

# KNOWLEDGE-BASED SYNERGIES AT THE CORPORATE LEVEL: A CASE STUDY ON KNOWLEDGE INTEGRATION ACROSS ORGANIZATIONS

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## Session F-3

### Abstract

This paper is a case study of ABC, a firm that designs and makes pre-fabricated concrete elements for large public construction projects. ABC pursued corporate knowledge integration because it was formed by acquiring several firms (now BU's organized geographically) with heterogeneous ways-of-doing, leading to a wide range of performance results across them. For that purpose, ABC designed a set of actions which we find respond to basic characteristics of the knowledge to be integrated. Distinguishing between tacit / explicit (Nonaka, 1994; Grant, 1996), individual / collective types of knowledge (Duncan and Weiss, 1997; Brown and Duguid, 1991; Spender 1994) and firm-specific / general-purpose knowledge (Doeringer and Piore, 1971; Williamson, 1981; Foss and Mahnke, 2001), is useful in conceptualizing knowledge integration practices in corporate environments (Hansen 2002). We show how the knowledge integration trajectory concept (Andreu & Sieber, 2004) can be applied to real world settings such as that of ABC.

**Keywords:** Knowledge integration, Corporate level knowledge, Knowledge-based synergies.

# Knowledge-based synergies at the corporate level: A case study on knowledge integration across organizations

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## Abstract

This paper is a case study of ABC, a firm that designs and makes pre-fabricated concrete elements for large public construction projects. ABC pursued corporate knowledge integration because it was formed by acquiring several firms (now BU's organized geographically) with heterogeneous ways-of-doing, leading to a wide range of performance results across them. For that purpose, ABC designed a set of actions which we find respond to basic characteristics of the knowledge to be integrated. Distinguishing between tacit / explicit (Nonaka, 1994; Grant, 1996), individual / collective types of knowledge (Duncan and Weiss, 1997; Brown and Duguid, 1991; Spender 1994) and firm-specific / general-purpose knowledge (Doeringer and Piore, 1971; Williamson, 1981; Foss and Mahnke, 2001), is useful in conceptualizing knowledge integration practices in corporate environments (Hansen 2002). We show how the knowledge integration trajectory concept (Andreu & Sieber, 2004) can be applied to real world settings such as that of ABC.

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**Suggested track:** Please indicate the suggested track for your paper (choose one of the list below):

F Integrating knowledge across organizations  
(L Practitioner's Track)

## 1. Introduction

In a firm, the role of the corporate level depends on how the different business units that compose it contribute to the company as a whole. Depending on this role, specific knowledge integration needs emerge. Specific knowledge integration needs depend heavily on the details of the situation at hand, thus implying that the concrete actions to undertake in order to achieve good corporate results are highly contingent, not only because each firm has very particular "technical" conditions to face, but also because tradition, culture, learning capabilities and so on vary widely from firm to firm and even from business unit to business unit. As a consequence, one might think that very little can be said in general regarding the identification of the associated knowledge integration needs and the design of action plans to give adequate response to them. Yet, we submit that a careful examination of the types of knowledge involved can throw

some light onto these managerial processes from a generic standpoint. This paper illustrates this through a case study where integration needs are apparent and pressing.

The paper is organized as follows: Section 2 presents the case and describes the context in which a company that we call ABC has pressing problems of knowledge integration at the corporate level. Section 3 briefly presents a few such problems in detail and explains the action plan that ABC's CEO developed and deployed in order to respond to those problems. The action plan is described in some detail to give enough information as to how different types of knowledge give rise different integration issues. Section 4 analyzes the action plan in retrospect, using the framework proposed in (Andreu & Sieber 2004), showing after what sort of "knowledge integration trajectory" it seems to be designed. In section 5, as a relevant complement, we point out some organizational aspects that must be taken into account, in additions to the strictly knowledge-based ones, in order to end up with realistic action plans for knowledge integration. Section 6 concludes and suggests some avenues for further research.

