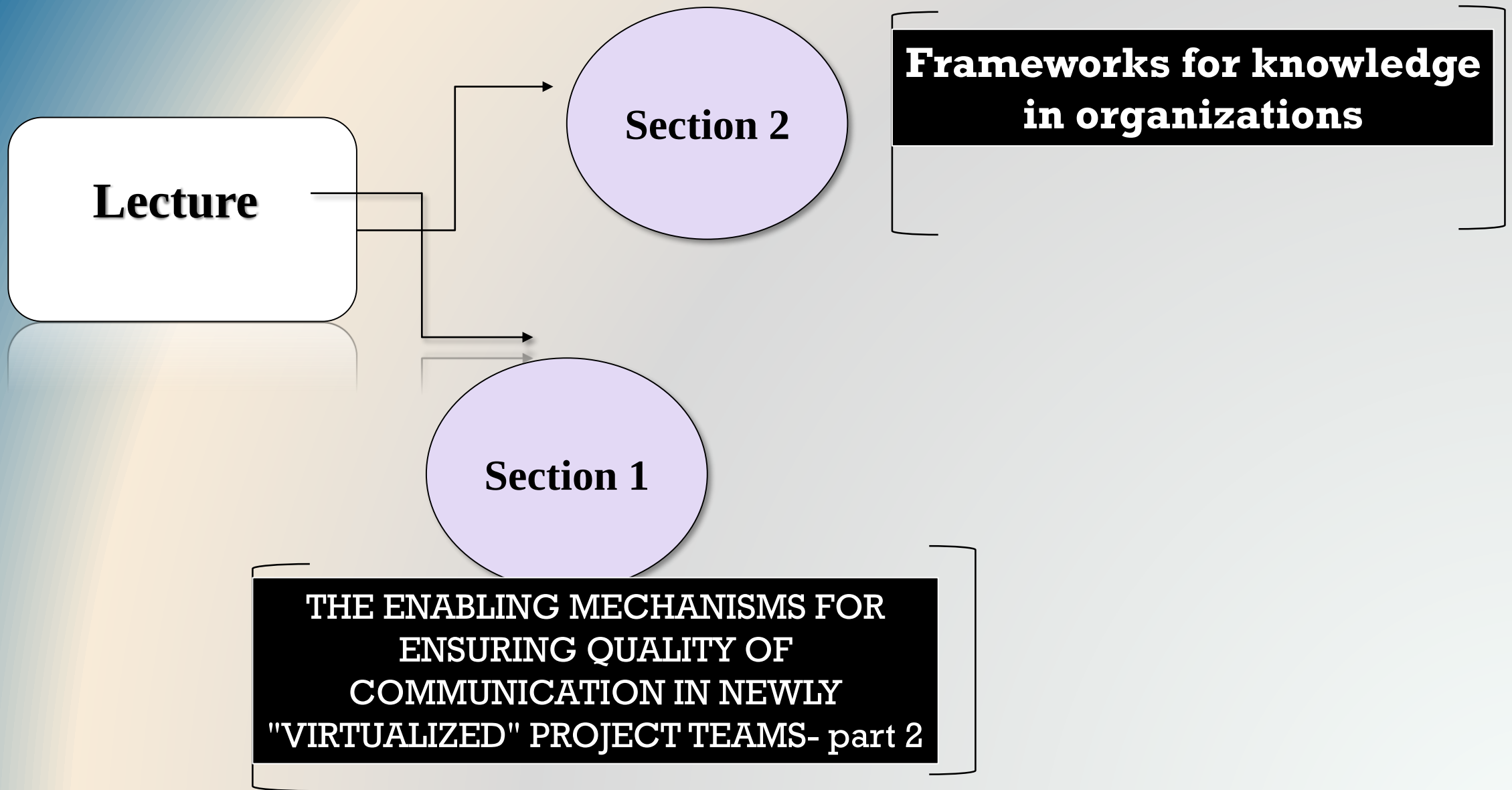


WELCOME



Section 1

**THE ENABLING MECHANISMS FOR ENSURING
QUALITY OF COMMUNICATION IN NEWLY
"VIRTUALIZED" PROJECT TEAMS- part 2**

INTRODUCTION

This overview of communication-supporting mechanisms shows how diverse and intermingled they are. For virtual project management to be effective, leaders need to pay attention to all three categories simultaneously. Despite the studies cited above, several areas of virtual project management and communication still remain unexplored or have been studied under conditions that may seem debatable. For example, the fact that many studies use samples of students as respondents could be seen as a limitation. It was to alleviate some of these problems and focus on certain types of projects that this research was undertaken.

