

The Role of Workarounds in Benefits Realisation: Evidence from a Field Study in Saudi Arabia

Research-in-Progress

Albayan Alraddadi

Taibah University, KSA/ School of Business and Economics, Loughborough University, UK

A.Alraddadi@lboro.ac.uk

Donna Champion

Cranfield School of Management, Cranfield University, UK

Donna.Champion@cranfield.ac.uk

Andrea Lagna

School of Business and Economics, Loughborough University, UK

A.Lagna@lboro.ac.uk

Abstract

Recent studies show that more than half of Saudi Arabian (SA) organisations fail to realise business benefits from their IS investments. This has been largely attributed to the contextual misalignment between information technologies and the needs of developing countries. In the IS literature on benefits realisation, the application of benefits dependency networks (BDN), have been established as being helpful in improving IS projects outcomes. This research investigates current IT development practice in SMEs in Saudi Arabia and reports on some of the challenges that these businesses need to overcome to achieve benefits from their IT investments. Evidence from the literature and a field study suggests that workarounds are widely used when implementing new IT, particularly to facilitate the continuation of embedded cultural practices. The paper argues that integrating the Theory of Workarounds into frameworks for benefits realisation would offer a useful conceptualisation of IT implementation practice to support businesses in developing countries such as Saudi Arabia to improve outcomes when investing in IT.

Keywords: Benefits Realisation, Benefits Dependency Network, Theory of Workarounds, Developing Country Context, Enterprise Resource Planning.

1.0 Introduction

Despite a considerable increase in information technology (IT) investments, the failure rate of IT projects remains high over the past forty years (Doherty, 2014). Information systems (IS) failure has been described as a global phenomenon. Shpilberg et al. (2007) report 74 percent of IT projects failed to deliver expected value. Similarly, a report by British Computer Society (BCS) indicates that only around 16 percent of IT projects can be considered successful (BCS, 2004). More recently, CHAOS report (2015) shows that between 2011 to 2015, only around 29 percent of IT projects worldwide are considered successful being delivered on time, on budget and with the required features and functions. The report indicates more than half (52 percent) of the projects are regarded as challenged projects which means they are delivered over budget, over time, or with unsatisfied results, while 19 percent has failed having been cancelled before completed, or delivered but never used (Hastie and Wojewoda, 2015). In developing countries (DCs), the level of IT failure is higher than the figures reported in developed nations (Heeks, 2002; Hawari and Heeks, 2010; Bitsini, 2015). For example, a recent study has estimated the failure rate of IT projects to reach 52 percent of the total IT investments in Saudi Arabia (SA) (Alfaadel et al., 2012).

Although many researchers have sought to identify the underlying factors for IT failure, resulting reasons are still divergent, complex and interdependent (Dwivedi et al., 2013; Dwivedi et al., 2015). Heeks (2002, 2006) has attributed the IS failure in DCs to the design-actuality gap between how designers of software in the western, industrialized nations have embedded 'best practices' that do not support the local actuality of DCs users. According to Barrett et al. (2001), most information technologies are primarily artifact of industrial societies in the developed world and have been introduced to DCs through a process of technology transfer. Yet, the literature suggests that software designed for application in industrialized countries is often incompatible with the context of DCs users in physical, cultural, economic and many other ways. This contextual misalignment is seen as a primary cause of IS failure in DCs (Heeks, 2002, 2006; Hawari and Heeks, 2010; Bitsini, 2015).

Consequently, there is a pressing need for establishing new ways of achieving fit between information technologies and the social contexts in which they are intended to operate (Doherty, 2014; Malaurent and Avison, 2015). Benefits realisation (BR),

also known as benefits management (BM), is one potentially important mechanism for ensuring contextual alignment between IT project and organisation's established practices (Doherty, 2014). BM refers to "the process of organising and managing such that the potential benefits arising from the use of IS/IT are actually realised" (Ward and Elvin, 1999, p.197). Yet, the approach is still in its relative infancy and might not be sufficient to ultimately resolve all practical issues (Ahlemann et al., 2013; Doherty, 2014; Coombs, 2015) particularly the issues associated with the design-actuality gap between the best practice embedded into imported ERP systems and the context of DCs organisations. Which may explain the low adoption of BR in DCs firms (Breese et al., 2015). Thus, the literature suggests BM tools need to be improved for effective application and greater adoption by organisations (Breese et al., 2015; Hesselmann et al., 2015; Doherty, 2016).

