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Enterprise Systems - silos, power and software - an incumbent concoction

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Abstract

The implementation of either Enterprise-wide systems or ERP technology projects can create a wide range of major technical, business and operational changes. Whilst the role and importance of project management is well defined and accepted, many organisations struggle to both implement and adopt new technology. One of the key benefits of ERP technology is in its capacity to change the way organisations can develop enhanced cross functional and integrated processing and data management. However, internal stakeholders need or desire to change incumbent technology often crosses internal functional organisational boundaries and may induce behaviours that have considerable ramifications for project investment, delivery, and ultimately, user adoption. This study poses the question on how and whether internal political silos and expressions of functional power can influence or impact the delivery and adoption of ES technology. A study of eight enterprise sites and 37 participants suggests that a combination of functional divides or silos, replacement of incumbent systems and project environment may stimulate a range of organisational power behaviours that may operate negatively and subsequently impact delivery. There is a paucity of research on these variables and the study concludes that this is an area that warrants further research. However, power and control processes tend to operate invisibly and may be difficult to address. This study concludes that potentially, a key pre project control mechanism to combat political power issues involves the recognition, management, and effective deterrence may be through external robust governance design.

Introduction

Since 2000, Software as a Service (SaaS) products and services have shown a significant increase as more organisations deploy their hardware and software services to cloud based technology in attempt to reduce costs and support effort. McKinsey (2022) estimates that the entire global SaaS market could be worth \$10trn by 2030. However, the Standish Group Chaos Report (2018), published annually, reports that around 30% of software projects, of all types, will be abandoned; 16% will be deemed as successful - whilst 54% are described as “challenged”. The advent of SaaS applications may help reduce this failure rate as many are “pay as you go” software packages that often allow little or no customisation or change to the technology. It is difficult to define from research literature what success means. There have been several attempts to define this concept in Information Systems since the 1980’s. This has included Iron Triangle (Naughton and Barnes, 2013), Project Management Star (PRINCE2, 2021) and an array of CSFs or Critical Success Factors (Hughes et al., 2020, Seres et al., 2020), Information Systems Success Model or ISSM (Delone and Mclean, 1993). However, it has been suggested that “project success is likely to remain protean in nature; a difficult and elusive concept that means different things to different people” (Thomas and Fernandez, 2008, p.739).

There has been extensive recognition from research since the 1990s that user resistance is a key contributor to the difficulties that software implementation projects often experience; when

combined with technical and system process complexities the failure risks to organisations can escalate rapidly. Kerzner (2014) identifies these elements as compounding the risk of project failure – and suggests a range of palliative recovery suggestions. However, this study posits that one of the key areas of vulnerability in any project management, organisational governance or commercial management environment is in the expression of both internal power and political control over projects of this type. This study will identify the negative outcomes that internal stakeholder power politics can induce and presents evidence that the both the development and ramifications of these controls often hide in plain sight.

These functional power controls operate often invisibly to the organisation but, as this study will suggest, the identification, management and perhaps control of these power bases are necessary to ensure that systems investment projects deliver for organisations. This study both suggests and concludes that there is significant disaggregated research evidence on the management of the internal political environment during projects, if this could be coalesced and structured, may provide considerable guidance to organisations implementing Enterprise Systems. This study also suggests that recognition of power bases and the associated organisational impacts are often identified prior to project commencement and are often just acknowledged - as opposed to formally managed. This study did not focus solely on ERP applications – but covered sites both with large ERP implementations – and those with considerably smaller business critical enterprise applications. This study takes a broad definition of enterprise technology: “Enterprise systems (ESs) are large-scale application software packages supporting business processes and decision making in organisations. Examples of this type of systems are enterprise resource planning (ERP) for supporting operational business processes, customer relationship management (CRM) for supporting customer-facing activities, and product lifecycle management (PLM) for supporting product design and configuration management” (Comuzzi and Parhizkar, 2017, p.2241, citing Bhattacharya et al., 2010; Shang and Seddon, 2002).

For individual organisations embarking on an ES/ERP implementation, this study posits that early, front-end recognition and management of the impact of enterprise applications on organisational structures and associated power bases could markedly influence both system adoption and implementation outcomes.

Previous Research

Organisational Power, Politics and Impacts

There is a vast array of research on the role of politics, power and associated organisational culture. Organisational politics has been described as being “all about manipulating organisational policies and values to again undue advantage over others using self-serving behaviour or action” (Gaji et al., 2021, citing Olatunji et al. 2015).

Cacciattolo (2015) takes a very differing perspective in that there are both positive and negative elements to both organisational power and politics. On the positive side it can be seen as creating an environment that can help resolve organisational stress and provides a means for working through conflicts within organisations. It is also suggested as helping to improve

learning (Coopey and Burgoyne, 2000). Vigoda-Gadot and Kapun (2005) see a wide range of positive elements that includes helping advancement and achievement of organisational goals.

However, there is a considerable volume of research that identifies negative outcomes (Cacciattolo, 2015, citing Gotsis and Kortezi, 2010, Vigoda-Gadot and Kapun, 2005). Cacciattolo (2015) refers in particular to the development of mistrust, a point reinforced by Gaji et al.(2018). It is also suggested that it is possible to “argue that employees need to be appropriately politically skilled in order for ideas to flow from one process to another”. (Cacciattolo, 2015, p.127 citing Lawrence et al., 2005). To this extent, Cacciattolo (2015) theorises that internal political dialogue may be the key to improved cross functional process management. However, research all suggests that: “organizational politics is an elusive type of power relationship in the workplace. It represents a unique domain of interpersonal relations, characterized by the direct or indirect (active or passive) engagement of people in influence tactics and power struggles. These activities are frequently aimed at securing or maximizing personal interests or, alternatively, avoiding negative outcomes within the organization” (Gaji et al, 2021, citing Vigoda-Gadot, Eran and Talmud, 2010). Gaji et al. (2021), from an empirical study, suggest that workforce diversity may be a key factor that may help to reduce the impacts. However, their study conclusions contradicted earlier studies by Pfeffer (1981) and Mishra and Tripathy (2016) in that for individuals who seek to exercise power, people have to behave politically to acquire that power. However, Gaji et al., (2021) concludes that the exercise of this power can create anxiety and lead to a reduced employee commitment. This finding was also supported by Riaz (2020).

Tan et al. (2020) take an approach that suggests that an ERP implementation in particular “evokes sensemaking because it disturbs the existing understandings of an organization – and therefore perhaps organisational perceptions” (Tan et al., 2020, p.1777, citing Maitlis and Christianson, 2014; Mantere et al. 2012). Sensemaking is defined as referring to a refers to “a process, prompted by violated expectations, that involves attending to and bracketing cues in the environment, creating intersubjective meaning through cycles of interpretation and action, and thereby enacting a more ordered environment from which further cues can be drawn” (Tan el. 2020, p. 1774, citing Maitlis and Christianson 2014). Whether this sensemaking approach resolved Tan et al. (2020) study issues is unclear. However, studies have also focused on sector specific ERP political impacts. This was also identified by Goodwin (2010) in a study of University ERP implementations and Boonstra (2006) from a food manufacturing study site. Stellingwerff (2020) also focused on project power structures and organisational control in manufacturing: “the centralized approach within a large company has meant that the power and interest of internal stakeholders in the production/sales interface did not have a significant impact on the decision-making process” (Stellingwerff, 2020, p.3).

