of its associated capabilities. Since the model regards success as achieving KM effectiveness, that objective needs specification. Finally, the model needs to clearly propose the mechanisms through which KM capabilities become effective.

Defining KM

KM is a multifaceted and multidisciplinary field. The KM literature is replete with attempts to specify the meaning of its subject. Most start with defining knowledge itself, often discussing the difference between explicit and tacit knowledge (*e.g.*, Nonaka & Takuchi 1995; Davenport & Prusak, 1998) or presenting a typology of the means organizations use to create value through knowledge (*e.g.*, Earl 2001; Bhatt 2001). Few characterizations of KM, however, avoid using the words “knowledge” and “management.” The following definition avoids that tautology and synthesizes common elements found throughout the field:

Knowledge management is a formal approach to acquiring, creating, codifying, storing, sharing and using contextualized information, expertise and other intellectual assets to support achieving an objective.

Together, the processes, activities, practices, organizational arrangements and values associated with this approach comprise the KM strategy of an organization.

Defining KM Capabilities

KM activities involve individual and group tasks intended to produce an outcome. Denford (2013) distinguished between KM activities that contributed to exploration (*i.e.*, discovery of new knowledge) and exploitation (*i.e.*, application of what is already known) respectively. Managers must address the inherent tensions and trade-offs between investments in these two areas when making decisions (March 1991). The resulting KM strategy reflects managerial judgments, which can vary widely based on

circumstances. Each discrete KM process and practice does not necessarily play an equally important role in the strategy and operations of a given organization. Any KM model can only do its best to capture the complexity of that reality across all instances of KM.

One way to mitigate these limitations is to focus on organizational capability, which conceptually provides a middle ground that bridges macro-level strategies and micro-level actions. A capability is something one is good at or needs to be good at to achieve an objective. Ulrich and Smallwood (2004, p. 119) describe organizational capabilities as “the collective skills, abilities and expertise of an organization...they are stable over time.” To provide an advantage over competitors, an organization's capabilities need to be unique, or at least difficult to replicate. Thus capabilities are at once strategic yet derived from attributes of individuals.

Capabilities are divided into two categories, and knowledge is central to both. *Operational capabilities* support current, day-to-day functions, and *dynamic capabilities* are required to adapt to future needs. Each aligns with the sets of KM activities related to exploitation and exploration, respectively. In one of the earliest discussions of KM capabilities, Gold, *et al* (2001) proposed that they comprised enabling infrastructure capabilities (*i.e.*, technology, structure, people and culture) and process capabilities (*i.e.*, creation, acquisition, use and so on). They found that both types are positively associated with organizational effectiveness.

Denford (2013) synthesized the KM literature to identify eight types of dynamic capabilities:

- | | |
|------------------|-----------------|
| 1. Creating | 5. Developing |
| 2. Integrating | 6. Assimilating |
| 3. Reconfiguring | 7. Synthesizing |
| 4. Replicating | 8. Imitating |

Liao, *et al* (2011) suggest that KM capabilities change organizations in ways that help mediate the effects of environmental uncertainty by lowering the cost of information sharing, increasing flexibility, and thus improving decision quality. In this way those capabilities are indicators of the potential for KM success.

There is an infinite variety of KM systems because the capabilities that support each reflect a unique combination of human, organizational, cultural and technical factors. Any advantage KM capabilities provide is a function of the interaction of these enablers. While each element of one system may not necessarily differ from its counterpart in another (*e.g.*, two firms can use the same KM software), the *system dynamics* are the source of any unique advantage.

Defining KM effectiveness

Enterprises make investments in KM activities out of the belief that doing so creates value through process and quality improvements, ideas for new products and increased efficiencies. While many studies have found evidence to support this, no single success measure or set of performance metrics have emerged to make findings directly

comparable (Jennex, *et al* 2009; Ragab & Arisha 2013). Some studies have focused on KM processes rather than outcomes *per se* by examining KM systems quality (*e.g.*, Owlia 2010). Kulkarni, *et al* (2006) made the case for considering individual perceptions of knowledge usefulness and overall satisfaction with the KM system. Jennex *et al* (2009) proposed a success model that combines outcome and process measures by sorting the most common measures into four dimensions at multiple levels of analysis.

This normative model likewise proposes a multidimensional definition of KM effectiveness. To be effective means producing net positive results at three levels: *enterprise, organization and individual*. This formulation is similar to the three levels of analysis – interorganizational, intraorganizational and interpersonal – Phelps, *et al* (2012) used to organize their review of the KM literature. The model uses the qualifier “net” since outcomes typically comprise a mix of positive and negative elements (Jennex & Olfman 2003); the law of unintended consequences alone suggests this would be true. Thus, we can regard KM as effective when the results are more beneficial than detrimental to the organization’s goals, capabilities and resources as follows:

Enterprise: KM systems need to deliver value in the eyes of those who govern the allocation of resources. Senior leadership have made an investment and seek some return. Therefore, *effectiveness at the enterprise level means the results of the KM effort meet or exceed the expectations of those who evaluate it against its stated, or even implicit, goals*. As defined by leaders on behalf of stakeholders, such goals represent the measurable manifestation of an enterprise’s fulfilling its purpose, be it making profits, alleviating societal ills, or educating the next generation. Note that in this context, “enterprise” refers to the highest level of accountability for the KM system. For instance, this may be an entire corporation or a single subsidiary; a university or only one of its schools or colleges; or, a branch of government or simply a department.

