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Managing the KM Trade-Off: Knowledge Centralization *versus* Distribution[1]

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Abstract: KM is more an archipelago of theories and practices rather than a monolithic approach. We propose a conceptual map that organizes some major approaches to KM according to their assumptions on the nature of knowledge. The paper introduces the two major views on knowledge –objectivist, subjectivist - and explodes each of them into two major approaches to KM: knowledge as a market, and knowledge as intellectual capital (the objectivistic perspective); knowledge as mental models, and knowledge as practice (the subjectivist perspective). We argue that the dichotomy between objective and subjective approaches is intrinsic to KM within complex organizations, as each side of the dichotomy responds to different, and often conflicting, needs: on the one hand, the need to maximize the value of knowledge through its replication; on the other hand, the need to keep knowledge appropriate to an increasingly complex and changing environment. Moreover, as a proposal for a deeper discussion, such trade-off will be suggested as the origin of other relevant KM related trade-offs that will be listed. Managing these trade-offs will be proposed as a main challenge of KM.

Keywords: Intellectual Capital, Knowledge Markets, Mental Models, Communities of Practice, Retrospective Rationality, Bounded Rationality, Constructivism, Organizational Trade-offs.
Categories: A.0, A.1, H.1.0, H.1.1

1 Introduction

It is quite evident that Knowledge Management (KM) today is more an archipelago of loosely connected and often contradictory theories and practices, rather than a coherent framework to support organizations in managing their knowledge. Moreover, it is clear that every approach is rooted within often implicit (but recognizable) epistemological assumptions about the very nature of knowledge. Such

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an epistemological reading of the different KM approaches, although well rooted in the KM literature (see for example [Nonaka 95] and [Drucker 94]), is obviously a major one, if we consider that KM aims at managing a resource whose nature has being debated for long and that is still, perhaps more than ever, object of a strong philosophical, cultural, and social debate. As we will suggest, such debate has implications that go far beyond a mere philosophical reading. In fact, different epistemological assumptions lead to very different answers on how knowledge and learning must be organized, and on what is the role of management and technology. Moreover the exploration of the relationship between the very nature of knowledge and its organization, can provide not just a lens in order to explain the coexistence of heterogeneous approaches to KM. It also represents a chance to discover a type of issue which is particularly relevant to managers that have to make decisions; it hides a trade-off between two very valuable opportunities that implicate very undesired consequences. In particular, we claim that each epistemological view and KM approach can be considered as an "archetype" that responds to different, and often conflicting, needs. On the one hand, the need to maximize the value of knowledge through its replication leads to objectification-codification, whereas, on the other hand, the need to keep knowledge appropriate to an increasingly complex and changing environment leads to subjectification-contextualization. From a managerial stand point, this phenomenon should be red as a "good new": KM is more likely to be considered as a challenging managerial discipline since it deals with the capacity to choose, balance, compromise, and find an equilibrium between conflicting but valuable issues.

2 Objectivist Approach: knowledge as content

A first macro-approach to KM, which we call the rational objectivistic approach, has its organizational roots in the theory of rational decision making. In its "classic" version, this theory sees knowledge as an objective, non-problematic resource, whose availability and transparency is taken for granted. Later versions of the theory, inspired by Simon's work on bounded [Simon 72] and procedural [Simon 76] rationality, made clear that human beings have a limited capacity of elaborating information, that acquiring information costs money, and thus the information available when making a decisions is necessarily limited. In both versions, however, knowledge is viewed as an "object" or content that can be stored and used in a non problematic way, independently from subjectivity of producers and consumers.

Two are the major KM views that can derive from the objectivist-rationalistic perspective: the "knowledge as a market" approach, and the "knowledge as intellectual capital" approach.