Emerging IS literature has introduced the concept of workarounds as a mean to make the technology works despites perceived contextual misfits and thereby realise IS benefits. For example, Orlikowski and Iacono (2001, p. 132) call for research on workarounds that "enable people to make dynamically complex systems work in practice". Alter (2014) formulates the theory of workarounds in IS and defines workarounds as adaptations, improvisations, or other changes implemented to overcome or minimize the impact of obstacles, exceptions, anomalies, or constraints that prevent the achievement of a desired level of efficiency, effectiveness, or other organisational or personal goals. The workarounds mechanism can be utilized by DCs organisations as 'local improvisations' to address the design-reality gaps between imported systems and the organisational context. Local improvisations include actuality improvisation which aims at changing local actuality to make it closer to IS design, and design improvisation which seeks to change the imported IS design to make it closer to DC user actuality (Heeks, 2002, 2006; Hawari and Heeks, 2010). The aim of this research in-progress is to explore how workarounds can potentially address the context incompatibility and therefore contribute to improved benefits realisation in DCs SMEs.

The paper will be structured as following. The first section will review the literature on SA SMEs context, benefits realisation and workarounds theory and identify the literature gap. Next, the research framework is introduced followed by research approach and methods. The paper concludes with the anticipated contributions of this ongoing study.

2.0 Literature Review

2.1 Contextual Factors Affecting ERP Implementation in SA SMEs

Enterprise resource planning (ERP) systems can be described as off-the-shelf packaged software designed to support generic rather than specific business requirements based on industry ‘best practice’ business processes (Strong and Volkoff, 2010). Finding the right fit between ERP systems and the business processes of the target organisation is critical for successful ERP implementation (Hong and Kim, 2002).

Yet, the literature and preliminary insights from ongoing case studies suggest that SA SMEs have a unique organisational structure and business practice that differentiate Saudi context from the best practice embedded into ERP systems which forms a potential source of system failure. These differences are evident in four dimensions discussed as following.

First, SA SMEs are mostly family-owned businesses run by different family members and sometimes with additional business partners (Al-Mahdi, 2009). This complex ownership influences the decision making process (Carlock and Ward, 2001; Kaslow, 2006) and how the ERP projects are planned, selected and implemented.

Second, in order to overcome the resource constraints, SMEs tend to work in a shared services environment and adopt shared IT investments. A sharing approach is believed to save expenses, increase resilience, overcome resource shortages, and enhances growth and survival among small firms (Chang and Hong, 2000; Hong et al., 2014; Choi et al., 2014). Again, this business practice often appears in family-owned businesses when different businesses are run by the same family. In this case, they prefer to share their business resources such as assets, offices, and business units including IT, finance and HR departments. Yet, this business model can bring about further challenges in terms of management, decision making (Kaslow, 2006), and IS planning and implementation (Choi et al., 2014).

Further, due to conservative traditional values, SA organisations operate in a gender-segregated environment where the female employees are working in a separated workplace (Alotaibi and Kuk, 2011; Alkahtani et al., 2013). Literature suggests female department often struggles with poor communication with male employees and do not usually get involved in the decision making process which may affect their

productivity and ability to engage with new technologies introduced in the workplace (Alkahtani et al., 2013).

