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Gibran Rivera Gonzalez
University of Sheffield, gibran.rivera@sheffield.ac.uk

Andrew M. Cox
University of Sheffield, a.m.cox@sheffield.ac.uk

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Gibran Rivera Gonzalez
University of Sheffield
gibran.rivera@sheffield.ac.uk

Andrew M. Cox
University of Sheffield
a.m.cox@sheffield.ac.uk

ABSTRACT (REQUIRED)

This paper draws on a qualitative study informed by Actor-Network Theory (ANT). A socio-technical perspective is presented to describe how humans and non-human actors are attempted to be enrolled during a Human Resources Competency-Based Model (HRCBM) Implementation in a multi-campus University System in Mexico. The Project Implementation (PI) is seen as continuous processes of negotiation with and enrollment of relevant actors during the project trajectory. It includes insights from 17 semi-structured interviews with actors involved in the project. The paper shows how an actor-network was created, expanded and maintained. To strengthen the network stability, different strategies were developed and implemented by the core implementation team. But other issues suggested by ANT contributed to slow down the implementation process: some omissions made by the core team during the problematization stage, the failure to fully enroll relevant actors and the existence of a competing network. This approach can help researchers to better understand how to apply ANT concepts to study socio-technical situations such as a Project Implementation.

Keywords (Required)

Actor-Network Theory, socio-technical processes, project implementation, human resources, interpretive research, México

INTRODUCTION

Organizations are continuously involved in developing and implementing new projects (Schultz et al., 1987). The management of both IT-mediated projects and non IT-projects involve changes in the way in which work is performed and often represent a nightmare for the parties involved (Linde et al., 2003) resulting in intra-organizational tensions (Kuruppuarachchi et al., 2002).

In order to understand how projects are implemented several studies have been conducted to examine the underlying critical success factors that support project implementations (Pinto and Slevin, 1986; Schultz et al., 1987; Martinez, 1994; Finney and Corbett, 2007) . In this regard factors such as clearly defined goals, sufficient resources allocation, top management support and commitment, visioning and planning, effective project managers, competent project team members, adequate communication, feedback capabilities, user involvement and other factors have been identified as critical factors useful to explain project success or failure.

Despite the huge literature that already exists on PI and how this process can be managed to achieve the expected goals, the reality is that there are still a big number of organizational projects that fail to accomplish their goals. In this paper we contribute to this area of knowledge by attempting to offer an alternative view to study PI processes. We shift our attention from the conventional view of underlying critical success factors for PI to the idea of how the interactions and negotiations between human and non-human actors shape the success or failure of PI processes, arguing that an ANT-informed understanding can enable practitioners to better understand socio-technical phenomena such as a PI and thus helping them to cope with, or at least to make them aware of, the complexities of such processes.

The paper is presented as follows. First, we present the key concepts of ANT followed by the research methods used to collect and analyze data. Next, we describe the research case focus of this study and then present the implementation process in ANT terms describing how this process occurred. Finally we present and discuss our conclusions.

KEY CONCEPTS IN ANT

In this section we outline our theoretical foundations by presenting a brief overview of ANT and its basic tenets. ANT was first developed by Michael Callon (1986) and Bruno Latour (1987). At the very beginning ANT was concerned with how scientists gain the support of others regarding their propositions about scientific facts and how they acquire power and resources to perform their work (Van House 2003). Since then, ANT has been concerned with how the work of society is accomplished (Callon, 1986; Latour, 1987).

The basic idea of ANT is to understand how humans and non-humans actors are brought together in stable, heterogeneous networks of aligned interests (Law, 1992). By tracing the transformation of these heterogeneous networks, ANT explores how networks emerge, how they are maintained over time and how they compete with other networks (Tatnall and Gilding, 1999) of aligned interests.

A core assumption in ANT is that neither social nor technical positions are privileged based upon the argument that the social is not simply human but a 'pattern networks of heterogeneous materials' (Law, 1992:381). Examples of actors in ANT include humans, groups of humans, ideologies, methodologies, concepts, computers, texts and other artefacts. In viewing non-humans as actors, a key issue is to know that the interests of a non-human actor can be equated to the interests that have been inscribed in it (Sarker and Sidorova, 2006).