2.1 Knowledge as a market

In analogy to what was proposed by [Hayek 48], computational and cognitive boundaries lead people to manage knowledge through markets. Market mechanisms, in fact, are able to bring to each actor the needed piece of information in the right moment. Prices are proposed as an example of mechanism that provides decision makers with enough (even though not complete) information in order to take rational

decisions. For example, a shock in oil supply means, for some reason, that oil becomes more scarce; from the perspective of a market buyer, higher prices are the informative vehicle that instantaneously provides him with the needed quantity of information. Through the market organizational form, the whole knowledge can be managed by the system without assuming that one needs to know everything.

Such perspective is reflected in all those theories of KM that see a KM systems as a sort of knowledge market (see e.g. [Davenport 00]), populated by producers/ manufacturers, intermediaries and consumers of knowledge. The goal of a KM system is therefore that of bringing down the barriers which prevent such a market from becoming efficient. This means that one has to increase the completeness of information (making explicit the real value of knowledge), to overcome the information asymmetries (some have better access to knowledge than others), and to avoid localisms (knowledge can be shared across remote businesses).

The need to overcome or push forward the limits of rationality has emphasized the role of those information and communication technologies that can be used to strengthen and extend the human cognitive capabilities. [Borghoff 99] shows that organizations use technology to provide its members with tools that allow them to increase the power to map, codify and transfer knowledge: thus, for example, information retrieval and text mining tools are used to facilitate the acquisition of new information from large bodies of documents, data mining tools are used to extract regular patterns from large collections of data, knowledge repositories and knowledge bases are used to expand the memory capacity, ontology and representation languages are used to improve the codification of information, document management and publishing technologies are proposed to facilitate the dissemination of knowledge.

2.2 Knowledge as Intellectual Capital

From another perspective, bounded rationality leads to the need of considering knowledge for the purpose of decision making in terms of local, rather than global, optimality. Since the acquisition of information has a cost that could be higher than the marginal outcome of its use, people need to rely on working heuristics and procedures when making decisions. In this sense, managing knowledge for decisions means reusing those solutions that worked in the past, even though the reasons why they work are not always clear, and as long as the value of each reuse is lower than the cost of acquiring additional information.

Such a perspective seems to be collected by those approaches to KM that view knowledge as an asset that needs to be reused by the organization. In particular, the school of intellectual capital [Stewart 97]; [Sveiby 00] argues that people, through their activity, generate working solutions that are embedded, for example, in social relationships with customers and partners, procedures on how things must be done, and structures that tell to people who can do what. The simple production of such a knowledge has already generated a cost, visible in the organization balance statement. On the other hand, it still contains a potential value given by its reuse in similar situations. This intangible value –the intangible capital- is not visible in the organization's formal accounting documents, but is recognizable by the difference between the value of the tangible assets, and the market value of an organization. In order to exploit the value of the organizations' intangibles, knowledge must be codified, spread and reused across the entire organization.

From an IT perspective, this view emphasizes the role of knowledge bases that become the driving metaphor of knowledge as a resource that must be codified and reused in order to exploit its value. Moreover, since the IT revolution dramatically decreased the variable cost of information communication, it opened the opportunity to maximize the rate of information replication. In other words, the more the cost of communicating information decreases, the more there is an incentive to replicate information to each potential user that, through its use, can generate some value.

3 Subjective Approach: knowledge as context

A second macro-approach to KM, which we call knowledge as context, stresses the subjective nature of knowledge and its strong dependency on a social and a cognitive dimension. In general, the epistemological focus is shifted from a notion of knowledge as general and abstract content, to those interpretative "premises" within which a "piece" of content gets a meaning, this way becoming knowledge. In this sense, knowledge is described as a double faced matter, made of content –such as traditional scientific statements- within an appropriate context – such as theories. In general, in this epistemological view the contextual layer is viewed as an intrinsically subjective construct that cannot be separated by people as an external matter. For example, a context is not the time and place where an event occurs, or the domain in which a statement is to be placed. Rather, it is a perspective through which events and statements are red, a lens that may change from person to person, from community to community. In this sense, the difference between content and context is not quantitative but qualitative; it is not an additional layer of facts that needs to be considered when interpreting some content, but rather an internal momentum through which facts, from the actor's perspective, gain sense [Giunchglia 00].

