

# CONVERGENCE OF IT PROJECT MANAGEMENT AND CHANGE MANAGEMENT: A COMPARATIVE STUDY

**Colin Ash**, School of Computing, Information and Mathematical Sciences, Faculty of Science and Technology, The University of the South Pacific, Fiji ash\_c@usp.ac.fj

## Abstract

*This paper presents the results of a study into the antecedents for IT Project change management success. An established research framework was adapted for gathering evidence to identify the factors for success of an IT project. In order to avoid an original IT-centric position, emphasis was on the success of managing the change of IT projects. Multiple case studies with varying dimensions of IT project scope are described in the context of this model. The results indicate that successful projects were found to have facilitators in all dimensions of the framework, including the change environment, and project management. The least successful project lacked facilitators primarily in the area of cultural readiness and change management.*

*Keywords: IT project management, change management, business process change, project champion, organisational readiness, stakeholder satisfaction.*

## 1 INTRODUCTION

This paper discussed the need for recognizing that project management and change management are inseparable, and identifies the major players in the change management regime. Change management is about championing the project and ensuring that the project is understood accepted and embraced by the stakeholder community. Slusarenko (2004) argues “well-managed projects do not involve a separate change management team, or a separate change management activities per se”. Such projects ensure that change management is an integral part of the project management process. Change management then, is not a mere adjunct activity to the project, or a phase within the project. Change management is viewed as a set of activities that starts with the project and ends with the project (Marchewka, 2006).

Kalakota & Robinson (1999, p. 60) state that “the creation and implementation of an IT project is inextricably linked to the management of change.” This requires systematic attention to learning processes, organisational culture, technology infrastructure, people and systems thinking. IT project change is defined here as an organisational initiative to designed an IT project “to achieve significant breakthrough improvements in performance” (Guha et al. 1997, p. 121). These performance gains can be achieved through changes in relationships between management, information, technology, organisational structure, and people. Planning and managing such systems requires an integrated multi-dimensional approach across the e-business and the development of new business process models (Kumar & Crook 1999, Scheer & Habermann 2000).

*“In trying to bring about IT project change, managers would do well to recognise the complementary nature of technology, business models, and cultural readiness throughout the organisation’s value chain” (Barua et al. 2001, p. 39).*

This paper reports on the initial findings from a multi-case study selected from a range organisation’s ongoing IT projects. A confirmed model of Project Change Management (PCM) was used to analyse the case content (Ash & Burn, 2006). The findings are to confirm that successful IT projects have facilitators in all components of the PCM framework. Further, there is the implication that stakeholder satisfaction is delivered through project management activities supported by change management.

## 2 THEORETICAL FRAMEWORK

Change management in the context of this paper is the process of setting, managing and meeting the expectations of stakeholders to ensure project success. It is not about scope control and management of changes to scope, schedule, or quality, although these attributes impact the change management process. These latter types of changes are usually known as "change control" or "engineering change control" which is a functional process within project management and is not considered in this paper.

Hence, we discuss change management not as a project in its own right but how that relates to the successful delivery of IT projects. This aspect is distinct and different from "change control" and suggests a new term - Project Change Management (PCM).

### 2.1 Model of Project Change Management

Norris et al. (2000) capture the essence of moving to a new IT environment as involving a major organisational change. "As with ERP major business initiatives, an IT implementation forces change to occur to three corporate domains – technology, process and people – at both a strategic and operational (tactical) level." To overcome resistance to change, each component must be aligned, along with the enabling technology, to the strategic initiatives (Hesterbrink 1999). Barua et al. (2001) specifically refer to the success of a company's IT initiatives coming from the readiness of stakeholders to engage in electronic interactions.