## **2. Case background**

ABC is a corporation that operates in the construction industry. It produces pre-fabricated concrete elements made, almost always, to order, following specifications of construction companies operating mainly in the public sector, where their activities have to do with highway and railroad construction. These elements can be of a number of different types, ranging from the very simple, almost standard ones to the really sophisticated that may need designs from scratch (some of them including involved engineering calculations), innovative fabrication processes, and even complex transportation to the construction sites. Considering the later aspect, having a plant physically close to the sites contributes to simplifying transportation and lowering overall costs. Mainly for this reason, and following the recommendation of one of the leading strategy and organization consulting firms which had in recent years conducted a project in ABC, the company was organized geographically, with four divisions covering the country and several plants under each division head.

Furthermore, since most of the construction projects are public, ABC's needs to have good expertise in the bidding processes that precede practically all sales. Also, good project management practices are practically a must, since the majority of production processes are non-standard and very often they tend to overlap with one another in complicated ways, so that they have to be effectively managed in order to avoid cost

overruns. Cost overruns are terrible, as they can turn any project in an economic disaster even if from an engineering and technology standpoint it might be brilliant.

ABC is the result of an acquisition process that has integrated as many as 10 different firms of different size and expertise into a single corporation during the last several years. The main acquisition criterion was good geographical coverage of the country and an acceptable level of technical expertise, capable of responding in an environment of technological complexity. The result has been a rather heterogeneous group of enterprises operating in different geographical areas and with no explicit standardization whatsoever in practices and procedures of any kind. In addition, the emerging culture has been one where technical excellence is considered paramount, and where good cost control, project management, and management in general were perceived as second class endeavours. Many of these firm's top managers, including the majority of the plants / business units heads, were engineers, with a good to excellent vita on the technical side. Organizationally, manufacturing would dominate practically all of them.

The company's current CEO was appointed in the middle of the acquisition outburst. After a period in which his main objective was simply making sure that the whole organization just functioned, he soon became aware of a need for a true corporate integration if ABC was to be a significant player in the industry. He was convinced that there were a lot of synergies to be exploited, many of which had to do with a much better scheme for good practice sharing and procedure and expertise harmonization among business units. Without identifying those synergies and an action plan to actually materialize them, ABC would eventually run into performance problems, which would very likely lead to a significant market share loss and probably to a decline in profits, which could put the company in the red and lead to its obliteration in a relatively short period of time. Thus, there was a clear sense of urgency surrounding the whole matter.

### **3. The pressing problems. A knowledge integration plan to solve them.**

The evidence was manifest. Many disturbing facts were popping up here and there pointing towards a myriad of areas where some kind of improvement was needed if ABC was to survive. One of the business units, for example, was able of starting production only five days after the go ahead in a project was decided, while all the others were unable to get ready in less than twenty. Technical designs prepared in one business unit were not easily usable in others because of lack of procedure and documentation standards. And production productivity and costs were all but

homogeneous: Apart from differences due to diverse salary levels at distant geographical zones, divergences of more than 40% were common in otherwise similar production runs. Also, costs derived from changes in element designs that clients demanded once they were under fabrication, ranged in wide intervals across business units. And so on.

Thus, ABC's CEO thought that some action was required in order to improve the situation. He was aware that in the end the change would be very significant, as it would involve a lot of different aspects in ABC's organization, procedures, and culture. One doubt he had was about where to begin. The task was a complex one, and it would require both a careful design and a good sense of rhythm in the implementation process, as changes would involve engineers and other technical personnel who had traditionally had most of the power in the organization.

He decided to start by sending clear messages to the organization through the implementation of specific, high potential actions under likely champions with the hope of setting a solid basis for more fundamental, all-encompassing changes that would follow in culture and organizational structure. The moves he made are interesting and illustrative of a range of knowledge integration actions which, in retrospect, can be understood and classified by taking into account the types of knowledge involved and their implication for the associated learning processes that were needed. We will undertake this sort of analysis in the next section. In this section we now continue by describing a set of representative actions that were taken, and the results obtained in the context of the overall goal pursued.