In ANT, actor-networks are continuously evolving. The process of transformation of networks is achieved through processes of translation (Callon, 1986) in which a temporary social order is created through changes of the alignment of interest in a network (Sarker and Sidorova, 2006). During the process of translation one actor or group of actors drives the process to enroll and mobilize others into a new network previously defined (Blackburn, 2002). These processes of translation should be deployed over time and consists of four interrelated stages: Problematization, interessment, enrolment and mobilization (Callon, 1986:203).

In the problematization stage, the nature of the problem is framed (Tatnall and Burgess, 2002) and a number of relevant actors identify, whose roles and relationships configure an initial problem-solving network (Linde et al., 2003). An obligatory passage point (OPP) is established that allows the actors to recognize that they will receive benefits from their involvement by sharing a focus of achieving certain goals.

During the interessement stage allies are locked in place (Tatnall and Burgess, 2002) and incentives are created to pass through the OPP defined by the focal actor (Sarker and Sidorova, 2006); negotiations among actors usually take place; however sometimes spokespersons or representatives negotiate on their behalf. Frequently actors who are represented by their speakers fail to act as their representatives promised. This action is called betrayal (Callon, 1986).

The third stage is called enrolment, in which roles in the network are defined and coordinated leading to the establishment of a stable network of alliances (Tatnall and Burgess, 2002). In this stage, the OPP has to be translated into a series of more specific sub-goals (Linde et al., 2003). If an agreement between actors is reached at this stage, such agreements need to be embodied into a medium or material (Cho et al., 2008) through inscriptions. Often, inscriptions have properties of irreversibility that refers to the degree which it is impossible in a certain situation to going back to a point where alternative possibilities exist.

Finally the stage of mobilization occurs when 'the proposed solution gains wider acceptance and an even larger network of absent entities is created' (Tatnall and Burgess, 2002:185).

RESEARCH APPROACH

Broadly speaking we adopted an interpretive approach (Walsham, 1995; Walsham and Sahay, 1999) and relied on data collected using a battery of different methods. Research access was negotiated through an 'informal sponsorship' (Hammersley and Atkinson, 1995), provided by the Human Resources President (HRP) of the organisation under study. The main sources of data are 17 face-to-face semi-structured interviews. Consistent with the sixth principle of interpretative research (Klein and Myers, 1999), an strategic selection of participants (Hammersley and Atkinson, 1995) was used to involve representatives of the relevant roles in the project at different levels of the organisation. The interviews were

conducted, recorded and transcribed typically lasting between 40 and 90 minutes long. An attempt to interview people who provided examples of polar types (Eisenhardt, 1989) was made in order to get access to the different interpretations (sixth principle of inductive research)

In terms of analysis our research rests on the principles of interpretive studies by Klein and Myers (1999). The process is based on the first principle of a hermeneutic circle of interpretive studies (Klein and Myers, 1999) in which we carefully read and reflected on our data sources by iterating between the interdependent meaning of parts and the whole that they form and by constantly questioning the surface meaning of what was said (seventh principle of inductive research). In alignment with the fourth principle of interpretive research about abstractions and the generalization of data through the use of theories, we used ANT as a 'sensitizing device' to view the world in a certain way (Klein and Myers, 1999) and to make sense of our data. To explain possible contradictions between our theoretical preconceptions and the actual findings we constantly reflected on our data and did various cycles of revision of our interpretations (Principle fifth in Klein and Myers, 1999).

We justify the use of ANT as our theoretical lens because it has been considered as a promising approach to better understand how the work of society is accomplished (Callon, 1986; Latour, 1987) how change processes and IT-mediated projects are implemented (Linde et al., 2003), how goals of projects are achieved through processes of translation (Monteiro, 2004), and how implementation of IS and situations involving innovation take place (Tatnall and Gilding, 1999).

