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Lost in Translation: Why Organizations Should Facilitate Knowledge Transfer

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Summary

Even if knowledge transfer has been extensively studied both in theory and in practice in the last few years, little analysis has been made regarding rhetoric. With very few exceptions (Czarniawska and Joerges, 1996; Gherardi and Nicolini, 2000) organizational knowledge transfer - defined as the process through which one unit (eg. group, department or division) is affected by the experience of another (Argote and Ingram, 2000: 151) - has been mainly represented as a communication process. Complementary to this view, I propose to interpret the circulation of knowledge in organizations as a process of translation: knowledge is not only transferred between two entities but is transformed during that process.

To support my view, I look at the different theoretical views on knowledge transfer in the organizational context. Four pieces of analysis can be found: the cognitive approach, the economic approach, the situated approach and the translation approach. First, knowledge transfer can be seen as a dyadic process between a sender and a receiver. In this cognitive approach, knowledge transfer is seen as a way to change the knowing activity. In the second analysis, knowledge is considered as a commodity built on routines. Transferring knowledge means choosing and re-using the right routines to ensure the evolution of the organization. The situated approach tries to make a synthesis of both of the previous approaches by analysing knowledge in the context in which it is created, used and transferred. Finally, the translation approach focuses on the modifications of knowledge that take place when it is translated. It involves creating convergences and homologies by relating things that were previously different (Gherardi and Nicolini, 2000). Because the process involves very different communities and social actors, both geographically and functionally it is one of the most frequent ways in which knowledge crosses organisational and geographical boundaries to move into other areas (Czarniawska and Joerges, 1996).

To illustrate my view, I will examine a story of knowledge transfer in a multinational company. The story is about the re-use of a new device called the "lump-breaker" which improves the manufacture in a gypsum plant. I examine the story before and after the implementation of a knowledge management structure. Before, the knowledge is "lost in translation" because of lack of support from the central organization (ie. knowledge management) that creates confusion of different meanings: when the sender has made little effort to translate the best practice into simple terms, the receiver has more difficulty to re-use the device. After having put in place a knowledge management structure, the device is subsequently adopted by different factory managers who have read the database which contains the best practice. At this point, the role of the knowledge management team (ie. the "translator") is to ease the re-use of the knowledge by "packaging" the best practice. If the effort is not made by the sender, the knowledge management team acts as a "translator" for the receiver. One implication is to minimize the role of technological mechanisms (databases and information portals) if the sender does not play his role: the practice has to be described in such a way that others can implement it. If not, the practice is lost.

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CHARLOTTE: *Why do they switch the r's and l's here?*

BOB: *I don't know. My fax said "have a good fright".*

Quotes from Sofia Coppola's *Lost in Translation* (2002)

In the movie *Lost in Translation* the two main characters, Bob and Charlotte, experience the feeling of being “lost” in a foreign country. Living in the city of Tokyo, neither speaks the Japanese language and they feel detached from the existing world. In this paper, I support the view that when knowledge is transferred in organizations, the same process occurs: a great part of it is “lost in translation”. Organizations do not try to “switch the r’s and the l’s”.

Even if knowledge transfer has been extensively studied both in theory and in practice in the last few years, there has been little analysis considering rhetoric. With very few exceptions (Czarniawska and Joerges, 1996; Gherardi and Nicolini, 2000) organizational knowledge transfer - defined as the process through which one unit (eg. group, department or division) is affected by the experience of another (Argote and Ingram, 2000: 151) - has been mainly represented as a communication process. In a perfect world, knowledge would flow uneventfully (Szulanski, 1996). In reality, the mere hope that one business unit might learn something useful from another is frequently a hope not realized (Porter, 1985: 352). In large organizations, there are many barriers to knowledge sharing, both between peer subsidiaries and between subsidiaries and headquarters, and the costs involved with knowledge transfers are likely to be substantial (Foss and Pedersen, 2002). Complementary to this view, I propose to interpret the spatial replication of knowledge in organizations as a process of translation: knowledge is not only transferred between two entities but transformed during that process.

I start my discussion by looking at the different theoretical views on knowledge transfer in the organizational context. I introduce a rhetorical approach of knowledge transfer through the image of “translation” (Part 1). Driven by a constructivist epistemology (Part 2), I confront my view to a case study of knowledge transfer in a multinational company (Part 3). Finally, I discuss the validity of my proposition by asking how organizations can facilitate the process and avoid a loss in translation (Part 4).

1. TO TRANSFER IS TO TRANSLATE: A REVIEW OF LITERATURE ON KNOWLEDGE TRANSFER

The aim of this review of literature is to show that theoretical views on knowledge transfer have shifted in the last few years from a recursive approach (knowledge-based) to a discursive approach (practice-based). Based on the work of Patriotta (2003), we analyze different theoretical views on knowledge transfer in organizations: the cognitive approach (1.1), the economic approach (1.2), the situated approach (1.3) and the translation approach (1.4).

1.1 The cognitive approach of knowledge transfer

In the cognitive approach, knowledge is analysed as information gathering, knowing is seen as a computation activity and knowledge transfer as a way to change this activity. The predominant vision that has guided a major portion of cognitive studies has been symbolic cognition and the computer model of the mind (Patriotta, 2003). Therefore, organization is depicted as a brain (Morgan, 1997) and some authors advocate for a 'thinking organization' (Sims and Gioia, 1986).

Winograd and Flores sum up perfectly the cognitive approach: "at its simplest, the rationalistic view accepts the existence of an objective reality, made up of things bearing properties and entering into relations. A cognitive 'gathers information' about those things and builds up a 'mental model' which will be in some respects correct (a faithful representation of reality) and in other respects incorrect. Knowledge is a storehouse of representations, which can be called upon for use in reasoning and which can be translated into language. Thinking is a process of manipulating representations" (Winograd and Flores 1986: 73, cited by Patriotta, 2003).

Existing models in the field of communications theory have influenced many of the models about knowledge transfer. Of particular importance has been the work undertaken by Shannon and Weaver (1949), who proposed a general, mathematical model of communication examining each step within the message transfer process. Breaking the communication process down into parts highlighted different factors of influence and mediators as a message (or knowledge) moves from sender to receiver. Mehrabian (1968) has also provided a very valuable contribution to our understanding of the most important and effective aspect of communication between two persons. His research revealed that in any communication, 55% of what is communicated is done through body language and expression, 38% is communicated through tone, and only 7% is communicated through words.