Some of these actions were as follows:

a) *Procedure sharing and best practices' identification to improve bid precision.*

Just confronting the variety of bid preparation templates used across business units unveiled how they could be improved, by incorporating the "best" pieces and ending up with a largely improved new overall procedure.

Since the documentation needed to prepare a bid was reasonably well defined (it was in fact explicitly specified in detail by the contractors, in accordance with official procedures and documents in the case of public projects), the corresponding preparation algorithms and presentation characteristics were almost spelled-out as the "specifications for an information system to automate them" would. Consequently, it was relatively easy to schedule a few meetings where individuals from different units would present their procedures to the rest, and an agreement worked out as to what

parts of them exhibited the best fit with those well defined specs regarding the bidding system.

The criteria to evaluate competing procedures were clear for the most part; only in a few cases some sort of simulation was needed to measure how close different results were to what the bid callers would expect.

ABC's CEO chose to start precisely with these meetings; he thought that in the context of rather well defined objectives and criteria the interaction between individuals from different business units would be less conflictive, while at the same time this would "unfreeze" the traditional isolation among business units.

The individuals that participated in these meeting came mainly from the administrative departments of the different business units, although at some points during the process they needed input from technical staff, which was called on-the-fly, starting with personnel working in the unit where the meetings were being held.

A round of about 6 meetings was organized over a period of almost three months; all the meetings were face-to face and the participant individuals would interchange suggestions and proposals via e-mail between meetings. No clear leader was designated at the start –just one person was chosen to coordinate de effort. As the process unfolded, a different person emerged as the natural leader, mainly because he was well informed about the specs and was reasonably knowledgeable about spreadsheets and e-mail and document sharing details.

The results were two-fold. On the one hand, a bid preparation procedure was developed that was adopted by all the business units. It was a sort of spreadsheet-based support tool put together by the working group in a way similar in many aspects to that used in the development of Linux, although obviously in much more reduced complexity and volume scales. It was proven to be very effective since its adoption led to better bid documentation and much less call backs from contractors during the bidding process.

On the other hand, it was agreed that a sort of "core" of the group, defined ad-hoc and initially staffed by volunteers (although it was established that people from different units would rotate to serve in it) would remain and meet approximately every four to six months just to ensure that the established procedures were still meeting the bidding conditions put by potential contractors, and, in case of changes, to trigger the appropriate response in order to make sure that good bids continued to be prepared "by default", so to speak.

*b) Improving team performance to achieve a significant reduction on elapsed time, from project acceptance to “ready to go”.*

This is an area not as well defined as the preceding one, because the good performers' ways of doing contain parts which are only informally defined. In addition, those ways of doing often involve a team, although not necessarily a well defined one –for example, sporadic participation of individuals from manufacturing could be very convenient in an environment where typically the majority of people would belong to planning and project management. Such sporadic contributions, often very instrumental to attain good results, were not necessarily easily achieved in a context in which engineering and production dominated the cultural side over that of management; furthermore, when they occurred they tended to be the consequence of good interpersonal relationships rather than stemming from organizational or professional “official” relations.

On the other hand, this contributed to a wide heterogeneity of ways of doing and also to a sizeable dispersion of performance indicators across units, with the added complication that since two projects were never exactly the same, it was difficult to compare and decide when a given way of doing could be considered the overall best.

Nevertheless, performance varied widely also in this area. In order to cope with this problem, a different approach was taken. Seizing the opportunity that at one of the under-performing units there was a motivated project coordinator (reporting to the manufacturing manager), the ABC's CEO suggested that he could spend a week or two at one of the “good” plants just to take a close look at how they approached the coordination problems that they faced, which were probably similar to those arising at his plant.

Himself an individual with good technical background, it wasn't difficult for the CEO to convince the coordinator's head that the idea could work. Thus, they agreed that the coordinator would go and do just that, with the specific assignment of identifying coordination practices that he felt could be imported to his unit to improve the time interval that went from a project acceptance to “ready to go”. The coordinator soon detected a few practices in the high performance unit that were overlooked in his plant, and a few others that he judged almost extreme because he felt that they could never work back home, mainly due to interpersonal conflicts there which could make efforts in those directions to seem pointless or even ridiculous.