CASE DESCRIPTION

The study is conducted within the context of the Direction of Human Resources at a multi-campus University in Mexico. The Human Resources Project Implementation initially focused on four specific areas aiming to establish a competency-based approach for developing employees' competencies. The different stages it includes are as follows: a definition of a job description is first developed to all relevant positions; based on this job description, employees are evaluated by applying a series of psychological and psychometrical tests to identify the gaps between the competencies in the job description and the actual employees' competencies. Then, a gap between current and desirable competencies is identified and feedback process takes place aiming to define a developing plan to narrow the existent gap. Finally, a series of training courses that need to be taken by the employees are offered in order to improve their actual competencies. It is expected that this process will lead to define an appraisal compensation system.

The initiation of the Human Resources PI can be traced back to four early events: 1) the success of previous Competency-Based Model Implementations at some of the University's high schools 2) the redefinition of the University's Vision, 3) the need for reaccreditation to validate studies conducted at the University and 4) the retirement of the current Human Resources President at that time and the arrival of a new President.

In 2006 a new Human Resources President (HRP) was hired. Rather than aligning himself with the current HR Practices of that time, he envisioned a new way to manage HR with the aim of developing a high performing HR organisation. To fulfill this goal, he hired a well-reputed HR practitioner who had previously implemented similar projects and became the new Human Resources Vice President (HRVP) of the University. To be successful in this initiative they acknowledged the need of identifying other actors and persuaded them to align their interests to those of their initiative. They identified four relevant groups of actors that needed to be enrolled: 1) Members of the HR Steering Committee who act as representatives of the Human Resources Directors of each campus, 2) Human Resources Directors (HRDs) who would implement the project in their own campus, 3) Vice-Chancellors (VC) of each campus who have the ability to allocate resources to support the PI and 4) Directors of the four areas involved in the PI who would coordinate the implementation in their own Directions.

Since the very beginning it was conceived by the initiators that the implementation would be a slow process that needed to be incorporated into the rhythm of the current HR practices. To facilitate the implementation the HRP and the HRVP, as soon as they took their new positions, started to communicate and promote the new paradigm to manage HR. After some time, the project was inscribed into the everyday language of the HR Steering Committee. To gain support from other relevant actors, HRCBM courses were offered by the HRP and HRVP across the different campuses within the University aiming to support the HRDs in the implementation process.

Despite the fact that this project was carefully planned, the need of reaccrediting studies at the University required by an international association speeded up the PI resulting in some problems and causing enormous delays. In mid 2007, when the PI began, a taken-for-granted enrollment of different relevant actors was assumed resulting in the lack of alignment of actors' interests and affecting the implementation. During this time, wide-ranging changes to the initial HRCBM emerged causing misunderstandings among implementers and delays at different stages. In addition during 2008 the economic crash significantly affected the allocation of resources to support the implementation. To make it even more difficult, in mid 2009

the HRVP abandoned the University forcing the HRP to readjust responsibilities regarding the PI. To date, the PI has only partially been implemented, now facing the departure of one of its most relevant promoters.

CASE ANALYSIS AND DISCUSSION

The old and the emerging networks

Before the occurrence of the four events mentioned above, the Direction of Human Resources could be seen as a stable actor-network formed by different actors with aligned interests. These actors perform the current HR Practices on a daily basis; allocating their resources, time and knowledge to carry out the HR activities such as hiring, performance appraisal, training and compensation.

When the new HRP took his position, he faced a low level of sophistication of the HR practices and envisioned a new paradigm to manage HR aiming to protect the interests of the organization. A new HRVP was hired and together, the HRP and the HRVP defined the HRCBM Implementation to be the Obligatory Passage Point (OPP) for the emerging network. By passing through the OPP, all actors would achieve their own interests, but also they would face some tensions and conflicts associated with this process of change.

They acknowledged the importance of identifying other relevant actors and persuaded them to align their interests to those of their initiative; thus supporting the emergence of the HRCBM actor-network. Its stability would depend on the ability of its members to enroll and lock other actors into the right place and by strengthening the relationships between them.