Organization: Once established, a KM system must continue to reliably support KM activities and their associated processes. To that end, *the methods used to build KM capabilities should also sustain and improve them*. An approach that leads to conflict between units or work groups, increased employee turnover or another dysfunctional outcome cannot be regarded as effective KM management.

Individual: KM systems can only be effective to the extent people use them, and KM success requires a sustainable level of effort. All models of rational human behavior – whether from economics, psychology, or sociology – assume that people act in certain ways only when they believe they will be better off. Thus, *effectiveness at the individual level means that participants in KM activities and processes experience more satisfaction than frustration from their efforts*.

Performance along these criteria can generate a reinforcing cycle. For instance, when KM demonstrates its value, leaders are more likely to make additional investments in it such as increased incentives and rewards, which can increase participation, sustain KM capabilities and produce continued results. Conversely, if individuals are dissatisfied and resist using the KM system, it may induce more

command and control oriented approaches that can impede goal attainment (Walton 1985), which makes further investments unlikely, threatens sustainability of KM efforts and decreases motivation.

Linking KM capabilities to KM effectiveness

Simply having KM capabilities is not the same as deploying them effectively. We need to identify the mechanisms through which that can happen. The model that follows proposes two process criteria that are precursors to KM. That is, to manage knowledge effectively an organization needs 1) to foster *collaboration* and make it integral to how work gets done; 2) to secure *commitment* throughout the organization to KM goals.

These process criteria are indicators that an organization's resources, structure and values are well designed and developed, aligned and producing the desired behaviors. The model is premised on the idea that there is a higher likelihood of KM success where more elements that help an organization meets the effectiveness criteria that are embedded in routines, norms, processes and structures.

To understand the conditions that influence the degree of collaboration and commitment, we turn now to a discussion of the three sets of levers managers can use to shape the organizational context.

Components of KM capabilities

In his influential discussion of innovation, Christensen (2001) proposes that organizational capabilities derive from three factors: *values, processes and resources*. His definition of processes, however, describes something regarded by sociologists and throughout the KM literature as *structure*: "Organizations create value as employees transform inputs of resources into products and services of greater worth. The patterns of interaction, coordination, communication and decision making through which they accomplish these transformations are *processes* [*sic*]." (Christensen 2001: 28)

Christensen's "processes" subsumes what exists at the task level as well as the more macro-level. A normative model must be generalizable; therefore the term "structure" is used here. As the source of KM capacities, these three components – values, structure and resources – are central to the proposed normative model:

Values

Values are the beliefs and principles that we find most worthy of adherence. They are a central part of an organization's culture and at the core of defining its identity. As an expression of priorities, values serve as decision criteria and can guide choices. They drive organizational strategy as well as reflect it. It is not simply the values themselves that matter, as important as that is, but also the extent to which there is clarity and consistency in their expression.

Structure

Organizational structure is the pattern of communication, coordination and control that shape behavior and outcomes. Structures are *a priori* in that role definitions and reporting relationships exist independent of their incumbents

and prior to their actualization. Just as structure influences action, however, so too it is shaped by behavior (Child 1972).

Processes also reflect structural elements designed to enable and constrain behavior through rules and policies. We see these in how an organization conducts its strategic planning, resource allocation and operational execution. Both human resources processes aimed at attracting, retaining and developing staff and IT management processes for service delivery are especially relevant to KM.

Resources

Resources are assets that can be acquired, maintained and divested. For examples, people can be hired, trained and developed and dismissed. Information Technology (IT) can be purchased and implemented, repaired and upgraded, decommissioned and sold. To the extent an organization can develop firm specific resources that are not easily replicable by competitors, it can better protect its KM investments (Teece, *et al* 1997).

Chuang (2004) built on the knowledge capability models of Gold, *et al* (2001) and Lee and Choi (2003) to analyze how social (*i.e.*, people) and technical (*i.e.*, IT) factors influence KM's contribution to a firm's competitive advantage. People and technology resources of course are interrelated. Kulkarni, *et al* (2006) takes as a starting point that IT is a necessary – though not sufficient – enabler to KM success and focus their examination on the importance of support from leaders, supervisors and coworkers to influencing when and how people use KM technologies.

These three sets of variables affect the way KM activities are planned and performed. The remaining discussion of the normative model identifies the conditions for each that increase the likelihood of satisfying the three effectiveness criteria.

