IMPACT OF HUMAN INTERACTION ON PROJECT SUCCESS –
A CASE STUDY EXPERIENCE

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ABSTRACT

The continued failure of development projects persists as an issue of central significance and concern within the IS domain. A significant factor is the intensive involvement of stakeholders in the development process. The theory is that such involvement cuts across organizational barriers, and that timely decision-making promotes project success. The empirical setting of this case study serves to inform on the theory represented in the literature.

Thus this study offers ‘rich insight’ into problems experienced that affected the project’s outcome. It examines the social nature of the human interaction and stakeholder involvement in design and development activities that impacted directly upon the development schedules. It further investigates the causal factors in terms of peoples’ individual mindsets, behaviour and attitudes that were problematic such that delays occurred.

Findings suggest that stakeholder control over critical decision-making activities prevailed over organizational driven strategies. The results of this case study are significant because they provide evidential insights into the phenomenon of stakeholder power and project success. Hence it provides meaningful insight for other similar development contexts within comparable project settings.
INTRODUCTION

The continued failure of development projects persists as an issue of central significance and concern within the IS domain. Literature posits that software development projects fail for the same reasons as they did 30 years ago, however there has been a shift away from criticizing the more IT related issues towards an increasing recognition of the impact of human interaction upon development projects. A significant factor is the inclusion of stakeholders within the design and development stages. The theory is that intensive user involvement cuts across organizational barriers reducing the effects of politics, and that timely decision-making leads to higher quality and greater business value that promotes project success (Beynon-Davies 1998, Beynon-Davies et al. 1999, DSDM 2001, Martin 1991, McConnell 1996) - however this was not held true for this research study.

In reality the interaction between the analysts and a multiplicity of system users (stakeholders) that is needed to provide a broad perspective of business activities and information introduces conflict (Beynon-Davies 2002, Cross 1998). However, there is no one question that can be answered but rather it is important to draw upon empirical research experiences from which validated conclusions can inform the IS domain. Although there are many examples of system failures from a technical viewpoint there are few papers within empirical settings that have studied the impact of how human aspects actually influence success, and this represents a key contribution of the paper. Indeed Fitzgerald (2000) states that it is the case that practice should inform theory thus the empirical setting of this case study serves to inform on the theory represented in the literature. Walsham (1995) further emphasizes ‘that interpretive case study can make a valuable contribution to both IS theory and practice’ (p80). A key aim of this interpretative study is to offer ‘rich insight’ into the problems that were experienced in terms of the human issues that affected the success of the development project. It examines the social nature of the human interaction in terms of stakeholder involvement, their behaviour and attitudes which impacted significantly on design and development activities such that delivery schedules could not be achieved and delays occurred.

Evidence posits that within this bureaucratic arena low levels of investment in social capital (Cohen & Prusak 2001, Putnam 1995) bound stakeholders to individualistic working cultures that undermined collaborative working and hindered the generation of trust necessary for development success. It is argued that ownership of crucial business processes sustained by organizational culture engendered a level of stakeholder authority that governed the decision-making activities and prevailed over organizational driven strategies. This was not only challenging for the case study arena but also had a direct impact on the project in terms of missed deadlines and project delay. Consequently there is a need to recognize the impact that this genre of ‘control’ can have on project success that has implications for practice.

Thus this paper proposes to increase the understanding of the difficulties of human interaction within the cultural and contextual situations of a bureaucratic environment. Hence it provides meaningful insight for other similar development contexts within comparable bureaucratic settings.
An interpretive research approach within a longitudinal case study setting that used an ethnographic method of qualitative data collection was adopted. The aim was to generate meaning from the data analysed such that emerging relationships can be explored to facilitate the identification of constructs and categories (Miles & Huberman 1994, Coffey & Atkinson 1996) that ultimately contribute towards theory building.

