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LOWERING THE BARRIERS TO KNOWLEDGE TRANSFER AND DISSEMINATION: THE ITALIAN COOPERATIVE BANKS EXPERIENCE

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ABSTRACT

Knowledge has become increasingly relevant for organizations since the shift from an industrial economy based on assembly lines and hierarchical control to a global, decentralized, information-driven economy (Barua, 1996; Levine, 1995). Although knowledge is a wider concept than information because it is based also on expertise, we can consider the Information Management as the enabler for the Knowledge Management (KM). In particular, KM is viewed as an emergent process in which bits and pieces of information are integrated, within and across organizational boundaries, to produce and share new knowledge. Thus, the basic aim of KM is to capture and increase the knowledge of individuals. We are going to consider the perspective according to which the organization is a knowledge transfer system (Hertog and Huizenga, 2000), since virtual corporations are based on technological and communication means that help it. After defining why the knowledge dissemination is a win strategy for people within an organization, we are going to describe how managers can promote it. In this respect, we consider the cooperative banks experience in Italy very interesting. In order to exploit the power coming from their institutional network, they decide to create a unique knowledge management system in which competences and process are shared by all banks participating to the virtual network.

1. KNOWLEDGE TRANSFER

Generally when we use the word "transfer" we are talking about conveying or moving something from one person or place to another, or to hand over something. Knowledge transfer would then indicate conveying or moving knowledge from one person or place to another.

In the world of business, knowledge transfer relates to how we move knowledge from one point of the organization to another (Rutkowski, 1999). Organizations are taking a serious look at how they can transfer the knowledge of their employees throughout their organizational structure. The pressure to more efficiently transfer knowledge to obtain highly qualified people that stay at the edge of the state of the art throughout life, and that can acquire new knowledge (=learn) whenever the need arises, has much increased over the

years, mainly due to the acceleration of growth of information and partly due to high cost of education, training and re-training. Even more serious, the fact that persons within an organization do not know what others are doing or what they know has lead to so much waste and duplication of efforts that it became imperative to look for at least partial solutions. There is yet another development that is constantly accelerating: in traditional organizations their main assets were property, buildings, machinery, inventory, etc.; in high-tech (read "high-brain") organizations the main asset has become more and more the knowledge in the brains of their employees. Putting this together, techniques for archiving, transferring and increasing knowledge will be crucial factors for high performance organizations (Maurer, 1999).

2. THE KNOWLEDGE TRANSFER MECHANISM. AN APPLICATION OF THE PRISONER'S DILEMMA.

Two players A, B (in our case: business units, enterprises, divisions, function or individuals) have to decide whether to transfer mutually their knowledge or not (cooperate or not). Each was offered by the Chief Knowledge Officer (CKO) a bargain (as shown in Fig. 1):

- if A and B decide not to transfer their own knowledge everyone will possess its own and the transferring cycle doesn't start at all (strategy 4);
- if A refuses to cooperate and B decides to transfer knowledge, B would lose its own knowledge which is absorbed by A (or the opposite) (strategies 2 and 3);
- if they both decide to cooperate, each would spend/lose some time in absorbing knowledge, but a learning circle is created (strategy 1).

		Player A	
		TRANSFER	**DON'T TRANSFER**
Player B	**TRANSFER**	5,5(1)	0,10(2)
	DON'T TRANSFER	10,0(3)	1,1(4)

Figure 1: *The prisoner's dilemma applied to the knowledge transfer case.*

Summarizing:

A's choices (A's hypothesis on B's behaviour):

- if B's strategy is to transfer, it's better if A decides not to transfer (10>5)
- if B's strategy is not to transfer, it's better for A not to transfer (1>0)

So whatever is B's choice, for A it is better not to transfer (dominant strategy)

B's choices

- if A's strategy is to transfer, it's better if B don't transfer (10>5)
- if A's strategy is to transfer, it's better if B don't transfer (1>0)

So whatever is A's choice, for B it is better not to transfer (dominant strategy)

Therefore each player chooses his optional strategy, taken as given the other player's one. The combination of the decision of the two players leads to the Nash-equilibrium (4) where neither has an incentive to uniterally change his strategy. But this equilibrium, which is stable, is not Pareto-efficient, because there is another one (1) where both are better off without anyone straying worse than in (4) (i.e. for each player 5>1).