ERP Implementation Studies

Research on the causes of ERP and ES implementation studies is considerable and has often focused on Critical Success Factor analysis which represents abroad spectrum of key delivery elements for example Al-Fawaz et al. (2008), Alsulami et al. (2016), Baccarini and Collins (2003), Bhatti(2005), Desalegn and Pettersson (2018), Gheni et al.(2017), Huang et al. (2018), Iriarte and Bayona (2020), Hong and Kim (2002), Hughes et al. (2020), Vargas and Comuzzi (2019), Wolters

et al. (2018), Yildirim and Kusacki (2018). Most significantly, most CSF studies site top management support as a key factor. Thus study will challenge these findings – it is difficult to envisage a situation where management would not support a major investment organisational investment. This study also critically suggests that “top management” may mean many things within organisations. An early paper by Fontana and Neto (2009) also highlighted a range of implementation issues with ERP systems.

Dery et al. (2006), in an early paper and through a broad conceptual study, suggested that ERP studies have focused primarily on functional and implementation capabilities. They propose there were four perspectives in the literature at that time - the theoretical orientation, the empirical orientation, the critical-emancipatory orientation, which deem to “critically evaluate the relationship between IT and forms of organisational power relations” (Dery et al., 2006, p. 206); and, finally, the pragmatic-interventionist orientation which “oriented more towards identifying ways of informing practice which might enhance the outcomes of ERP” (Dery et al., 2006, p. 207). They conclude that; “they highlight the significance of ERPs in terms of their consequences for the structure, nature and management of work, and examine a number of hitherto under-explored and important factors that may contribute to understanding the human and organisational implications of ERP implementation and use” (Dery et al, 2006, p. 211). This conclusion suggests that a deeper understanding of organisations and their associated structures is key prior to commencement of ERP technology implementations - a factor this study supports.

Management and Leadership

One of the key areas in any research on organisations is on the role of individual and organisational management and leadership. Recent research has started to focus on manager personal characteristics as a component of leadership effectiveness. Research by Zaman et al. (2018) focused on the importance of effectiveness of social/political skills of project managers; Blickle et al. (2020) in an empirical study concluded that many managers may be able to successfully hide Machiavellian behaviour “we found that individuals very high in MACH and high in political skill did not tend to avoid engaging in overtly mean behaviours toward others and extracting organizational resources at short tenure” (Blickle et al., 2020, p.32). Critically, this study challenges these findings in that the definition of what s Machiavellian is complex and may have more in common with psychopathy in some cases. This is a complex research area though this study recognises the impact of individual personality traits in organisational behaviour.

Cross Functional Impacts

Implementation of ES/ERP technologies often crosses existing status quo functional business unit boundaries; both workflow and accountabilities may need to change with the new software capability to enable it to function more effectively. It is suggested that “New ERP systems enhance information coordination, by integrating data flow across different departments; previously working in “silos” due to a lack of system integration” (Ali and Miller, 2017, p.667). Hassan and Mouakket (2018) specifically focus on the impacts of ERP technology on organisational politics particularly where the implementation emphasis is on the accounting modules.

Chang (2014) also suggests an examination of how organisation members attempt to gain power, secure their self-interest and avoid responsibility relates to their “political behaviour” during the implementation of information systems. Coad and Glyptis (2014) highlight that political behaviour in organisations rests on feelings of trust among people and on the system itself”. There was also early recognition that the key elements of ES and ERP applications is in their capacity to deliver improved, effective cross functional processes and improved data and management capabilities (O’Leary, 2004).

Wongchotewiriyakit and Ractham (2018) also conducted a study in to specific activities that could improve cross functional integration with ERP systems in particular; they conclude that this may be a function of senior management activity – and restructuring the organisation. However, critically, the latter option is likely to be significantly more complex politically.

Organisational Silos and Power

Aamurusco (2016), defined organisational politics as the “exercise of power and described the attempts of organisation members to support or resist policies, rules or other decisions affecting them. Power and politics contribute to shaping ongoing organisational processes” (Pfeffer, 1981, no page). However, inductively, this assumes, to some extent, that organisations are originally functionally divided or siloed prior to project initiation. The concept of an organisational silo was suggested in the late 1980’s and describes a situation where: “People across the organization do not share common goals. Their goals are primarily functional” (Ensor, 1988, p.16.). The term is also suggested as “An attitude that occurs when several departments or groups do not want to share information and knowledge with other individuals in the same company” (Mohapeloa, 2017, p.1). There is also a suggestion that the concept of an organisational silo term is: “Often used in practice but has not been thoroughly researched” (Cilliers and Greyvenstein, 2012, p.2). They further suggest this concept may simply be a metaphor for organisational dysfunction and fragmentation; they also propose that this generates: “Feelings of disconnection” within the workforce (Cilliers and Greyvenstein, 2012, p.3). Fenwick et al. (2009) take a differing view and suggest that silos are a harsh reality of organisational life: “Silos are organisational units where there is a breakdown in communication, co-operation and co-ordination with external parties...Silos can arise within organisations, a result of silo mentality...silos are often detrimental to the resilience of organisations and communities” (Fenwick et al., 2009, p.ii).

It is widely recognised in organisational research that these behaviours can create negative impacts commercially, individually, organisationally and technically (Alter, 2015, Cilliers and Greyvenstein, 2012, Fenwick et al., 2009, Mohapeloa, 2017). It has been suggested that power base divisions between functions may devolve in to a series of project integration stumbling blocks: “The three largest stumbling blocks at the departmental borders are addressed. First, gaining the support of important partners, second, eradicating ignorance about the natural goal conflicts between departments inside the company and lastly, the discrepancy between own and external views of the different functions” (Schutz and Bloch, 2006, p.42). However, whilst recognising the impact of the issue, their paper offers little advice that a practitioner can deploy to both identify and overcome these issues prior to initiating a major project. In an earlier paper, Legare (2002) conducted a review of organisational factors in helping realise the benefits of an ERP; the study concludes that a key step is in the recognition of new ways of working, the redesign of processes and re-aligning the organisational structure and, by default, organisational power bases. Research by Skoumpopoulou and Moss (2018) on a silo study of two ERP

implementation sites also suggest that some form of pre-ERP project effort is required as one company faces: “ERP failure in adoption but will jeopardise their progress through cultural transformation as a result of adopting their old identity as a “power culture” (Skoumpopoulou and Moss, 2018, p.275).

