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**THE DIFFICULTY OF FORMALIZING THE IMPLICIT:
LIMITS AND PROBLEMS OF THE MANAGEMENT OF
KNOWLEDGE**

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First version

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As its preceding sisters, the new generation of information technologies, i. e. the Internet and its applications inside the firm, is credited with almost magical powers for bringing about organizational change. These forces can either be seen as positive, because they carry with them the unavoidable evolution towards more open, more flexible, more adaptable, more extended, more transparent and more intelligent organizations. They can also be looked at with apprehension, seeing them as a vehicle for a new wave of rationalization and standardization opening the way to de-qualification of jobs, tighter hierarchical controls on activities, panoptical devices and new modes of domination in firms. In both perspectives, however, as was the case in prior waves of computerization, information technology is considered and presented as the driving force behind organization and organizational transformation towards new models and organizational forms, which leave little place for local variation.

Knowledge management is one case in point. It is presented as one of the most promising potential uses of the new information technology, which will make it possible for companies to become intelligent by mobilizing, formalizing and circulating the tacit and explicit knowledge accumulated by its members. Information is considered as a technicality, or even better as a commodity, which can be accumulated, brought to the open and transferred at will, if only the necessary software can be developed and introduced.

In this paper, we have chosen to use knowledge-management as our entry into a more realistic discussion of the new information technology's organizational potential. We shall do so, on the basis of the case-study of the introduction of knowledge-management software in the sales-department of a big French software company¹ which we shall call Papyrus. As we shall show, this software has not

¹ The empirical material for this case-study as well as for the discussion is drawn from an on-going PhD dissertation by D. Muhlmann on the organizational impact of the new information, and communication

produced the expected results across-board. Its use varies in the different parts of the department, as a function of the characteristics of the work-setting, the nature of the task and the peculiarities of the actor-system involved. Having shown this interdependence between organizational context and technology, we shall then draw on still other results from the same company to try and discuss some of the reasons why knowledge management and other information technologies rarely live up to the promises made and the expectations raised.

1. Knowledge management in the Sales-department of Papyrus

The formal organization of the sales department at Papyrus is simple. Headed by the Director for Sales, it is divided into five divisions each of which attends to a particular sector and/or market segment. Four divisions are in charge of the so-called big accounts, i. e. they take care of the big firms in particular sectors. Three of them are in charge of specific sectors (Banks and Insurance, Industry, Administration and Services), while the fourth, called Business Development, is in charge of hunting new customers away from the competition. Each of them is headed by a division-manager, and employs between five and seven salesmen. The fifth division is called GBS (acronym for General Business Sales), which is in charge of the market-segment of small and medium accounts with lesser sales potential. It is also headed by a division manager and is bigger than the other divisions, as it employs ten salesmen.

At the time of our research, a KM software called WORKLINK had been in place for five months within the sales department. The introduction of this technology was a management decision. It represents management's latest attempt to capitalize², i. e. bring out in the open and formalize all that personalized and particular information and knowledge about customers which each salesmen accumulates in the course of his activity. Before presenting the impact of the new software, a few words about its characteristics are in order.

technologies. See D. Muhlmann : *Le "Knowledge management" chez Papyrus*, unpublished research-report, Centre de Sociologie des Organisations, 2001.

² It was not management's first attempt to do this. There had been prior attempts, which however had been unsuccessful.

A short description of WORKLINK

WORKLINK basically consists of a phone book and a data-base for sales monitoring. In the phone book, you can find the addresses of each salesman's different contacts and counterparts inside a given client-firm. When the salesman clicks on a name in the phonebook, he can then create a "project", i.e. a prospective sales-operation, and within such a "project" he can then create as many sub-files as necessary. The project and its sub-files are automatically registered in the base for sales monitoring, and this is where the salesman will have to go if he wants to add new elements to the project. And once it is sufficiently advanced, the salesman can transform it into a "forecast" which will then automatically appear with, and be added to, the other forecasts, providing a pretty good picture of where the sales department stands at any moment in time. Of course as soon as an information is entered into the base, it is available for everybody (colleagues, superiors) with access to the base.