Finally, SA SMEs have relied heavily on foreign workers. A recent government report shows 83 percent of the work force in Saudi private sector consists of expatriate (MLSD, 2016). This cultural diversity in a workplace can bring some disadvantages including an increase in the cost of training, dysfunctional conflicts, lost productivity, and difficulty to achieve harmony in group settings (Henry and Evans, 2007). Benibo (1997) suggests this conflict can reflect on the level of acceptance and use of IS in the workplace.

These distinct features of SA SMEs context can increase the challenge of achieving the benefits from ERP investments. This research seeks to learn how SA firms can bridge the gap between the system's best practice and their local conditions through the application of workarounds and thereby realise the business values from ERP implementation.

2.2 Benefits Realisation

Fundamentally, BR is an approach to plan and manage IS investment and increase the likelihood of its planned benefits being ultimately realised (Peppard et al., 2007). Business benefits from IS implementations can range from providing 'problem-based solutions' to address certain problems or constraints to 'innovation-based solutions' which aimed at creating competitive advantage for the organisation (Peppard et al., 2007). BM approach provides different tools, such as Benefit Dependency Network (BDN), to help planning how expected benefits will be delivered. BDN is a framework that explicitly links the investment objectives and their resulting benefits with the business, organisational and IS/IT changes required to deliver those benefits (Ward and Daniel, 2006; Peppard et al., 2007).

The investment objectives are the organisational targets agreed for the investment. Each objective will result in a number of benefits, and each benefit will then be associated with business changes necessary to realise those benefits. The business changes are linked to prerequisites called enabling changes and IT functions required to drive and enact desired business changes (Coombs, 2015). The resulting framework can then be used as a guideline throughout the IS/IT project lifecycle (Peppard et al., 2007). Aitken et al. (2015) suggest two main purposes for developing a benefits map.

First, to ensure the focus will mainly remain on delivering business benefits instead of solely considering the successful delivery of a new system. Second, the visual nature of the benefits map will allow key stakeholders to envisage the benefits and develop a plan to deliver identified benefits and indicate the order in which these benefits will be realised.

Although BDN combines elements support both the technical and organisational perspectives related to IS implementation (Ahlemann et al., 2013; Coombs, 2015) the framework does not give specific attention to the contextual issues that inhibit effective organisational change necessary for benefits achievement. Therefore, additional enhancements are required for the effective utilization of BDN framework and consequently improving BR practice (Coombs, 2015). The following section will further discuss the potential of workarounds mechanism to address the context incompatibility issues and improve BR approach.

2.3 Workarounds Perspective

A general sense of workaround is described as “when a path to a goal is blocked, people use their knowledge to create and execute an alternate path to that goal” (Koopman and Hoffman, 2003, p. 71). The researchers note that the introduction of IS within organisations often results in workarounds behaviour or use of the systems in unintended ways (Boudreau and Robey, 2005; Ferneley and Sobreperez, 2006; Azad and King, 2008). This often occurs with newer technologies, particularly ERP systems, which continue to be associated with the agenda of organisational transformation and assumed to represent a “hard” constraint on human actions (Boudreau and Robey, 2005).

Although system workarounds have been thought to bring negative consequences to the organisation (Ignatiadis and Nandhakumar, 2009; Ferneley and Sobreperez, 2006), emerging IS literature has highlighted some advantages of workarounds, particularly, the impact of workarounds on making the technology works (Orlikowski and Iacono, 2001; Malaurent and Avison, 2015). A group of IS researchers argues that workarounds, which might seem inherently ad hoc, can make the difference between system success and failure in many situations (Koopman and Hoffman, 2003; Azad and King, 2012; Malaurent and Avison, 2015; Röder et al., 2016). For example, Malaurent and Avison (2015) describe a case where an implementation of a French

multinational corporation's ERP system in its subsidiaries in China was largely unsuccessful due to the misfits between the features imposed by the ERP template and the Chinese context. Instead of completely resisting the system, the Chinese users worked around the misfits by inventing their own solutions which enabled the ERP system to be workable and accepted by both the users and management (Malaurent and Avison, 2015).