The contextual nature of knowledge has been described according to two main perspectives. The first one underlines the cognitive nature of interpretation, and views knowledge as a phenomenon that manifests itself mainly in terms of mental constructs (knowledge as mental models). The second underlines the social nature of interpretation and represents knowledge as a phenomenon that manifests mainly in terms of social relationships (knowledge as a practice).

3.1 Knowledge as mental models

The cognitive approach has its roots in the phenomenological-cognitive theory of organizations. These theories stress that the problem of rationality does not lie in the limited quantity of available information, but rather in the fact that the meaning of a piece of information changes according to the actor's goals and beliefs. Information is interpreted, and not simply received. The problem of knowledge is thus shifted from uncertainty to ambiguity, that is, from the problem of deciding when there is a lack of information (Simon) to the problem of deciding when information is abundant and alternative interpretations are available [Zack 99], [Weick 95]. Such a perspective, brought to its organizational consequences by [March 91a], underlines how people and organizations act on the basis of their roles and identities, and not on the basis of prospectively assessed goals. Rather on the contrary, goals are defined ex-post, once an action has been executed and some new situation has been achieved. Quoting

March [March 91a], organizations are seen as "garbage cans", that is to say, collections of existing solutions seeking for new problems. In this sense, knowledge is viewed as a tool to celebrate and justify decisions, rather than a matter that describes a world in order to take a correct action.

March's critic opens the way to the constructivist approach, proposed by [Daft and Weick 84], who moves the attention from interpretation to sense making processes. While the former assumes that there is an external world that needs to be interpreted through cognitive constructs, the latter stresses that through interpretation we act on the world and we modify it. The intrinsic ambiguity of an environment is now viewed as an opportunity to interpret a situation from a point of view and to change the world accordingly. As a consequence, from a description of a given environment, knowledge becomes the tool both to retrospectively justify and prospectively construct reality (enactment).

As it is well described in [Zack 99], a KM system must allow the emergence of those interpretation schemas and mental models that structure the way in which management perceives reality and, consequently, proceeds to action. The goal of such a process is to explicit the subjective nature of the current beliefs and business theories, to modify these models and thus act in a different way, and to encourage the communication and sharing not only of information, but also of those mental models underlying the interpretation of information. These KM solutions are characterized, on the one hand by a higher complexity and "volatility" of the issues they deal with (e.g. the mental models, the vision) and, on the other hand, by a stronger impact on traditional organizational structures. For these reasons, these solutions become often the basis of methodologies (which have become fashionable in the 90s), which aim at making the top management aware of new methods of business leadership based on recommendations mainly focused on reasoning about, and exploiting mental models [Senge 90] [Argyris 02] [2]

3.2 Knowledge as practice

The other subjective approach to organizational knowledge, which we call the pragmatic approach, has its roots in the social theories of organizational learning, namely in the study of organizational cultures and the influence of social factors (such as the feeling of belonging to something, trust, and identity) on organizational dynamics [Mead 34], [Vygotsky 78], [Latour 87]. These studies, in a first phase, operated within the conception of sociality as a constraint to be taken into account in

[2] An interesting view that brings the cognitivist-subjective approach to its extreme is proposed by [Vopel 03]. Basically, since knowledge is not a means to describe reality but rather a tool to reduce decisional ambiguity and celebrate actions, it is no longer relevant to have the "right" knowledge. What is relevant is to act, and to have some "knowledge" able to drive people's confidence on the goodness of a decision. In KM terms, since an ambiguous reality is not describable at all, this view leads to a solution similar to the one proposed by the intellectual capital approach, in which "centralization and control of the knowledge base(s)" and the building of "a single perspective" is a good KM strategy. But the reason is quite different; centralization becomes a means to merely legitimate actions; no matter what knowledge base or perspective is adopted.