So if they were able to cooperate and decide to mutually transfer their knowledge they would be better off, but there is no opportunity to make any formal agreement, they just have to act making hypothesis on each other's strategy.

If this game is played just one time (one-shot game) the final equilibrium is the Nash one. The same result is obtained if it is played a finite number of times (this is like repeating the one-shot game *n*-finite times). But it is almost unreal: in an organization, business units will interact an infinite number of times. So it is reasonable to assume that this game is not played one shot, but an infinite number of times: in this situation it is optimal for both player trying to cooperate (even without formal agreement) and play (1).

The risk here is that, for instance, player A, thinking B will always play Transfer, decides to deviate and play Not Transfer, to get a better payoff in the short-run (10 instead of 5, (2)), but in the next turn player B knows what's happened and decides to punish player A playing Not Transfer, which pushes them back to Nash-equilibrium (4). To avoid this situation in an infinitely-repeated game, there must be an appropriate discount factor which makes it not convenient to deviate from (1).

This concept of organizational interdependence is included in Henderson's discussion of strategic partnership, which he defines as, "*...a working relationship that reflects a long-term commitment, a sense of mutual cooperation, shared risk and benefits, and other qualities consistent with concepts and theories of participatory decision making*." This is relevant to the goal sharing and strategy-congruent measure construction initiatives, in that an incentive system aligned with the partnership goal structure causes the participants to view the partnership as an infinite game. This is because each of their "payoffs" are maximized in the partnership, causing each to believe the relationship won't be unilaterally ended--i.e., the partners won't "fink"." One executive's statement sums it up: *'Why do I think it will last? Because we both have something to gain.'* (Setzekorn, 1995).

3. BARRIERS TO KNOWLEDGE TRANSFER

Unfortunately, humans - the sole vessels of knowledge - are very inefficient at passing it along from one brain to another. In seconds, computers can transfer reams of data from one terminal to another while knowledge is far more difficult to move. According to Hard H. and Lindkvist B. (Hard and Lindkvist, 2000), there are two main kinds of barriers to knowledge transfer:

- culture;
- localization

3.1 Culture

For this study, we use a definition of culture that helped us see its multiple levels. Following Edgar Schien, we define culture as the shared values, beliefs, and practices of the people in the organization (Schien, 1993). Culture is reflected in the visible aspects of the organization, such as its mission. It is embedded in the way people act, what they expect of each other, and how they make sense of each other's actions. And it is rooted in the core values of the organization. Following this definition, in an organization with a knowledge-sharing culture, people would share ideas and insights because they see it as natural, rather than something they are forced to do. They would expect it of each other and assume that sharing ideas is the right thing to do. In the past people have taught themselves to hoard knowledge over the years to achieve power. Today we have to reverse that tendency as the most powerful individuals will be those that become a source of knowledge by proactively sharing what they have or what they can get their hands on with others. A climate of continuity and trust is necessary to accomplish proactive knowledge sharing within the company (Buckman, 2000).

3.2 Localization

Modern enterprise is rarely local. Between coordinating global operations and interacting with suppliers, customers, and partners wherever they may reside, most people must be able to carry on transactions and interactions from afar. Unfortunately, face-to-face interactions are the highest bandwidth forms of knowledge exchange. Therefore, mediating the gains of global reach is the intellectual heat loss which

accompanies interaction while physically separated. Technology can help bridge these gaps to some extent, sometimes just by allowing virtual replication of existing practices.

4. HOW MANAGEMENT CAN PROMOTE KNOWLEDGE TRANSFER

This section outlines how managers can encourage knowledge transfer within an organization through the use of training and incentives, technology and structure in order to overcome the tangible and intangible barriers mentioned above.

4.1 Training

To share articulated or explicit knowledge, workers need to be literate in the languages in which ideas are expressed in their work. In addition to spoken and written language, this may involve high-order "literacy" in more technical languages such as blue prints or statistics.
Managers and workers must be trained to evaluate new ideas. Just as importantly, they must be trained in systematically understanding what evidence should be convincing - for example, the difference between correlation and causality, and the problems of small samples. Once these basics have been mastered, formal procedures such as statistical process control and the design of experiments can be useful in creating new knowledge. Importantly, for most employees and managers, statistical and problem-solving training will usually be more effective if it is coupled with resolving an actual problem, instead of classroom training in statistics.
Training workers to both disseminate and adopt new ideas may revolve around making them aware of where else in the organization their ideas may be useful and where else ideas may arrive from. Workers must also know how to use technology to post and search for new ideas. A receiver's ability to understand an idea, "*absorptive capacity*", can be a barrier. This can only be resolved through increasing the worker's own knowledge base, requiring an increased emphasis on substantive ongoing education and training. One difficulty with existing training efforts is their lack of integration. To be most effective, training on creativity should include designing solutions that include opportunities for validation and dissemination of ideas.