On the individual level, the distinction between information and knowledge is often presented as primary importance to grasp the knowledge transfer phenomena. Information is data to which an individual attributes significance. As for knowledge, it requires that the individual first articulates available information and then appropriates and incorporates it. Therefore, organizations need to climb up on the "information-knowledge ladder" by gathering as much useful information as it can. The more meaningful information an organization gets, the more knowledge the organization can make from it. Generally speaking, databases, search engines, expert systems and other decision-making tools all provide actors with information that they cannot otherwise obtain due to the limits of their memory and cognition. In this manner, technology is also a source of knowledge.

On the organizational level, this view has been summarized by the "knowing cycle" of Chun Wei Choo (1998: 18): at the beginning of the cycle, the "knowing organization" connects together different streams of experience from the environment in order to make sense of the equivocal information; then, members enact the environment and develop shared meanings about their common knowledge; finally an adaptive behaviour leads to act upon the knowledge developed. The "knowing cycle" is inspired from the sense making model of Karl Weick. Sense making literally means the

making of sense (Weick, 1995: 4). It deals with how people construct meaning out of a flow of action and information and how this meaning is crystallized into structures. The concept of sense making is directly linked with cognitive phenomena. The environment is 'enacted' by the actors who face them through processes of selection, punctuation, and retention (Weick, 1977). Therefore, when knowledge is transferred, it modifies the way people think or 'enact' the environment.

1.2 The economic approach of knowledge transfer

In the economic approach, authors conceptualize the organization as a body of knowledge. The knowledge-based view of the firm (eg, Grant 1996; Spender 1996) emphasizes the difficulty to imitate assets as a source of sustainable competitive advantage. Therefore, knowledge is no longer considered as a mental model but as a commodity. The firm's ability to deal efficiently with its own knowledge is a primary source for creating value and developing the organization (Spender, 1996). This view refers to the "epistemology of knowledge possession" defined by Cook and Brown (1999).

Although some knowledge can be easily formalized (explicit knowledge), other knowledge is difficult to explicate and codify (tacit knowledge). As Polanyi (1966) stresses, we know more than it is possible to express orally. This individual expertise, know-how or collective capabilities are based on tacit knowledge and can be sources of competitive advantage because they are rare, difficult to imitate or substitute (Barney, 1991). Therefore a company needs to clearly identify existing knowledge, a task which can be quite challenging. The expression "if only my company knew what it already knows" is frequently used by managers wishing to better "know the knowledge" in order to precisely and reliably identify the existing patrimony. The difficulty in identifying and transferring what the company knows results in the wasting of knowledge by non-use. The use of knowledge, unlike that of other resources, does not lead to its diminution in quality or quantity. On the contrary, it can result in the creation of new knowledge.

One implication of the economic view is the distinction between tacit and explicit knowledge. Indeed, Nonaka and Takeuchi consider that "the key to knowledge creation lies in the mobilization and conversion of tacit knowledge" (Nonaka and Takeuchi, 1995: 56). According to this view, the management of knowledge must be guided by the quest to achieve a balance between knowledge exploitation and exploration (March, 1991): exploitation facilitates the capitalization and transfer of the acquired patrimony; and exploration leads to the acquisition of new knowledge.

For Davenport and Prusak (1997) knowledge transfer involves two actions: transmission (sending or presenting knowledge to a potential recipient) and absorption by a person or group. Therefore, if knowledge has not been absorbed it has not been transferred. The concept "absorptive capacity" has mainly been used to capture a company's ability to recognize, assimilate, and apply external knowledge to commercial ends (Cohen and Levinthal, 1990). Several studies on the knowledge flows of multinational corporations propose that the absorptive capacity of the receiving unit is the most significant determinant of internal knowledge transfer in multinational corporations

(Gupta and Govindarajan, 2000). Concretely, absorptive capacity relates to numerous variables: financial means, time, etc.

Based on the model of Shannon and Weaver, Szulanski (1996) represents knowledge transfer as a sequential process which encompasses four steps between the sender and the receiver: initiation, implementation, ramp-up and integration. One implication of that model is the existence of impediments to knowledge transfer. The nature of difficulty at each stage is different. In the initiation phase, the difficulty consists of recognizing opportunities to transfer and of acting on them (Szulanski, 2003). Following the decision to transfer, attention shifts to the exchange of information between the sender and the receiver. Bridging the communication gap may require solving problems caused by incompatibilities of language, coding schemes and cultural conventions (Szulanski, 2003: 36). Then, the ramp-up phase tends to solve unexpected problems that can occur once the recipient begins to use the knowledge. Finally, in the integration phase defined by Szulanski, the re-use of knowledge gradually becomes routine.

To sum up, transferring knowledge means choosing and re-using the right routines to ensure the evolution of the organization. The capacity to absorb knowledge is the main determinant to ensure this evolution.

1.3 The situated approach of knowledge transfer

The situated approach tries to make a synthesis of both approaches by analysing knowledge in the context in which it is created, used and transferred. Knowledge is neither a disembodied cognitive structure nor an objectified commodity (Patriotta, 2003). Knowledge is clearly analyzed according to the practice constructed from social activities which take place when participating within a “community of practice” (Lave and Wenger 1991; Brown and Duguid 1991; Wenger 1998). “Communities of practice” have gained significant attention in recent years. These communities bring together, on a voluntary basis, individuals sharing the same interests (for a vocation, product, technology, etc.). They represent an opportune place for knowledge transfer (Brown and Duguid, 2001; Wenger and al, 2002).

The situated approach tries to go beyond the cognition split between thought and action and the economic split between individual and collective knowledge by analyzing social activity systems (eg. Communities of practice). Cognition is situated in a context. Rather than a person 'being' in an environment, the activities of a person and an environment are parts of a mutually constructed whole (Patriotta, 2003). Individuals need to adapt their practices to the environment because it interacts with them. The inside/outside relationship between person and environment is replaced by a part/whole relationship (Bredo, 1994). People co-construct their own practices by acting in the environment.

Therefore, the main implication of the situated approach is the distinction between knowledge and practices. The latter refers to habits, customs, beliefs, and principles, pointing to the fact that practices are shared; conversely, the meaning of the term 'practice' can be grasped as opposed to

theory (Patriotta, 2003). Orr's ethnographic study of service technicians is the conceptual ground of this split. He opposes canonical practices (espoused practices) to noncanonical ones (actual practices). In a nutshell, 'practices' are 'what people actually do'. The work of the French philosopher and sociologist Pierre Bourdieu (1973) is often referred to explain this split because he distinguishes the *modus operandi* from the *opus operatum*. The former refers to practices (know-how) whereas the latter refers to knowledge explained through a discourse.¹ In an organization, *opus operatum* is the process that should guide the action of individuals and *modus operandi* is the procedural knowledge that implicitly guides the action of individuals: "actual practice inevitably involves tricky interpolations between abstract accounts and situated demands" (Brown and Duguid, 1991: 42). There is a ritual aspect in knowledge transfer. Knowing is not knowledge used in action, but knowledge that is part of action (Cook and Brown, 1999). This view can be summed up by Brown and Duguid's concept of "learning-in-working" (Brown and Duguid, 1991: 41).