**RESEARCH APPROACH AND THEORETICAL SETTING**

There has been much debate about the types of research conducted within the IS domain (Benbasat & Zmud 1999, Davenport & Markus 1999, Lee 1999). Previously a predominantly positivist approach existed however since the 1980s there has been a shift towards a more phenomenological perspective involving qualitative methods (Myers 1999). This reflects the need to understand the meaning that lies within social interaction and in individual actions based upon peoples’ behaviour and attitudes that impact significantly upon systems development projects. It is necessary to explore why individuals act the way they do, and what common understandings and behaviour result (Hammersley & Atkinson 1983, Loftland & Loftland 1984, Myers 1999).

This research adopted an interpretive stance (Walsham 1997) within a case study setting that involved an ethnographic method of qualitative data collection considered suitable to both the research theme and the IS domain (Beynon-Davies 1997, Harvey & Myers 1997, Myers 1997, 1999, Loftland & Loftland 1984, Strauss & Corbin 1990, Yin 1993, 2003). Walsham argues ‘that there is need for much more work from an interpretive stance in the future, since human interpretations concerning computer-based IS are of central importance to the practice of IS, and thus to the investigations carried out by IS researchers’ (1995, p80). It is particularly suited to providing rich insights into the human, social and organizational contexts of information systems (Myers 1999). The inductive approach used enabled the researcher to collect data from primary and secondary research that would subsequently develop or contribute to theory as a result of the data analysis.

Although common criticisms of ethnography refer to its limited breadth – an in-depth knowledge of particular contexts and situations that restricts development of general models, Yin (2003) theorizes that as it is possible to generalize from one case study to theory it is therefore possible to generalize from one ethnography to theory. Additionally increased used of ethnography will facilitate development of general models (Myers 1999). Moreover, Klein & Myers (1999) propose a model of 7 principles that are grounded in one direction of interpretive philosophy (p87), that specifies the conduct and evaluation of interpretive field studies within IS that are pertinent to case studies and ethnographies. This paper acknowledges the model of principles put forward and aligns them to this research study. For example human understanding was achieved through iterative enquiry of both the 'parts' and the whole that they form in terms of individuals and the environment, context was achieved though the critical reflection of the social and historical backgrounds, sustained interaction occurred between researcher and subjects, the theoretical framework is concerned with generalizations of an ecological nature, dialogical reasoning was applied through the recognition of possible contradictions and preconceptions and subjected to subsequent cycles of revision. The ethnographic approach examined multiple interpretations and influences borne from the social
contexts and participant behaviour. Finally data gathered was examined in terms of social and political interests of the stakeholders to acknowledge socially created biases and distortions from participants.

In terms of generalizing conclusions drawn, Orlikowski & Baroudi (1991, p5) inform that ‘Generalization from the setting (...) to a population is not sought; rather, the intent is to understand the deeper structure of a phenomenon, which it is believed can then be used to inform other settings’. In support of this view Remenyi et al. (1998 cited in Saunders 2007) argue that there is no space for generalizability because of the dynamic nature of the world and its organizations but that it is necessary to discover “the details of the situation to understand the reality or perhaps a reality working behind them” (p84). Consequently this research study applied ecological validity that specifically relates to the extent to which conclusions drawn from this research case can be significant to comparable social contexts. Thus a ‘lessons learnt’ approach can be applied from a retrospective view for like developments in similar environments.

The case study concerns a UK Regional Government department (the Clients) that recently took on the devolved functions of managing the administration and expenditure of EC grants and subsidies to customers across the region through a number of Common Agricultural Policy (CAP) schemes. It consisted of longitudinal research over three years situated within the project environment. It involved a sustained period of fieldwork (9 months observations) in order to get close to the organization/participants being studied, and to analyse behaviour by observing events as did, or did not occur, in practice within their natural context (Silverman 1985 cited in Alvesson & Deetz 2000). Complementary to the ethnographic approach 126, 1:1 informal semi-structured interviews were conducted, audio-taped and respondent validated for added rigour and to offset unintentional observer bias (Alvesson & Deetz 2000, Patton 1990). Spontaneous discussions/conversations occurred during the natural flow of interaction between the researcher and project participants and recorded in the project diary (Patton 1990, Preece et al. 1998). A case study database was created (NVivo) to store and manage the range of data collected (Myers 1999, Yin 2003) that supports a more rigorous and fluid research process than manual methods (Richards 2002). Initial data analysis was driven by the data rather than the researcher and concerned ‘open coding’ that involved categorization of content into meaningful themes. Further investigation established how categories might inter-relate and link into sub-categories where data are further organized by reoccurring theme through axial coding (Orlikowski 1993). Data was differentiated such that it facilitated both factual and heuristic searching. Secondary research reflected an in-depth analysis of published literature and examination of project documents, discourse and artefacts that allowed cross checking, and was aimed at yielding a stronger substantiation of analysis and conclusions drawn. In addition the real-life context, experiences and commentary from individuals directly involved in the project provide meaningful insight and validity to the findings.

