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institutions of higher education in less developed countries*

**ADOPTION OF LARGE SCALE GENERIC SOFTWARE  
APPLICATIONS IN INSTITUTIONS OF HIGHER EDUCATION IN LESS  
DEVELOPED COUNTRIES**

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## **ADOPTION OF LARGE SCALE GENERIC SOFTWARE APPLICATIONS IN INSTITUTIONS OF HIGHER EDUCATION IN LESS DEVELOPED COUNTRIES**

### **RESEARCH QUESTIONS**

#### **Major Question:**

Do Large Scale generic software applications transform Higher Education Institutions in less developed countries?

#### **Sub-Questions:**

- (a) What is the role of international agencies and other decision making structures in the adoption and embedding of LSGS in less developed countries?
- (b) Do adopters have the capabilities to adopt LSGS?
- (c) What are the power relations in LSGS implementation at local, organisational and national level?
- (d) What are the major concerns of sources of tension?

### **RATIONALE FOR WORK**

Information and communication Technologies have gained prominence in organizational and development thinking. This prominence is evident through the several policies and initiatives aimed at accelerating the adoption of ICTs and the numerous ICT projects implemented for development. The rationale for adoption of ICTs is usually presented in terms of bridging the digital divide, enabling the millennium development goals, and enhancing socio-economic development (World Bank 2002; UNDP 2001; DFID 1999; World Bank 1999).

Research on ICT for development however, has found that developing countries are still faced with many challenges in the adoption of ICTs. The literature on ICT adoption notes for example that many ICT initiatives and projects for development continue to fail (Heeks 2002; Avgerou and Walsham 2000; Walsham and Sahay 1999) and continuously fail to achieve the intended objectives leading to a massive waste of investment. Additionally, few studies have focused on the adoption of Large Scale Generic Software applications<sup>1</sup> in less developed countries particularly in Africa. Most importantly, given the fact that large scale generic software infrastructures are considered to be one of the most expensive and most difficult to implement to date (Pan et al 2003), it is important to explore the process of adopting such a technology in a less developed context and what the implications for development might be.

Further more, although numerous studies have been done on ICTs for development, the perspective that dominates the literature reflects economic and technical rationality with little attention on issues of user experiences of the adoption and use of ICTs in a less developed context particularly with regards to evolutionary ICTs such as the one being studied for this

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<sup>1</sup> Large Scale generic software applications here refers to commercial software packages that integrate the flow of information throughout the organization while automating core activities of the organisation

research and how these experiences may impact on the interaction between ICT and the organisation and ICT and development. In addition, the concept of development is itself problematic with sustained criticism and debate about what it constitutes (Kothari and Minogue 2002; Piertse 2001) and for failure of many development projects.

Given this context, the study seeks to understand to what extent ICTs can contribute to development. It does this by examining what actually happens in practice when ICTs are adopted for development in organizations in less developed countries. In particular, the study is designed to do the following:

- To examine how large scale generic software is embedded and institutionalised in organisations in less developed countries
- To examine the institutional forces that aid this process
- To investigate the experience surrounding its adoption and use in a less developed context.
- To identify the most appropriate theoretical framework for investigating the adoption and embedding of LSGS in organisations in less developed countries

## **RESEARCH METHODOLOGY**

The study is interdisciplinary and has adopted a holistic approach to capture the complexities involved in deploying ICTs for development. In light of this, the study draws on the Social Shaping of Technology approach (Mackenzie and Wajcman (1985) for its theoretical framework. SST offers different perspectives and concepts on the relationship between technology and society and recognises that the process of ICT adoption and use consists of a range of factors that frame the technological innovation. As such it can provide better understanding of the issues in deploying ICTs in a development context. The two conceptual tools being used are social construction of technology (SCOT) (Bijker 1997) and actor-network (ANT) (Latour 2005; Law 1991; Callon 1986).

The social construction of technology (SCOT) is being used to investigate the different meanings the different social groups attach to ICTs and to question the dominant deterministic view that ICTs lead to development. The constructivist school of thought views technological change as a result of choices and negotiations between relevant social groups who then influence the direction of the technology depending on their different interpretations of their needs and the functionality of the technology.

Actor Network theory is being used to provide an insight into the local and global actor networks that surround the ICT for development project for this research and is being specifically used to examine the embedding of the technology and to interpret the political processes of its adoption and use.

## **RESEARCH DESIGN**

### **1. EPISTEMOLOGICAL AND ONTOLOGICAL CONSIDERATIONS:**

A contextualised interpretivist approach is applied as the philosophical underpinning for this research. The ontological orientation of the research is constructivism which asserts that

social phenomenon and their meanings are continually being established by social actors (Bryman 2004).

## **2. RESEARCH STRATEGY**

The research employs case study design using a University in a less developed country in 'Africa and is explanatory. Case study enquiry is used to examine the contextual conditions of large scale generic software and the many variables associated with its adoption.

## **3. RESEARCH METHODS**

The research applies qualitative and quantitative methods in the collection, comparison and analysis of data and utilises 'method triangulation' (Mingers 2001) in order to compare and increase the validity of the final research outcomes (Oates 2006:37). To understand the process of adoption and the embedding of the technology, the research involves field work aimed at understanding the different, historical and cultural context within which large scale generic software has been adopted, how it is interpreted, and the implications from the study with regard to theory and existing research

## **4 THE DATA COLLECTION METHODS**

The data collection techniques applied are those usually associated with interpretive research in information systems. Document analysis and semi structured interviews. Documentary analysis is being used to examine the local, national, international and decision making structures and the broader global/international issues surrounding the adoption of ICTs and for assessing long term patterns. The Interviews are being used to explore the personal, group and divisional perceptions of and reactions to the adoption and embedding of the technology. These are being supplemented by questionnaires and direct observation of the actions directly related to the use of the ICT and diaries and notes I am maintaining.

## **SUMMARY OF INTIAL FINDINGS AND PLANNED ANALYSIS APPROACH:**

Initial findings indicate that the potential of ICTs for improving the institutional performance of Higher Education in less developed countries has been recognised and that there are some opportunities for cost savings and innovation that can be derived from adopting ICTs. However, initial findings also point to significant critical issues which adopters confront regarding quality of user requirements, weak enforcement of institutional policy which prevents certain systems function to be completed, cost overruns, project staffing, interaction between exogenous and endogenous actors and within endogenous actors, user attitudes and capabilities, work practices and other interesting issues that are of relevance to, vendors, donors and policy makers.

The research takes the adoption process as the unit of analysis. The contribution of ICTs to development would be better understood by examining this process, the relationships and the interpretations of the technology. The planned analysis approach is hermeneutics. The approach suggests how the meaning of a text or text analog can be understood. (Myers 1997) and would be a useful mode of analysis for this study.

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