After this general presentation of the software, two of its characteristic elements have to be emphasized which condition the facility, with which the base can be consulted by the salesmen. A first characteristic is the fact that the available information is classified only by projects and never by persons or individuals. If a salesman wants to file information concerning one of his contacts, he necessarily has to file this information in the form of a project, and "qualify" this document (is it a report, a commercial proposition, a memo, etc.?). In other words, the base for sales monitoring only contains projects, and information can only be found through its link with a project. Contacts do not exist in this base. In the second place, the arborescence of the phone book as well as of the base for sales-monitoring is structured by organizational entities of the client-system. Thus, if a salesman wants to create a project, he has to integrate this project into the arborescence of entities of the account, even if his contact is in another entity than the one concerned by the project. He has to conform to the structure of the client system as it is represented in the software³.

With WORKLINK, we are locked in with the arborescence put in the software. I have to enter a project in relation with an entity(...) and in that project, I cannot put somebody who works in another entity (Salesman big account)

³ Or as he has represented it in the software since he is the one who enters the arborescence of entities of his client-systems into the computer data base).

In the next section, we present the impact of WORKLINK in the five divisions of the sales-department. The following section will then be devoted to the analysis of these results and to the discussion of the limits or problems they seem to indicate for the implementation of knowledge management programs⁴.

2. The impact of WORKLINK in the divisions of the sales department

Our observation shows that the reaction of the sales department to the introduction of WORKLINK is not at all homogenous. Two sectors can be distinguished. On the one hand, there is the sector of the big accounts (four divisions out of five) where WORKLINK is rejected. On the other hand, there is the GBS division where on the contrary the software is perfectly integrated into the day to day routine of salesmen.

WORKLINK in the divisions of the big accounts.

The big accounts salesmen refuse to use WORKLINK. They are very critical with regard to this technology.

" It is not worth a nickel, I do not use WORKLINK (...) I went to take a look, but I cannot tell you much about it.... I don't know it. All I know is that it seems too complicated to be used " (big accounts salesman)

They incriminate the complications which follow from the way it is structured, saying that this does not correspond with their sales practice, that it does not help them in their work and forces on them an unnecessary burden of paper or secretarial work which has no additional value for them in their sales activity. As comments one of the big accounts salesmen :

My job is to sell a product to an individual. But in WORKLINK, every thing is structured by projects, and that simply is not relevant. I would need a classification by individuals or contacts in order to be able to link

⁴ The case study is built on 25 in depth interviews with a representative sample of employees of the sales department. In particular, we interviewed the Director of Sales, the division managers, almost all GBS salesmen and a dozen or so salesmen in charge of big accounts.

memos to names. With this database, it is really difficult to track and monitor clients : the minutes of our meetings have to be linked to projects, and it takes a quarter of an hour to do it ! (Big accounts salesman)

What am I supposed to do if a person with whom I am in contact,... is party to five or six projects ? (Big accounts salesman)

IT is remarkable that in spite of the problems which this refusal of their salespeople to play along with WORKLINK creates for them, particularly for their own task of forecasting the activity of their division, the division managers do not seem to make a great case of it. They seem unwilling to force this technology onto their salesmen. On the contrary, their attitude is one of withdrawal and indifference.

It's true, as long as they sell, I won't bother them with that. Their targets are difficult to attain. I shouldn't really say this, but if they succeed better without the software, OK. If somebody brings back a huge contract, I won't ask him : Have you done it with WORKLINK? A manager should be directive, but not in a stupid way. (Division manager)

I have talked to them about the necessity to use WORKLINK. I have told them that they as well as I are wasting our time, and that the software could make us work more efficiently. (Division manager)

WORKLINK in GBS division

By contrast, the manager of GBS is much more interventionist. He forces his salesmen to use WORKLINK.

" I asked them to fill out WORKLINK. It is mandatory. Anyway, I see if one of my people did not fill out this or that column, and I have him know that I've seen (...) As I told you, I can see in the data base if somebody has not filled out the forecasts yet " (GBS Manager)

He is very much preoccupied by the use of WORKLINK and actively helps his salesmen to get to know and to use the software. His competence in the field as well as the proximity which provides his help in the use of the software both enhance his effort to "sell" the software to his salespeople.

I show them how to do it. ...I feed the team-room of GBS (an electronic forum) with all sorts of documents, and that certainly acts as an incentive. (GBS Manager)

And our observation and interviews show that GBS salesmen do not in any way resist against this pressure for the use of WORKLINK. From their point of view, using WORKLINK seems to be very “natural”.