In this context, we propose to study communications within virtual project management from two main perspectives. The first objective is to study real technological projects from the perspective of project managers. The focus is firmly on certain high-tech industries where projects always involve a degree of uncertainty and complexity. Furthermore, it was important to get the data directly from people who have to manage virtual projects on a daily basis.

INTRODUCTION

The second objective was to study communication and virtual project management in the more specific context of people who are having their first experiences with virtuality. Considering the difficulties associated with "getting virtual," the aim was to identify the mechanisms that project managers prefer in the earliest stages of project virtualization.

Several reasons were given to explain why the virtual mode was the preferred option for managing those projects. These reasons are no different from the various reasons usually invoked in previous research. In some cases, a distributed team was justified by the need to tap into external expertise not locally available. For other projects, it was the financial constraints of the organization that limited regular face-to-face gatherings and so new ways of "meeting" needed to be put in place. Whatever the reasons for organizing a project in virtual mode, members of the virtual teams that were observed showed the typical characteristics of distributed teams where language, organizational and/or national culture, and time zone differ from one member to the next. To add to the challenge, team members were often assigned to several projects at the same time.

Current suggested practices

We emphasized the need for face-to-face kick-off meetings. Such meetings have long been identified as a success factor for any project but they seem particularly critical in the case of virtual projects. Project managers believe that they can positively influence the quality of communications for the duration of the project by making sure team members meet at the very beginning.

Project managers would use this opportunity to present strategic information to all members: project mission, objectives, risks and so on. For team members, this represents a good opportunity to get an overall view of the project and a common understanding of each other's responsibilities. once the project is launched, people will clearly communicate better if such a meeting has taken place.

Current suggested practices

Once the project has started, face-to-face meetings remain a powerful tool at critical points such as contract negotiation and signature, or resolution of major conflicts. This is particularly true when team members have not previously worked together or have known each other in a different context.

This research also reveals that if such meetings do not occur at a few, strategic moments throughout the project, there will be an inclination to strengthen traditional controls by means of norms and procedures. This finding can be linked to previous research that shows how, in certain cases such as international projects, there is a tendency towards a task-oriented type of management to compensate for the reduced frequency of interactions and the lower level of trust.

Current suggested practices

A second important finding of the research is the strong emphasis on central servers and centralized databases to facilitate coordination between team members and support the decision-making process. Ensuring the distribution of relevant information to all, including updates on the progress of the work, is certainly a key advantage for virtual teams. Information traceability is another functionality that project managers consider to be very important in dealing with distributed teams, and an information system can provide this. More specifically, respondents emphasize that setting up a properly performing information system is not as simple as it seems.

In order for databases to be shared and used effectively, they must be organized in such a way that information of any type (reports, plans, drawings, electronic messages, etc.) can easily be located and read.

Current suggested practices

Managing information flows and maintaining the system also appear to be a challenge especially when no specific resource has been assigned to the task. In such cases, it is often the project manager him/herself who has to compensate and assume this responsibility. In fact, his/her central position in the project allows him/her to set the rules, including those related to the distribution, duplication and use of documents. He/She will also make sure that final responsibilities regarding the preparation of formal documents are well understood. This appears to be particularly critical if electronic sharing of documents is not possible

When questioned about communication habits, several managers raised the issue of people's behavior when using electronic messaging systems. While considering them to be an essential tool for virtual teams, respondents observe that the quantity of information being exchanged through electronic mail is gradually becoming a problem. By extension, the quality of communication is also being questioned.

Current suggested practices

So far, these results tend to emphasize the fact that, in the case of virtual projects, the project manager's communication roles become predominant when compared to traditional situations. Some of these roles appear to be specifically related to the newness of virtual project management for the team or the organization. In the cases we observed, it became obvious that project managers had to act as champions in order to convince the top managers to implement certain mechanisms to support the virtual team.

Brief discussion and findings for the future

The widespread diffusion of IC technologies has led people to believe that projects could easily be managed and conducted even in the context of distributed or virtual teams. In fact, the professional literature abounds in such cases.