An early case study data suggested, bluntly, that: “There was a human and organisational problem (inadequate management of organisational politics), which wasn’t addressed because of another human and organisation problem (perspective of ERP as just a technical system) which instigated the technical problems (difficulties in operating effectively with systems functionality and frequent changes in requirements).” (Dawson and Owens, 2007, p.11). An earlier paper makes a more robust conclusion: “ERP-implementation can impact the interests of stakeholders of the ERP-system and how these groups may react by influencing the course of events, for example by altering the design and implementation in ways that are more consistent with their interests” (Boonstra, 2006, p.38). Research also suggests internal functional power bases often sense that proposed organisational structural and power changes may be significant - and therefore creates considerable animosity: “Once it became clear that implementation of the system as planned by the project would have involved such impact, they then worked to destroy it and pursued other options for system improvement” (Hart and Warne, 2007, p.165).

Finally, Kerzner (2014) examined the contributing factors to systems project failure. A key area of focus was on the role of governance or project control mechanisms. Kerzner (2014) highlights the fact that governance bodies may often populated by managers or executives who may have specific interests: “Governance team members allow politics to influence their decisions, such as the timetable for announcements or how the project will impact their community...New members bring with them hidden agendas” (Kerzner, 2014, p.93).

Research Methodology

This study collected primary semi-structured interview data from 8 participating sites, 9 projects and 34 individual respondents though with nine projects (one site had two investment projects). Philosophically, this research adopted an inductive, qualitative approach as a means of identification of additional quantitative research (Bryman, 2012, Creswell, 1994). This study opted to deploy a Heideggerian perspective (Reiners, 2012) which recognises researcher previous knowledge as opposed to Husserl (Reiners, 2012) descriptive qualitative approach.

Potential participating sites were part of a maximum purposive sampling technique. (Acharya et al.2013, Sharma, 2017). The objective was to identify and engage with sites from a cross section of sectors that may have deployed or be about to deploy enterprise technologies. This would include commercial or manufacturing, government and academic or educational establishments. Site codes and organisational descriptions are at Figure 1.

Respondents were all employees from participating sites but often with widely varying functional backgrounds; a key component of the decision to use an initial qualitative approach. Their individual experiences would rely on both previous project knowledge and level of participation. All participants were interviewed for a maximum of one hour. Participant site coordinators for the study identified and provided the initial engagement with respondents. The study focused on engaging site that were either pre or post project stages.

Acquiring participating sites was complex; several potential survey sites withdrew as early engagement suggested that there was a reluctance to discuss project details, particularly if the project had failed to be fully implemented or abandoned. Participating sites were provided with guidelines on the spectrum of respondents that the study would seek to engage to collect the data. Each site identified staff willing to participate that met the specified criteria. All organisations were UK based.

Target respondents could include:

- a) Governance staff – executives and steering group members.
- b) IT Managers.
- c) CEOs.
- d) Site seconded Project staff – either early project initiation stage or post project participants.
- e) Operations staff – managers and system users.
- f) System Support staff.
- g) Project manager – if in place or closing a project.

Participants were provided with the title and objectives of the study in conjunction with a consent form. These were collated prior to the site visit. A profile of the respondents and their employment categories are at Table 2 and Graph 1 at Figure 1. Several respondents had been engaged in multiple roles often with differing implementations on the same site. The graph on Figure 1 reflects that 50% of participants were “hands on” users a critical element of the analysis.

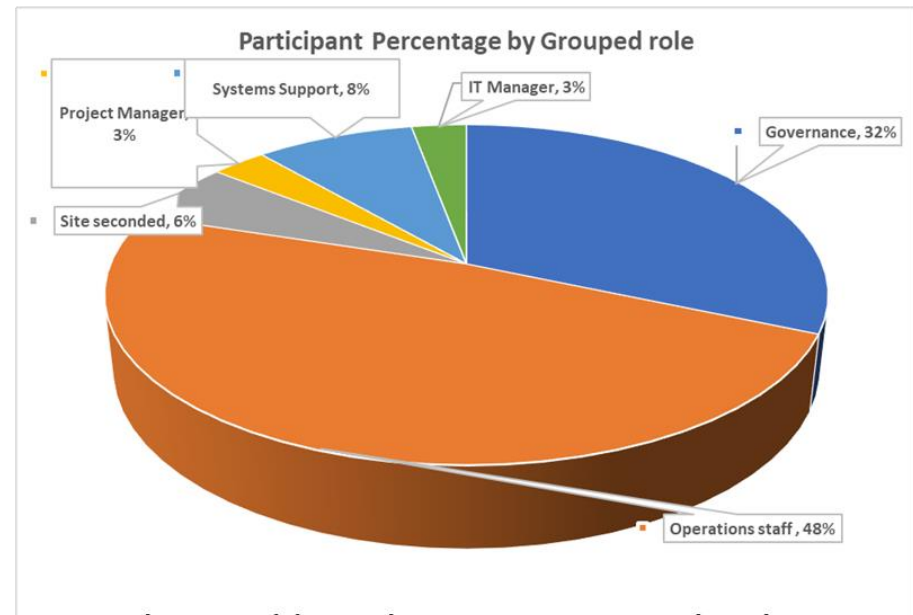
Data was collected from sites at both the pre and post project stages of project evolution development. Interviews were digitally recorded if the respondent approved and electronically transcribed to text. Both interviews and transcribed text were reviewed simultaneously to clarify key elements of the transcription and to correct as appropriate. Data collection was cross-sectional in approach.

Site Code name	Stage	Organisation Type	Description	Interview count	Notes
CSERVProj1	Complete	Commercial	Field service application	6	Interviewees covered both systems
CSERVProj2	Initiated	Commercial	Customer Contact Application		Interviewees covered both systems
PUBERP1	Initiating	Governmental	Full ERP	1	Conceptual phase initiated
EDMPUB	Complete	Governmental	Full enterprise non ERP application	6	Re-run implementation effort after several attempts
EDMMGT	Initiating	Educational	Enterprise Educational admin	6	Front end closing and initiation commenced
EDRPA1	Complete	Educational	Full ERP	7	Full ERP implementation
EDRPA2	Complete	Educational	Full ERP	8	Full ERP implementation
MAN01	Complete	Manufacturing	Full ERP	1	Perceptions from merger/multi site implementation.
WFLO01	Complete	Commercial	Full integrated Enterprise workflow application	1	PM interview - company now closed, 2.5 years after implementation.
Total				36	Interviews c. 1hr duration.

Table 1 – Site codes by type.

Sector	Stage	Site	Position Group	Percentage of total participants
Government	Post	EDMPUB	Operations staff	11.1%
			Governance	2.8
Commercial	Pre	PUBERP1	IT Manager/CIO	2.8
			Governance	5.5
	Post	CservProj2	Governance	5.5
			Operations staff	11.1
Academic/Educational	Post	MAN01	Governance	2.8
			Governance	2.8
			Governance	2.8
	Pre	EDMMGT	Governance	2.8
			Site seconded	2.8
			Operations Staff	11.1
	Post	EDRPA1	Project Manager	2.8
			Governance	2.8
			Site seconded	2.8
			Operations staff	11.1
	Post	EDRPA2	Systems Support	2.8
			Governance	8.3
			System Support	5.5
			Operations staff	2.8
Total				100%

Table 2 – Participants by percentage work category.



Graph 1 – Participants by percentage grouped work category.