He nevertheless succinctly documented them all, and returned to his unit with a plethora of ideas for better coordinating the activities that led to a workable plan for

project definition and structuring. He could implement some of them relatively easily, mainly the ones that required his almost exclusive involvement and those which called for the participation of production staff, who had not participated in project planning before but with whom he had good personal relations.

But, he had trouble with the ones that required genuine team practices' changes; he had a hard time trying to convince team members of the practices' appropriateness and convenience, and was only able of making them try one or two in a sort of simulated scenario, without succeeding in their adoption in actual business settings.

The immediate results were mixed, with certain improvements in project planning time –nothing outstanding, though. However, the seed seemed to be there, and as time went by and the over-performing plant continued to perform better, some of the involved people became more and more willing to try.

To make a long story short, it took more than a year and a half to get practically all of the “imported” practices to work in the second unit, with some variations over the original ones, but with more noticeable results in good project coordination and planning leading to shortening the planning time and, according to many, also to better coordination schemes for the projects of the unit.

The “champion” of the “practices’ importing effort”, as he would call it, wasn't completely satisfied, however. For one thing, he felt that he (they) had fallen out of touch with the over-performing fellows at the other plant, who probably had, over the time, improved their good practices or even invented some new ones –he thought that there should be some kind of permanent organizational structure designed to make sure that all plants (not only those two) knew about best coordinating and project design practices –“eventually”, he said, “we will have something to share as well; we are learning and having our own initiatives, you know”.

On the other hand, he was concerned about how long it had taken his team to finally get the good practices in place. “It seems like we are more or less good at working as a team, but we certainly don't do a good job when it comes to learn as a team; this needs improvement at the unit level; it has nothing to do with the corporate level”.

An explicit initiative at the corporate level to cope with the first problem is currently under way; nothing of the sort has been done so far to address the second one.

*c) Improving production sequencing and the resulting efficiency.*

This is at the heart of a company like ABC, proud of its technical capabilities and technology, and of having some of the best specialists in the industry. “If ABC can't do



it, changes are that nobody can”, some of the ABC veterans liked to say. The emphasis often was, however, on being capable of doing it (from an engineering point of view or even from a manufacturing standpoint) rather than on doing it efficiently and reasonably from an economic perspective.

As mentioned above, this meant a lot of variation across plants regarding economic performance. While sharing technical and engineering expertise was considered normal at ABC, and it was done spontaneously even among engineers and professionals coming from very different companies before they were bought by ABC, very few seemed to worry about doing the same on the economic / management side – these concerns were rather considered to be sort of “second class”; “once the technical problem is solved, the rest is peanuts and un-motivating, let me go on to the next technical challenge”.

ABC’s CEO was very critical of this kind of behaviour and way of thinking –“Do those guys realize that their salary depends on this side of the issues as well? I think that our technical universities and schools do us a small favour by not including the economic side of the equation in their curriculum, or by doing so in a sort of demoted way so that the future engineers consider it to be second class from the beginning. We have some smart guys around who do not seem will be ever ready to put their even brilliant minds to think about how an economic or productivity issue could be resolved”.

In a move to try to improve the situation, he approached the manager responsible for the most efficient plant, and asked him to propose a way in which he thought his plant could help others in the firm to improve their performance. Although coming from a plant that had been one of the latest to be incorporated into ABC, this manager was a veteran, well respected engineer among the company’s technical staff. In addition, he had turned a good organizer and administrator, although his profile as a good all-round manager had a few fissures, mainly in the human relations side. He considered himself a good engineer, and a reasonable organizer only by chance –“I don’t really know what exactly makes my unit to perform so well; we just try to do things according to common sense”, he liked to say.

