Chapter 7
Critical Analysis of the Roles of Actors in the Deployment of Software

Tefo Sekgweleo
Tshwane University of Technology, Pretoria, South Africa

ABSTRACT

Many organizations resort to software deployment with the intention to simplify their daily activities, and for competitive advantage. The deployment consists of two main phases, development and implementation. Unfortunately, software doesn’t always fulfil the organization’s intentions. This is attributed to numerous factors, some of complex nature, which happen among humans, non-humans, and between humans and non-humans actors during development and implementation of software. Case study research was conducted to understand the roles of actors, and how their actions and interactions impact the development and implementation of software in the organization. Actor Network Theory (ANT) was employed in the analysis of the data. The theory focused on activities including the negotiation among actors which happened within heterogeneous network.

1. INTRODUCTION

Many companies are in competition with each other for the same group of customers, overtime and space. The challenge to attract customers leads to increased competition, and engineer innovations. According to Watson et al. (2010:24), many companies adopted information systems (IS) for innovative purposes in order to improve productivity, save costs, and increase profits. Pappa and Stergioulas (2008:38) argued that software is often developed to support particular business functions of the organization.

Companies that provide the same types of products and services are more competitively challenging than those in a niche space. The high rate of competitiveness motivates companies to develop strategy in order to make a difference. According to Hough et al. (2008:4), a company’s strategy is concerned with growing the business, maintaining a competitive edge over rivals, attracting more customers, generating increased profit, and achieving targeted goals. Thus, software is intended to support and enable competitive advantage.

DOI: 10.4018/978-1-4666-8524-6.ch007
However, there are various activities such as human interactions and application of methodologies that are involved in the development and implementation of software. Avison and Fitzgerald (2006:35) argued that methodologies are vital to the development of software. In their preference for products Jain and Chandrasekaran (2009:32), argued that the types of methodologies that can be used in IS development include the waterfall model as well as spiral and evolutionary development models. Fitzgerald (2000:178) explained how methodology serves as a guideline in the software development process for organization benefit.

The development and implementation of software involve human and non-human actors. This is primarily because software comprises of various components. Each, or group of the actors have different tasks and responsibilities in the development and implementation of software. For example, Business Analysts are responsible for gathering business requirements, as well as compiling the functional design specifications (Avison and Fitzgerald, 2006:11). According to Satzinger et al. (2004:115), System Analysts design technical specifications which illustrate how the new system will function.

Both human and non-human actors work together as a collective to deliver software in accordance to organizational needs. Chen et al. (2010:240) argued that software consists of technical components and human activities and describe processes which are used to manage the organization. Actor Network Theory (ANT) focuses on the interactions between human and non-human actors within a heterogeneous network (Macome, 2008:155). Wernick et al. (2007:321) stated that irrespective of whether the actor is human or non-human they are both weighed equally as they offer the same contribution to the existence of the network.

2. RESEARCH APPROACH

The case study research method was employed in the research. According to Noor (2008:1602), a case study focuses on conducting an in-depth investigation into one or a few cases in order to gain a holistic insight about the phenomenon. The choice of the case study method was mainly because of the nature of the study, which required specific context of empirical enquiring. Parè (2004:233) defines a case study as “an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”.

The research was carried out in a South African financial institution, Bonolo Bank. The selection of the organization was based on three factors, namely, accessibility, proximity, and evidence of specialised unit for software development and implementation. The semi-structured interview approach was used for the data collection. A total of seventeen employees were interviewed over three months in 2011. The interviewees were conducted at different levels in both IT and Business units of the organization.

The moments of translation was employed in the data analysis. This is mainly because of strength to focus on negotiation and interactions of actors within networks. Iyamu and Tatnall (2009:22) posited that actors are allowed to make decisions in the creation of the networks in which they choose to participate. The moments of translation consist of components: problematisation, interessement, enrolment and mobilisation:

1. Problematisation. An Actor network can be formed to solve a problem or take advantage of a new opportunity. At this stage the main/focal actors are responsible for identifying problems and relevant actors to solve these problems (Greenhalgh and Stones, 2010:1287).
Related Content

A Specialized Evaluation and Comparison of Sample Data Mining Software
www.igi-global.com/chapter/specialized-evaluation-comparison-sample-data/58130?camid=4v1a

Processes, Events, and Temporal Relationships
www.igi-global.com/chapter/processes-events-temporal-relationships/25468?camid=4v1a

Organizational Maturity and Project: Program and Portfolio Success
Sergey Bushuyev and Olena Verenych (2018). Developing Organizational Maturity for Effective Project Management (pp. 104-127).
www.igi-global.com/chapter/organizational-maturity-and-project/200202?camid=4v1a

Innovation and Sustainability in SMEs
www.igi-global.com/chapter/innovation-and-sustainability-in-smes/202620?camid=4v1a