Figure 1 - Demographic Analysis

The approach to qualitative data analysis was via a thematic approach (Braun and Clarke, 2019). A key benefit of this approach is that it provides for a comprehensive methodology that analyses communicated textual information with the intent of identifying evolving themes from the raw data. Similarly, thematic analysis also provides the capacity to develop more structured relationships within and between themes in the textual data. To enable this analysis, given the volume of transcribed textual data, NVIVO software was deployed to evaluate if thematic patterns existed within the data; this was the most suitable option given both volume and complexity (Braun and Clarke, 2019). Thematic, categorical and code analysis utilised Vaismoradi et.al (2013) approach.

The data was then analysed via use of the Gioia Methodology (Gioia et al., 2013) that identifies code level patterns and aggregates through a first, second and third level grouping. The study Gioia analysis (Gioia et al., 2103) is at Figure 2.

Study initial overall findings are encapsulated in an Ishikawa Fishbone diagram at Figure B. This diagrammatic model is used for representation of diagnostic cause and effect. The original use of Fishbone diagrams was deployed as part of TQM or Total Quality Management methods and statistical process control. However, the role of cause and effect has a limited fit in qualitative analysis (Maxwell, 2012) and has been re-termed by this study as antecedent and outcome. The study objective is placed to the right of the diagram and key data summary linkages, against a high-level variable or potential theme suite of fishbones. The diagram at Figure 3 highlights the key findings that relate to power and institutional control.

The combination of Nvivo data analysis, antecedent and outcome development and the Gioia Methodology created a three-dimensional view of the data. From this high-level analysis, a number of key themes emerged. These are at Table 1.

Top level theme	Sub theme	Description
Power	Functional authority	Functional business areas exerting schedule control.
	Customisation	Pressure applied to the project to allocate resources to
Institutional Control	Project Initiation	How the investment evaluation is managed and decisions made.
	Levels of internal support	Management support to the project.
	Potential cross functional changes invoked by the change.	Realisation that new technology operating may alter existing power structures and boundaries.

Table 1 – Top level themes and categories

Textual theme analysis revealed several key patterns around the impact of procurement process – particularly on those sites in the post project implementation phase.

This study deployed triangulation (Flick, 2004, 2007) using several site participants to validate the findings. Findings have also been reviewed and validated by a senior IT executive participant on a separate interview and discussion.

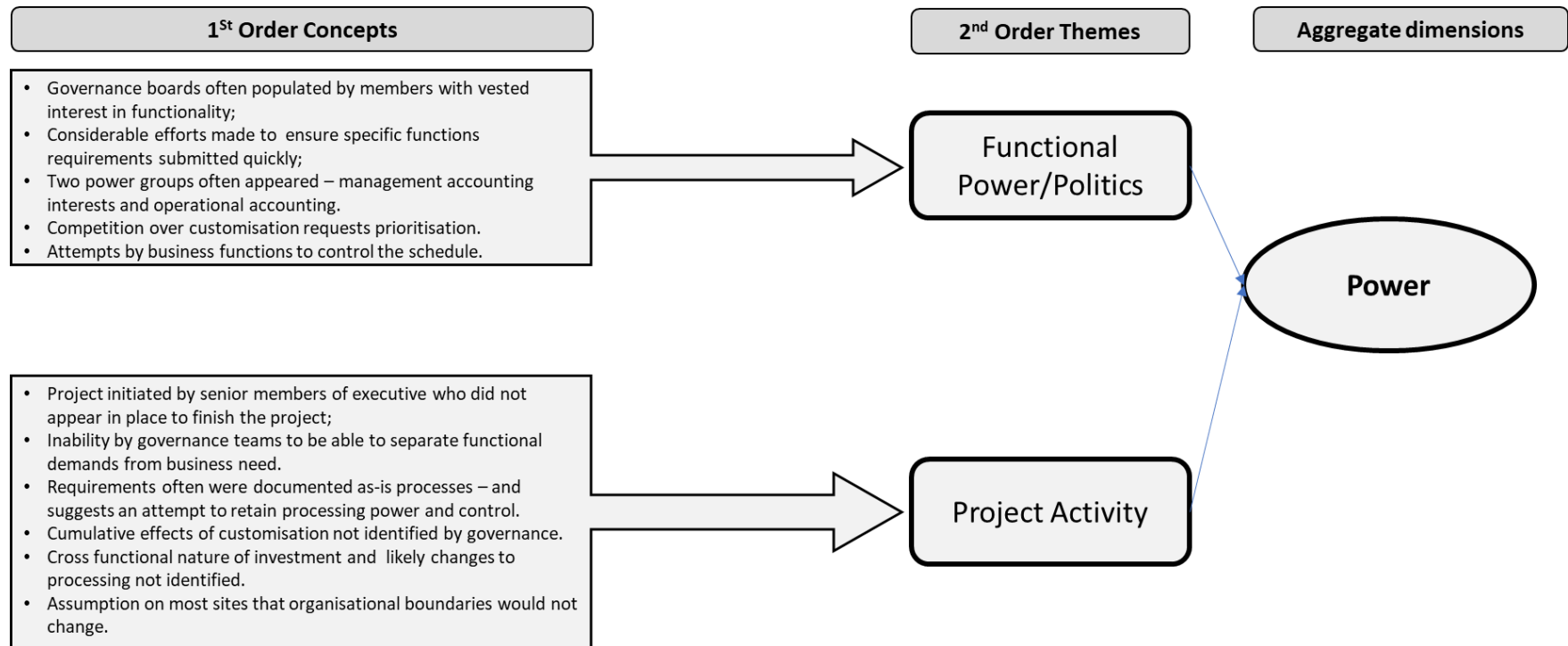
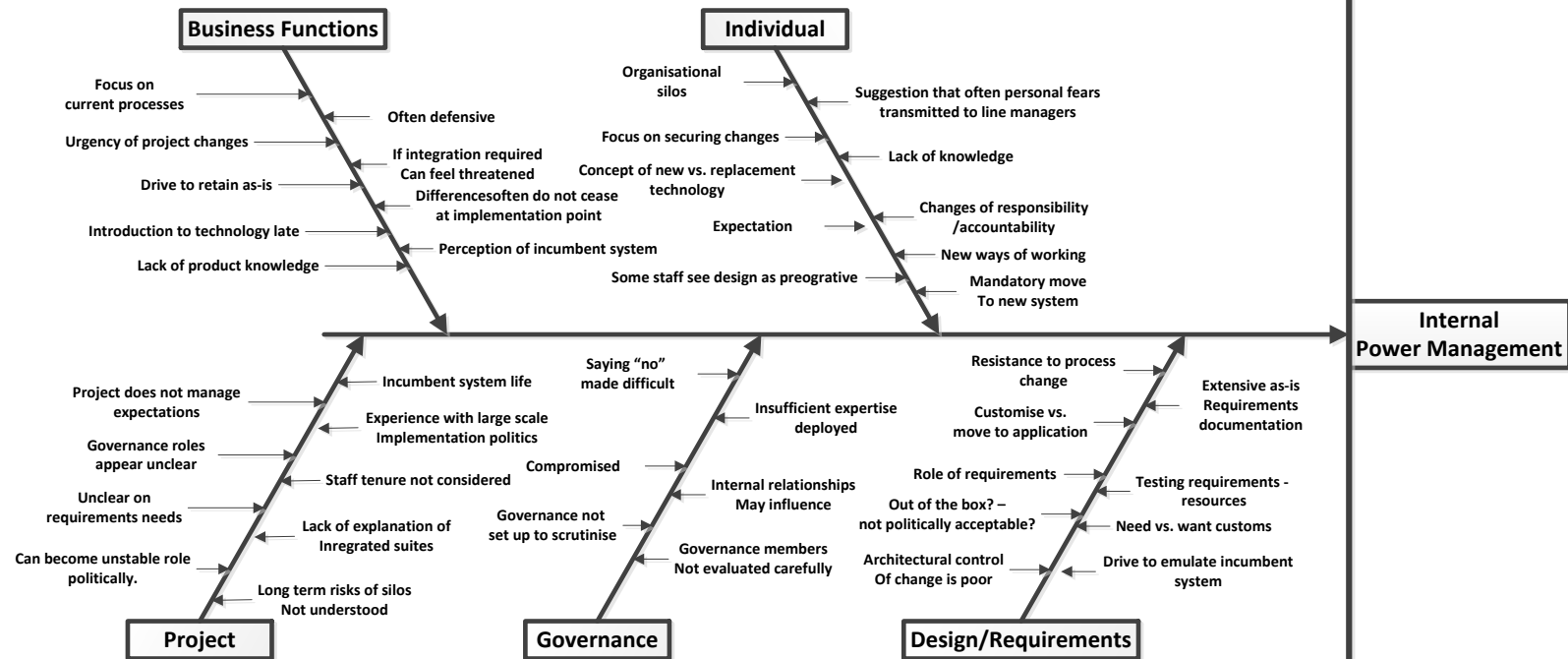