His reaction to the CEO’s proposition was basically positive, although not enthusiastic. He said he was ready to share whatever procedures and practices would seem good to other units, but he made clear that he wouldn’t know how to approach a systematic way of doing it, so that any kind of formal training led by him was out of the question. He felt that any formal training effort would seem trivial, and that the best way to share that he could think of would be for people from other plants to visit his, stay for a while,

see what they thought could be useful back at other plants, and try to incorporate it the best they could.

The CEO replied that, although the plant's manager attitude could sound a bit on the low commitment side, and that his fellow units' directors could judge it as not collaborative enough and even somewhat arrogant, he was willing to run an experiment and try it out. Thus, he pondered for a while who could be a good candidate to go and stay for a few weeks at the best performing plant, also what would be the right moment to do it.

Eventually (like half a year after he had launched the procedure sharing initiative described in a above) he thought the time was ripe when in a business planning session for the next period an unpleasant discussion among plant managers broke off regarding efficiency differences across units. The CEO had been thinking that a young and motivated assistant director at one of the plants which head was close to retirement could make the ideal profile to break the ice for initiating a sharing experience. This individual had showed an interest in management issues –he was still an engineer and thus considered a technical person, but he was half way through a part-time MBA and always ready to accept managerial assignments.

In this context, and presenting it as an opportunity to continue exploring the practices' sharing exercise that had initiated a few months ago, the CEO suggested that the young assistant went to the best performing plant for a stay of in principle two or three weeks, with the explicit assignment of identifying specific practices in production scheduling and sequencing that could improve the efficiency back at his unit. The assistant's boss complained that the proposed stay length was too much, and that he needed the assistant badly; he argued that in his opinion three or four days would be enough.

After a short negotiation it was agreed that during his stay, the assistant would actually become involved in the operations of the plant while at the same time being on call to answer questions that his colleagues might have at his plant, in an attempt to incorporate good practices on-the-fly to make the experience as effective as possible in the short run.

The whole thing was a success. The assistant's stay lasted for a month, and he was able of identifying several ways of improving their sequencing practices; some of them hadn't occurred to him and his colleagues –for example a few involving taking advantage of production schedules running in parallel. Some others were based on

heavy coordination, well beyond what the assistant was used to see and do in his plant.

However, the real driver of success was the possibility of being “on line”, take real-time questions from people at his plant regarding on-going manufacturing processes, and going back to them with specific answers based on the experience of professionals at the better plant with whom the assistant had been developing good personal relationships. And, most importantly, the assistant’s plant performance improved significantly. Its costs decreased, and the morale of many of the technical staff involved in production improved noticeably –many of them were convinced that the improved practices were differential in their marketplace, and that they would thus give them clear advantage in getting new contracts.

After this positive experience, which was explicitly emphasized by the CEO in the next business planning session, many of the company’s units expressed their willingness to be involved in similar experiences, and in fact to go beyond that, creating a genuine sharing environment in which “everybody could learn from everybody else”. The company is currently setting up a corporate level initiative aimed at tracking the manufacturing performance of the different units and consequently proposing and monitoring a program of interchange visits across plants very much trying to reproduce what is judged as one of the best experiences in the history of ABC.

It goes without saying that the CEO is also very pleased by the results. In fact, he thinks that not only strict manufacturing practices are to be shared, but that also a more managerial point of view should be spread around. He thinks that choosing the assistant he did was an important part of the results obtained, and he is considering the possibility of asking him to lead the corporate level effort at least at the beginning –the problem is that the assistant has just taken on the full responsibility for his plant now, and that doing so would perhaps imply both a break in the assistant’s career and also one on his plant evolution. As the CEO sometimes says, however “this is the kind of management problems that any CEO would love to have.”

*d) Improving negotiation skills to accommodate changes in design / production schedules asked by clients while still controlling the associated costs effectively.*

Once an across-plants efficiency improvement plan is being put in place as explained in the preceding point, ABC’s management identified another area in which a bit more homogeneity is likely, again, to contribute to the overall performance of the company.