The researcher was granted entry into the project arena through the Project Board of the IS project and access was granted across the project environment and to the population of the project community. The researcher was effectively a ‘fly on the wall’, an outside observer, no action research was involved.
CASE STUDY BACKGROUND

The case study concerns a UK Regional Government department (the Clients) that is responsible for managing the administration and expenditure of the EC’s Common Agricultural Policy (CAP) schemes through a number of grants and subsidies. Due to the nature of the EU’s agricultural policy, CAP schemes undergo continual change, with new schemes being drafted as required. This introduces an evolving and dynamic nature to the business environment. Additionally each CAP scheme must comply with scheme specific EC legislation and regulatory control mechanisms. Scheme management was the responsibility of scheme specific Process and Scheme Managers. It was these Business Managers who attended to the business needs and administration of the schemes respectively.

The New IT System

The legacy system had a history of late payments, poor customer satisfaction and an increasing inability to meet the EC’s changing requirements such that the development of a New IT System was rationalized. The New IT System moves away from the previous individual scheme administration procedures towards a Generic Process Model. The aim was to integrate the core processes of the common activities of the separate CAP schemes (figure 1).

![Generic Process Model](image)

*Figure 1. The Generic Process*

*Source: Adapted from Project Ref DT.01.001.01*

The Project is described as large. Its size and complexity are reflected by an initial cost estimate of £10m+, a projected timeframe of 2-3 years, a core project team of 50+, and a customer base that is measured in terms of 100,000s of grant and subsidy applications per annum across the region. Due to severe delays with the development schedules the project went into overrun and is still on-going.

Organizational Culture

The culture of the UK Government Department can be characterized as bureaucratic. It is hierarchy driven, highly procedural and risk averse, operating within a regulated, and control oriented environment. Culturally were people were accustomed to precise patterns of working that required a high degree of job specialization. This was supported by a hierarchy of status differentials where decision-making was traditionally deferred up the management line. Evidence confirmed the existence of clear management lines of responsibility and authority, and work processes that were highly organized, compartmentalized and systematic. Thus information was inherently owned discretely and knowledge remained domain specific.
Development Environment

Development was outsourced to a commercial company but the project environment remained within a central location where both the Clients and Developers were co-located on the same site for the duration of the project. The Developers adopted their own in-house commercial Iterative Application Development (IAD) approach to promote a controlled, structured but flexible development method, which they believed was suited to the uncertainty of, and the continually changing business requirements. The Developers imported their customary technique of JAD workshops for requirements gathering purposes. The aim was to provide early visibility of the system being developed with the potential to incorporate user feedback, and the flexibility to handle new and changing requirements.

The project structure consisted of a senior management project board and teams of project workers with a pre-defined reporting structure. Teams were subject and specialist specific according to need that evolved in line with the project’s development. The project community refers to the Developers, the organization’s business people within the IS development arena and members of the Project Board.

STAKEHOLDER ISSUES

Extant research tends to focus on IS development project failures from a technical aspect rather than issues of social and organizational factors (Doherty & King 1998, Luna-Reyes et al. 2005). However the neglect of human issues in IS development is recognized as a major cause of IS/IT failures and is well documented. As far back as 1987, Willcocks & Mason argued that although human factors are vital to development they are often underestimated and under utilized in new systems development projects.