While workarounds have been criticized for being temporary means that have a short term effect, some recent studies suggest that technology workarounds can be institutionalized and persistent (Koopman and Hoffman, 2003; Kobayashi et al., 2005; Azad and King, 2012; Malaurent and Avison, 2015). Thus, a better understanding of the role of workarounds on IS implementation may provide a significant improvement in realising benefits from IS/IT investments in DCs SMEs.

2.4 Literature Gap: The Role of Workarounds in Benefits Realisation

Although former research acknowledges the fact that workarounds can be necessary for system implementation (Koopman and Hoffman, 2003; Malaurent and Avison, 2015) and how workarounds can be implemented (Alter, 2014), the literature is not clear whether or not these workarounds result in improved realisation of IS benefits. Further, some studies suggest a link between system workarounds and the benefits (e.g Koopman and Hoffman, 2003; Alter 2014; Malaurent and Avison, 2015; Li et al., 2017) but they do not examine the impact of different workarounds, social or technical, on the benefits derived from the system. Thus, examining how workarounds can be integrated with existing BR frameworks such as BDN is significant for the whole BR process.

Accordingly, this research initially investigates the contextual challenges encounter SA SMEs and lead to the implementation of workarounds. This will be followed by further exploration of how workarounds are triggered and developed during ERP implementation. Finally, examining the relationship between each type of workarounds, social and technical, and the realisation of system benefits.

The following research framework has been developed to guide the research to investigate how workarounds can potentially contribute to the benefits realisation from ERP investments in SA SMEs.

3.0 Research Framework

Figure 1 shows a prototype framework that combines BDN and workaround process. The main goal of this framework is to examine how can workarounds potentially contribute to the benefits realisation from IS/IT investments in DCs SMEs.

BR literature argues that effective organisational change is the cornerstone to deliver business benefits from IS projects. Thus, ‘inhibitors’ to organisational change caused by either contextual or technical issues should be addressed for successful IS/IT implementation. Yet, the original BDN framework does not emphasize on these inhibitors or how to address such issues (Coombs, 2015).

In the extended BDN by Coombs (2015), ‘inhibitors’ construct is added between ‘business change’ and ‘business benefits’ which would be a starting point for a workaround process to occur. This is based on the assumption that a workaround may be utilized once the inhibitors to business change emerge.