Figure 2 - Gioia Analysis of project theme and dimension data (Gioia et al., 2013)

Antecedent

Outcome



Antecedent/Outcome analysis – Internal Power Management

Figure 3 - Ishikawa Fishbone (Ilie & Ciocoiu, 2010 citing Ishikawa 1968), - antecedents and outcomes.

Analysis

The data gathered in this study indicates that functional power bases or silos may often be discrete, powerful and have considerable influence over project-based organisational activity. However, one of the key data findings is that the manifestation of this power is often both evolutionary and temporal in nature. The study will now highlight the key thematic data.

Organisational Silos

A diagram that highlights these elements is at Figure 4.

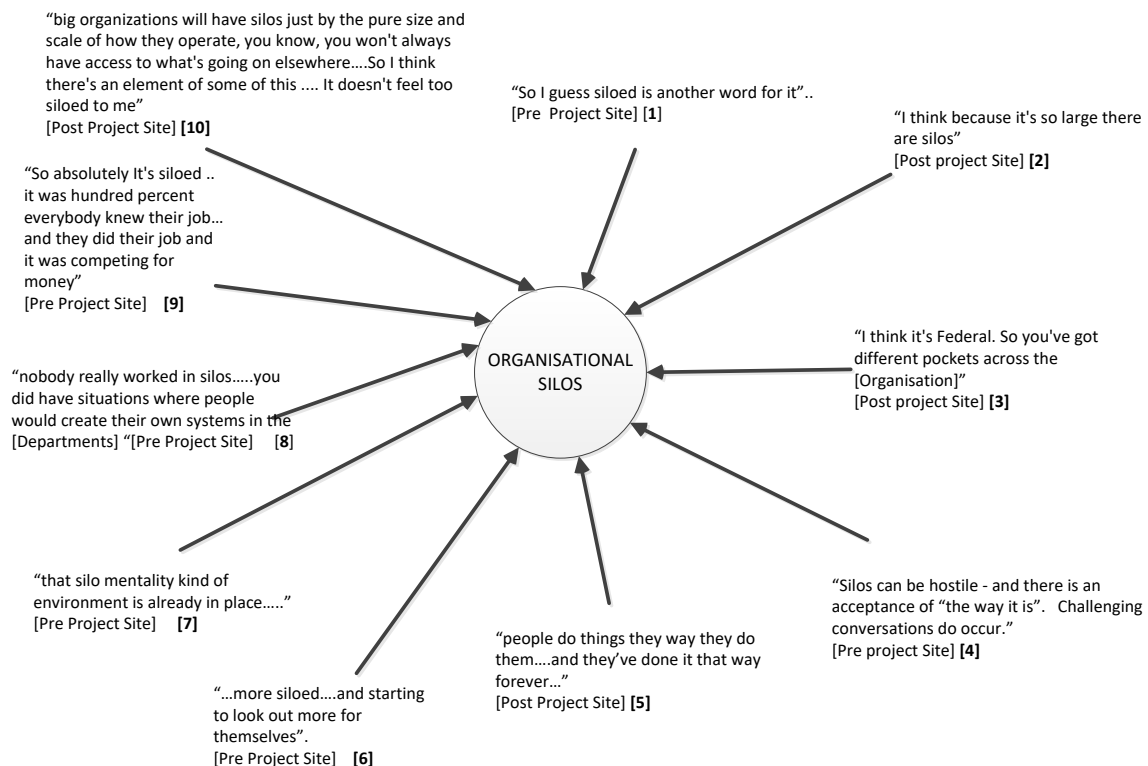


Figure 4 – Context Diagram - Silo Data

The study data suggests that silos are common organisational perceptions and did not appear to be related to position in the organisation. The analysis of the data then sought to understand the key generic stages of the project lifecycle to assess if themes developed a specific relevance and how both data and existing research supports that finding. Worthy of note in the data is that many pre project participants appeared to recognise the concept of silos but did not express any negativity; this perhaps may reflect that in early pre project evolution, the political environment is steady-state and, as yet, unexposed to the potential impacts of new technology.

Getting going

The pre-project phase on all study sites appeared to have few initial power or control issues. Most decisions to invest appeared to be driven from CEO's or Boards. It is noticeable that pre-project site participants had considerable optimism over the outcomes. In an analysis of participant data on Nvivo, pre-project participants appeared to have a considerable focus on success. Table 2 highlights the percentages:

Term	Pre project sites - %	Post Project sites -%
Success	83.33%	50%
Failure	16.66%	50%
Total 100%		

Table 2 – Perceptions of success and failure

Post-project site perceptions of organisational success were considerably more muted and is suggested as more reflecting participant perceptions of the project experience. Figure 5 suggests that political and silo influence is minimal at the pre project stage. This may in part be due to many organisational staff having little or no visibility over the impending change. This study data suggests that once the project commences and knowledge of the change develops, power politics may be initiated. Particularly significant in Figure 5 is comment [1]. This site spent considerable volumes of time defining requirements. However, as the project developed, vast numbers of change requests were generated to change the application, presumably as the chosen application was evolving. However, several pre-project participants started to focus on specific facets of the prospective investment – particularly around governance from experience of previous investment projects; Figure 5 [3]. Research by Cooke-Davis (2002) on project success suggests that successful delivery may stem from learning from previous project experience – governance being a key driver.