The model

Figure 1 below depicts and summarizes the components of the normative model of KM. It shows the relationship between knowledge capabilities, the factors that comprise it and the mechanisms by which those capabilities can lead to KM effectiveness.

[insert Figure 1 here]

Conditions that support collaboration

Most process models of KM depict the completion of sequential activities (*e.g.*, knowledge has to be created before it can be applied), which typically involves teamwork. Collaboration is a defining characteristic of team based work, and it is especially true for knowledge-intensive functions such as R&D, marketing and customer support. KM requires collaboration since fundamentally it is about taking what is known by individuals and creating the potential for it to be known by others.

Without embracing collaboration between individuals, teams and organizational units, meaningful KM is not possible.

A collaborative culture is most likely to emerge when the following three conditions exist:

- 1) Trust, transparency and learning are valued
- 2) Organizational roles, rules, and rewards support knowledge exchange and learning
- 3) People have the skills, motivation and tools to work with others

Values

Three values are essential to fostering a collaborative culture: trust, transparency and learning. Collaboration is a mindset, a way of thinking about how to do work that cannot best be accomplished by a single individual. At its most effective, it brings together people with different expertise and skills with the tacit understanding that they will teach and learn from each other (Edmondson 2012). For this reason collaboration requires trust.

Trust is the expectation that others will be benevolent, reliable, competent, honest and open (Tschannen-Moran & Hoy 2000). Lack of trust inhibits collaboration since the former can engender a sense of vulnerability due to fear of revealing weaknesses or concerns about giving something away without reciprocation (Edmondson 1999). In their review of the KM literature, Wang and Noe (2010) found abundant empirical evidence that a trust facilitates knowledge exchange. Such exchanges are required to develop each of the eight types of dynamic KM capabilities identified by Denford (2013).

Trust is a relational concept that emerges from interactions. Interpersonal trust, though, is distinct from an organizational climate that values it. Abrams, et al (2003) identified ten managerial behaviors that can help build interpersonal trust by promoting benevolence and competence. In such a culture, people are expected to be trustworthy and to act with integrity. An important component of this is transparency for it can provide reassurance of candor, honesty and forthrightness of intention. These can create a climate that reduces psychological barriers to collaboration, which is important for evaluating content and knowledge quality without the risk of creating resentments or bruised egos.

Transparency most commonly is associated with a conscious, prudent effort to make timely, accurate and complete information available. A culture that encourages transparent communication increases the quality of decentralized decisions. It also can inspire new opportunities for collaboration because people can see who among them are working together and sharing, which can increase the sense of personal responsibility and accountability to others for doing the same (Axelrod 1984).

An organization that values learning also encourages collaboration. Learning requires being open to other perspectives. Gold, *et al* (2001) found a positive

relationship between strong KM capabilities and environments in which employees were encouraged to ask for assistance, to interact with others and to talk about their work with colleagues. Leaders who value learning balance advocacy and inquiry (Argyris & Schön 1996). When they speak with a genuine interest in listening to what others say, they send the message that asking questions and being curious are important and even expected (Edmondson 2012). Where these are discouraged or not recognized as important, a primary motive for collaborating and sharing knowledge is diminished.

Structure

Collaboration is most likely to emerge in organizations that are less hierarchical and centralized, more flexible and with less formal roles and more integrated across functions and units (Mahmoudsalehi, *et al* 2012). These structural features facilitate social interaction in several ways. Fewer rules about roles and boundaries gives employees more discretion in how work is done. This can increase motivation and feeling of responsibility for outcomes, the desire to solve problems and the amount of interaction with others (Chen & Huang 2007). Decentralized decision-making facilitates experimentation and creativity, which are catalysts for knowledge creation (Lee & Choi 2003).

Organizing work in teams by definition imposes the need for collaboration. Where roles and boundaries are flexible rather than rigid, it is easier to create and reconfigure teams in response to particular problems or specific operational needs. This has clear benefits for KM. More integration across boundaries creates richer information flows, makes team knowledge more diverse, increases opportunities to learn from others and results in more valuable collaboration (Chen & Huang 2007). Forcadell and Guadamillas (2002) studied an organization that shifted from a segmented (*i.e.*, functional) structure to a process-based cross-functional one where authority was delegated to self-managed teams. They found that this structure facilitated knowledge creation, distribution and use. Effective process-based organization requires clear communication processes, including common vocabularies and norms of practice that also benefit collaborative KM activities.

Permeable boundaries between organizational units enable dense networks of relationships to emerge (Kanter, 1988). There is evidence that characteristics of individual ties (*i.e.*, frequency and depth of interactions), network cohesion (*i.e.*, proportion of direct ties relative to the total possible) and network range (*i.e.*, non-redundancy of ties to clusters of people or organizations) can create advantages for KM outcomes (Phelps, *et al* 2012). Norms of reciprocity and the emergence of trust in networks can increase the volume and velocity of information sharing and create more opportunities for learning.