"I am not working without WORKLINK. It was not even thinkable to reject this computer system. You know, WORKLINK, it's like the "baby" of our manager" (GBS salesman)

We cannot cook each in our own corner (...) I use WORKLINK not only for my own sake. There are also the informations for the partner. (GBS salesman)

WORKLINK indeed has been adopted in GBS and completely structures the work there : it is truly an instrument which favors cooperation and interaction : WORKLINK plays an important role of formalization of the information which is being exchanged among the salesmen of GBS, but also between GBS salesman and the retailers with whom they are in contact.

IN WORKLINK, in each of my accounts, in the window for comments, I have put down the name of the retailer. Before contacting a client, I look into WORKLINK to find the retailer's name. Then I get in touch with him, and he will inform me about the client's projects, which he knows well. It's a relationship between us three : me, the retailer and the client. (GBS salesman)

While valid, this general picture needs to be somewhat qualified. A few of the salespeople at GBS (about a quarter) have nominal accounts, and a sales practice which tends to resemble what we have observed in the big accounts divisions. These few also have a different, and partial way of using WORKLINK. The database is used by them only as a repertoire, as a phone book of contacts and not as a base for the monitoring of sales and of their work. Making reports is perceived as a useless and redundant task : they know their customers well, almost as well as the big accounts salesmen, so they don't feel the need for a tool for monitoring their sales activities. Whereas for the salesmen who are in charge of whole sectors, the use of WORKLINK is much larger, and includes the phonebook as well as the

monitoring function, because its use helps them,; remembering all the sales initiatives that have taken place already with the different clients.

So, if we sum up the findings, we can say that there seems to be a clear structure as to the acceptance or the refusal of WORKLINK in the sales department of Papyrus. One could present the results on a continuum, as is shown in table 1. At one end, you have the big accounts whose sales-people outright refuse to use any part of the KM software. On the other end, you have the salesmen of GBS who have adopted the software and use it in their day to day dealings. And the few salesmen of GBS with nominal accounts form an intermediate group, accepting only part of the software.

Table 1 : Use of WORKLINK in the sales department of Papyrus

Sales monitoring			GBS sector
Phone book		GBS personal accounts	
No use	Big accounts		

This structure expresses the link between the use of WORKLINK, the nature of the work in the two social systems of the sales department as well as the nature of the task interdependencies which can be observed in each of them. In fact, it points to the existence of two social systems in the sales department which differ on all those grounds and the characteristics of which condition the reception of the KM software.

3. The sales department of Papyrus : two social systems

The interviews show that the sales department really is divided into two worlds or two social systems, which do not have much in common. On the one side, we have the world of the “big accounts”, on the other hand the world of GBS. The two worlds contrast in the way their work is structured, in the degree of autonomy granted to the salesmen and in the role played by the division-managers. These characteristics in turn can explain the acceptance or rejection of WORKLINK.

The world of the big accounts

The major feature of the world of the big accounts is the considerable autonomy enjoyed of the big accounts salesmen in the pursuit of their activities. They are experienced salesmen, who are very familiar with their customers, some of whom they have known and interacted with for years.

"In the big accounts, we work alone, we have great autonomy. I do not appreciate it if someone else gets involved in my business (...) You will certainly hear that one of the nicknames of the salesmen here is "the eagles", because eagles fly alone " (Big account salesman)

"I have been knowing my customers for years. I manage my job as I please. I know what to do, that's all there is to it" (Big account salesman)

In the "big account" divisions, each salesman is in charge only of a few customers or accounts (firms), and some of them even of one account (firm) only. In order to get his job done, he⁵ has to become an expert of the account. This means that he has to develop intimate knowledge about the organization of the firm and the people in it, he must get to know all the potential customers, he must become knowledgeable about the projects that are under development. In short, he will have to carefully manage the relation with the account. He can only do if he is able to construct a network of personal relations with the relevant people inside the customer firm. As these firms are big ones, with many subdivisions, and other decisional complexities, this takes time and lots of contacts, not all of which are 'immediately useful', but may only pay off after a while. Contacts and sales cannot be clearly distinguished.

