CHANGING PROVIDER IN AN OUTSOURCED INFORMATION SYSTEM PROJECT

Good Practices for Knowledge Transfer

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Keywords: outsourced project, transition phase, knowledge transfer, maintenance in cooperation

Abstract: Outsourcing information system development has become a common practice in companies. Many contributions were proposed for dealing with the management of such projects, and relationship between client and vendor. But little is known concerning the way to manage the change of service provider in an on-going project. Our study concerns the transition from an outgoing service provider to an incoming one during an outsourcing development project in a public institution. This transition mainly consists in transferring the project. The transfer involves not only materials (documents and code) but also knowledge. The literature shows that knowledge transfer is a key of success in an outsourced project. Based on this literature, we emphasized some effects of transfer knowledge process and several postulates of interest. These postulates permitted us to deduce good practices for knowledge transfer in the transition phase of an on-going outsourced project. We show how we applied these good practices on a real application case. We then discuss observed effects and limitations of these good practices.

1 INTRODUCTION

Since a decade, French Public Scientific and Technological Institutions (PSTI) have focused on their primary business, that is to say research, and have outsourced their support services like Human Resources, Finances, or Information System (IS). The IS Department’s job, partly consisting in the conception and the development of new applications, is affected: the IS Department now coordinates outsourced projects.

An outsourced project implicates three participants: two internal participants which are the IS Department and the business direction concerned by the project, and an external participant which is a software and computing services company also called service provider. The service provider is chosen at the end of an invitation to tender. In a French public organization like a PSTI, government contract rules concerning outsourcing impose a (re-) call for tenders on a contract at least each three years, leading to change the service provider during the project. This change necessitates performing a transition phase in the project, during which the outgoing provider transfers documentations, applications, codes and knowledge necessary to the project performance to the incoming service provider. Knowledge transfer in this transition phase is a key source of success of the outsourced project.

In the PSTI we are in contact with, a transition phase has to respect a pre-defined business process. We studied this process and, based on literature concerning knowledge transfer, we exhibited a crucial and sometimes neglected activity for knowledge transfer (the maintenance in cooperation activity). Again based on literature review, we proposed some simple good practices for improving knowledge transfer in the PSTI transition process, impacting the transition process only and satisfying timing constraints. More generally, key questions guiding this study are: “How is knowledge transfer process used during the transition phase of an IS development outsourced project?”, “How to create favourable environment to knowledge transfer in a transition phase?”, and “To what extent does the face-to-face communication remain indispensable in a transition phase?”
The paper is structured as follows. The next section (Section 2) presents the transition phase of an IS development outsourced project. In Section 3, we discuss knowledge transfer according to the literature and exhibit some postulates of interest for our problem. From these postulates, we infer in Section 4 good practices for knowledge transfer in the transition phase of an outsourced IS development project and show how we applied them in our case study. Last section is devoted to discussion of results and limits. We also conclude and give perspectives.

2 Transition phase of an outsourced project when changing service provider: context and related work

We conducted our case study in a French public scientific and technological institution (PSTI). Following a general trend (Feeny and Willcocks, 1998), French public scientific and technological institutions focus on their core competencies (research) and outsource their support services like Information System (IS). Thus, the IS Department’s job, partly consisting in the conception and the development of new applications, is affected: the IS Department now manages IS development outsourced projects. The IS outsourcing is defined by Willcocks and Kern (1998) as “the handing over to a third party management of IT/IS assets, resources, and/or activities for required results”. Different categorizations of outsourcing were proposed in literature (see (Dibbern, Goles, Hirschheim and Jayatilaka, 2004) for a comprehensive survey). For positioning, we place in the case of a simple outgoing arrangement, i.e. a one (service provider) to one (service receiver) relation according to Gallivan and Oh (1999)’ classification. We also place in the case of a project management outsourcing according to Lacity and Hirschheim (1993)’ classification, meaning that the IS department outsources for a specific project or portion of IS work. In our particular –real– case study, the IS department outsources the development of a new software, necessary to a business direction, to one service provider. The IS department still manages the project and keeps being the selected interlocutor of the business direction, it is an interface between the business direction and the service provider. In other words, the service provider interacts almost only with the IS department during the project. From the IS department point of view, the outsourcing cycle involves five stages:

- **Decision of outsourcing** – The organization selects the service, function or IS project to outsource.
- **Invitation to tender** – The organization defines it needs and publishes them. Service providers propose answers to theses requirements.
- **Selection** – The organization selects the appropriate service provider, that is to say the service provider providing the most satisfactory service at a reasonable cost.
- **Implementation and managing relationships** – This is a phase of liaison, contract administration and performance monitoring between the service provider and the client during which the service provider develops the application.
- **Termination** – This stage corresponds to the end of the contract. We can distinguish several classical main cases. If the outsourced development is over then the fulfilled project has to be transferred back to the IS department. This is a reversibility process. If the contract is over but not the project then a re-call for tenders is processed. But if this re-call for tenders leads to the choice of the same service provider then protagonists of the project are usually unchanged; the project goes on without transition. If the re-call for tenders leads to the choice of a service provider different from the current one then the project has to be transferred from a current outgoing team to an incoming one. The outgoing team is compound of:
  - the IS department managing the outsourced project, and
  - the outgoing service provider, which has to leave.

The incoming team is compound of:
  - the IS department which of course does not leave, and
  - the incoming (new) service provider.

Figure 1 - Transition from the outgoing team to incoming one
Figure 1 represents this process. This transfer is called service provider transition process (transition for short in the following).

In a French public organization like a PSTI, government contract rules concerning outsourcing impose to (re-)call for tenders on a contract at least each three years, even for a project in progress. Thus each invitation to tender can lead to a change in service provider, i.e. a transition process. This process is devoted to the transfer of documentations, applications, codes and knowledge necessary to the IT project performance from the outgoing team to the incoming one. The transmission of “materials” (data, information and explicited knowledge) is usually well controlled. But this is not sufficient! Several studies showed that knowledge sharing and transfer are major predictors for outsourcing success and that not only explicit but also tacit knowledge sharing plays an important role in outsourcing success (Lee, 2001). In particular, it is now well known that knowledge sharing between the client (the IS department here) and the service provider plays an important role in outsourcing performance (Dibbern et al., 2004) (Lee, 2001). The literature proposes a large number of contributions related to contractual and cooperative aspects for partnership between the client and the service provider (see e.g. (Willcocks and Kern, 1998) and (Dibbern et al., 2004)). However dealing with a change of service provider brings further problems, and possible additional costs (Whitten and Leidner, 2006). Indeed in the case of an outsourced IS development project in project management mode (Lacity and Hirschheim, 1993), the service provider “possesses” most of the knowledge necessary to the project. In a transition phase due to a change of service provider (as opposed to a reversibility phase), the client does not want to absorb knowledge. Its main goal is to manage the project transfer from the outgoing service provider to the incoming one, in limited time. If a part of the outgoing provider knowledge is not transferred during the transition then it is lost for the project at this moment.

Few proposals focused on the specific case of changing provider from a knowledge management point of view. To the best of our knowledge, Alaranta and Jarvenpaa (2010) are the only one to explicitly address this question. Their interesting work exhibits key facilitators (which can be seen as good practices) for improving knowledge transfer in the transition phase. Theses key facilitators impact the whole outsourcing cycle: performing the outsourcing respecting these facilitator, in particular during the implementation stage, allows improving a future transition phase in case of changing provider. We point (Alaranta and Jarvenpaa, 2010) for details. For our part, we focus on (complementary) good practices for knowledge transfer that can be applied “locally” during the termination stage, independently of the project history. Pragmatically, we define “really concrete” operational actions for improving knowledge transfer during a transition phase, these actions being performed under timing constraints (as it has to be done in practice).

Following Sections 3 and 4, constitute the core of our contribution. Based on literature, we exhibited postulates of interest in Section 3. These postulates are the basis for good practices, concerning the transition phase of an IS development outsourced project, proposed in Section 4. In this section, we also explain how these recommendations were put into practice in our application case.

3 THEORETICAL BACKGROUND ON KNOWLEDGE TRANSFER

Before considering knowledge transfer, let’s recall some classical and fundamental notions concerning knowledge. Knowledge is defined as being justified true belief (Nonaka and Takeuchi, 1995). We agree with the vision considering that knowledge is not an object (this vision is explained in details in (Grundstein, 2009)). Knowledge is often distinguished between tacit (or implicit) knowledge and explicit one (Polanyi, 1967) (Nonaka, 1991). Explicit knowledge can be codified (e.g. writing or drawing) and articulated since it can be expressed formally and systematically. Tacit knowledge corresponds to non explicitable knowledge like e.g. skills, senses, intuition, physical experiences, “job secrets”, environmental knowledge concerning clients or the technologies. We can differentiate two kinds of tacit knowledge: the individual and the collective one (Nonaka, 1994). The collective knowledge is created and possessed collectively by a group composed of more than one individual. Note that group tacit knowledge is more than the aggregation of individual tacit knowledge of group members (see (Erden, von Krogh and Nonaka, 2008) for details).