the designing and development of rational organizations (as in the case of the so-called human relations schools – see e.g. [Mayo 34]). Here, learning is viewed as information acquisition, and sociality as a dimension that needs to be managed in order to improve traditional learning. However, a radically alternative approach emerged which envisions sociality as an intrinsic factor that determines the very nature of organizational learning tout-court. The strong link between knowledge and sociality was brought forward by several authors (see, e.g. [Suchman 87], [Brown 91], [Clancey 92], [Lave 90]), and is based on the idea that, in its essence, knowledge has a practical nature. In other words, knowledge, far from being an abstract matter based on a factual representation of reality, is closely linked to the context of social practices which are created, generated, and reshaped within a certain community. It is only by knowing the group dynamics and habits, that the outspoken and traditional knowledge acquires significance. Therefore learning, viewed as a generative process of creating a practice, is carried out first of all through active participation (engagement), and then internalized and transmitted through the practices of a community.

Such view generated two quite different approaches to KM. A first one, particularly famous thanks to the work of [Nonaka 95], brought the attention of companies to the concept of implicit knowledge: knowledge created by individual workers, and therefore strongly dependent on the personal experience of its producers, can become of great value to the company through a process of explicitation, refinement and crystallization. This way, drawing a conclusion similar to those that belong to the objectivistic tradition, knowledge can be transformed into a general and abstract object, that can then be applied and re-used in contexts, which are different from the original one.

The second view gave a more fundamental role to subjectivity and sociality stressing the collective, rather than the individual, dimension of knowledge creation [Wenger 98]. People participate to informal communities in which they learn through practice, and generate knowledge by contributing to the update and modification of these practices. Therefore, a KM system cannot aim only at making explicit the implicit knowledge of individuals, but rather at facilitating the creation and social dissemination of practical knowledge. This happens by encouraging the creation and vitality of the Web of informal relationships, which feeds the system of communities of practice also through the use of open, weakly structured and mainly collaborative technologies (like groupware systems), capable of supporting the creation of traditional, or even virtual communities.[3]

[3] Compared to Nonaka's approach, communities of practice had a greater impact on concrete KM solutions and techniques since the former proposes a very costly process of knowledge exploitation, based on putting a manager side by side with workers. On the other hand, a common managerial interpretation of the community-based approach, supports a vision in which knowledge workers, independently from the organizational will or desire, participate to the processes of exploitation simply by taking part in the life of their community.

4 Managing KM Trade-offs

The heterogeneity that characterizes the different KM approaches here presented, rather than deriving from alternative ideological views on knowledge, represent the expressions of a "natural", unsaid, and typically unintentional, debate around the dualistic nature of knowledge that happens within organizations. In other words, we believe that the "ontological dualism" between subjectivity and objectivity [Giddens 84] is not simply a matter of debate on the foundations of KM, but a real contradiction afflicting researchers and practitioners whose task is to manage knowledge within complex firms. In particular this ontological dualism manifests itself in terms of a very concrete trade-off between two opposite needs. On the one hand, managers need to foster value and control, and try to achieve the latter through knowledge standardization and the former through knowledge replication. Such a need is legitimated by an objectivist approach to KM, and drives actions oriented towards the creation of centralized repositories and efficient communication networks. On the other hand, managers face the need, expressed by organizational communities, to keep knowledge appropriate to context specific business environments. Such a need is legitimated by a subjectivist approach to KM, and drives actions oriented towards the enablement of informal networks, and the recognition of the value generated by semantic specialization and differentiation. The ontological dualism becomes a trade-off if we consider how the two tendencies generate conflicting side effects: while standardization tends to reduce appropriateness, contextualization tends to reduce replicability. In fact, as underlined elsewhere [Bonifacio 02], in complex environments standard knowledge tends to become useless since too general to be applied and generate value. On the other hand, highly contextual distributed "knowledges" tend to be "solipsistically" owned by communities and organizations in order to merely justify their actions; each "knowledge" becomes unable both to represent some reality and to be communicated to another community. As a consequence, complex firms that face heterogeneous environmental conditions, such as PSFs [Bonifacio 00], are likely to promote, more or less intentionally, both types of approaches as appropriate answers to the need/opportunity to crystallize knowledge through centralization (in stable or controllable environments), and the need/opportunity to mobilize it through distribution (in uncontrolled and dynamic settings). Moreover we propose that this fundamental trade-off is the basis of some other relevant ones that concretely impact on well known and traditional organizational issues.