All site data, except MANO1 and WFLO01, suggests that early governance rules had received little attention or communication within the organisation. Governance boards also formed as the project was initiating and were therefore evolving in parallel with the project. Universally, all site governance boards comprised senior internal staff. Considerable optimism was expressed around the potential that the new technology could offer to help remove processing redundancies and poor current support to business functions and associated processes. One junior pre-project participant stressed that from their perspective that her only concern was in the project collating and delivering her *precise* requirements. Whilst not overtly power driven as a statement, this particular comment, as will be discussed in the next section, may be the portent of more complex political dialogue and action later in the project's lifecycle.

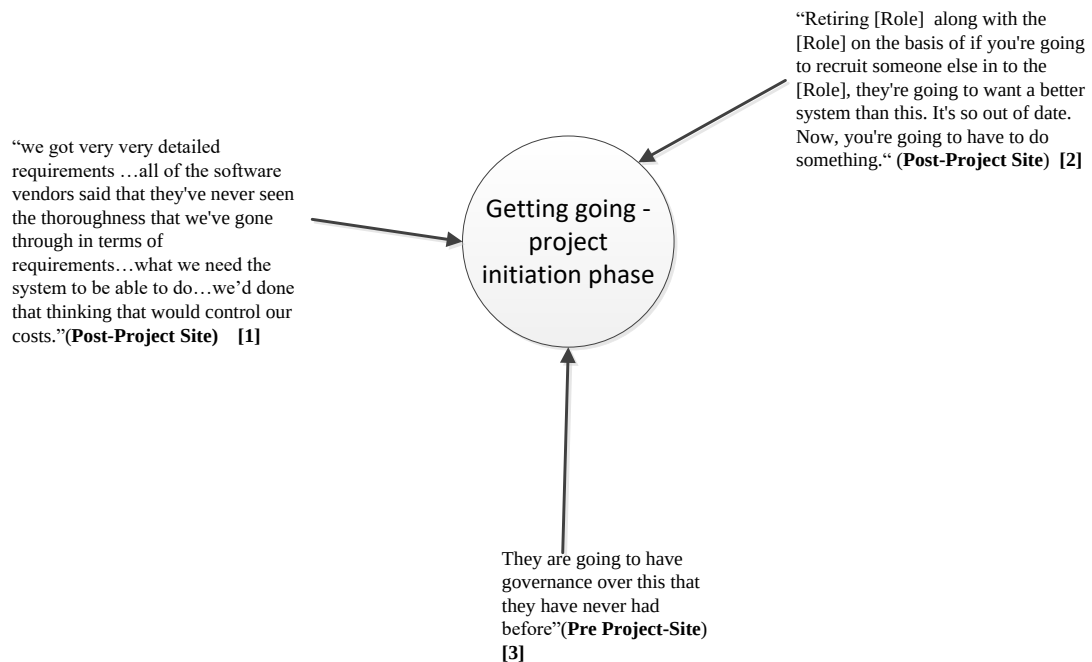


Figure 5 – Getting Going – the project initiation phase

The project Initiation phase

This phase tended to witness the commencement of more detailed stakeholder engagement. This stage, under the Systems Development Lifecycle Methodology or SDLC and project methodologies (PMI, 2017, PRINCE2, 2017) tends to focus on establishment of governance and requirements gathering. In general, participating sites appeared to have few power or control issues at this stage – though this study suggests that requirements, in a number of sites, had perhaps morphed in "must be delivered" as opposed to an expression of need.

However, once the project was underway, the same participant suggested that political control had not been as straightforward as people had expected. The other ERP site investment was driven primarily by the incumbent Chief Financial Officer; however, the original CFO voluntarily left the organisation early into the project lifecycle. Little or no clarity was provided by participants on this event though some speculated that it may in part been due to the lack of progress early in the project.

“Let battle commence”.

Post project data in this study suggests that once the project was underway, power activity became considerably more vigorous (Figure 6).

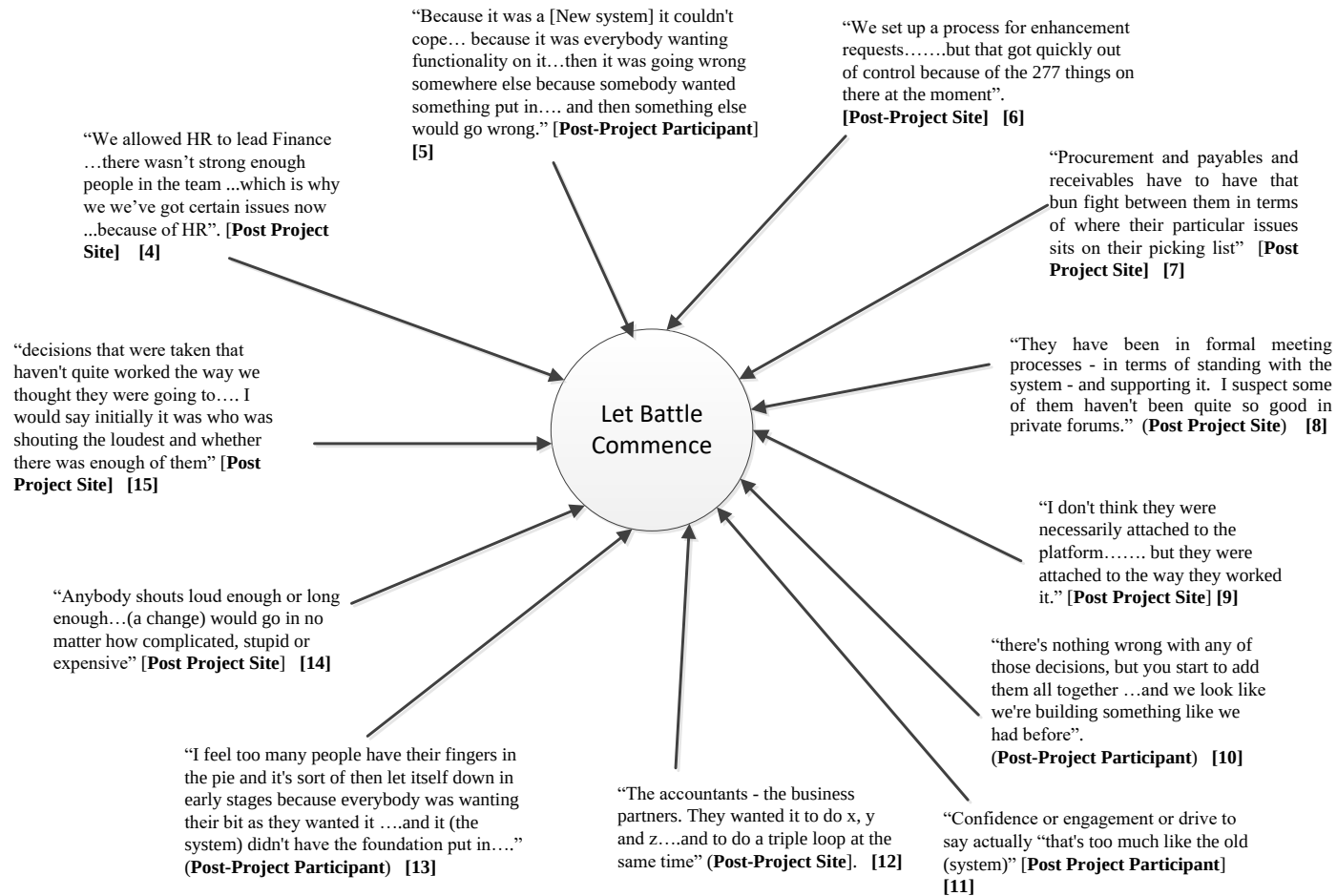


Figure 6 – Let Battle Commence – project activity.