However, the use of sophisticated technology does not necessarily represent a panacea for ensuring quality communications, hi the case of project managers who are new at virtual project management, dealing with communication issues continues to be a challenge. For these managers, face-to-face kick-off meetings are unquestionably important, not only because they provide a rich communication context but also because they create an opportunity to build trust right at the beginning of the project.

Brief discussion and findings for the future

In situations where no meeting of the sort occurred, it was more due to a lack of financial resources than to a lack of interest, as is often the case.

Finding no. 1: In cases where project team members do not rely on previous, mutual experience of virtual management, investing in richer communication means, such as face-to-face meetings at the "front end" of the project can have a positive impact on the communication throughout the project.

With regard to communication tools and systems, project managers rely heavily on centralized systems (database and servers) to support information management.

Brief discussion and findings for the future

Without an adequate infrastructure allowing the sharing and archiving of project-related documents, no team can claim to be efficiently managing its virtual project. But the presence of such a system is not sufficient as it requires close attention to ensure that information is easily accessible to all the people.

Top managers therefore need to invest resources, both financial and human, to make these systems really support management.

Exchanging information and communicating in virtual mode also imply that team members have agreed on certain rules such as a communication protocol. communication can quickly be affected by various "pathologies" if people do not share certain rules. E-mail systems are typically seen as generators of such pathologies (misunderstandings, information overdose, etc.).

Brief discussion and findings for the future

Finding no. 2: Information management is critical for managing virtual projects and therefore cannot be left up to individual initiative. Organizations need to make sure that systems, procedures and behaviors are congruent with the project's goals.

Another important point that this research has revealed is how important it is, in the context of virtuality, that certain roles be assigned to key individuals so that interest in communication is sustained throughout the project's lifespan.

During the preliminary stages of the project, it may benefit from having a person who champions the setting up of systems and rules, but as the project unfolds, it clearly requires the role of facilitator /moderator/ stimulator. Most often, these roles are assumed by project managers themselves even though, in some cases, they are visibly unprepared to do so.

Brief discussion and findings for the future

Finding no. 3: Projects that are considered to be virtual require that communication roles be forefronted and that specific individuals be associated with them. These roles do not necessarily rest with project managers.

CONCLUDING REMARKS

This research focused on identifying which mechanisms project managers identify as the most relevant in the context of virtual projects. Building on the current literature, which provides an indication of which success factors should prevail in these cases, this study goes beyond previous work by taking a more holistic view of the problem and by capturing managers' perceptions of their context through interviews.

The research reveals some interesting findings and contributes to a deeper understanding of virtual project management.

Overall, it can be concluded that even though virtual projects are becoming routine, there is a lack of understanding of the particular constraints and success factors associated with them. The general underlying thinking is that, no matter what, project members will agree to focus on the aims of the project, with or without "hard" tools and "soft" confidence. Project people are task-oriented and they tend to adjust to financial constraints. But without a more structured response to the specific context of those projects, top management may keep reporting slow learning curves in the way projects are conducted, and project members will continue to feel pressure to produce in a somewhat adversarial context.

CONCLUDING REMARKS

Instead of viewing virtuality as a constraint, we hypothesize that virtualizing a project could produce a positive outcome in the sense that project teams have no choice but to pay more attention to the basics of project management such as coordination.

Interestingly, the results of this study indicate that means for alleviating obstacles are not exceptionally sophisticated or costly if they are planned and integrated into the firm's project management resources.

Section 2

Frameworks for knowledge in organizations

Introduction

The literature proposes two main theoretical frameworks for knowledge in organizations: knowledge as a resource and knowledge as a process of knowing. Working in this line, Cook and Brown (1999) proposed that the bridging of knowledge and knowing implies that less focus should be given to the idea of knowledge transfer while more focus should go to knowledge integration processes. Nonaka and Takeuchi (1995) had already observed the importance of the conversions and the mobilizations in creating organizational knowledge but didn't explore the efficiency of these interactions.

Introduction

This paper proposes a new conceptualization that supports Cook and Brown's view while extending Nonaka and Takeuchi's theory. The model considers a special set of assets in organizations, the cognitive assets, as a key to appropriate the tacit collective knowledge. Cognitive assets are tangible and intangible organizational assets that constitute sources of the cognition that is necessary for action coordination. These assets allow for the integrity and efficiency of the multiple conversions of individual knowledge into organizational knowledge.