The second set of structural factors that shape a collaborative culture includes human resource policies and practices. Hiring criteria, performance management processes and reward systems are strong influences on collaboration and learning. Screening applicants for traits associated with cooperation and teamwork is an

important starting point. Skills can be learned, but temperament is not generally open to significant modification.

While individuals vary in the degree to which their motivation is influenced by extrinsic factors, incentives matter. Collaboration is a form of social cooperation, and game theoretic approaches point out its emergence requires a payoff structure that makes it more valuable to collaborate than to not (Axelrod 1984). In the KM context, Cabrera and Cabrera (2002) refer to this collective action problem as the “knowledge sharing dilemma” and discuss ways to restructure the payoffs through incentives to increase individual contributions. Among these rewards is social esteem – being well thought of and regarded as an expert. KM systems that including the names of contributors, incorporate a simple rating system for usefulness (*i.e.*, thumbs up, thumbs down) and provide public recognition for notable contributions can inspire continued collaboration by building an individual’s reputation and social capital (Wasko and Faraj 2005).

Resources

Collaboration requires individuals who have both content related expertise and teaming skills. The first type of competency engenders credibility and a willingness of others to exchange information and knowledge with them. It may be a mastery of subject matter, a facility with analysis and synthesis, or the ability to recognize patterns and put knowledge in proper context. Note that accomplishing work through collaboration means it is not necessary or even desirable that each member have the same competencies. For instance, only certain KM roles require technical expertise in areas such as metadata, database management, HTML or Drupal.

To collaborate effectively people also need the ability to work with others. Interpersonal skills such as communication and conflict resolution help make discussions and joint activities more productive. An aptitude for planning, coordinating and managing task performance can do the same (Stevens & Campion 1994). A team also benefits when members are self aware and can reflect on their experience to identify what they know and have learned so it can be captured and applied.

Even with expertise and teaming skills, some people are more comfortable with collaboration than others. Individual characteristics help determine motivation to collaborate. Personality traits including a disposition toward building relationships, extroversion and perceived self efficacy strongly influence collaboration and knowledge sharing (Lin & Huang 2009; McGiveney, *et al* 2009). Diversity in team composition is an important ingredient for effectiveness, and selecting members for temperament can be as important to promoting satisfactory collaborative experiences as ensuring that each brings a complementary skill set (Hackman 1987).

The second set of resources needed for collaboration is an IT infrastructure that enables a flatter, more flexible organization and supports information sharing. This includes a communication network that facilitates synchronous and asynchronous interaction and a KM system (*i.e.*, application, hardware and so on) that is accessible

from multiple locations inside and outside the organization. A core KM resource is a repository for knowledge objects that consist of content that can be tagged, indexed, stored, retrieved and modified. KM success includes having quality content perceived as relevant, timely and applicable (Kulkarni, *et al* 2006). Characteristics of strong capabilities include KM technology with the necessary functionality, user friendly interface, easy to use search, low redundancy of content, reliable connectivity, flexible presentation of output and adequate security (Owlia 2010). These aspects shape how people perceive the efficacy of the KM system and increase their willingness to exchange and use knowledge (Cabrera & Cabrera 2002). The absence of a quality IT infrastructure can decrease both the ability and the motivation to collaborate.

Integral to an enabling technology system is the capacity of staff to coordinate implementation, manage operations and support users. The maturity and general effectiveness of IT management processes will influence how well an enterprise's KM tools can remove barriers to communication and knowledge sharing (Davenport & Prusak 1998; Von Krogh, *et al* 2000). As the normative model makes clear, however, even a highly capable IT infrastructure by itself is not sufficient to support effective KM activities without the reinforcement of the organizational and cultural factors to which we now turn.

To summarize this section, three sets of factors increase the likelihood that a collaborative culture will develop and be a basis for KM effectiveness. The cultural climate should favor trust, transparency and learning. The organizational design must facilitate connections between individuals and the rich flow of information. Lastly, people need the appropriate aptitudes and capacities and the tools to help them communicate and work with others.

Conditions that support commitment

Commitment is the volitional act of binding oneself intellectually or emotionally to a course of action. In an organization, it is a willingness to do what is necessary for the group because it meets one's instrumental, affective and moral needs. Mechanisms that generate commitment are what sustain any collective effort (Kanter 1972). Together these contribute to shaping an organization's climate. Indeed each of the four validated dimensions of organizational culture – involvement, consistency, adaptability and mission – has been associated with building commitment (Nongo & Ikyanyon 2012).

KM requires three types of commitments from individuals. A commitment to *continued involvement* in KM activities makes people feel invested in its success. A commitment to *relationships and communities* creates the cohesion among individuals needed to identify and share relevant knowledge. Finally, a commitment to *uphold beliefs and norms* binds participants to the organization through self-regulation rather than extrinsic controls. As a group these commitments promote behaviors conducive to effective KM.