One of the most contentious areas in the data at Figure 6 was in the approval of customisations or changes to the application software at a code level and appeared to be a key battlefield for political conflict and exercise of power (Figure 6: [7-15]). Projects may generate considerable numbers of these requests even for package applications and may often be an attempt to keep the application with an incumbent system “look and feel” and similar processing (Bridger, 2021). The data also suggests that “who shouts loudest” was a common theme though is likely to be synonymous with the capability to exercise or influence control.

However, two of the enterprise sites had approached management of customisation in very differing ways; one site had mandated, from the CEO, that no customisations were to be scoped or developed unless necessary, this avoided significant internal political lobbying to make specific changes. The second site had been acquired as part of a business take over. The overseas owner had mandated that their ERP mirror exactly the same processing and transaction management processes as the parent company and therefore the customisation ban was not negotiable. As Kerzner (2014) suggests, a significant component of the control of projects revolves around strict governance structures designed to prevent internal wrangling for control of the customisation process. Change approval and subsequent scheduling needs to be carefully managed through governance or steering group control. This study questions whether internal governance members are not compromised in their ability to effectively manage the demands of this role given their place in the normal or business-as-usual political structure.

Customisation requests may also start to drive the system back towards the incumbent format and processing. It is also suggested that many staff within functional areas feared the imminent technical changes and therefore functional power was deployed in an effort to maintain the status quo and to some extent reflect the basic tenets of Status Quo Bias Theory or SQBT (Samuelson and Zechauser, 1988).

Triangulation of the data against political motives is difficult. However, this study hypothesises that the power conflict between functions and the project team may have been expressed also through project managers and organisational management activity. Surprisingly, both ERP projects in particular removed a considerable number of project managers over an 18–24-month period. One site changed their project manager on three occasions during the project; the other, five times. There has been some research on project manager turnover (Pee et al, 2014, Parker and Skitmore, 2006) though are project centric in terms of potential impact. More recently, Chughtai (2019) in a study of project manager turnover allude to software development organisational team turnover and suggest that: “If project managers and project team leaders have bad relationships with the project stakeholders then they are likely be going to suffer from increased psychological distress, because the success of the project can only be achieved by effective management of the stakeholder relationship (Chughtai, 2019, p.310 citing Bourne and Walker, 2006; Jiang et al., 2009), though they do not explicitly expand on the nature of these relationships. This is an area where further research would prove insightful.

Discussion

Participating sites in this study demonstrated a range of both power and internal political themes that emerge from a range of internal sources – and may commence before the project has been initiated. This study suggests from the data, at Figure 5, that power evolves as project impact awareness develops.

This study also concludes that political power appears to be mainly influenced through three distinct variables. The impact of silo politics and power are evident in the data; though this study posits that the antecedents of this behavior may emanate from, firstly, functional areas anxiety over technical change and the need to customise to retain existing processing routines (Bridger, 2021). Secondly, the lack of knowledge of the new software capability (Bridger, 2022). Thirdly, functional power also appears to be exercised in the pursuit of new capabilities that did not exist before and therefore new functional specialisation requirements may drive these activities. The likely source of friction between silos is in ensuring these changes are accepted, scheduled and implemented based on their own perceptions of need and importance. This study data suggests that with new technological projects that the problem is considerable, low key and often identified through what this study terms as proxy symptoms. These are summarized in Table 3.

Proxy Symptom	Research
Project Manager Turnover	Two sites turned over 3 and 5 project managers respectively – Chughtai (2019) evaluated the impact of internal politics.
Influence of organisational behaviour on employees	Staff appeared to seek system changes regardless of the impact on the schedule; the destructive effect of organisational politics can be manifest. Al-Madadha et al. (2021)
Silos and organisational belonging	As discussed earlier; research is now focusing on staff relationships with employing organisations Almatrodi (2021), do staff belong with silos.... or organisations? Are silos proving to be discreet organisations within organisations?
Managing the increasing range of change management factors with ERP via power management – clarity over detail.	Legitimise power: “communicate information regarding changes; Exercise authority from legitimate power to instruct subordinates about what exactly to do (rather than expecting them to figure out themselves how to do things in a changed circumstance)” (Roy and Sangle, 2016, p.141).

One of the main limitations of the data is that it is not possible to see the interconnectivity of these functional power bases and how they operate at an organisational level. This study suggests that this may not be as important as deterring control behaviour early in the project lifecycle. This study also does not imply that all political power interventions are negative; from a risk perspective these challenges are necessary. However, as this study suggests, evidence from two sites in particular suggests that clear, unambiguous project operating or governance rules and a well-designed process for managing customisation requests are major contributors to robust systems delivery.