A view held is that user involvement in system development influences the success of development projects depending on the type and depth of user participation (Lynch & Gregor 2004, Baronas & Louis 1988, cited in Kappelman & Maclean 1991, Hirschheim, 1983, Beynon-Davies 1998). However it is argued that it is not possible to predict the impact that organizational stakeholders can have on project outcome. Literature reports that the potential impacts of stakeholders presents a significant problem because of the unpredictability of the participants involved and the multifarious perspectives, particularly negative ones, that can impact upon a development project and influence the eventual outcome (Doherty & King 2005, Ewusi-Mensah & Przasnyski 1994, Lederer & Nath 1991, Lyytinen & Hirschheim 1987). In fact Doherty & King (2005) raise the need for further research to ‘shed fresh insights into the nature of the organizational impacts of information technology’ (p2). However for this research study it was not the diversity of stakeholders that was problematic but rather the degree of control that key stakeholders had over the decision-making processes. These issues are fully discussed in later sections of this paper.
STAKEHOLDER INVOLVEMENT

There is much discussion within the literature regarding the definition and degree of user involvement (Barki & Hartwick 1989, Beynon-Davies 1998, 2002, Kappelman & Maclean 1991, Willcocks & Mason 1987, Ives & Olson 1984). Ives & Olson (1984) make reference to user involvement in terms of participative decision-making (PDM) that is particularly relevant to this research study where the scope of user involvement is expanded to a representative role such that Business Managers articulate and negotiate in the design and development of the systems specifications (Purvis & Sambamurthy 1997).

Additionally Barki & Hartwick (1989) refer to user participation in terms of the users’ performance of activities and user involvement as the relevant/importance of the system to the user. However this research seeks to emphasize the element of responsibility that the key stakeholders were subject to. This element goes beyond the inherent relevance of the system to users. It is linked to the level of blame and reproach that is involved for individual participants – it is an active involvement rather than a passive one (Santosa et al. 2005). For this research study the term ‘user involvement’ refers specifically to the Business Managers (Process and Scheme Managers) responsible for the separate CAP schemes, and other business users responsible for the day-to-day activities. This involved participative decision-making. Their degree of participation pertains to their involvement in the requirements elicitation activities that impacted upon the design and development activities of the IS and the eventual outcome of the project.

SOCIAL CAPITAL AND TRUST

In this paper it is argued that within this bureaucratic arena low levels of investment in social capital bound key stakeholders to specific working cultures that undermined the successful outcome of the project. As mentioned previously the organizational structure and working cultures are steeped in traditional hierarchical driven business policies and procedures governed through line management and a perceived blame culture.

Due to the mechanistic focus of organizational activity, social capital in organizations is relatively new (Cohen & Prusak 2001). Social capital is part of the fabric of organizational life. It is all the more important as organizations and their information and knowledge needs become increasingly complex (Cohen & Prusak 2001). For this research study it was the element of trust borne from the organization’s culture and social capital that is particularly relevant. Trust necessitates creating active connections amongst people to promote mutual understanding, and shared values and behaviours. It is this that contributes to better knowledge sharing borne from established relationships, common frames of reference, and shared goals. This in turn builds and generates trust that binds people together and facilitates cooperative, collaborative working and trust (Cohen & Prusak 2001).

Trust cannot be manufactured, and for this bureaucratic setting it was not a characteristic present within the project arena. Trust has to evolve through the interactions and behaviour of those involved. Moreover trust is fragile, it needs to be
maintained and sustained through daily activities. The following quotes illustrate the low levels of trust that were present within the project environment:

*I think it’s a shame that there is very little trust between us [the Developers] and the Business Managers, we are both at fault but they don’t trust us to do our jobs to their satisfaction.* Developer (18)

*It’s created a lot of problems, a lot of unease and a lot of distrust now, will we get what we need for our schemes to meet business and EC objectives …we’re very cynical.* Business Manager (11)

**STAKEHOLDER CULTURE**

Culturally, the bureaucratic patterns of working operated on a ‘one person, one job’ basis that engendered a sense of ‘ownership’ of key business processes. Thus specific skills sets and business knowledge belonged to individuals such that knowledge sharing was inhibited and problematic. As a consequence project development was affected by the inflexibility of participants’ mindsets, attitudes and behaviour i.e. they experienced difficulty in collaborative working and information sharing.