In the course of time, then, each "big account" corresponds to an array of more or less formal relations between each respective salesman and his counterparts inside the customer company. The nature of this network depends on each salesman, on the peculiar road he has used to approach his client-system, and the exchange-networks which he has been able to construct. In these activities, the big accounts salesman does not need help neither from his colleagues nor from his hierarchy. To some extent one could say that, a big account is something "private". It cannot be separated from the person who not only has developed all the contacts worked out

⁵ There was no woman in the sales-population, which explains why we always use the masculine form.

in the particular interface with a particular customer, but who also has his very personal and idiosyncratic ways of going about his work.

This results in a very disjointed, systematically individualized work-practice, each salesman managing his work and his relations to his customers as he desires. The activity appears to be strongly dependent on the specific and peculiar know-how of each salesman. In short, the organization of the big accounts divisions can best be characterized as a “loosely coupled system”, where the practices of the actors are only very loosely integrated and regulated.

This situation is clearly acknowledged by the management of the Sales department (the Director of Sales and the relevant division managers). The Director of Sales complains about the impossibility to have an overall sales-file, which would give him a complete and detailed picture of the different accounts as well as of the history of the business interactions between the salesmen and their client-systems. As to the division-managers, they talk about their difficulties in managing their salespeople. In particular, they criticize their lack of visibility on the activity of their salesmen, and complain about the impossibility to bring out into the open and capitalize the information and knowledge available to their salesmen.

" We have no tools for managing the team. Because the salesmen keep to themselves the history of the relations with their customers, I don't know much about the development of their work: I don't know whom he met, which type of actions he has planned, etc. (...) I have no overall picture," (division manager)

" Every salesman has his own files and PC ! Plenty of informations are located in the personal computers. And in their head, they know many things, (...) If they leave the company, it will be a big problem for us" (division manager)

The world of GBS

The situation is completely different in the **world of GBS**. Its way of functioning contrasts in all respects with the one observed in the big accounts divisions, and its salespeople have a very different way of going about their business.

As we know, a big accounts salesman takes charge only of a restricted number of accounts ; this enables him to closely monitor his customers and to maintain strong

and personalized relations with them. *A contrario*, a GBS salesman takes charge of a multitude of accounts. It is therefore not possible for him to build the same intimate relations with each of his (many) customers. Relations with customers at GBS are much more impersonal and distanced. They are more like spot-contacts, which have to be renewed regularly, and will be done normally over the phone. As our interviewees declare, the interactions with their customers take place almost exclusively on the phone, and rarely do they meet their customers. Personal encounters, if they take place, are much more finalized : they take place to finalize a sale, and not so much maintaining the relationship.

Moreover, GBS salesmen are young and relatively inexperienced. Unlike the big accounts, they are in position of "discovery", both of the company, of their job and of their customers, and they actively seek the professional advice the manager can provide them with. In short the active presence of the manager functions as a resource for them.

As a consequence, relations between the salesmen and their manager are structured very differently, too. They seem to be much tighter. The manager of GBS regularly and closely monitors the activities of his salesmen, he keeps in contact with them and provides them with active advice. For he too is in a very different position compared to the division managers in the world of big accounts where the limited number of accounts makes informal communication about the sales activities feasible. The same is much more difficult in GBS, as its manager has more than ten salesmen each of whom is working on dozens and even hundred of accounts. When the manager needs to know what is happening concerning the accounts, he has to "implicate" himself, he has to organize the information flow.

" The big accounts always have big deals, so the managers know easily what is happening concerning the accounts (...) It is very different for me: I do not know every account as precisely, and nevertheless I need to know (...) At GBS, it is the addition of small sales that makes the profit: here lies the difference with the big accounts (...) To be able to manage the GBS team, it is necessary to "implicate" yourself a lot. I told you, I work very closely with my people in order to know how they are working. It is very important to manage them well, because it is often their first professional experience" (GBS manager)

However, this general picture has to be somewhat qualified. As already mentioned, there is a small group of salesmen in GBS (about a quarter of them) who have nominal, personalized accounts (particular firms), and whose sales practice, *mutatis*

mutandis, tends to resemble the one of the big accounts salesmen. As much as their situation allows for it, they, too, tend to build personalized relations with their (less numerous) customers, they more frequently meet with them, and they work more independently from their manager. However, they are only a small minority, and they never equal the autonomy of the big accounts salesmen. The rest of the salesmen in GBS are responsible for a sector, and for them the description provided above fully applies.

