CULTURAL INFLUENCES ON ERP IMPLEMENTATION SUCCESS

Xavier Thavaruban Thavapragasam [1]

[1] School of Computing and Information Technology,
Griffith University, Nathan, Brisbane, Australia.

ABSTRACT: The evolution of Enterprise Resource Planning (ERP) systems has been a highlight in the information systems (IS) literature since early 1990's. The growth of ERP systems has been enormous; however, the time and cost to implement ERP systems and other critical success factors have undermined its true capabilities. The literature suggests that the organisational culture is often over-looked while implementing ERP systems. Consequently, this research in progress paper is written to address the notion of cultural influences on user satisfaction with ERP implementation. Due to the diverse nature of ERP systems, the author is only concentrating on factors influencing at the post-implementation stage of ERP life cycle in a large Australian University. This interpretive study involves student administration staff as users and applies the theories developed by Hofstede's work on national culture dimensions to assess the users' satisfaction and subsequently address the importance of user satisfaction factor as a success measure for ERP implementation.

INTRODUCTION

ERP systems are regarded as the biggest technology move from the old legacy systems since early 1990s, while Chung & Snyder [CS00] suggest ERP systems have been a popular information technology (IT) in the changing business environment of the 1990s. Recently, the theme of ERP implementation failures has been a major topic of discussion and it is suggested that the organisational culture plays an important role while implementing ERP systems [Bee01], [Cha00], [SD01], [SKT00].

The goal of this paper is to address the notion of cultural influences on user satisfaction with the newly implemented ERP system in a large Australian University. Due to the scope of the research, the author is only assessing the factors influencing the users at the post-implementation stage of ERP life cycle. This interpretive study involves administrative staff users and intends to provide an in-depth analysis regarding their satisfaction by considering the organisational culture based on Hofstede's work on national culture dimensions. The following figure depicts the author's perspective on this research and identifies the three major areas and how they are inter-linked together to form a research investigation:
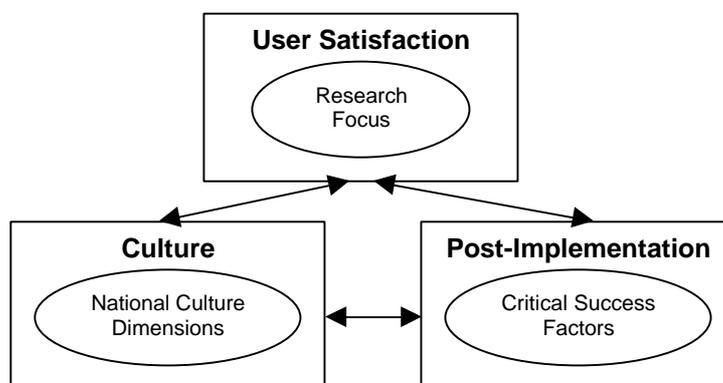

Figure 1. Author's Perspective on Research Study

The structure of the paper is divided into background literature, research question, research approach, theoretical framework and the significance of research, which outlines the intended outcomes. This

structure attempts to assist the reader in understanding the author's perspective and hence enabling the reader to view the research situation through the same lens as the author. But, it is important to note that the paper does not provide any information on results gathered or any final conclusions since this is a research in progress paper.

BACKGROUND LITERATURE

ERP was the major success stories of the 1990's [BGN02] and Davenport [Dav00] suggests that enterprise systems represent one of the most important information technology categories to emerge in the last decade. Esteves & Pastor [EP01] propose ERP systems as software packages composed of several modules, such as human resources, sales finance and production, providing cross-organisation integration of data through embedded business processes. Aladwani [Ala01] states an ERP system helps the different parts of the organisation and distribution with external suppliers and customers into a tightly integrated system with shared data and visibility [Che01].

Businesses today face a stark reality: anticipate, respond and react to the growing demands of the marketplace or perish [NLK01] and hence it is vital to develop a technology or a solution to overcome this demand. According to Nah et al. [NLK01] ERP systems enable a company to manage the efficient and effective use of resources. Carlino & Kelly [CK99] propose that the ERP market in the United Sates (US) will reach $66.6 billion by this year (2003) with an estimated compound annual growth rate of 32 precent over next five years.

Chung & Snyder [CS00] suggests that the top five vendors are SAP, Oracle, PeopleSoft, Baan and J.D.Edwards and these five vendors accounts for 61 percent of total ERP revenue [CK99]. They classify, with this continuation of steady growth, the ERP market will proceed to be one of largest, fastest growing and most influential in the application industry.

DeLone & McLean [DM92] suggest, that successful integration by management with the IS can be measured in terms of user satisfaction. While Greenbaum [Gre03] depicts that, one of the great ironies of the software industry is its historical indifference to customer satisfaction. The importance of user satisfaction is heavily addressed by Greenbaum [Gre03] as market forces are becoming increasingly compelling, foreshadowing a fundamental shift in the software industry that places customer satisfaction in the very top of the competitive checklist hierarchy. User satisfaction plays a major role in the post-implementation of the ERP life cycle and user satisfaction with the developed system has been widely employed by researchers as a surrogate for system success [Cav95].