This was particularly evident in the JAD workshop sessions that were utilized for requirements gathering. The difficulties experienced moving from the previous individual working patterns towards the new integrated team-working environment coupled with an assumed ownership of the business processes meant that people experienced uneasiness in team workshops; they felt outside their comfort zone. Business Managers did not want to present their ‘thinking’ in front of their colleagues. Comments made by Developers illustrate this:

*There’s definitely an attitude of not wanting to criticize your boss... that would just be a comment that is not of the same opinion of your boss, that seems to be perceived as a criticism so there isn’t that openness of being able to comment or speak their mind.* Developer (6)

*The culture in government... where only one person speaks and they happen to be the most senior person in the room isn’t helpful...* Developer (9)

Business Managers were reluctant to voice opinions in workshops if their managers were also in attendance. They reported that they preferred to consider their ideas and their responses before making decisions in front of their superiors, as was the custom of their former work patterns. This delayed development work and frustrated the Developers for example:

*It was very frustrating we were trying to meet deadlines but this, well it just make it very difficult.* Developer (21)
Observations also confirm that development meetings where problematic and difficulty arose in the prioritising and subsequent scheduling of scheme development work. In development schedule meetings those Business Managers present believed their own priorities to be paramount and although required to make decisions, did not feel able to do so if they felt it was counter to their own individual agendas. This is illustrated through the following quotes:

... actually what happened was everybody was still saying ‘my priority is first, mine’s the first’, from 5-6 different Business Leaders. Developer Manager (12)

A further difficulty related to this issue was getting agreement from the managers about what was core to development and what was secondary Business Managers had difficulty in coming to a consensus due to their individual agendas. There is also evidence that for some managers cosmetic changes to the system were as important as getting a fundamental aspect of the system working. Business Manager would not sign off development work if it meant they could not meet their individual agendas.

When we started to try and get the Business to really prioritize and they couldn’t, they just couldn’t, because they were very schemes specific. Developer (1)

Even though the project consisted of an integrated development environment, the Business Managers were still working with mindsets of the former scheme specific management culture. Here it can be argued that the organization’s social culture sustained ownership of crucial business processes by key stakeholders this then promoted a level of authority exhibited through individual behaviour and attitudes. Business Managers were working to their own objectives.

STAKEHOLDER – DECISION-MAKING

Human interaction in terms of stakeholder behaviour and attitudes had a significant impact such that development deadlines and schedules were not met and this led to project delays. The difficulty in making the transition from the previous bureaucratic behaviour of referring decision-making up the line management hierarchy is attributed to the bureaucratic nature typical of most Government departments, where people perceived themselves to be working within a ‘blame culture’ environment. This was particularly visible where business users participating in requirements gathering were unable to make decisions without referral to the relevant Business Manager. They would withdraw from the meeting with a view to rescheduling at a later date. Similarly adherence to the former culture of owning business processes by the Business Managers hindered decision-making activities in terms of prioritising development activities that caused considerable delay and affected delivery schedules. As discussed previously this reflects the organization’s social capital where the organizational behaviour emphasizes control over processes and outcome rather than a investment in social capital.

The inability to make decisions about business needs was a key concern for the Developers who needed prioritization of development work to meet time-boxed development deadlines. Even the creation of ‘Business Champions’ responsible for key business/functional areas appointed specifically to make pragmatic decisions and
progress development forward proved a failure. Business Managers remained reluctant to make decisions.