Interestingly, the authors of the situated school consider narratives as boundary objects that delimitate the existence of the community. In a social context, people not only learn new things but they learn how they should behave according to the implicit rules of that community. Social relations are now considered of primary importance: "a large part of service work might better be described as repair and maintenance of the social setting" (Orr, 1990: 169). Following Orr's example, the transfer of the practices inside the community starts when a story-telling process occurs: "the rep and the specialist embarked on a long story-telling procedure. The machine, with its erratic behaviour, mixed with information from the user and memories from the technicians, provided essential ingredients that the two aimed to account for in a composite story. The process of forming story was, centrally, one of diagnosis" (Brown and Duguid, 1991: 44).

At this point, we can ask the following rhetorical question: why the rep is using stories (non canonical knowledge) and not the manual (the canonical knowledge)? Because stories are ways to solve problems, create new practices and transfer it: "they [the rep] do not know where they are going to find the information they need to understand and solve the problem. In their search for inspiration, they tell stories" (Orr, 1990: 179). Narratives provide sense-making devices and foster knowledge transfer: knowledge is created day-by-day through problem solving and maintained through the circulation of success stories.

One major implication regarding knowledge transfer in organizations is that knowledge is co-created by mutual verbal interactions. This phenomenon is well depicted by Orr's concept of "antiphonal recitation": two versions of the same story can be told. "They [the rep] are talking about personal encounters with the same problem, but the two versions are significantly different (Orr, 1987: 177)". In a social context, knowledge transfer is based on an exchange of stories. This exchange should build a common knowledge available to the community: "such stories are passed around, becoming part of the repertoire available to all reps [...]. A story, one in the possession of the community, can then be used - and further modified - in similar diagnostic sessions" (Brown and Duguid, 1991: 44).

¹ « L'essentiel du *modus operandi* qui définit la maîtrise pratique se transmet dans la pratique, à l'état pratique, sans accéder au niveau du discours » (Bourdieu, 1973: 136).

Finally, the circulation of success stories contributes to building the technician's identity as a competent worker. This competence allows the rep to become a member of the community. Orr notes, "this construction of their identity as technicians occurs both in doing the work and in their stories, and their stories of themselves fixing machines show their world in what they consider the appropriate perspective" (Orr, 1990: 187).

In a nutshell, theorists of the situated approach see the organization as an activity system characterized by an idiosyncratic set of practices. Knowledge transfer is made possible through the exchange of stories which refer to the context where the practices have been developed.

1.4 The translation approach of knowledge transfer

The translation approach proposes to expand the views developed by the situated approach by focusing on the modifications of knowledge that take place when it is translated. Knowledge is not transferred or absorbed by an entity but it "travels". As explained by Czarniawska and Joerges, "the translation view can help us to reconcile the fact that a text is the same time object-like and yet it can be read in differing ways. Also, it answers the question about the energy needed for travelling: it is the people, whether we see them as users or creators, who energize an idea any time they translate it for their own or somebody else's use" (Czarniawska and Joerges, 1996: 23).

Looking at the definition in the Oxford Dictionary, "translation" refers to "the action or process of turning from own language into another; it is the expression of rendering of something in another medium or form".² But it also means "changing or adopting to another use". The word 'translation' conveys both the original semantic meaning of the Latin word *translatum* in physics and mechanics, and the linguistic one of undertaking a change from one language to another in which betrayal is inextricably implicated (Gherardi and Nicolini, 2000: 333). This term surpasses the linguistic interpretation, as Latour writes: "translation means displacement, drift, invention, mediation, creation of a new link that did not exist before and modifies in part the two agents" (Latour, 1993: 6). Translation involves creating convergences and homologies by relating things that were previously different (Gherardi and Nicolini, 2000). These convergences are usually generated by organizational artefacts such as success stories.

Regarding knowledge in the organization, this view proposes to abandon the cognitive and economic ones for a social one. Therefore, knowledge is mainly analyzed as a social and cultural phenomenon (Brown and Duguid, 1991; Blackler, 1995; Gherardi, 1995; Tsoukas, 1996). This view has been popularized in a special issue of the scientific journal *Organization* in 2000 and published in 2003 in the book *Knowing in Organizations: A Practice-Based Approach*. They criticize the two previous approaches (cognitive and economic), saying that both views means choosing between Scylla and Charybdis (ie. a dilemma in which both options are equally undesirable). "[Both] can be represented,

² Some translation mistakes can have dramatic implications. An example is given by the Greek translation of the Hebrew bible in the "Septante" (ie the Greek version of the bible): the Hebrew word "almah" (young lady) became the Greek one "parthenos" (virgin). This translation was the beginning of the Immaculate Conception theory...

respectively, by a mentalistic vision of knowledge in organizations and by a commodification of knowledge” (Gherardi, 2000: 211). On the contrary, the authors adopt a constructivist view of knowledge, summed up by the sentence: “knowledge is not something that people possess in their head, but rather, something that people do together” (Gergen, 1991: 270 cited by Gherardi and Nicolini, 2003: 205). In that view, knowledge has four characteristics: it is situated in the system of ongoing practices; it is relational and mediated by artefacts; it is always rooted in a context of interaction and it is acquired through some form of participation in a community of practice; it is continually reproduced and negotiated, and hence it is always dynamic and provisional (Gherardi and Nicolini, 2000: 330). To illustrate these characteristics, Gherardi and Nicolini analyse the circulation and transformation of safety knowledge in organizations. One major implication of this study is that knowledge is mediated and transformed through artefacts: “everyday action is based on the use of discursive and material artefacts which embody not only practical knowledge and experience but also the history and social relations implicit in the mediating artefact” (Ciborra and Lanzara, 1990 cited by Gherardi and Nicolini, 2000: 331). Knowledge transfer is analyzed as a transformation process in a network of actors: “with each passage, the translated item acquires energy that carries it further forward, and in this chain each actor modifies and adapts the item according to its own interests, and uses it for its own purposes” (Gherardi and Nicolini, 2000: 335).