In ABC’s competitive environment it is important to be responsive to clients’ changes in project specifications once the projects are under way. In large construction jobs is not

uncommon to run into implementation difficulties that stem from genuine needs for changes in overall project characteristics, often because unforeseen events come up unexpectedly (for example, the discovery of new geological profiles where construction is to be done, or important delays due to difficulties in projects' preceding phases, or whatever).

Being able to respond to such eventualities is part of what clients expect in the "service" chapter in this industry. But, however, not any change can be accepted on ABC's part without an analysis of the corresponding consequences, including extra efforts by ABC's technical staff, and costs associated with the re-scheduling of deliveries that can imply the revision of future production schedules and of course changes in delivery logistics, which in this industry often involve special expeditions that need explicit permission and support from regional authorities.

Doing a good job in servicing clients in this area requires being particularly proficient in two main areas of expertise: On the one hand, one needs to be able of re-computing project costs in different change scenarios –accepting completely all the client's conditions or only partially or only some of them– in a sufficiently precise and quick way. On the other hand, one needs to be a reasonably talented negotiator –to put to good use the results of those scenario analyses.

ABC's response to these needs has been accordingly two-fold: The development of a decision support system tool that helps to compute the consequences in different project costs triggered by hypothetical changes in project structure and time constraints, is the company's response to the first need. To address the second one, training courses in basic negotiation skills have been subcontracted to well known professional schools; the courses have a "standard" part and a tailored one designed around simulations of real life situations, where client – ABC relationships in the context of specific projects are used to exercise both the standard negotiation skills and the decision support tool mentioned above.

The results have been encouraging; negotiators find the support tool more and more useful as it is improved over time in response to their own suggestions and ideas, and at the same time appreciate the more standard training because they find it very focused on their actual day-to-day work. ABC's management finds, in addition, that having a common base in both negotiation "style" and supporting tools gives the company additional potential to improve as a whole: Since negotiators can rotate effectively to go and help where they are needed as relationships with clients in the context of specific projects evolve over time, they end up being also more efficient.

#### 4. The action plan in retrospect: What knowledge integration and why?

The ABC's CEO designed the actions described in the preceding section rather intuitively, without an explicit analysis aimed at thoroughly understanding the underlying structure of the problems he was trying to solve, in particular from what could be called a "knowledge management" perspective in a wide sense. Of course, he took into consideration several relevant criteria like who could do certain things, their potential to serve as good examples and become champions, etc., and he also went on to make organizational adjustments with the goal of either perpetuating the knowledge-related practices that his action plan had started, or simply to make them more effective and consistent with ABC's culture and competitive positioning.

Beyond that, and from a more theoretical perspective, we find that the described corporate integration initiatives and actions can be better understood and their appropriateness further analyzed on the light of well-known characteristics of the knowledge which they aim at integrating. For this purpose, distinguishing between the classical tacit-explicit (Nonaka, 1994; Grant, 1996) and individual-collective types of knowledge (Duncan and Weiss, 1997; Brown and Duguid, 1991; and Spender 1994) and also between firm-specific and general-purpose knowledge (Doeringer and Piore, 1971; Williamson, 1981; and Foss and Mahnke, 2001), proved to be useful to conceptualize in a more general way the subject of knowledge integration in corporate environments, which is somewhat related to the recent work of Hansen (Hansen 2002).

This kind of analysis can be done in the context of the concepts introduced in a companion paper, also presented at OKLC'04 (Andreu & Sieber 2004). Figure 1 shows which kind of knowledge was involved in the integration efforts labeled (a), (b), (c) and (d) in the preceding section. In essence, the justification for the classification in the figure is as follows (we also introduce, in the discussion below, a few comments regarding the sort of activities that would seem more appropriate to make the different kinds of integration to actually occur):

		<b>Firm-specific</b>		<b>General-purpose</b>	
		<b>Explicit</b>	<b>Implicit</b>	<b>Explicit</b>	<b>Implicit</b>
<b>Collective</b>	<b>Individual</b>		<b>(c), (d)</b>	<b>(a), (d)</b>	<b>(d)</b>
	<b>Collective</b>	<b>(c), (b)</b>	<b>(c), (b)</b>		<b>(b)</b>