... they were empowered to make decisions but they just couldn’t. It was very frustrating we were trying to meet deadlines but this, well it just make it very difficult. Supplier Developer (5)

... we were holding meetings and people would attend because they wanted to be involved but they actually wouldn’t make a decision. So we wanted to create Business Champions to start making decisions basically. The reasons that’s failed in most case, was because those individuals didn’t want to make decisions or couldn’t. Project Manager

It proved difficult to remove the perception of the blame status attached to decision-making activities, people were not willing to make decisions. Although empowered to make decisions, it was not enough, key stakeholders deferred or withheld decision-making. There had to be a willingness to make important critical business decisions – this willingness was lacking. The Project Manager reported:

The ability to make effective decisions ... people don’t particularly want to (I’m glad you are recording this actually) people don’t want to make decisions because they don’t want the blame attached to them if something goes wrong. Project Manager.

Evidence posits that within the development arena where decision-making was critical to development deadlines new behavioural attitudes and work patterns were required. It was necessary for the Business Managers and other business users to move away from previous siloed methods of working and adopt a more collaborative team approach that involved decision-making skills. This did not happen. Developers commented:

... we tried to have particular sorts of people in the role of Business Champions to be representative of not simply a Manager but somebody who was in a particular role, told they can take decisions ... that just didn’t work. Developer (8)

I think it’s very difficult to keep the Business on track during meetings, they do tend to wander off to talk to colleagues .... Developer (17)

However what is significant for this study is that stakeholders were actually able to influence decision-making activities. Their levels of authority and control borne from the organization’s philosophy of discrete working patterns of ‘one person, one job’ resulted in the ‘ownership’ of key business processes. Their command of scheme specific skills sets and business knowledge allowed them to govern decision-making activities of their particular CAP schemes. As a consequence Business Managers had a level of authority and control in decision-making that was critical to development schedules that undermined the successful outcome of the project.
CONCLUSIONS

This paper has attempted to offer rich and meaningful insight into how human interaction actually impacted upon the IS development project within the empirical setting of the case study. It examined issues with human interaction and stakeholder involvement in the design and development activities that impacted directly upon the development schedules. In analysis it was found that the organizational people maintained their former working patterns such that individual mindsets, behaviour and attitudes were problematic. As a consequence development delays occurred that affected the project’s outcome.

Findings highlight how working customs and practices gained through the organisational social environment influenced stakeholder behaviour and attitudes. The investment in discrete patterns of working was counter productive to, and at odds with the need for collaborative and co-operative team working. Within this bureaucratic environment where the organization had an inherent investment (social capital) in its processes and outcomes rather than in the human capital this then led to a situation where key decision makers were working to their own agendas to meet organizational goals. It is evident that stakeholders were subject to their own specific thinking patterns in relation to the former culture of 1 person 1 job. A corollary of this was that stakeholders, in particular the Business Managers, possessed a level of authority and control that governed the decision-making activities and which prevailed over organizational driven strategies. This enabled them to refuse or defer decision-making at will. If they were not willing to make a decision then they simply did not regardless of the consequences. Consequently there is a need to recognize the impact that this genre of ‘control’ can have on project success that has implications for practice.

Additionally the success of the development project was tempered by the fact that the scheme specific knowledge needed for requirements elicitation was embedded in the social worlds of the stakeholders who were fearful of the blame culture. This further impeded effective and collaborative decision-making. However, the reluctance displayed cannot be solely attributed to fear of the blame culture environment as evidenced by the contention that existed between the managers themselves in relation to the prioritization of development schedules.

A critique put forward refers to the absence of people management on the organizational side in workshops and development meetings. This meant that there was no one present with sufficient authority to impose decision-making and direct development activities. Consequently, people management is viewed as reactive rather than proactive and considered weak since the authority exerted was not sufficient or effective enough to handle the impact these issues had on initial development delays.

Hence this paper documents the need to recognize how individual stakeholder control over critical decision-making activities within the development arena has the potential to prevail organizational promotion of collaboration and co-operation. This paper emphasizes the need for interdisciplinary team working as opposed to individual specializations borne from culture. Thus there is a need to recognise the impact that this genre of ‘control’ can have on project success in terms of missed deadlines and
overrun that has implications for practice. The results of this case study are significant because they provide evidential insights into the phenomenon of stakeholder power and project success. Hence it provides meaningful insight for other similar development contexts within comparable project settings.

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