WORKLINK, the nature of activity and task-interdependencies in the divisions of the Sales department.

The delineation of these two social systems neatly overlaps the map of the acceptance of WORKLINK by the salesmen in the different divisions. Their characteristics can indeed explain these reactions.

The refusal of WORKLINK by the big account salesmen can best be understood and explained by the contradiction existing between the formalism of the software, and the way the sales activity is conducted in the world of the big accounts which requires flexibility in the treatment of the information, and calls for the monitoring of relations and persons, not of projects.

The big account salesmen work with a great number of contacts in the client-company, and they keep up these relations for long periods of time, with each encounter being important, but not necessarily leading directly to a sales proposal⁶. An informal contact today can, in the course of time, become the strategic basis for a contract. Not only is the transparency and formalization, which is required by WORKLINK, contradictory with the informal and uncertain nature of the activity, which leads up to a sale. It collides also with the logic of the sales activity which is entirely based on persons, and not on projects. It is persons and the history of the relation with them that have to be monitored and not projects. And to make matters worse, these persons are very often party to more than one project, all of which does not fit with the arborescence structuring WORKLINK.

My activity is difficult to foresee. I mean to say that one does not know whether this or that contact will become important (...). The same goes for a contact, which will give us information about somebody else in

⁶ For instance, the salesman in charge of France Telecom, monitors 287 contacts and relations with individuals spread over a great number of entities of France Telecom.

another entity, and this will then be the important contact. When you are dealing with such amounts, it all becomes a question of finesse ...it's strategy. Nothing is ever final, everything can be undone(...)so everybody has his own way of managing the information...we muddle through. (Big accounts Salesman)

Sometimes, I spend weeks, or even months, preparing a sale. How am I supposed to record this in the sales monitoring ? (Big accounts salesman)

To sum up, the way the big accounts salesmen go about their selling is contradictory with the formalism imposed by WORKLINK. This means that they have really nothing much to gain from the software in coping with the problems of their job. On the other hand, they may even have a lot to lose. Recording their activity on a day to day basis in WORKLINK clarifies and makes visible for their hierarchy what up to now is their private knowledge and the basis for the autonomy they have in relation to their managers. Big accounts salesmen therefore really have no interest in sharing their tacit knowledge and make it accessible for anyone who wishes to consult WORKLINK. It would mean a loss of autonomy without much to gain in exchange. It would also potentially devalue their commercial expertise which is the basis of their bargaining power inside Papyrus as well as on the market. It is therefore very understandable that they should refuse to adopt WORKLINK.

The situation is completely different in GBS. We have already emphasized that salesmen in GBS have a much more distanced and impersonal relationship with their customers. WORKLINK therefore provides them with a clear map of their contacts and of the different entities of the client-systems. It is also easier for GBS salesmen to inform the sales-monitoring, because most of their contacts represent to already relatively explicit demands coming from customers. Furthermore, WORKLINK's arborescence based on entities and projects better adapts to the structure of their contacts, who are normally with the leaders of formal entities (head office, sales management, computer direction), and happen around clear business project, in contrast to the "softness" of the very political practice of the big accounts. Consequently, the ergonomics and the formalism of WORKLINK, which is built by entities and by projects, is convenient for them, and even helps them to acquire a synoptic point of view on the multitude of accounts they administer.

When I talk to a client, I know why I do it. It is not as though I just went to see them to say halo, without a precise aim.(...)And when a client calls me, he wants to ask me something. (GBS salesman)

I am in my office and I answer the phone. Instantly I have to recall the client, and the sales already under way. Here, WORKLINK comes handy. (GBS salesman)

With the big accounts, it's more political : they spend five or six months discussing with as much as twenty individuals of a client-system to finalize a deal. This is more social, more relational than here. Here, things are more direct : I discover or not a customer's need, there is a real project or there is none. (GBS salesman)

For all these reasons, GBS salesmen, in contrast to their colleagues in the big accounts divisions, have a lot to gain from using WORKLINK. And they have not so much to lose. The task-interdependencies are already in favor of their manager whom they need in order to cope with the problems of their job. Their autonomy is less central to them, and they are used to a cohesive work-setting. Moreover, the information in their possession is of less strategic value than the information and customer knowledge accumulated by the big accounts salesmen. Making their situation transparent to their manager and to their colleagues therefore does not carry much cost compared to the gains. It seems clear that WORKLINK's integration at GBS cannot be separated from the tight interdependencies which characterize this organizational context, which is much more tightly coupled. Their acceptance of WORKLINK is therefore not really surprising.