Therefore, knowledge transfer involves modification of this knowledge by the process of translation. Knowledge cannot be reduced to a resource or to a cognitive scheme: “when practices are defined as the situated recurrent activities of human agents, they cannot simply be spread around as if they were fixed and static objects” (Orlikowski, 2002: 253). Because the process involves very different communities and social actors, both geographically and functionally, it is one of the most frequent ways in which knowledge crosses organisational and geographical boundaries to move into other areas (Czarniawska and Joerges, 1996). Czarniawska and Joerges propose the following cycle to analyze the translation of ideas: image → object → action → institution and so on. The process can be described like this: “ideas take root in local knowledge. As more and more people are persuaded to translate the idea for their own use, it can be materialized into a collective action. In order to become public knowledge, though, an idea must become objectified, made into a quasi-object: only then can it travel between local places and moments so as to move into translocal time/spaces” (Czarniawska and Joerges, 1996: 44). Therefore, knowledge must be “objectified” and not “commodified”. Without this translation process, knowledge cannot be transferred.

It is time for me to sum-up the different theoretical approaches on knowledge transfer (Table 1). The review of literature shows that organizational knowledge cannot be conceived as a mental process residing in members’ heads, but, rather, as a form of social expertise, in which the learning process is tight with the individual’s practice. This social expertise is modified by the participants and often materialized into narratives. We propose, in the next part, to explore the different approaches, especially the “translation” one.

Approach	Cognitive	Economic	Situated	Translation
Knowledge as...	Representation	Commodity	Praxis	Discourse
Knowing as...	Computing info	Routinizing tasks	Contextual interacting	Discoursing process
Knowledge Transfer as...	Changing mental models	Reproducing routines to improve performance	Co-creation within a community	Transformation of practices
Main authors	Weick (1995), Choo (1998)	Grant (1996); Spender (1996); Szulanski (1996; 2003)	Orr (1990); Lave and Wenger (1991); Brown and Duguid (1991); Tsoukas (1996);	Czarniawska and Joerges (1996); Gherardi and Nicolini (2000, 2003)
Narratives as...	A way to understand the sensemaking process.	A way to access to routines and tacit knowledge.	A way to describe and convey practices.	Artefacts
Importance of narratives...	Medium	Low	High	Central

Table 1. Review of the literature on knowledge transfer.

2. METHODOLOGY: EXAMINING KNOWLEDGE TRANSLATION IN A MULTINATIONAL COMPANY

For the researcher who tries to study the “knowledge translation” phenomenon, the “situation” - and not the individual - becomes the most appropriate level for organizational analysis. The situation is the point of contact between the individual and the organization (Pentland, 1992: 529). Therefore, as a researcher, I have to find this point of contact.

To illustrate this view, I propose to examine a knowledge transfer program in a multinational company. By “knowledge transfer program” I mean the tools, the methodology and the structure to facilitate the identification, the capitalisation and the transfer of organizational knowledge. My intent is to localize the point of contact between the knowledge and its interpretation by the people who translate this knowledge. To do so, I will compare a best practice transfer in two different periods and organizational settings: the first one relates to a lack of translation and the second one relates to translation facilitation. In this part, I will present the context of the case study (2.1) and my research design (2.2).

2.1 Context of the case study: a knowledge transfer program in a multinational company

Company A is a multinational company in the construction materials industry. Its business is based on four different lines: Cement, Aggregates and Concrete, Gypsum and Roofing solutions. Company A is one of France's largest corporations in terms of sales. Operating on the five continents, Company A has internationalized its workforce and developed a “multi-local” approach of doing

business with people from diverse cultural backgrounds. Company A culture is defined as “multi-local”, like a series of small businesses. This multi-local culture has an impact on knowledge transfer: it makes sharing and leveraging the resources and expertise of others more important. Company A continues to evolve as a global company that increasingly leverages the expertise that exists within its decentralized culture.

That is why Company A must transfer information and knowledge to create value, and value is created by translating knowledge into action. Thanks to knowledge transfer initiatives (eg. Best Practices Databases, Knowledge Sharing Seminars, and so on.) Company A offers the opportunity of benefiting from its varied experience and diversity, learning from others and continuously improving competitiveness. In order to facilitate effective sharing of knowledge and information throughout the organization, Company A is committed to facilitating knowledge exchange and to reducing the linguistic, cultural and technical communication barriers between the different international operations. As one of Company A's directors said: *“sharing experience is not new for us. The challenge is to find a way to achieve it rapidly with good sustainable results.”*

I focus on the knowledge transfer program of one of the division of Company A: the Gypsum division. In this division, 82 plants produce gypsum and wallboards. I choose this division because it is the most internationalized of Company A - with activities in all parts of the world, 7 700 people employed in 36 countries - and because a knowledge transfer program has been launched in the last few years. This corporate program - called “FIRST” - aims at transferring the best practices related to safety, quality and product management between the different plants. The objective is to increase the level of safety (and decrease the high number of accidents per plant), decrease the downtime in plants and improve the level of quality of the products. This objective is managed by a “Best Practices Coordinator” whose aim is to animate a network of Knowledge Management Officers and Quality Officers and to push/pull best practices on a database accessible via Lotus Notes and called the ‘Know How Portal’.

Launched in January 2004, the main focus of “FIRST” is on training people, building a real Knowledge Management Officers network, gaining a new experience on the documentation of the know-how, creating a dynamic exchange of practices via Best Practices database and giving more visibility to plant people on what happens in other industrial sites. One year later, 55 industrial sites have been sharing processes, 85 good practices were produced, 35 became Best Practices³ and more than 150 implementation reports were created. The year after, impressive numbers are reported about the usage of the Best Practices database. Almost 130 were produced and 300 were implemented. So, on average a good practice is already implemented at least 2,3 times. Some success stories of best practices transfer were communicated inside Company A by the Best Practices Coordinator.

2.2 Research design

2.2.1 Qualitative Methodology

³ A good practice becomes a « best » practice when it has been re-used at least two times by other plants.

At the time of the study, the knowledge transfer program was two years old. This duration of time had allowed the program sufficient opportunity to demonstrate clear outcomes, which meets Yin's criteria for a strong, positive example in site selection (Yin, 2003: 12). More specifically, Yin asserts that the case study is appropriate for exploratory analysis when investigating a contemporary phenomenon within its real-life context, and when the boundaries between the phenomena and the context are not clear. Furthermore, case studies are the strategy of choice when the focus is on understanding the dynamics present within single settings, and when existing theory seems inadequate (Eisenhardt, 1989). Moreover, a case study approach permits flexible and opportunistic data collection methods that allow additional questions during interviews (Easterby-Smith, 1994: 532). Additionally, it was an easily accessible site for researchers as I was an employee of the organisation, with significant potential for follow-up.