Let’s now consider the notion of knowledge transfer. Knowledge transfer is the process by which one unit of an organization, such as a group or department, is affected by the experience of another
(Argote and Ingram, 2000). Knowledge transfer leads to an increase of shared knowledge that, in turn, may affect performance of receiver. Penrose (1959, p. 76) formulates that “... it is likely that increases in knowledge can always increase the range or amount of services available from any resource.”

Several studies showed that not only explicit but also tacit knowledge sharing plays an important role in outsourcing success (Lee, 2001). Moreover, tacit knowledge plays an important role in explicit knowledge transfer because tacit knowledge is necessary to the understanding of explicit knowledge (Polanyi, 1975) (Alavi and Leidner, 2001). These works leads us to our first postulate of interest.

(Postulate 1) Considering knowledge transfer means considering explicit and tacit knowledge transfer, eventually also individual and group tacit knowledge.

Davenport and Prusak (1998) defined knowledge transfer as follows:

(Postulate 2) 
Transfer = Transmission + Absorption (and Use)  
(Davenport and Prusak, 1998)

Please, note here the important distinction between transmission and transfer. Expression of Postulate 2 indicates that transmitting by sending or presenting explicit knowledge is not sufficient for transferring it. A knowledge that is not absorbed (Cohen and Levinthal, 1990) by its receiver is not transferred. Davenport and Prusak (1998) also emphasize on the difference between “knowing” and “doing”; knowledge is really absorbed when it can be put into practice. This justifies the “Use” part of the expression.

According to Ivari, Linger (1999), Tuomi (1999) and Grundstein (2009) -roughly speaking- an information receiver interpreted the information “in his own way”. This is due to distinct underlying individual shared knowledge space between information emitter and information receiver. This often induces a distortion of absorbed knowledge. We can reformulate this observation through the simplified following Postulate.

(Postulate 3) Absorbed knowledge is often “distorted”.

Knowledge can be acquired not only through structured media, such as documents, but also through informal and/or formal interpersonal interactions (Davenport and Prusak, 1998). Introducing the notion of Ba, Nonaka and Konno (1998) indicated that:

(Postulate 4) Physical, face-to-face experiences are the key to conversion and transfer of tacit knowledge (Nonaka and Konno, 1998)

The four postulates defined above are fundamentals hypotheses that guide our discussion in Section 4.

4 GOOD PRACTICES FOR KNOWLEDGE TRANSFER IN A TRANSITION PROCESS

4.1 Application case

We recall here that the transition phase mainly consists in transferring the outsourced project from the outgoing team (compound of the IS department and the outgoing service provider) to the incoming team (compound of the IS department and the incoming service provider). One has to note that in the case of an outsourced IS development project in project management mode (Lacity and Hirschheim, 1993), the service provider “possesses” most of the knowledge necessary to the project. In a transition phase, as opposed to a reversibility phase, the IS department does not want to absorb the knowledge. Its main goal is to manage the project transfer from the outgoing service provider to the incoming one. Thus, even if the IS department possesses a part of the knowledge necessary to the project and participates to -and even more manages- the transfer, we will consider in the following that knowledge transfer mainly concerns knowledge transfer from the outgoing service provider to the incoming one.

In the PSTI we are in contact with, the transition process has to satisfy an important constraint: it must be performed in twenty (or less) working days. It respects a pre-defined business process during which

- the outgoing provider transmits documentations, applications, codes to the incoming team, and
- the outgoing provider and the ingoing team -and more particularly the ingoing service provider- share knowledge.

This transition process consists in six activities:
(Activity 1) the initialization activity, which marks the official start of the transition phase,
(Activity 2) the Third Party Maintenance ending where an inventory of internal and external documents and codes is performed,
(Activity 3) the edition and validation of the transfer plan,
(Activity 4) the “knowledge transfer” essentially consisting in transmitting documentations, applications and codes from the outgoing team to the incoming one,
(Activity 5) the maintenance in cooperation during which outgoing and incoming service providers assume together a maintenance of the application, and
(Activity 6) the responsibilities transfer, which marks the official departure of the outgoing provider.