Culture has different layers [SD01] and culture is always a collective phenomenon, because it is at least partly shared aspects with people who live or lived within the same social environment [Hof91]. ERP software packages that manage and integrate business processes across organizational functions and locations cost millions of dollars to buy, several times as much to implement, and necessitate disruptive organizational change [SKT00]. Skok and Döringer [SD01] suggests there has been an increase in reported ERP failures, suggesting that the implementation issues are not just technical, but encompass wider behavioural factors and Chatfield [Cha00] suggests that the organisation's culture and structure had a significant effect upon the implementation process.

The concept of cultural influences on work practices in the university are portrayed by findings gathered by Beekhuyzen [Bee01] as *"There's an overall general social culture that people get on but then a work discipline culture that is focused around the areas that people are interested in".* The IS literature on culture and ERP provides a general understanding of the possible culture concepts and its impact on ERP projects but these typologies of culture have inherent weaknesses and limitations [SD01]. Therefore, these limitations will need to be borne in mind as we consider potential cultural impact on the use of information systems, particularly ERP systems [SD01].

The ERP Phenomena has evolved so much in the past decade and it has been adopted by many organisations across the world. However, the debates over success and failure stories of ERP implementation are shown in Nielsen [Nie02] "the ways to fail an ERP implementation outnumbers the ways to succeed it". IS literature identifies the time and cost to implement ERP systems have undermined its true capabilities while debacles with ERP implementation failures have provoked serious consideration to identify factors influencing ERP systems success. Subsequently, identifying user satisfaction as a success measure is vital and organisational culture seem to have an influence

on users and how they interact with the system based on culture dimensions developed Hofstede [Hof85], their age, gender and past experiences from using similar systems.

RESEARCH QUESTION

Though this research involves ERP systems and organisational culture, the focus is user satisfaction. User satisfaction is being seen as the focal point of the research and literature on ERP and organisational culture is revolving around user satisfaction to form a solid backbone for the research. Thus the two primary questions addressed for this study as follows:

1. *Through the lens of organisational culture, what influences user satisfaction?*
2. *The significance of user satisfaction factor as a success measure for ERP implementation?*

End users vary greatly in their level of experience with end user development and in the amounts of training they have had to prepare for application development [CS96] and in addition to the questions mentions previously, the following questions have been used to aid the research further but not limited to:

- How do users perceive satisfaction with a system?
- What makes the users to deny or accept the implemented system?
- What are the users' cultural values (everyday work practices) in their specific department?
- How are these cultural values affected or impacted by ERP implementation?

RESEARCH APPROACH

This research is heavily based on user inputs to the system and a major focus is user satisfaction with regards to organisational culture. Hence it was imperative to select the right user group. It was also important to choose a group who has a high level of interaction with the system. Thus, the student administrative users (SAU) were selected to participate in the research. The SAU's are a very relevant user group for the research, as their every-day work cannot be completed without interacting with the system. They are very special group of people who seem to have a certain culture, which makes them and their department a perfect place to conduct the research.

User satisfaction refers to the attitude or response of an end user towards information, an information system or a development tool [MLL01], so the research on user satisfaction is taking a subjective idiographic approach as addressed by Burrell & Morgan [BM79]. In order to conduct this research on user satisfaction a qualitative research approach is adopted where semi-structured interviews, observations and documentation is used. Jick's [Jic79] triangulation technique is also used to validate the collated data and Coombs et al. [CDL99] suggest it can help in explaining diverging results.

Research Assumptions

Ontology studies the assumptions made about the phenomena to be investigated [IH92]. User satisfaction is measured by how successful the ERP implementation has been with respect to users' cultural values and hence this research is taking a subjective approach. Due to the nature of the research, semi-structured interview techniques will be used and thus the users shall openly assess the impact of ERP implementation on their cultural values. The users shall explore their own thoughts when it comes to assessing their satisfaction as much as possible while considering cultural influences on their everyday work practices.

Epistemological assumptions are interpreted more narrowly to concern the nature of scientific knowledge about the phenomena to be investigated [IH92]. The epistemological assumption for this research would be trying to understand the knowledge of user satisfaction with regards to ERP implementation and thus this research will take an anti-positivist approach as [IH92] suggests, anti-positivism maintains that the social world 'can only be understood from the point of view of the individuals who are directly involved in the activities which are to be studied' where as positivism seeks 'to explain and predict what happens in the social world by searching for regularities, causal relationships between its constituent elements' [IH92].