Following Miles and Huberman (1991) and Yin (2003), we believe that it can be counter-productive to deliberately ignore previous literature. Our research method is inspired from the precept of discovery of the "grounded theory" (Glaser and Strauss, 1984) and the constant comparison principle. That is why we propose to compare a knowledge transfer in two organizational settings: one without translation facilitation and - later on - with translation facilitation. In the data collection process, I use multiple sources of evidence. I ensure that my data collection is robust by writing full and precise transcriptions of interviews, by coding the primary and secondary data and comparing the data obtained from my observations.

2.2.2 Data Collection

My research methodology allows us to examine knowledge translation by using primary data (interviews and observation) and secondary data (database, statistics and internal documentation). Looking at best practice transfer, I start by examining the database in order to find a relevant knowledge transfer (Step 1). Then, I interview the people involved in the translation process (Step 2). Finally, I try to observe the effective use of knowledge in the working place (Step 3).

> Step 1: examine the database to find a relevant knowledge transfer

As explained before, every best practice transfer in the Division is documented into a database. After looking at the database, I identify a success story of knowledge transfer. This transfer was documented on the database (who send it? who re-use it? what has been changed?) and communicated as a success story on the Intranet. As detecting the presence of particular stories in particular organizations is not enough for research in social science (Czarniawska, 2004), my intent is to assess the process of translation that occurred during that exemplary knowledge transfer. As the program was successful, finding a relevant one was not a difficult task. To ensure that the transfer is "relevant", I validate our choice with the help of the Best Practice Coordinator. By "relevant", I mean that the knowledge has to be transferred several times in several places. Moreover, our aim is to compare a knowledge transfer with translation and without translation. I choose the knowledge transfer called "the lump breaker".

> Step 2: interview the people involved in knowledge translation

Once the story was found, the people involved in the knowledge transfer process were contacted for an interview. The aim of the interview was to understand the meanings that people gave to the “lump breaker” best practice. I want to understand the different meanings the same information has - as stated before, “a text is the same time object-like and yet it can be read in differing ways” (Czarniawska and Joerges, 1996). The second objective is to assess the energy needed for translating the practice.

To do so, I use a structured interview conducted on the phone. A structured interview as defined by Kvale (1983: 174) is an interview whose purpose is to gather descriptions of the life-world of the interviewee with respect to interpretation of the meaning of the described phenomena. The interview was structured into three main parts: the problems encountered by the units before the practice was adopted; the process of knowledge translation realized by the units and the difficulties encountered; and the lessons they have learned after this knowledge integration (Table 2).

	The Sender	The Receiver	The Best Practice Coordinator (ie. the translator)
Origins of the problem	<i>What was the problem originally encountered by your plant?</i>	<i>What was the problem encountered by your plant?</i>	<i>What was the problem encountered by the receiver?</i>
Adaptation of the practice	<i>How did you create the practice in your own plant?</i>	<i>How did you adapt the practice to your own plant?</i>	<i>How did you adapt the practice on the database?</i>
Difficulties encountered	<i>What were the difficulties encountered?</i>	<i>What were the difficulties encountered?</i>	<i>What kind of difficulties did you encounter?</i>
Results achieved	<i>What lessons did you learn from that practice?</i>	<i>What lessons did you learn from that re-use?</i>	<i>How did you write the implementation report?</i>

Table 2. Questions asked during the interview.

The questions included in this questionnaire were developed directly from the (extant?) literature with consideration for the translation processes that had been established in the case study site. Telephone interviews typically lasted between 20 and 30 minutes.

> Step 3: observe the re-use of the best practices.

Finally, I try to go to the field (ie in Gypsum plants) to observe the application of the best practice. This step is the most difficult one, as some plant directors are reluctant to spend time with external observers. Nevertheless, I managed to visit one of these plants in France.

3. WHEN KNOWLEDGE IS “LOST IN TRANSLATION”: THE TWO VERSIONS OF THE ‘LUMP-BREAKER’ TRANSFER

In the manufacturing of wallboards, a common problem is that hard and abrasive plaster lumps can be present in the slurry when it is poured from the mixer onto the paper. This will break the paper as it goes through the forming plate and, as a result, the paper tears which stops the line. Each paper break wastes about twenty minutes before the line is up again. In any month, these breakages can occur between ten and two hundred times and losses can be as high as 5% of production. Many causes lead to lump formation. However, the primary one is found in the mixer. In 1998 a new device called the “lump breaker” which destroys the lumps before they leave the mixer was successfully invented and developed at the Auneuil factory (in France). These findings were published in the Gypsum internal technical bulletin (now replaced by the Know How Portal). The lump-breaker is a small piece of equipment regarded by technical experts as a trick rather than a technical breakthrough. It is not a major discovery and the real solution to the lump problem would be to avoid creating the lumps.

In this part, I compare two different versions of the lump -breaker transfer: the first one relates to a lack of translation and the second one relates to translation facilitation.

3.1 The First Transfer Of The Lump Breaker: “Pure Luck”, “Conflicts Of Meanings” And “Re-Invention Of The Wheel”.

As the lump-breaker device was created in 1998, one transfer of this device has occurred between the United States and France two years later. The technical director describes the process: “ *the solution [the lump-breaker] was adopted by the Wilmington factory in the USA after reading the technical bulletin. No intervention from the Division was necessary as both plant managers knew each other and were able, with direct contact between the teams to adapt the lump-breaker to the US factory. A team from Wilmington visited the Auneuil facility and implementation took about 3 months.*” This first transfer was a success because of the existing link between the French and the American directors. In that sense, it comforts the social theory of knowledge transfer presented in part 1.3. The process can be depicted in the Figure 1.