Commitment is most likely to be secured when the following conditions are present:

- 1) Leaders display comfort with adaptation and a passion for innovation
- 2) Those with the direct access to relevant information participate in decisions
- 3) People identify with the organization's KM goals

Values

The values of trust, transparency and learning that are essential to collaboration also facilitate commitment. The foundation of each is respect for individuals and their contributions, without which participation loses meaning. Similarly, the values associated with decentralization and open communication contribute to group cohesion by diminishing status distinctions based on hierarchical position. The beliefs and norms that promote pro-social behavior and assume goodwill motivate individuals to live up to expectations. For these reasons trust, transparency and learning inspire people to identify with, contribute to and align their behavior with their organization's mission.

To extend that general willingness to embrace a mission into commitment to a set of KM goals, an additional value is important. Collaboration and knowledge sharing thrive in an innovative climate (Chen & Huang 2007), and innovation is an important driver for building KM capabilities. Valuing novelty over familiarity is essential to knowledge exploration, and exploiting existing knowledge leads to doing things differently. But adopting new perspectives and learning new approaches can cause unease and even an unwillingness to change. Kouzes and Posner (2007) have observed that leadership and innovation are inextricably linked and that effective leaders inspire others with their passion to overcome resistance. A climate that recognizes change as a normal ongoing aspect of organizational life rather than a periodic episode is more conducive to inducing commitments to KM success.

A leader's passion by itself can rarely sustain a collective effort. However when *having* passion for innovation becomes a cultural norm, channeling it unites others and facilitates their engagement (the "involvement" trait of organizational culture). In so doing, it can create a sense of shared responsibility to the group that promotes continued effort and cohesion. In a review of research on KM and HR practices, Hislop (2003) offered a conceptual model that tightly linked employee commitment to a positive response to KM initiatives. Subsequent research has found support for the notion that affective commitment increases knowledge sharing behavior (Casimir, *et al* 2012; Swart, Kinnie, & van Rossenberg 2013). Chang, *et al* (2013) found similar evidence for all three forms of commitment in a study of knowledge sharing in the Taiwanese semiconductor industry.

Structure:

The structural characteristics that enable collaboration also foster commitment. Evidence shows that flatter organizations generate higher level of commitment than those with steeper hierarchies (Anderson & Brown 2010). When information and authority are decentralized, employees have greater autonomy and more participation in

decision making. This can increase identification with shared goals, contribute to intrinsic motivation and spur sustained effort (Hackman 1987; Walton 1985).

In addition to decision control, other governance matters such as strategic planning and goal setting relate to commitment. How a strategy is developed and executed can be as important as the results. Effective leaders clarify and gain a consensus about the mission, link it to goals and use feedback and learning to review and improve performance. When a strategy process considers and involves employees as stakeholders, they are more likely to identify with its resulting goals and the values reflected therein. Limited evidence also suggests that broad stakeholder participation in KM governance, including on steering committees and with federated approaches that give responsibility for implementation to work units, may increase KM effectiveness (Kannabiran & Pandyan 2010).

Human resource management processes also influence organizational commitment. A common behavioral measure of commitment is employee turnover. Retention suggests a commitment to continued involvement (Kanter, 1988), so reward systems and associated practices are important factors in holding onto staff. Encouraging professional development by allocating time and resources to it influences commitment because employees perceive that their contributions are valued. It can also increase their sense of attachment to the group (Baek-Kyoo & Lim 2009). Research has found links between knowledge sharing and high commitment HRM practices such as investment in employee learning (Chiang, *et al* 2011). To be sure, however, extrinsic rewards such as money or recognition are weak tools for building commitment. If those incentives disappear, without the ability to secure otherwise any true commitment to KM success an enterprise faces a challenge that is difficult to overcome.

Resources:

Research suggests that some people by temperament are more likely than others to identify with organizational goals. Panaccio and Vandenberghe (2012) found that extroversion and agreeableness (*i.e.*, sociability and relationship-orientation) are positively linked to all three types of commitment. In a study that linked organizational commitment to higher levels of knowledge sharing, Matzler, *et al* (2011) reported similar ties between commitment and agreeableness as well as to another personality trait, conscientiousness (*i.e.*, self-regulation and adherence to rules and norms).

Since it is unlikely that every person in an organization will have the personality traits that incline them toward making commitment, leaders who can inspire commitment are a key resource. Management characteristics and behavior strongly influence whether an environment encourages commitment. These include such empathy and listening skills, comfort with delegation and a participative approach to management and a belief that gaining employee commitment will improve performance (Edmondson 2012; Walton 1985).

Experienced managers with credibility can explain the organization's goals so participants understand to what they are being asked to commit. This involves

acknowledging that goals are achieved through individual contributions to a clearly defined collective mission (the “mission” trait). When they understand how their work links to an overall objective and that others view what they do as significant, employees develop the internal motivation to behave in ways that support it (the “consistency” trait). Indeed, employees who understand the purpose and recognize the value of a KM initiative are the most likely to commit to its success (McKensie, *et al* 2001).