Activity 5 (the maintenance in cooperation) is optional according to the procedure. In practice, this activity is often skipped for cost or time saving reasons. Yet we will show, in the following of the paper, the crucial role of this activity in knowledge transfer. We will also give some motivated “good practices” for the layout of a more favourable environment for knowledge transfer inside this process.

4.2 From postulates to good practices

According to postulates of Section 3, let’s discuss the process of our PSTI case study: the transition process from an outgoing service provider to an incoming one in an outsourced IS development project (defined in Section 3), focusing on knowledge transfer.

We could think that explicit knowledge is more easily transferable as it is teachable, codifiable, articulate. However, we have observed in reality, that even explicit knowledge is hard to learn and transfer due to limitations of explanation capacity (documents) and codification ability (IT). We can see in practice that, when the outgoing provider transfers knowledge to the incoming provider, knowledge can be distorted (Postulate 3). The level of absorptive capacity of the receiver can also limit explicit knowledge transfer (see Postulates 2). Thus, transmitting explicit knowledge is not sufficient of transferring it. Postulate 2, which applies for not only tacit but also explicit knowledge, confirms it. Concretely, this means that even in the case of explicit knowledge, transmission is not sufficient: knowledge contained in documentations, applications, and codes has to be absorbed, and use.

According to Postulate 1, the transfer of documentations, applications and codes (explicit knowledge) is not sufficient for efficiently transferring the entire project (material and knowledge) from the outgoing team to the incoming one. A part of tacit knowledge also has to be transferred. This tacit knowledge can also help to understand and interpret the explicit one.

According to Postulate 4, physical and face-to-face experiences between outgoing and incoming teams are necessary for tacit knowledge transfer. All of this encourages us to the following good practice.

(Good Practice 1) Organize global meetings (face-to-face) where -all- members of the outgoing and incoming service providers participate in order to discuss around the project and the documents, application and code transferred by the outgoing team.

During the project, the service provider and the IS department share and transfer knowledge to each other. In particular, the service provider, namely the IS department, transfers business tacit knowledge to the outgoing provider. According to Postulate 3, this tacit knowledge was “distorted” when the outgoing service provider absorbed it. We recall here that one of transition phase objectives is to transfer knowledge from the outgoing service provider to the incoming one. If the outgoing service provider alone transfers business tacit knowledge to the incoming service provider then a supplementary distortion occurs, even more deviating from the IS department business vision (Figure 2). If the IS department participates to knowledge transfer, then this distortion if reduces (Figure 3). This leads us to the good practice that we called Good Practice 2.
(Good Practice 2) The service provider (the IS department) has to participate to meetings.

In other words, global meetings of Good Practice 1 concern not only outgoing and incoming service provider but also the IS department. This good practice approaches the “joint collaboration” key facilitator mentioned by Alaranta and Jarvenpaa (2010) who recommend that the new provider and the client (the IS department) work “closely hand in hand, first in modularization and later in implementation of services including software solutions”.

Such meetings constitute an interacting ba (Nonaka and Konno, 1998), i.e. a shared space for emerging relationships and practices in a group, favourable to the creation new group tacit knowledge for the incoming team and transmit a part of the outgoing team’s group tacit knowledge (based on (Nonaka and Konno, 1998), (Nonaka, von Krogh and Voepel, 2006) and (Erden, von Krogh and Nonaka, 2008)).

In practice in our application case, the knowledge transfer activity (Activity 4) of the transition process consisted almost only in the transmission of documentations, applications, and codes. We added a “workshop session” holding in the same place, during three days. Outgoing service provider (two members), incoming service provider (four members) and internal IS department members concerned by the project (four members) were present. In this seminar, each participant presented himself, its experiences, its profile and its role in the project. Project documents and IT were transmitted to incoming provider and then discussed. The outgoing team presented (development) anomalies encountered during the project and the associated solving solution they adopted.

When the outgoing provider transfers the knowledge to the incoming provider, the knowledge can be distorted. The PSTI usually realizes this distort later, when the outgoing team definitely gone (with his knowledge!). Thus, the “Use” part of Postulate 2 is very important in our application case because it permits to make sure of knowledge absorption by the incoming service provider. This “Use” part emphasis the great importance of the maintenance in cooperation activity, which is the only activity where the incoming service provider puts in practice knowledge transferred by the incoming provider.