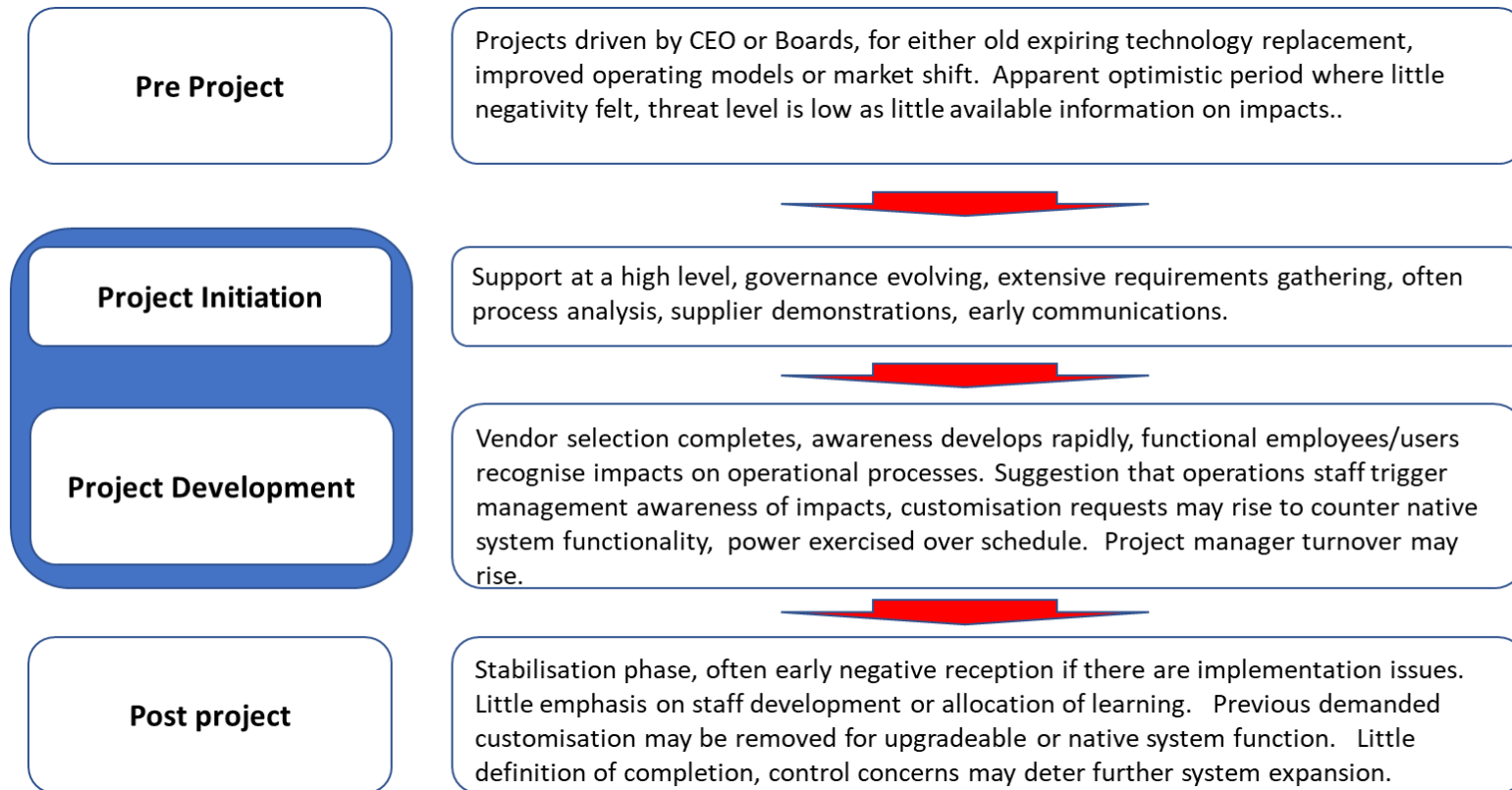


Figure 4 – Conceptual power evolution

However, Egmon (n.d) suggests that silos can be bridged. It is suggested that: “a leader must move beyond wanting everything to happen “my way” while also resisting the urge to succumb to the status quo or give in to others’ entreaties to do things “their way.” (Egmon, n.d, p.3). Egmon (n.d) suggests taking a collaborative approach using communication, pilot projects and a range of organisational motivational approaches. This study only partly supports this finding as data evidence suggests that the delivery pace of projects did not necessarily allow the addressing of these elements. Both enterprise and ERP projects are expensive undertakings and both cost and schedule overruns can create considerable effort and investment to resolve. This study suggests, as the old adage purports, that in overt power cultures “that prevention is better than cure”.

For many organisations that participate in research studies outcomes often reflect mistakes in the calm of the post project environment. However, Chen et al. (2009) in a unique case study of a Taiwanese manufacturing company, were able to document an ERP re-implementation. In effect, the organisation did not adopt the first project – so re-ran the project to eradicate many of the new system complexities. Chen et al., (2009) study therefore reflects a documented first and second approach implementation comparison. Chen et al., (2009) identified customisation as a key issue; the second implementation was also associated with very different managerial governance terms. However, the key management priority became control of project scope. The key changes included strictly defined scope management with keeping “85% of business processes in common” (Chen et al., 2009, p.164). This common business approach meant that the organisation had opted to align with the way in which the software managed processes intra site and did not cater for local functional process replication and associated customisation. This was reinforced by the formation of a user prioritisation committee from across business areas in an effort to better manage limited technical and organisational resource. There was also a core priority focus on accounting and manufacturing modules whilst dropping work on vendor bolt-on modules and the enhanced development and systematisation of procedures and criteria for request prioritisation.

These controls had a marked effect on the second implementation attempt. Chen et al. (2009) do not suggest that customisation effort had to be eliminated, though “Unchecked customization contributed to the poor outcome of the first ERP implementation. However, some amount of customization will always be necessary to meet specific business requirements” (Chen et al, 2009, p.167) a finding that is supported by this study. However, their study identified that “In the first phase of the case, although the intent was to implement a “vanilla” system, the reality was that management gave into customization requests” (Chen et. al, 2009, p.168).

This study posits that despite a range of often empirical project governance studies and theory (Bekker, 2015, 2014, Haq et al., 2019, ul Musawir et al, 2020, Riis et al., 2019, Sirisimboonsuk et al., 2017, Young et al., 2019) many organisations have basic project governance controls. Kerzner (2014) suggests that information system project governance may be in part influenced by governance conflicts; Chen et al.(2009) identify that a broad-based prioritisation committee created an environment where “Conflicts of interest are avoided by improving the degree of transparency in the decision-making process.” (Chen et. al, 2009, p.167). Chen et al. (2009) case study omits to identify two key factors in the use of knowledgeable prioritisation resources.

Firstly, their knowledge and understanding of operational detail meant that low value changes or attempts at re-automating incumbent processes could not authoritatively and confidently be prevented. Secondly, cross functional impacts of poorly specified change requests could be assessed and rejected if required. However, Chen et. al,(2009) issue a clear message that: “an empowered prioritization committee that is authorized to make binding decisions and creates concerted efforts in accomplishing business goals”(Chen et al. 2009, p.168).

Chen et al. (2009) also are able to provide some perspective on the relationship between Project Managers and stakeholders. During the first implementation, it was noted that project customisation management had experienced some considerable conflict with internal functions. However, during the re-implementation, differing governance structures were created for the new project manager “To avoid entering a competing mode with management” (Chen et al. 2009, p.167). The notion of competing may also shed some light on the turnover of project managers on participating sites, though there is no antecedent evidence in the study data and is an area for additional research. However, Chen et al. (2009) study is Taiwan based and therefore may represent a differing culture. Despite this factor, their findings are consistent with documented research experiences of prioritisation committees. This study concludes that there is some scope for project governance structures to be managed, like organisational governance, through a third-party involvement where they are outside of the organisational, internal political structures. Theoretically, project decisions may be unbiased and therefore defined by stated organisational objectives (Bekker, 2015).

Conclusion

This study concludes that the exercise of both power and political control, particularly around customisation and system change may often be the portent of less than successful ERP implementations and affect user adoption – and their experiences of the new technology.

From a purely theoretical perspective, a governance or steering committee should, technically, be an independent variable. However, data evidence in this study suggests that without clear structures and controls, the political pressure from functional areas and business units to embed their change requests, often regardless of the project impact, may exacerbate the complexity of system implementation projects.

A key limitation of this study is in the limited access to system change request artifacts and data on change requests from the projects - and the capacity to collect data on a longitudinal basis to understand more of the evolving power and pressure organisations face as projects evolve. The approach outlined from the Taiwan based study also lends itself to experimental approaches. As all organisations process change management requests across a multitude of systems – an organisation could undertake a documented research study to understand the dynamics of these types of controls – particularly if they intend to implement an ERP or other enterprise level project.

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