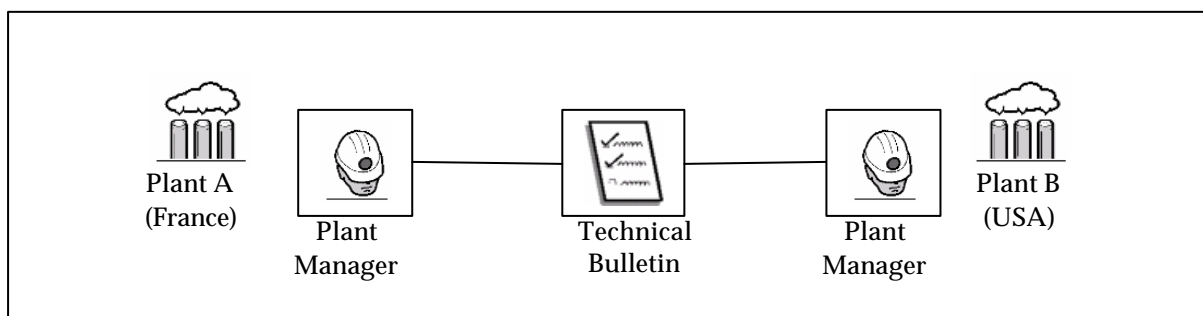


Figure 1. The lump -breaker transfer without facilitation

As stated by the technical director: *“the first success was pure luck and nobody really checked that there has been a true transfer. At least, the implementation was fast and the idea was well transferred. However, the know-how was not capitalized and no headway was made towards an efficient Division-wide implementation. The second attempt to transfer turned out to be a failure.”* Indeed different problems of translation started to appear when another plant tried to re-use the lump-breaker device: *“the Division’s process department then informed the plants of this best practice; it became a standard recommendation. However, the process department was unable to assist with the implementation and the recommendation was limited to a visit of the Auneuil plant for details. The documentation on the device had not been updated and no specific work was done towards a global implementation”* recognizes the technical director. Therefore, two subsequent difficulties were encountered: conflicts of meanings (3.1.1) and lack of support for the implementation (3.1.2).

3.1.2 Conflicts of meanings: when the manager is “lost in translation”.

Contrary to the transfer process between Auneuil and Welmington, several plants are experiencing serious difficulties in re-using the lump-breaker. Conflicts of meanings start to appear. For example, the managers in Korea decided to install the lump-breaker in the plant. The technical director recognizes that *“all conditions for success were favourable: the plant was motivated to solve the problems; the solution looked applicable. However, the plant manager was not fluent in English and the documentation received was not clear enough.”* The manager was literally “lost in translation”. Although invented in a European plant, the equipment was not installed in many plants in this area. Many good performing plants do not have it and question the need for it in their specific plant. More surprising was this: another site in the USA, Silver Grove, has not made the decision to adopt it, even though it is plagued with lumps. Knowing that the plant manager in Silver Grove was the same as in Auneuil - where the device was originally created - shows that without strong support, best practice transfer can be a serious issue within the plant.

3.1.2 Lack of support: when the organization is “lost in translation”.

Nevertheless, the Korean team accepted to implement what they were given. The documentation was very short and badly translated. *“The first attempt was a failure and it is clear today that the documentation I had received was not good enough to do the job”* said one manager of the Korean plant. The linguistic problem was stronger than expected. The Korean quality coordinator says: *“In 2000, I received Lump breaker photo. Actually, it was not enough information to implement the device at our plant. But I decided to test it. I thought it was good time to test lump breaker because I used slurry guide for edge mixer for normal board. When I produced board, I did not use edge mixer. The result was not good to adopt it. So I tried to find another way to reduce lump breaks. In 2002, even though I found alternative method for lump, it needed a lot of man power. So I decided to test again. Because I had test experience, I analyzed it carefully. Finally, I decided revised mixer fully. At first, I enlarged edge mixer chute because edge mixer slurry guide. Secondly, I installed screen and scrapper. Result was good. Finally I installed lump breaker. In 2003, our*

plant changed mater roll to forming plate. I redesigned lump breaker opening again.” We reach there a paradoxical point: the Korean has ‘re-invented the wheel’: it took three years to adopt and adapt the device compared to three months with the American plan in Welmington.

Later on, the Vice President (VP) Manufacturing in Asia got involved with the Korean problems and requested that a similar device be developed that would fit the need. As the technical director says “*the Korean plant did not think of warning the technical community about the difficulties. We do not have the necessary culture of feedback necessary to learn from our mistakes. The plant covered up (Shyness? Did not want or look stupid?). They reinvented the device and adapted it to their local conditions. However the failure was a terrible drawback in spreading the practice. Doubt was introduced that the device actually worked. The end result is not very different from the initial design and is an improvement upon previous technology rather than redesign*”. The different incremental efforts made by the Korean quality coordinator show how hard it is to implement a codified piece of knowledge without receiving support. Support comes from proper documentation and social interactions with the sender of the knowledge. This problem was not encountered by the Auneuil factory and the Welmington factory because the two managers knew each other.

Finally the VP manufacturing in Asia thought it was a good device and reacted positively in making the device mandatory in his area of responsibility but he never pushed to have this recognized and well proven at the Division level. Moreover, no effort has been made to prove the impact of this device on key performance indicators (here it would be to find advantages in this process machine efficiency).

All these results have pushed Company A to think about a knowledge management structure whose aim is to ease the transfer process between plants and to avoid “loss in translation” of best practices.

3.2 From One To Many Transfers: The Facilitation of the Knowledge Management Organization.

Based on the difficulties encountered by the Korean managers for re-using the lump-breaker best practice, a new organization to support knowledge transfer - called “FIRST” - was launched in January 2004. A database was created on Lotus Notes to document the available practices. A Best Practice Coordinator is appointed at the corporate level. His objective is to animate a network of Knowledge Management Officers and Quality Officers and to push/pull best practices on the database.

The Best Practice Coordinator starts by contacting the different people engaged in the first transfer of the lump-breaker. His objective was to document as much as possible this transfer in an electronic document. Instead of connecting the sender of the practice (ie. the Auneuil factory where the device has been created) with the receiver of the practice (ie. the Welmington factory), the ??? is to centralize the documentation. Therefore, the knowledge is “translated”. Remember that “translation

involves creating convergences and homologies by relating things that were previously different” (Gherardi and Nicolini, 2000). In that sense, the Industrial Best Practices Coordinator acts as a translator for the other plants who need to re-use the device. He creates the convergences and the homologies to “plug” the practice into a new plant. We can sum up this process in the Figure 2.