4.1 Innovation versus improvement

Two typical ways to describe organizational learning are radical innovation and continuous improvement [Hamel 01], [Boland 95], [Brown 91]. Such processes are seemingly related to the main approaches to KM here proposed. In fact, viewing knowledge as content implies, as said, an objectivistic reading of the environment that can be increasingly "known" through deeper observation and analysis. From this perspective, knowing is an incremental process that aims at refining our representation of the world which is addressed towards precision and truth. Such refinement is achieved inductively through the formulation of better theories and, deductively, through their verification by means of more precise experiments. As a

consequence, according to a behavioural metaphor [Weick 91], organizational learning manifests as continuous improvement, that is, a reactive trial and error process of adjustment of organizational behaviours to changing environmental conditions.

On the other hand, knowledge as context implies a broader view of organizational learning that resembles the way in which Kuhn [Kuhn 70] described the paradigmatic and discontinuous evolution of scientific knowledge. From this perspective, a knowledge is seen as one of the "plausible" interpretations of the world rather than a "draft" version of an increasingly refined truth. People can see the environment from different perspective and, moreover, they can construct different realities through social negotiation [Berger 66]. As a consequence, the evolution of a knowledge can be subject to "discontinuities" and not only to "incrementality"; that is, social entities can negotiate radically new theories of the world that lead and, according to these, generate alternative and even conflicting interpretations of the same facts. Moreover, social actors can "implement" such views in the world through manipulation and creation of consensus, or, as said by Weick [Weick 95], enact different "realities". In this sense, organizational learning can be seen as innovation, that is, the generation of alternative views of both the business and the organization itself, which drives actions that are able to enable business and organizational configurations in which such views are, ex post, true.[4] Such dualism is the basis of other important ones such as specialization versus despecialization. In fact, as proposed by James March [March 91b], while incremental learning are sustained by specialization trends (that March calls exploitation), discontinuous forms of learning are sustain by despecialization (that March calls exploration). Moreover, such dualism is the basis of the other famous one of efficiency versus efficacy. In fact, while exploitation of current capabilities leads to more efficient solutions (being able do the same things with less resources), exploration of new capabilities leads to new solutions (do new things). Of course, within an unstable environment efficiency could be ineffective, since leading to improve useless solutions, while in a stable one efficacy could lead to un efficient behaviours, since exploring alternative answers that are not required by environmental dynamics.

4.2 The source of knowledge: theory versus practice

An important debate evolves around the source of knowledge, that is, whether knowledge originates from theoretical or practical reasoning [Brown 00]. In the former case, primacy is attributed to logical reasoning and, moreover, to those mental processes that occur in the head of knowledge workers. In the latter case, primacy is attributed to those relationship that occur among social actors since knowledge is embedded in the various ways in which we relate to each other. The trade off manifests if we consider how theoretical reasoning aims at defining abstract (from specific contexts) and general (applicable in different contexts) knowledge objects

[4] Such view of innovation as social construction is sustained by a series of studies that, through the concept of network externalities [Liebowitz 94], [Katz 85], show how famous innovations can be better described as enactment of favorable business environments, rather than proper understanding of given business environments [Arthur 89], [David 85].