4.2 Incentives

Employees are most likely to spend energy sharing what they know if they are in a single workplace with group incentives. Thus, extra incentives can be helpful when employees are in different units without common objectives. Both monetary rewards and recognition can prompt people to be more open with information and can create corporate cultures in which sharing of information is valued. Managers can also be rewarded for subordinates' participation.
In order to encourage not only sharing but also evaluation and dissemination of ideas, knowledge-creating divisions must be rewarded for creating knowledge that other divisions use. Corporate headquarters cannot monitor the value of the knowledge transfer between units, or even whether any knowledge is shared. Knowledge-creating divisions face costs of creating an idea, posting it to the corporate computer network, posting it carefully (for example, avoiding division-specific jargon, being complete, creating helpful keywords, providing appropriate pointers to people who can supplement the report), and helping the knowledge-using unit implement the idea.
Sometimes employers pay bonuses based on knowledge-using units' claimed results. Variants on this process include having knowledge-using units nominate knowledge-creating units for internal awards, or giving each knowledge-using unit a fixed number of prizes it can award to knowledge-creating units that help it out.

4.3 Technologies

Many companies have used the Web as a technology for enabling knowledge sharing at both workgroup and company levels (Davenport, 1996; Halal, 1996). As the need to guarantee security of the Web grows, companies are setting up internal Web sites called *intranets*, private networks based on Internet protocols like TCP/IP, HTTP, FTP and others.

The main purpose of such a network is to share company information and computing resources among company people, enabling the sharing of knowledge and expertise, overcoming time and spatial barriers and letting different levels of permissions and interactions, in order to facilitate working in groups, exchanging documents and communicating via teleconferences.

Using this technology, companies can send private messages through the public network, with special encryption/decryption and other security safeguards to connect one part of their intranet to another.

Internet technologies on which intranets are based, have solved several of the longest-standing and most difficult problems in corporate use of computers and telecommunications

We can summarize these benefits with three words: *reach, range, easy* (of use) (Keen and Ballance, 1997).

- Reach: Who can access the firm's on-line services and information resources. TCP/IP, Transmission Control Protocol/Internet Protocol, is the communications protocol that allows any computer of any type anywhere in the world to link to another computer of any type anywhere in the world. It made it possible for companies to collect, to transfer and to share information from their transactional systems built on proprietary technology.
- Range: What information and services can be automatically and immediately crosslinked. The WWW, World Wide Web, provides an entirely new way of interacting with information on-line. The HTML, HyperText Markup Language could be learnt quickly and made it cheap to build basic Web sites. Web browsers go beyond just displaying Web sites. The term is now somewhat misleading, in that the leading browsers are powerful tools for handling just about any Internet application, including file transfers and electronic mail, for building Internet applications and for ensuring security.
- Ease of use and training: how natural is the system to access and navigate through its menus and options.
  Browsers also offers a deceptively simple feature that is as radical in its impacts on the use of computers as spreadsheets were for personal computers. These ones are not traditionally easy to use or user friendly for all people. Computers are still difficult to use. The genius of the combination of browsers, the Web and hypertext is that they make intranets simpler to use than any other information retrieval systems.

So the advent of the WWW has provided a tremendous opportunity to speed up the diffusion of various knowledge creation/diffusion structures (Chen and Gaines, 1996, 1997). Because the Web enables organizations to create a knowledge repository and to extend the scope of collaboration in an easy and cost effective manner, it creates the possibility to develop global collaborative KM platforms (Davenport, 1996).

Now groups and organizations can use the Web as a way to share business knowledge within a group or an organization. The result is a significant pin in efficiency over other ways of sharing knowledge (Chen and Gaines, 1996).