LITERATURE REVIEW

With intellectual roots in the works of Schumpeter (1934), Penrose (1959) and Nelson and Winter (1982), this view defends that competitive advantage of firms 'lie with its managerial and organizational processes, shaped by its (specific) asset positions, and the paths available to it'. Processes are thus key to understand superior performance. These processes comprise learning, coordination, integration, reconfiguration and transformation. They are social and collective, arising from the interaction of people within a given organization. They are also dynamic and path-dependent, reflecting accumulated behaviors and beliefs based on early corporate successes.

LITERATURE REVIEW

Within this more general phenomenon of organizational capabilities, we are going to focus on one specific process that has been considered to be at the core of organizational capabilities: generation and appropriation of collective knowledge.

Research on knowledge in organizations came into fashion a little after the resource-based view in strategic management gained momentum. Some researchers started to claim that the most important resource that leads to competitive advantage is knowledge. According to their view, firms need superior access to and integration of specialized knowledge to gain capability-based advantages.

LITERATURE REVIEW

The fact that not all knowledge is explicit helps to explain why this knowledge-based competitive advantage is not easily replicable: the tacit knowledge (Polanyi, 1966) held by organizational members inhibits imitation by other organizations, given that one of its main characteristics is that it is difficult to articulate and codify. This is especially true for collective tacit knowledge, which is the focus of our analysis in this paper. While individual tacit knowledge may be bought in factor markets (through the hiring of members coming from other organizations), the collective tacit knowledge held by groups and teams within organizations is much more difficult to transfer across organizations - unless the whole team and the social setting in which it is embedded is also transferred.

LITERATURE REVIEW

Given that, collective tacit knowledge is the main pillar of knowledge-based competitive advantage. Knowledge is embedded both in individuals and in the organization. Organizations play an important role in the acquisition, processing, storage and application of knowledge. They provide a setting for production, sharing and exchange of knowledge among organizational members. But, more importantly, organizations (or groups inside the organization) also possess some knowledge that goes beyond the knowledge held by any individual in particular. The development of capabilities requires integration of disperse bodies of knowledge, turning them into what is called "organizational knowledge".

How knowledge becomes 'organizational'?

Although most works assume that organizational knowledge exists and that it is more than simply the sum of individual knowledge, the important question of how it becomes "organizational" has not been addressed in much depth. Most authors refer to the work of Nonaka and his co-authors, which remains the sole comprehensive view on organizational knowledge formation.

Nonaka (1994) explains the formation of organizational knowledge through a 'knowledge-creating spiral', where tacit knowledge held by individuals is shared with other members through socialization, then made explicit through externalization, then combined with other explicit knowledge and finally internalized in tacit form - and the process starts over again. In this process, knowledge is created through interactions among individuals with different types and contents of knowledge.

How knowledge becomes 'organizational'?

More recent conceptualizations on the process of organizational knowledge creation have stressed the role of knowledge linked to action, in other words the ability to put know-what (knowledge about cause-effect relationships) into practice. Cook and Brown (1999), for example, propose a model for organizational knowledge development based on what they call "the generative dance between organizational knowledge and organizational knowing". Knowing for them is "to interact with and honor the world using knowledge as a tool", or the epistemological dimension of action itself. In their view, these two dimensions of knowledge interact continuously to generate organizational knowledge.

Orlikowski (2002) defends that knowing is not a static embedded capability or stable disposition of actors, but rather an ongoing social accomplishment, constituted and reconstituted as actors engage the world in practice.

What is still missing

The mechanisms through which knowledge becomes organizational and result in capabilities to perform activities are still unclear. Apart from the process proposed by Nonaka (1994), there is not much else available in the literature, especially on the empirical side. One possible reason is the way the field evolved: by treating knowledge as something people (or groups) possess, until recently it had not accounted for the 'knowing' found in individual and group practice.

Knowledge is seen as something we use in action but not as something that is action. Cook and Brown (1999) defend that these two epistemologies (knowledge and knowing) should be brought together if we want to understand the ability to generate new knowledge and new ways of using knowledge - a central theme to understand capability development. Eisenhardt and Santos (2001) point in the same direction, arguing that a bridging of knowledge and knowing perspectives should focus on knowledge integration processes, in which the development of meaning and the creation of new knowledge occurs through individual interactions and is affected by social contexts.

What is still missing

Another issue still to be explored in knowledge management studies regards the effectiveness of knowledge conversion processes - i.e. which are the enablers that allow for better conversions of individual knowledge into organizational knowledge. Previous studies have shown that there is a certain gap between knowledge and action - groups are somehow not able to transform all their individual knowledge potential into collective knowledge for action.