Summary

The normative model of KM effectiveness proposed here starts with the desired outcome – effectiveness – and traces backwards to identify the organizational capabilities most likely to help an enterprise achieve it. The impulse behind the model was to synthesize what researchers have learned in the past two decades about the factors associated with KM success and to present the result in a format that is useful for both theory and practice. For academics, the model can be the basis for developing and refining existing ideas about influential factors and causal links. Practitioners may find it a good starting point for planning KM initiatives or assessing and improving existing ones.

Alliterative lists can support understanding and application for both audiences. For that purpose, key concepts from the normative model can be abstracted to form a “seven C’s model.”¹ The following review identifies the links between the two models. Here we can see the interrelationships between the resources, structures and values that comprise KM capabilities.

1. Connection: provide all people in the organization access to all relevant information

Connection relates to technologies that enable collaboration and communication, norms for interaction that guide information sharing and principles that engender trust, empathy and commitment. Without connection, the right knowledge cannot flow to the right people at the right time.

2. Competencies: people have the skills and characteristics for the exploitation and exploration of knowledge

The normative model includes several sets of aptitudes, attitudes and abilities needed to support collaboration, communication and commitment. HRM practices for recruitment, selection, retention, rewards and training are the primary means for ensuring that people have the ability and motivation to participate effectively to KM efforts. These can be important indicators of an organizational culture that values learning and recognizes that superordinate goals can only be achieved through the contributions of individuals.

3. Contacts: facilitate and encourage relationship between people

Contacts relates to the flat organizational structures and cross-functional teams that are adaptive and integrative; the networks that facilitate pursuit, discovery and maintenance of relationships; and IT systems that enable collaboration and communication.

4. Communication: create an IT system that supports the exploitation and exploration of knowledge

Whether through documents or conversations, knowledge activities (*e.g.*, creation, acquisition, sharing and use) require communication and a technology infrastructure that enables it.

5. Catalysts: motivate people

Catalysts here refers to factors that provide intrinsic and extrinsic motivation for participation in KM activities. These include leaders who build consensus on the value of KM and inspire commitment to learning as well as HRM practices that reward and recognize individual effort.

6. Culture: Create a group identify by aligning values and organizational practices

The normative model speaks to culture in many ways, most prominently in the discussion of values that support collaboration and commitment.

7. Capability: A system-based advantage that is difficult to replicate by competitors

The final “C” is capability. The normative model is based on the idea that each of the other “C”s together comprise an organization’s KM capability.ⁱⁱ

[insert Figure 2 here]

Conclusion

From a practical perspective, the effective application of this normative model requires the understanding that how people act is shaped by a range of contextual factors. The primary responsibility of managers and leaders is to shape the context in which work is done to increase the probability of achieving desired outcomes. In this way, this normative model is a tool to help managers assess the strengths and weaknesses of their organization’s KM capabilities and to focus on the things most likely to improve them.

An underlying premise of the model is that the greater the breadth and depth to which an organization embraces collaboration and instills commitment, the more effective it will be at KM. The potency of any particular aspect of a KM capability to influence one or both of these process criteria will vary by organizational setting. Still, in enterprises with effective KM we would expect more values, structures and processes and resources to trend toward meeting the effectiveness criteria rather than to run at cross purposes to them.

One final thought: the conditions that increase the likelihood of KM effectiveness do not differ fundamentally from those that many management thinkers regard as necessary for high performance in general. Collaboration and commitment and the factors that enable them are not uniquely applicable to KM. The beliefs and norms that support KM are not inconsistent with those associated with an

organizational culture that empowers employees to excel rather than limits their opportunities to contribute. Does this bring into question the validity of the proposed normative model?

To the contrary. The shrinking distance between effective management and effective KM signals a strength in the trajectory of KM research and practice and speaks to the success of both. It is now axiomatic that the information age and the knowledge work that defines it compels leaders to create organizations whose processes, policies and principles enable collaboration and innovation and foster employee commitment. As it becomes more and more difficult to separate day-to-day tasks from the knowledge needed to accomplish them, and thus ever more important to deliberately manage knowledge as an asset, there will be little distinction to be made between effective KM and effective management.