Conclusion

So far, we have centered our paper on the Sales department at Papyrus. In this last section, we would like to draw some larger conclusions from the structure of results presented above. In order to do so, we shall refer to other results of our research at Papyrus, both in other parts of Papyrus and on other information technologies,

which point in the same direction and seem to follow a similar pattern⁷. On this basis, at least four points can be emphasized.

The private use of information technology

It seems to us that the impact of information technology should not always be looked for on the collective level, it may just be used as a personal device. This is case with the GBS salesmen who have nominal accounts, and who see an interest in using the phone book (in order to better administer their accounts), without making their sales practice more transparent for the manager of GBS through the monitoring function. The same pattern appears when one looks at groupware, in the form of an electronic agenda which was introduced in all parts of Papyrus. Consulting rejects the software outright both on the collective and the individual level, creating big problems for the staffing office which is in charge of dispatching consultants on the different projects. The big accounts divisions reject the software on the collective level. However, some big accounts salesmen use the software on an individual level, as a personal device for managing their time, but reject the sharing function which would force them to grant visibility on their personal agendas in order to gain visibility on their colleagues' agendas. And in GBS, not surprisingly, the electronic agenda is used to its full potential. It is more to them than just a personal tool, it also helps them especially in coordinating better with the manager of GBS (by the sending of electronic invitations and the organizing of meetings).

KM does not create task-interdependencies

Knowledge management-software does not create task-interdependencies, it thrives on them. At best it will help manage them, if the actors concerned find an interest in it. In the social system characteristic of the big accounts, which can be qualified as "loosely coupled", the KM computer-base is not integrated into the organizational functioning, and the management is confronted with the "resistance" of the actors. This clearly shows that the introduction of KM software is not enough to build social interdependence, and to initiate a dynamic of exchange and circulation of knowledge between actors. *A contrario*, in a cohesive, "tightly

⁷ This research was conducted in the two other departments of the company, the Consulting department (in charge of inventing and introducing in client companies new software solutions integrating Papyrus software) and the department for technical support (in charge of the repair of breakdowns and computer dysfunctions caused by Papyrus software in client-systems). See D. Muhlmann : *Le "Knowledge management" chez Papyrus*, unpublished research-report, Centre de Sociologie des Organisations, 2001.

coupled context like GBS, the KM project succeeds in becoming integrated into the exchanges of the actors, and contributes to the activation and development of the pre-existent structure of exchanges.

Again similar patterns can be found in other parts of Papyrus, i.e. in the Consulting Department and in Support. The functioning of the Consulting department reminds of the observation in the big accounts divisions. Indeed, we observed that the consultants and their managers (the “Project Managers”) organized themselves very freely, both in regard to the allocation of consultants to projects and in regard to the actual management of projects. Likewise, the “managing structure ” (the Managing Director, the Operations Manager, and the staffing office) has little impact on this functioning and on the rules of the game, which govern the organization of this “ professional structure”. The introduction of a KM software called INTELSYSTEM, which was supposed to mobilize, formalize and circulate the intellectual capital represented by the software solutions developed by consultants in their projects, and thus to create the conditions for better, more efficient and therefore also more profitable cooperation among consultants failed completely. Accepted in the abstract as “*something interesting*”, it was not used by the consultants and very quickly became identified as a base full of unusable solutions. Having no cooperative setting to thrive on, it did not succeed in creating one.

On the other hand, a “tightly coupled” sector like the department for technical Support, illustrates how task interdependence can successfully be managed by KM software. Members of support find strong interest in exchanging between them the technical information concerning these products they have to debug and repair, in order to be able to face the various problems, which arise at the customer’s. In such a situation of high interdependence, it is not surprising that their KM data-base called SUPERSYSTEM, which capitalizes the technical information is regularly fed and strongly mobilized by the actors.