This paper pushes forward the theory on organizational knowledge formation by introducing the concept of cognitive assets, which bridges knowledge and knowing perspectives to address the effectiveness of knowledge conversion processes within organizations.

Cognitive Assets

Although the idea of "collective cognition" has been contested by researchers on the grounds that "cognition belongs to individuals, not organizations", there is a growing number of studies in management that address this phenomenon at a group or organizational level. These studies concentrate on cognitive phenomena in and by organizations that impact the organization as a whole. Recent conceptualizations stress that the field must embrace the complexities of the two levels (individual and group), which co-exist through interactive processes.

In order to address the issues raised in the last section concerning the drivers for knowledge conversion processes, we propose a concept labeled cognitive assets.

Cognitive Assets

Cognitive assets are tangible and intangible organizational assets that constitute sources of the cognition that is necessary for action coordination. These assets allow for the integrity and efficiency of the multiple conversions of individual knowledge into organizational knowledge.

They comprise 4 main dimensions:

- 1) the environmental mechanisms that foster knowledge creation;
- 2) organizational members' cognitive capacities;
- 3) organizational members' transactional potential (defined as their ability to interact and share knowledge with co-workers);
- and 4) decision-making methods used by the organization.

Cognitive Assets

Figure 1 brings a representation of the role of cognitive assets. Analogous to the process of individual knowledge creation, cognitive assets represent to organizations what cognition potential is to individuals. The process of new knowledge generation at the individual level can be seen as the systematic and efficient combination of the information available to the individual with her cognitive potential. Similarly, we can model organizational knowledge creation as the systematic and efficient combination of information-based assets with cognitive assets.

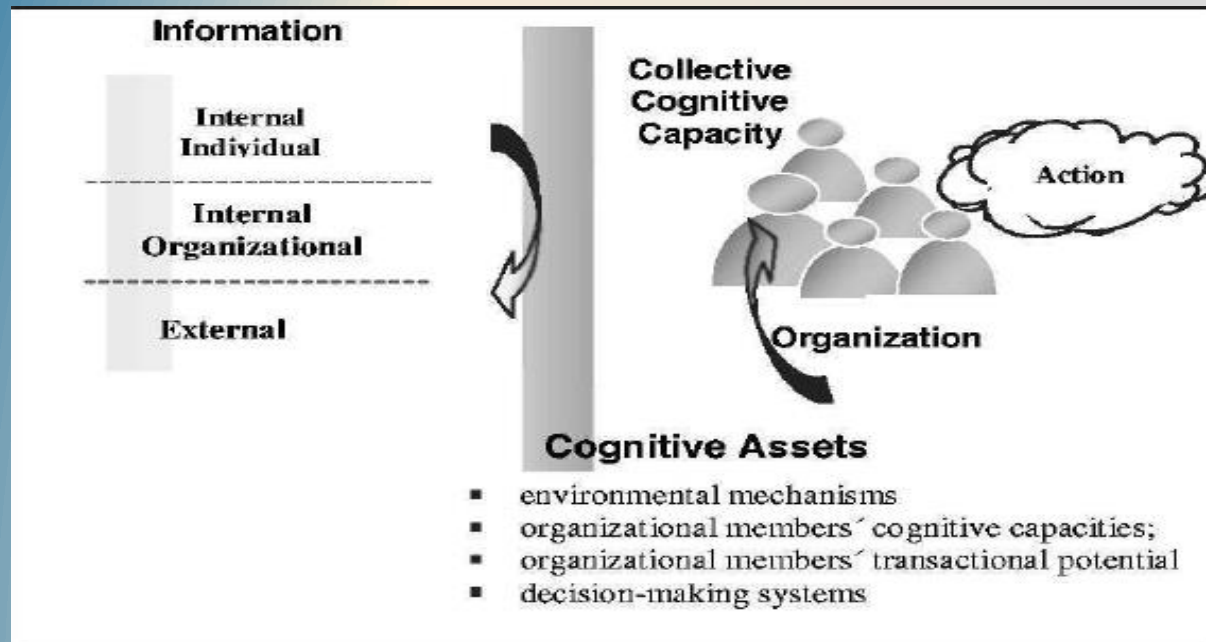


Figure 1 – The role of cognitive assets in organizational knowledge formation

Cognitive Assets

Cognition research in organizations has taken two main approaches: one computational and one interpretive. The computational stream examines the process by which managers and organizations process information and make decisions; the interpretive approach investigates how meaning is created around information in a social context. Our concept of cognitive assets takes both perspectives into account; individuals' cognitive capacities and organizational decision-making systems are linked to the computational view, whereas the environment and transactional elements are linked to interpretive efforts.