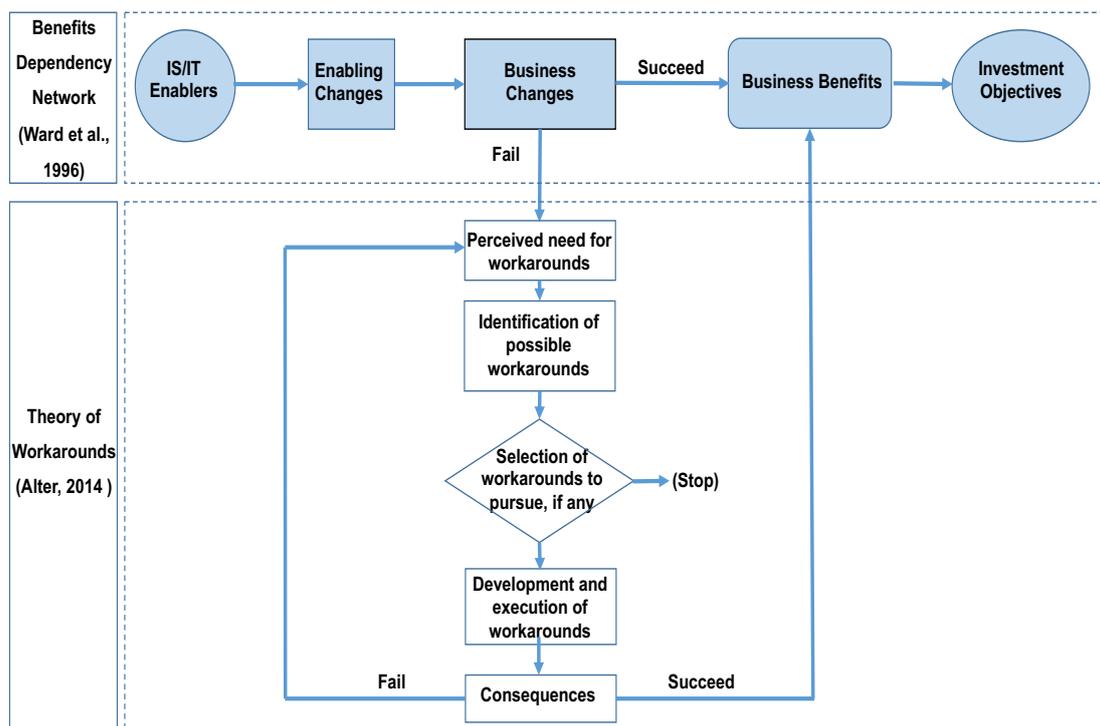


Figure 1. Workarounds for Benefits Realisation.

Alter (2014) describes the process of workarounds including several steps presented in italic. First, the context, in which the workaround occurs, comprises of both the *intentions, goals, and interests* of each individual in a work system and the *structure*

which includes the architecture and characteristics of the work system. ‘Work system’ refers to “a system in which human participants and/or machines perform work using information, technology, and other resources to produce products/services for internal or external customers” (Alter, 2014; p.34). These first two elements, individual goals and structure, are defining the context in which the workaround occurs, yet, an actual workaround will start when ‘*perceiving the need for a workaround*’ emerges (Alter, 2014). Thus, the first two steps are not included in the integrated framework. Next, *perceived need for a workaround* results from a combination of situational constraints, obstacles, anomalies and individual goals. This is followed by *identification of possible workarounds* taken into consideration their perceived costs, benefits, and risks in addition to other factors such as knowledge and ability for designing workarounds, and ethical considerations. Next step is *the selection of a workaround to pursue* based on the perceived costs, benefits, and risks of the alternatives. If no potential workarounds can be selected due to its cost, risks, long term consequences or ethical considerations, the process of workaround would stop. The following step is *the development and execution of the selected workarounds*. Finally, examining *the consequences of workarounds* is the last element of the process (Alter, 2014).

The framework assumes that if the consequences from workarounds were successful, then, they can be institutionalized and persistent (Koopman and Hoffman, 2003; Kobayashi et al., 2005; Azad and King, 2012; Malaurent and Avison, 2015), if otherwise, the process will start again to find alternative workarounds as a typical problem-solving process. This assumption is reflected by the two arrows emerging from the ‘consequences’ square.

As mentioned earlier, this combined approach of benefits management and workarounds has not been examined empirically in the literature and this study aims to address this gap. The framework is expected to be further improved by the completion of this ongoing study due to the application of western theory of workarounds in the context of middle eastern culture, SA in this instance, which forms a potential contribution of the research (Whetten, 1989; Davison and Martinsons, 2016).

4.0 Research Approach and Methods

This ongoing research is carried out using two critical realist case studies (Easton, 2010; Wynn and Williams, 2012). The approach basically seeks to provide “empirically supported statements about causation, specifically how and why phenomenon occurred” (Wynn and Williams, 2012: 789). This is consistent with the research questions that seek to understand how system workarounds can help to achieve business benefits from ERP implementation across net of SA SMEs. Adopting a case study strategy allows for an in-depth exploration of socio-technical phenomenon in relatively clearly bounded, but complex, context such as organisations or nets of connected organisations (Easton, 2010; Wynn and Williams, 2012).

Yin (2013) has identified three conditions for selecting a case study strategy. First, the type of research question; when the question is aimed at explaining ‘how’ or ‘why’, case study research will be relevant. Second, the level of control that the researcher has over the relevant behaviors of events. Third, the degree to which the research focuses on a contemporary issue. In this study, the research question satisfies these three conditions in that a) the research aims to answer the question of how workarounds can contribute to benefits realiation in SA SMEs, b) the relevant behaviors of phenomenon under investigation cannot be manipulated as the researcher has no control over the behaviour of SMEs, c) the study is aimed at exploring a contemporary issue associated with the implementation of ERPs across net of connected organisations, which satisfies the third condition.