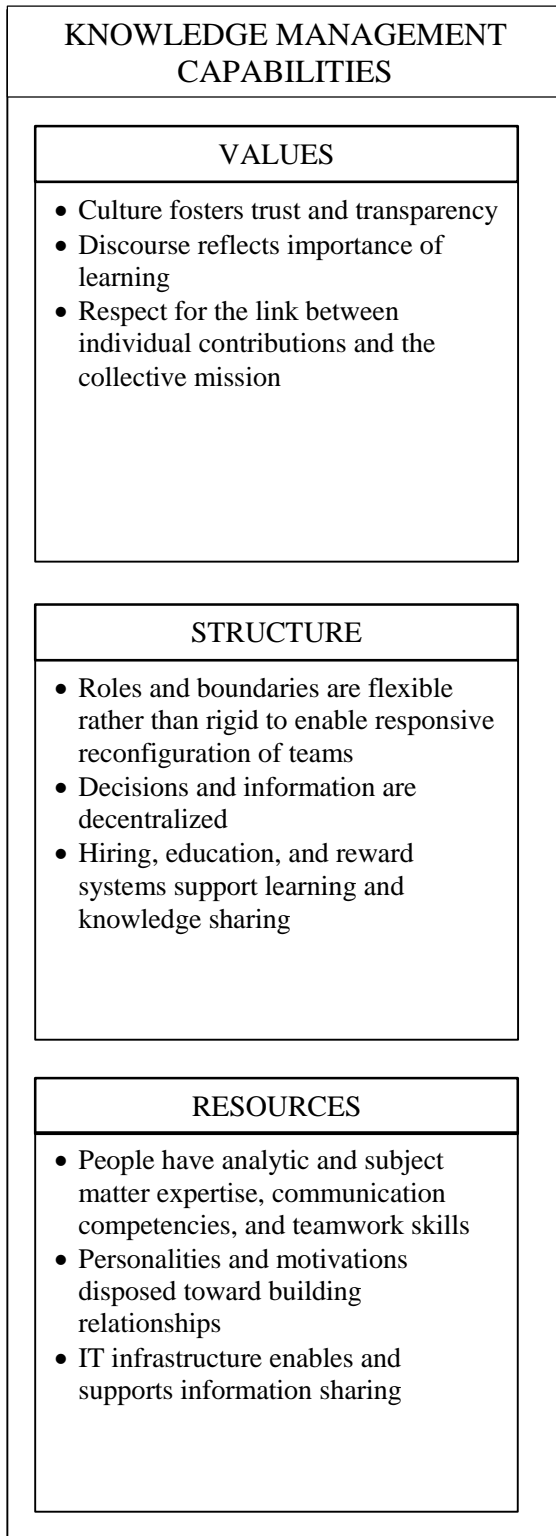


Figure 1 A normative model of knowledge management effectiveness

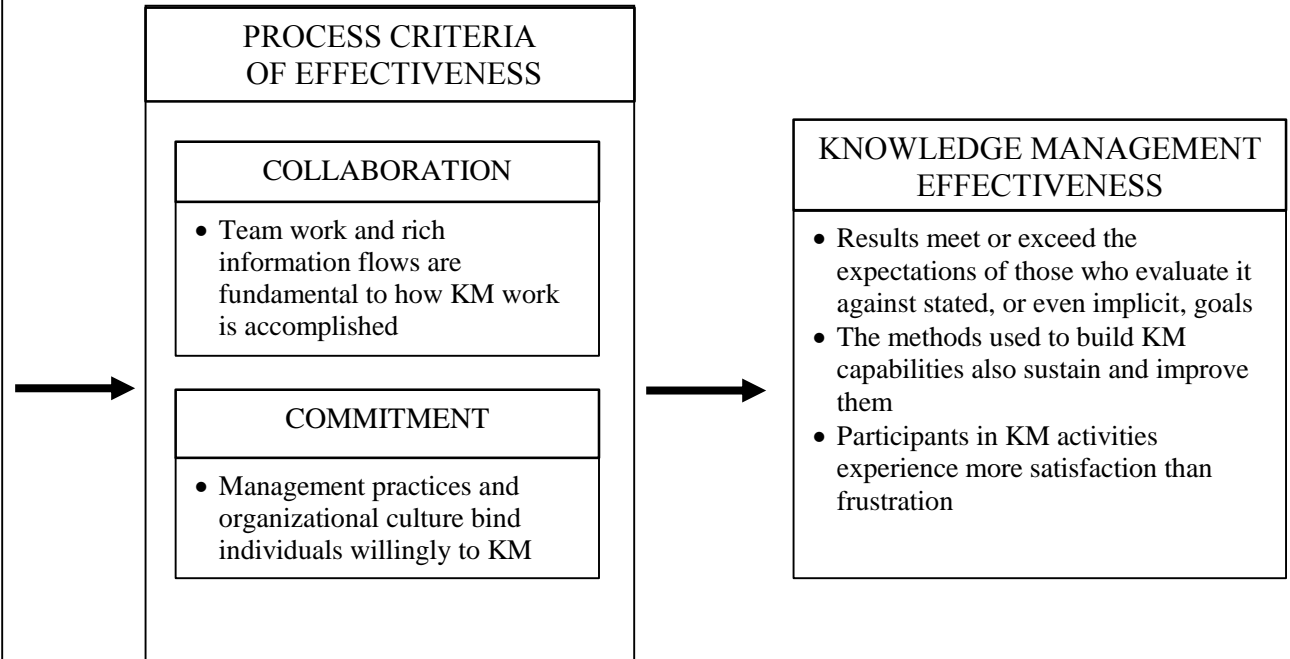
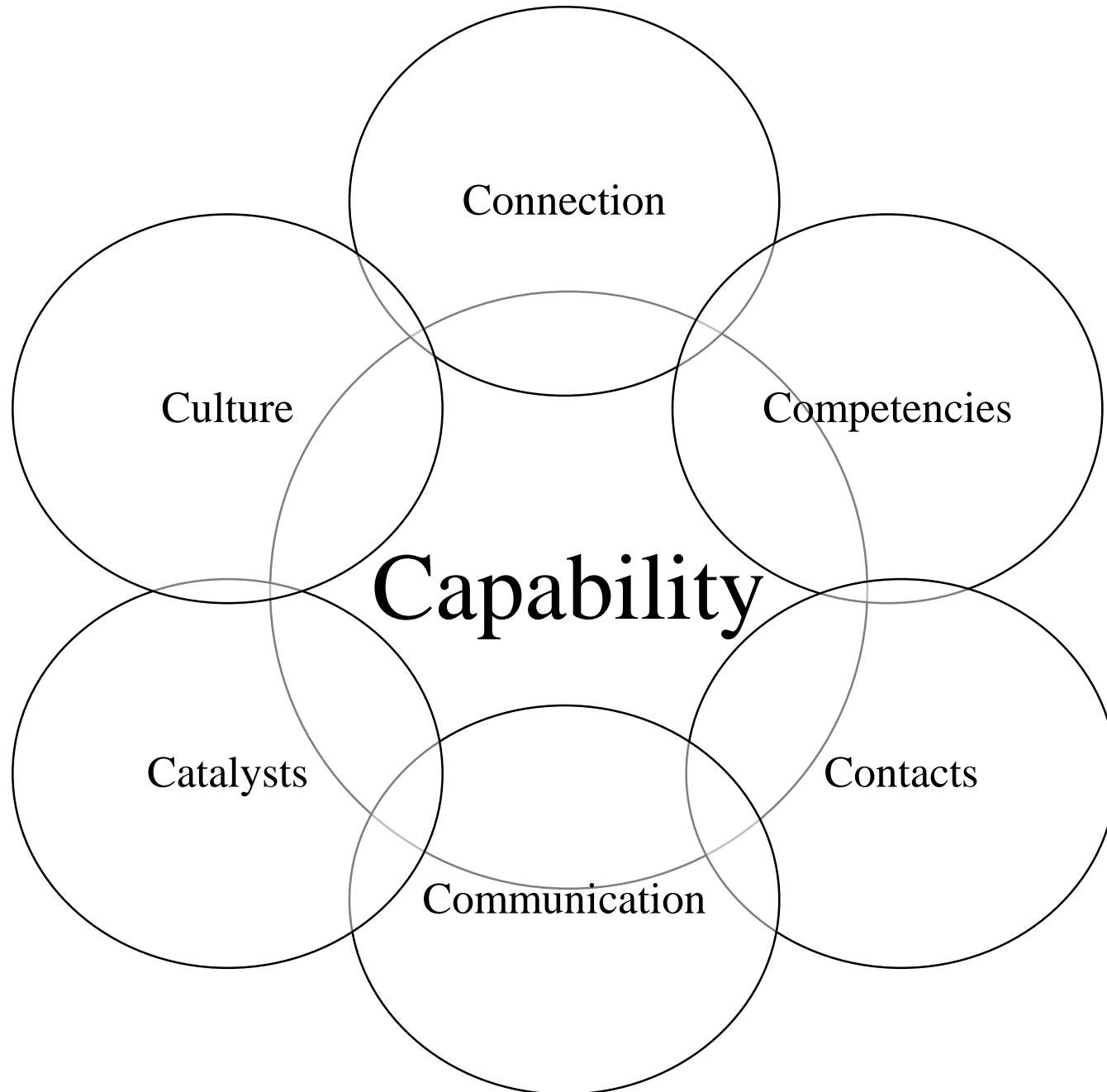


Figure 2 The Seven C's model of knowledge management effectiveness



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ⁱ Anders Örténblad conceived the “seven C’s” model as presented here and was the lead contributor to its development. In the next section of this book, authors have used this list of seven characteristics as a starting point for their analysis.

ⁱⁱ Oinas-Kukkonen and Oinas (2001) also proposed a 7C model of knowledge creation and management. They identified *Connection, Concurrency, Comprehension, Communication, Conceptualization, and Collaboration* as the key factors leading to *Collective intelligence*. Their conceptual model emphasizes that knowledge management is a process that cycles through these interdependent processes. O’Leary (1998) also used alliteration to describe KM systems as a means of *Conversion* (individual to group knowledge, data to knowledge and text to knowledge) and *Connection* (people to knowledge, knowledge to knowledge, people to people, and knowledge to knowledge).