Identification of relevant actors

Although the HRP and the HRVP assumed the responsibility for identifying and enrolling other key actors into the emerging network, the need to speed up the PI led them to make some omissions and the implementation started solely with the support of the Directors of the four areas involved. At this stage they failed to involve other influential actors such as the members of the HR Steering Committee and the HRDs and VCs of each campus. The only non-human actor recognized during this phase was the HRCBM, whose main interest was to develop a high performing organisation and still was in a development process. Other non-human actors –with their own interests, which not necessarily would be aligned to those of the HRCBM network-, would be identified later on.

Mobilizing support for the HRCBM Implementation

To gather support from other relevant actors, the HRP and the HRVP had to mobilize other strong influential actors. They had to negotiate with them and translate their visions to create interessement. While the project implementation was taking place only with the support of the Directors of the areas involved, the HRP and the HRVP started to negotiate the enrollment of other relevant actors. Far from a straightforward implementation, the PI turned out to be complex and continuously faced the need, and tensions involved, to align different and sometimes competing interests.

When the interessement started, the HRP and the HRVP realized that the HRDs and VCs of each campus were critical actors to the successful formation of the emerging network and started to visiting different campuses to promote the implementation of the HRCBM among them. At this stage, a high degree of alignment was achieved between these two actors and the HRDs of each campus. A general opinion of HRDs which considered being the HRCBM as 'something coming from heaven' was shared and the perceived benefits of many HRDs at this stage showed a successful enrollment. However, by joining the emerging network, the HRDs misaligned their interests from their previous actor-network; thus having to face the tensions of belonging to different networks simultaneously. Not helping matters was the fact that despite the efforts of the HRP and the HRVP to involve HRDs of all campuses, some HRDs noticed the implementation was taking place in their campuses without previous notification of the HR Steering Committee. As a HRD reported:

> 'There was a direct communication from the Human Resources steering committee to the Direction of Marketing and Libraries, they had meetings in which they started to work with job descriptions and suddenly we 'found out' that something was happening. Some employees came to us and asked about competencies and we did not know what had been happening, we were not aware. At that time someone complained and they [the HRP and the HRVP] apologized and recognized their mistake. They said: you are right, we made a mistake by not involving Human Resources [of each campus], and indeed it is you [Human Resources of each campus] who should lead the project. Then, they enrolled us into the project.

As a consequence of this situation, a formal attempted to enroll all HRDs and all members of the HR Steering Committee took place aiming to create an organizational body which would coordinate the implementation. A team called Organizational Development Committee (ODC) was established in which the interests of all these actors were inscribed. This ODC became a punctualized actor with its own right. By being recognized the high visibility and authority of the ODC, it gained properties of irreversibility. Its members would act as the spokesperson of the network.

Once assembled the ODC, a series of negotiations between its members and the HRCBM concept took place. The ODC realized that the HRCBM concept (including the methodology for implementation, the catalogue of competencies, the information systems required for evaluation) was also critical to maintain the network' stability. Although the ODC attempted to pursue the rapid enrollment of the HRCBM into the network, some delays resulted from the ongoing modifications to the HRCBM concept. A HRD explained how this continuous development affected the implementation in her campus:

> '[During the workshops to develop job profiles] we had a problem, because [the HRVP] came in May [2007] and we used a scale from 1 to 5 to define competencies' levels, then in June [2007] they changed the scale from 1 to 7… they also realized that some institutional competencies should have been classified as functional and vice versa … after one month [the HRVP] told me that they had changed the job description. Unfortunately this happened after I had received the job descriptions of all people who participated in that workshop, as a consequence we had to send the job descriptions again. Until now, we are still in that stage'

Additionally, the HRP acknowledged that efforts were still needed to persuade VCs to allocate more resources to the PI:

> 'Something that is missing is that we have not been working with the Vice-chancellors of each campus... I have not had any meeting about this topic with them... so, one problem is that some Vice-chancellors have an idea about what we are doing, but for others it is not very clear what we are doing because they have many thing to do [due to their position as Vice-chancellors]. Therefore we have an opportunity area that we have to work with; they have to know about this project. They have been informed of all the initiatives, they know, but still something is missing...what is missing is to give them more information [about the project] to make them realise about the benefits of the project' (IHRP 1/138).