4.1 Research Context

Two case studies are selected according to key criteria that reflect the unique organisational structure and business practice in SA context. First, the selected organisations are described as family-owned businesses run by different family members and have additional business partners. Both groups of organisations operate in a shared services environment where they share the same business units including IT, finance and HR departments with their sister companies and adopt shared IT investments. Shared technologies includes multi-company ERP, on-location ICTs infrastructure and services such the internet access, servers, devices, software and IT staff and supports. Further, both groups operate in gender-segregated environments where the female employees are working in a separated workplace. In addition, the

majority of work force in both groups are expatriate which reflect high cultural diversity in the workplaces.

The selected cases can provide a viable setting for answering the research questions because they reflect a typical SA SMEs characteristic which mean the result of the two cases can be of use to other SA firms. The two case studies are envisaged to enable in-depth understanding of how, in practice, SA SMEs try to fit with off-the-shelf systems, such as ERP, and find out what sorts of social and technical workarounds have been developed to achieve business benefits.

4.2 Data Collection Strategy

During the ongoing case studies, the data is collected in several stages. First phase of data collection comprises of 11 semi-structured interviews with different people across the organisational structure in both female and male departments. Interviews lasted between 45 and 90 minutes. This was combined with direct observation of the social and environmental conditions of the workplace and working practices. The aim of this exploratory phase is to identify the contextual issues associated with the local conditions of SA organisations which might influence the outcomes of ERP implementation. Data emerged from this phase was important to inform the research due to the lack of sufficient literature about DCs context in general and SA SMEs in particular (Alyahya and Suhaimi, 2013). The collected data was then transcribed and thematically analysed (Braun and Clarke, 2006) and combined with the literature to develop the research framework and relevant lines of research questions (Yin, 2013).

The second phase of data collection consists of two in-depth case studies to further investigate how workarounds can help SA SMEs to overcome the contextual misfits. Further interviews with a range of management positions and employees will be conducted along with retrospective review of organisational documents including business process, project initiation document, project plan progress reports and notes from the firms' IS development team meetings. The second phase is expected to reveal further insights into how social and technical workarounds have been developed and implemented during the system implementation to address contextual issues, as well as the impact of different workarounds on benefits achievement.

5.0 Anticipated Contributions of the Study

This ongoing research is anticipated to make a contribution to a growing body of IS literature on workarounds. Up to date, there is a lack of theoretically grounded and empirically tested understanding on the causes of workarounds and their impact on the implementation outcomes (Yang et al., 2012; Alter, 2014; Li et al., 2017). The study investigates how, in practice, workarounds can contribute to the benefits realisation in SA context which has witnessed a high failure rate of IT projects due to the gap between IS design and SA actual conditions. The research is expected to contribute to the theory of workarounds by investigating its application to developing countries context. The theory of workarounds and its process has been developed based on the practice of western organisations. Applying the theory to different conditions, in this instance middle eastern culture, may reveal new insights that help to improve the theory (Whetten, 1989; Tsui, 2006; Welch et al., 2011; Davison and Martinsons, 2016).

This ongoing research also contributes to benefits realisation literature. The study draws attention to the specific challenges encounter DCs organisations due to their contextual incompatibility with imported technologies. Current BR approach has not given particular focus to address contextual misfits. This study will further improve BR practice by integrating the concept of workarounds to support DCs firms to achieve IS benefits despite perceived contextual misalignment.

Finally, there is a lack of empirical investigation of IS implementation in SA SMEs (Alyahya and Suhaimi, 2013; Ebad, 2016). This study will add to our current understanding of the determinants of systems failure in SA SMEs and how they can be addressed to improve IT investment outcomes.

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