(Good Practice 3) Skipping the Maintenance in cooperation activity may have a negative impact on project knowledge transfer.

Furthermore, we observed that, if no unusual event happens during the Maintenance in cooperation activity then this activity could lead to a simple observation period. In order to enforce the incoming team to use a part of its transferred knowledge, a good practice is to introduce a project use case during the maintenance in cooperation activity of the transition. Good Practice 4 is a candidate solution for this.
(Good Practice 4) Plan to solve one or several ongoing incident(s) on the project during the Maintenance in cooperation activity.

Such a practice also permits to create an exercising base facilitating the conversion of (individual or group) explicit knowledge to (individual or group) tacit knowledge (Nonaka and Konno, 1998) (Nonaka, von Krogh and Voepel, 2006) (Erden, von Krogh and Nonaka, 2008).

In practice in our application case, good practice 3 was performed during the maintenance in cooperation activity (Activity 5). The outgoing team chose some incidents and the incoming service provider had to solve each of them.

5 DISCUSSION AND FUTURE WORK

Our study concerns French Public Scientific and Technological Institutions, which focus on their primary business, that is to say research, outsourcing their support services as Information System development. Due to this outsourcing, the service provider “possesses” most of the knowledge necessary to the project during its development. We focus on the transition phase of an outsourced project when switching service provider, which is a critical stage in such organization. The transition mainly consists in transferring the project from the outgoing provider to the incoming one, in a limited time. This transfer not only concerns materials (documents and code) but also knowledge. Our study is grounded in the concept of knowledge and knowledge transfer process. We discuss knowledge transfer according to the literature. Literature brings fundamentals theoretical concepts on knowledge transfer that regain value for our issue of outsourced project. Thus, we have exhibited some interesting postulates for our problem. Our results indicate that some dimensions influence knowledge transfer process in outsourced project. Based on postulates, we suggest some good practices for efficient transfer knowledge in the transition phase.

Implementation of these good practices in our case study leaded us to observe positive effects. First of all, performing the transition process applying these good practices did not increased the time taken for transition. In other words, timing constraints were satisfied. According to the project manager, knowledge that was difficult to transfer before the implementation of good practices. This e.g. could be seen methods of knowledge transfer such as descriptions, manuals, and tools (Request tickets tool) failed to transfer knowledge of incidents, as the incoming provider couldn’t easily solve problems and needed a lot of supplementary information after the transition phase, revelling a poor autonomy. After a transition including good practices presented in this article, it seemed that transition has been achieved with great ease, leading to incidents easily solved without the help of the IS department.

We also observe a “negative” effect: the process was most costly due to the increasing implication of human resources in the process. We do not deny this negative effect but it has to be read with caution because it is a “price to pay” for improving the transition phase quality, which certainly improves the global project quality, and thus maybe decreases its global cost…

Measuring impact of good practices is a difficult problem. For the moment, asking for the project manager judgement is the only way to evaluate the quality of the transition phase with or without good practices. One of our future works is to define an empirical method for this evaluation (e.g. inspired from Lee’s work (2001)).

Additional aspects that might also be very relevant to include in future related studies (leading to additional good practices) are (i) improving the motivation and the attitude of the involved participants and (ii) improving the capacity of absorption of the incoming service provider. These aspects are important issues in knowledge transfer (Cohen and Levinthal, 1990) (Easterby-Smith, Lyles and Tsang, 2008), especially for the transition phase.

For a better knowledge transfer management, good practices that can be applied during the implementation phase (see Section 2 for references, in particular (Alaranta and Jarvenpaa, 2010)) are complementary to our good practices, which can be applied during the transition phase. Of course, this necessitates having a control of the implementation stage (that we did not have for our application case performed with a quite limited room for manoeuvre for modifying the pre-defined transition process).

Our study concerns only one type of organization. We believe that de transition process described in this paper is representative of a classical transition process. We also believe that guidelines can be generalized to most of organizations faced to
a service provider transition in an outsourced IS project. According on our application case, we considered the case of a simple outgoing arrangement (one to one contract for the outsourcing). A further research work should therefore be to study outsourcing with one client and several providers for eventually offshore outsourcing.

REFERENCES