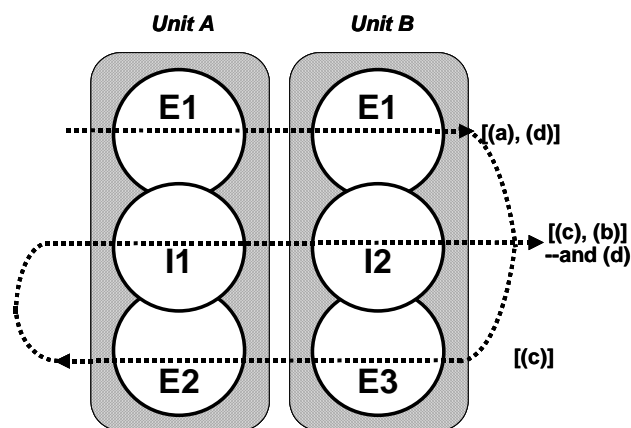
**Fig. 1.** Different kinds of knowledge involved in ABC's integration initiatives

- a) *Improving bid precision.* Mostly explicit knowledge which can be incorporated at the individual level. Not many firm-specific aspects. This would seem to indicate that the corresponding integration actions can be rather standard and probably that technology-based support could be developed without much difficulty. Summing up, a relatively easy integration problem to attack, which makes it a good candidate as starting point if one decides to “start on the easy side in order to break any organizational ice” that might exist, because doing so can facilitate further, more ambitious integration actions in the future.
- b) *Improving elapsed time from project acceptance to “ready to go”.* This implies getting better team performance by improving its coordination at the design level, with the hope that it will be deployed effectively at actual project operations time. Thus, collective knowledge is involved, with some rules that can be made explicit once identified, although a number of others are rather implicit and also firm-specific. Consequently, this is a much more complex integration problem, which one would avoid to engage-in at early stages of an integration process, particularly if organizational issues were foreseen.
- c) *Improving production sequencing and efficiency.* This involves a mixture of implicit / explicit; individual / collective and mostly firm-specific pieces of knowledge, meaning a difficult and organizationally complex integration endeavour. Consequently, not a good candidate to include in the early stages of an implementation process. But, given its organizational complexity, it would probably make sense to jump into any opportunity with reasonably high chances of success as soon as it passed by –a risky decision to make, but considering that a lot can be at stake not only in terms of economic results but also in terms of organizational integration, doing so may make sense to top management depending on its style, risk evaluation and acceptance, and specific organization development goals at a given point in time.
- d) *Improving change negotiation and reducing associated costs.* Mostly individual, implicit knowledge with some firm-specific aspects but involving otherwise well-known negotiation techniques. Thus, a relatively easy problem to tackle, for example through situated negotiation seminars, with the participation of expert insiders can be effective. Not particularly critical regarding when such an action could be taken; in fact, if it was judged that it could be useful the break some ice initially, it could be scheduled relatively soon. The only critical point is to get

good seminars, and to put specific emphasis on the design of personalized negotiation situations in which ABC's "typical" issues were well represented.

What was actually done at ABC, as described in section 3 above, pretty much agrees with the majority of recommendations that we have just suggested. Thus, from the standpoint that interests us here, it could be said that seem to be off to a good start and that no major flaws can be identified in ABC's corporate integration plan. It is interesting to note that putting all those initiatives to work has taken a somewhat long time, and they are not yet finished –in fact, a lot is still pending in areas other than the ones analyzed above.

In terms of "integration trajectories" (Andreu & Sieber 2004), it is also possible to describe ABC's integration plan so far as we do below in Figure 2. In accordance with the brief analysis in the preceding paragraph, we can say that the integration trajectory used in ABC is basically of the type drawn in the figure. It tries to start with "easy" initiatives, integrating mainly general purpose knowledge, with the goal of getting something going and sending a message to the organization in the sense of "being serious with the integration efforts; be aware because some more is coming". At the same time, taking advantage of the fact that initiative (d) had many general purpose knowledge pieces but at the same time some firm-specific ones that could be rather easily combined with the former, ABC's trajectory started to include idiosyncratic knowledge integration relatively early on (although this particularity is not clearly shown in Figure 2).