Traditionally, team members have shared knowledge through file servers, e-mail, and groupware. However, none of these tools are fundamentally designed for facilitating an exchange of knowledge, particularly not among team members who are geographically distributed.

But recently a new generation of Web-based groupware systems, such as Domino of Lotus, Collabra of Netscape and NetMeeting of Microsoft allow collaboration and knowledge sharing among teams of people inside and outside an organization.

Chen and Gaines, (Chen and Gaines, 1996) state that "*the Web can be considered as a large scale groupware for facilitating knowledge creation/dissemination in special interest communities*".

4.4 Structures

A variety of organizational structures can promote the dissemination and adoption of knowledge. Despite the current emphasis on technology and new methods of idea transmission, much knowledge remains tacit and is most efficiently transmitted in person, renewing the importance of decidedly low-tech practices including job rotation across units, cross-functional meetings, cross-unit or cross-group meetings (e.g., sales convention), mentoring, training, and free time.

Many companies use *war rooms* or *talk rooms* as incubators for spontaneous innovation. War rooms are established with a specific project or objective in mind, while talk rooms are general areas where people can gather to chat and exchange knowledge. Because, at the end of the day, knowledge transfer must take place between people, war and talk rooms offer an opportunity for such transfer by creating the space and the opportunity. While not an overt process tool, the establishment of such space is a strong statement in support of open communication, sharing, and the trust needed in knowledge transfer. Of course, it also has to be socially, politically, and realistically acceptable to gather in these areas for them to have any effect, but that is true whether real or virtual. In order to break down the barrier of distance, many such rooms are also being established virtually. By allowing individuals to create virtual spaces, groupware and similar Internet-based tools allow individuals to carry on conversations over time and distance, work on documents cooperatively, create virtual libraries and knowledge-bases, and coordinate activities from remote locations. A powerful idea when fully utilized, groupware has the capacity to create the virtual space for interaction and communication that talk and war rooms can do in physical locations. Other tools enhance simultaneous conversations over distance. Knowledge transfer benefits from increased bandwidth, so every sense which can be involved in the interaction adds more information and more context.

5. OVERCOMING THE BARRIERS TO KNOWLEDGE TRANSFER: THE ITALIAN COOPERATIVE BANKS EXPERIENCE

5.1 The Context

Cooperative banks (BCC) in Italy have played an important role in the banking system scenario. Since they have a particular legislation trying to preserve their small dimensions and their social characteristics, they have represented a strong competitor for the other bigger banks. The most important strengths of this kind of banks are:

- Territoriality. They have been developed with a strong link to the place they were be funded. They are banks which take names from the city or town they are established in. Their clients are retail and small businesses (professionals, unions) that look for competitive economic conditions, easy products and personal relationships.

- Small dimensions. Although within this category there are different banks in terms of assets, products, number of clients and penetration, the cooperative banks are characterized by a functional organization structured by one headquarter (in which all back office activities are collocated) and some branches (from two to several ones).

- High number of shareholders. These banks have a cooperative social form, that means many shareholders held the bank capital. Usually, the CEO is composed by citizens known by the clients and representing the traditional interests. The control on management is very high so that competences and skills have been always tested.

- Social network (Grandori and Soda, 1995). Due to their relative small dimensions these institutions have established common associations able to support all managements of affiliate banks. In particular, these organizations operating in a regional, interregional or national level, support IT and organizational departments, from an operative as well as strategic point of view. In order to create competences centers and share the knowledge which can contribute at decreasing costs and concurrence, dedicated networks are build up. Trust and interpersonal relationships within them characterize their social side.

5.2 What is Knowledge for Banks?

Complexity for banks lives in processes which are very detailed and have several implications in the operability of working. The experienced workers have a wide knowledge of the operational and legal impacts of each activity in banking processes together with a good knowledge of information systems which allow workers to make transactions and interact directly with the banking system.

Creating a knowledge management system in banking industry means to build up a technological infrastructure which can provide information coming from implicit and explicit experience of workers. Each employee should be able to find in an unique point punctual and useful instructions showing processes in a systematic way: their description, organizational structures in charge to make them, correlated processes and documents, electronic transactions for making operations and description of related controls. It is more useful to indicate also the way to manage all exceptions which are often present in the normal process. These information are the really implicit knowledge the experienced workers should transfer, since no operational handbook or just right insights are enough.