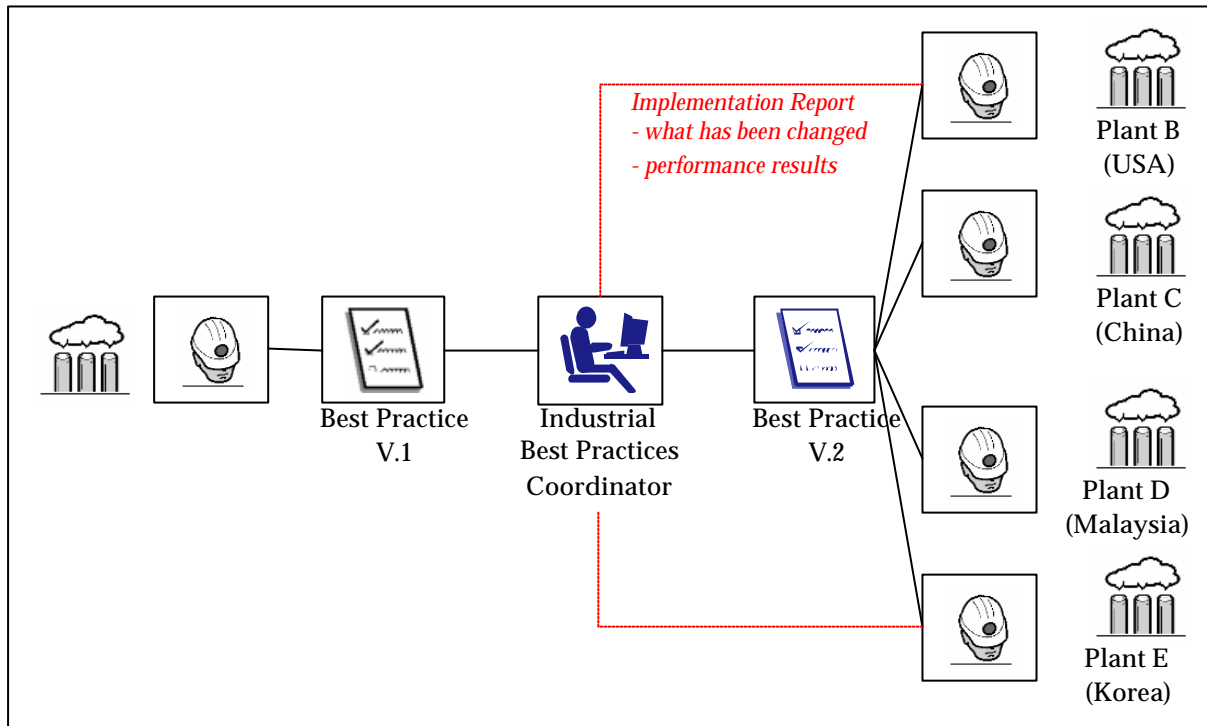


Figure 2. The lump breaker transfer with facilitation

In the best practice database, there exists now an electronic document that presents the lump-breaker. This document is based on a common template and structured as follow: the problem, the solution and the results are described. Every time the best practice is re-used, an implementation report is written by the Knowledge Officer of the plant. All the content is validated by the Industrial Best Practices Coordinator. All the practices are written in English. No local languages (French or Spanish) are allowed. The main objective is to build a common language around the re-use of best practices by systematizing the implementation reports.

Since the “lump breaker” documentation is on the database, the best practice has been re-used 9 times around the world. Subsequent installations take place in Asia. As we have seen, the lump-breaker was finally developed in Korea... but also improved in Malaysia, China and so on. As the Best Practice Coordinator says *“the feedback helps to clarify the misunderstanding and saves time for the next ones”*. Every adaptation of the device is documented in the database. Translation is tracked.

The story of the lump breaker transfer is a good example of the necessity to “adapt” knowledge if the organization wants that knowledge to be “adopted” by its units.

4. DISCUSSION AND LIMITS OF OUR CASE STUDY

In this last part, I will discuss briefly the different ways for facilitating knowledge translation in organizations.

4.1 How to Facilitate Knowledge Translation: the dilemma of petrification of knowledge.

In our case study, most plant managers - although willing to improve their plants - do not know how to motivate their managers, foremen and operators to use best practices that come from other plants. They recognize that *“only a strong support and a significant effort from the coordinator will lead them to adopt a practice”*. However, it seems that very few people understand that their successes are a valuable piece of information for everybody else in the community and that documenting these successes is a powerful way to bring the community forward.

It is eminently clear that the decision to accept a practice from another organizational unit is not made in an emotionally neutral state and that this factor must be taken into consideration in the design of organizational knowledge management systems and processes. Management encounters great difficulties in animating the transfer of practices. Forcing a “good practice” down the throats of people can be extremely counterproductive, as the affected people will somehow make it fail.

Knowledge transfer is facilitated by the working of incentives and initiatives, meaning that extra incentives increase - whilst extra costs reduce - a particular type of knowledge sharing behaviour (Lindenberg, 2001: 317). The knowledge management structure is responsible for those incentives. In the Table 3, I have summed up the common problems raised by the plant managers regarding the re-use of best practices.

Transfer...	Cognitive View	Economic View	Situated View	Translation View
Without Facilitation	“We need a database”	“I did not know we had developed this practice”	“I don’t know the person who has developed this practice”	“I don’t speak the language, so I don’t understand the practice”
With Facilitation	“I have no time to use the database”	“There are too many rubrics in the template”	“I would like to meet my colleagues to talk about the practice”	“It is hard when it is written in complicated terms”

Table 3. Common problems encountered by plant managers

Looking back at our review of literature, different initiatives can be applied to facilitate knowledge translation: the use of communication tools to translate expertise (cognitive approach), the use of internal documentation to translate routines (economic approach), the launch of communities of

practice to translate the social context (situated approach) and the use of narratives to translate practices (translation approach).

The technological dimension is the most tangible. It is the one that has attracted the most attention from companies over the past few years. Certainly, many companies have allocated significant resources to the implementation of IT systems. Most modern organisations recognise that technology such as Lotus Notes, Collaborative Tools, EMail, Databases, etc. are efficient way to distribute explicit knowledge (O'Dell and Grayson, 1998). According to Lei, Slocum and Pitts (1999) the availability of computer-based technology components, models and inter-intra network connectivity can significantly enhance the rapid and multi-level, multi-location sharing of knowledge, innovation and status of progress on all fronts. Hansen, Nohria and Tierney (1999) highlight the existence of two strategies: codification and personalization. In the first case, the IT system, as well as the employees responsible for them, is at the core of the knowledge management approach. The main stakes consist of identifying knowledge, codifying it and making it available through the IT tool. This strategy is adapted to situations in which knowledge can easily be made explicit. In a personalization strategy, the IT system plays a much less central role. The stakes consist of making readily available structures and functioning modes propitious to sharing dominantly tacit knowledge: frequent meetings, transversal project teams, etc.