Data Collection & Analysis

Data collection for this research was conducted via three mediums: interviews, observations and documentation analysis. These three mediums played a vital role with the collection of real data and triangulation will be used to validate the gathered data. As [Jic79] promotes, the triangulation is the combination of methodologies in the study of the same phenomena. The triangulation technique for this research will be accomplished through the following means of research:

- **Interviews:** 30 – 50 minutes interviews with 9 SAU staff
- **Observations:** Two 90 minutes observations
    - Observation 1: During "Normal Time" – serving 40 – 100 students per day.
    - Observation 2: During "Busy Time" – serving 100 – 400 students per day.
- **Documentation:** Documentation on post-implementation procedures, SAU staff policies and procedures.

Currently, the research is at the data analysis stage as all data collection is completed. The NUD*IST data analysing software tool is being used to aid data analysis. Through the means of triangulation and NUD*IST software a comprehensive analysis and comparison will be performed. Thus, appropriate conclusions and recommendations for future research will be derived from the analysis.

THEORETICAL FRAMEWORK

As mentioned previously, this research attempts to apply Hofstede's work on national culture dimensions to assess user satisfaction. As [Har89] suggests, like all major social entities, Universities possess a cultural or symbolic dimension, which is not incidental nor separate from the structural elements of their organisation but separable only conceptually. Organizations have prevalent value systems, which are part of their organizational cultures [Hof85]. As for this research, the author is using Hofstede's work on national culture dimensions and applies the theory to compare with the existing culture within the users who were selected to conduct the research.

About two decades ago, Hofstede performed an extensive study on national culture and according to Ford et al. [FCM03] to define the construct of national culture. His argument was that in order to be able to act together, people must understand and be aware of the differences between cultures [FCM03]. According to [Mur99] the decision regarding organisational practices should be made on the basis of scores for a country across four national cultures as follows:

Power Distance: the extent to which the members of a society accept that power in institutions and organizations is distributed unequally [Hof85]. In this research, the author is trying to identify any power distance that might exist in the department or whether it is influencing users on what they do and thus influencing their overall satisfaction.

Uncertainty Avoidance: the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity, which lead them to support beliefs promising certainty and to maintain institutions protecting conformity [Hof85]. As for this research, different scenarios are been used to identify uncertainty avoidance. For example, are users' job types affecting the way they work and how they interact with the system? Such as full-time, part-time, casual or permanent positions.

Individualism Vs Collectivism: Individualism, which stands for a preference for a loosely knit social framework in society in which individuals are supposed to take care of themselves and their immediate families only [Hof85], as opposed to Collectivism, which stands for a preference for a tightly knit social framework in which individuals can expect their relatives, clan, or their in-group to look after them, in exchange for unquestioning loyalty [Hof85]. In this research, the author is trying to understand which technique is used most within the working environment and how it's affecting the staff and their satisfaction with the system.

Masculinity Vs Femininity: Masculinity, which stands for a preference for achievement, heroism, assertiveness, and material success; as opposed to Femininity, which stands for a preference for a relationships, modesty, caring for the weak, and the quality of life. In a masculine society even the women prefer assertiveness (at least in men); in a feminine society, even the men prefer modesty [Hof85]. As for the last dimension, the author is trying to discover which gender plays a bigger role within the working environment and how it's affecting the way they work.

Australia is a multi-cultural society and having defined Hofstede's work on national culture dimensions, it could be said that this research based on Hofstede's work on characteristics of national cultures can identify differences in culture characteristics within the user group, which may influence ERP implementation success. Skok and Döringer [SD01] suggest that the combined effects of cultural and process changes in ERP projects can produce serious detrimental effects on staff attitude. Hence this research study will examine user satisfaction with the implemented ERP system according to national culture dimensions.

SIGNIFICANCE OF RESEARCH

Allen and Kern [AK01] suggest that organisational culture is impacted by information systems implementation and hence this research is significant because of the influences the system has on the users, people and the organisation as whole. The purposes of theoretical and practical outcomes are to build and contribute the current literature on the research topic and to ease organisational problems associated with ERP implementation. Therefore, the intended practical and theoretical outcomes of this research as follows but not limited to:

Theoretical Outcomes

- Identify user satisfaction with the implemented ERP system.
- Provide unique insight into post-implementation factors of ERP in an Australian university.
- Contribute to the body of literature on organisational cultural analysis.
- Adopting national culture dimensions for organisational culture analysis.
- Promote cultural factors do impact on ERP implementation success.

Practical Outcomes

- Address the importance of post-implementation stage in the ERP life cycle.
- Considering cultural factors while implementing ERP systems.
- Importance of user satisfaction factor as a success measure for ERP implementation.
- Derive appropriate conclusions, which will benefit all parties involved in the ERP implementation process.

CONCLUSIONS

This paper can be seen as a status report on the ongoing research, which attempts to understand the cultural influences on ERP implementation success within an organisation and how the culture dimensions developed by Hofstede can be used to understand the different cultural settings which may exist among the users of the system. Therefore, the research focus is user satisfaction with the implemented ERP system in a large Australian University. This research study identifies the importance of cultural influences on user satisfaction with ERP implementation, as Olson [Ols01] suggests, when implementing technology, the management of human and organisational risk is not only more difficult that managing the technical risk, it is crucial to the success of enterprise system.

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