KM as an managerial investment

The comparative analysis of the results in Sales, Consulting and Support leads us to emphasize that the success or failure of KM is not only linked to the structure of work, but also to its nature. By that we mean to underscore that that the success of a KM project requires a strong managerial “investment” and commitment of resources, for two reasons.

One reason is that there is nothing natural about cooperation : it is precisely the task of management to construct a cooperative context, i.e. an incentive system which

makes cooperation worthwhile and helps people discover what they can gain by it. Another, just as important reason, has to do with the fact that information, in order to be tractable for a data base, has to be standardized, has to be made fungible in order to resemble a commodity the meaning of which is univocal and which therefore can be freely exchanged without personal interchange and face to face contact. This transformation is a very costly process. It is costly for the actors involved who have to give up their idiosyncracies in the processing of the relevant information, which may mean a loss of bargaining capacity for them. But even if this is agreed on, the process is still costly in technical investments, because fungible, i.e. freely circulable information does not emerge spontaneously, but has to be created through an organizational process. To come back to our case, in the sales department, the big accounts salesmen have very “good reasons” to “resist” the attempt to make their know-how and their knowledge fungible and to decontextualize its exchange. At the same time, their commercial practice, which is very “political”, contextual and relational, is not at all easy to formalize and decontextualize, even if they agreed to such a thing. In GBS this is much less so, and the decontextualization of information is easier to obtain.

Similar arguments can be made in the case of Consulting and Support. INTELSYSTEM has not generated any managerial investment other than the formal prescription that each consultant is to put as many IC's (Intellectual Capital) on the data base. There is no revision of the ICs posted, no particular format is prescribed : the data injected into INTELSYSTEM at the end of a project of consulting are supposed to naturally constitute fungible knowledge which is meant to be transferable without modification or adaptation to other consultants in other contexts. Such a procedure underestimates the cost (in time and energy) of posting an IC, and the cost of using it, i.e. recontextualizing it for the particular job one wants to use it in. The postulate of the “natural” fungibility of the ICs is in contradiction with reality. Support is a case in point. The computer base of SUPERSYSTEM has been thoroughly structured, there are prescriptions as to the format that has to be respected when posting an information, and there are several levels of reading and validation of the information introduced into the base, which contributes to the homogeneity of the data one can find in SUPERSYSTEM. Lacking such an organizational investment, INTELSYSTEM is only a sort of “receptacle” of the unstandardized product of what the consultants and the Project Managers choose to feed into it. As a result, the information contained in INTELSYSTEM are less numerous (i.e. consultants do not easily volunteer an IC), poor and extremely heterogeneous, and the actors perceive the system as a “garbage can” where one finds everything, anything and....nothing.

Information technology does not eliminate the agency problem

All this points to a last argument, which could not be stressed enough, given all the promises that are attached to the use of information technologies. In no way can the introduction of information technologies do away with the agency problem within organizations, i.e. with the information asymmetries, which plague all organizations and have to be managed.

Information technologies may well have been developed to provide management with better, quicker and richer information about what is going on in the different parts of an organization, and therefore to increase its capacity for monitoring an organization. However, as long as the gathering of information and its recording in a data base is not (cannot be) done automatically, information technologies only displace the problem of agency : the very actors whose activities are supposed to be monitored and controlled, still have to feed the software and create the data base which can then be used to evaluate them⁸. And there is no reason to believe that just because we have to do with computers and their potential, actors will refrain from making use of that fact in order to structure the situation in a way favorable to them and to what they consider their interests.

In this respect, information technologies are no different from organizational rules and routines the dilemma of which has so aptly been analyzed by Gouldner⁹. They are created (they emerge) in order to manage and structure the strategic exploitation of the information asymmetries inherent in collective action by eliminating uncertainty, creating stable expectations and thus channeling the opportunistic tendencies in the behavior of the various actors involved. They may and do succeed in doing so, but in so doing they also always provide new opportunities for the strategic behavior by the individual members of the organization. The agency problem is never eliminated, less than ever by information technologies.

⁸ This classical phenomenon is generally referred to as “garbage in and garbage out”. If you don’t want garbage in, you better create the necessary incentive structure.

⁹ A. Gouldner : *Patterns of Industrial Bureaucracy*, Glencoe, The Free Press, 1954.