Similarly, the manifestation of a new actor with competing interests to those of the HRCBM network emerged, represented by the 'current HR Practices'. This new actor would play a very influential role during the PI and would weaken the HRCBM network. In many interviews expression such as: 'I have not been working in the project because of the current overload work we have'; 'the project now is in stand-by…because we have overwhelming situations with the daily activities'; 'we have daily operations that we cannot postpone'; 'the project requires a lot of time, more that the time that I have to focus on it… there are operational activities of our system that we cannot simply abandon'; show the inherent and unavoidable tensions that exist between the HRCBM Project and the current HR Practices. A HRD explained how the introduction of the HRCBM affected the daily practices at that time:

> 'I felt that the different stages during the HRCBM implementation had some conflicts with the current practices [of the HR departments of each campus]… at the beginning we did have some conflicts because we could not stop working on our current operations and we could not leave some projects that we already, had and at the same time started to work with this new project…but at the end we supported the new project [the HRCBM project] and started to align ourselves to the new circumstances'

By being involved in both networks, the old network supporting the Current Practices and the emerging network aiming to implement the HRCBM, HRDs would face continuous tensions along the Implementation caused by a lack of time and resources to allocate to the PI. The outcome of this situation was a partial enrollment of these actors in the HRCBM implementation that resulted in long delays during the Implementation. The HRVP ascribed this problem to the fact that the HRCBM Implementation was an initiative in which HRDs were invited to participate but their participation was still optional.

To make this situation even more difficult the failure to enroll VCs, and therefore the inability to allocate more resources to the PI, would prevent HRDs to be fully enrolled. The HRP acknowledged that efforts were still needed in this respect:

> 'Something that is missing is that we have not been working with the Vice-chancellors of each campus... I have not had any meeting about this topic with them... so, one problem is that some Vice-chancellors have an idea about what we are doing, but for others it is not very clear…we have to work with them; they have to know about this project…what is missing is to give them more information [about the project] to make them realize about the benefits of the project'.

The failure of the core network to fully enrolled Vice-Chancellors into the HRCBM network resulting from a lack of negotiation between these two actors cost the network powerful allies. Unable to enroll Vice-Chancellors, the HRCBM network would find difficulties along the PI, which would result in a hybrid Implementation rhythm shaped by the combination of two competing networks: one represented by the HRCBM network and another one embedded in the current HR Practices.

One of the strategies taken for the ODC was to create a series of online courses which were presented to all HRDs to support the PI. During the interviews, some HRDs mentioned these courses were the starting point for them to begin the implementation. In October 2008 an unexpected event disrupted the PI: the world crises. Top management' decisions were made to reduce expenses in all the University campuses and therefore the possibility for VCs to allocate more resources was dismissed. In some extreme cases some campuses had to fire some HR staff. Finally, in July 2009, the HRVP left the University and abandoned the Project. To date, the PI has only partially been implemented, now facing the departure of one of its most relevant promoters.

CONCLUSIONS

This investigation has attempted to demonstrate the application of ANT to study a Project Implementation. Using an ANT approach to the analysis of project implementations provides a better understanding of the complexities associated with these processes. We observed that the PI is a process whereby a core group of actors shape the formation of an actor-network and attempted to persuade other actors to align their interests to the requirements of this emerging network. In order to strengthen the network stability, different strategies were deployed to enroll new actors. The enrolment process was supported by a series of inscriptions created to ensure the protection of certain interests but also influenced by the resistance of some human and non-human actors to join the network. The inscription processes such as the creation of the ODC and the HRCBM courses; the omission to identify some relevant actors at the problematization stage; the continuous development of the HRCBM; and the existence of another actor-network with competing interests shaped the Project Implementation.

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