5.3 The Knowledge Management System

The problem of explicating and transferring knowledge within an organization is more present in small companies in which a person usually could have different roles and brings more competences. The cooperative banks, in particular, have felt this problem and have tried to solve it by creating a knowledge based information system able to help all employees to understand their responsibilities and how the bank processes are organized and controlled. The development of this product was given to CSSB (Centro Studi Servizi Bancari) in the North of Italy, a technological outsourcer of some cooperative banks in Lombardia. Thanks to the high competencies from a technological as well as organizational point of view, this center has created a Lotus Notes based system which maps all bank processes, dividing them into phases and activities. The support of three data bases (activities, documents, human resources) is fundamental to create the final interface in which the employee can find the description of the activity, the persons in charge of doing it, the relative control and all exceptions in processes. References to information system transactions, to the attachment documents and forms and to the communication means within the organization, are managed by the system in an electronic and automatic way.

The system was borne after having testing the prototype, has a database master logic. That means that CSSB, in accordance with four very motivated banks, is creating a “dream bank” from all experiences and suggestions of these organizations. The aim is to create a unique data base which, in a further step, could be personalized for all banks joining the network.

Some considerations have to be done:

- to use the knowledge management system Lotus Notes’ tool has to be implemented. That means it is necessary to train people to use it. In this respect, it is useful to organize *training* courses and discussion forums, which support the already existing online guide for the ended user.
- The explication of implicit process knowledge, existing in the way of working of employees, is supported by different *meetings* (talk rooms) among a manager of CSSB, who knows the information tool, and at least four bank employees, one for each bank, which have competences on a given process. The conversation becomes the way to explicit knowledge and to create new one (by the confront). The

banks, that are participating directly to the process, will obtain two kind of advantages: from an economical point of view, they will receive *incentives* from the network of banks, which in the near future will use the tool, and will save all costs of personalizing the mapped process, since the system has already assumed their characteristics. They will benefit also from the bottom-up approached used in their organizations. The knowledge is directly coming from the persons that own it so that each of them can understand the utility of the system.

- The system is developed by technology providers (CSSB and Lotus Notes suppliers) and cooperative banks, which are already parts of a regional *network*, using the same information systems and have other point of contacts. The friendly and trust based cooperation could be considerate an enabler context for formalizing and than transferring knowledge. All documents and processes could be immediately and directly updated by CSSB, in accordance with European and Italian central banks and other bank authorities.
- From a technological point of view, the tool is using a groupware system able to share resources in a local dimension. The link with the data base master located in CSSB and all network communication will be supported by using the *Internet* protocol.

5.4 Potentialities of a Shared Knowledge Management System in Cooperative Banks

The experience in cooperative banks context shows there are some potentialities of a knowledge management systems. The network allows the dissemination of best competencies which could represent a way of overcoming the dimension inefficiencies. Each bank can help others by transfer just the well-founded knowledge it has. Due to economical incentives banks are driven to develop the best competencies by them own and try to disseminate them through the other banks. The banks more relevant in the cooperative scenario because of their dimensions and competences can conquest further The smallest ones could benefit of the work done by others and consequently:

- saving time and resources dedicated to organizational roles (the knowledge management system can make up for all documentation providing process descriptions and professional behavior);
- taking advantage of a database which should be the result of the best competencies so that could be an useful “modus operandi” for the bank.

6. CONCLUSIONS

Focusing on the transfer problems of the knowledge management, we argue that the win strategy is to cooperate within a given organisation in order to achieve a mutual benefit. In this respect, co-operative banks, exploiting their already existing networks among them, have tried to use a new tool which can support knowledge dissemination.
Due to the importance of these networks in the daily work of each banks, sharing and trust elements are already established. Incentives and training are present in the single banks (Tab. 1), while a sort of economical incentive is foresee for the banks which are directly involved in the explication of the knowledge.

BARRIERS	**ENABLERS**	COOPERATIVE BANKS	
CULTURE	TRAINING		ON LINE GUIDE COURSES
	INCENTIVES		FEES
LOCALIZATION	TECHNOLOGY		GROUPWARE INTERNET
	STRUCTURE	SOCIAL NETWORKS	TALK ROOMS

Table 1: *The cooperative banks system: a way to bypass cultural and geographical barriers.*

The appropriate level of senior management support and involvement is another enabler to the knowledge transfer in these organizations.

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