The economic dimension is also very tangible in organizations. It consists in creating a knowledge portfolio mainly based on documentation. By documentation, I consider all the written practices or procedures that help people to adopt existing knowledge. Knowledge that can be described through language (i.e. explicit knowledge) can be documented. This is a common way of capturing and communicating knowledge (Hansen and al, 1999). Szulanski and Winter (2002) underline the importance of using a structured form to document knowledge through the image of a "template". As we have seen in the case study, documentation is an important part of the knowledge transfer process, particularly if the organisation has many employees and is geographically dispersed. Documenting explicit knowledge and particularly the more complex explicit knowledge, is not an easy task. This is because collecting, codifying and documenting knowledge is actually a high level skill. Dixon (2000: 117) suggests that an external person, who has been trained in interviewing and who has a good understanding of the organisation, should be used to document explicit knowledge with regard to best practices. The author believes that this action will help to reduce and neutralize the actual or perceived biases of those collecting the data. Timing is an important factor in documenting knowledge. It is better where possible to collect and construct knowledge in real time, rather than when team members have to rely on their memory of past events and reasoning (Dixon, 2000: 117).

The situated approach is more and more explored by organizations. Understanding of the impact and power of group dynamics in facilitating learning and knowledge transfer was first highlighted by Festinger in 1957. Since this time, there has been extensive interest and research on the conditions that make self-managing teams an effective vehicle for motivating individuals, transferring knowledge and getting organisational work done (Probst and al, 2000). The importance of informal

networks or communities of practice has also emerged in the last decade as important for knowledge sourcing, creation, leveraging and transfer within organisations (Brown and Duguid 1991; Wenger, 1999). By way of definition, Wenger, McDermott and Snyder (2002: 4) have defined a community of practice as “a group of people informally bound together by shared expertise and passion for a joint enterprise”. They comment that while communities of practice have been pervasive in society and organisations for a long time, it is only recently that organisations have recognised both the central role that these communities play in managing knowledge, and of need to be more systematic and intentional in supporting them. O’Dell and Grayson (1998) found that once an organisation created the environment and technology to support networks, they often emerged and flourished.

Finally, the translation approach of knowledge transfer facilitation can also be found in companies. As narratives are ways to convey knowledge and make sense of it, organizations who seek to transfer their best practices should rely on storytelling. This approach has been put in place in the World Bank by Steven Denning. He introduces the concept of the “springboard story”, a “story that enables a leap in understanding the audience so as to grasp how organisation or community or complex system may change” (Denning, 2001: 18). In that sense, a story can be used to strengthen or change organizational culture because “it has an impact not so much through transferring large amounts of information, as through catalyzing understanding [...] In effect, it invites people to see analogies from their own backgrounds, their own contexts, their own fields of expertise.” (Denning, 2001: 19). This goal can be reached if the “springboard story” has the following characteristics: connectedness (the story has to be told from the perspective of a single protagonist who was in a predicament that is relevant of the organization’s business); comprehensibility (the predicament has to be familiar to the audience; strangeness (to capture the attention of the audience, the story needs incongruity and plausibility); finally, it has to introduce a change in the behaviour of the listeners by drawing out the implications. Denning weighs the pros and cons of using storytelling in large organizations. On the one hand, it is “a tool that gives privileged access to the living part of an organization, and so can be used to elicit decisions to create artefacts in the first place” (Denning, 2001: 191). On the other hand, “it will be less relevant to the more structured task of administering an ongoing program of knowledge management” (Denning, 2001: 191).

To conclude on this part, I can say that facilitation of knowledge transfer relates to a process of objectification and mediation of knowledge by a third-party in the organization. Using a third party increases believability of the resulting knowledge. This represents important considerations when examining the quality of explicit information capturing and documentation processes within an organisational setting but it also represents “a dilemma for management coping with the twin challenges of petrification and transformation” (Denning, 2001: 192).

4.2 Limits of the Case Study

In this paper, I argue that the four perspectives on knowledge transfer are plausible, but instead of considering them as mutually exclusive I suggest that knowledge transfer should be viewed as a continuum of different views.

One major limit of our study is the focus on only one transfer. We have to multiply the examples to reach a robust comparison between different practices. Moreover, some of them remain hidden: *“there are still practices not documented enough at the beginning. Their implementation in the data base is therefore postponed, looking for precision”* (the Industrial Best Practices Coordinator). Therefore, a gap can exist between the declarative transfer (what is on the database) and the real transfer (what has been done). We tried to reduce this uncertainty by visiting a plant where the lump-breaker has been installed.

CONCLUSION

CHARLOTTE: *Isn't it weird there are no street names in Tokyo... you'd think a city like this would have street names... you need a map to get anywhere...*

Quotes from Sofia Coppola's *Lost in Translation* (2002)

Managers often feel “lost” when it comes to re-using knowledge from other units. Like Charlotte, they need a map with street names. In this case study I wanted to show that “adapting” a best practice increases the chances of “adoption” from other units in the organization. If the effort is not made by the sender, the coordinator acts as a “translator” for the receiver and facilitates the travel of knowledge. Therefore, the knowledge management structure is a “travel agency” whose aim is to ensure that knowledge is well translated for multiple re-use.

When you are watching the movie *Lost in Translation*, you have the feeling that what you get out of it depends on how much you put into it. I think that it is the same for best practice transfer in multinational companies. In *Lost in Translation*, the characters are in Japan, where no one speaks their language, where nothing seems familiar, and they feel as detached from their “normal” lives as anyone possibly could. In so many great moments, they are shown as passengers in cars, removed from the outside world, watching the gaudy lights of Tokyo pass by almost as if they were watching a movie.

Bob Harris (played by Bill Murray) is an American film actor, far past his prime. He visits Tokyo to appear in commercials, and he meets Charlotte (Scarlett Johansson), the young wife of a visiting photographer. Bored and weary, Bob and Charlotte make ideal if improbable travelling companions. Charlotte is looking for “her place in life,” and Bob is tolerating a mediocre stateside marriage. Both separately and together, they live the experience of the American in Tokyo.

They forge a friendship after several chance meetings. In one of the movie’s best decisions, these are not people who fall for each other at first sight. Instead, they see each other in the elevator, the hotel bar, and the pool and slowly bond because they are the only ones who seemingly have something in common to share. What ensues is difficult to put into words. They start hanging out together, start learning about each other’s lives, start leaning on each other to escape the awkwardness of their existence, and have late-night, heart-to-heart conversations.

In this sense, the film reminded me of how I felt when I first came to Barcelona, not knowing a single soul in this big city. For a long time, I was unable to converse with anyone in Spanish (even less in Catalan!). When you are in your own city, the strangers around you are not as strange as you might think. You can still imagine what their lives are like, whom they might look up to, what kind of music they might listen to, what kind of job they might have, how much money they might be making, etc.. You unconsciously compare yourself to them. That is, they are not total strangers; you know them to a degree. In many ways, they are playing the same game that you are playing...in companies, people are also playing that kind of game...I hope!

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