while practical reasoning aims at defining "knowledges" that are rooted in contextual circumstances. On the other hand, the more we pursue theoretical formulations the more we risk to generate logically correct but useless statements. Moreover, the more we keep our solutions as practical, the more these are unable to sustain predictions about alternative applicative domains. As a corollary, such trade-off inspires well known limitations of current KM approaches: while those that are inspired by an objectivistic metaphor are proposed as prescriptive theories (they state what should be done normatively in order to sustain organizational knowledge), those that are inspired by subjectivistic metaphors tend to be merely descriptive (they tell us how to study a practice but not how to judge it as good or bad). On the contrary, while objectivistic approaches manifest an evident weak capacity to describe how "things really work", subjectivistic ones are quite effective in sustaining a deep understanding of organizational dynamics. As a matter of fact, as many KM practitioners know, while Davenport or Sveiby's like approaches are more easy to sell to companies, CoP and Mental Models are much more able to explain learning dynamics.

4.3 The power of knowledge: owning content versus context

An important corollary of the two main approaches to KM is the definition of power. Objectivistic approaches tend to view power as the capacity of people to own content, that is, to prevent other people from accessing relevant pieces of knowledge if they aren't disposed to pay some form of value in order to acquire it [Davenport 00], [Stewart 97]. On the other hand, subjectivistic approaches lead to a notion of power embedded in the capacity to own a context, that is, the capacity prevent people from accessing either a social environment (CoP), or an interpretative frame (mental models) in which content becomes meaningful [Wenger 98]. In the latter case, power lies in the capacity to interpret facts according to a perspective or identity, while in the former resides in the quantity to store and recall relevant pieces of content. In particular, the market metaphor views power as the capacity to generate information asymmetries and the intellectual capital as the capacity to standardize more content. On the other hand, the CoP approach views power as the capacity to prevent people from accessing the social practice reducing transparency, and the mental models as the capacity of people to share content but not the ability to interpret it.

4.4 The role of technology: problem versus solution

The two different views on the knowledge provide a quite different angle to read the role of technology. On the one hand, knowledge as content reads technology as a neutral medium that vehicles knowledge from producers to consumers. Technology is evaluated in quantitative terms as, for example, media richness [Daft 86], and storing or processing capacity. From this perspective, technological architectures are to be incrementally evaluated on the base of their capacity to store, process, and richly represent knowledge objects while managers and designers are seen as independent parties that aim at enabling a better management of knowledge. On the other hand, knowledge as context holds an opposite perspective that views technology as an attempt to provide, and sometimes impose, a context through which content should be interpreted. In fact, a KM technology is seen as a "knowledge" itself that implicitly embeds a perspective on social practices and meaning. That is, technology aims at

structuring both the way in which users should engage in learning practices (CoP perspective), and the reference schema –such as ontologies, taxonomies, concept maps- through which content should be interpreted (mental models) [Bowker 00]. From this perspective, technology adoption is seen as a negotiation process among different groups of interest (at least, as said by Orlikowski [Orlikowski 91a; 91b] designers, users, and managers) that aims at preserving and imposing alternative interpretations of the working environment. Moreover, managers aim at controlling knowledge through processes and schemas inspired by standardization and centralization, users aim at preserving opaqueness and locality of work practices, while designers aim at implementing solutions that are conceptually appealing according to their community. In such sense, technology, rather than a medium, is a message.

4.5 The role of managers: enablers versus controller

Strongly related to the above perspective, is the notion of management that emerges if considering knowledge as either content or context. In the former sense, the management of knowledge can and should be focused on its traditional function, that is control. Here, managers divide, through a top down process, the cognitive labour according to cognitive loads and roles [Rullani 90]. Moreover, they aim at "extracting" knowledge from people through standardization processes to transform it into a matter that is independent from its holder. As a consequence, as much as standard labour force and financial capital means that both manual workers and industrial assets can be substituted, than standard cognitive labour means that knowledge workers can be substituted as well [Drucker 94]. Such goal, is well represented by Nonaka's idea of making knowledge explicit, by Stweart with the idea of transforming human capital into structural capital, and with the one proposed by Davenport of knowledge codification. Moreover, these views lead to hierarchical forms of cognitive division of labour such as the Nonaka's Middle-Up-Down Management [Nonaka 95], and the Devanport's [Davenport 00] and Stewart [Stewart 97] classic forms based on Chief Knowledge Officers, Knowledge Managers, and Knowledge workers. From this perspective, knowledge is a value that can be controlled by managers.