As defended by Lant (2002), putting together these two perspectives will deepen our understanding of organizational cognition. Our objective is not to take sides in this debate; rather, we aim to have a comprehensive model that captures all richness of collective cognitive processes. The next section expands the discussion on the dimensions of cognitive assets.

Dimensions of cognitive assets

Environment. Differently from cognitive studies done in psychology, where laboratory experiments are used to address issues of individual cognition, researchers of cognition in management have stressed the role of the environment where decisions and actions are being taken and the interactions of people within this environment. Knowledge is seen as a function of the social and physical system in which it exists.

For example, the influential work of Karl Weick has always stressed the fact that sensemaking is a collective interpretive process. As proposed by Lant, "cognition is situated within a cultural system, including artifacts and practices". Given those characteristics of collective cognition process, the most basic dimension of cognitive assets is the environment where cognition takes place.

Dimensions of cognitive assets

The environment provides regulative (rules) and normative (values and norms) dimensions that govern organizational life. It sets the pre-conditions that allow for the transformation of individual knowledge into collective knowledge put into action.

Following Orlikowski (2002), five sets of activities are important in the organizational environment:

- (1) sharing identity;
- (2) interacting face to face;
- (3) aligning effort;
- (4) learning by doing;
- and (5) supporting participation.

Dimensions of cognitive assets

Managers can increase the effectiveness of knowledge conversions by stimulating these five sets of activities in the areas under their control.

Individual cognitive capacity. The second important dimension of cognitive assets is the individual cognitive capacity of organizational members, which corresponds to their ability to process information efficiently and effectively to attain goals.

That ability contributes to more and better conversions of information into collective knowledge.

Dimensions of cognitive assets

Research in cognition has burgeoned in the past 30 years. It is beyond the scope of this paper to bring a comprehensive view on the main findings of this stream of research in psychology; we will present here some findings that pertain to the effectiveness of information processing inside organizations.

Humans have a knowledge structure (or schema), which "represents organized knowledge about a given concept or type of stimulus". This knowledge structure is a mental template that individuals impose on an information environment to give it form and meaning and to enable subsequent action. That way, it has strong influence on the process of transforming information into action.

Dimensions of cognitive assets

The two most commonly studied attributes of knowledge structures are differentiation (the number of dimensions within a knowledge structure) and integration (the degree of interconnectedness among the knowledge structure dimensions). The higher the differentiation and integration, the more effective the knowledge structure is. Little differentiation leads to a narrow vision, which results in ineffective managerial behavior. Differentiation and integration are influenced by personality variables (level of aspiration, job involvement, cognitive complexity) and organizational experience (position in hierarchy, work experience).

Dimensions of cognitive assets

Transactional capacity. Even if the environment is conducive to knowledge sharing and individuals have high cognitive capacity, the ability to generate and put into use collective knowledge will also depend on individuals' ability to connect to each other.

Transactional capacity is ability individuals have to absorb, codify and share information and explicit knowledge in order to meet organizational objectives. Transactional capacity will be a function of personal and structural dimensions. For personal characteristics, Eric Berne's transactional analysis in psychology studies three important dimensions: (1) learning; (2) rationality; and (3) emotions.

Dimensions of cognitive assets

The structural dimension of transactional capacity is linked to the various networks within the organization. Social networks and the role of social capital have received an increasing attention in sociology studies over the past few years.

Decision making systems. Organizations use different systems to help their decisionmaking processes. Operations research, management science and decision science methods can be seen as analytical cognitive processes that help decision-making. These methods serve to increase the efficiency of the knowledge conversion and mobilization processes, increasing managers' ability to process information and make decisions. That way, they are also important constituents of cognitive assets.

Dimensions of cognitive assets

We define these systems rather broadly: any activity that, based on explicit (but not necessarily formalized) models, helps decision-making agents to obtain solutions to their problems given their preferences and the uncertainty of the environment. Together with individuals' cognitive capacities, they define the organization's capacity to process information and make decisions.

What I expect from you?



merna@esu.ac.ae



thank
you!