Chapter 60
Actor Network Theory Applied to Organizational Change: A Case Study

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ABSTRACT

There are various models proposed in the literature to analyze trajectories of enterprise change projects in terms of success and failure. Yet, only the Actor-Network Theory (ANT) perspective considers the interaction factors among network actors and actants. In 2009, with an initiative started in 2007, the Portuguese Air Force developed and carried on a Change project. The aim of this project was to obtain better information to support decision processes. This chapter proposes the ANT for approaching the Portuguese Air Force change process initiative as a case study. In doing so, it provides valuable insight in terms of both local and global actor networks, which surround the initiative.

INTRODUCTION

Enterprise change initiatives are expected to result in better delivery of services to citizens, improved interactions with business and industry, citizen empowerment through access to information, and more efficient government management. In addition, other expected side benefits involve less corruption, increased transparency, greater convenience, revenue growth, and cost reductions. All and all, enterprise changes need to uncover new ways of getting competitive advantage through better objective analysis and definition processes. It all comes to better information that can lead to better decision. The United States Air Force defines information superiority as "the degree of dominance in the information domain which allows friendly forces the ability to collect, control, exploit, and defend information without effective opposition (USAF, 2005). When applied to organizations the information concept has exactly the same importance as it conveys acquiring context

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and relevant information to allow comprehensive decisions that allow gaining competitive advantage over competitors.

This chapter aims to uncover the trajectories of the Portuguese Air Force change initiative. When conducting a project, there are a lot of factors that influence how it is done and how its outcome is influenced by. For instance, prior similar experiences, IT regulations and capabilities and so forth are some key influencers. All of these factors are related or connected to how parties involved in the project act. Change projects cannot be developed in a total vacuum but rather under the influence of a wide range of surrounding factors.

The acts parties have carried out, and all of these influencing factors, should be considered together. This is exactly what the term actor-network theory accomplishes. An actor network is "the act linked together with all of its influencing factors in building a network" (Suchman, 1987; Hanseth and Monteiro, 1998).

The theoretical framework for Portuguese Air Force change process analysis must be sufficiently rich to comprehend the complexities of all network actors' interactions. The Actor-(or actant) Network Theory (ANT) of Latour and Callon (Callon, 1986; Latour, 1988; Latour, 1992; Latour, 1993) offers a set of analytical resources for this purpose (Frohmann, 1995). ANT has been previously employed by Heeks and Stanforth (2007) to explain the trajectories of the Integrated Financial Management Information System (IFMIS) development–an application of IT in the Sri Lankan Government.

The remainder of this chapter is organized as follows:

- The following section introduces "Actor-Network Theory" through a review of associated literature.
- Section "Case Overview and Application" explains the Portuguese Air Force change process initiative.
- Section "Using Actor Network Theory" compares the PRT AF change project in light of the ANT theory.
- "Conclusion" and "Future Work" sections constitute the last section of the paper.

ACTOR NETWORK THEORY

The Actor Network Theory (ANT) is a coherent theory that deals with "emergent social processes" (Holmstrom & Robey, 2005) involving technology and organizational change, considering that human and non-human actors are linked together in a web of relationships, referred to as an actor network, where their interests are translated and inscribed into technical and social arrangements (Holmstrom & Robey, 2005) that stabilize the network.

ANT is an established approach (Stanforth, 2006; Jarke, 2007) to explain application of IT projects in developing countries (Stanforth, 2006).

As underlined by Heeks and Stanforth (2007), a great number of projects result in failure. Therefore, it is crucial to examine projects closely to draw lessons for future. Popularity of ANT is increasing to better understand the trajectories of projects as defended by Trusler (2003), Avgerou, Ciborra et al., 2006; Heeks and Stanforth, 2007; Johanes and Kwong, 2007; Hardy and Williams, 2008; Muganda-Ochara and Belle, 2008).

ANT can be applied to empirical studies, on the IT field, guiding the investigation of networks of people, organizations, software and hardware (Latour, 1986; Walsham, 1997), and showing evidence on how social and technology aspects are mutually dependent (Holmstrom & Robey, 2005).

ANT is divided into three main phases (see Figure 1), Translation (which includes Problematization, Interessment, Enrollment and Motivation), Mobilization and Inscription.

Translation is the process of the alignment of the interests of a diverse set of actors with the