**Fig. 2.** An approximation at ABC's knowledge integration trajectory

Next, mainly through initiative (c), the trajectory goes further in terms of integrating not only structured procedures, but also team coordination and cross-professional activities, which eventually incorporate firm-specific aspects as well. Finally, the trajectory culminates –for the time being–, through initiatives (b) and (c), with an

increasing presence of firm-specific knowledge that pursues deeper integration as it relates to organizational culture and idiosyncratic ways of doing.

Mixed with this logical progression, as we have described, there are a few important organizational aspects that make the trajectory to look a bit weird –we briefly consider these aspects in the next section.

## **5. Some organizational aspects of the action plan implementation.**

As always, the course of action taken by ABC to integrate different kinds of knowledge at the corporate level ran into some organizational roadblocks when it came to its implementation. Several of them were included in the description in section 3, but it is nevertheless interesting to go over them as an overview, because they illustrate why “pure integration trajectories” that make sense from a strict knowledge integration standpoint have to be adapted in order to fit the organizational environment in a way that facilitates their actual deployment.

One fundamental observation is that integration itself will have to be, eventually, the responsibility of some organizational unit that almost by definition didn't exist before. How to get to a situation in which such new organizational component is both accepted and staffed, and starts functioning in the appropriate way, is something that interferes with those “pure knowledge integration trajectories” and which must be taken explicitly into account by management in what, on the other hand, constitutes a genuine management task.

In the ABC's case we have seen several “implementation adjustments” made by the CEO as he went down the integration path. In initiative (c), for instance, he took advantage of a well prepared individual, who in addition was at a convenient organizational level and had the adequate motivation, to set up a temporary organizational arrangement which, in addition to being ad-hoc and thus sort of unnatural or at least not what you could call exactly “orthodox”, tried to integrate team knowledge through a single individual –something also strange from a strict knowledge perspective. However, the firm responded very positively to such a move and eventually progressed in the right direction, growing even in terms of good team performance in the context of an incipient organizational structure arrangement which is likely to develop and ensure the integration in the future.

It is also apparent that interpersonal relationships were sometimes dysfunctional to get the integration process well up and running, but some other times they were the primary source of problems and delays. This is of course to be expected –knowledge



integration means, after all, that several individuals and groups in the organization will have to incorporate new knowledge, which implies learning and, most of the time and very important, also unlearning. We all know that learning processes are not immediate; they take time and require willing effort –which contributes to make the implementation process more involved, complex and time consuming.

## **6. Conclusion**

This case study has illustrated how different knowledge integration needs at a firm's corporate level can be analysed by classifying the knowledge elements involved according to well-known taxonomies. Such an analysis permits in turn to set the main characteristics that knowledge integration efforts should have in order to be effective in principle. In turn, combining the different efforts in what we call knowledge integration trajectories is useful to start taking into account organizational issues that, as in all implementation processes, turn out to be also relevant. Different knowledge integration trajectories have different potential for coping with different organisational issues, although the fine tuning needed in order to attain a good fit and thus good integration results, is very dependent on the specificities of each concrete situation. Although this shouldn't come as a surprise (and less so as the involved knowledge is at the root of a firm's competitive advantage), still the knowledge-based frameworks employed in our analysis seem to be useful for diagnosis and action plan design purposes.

Thus, we can conclude that the concepts and frameworks presented in (Andreu & Sieber 2004) proved useful in the analysis of the ABC case, both in terms of diagnosing the situation and of suggesting integration initiatives to cope with it and how to combine them in knowledge integration trajectories. Still, further refinements of the framework can prove useful in the future, mainly in the area of the needed organizational fit for such trajectories to make sense when one takes explicitly into account the basic characteristics of a given organization. In this sense, for example, a further case study in the context of a financial institution which has recently acquired three smaller ones is currently in the initial stages.

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