On the other side, knowledge as context views managers as enablers that can create an environment favourable to knowledge, but they cannot control or appropriate its value. Such impossibility is due to the "sticky" nature of knowledge [Brown 00] whose value is intrinsically embedded in social practices and interpretative schemas. As a consequence, aiming at collecting content is a non sense since any content avulse from practical and mental context has no meaning. Moreover, managers have to reposition themselves as community facilitators and, as clearly proposed by Stewart [Stewart 97], renounce to the goal of controlling the uncontrollable; that is, knowledge flows naturally cross organizational boundaries since communities are transversal by definition. Rather, managers should concentrate on moving "the heart" of a community within the company so that the net exchange of knowledge (knowledge that goes in minus the one that goes out) is positive. To do so, rather than controlling intellectual property with non disclosure agreements or patents, they should invest in strategic communities providing resources and space for interaction.

5 Conclusion

Traditionally KM initiatives are presented as *win win solutions,* that is, they are proposed as systems and organizational models that, if implemented, expand the capacity of the firm to generate value and, moreover, such value is distributed among every steak holder. They are neutral, in the broader sense that these systems do not fundamentally influence the existing equilibria if not in terms of requiring cultural change or a more developed knowledge sharing attitude. In short, they're presented just as "good news". Of course, like every evolution that impacts on the firm's core processes, "good news" come always with "bad news". As we showed, pushing too much the value of replicability generates meaningless solutions, focusing too much on content implies a lack of context, promoting improvement, specialization, and efficiency, weaknesses the capacity to generate effective innovation. Moreover, adopting normative and theoretic approaches to KM system design leads to solutions that are unable to properly represent work practices, while technologies are "messages" whose successful implementation is crucially rooted in the negotiation among managers, users and designers. Finally, if power lies in the capacity not only to own content but also context, KM systems should focus less on quantitative performance parameters (such as, storing capacity) and more on qualitative ones such as: to what extent people are disposed to share their interpretative schemas? Are social practices transparent so that new comers are legitimated to learn? Is technology an instrument that reduce or increase the opacity of meaning ?

Of course such bad news are good news for managers. In fact, wherever there are decision to be taken than there's managerial work to be done. In managerial terms, in fact, our thesis entails that the role of knowledge managers should be mainly focused on balancing the KM related trade-offs; in this sense, a good knowledge manager must be able to tune centralization vs distribution dynamics on the basis of a pragmatic evaluation of environmental conditions, privileging the former in stable conditions, and the latter in turbulent settings. In particular, he/she should balance innovation issues versus improvement, efficiency versus efficacy, specialization versus despecialization, replicability of solutions versus appropriateness, normative approaches to organizational design versus more descriptive ones, technologies as mediums versus technologies as messages, power as content versus power as context. That is, managers should heavily reposition KM as a practice that can lead towards two very different organizational models which imply a main trade-off that goes directly at the very heart of the managerial function. In fact, while the objectivist view leads to centralized forms of organization, the subjectivistic one leads to distributed forms. In trade-off terms, centralization could ensure control but at the risk of controlling a useless and maladaptive organization; on the other hand, distribution could sustain more innovative and flexible capacities, while implying a loss in power and control. From the latter perspective, managers that so often underline the importance of the subjective factor, should be aware that they're going in the direction of criticizing their own traditional position in favour of a new distributed managerial paradigm.

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