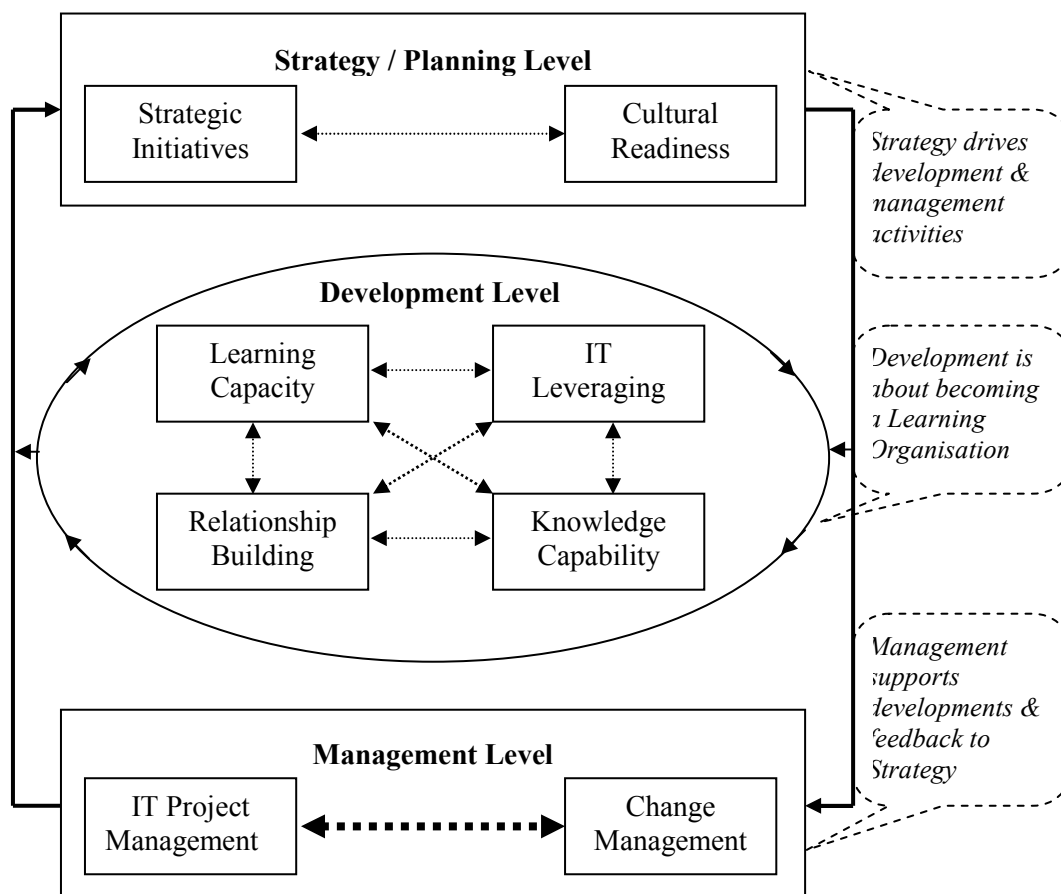


Figure 1. Model of Project Change Management in IT projects, (source Ash & Burn, 2006)

Figure 1 illustrates a model of PCM, where all components within the three levels are considered antecedents of IT project success. It indicates that strategy drives developmental and managerial activities, where management supports the developments in IT and in turn provides feedback a dynamic strategy. In addition, *project evaluation* (or reporting Level) is considered a sub-level within the Management level.

### 3 METHODOLOGY

The study used an established theoretical framework (Figure 1) of “e-business change” research (Ash & Burn, 2006) which was based on earlier work by Guha et al., (1997), on “business process change”. It is used for identifying and examining the facilitators and inhibitors of successful IT projects. Figure 1 was adapted from Ash & Burn’s (2006) model to focus on the unexplored relationship between Project Management and Change Management. The research questions addressed are as follows:

- What components of the PCM model facilitate and/or inhibit success of IT projects?
- Is the PCM model appropriate for identifying patterns of change?
- What are the critical success factors in IT PCM?

Embedded multiple case study analysis was chosen to investigate the research questions concerning the complex phenomenon of change management of projects, in four organisations (Yin, 1989). Embedded approaches enlist the use of multiple units of analysis: (i) the company (strategy), (ii) the project team, and (iii) the project. This triangulation attempts to validate primary data (Eisenhardt, 1989). The case study selection criterion required a major e-business project, which had organisational implications. Also, as the focus was on studying antecedents to organisational performance, a set of projects having a range of IT initiatives with variance across cases, but with the same performance measures was required: cost reductions, responsiveness, flexibility, shareholder satisfaction and value.

#### 3.1 Data Collection

The study was carried during 2005 and 2006 of eighteen (18) IT projects out using multiple interviews of senior project staff of a global mining e-marketplace QTX involved in e-business developments of customer within this e-marketplace. Case data was gathered from three sources:

- Primary data; interviews of all open and semi-structured project team meetings.
- Secondary data; telephone interviews and email correspondence to verify the case notes.
- Tertiary data from; company documents and reports sent via emails, student presentations.

#### 3.2 Case Selection

Four IT projects with significant organisational change, were selected for their suitability to represent all cases. These four cases are presented in no particular order of success – stakeholder satisfaction. Table 2 summarises the profiles of the four “representative” case organisations used in the study.

Case Code	Organisation Alias	Location	Employees
1. GFLF	Good Food Ltd - Fiji	Suva, Fiji	~400
2. VBFA	Volunteer Bushfire Fighters Association	Perth, Australia	19600 members
3. LILF	Life Insurance Ltd – Fiji/ Australia	Suva, Fiji, Australia	600
4. PSDF	Prisons Services Department. - Fiji	Suva, Fiji	300

Table 1. Case Profiles

## 4 FINDINGS

### 4.1 Case Summaries

Case 1. Good-Food Ltd (GFLF) based in Fiji with parent company in Australia. Its mission is to create cost effective retail outlets with large and small companies of its frozen and snack food lines. The aim of IT project was to optimise the daily truck routes from its main warehouse to its outlets. The major beneficiary would be sales/order staff via the automation of the old, paper-bound purchasing and delivery processes. The project was to establish more favourable conditions with the slimmed-down retailer base and build up closer business relationships with each one. Apart from the cost savings from more efficient delivery procedures, the company's sales team have a more strategic role. GFLF sales staff should be relieved of routine paperwork, enabling them to concentrate more on key retail customers will broaden these people's day-to-day task base considerably.

*'We'll have more time to spend on nurturing customer relationships and promoting new product lines from the automation of an optimised set of delivery routes.'*

Case 2. For Volunteer Bushfire Fighters Association (VBFA) the primary beneficiaries were the brigade managers who needed email communication to all volunteers with the brigade and gained this through the innovative use of Internet technology. The result was one of considerable time savings and improved reliability of essential communiqués and improved volunteer resourcing. The intrinsic motivation by the project champion, and self-management of autonomous knowledge within the development team played an important role in the successful implementation. The emphasis was much more on collective performance rather than individual, but at the same time, development and maintenance of personal and professional reputations was a significant driver. The association's volunteers were initially luke-warm in their support, viewing the proposed system as a threat to a strongly centralised control culture. Once the benefits were understood their initial reluctance subsided.

*'Our project champion assumed responsibility for the success and leadership of the implementation.'*

Case 3. The (LILF) case study demonstrates how computer technology division within a large Insurance organisation succeeded in making the sell-side financial products ("new customer accounts") available over the Internet. A new accounts system (extranet) was developed to supersede a paper based sales system by leveraging the power of graphics and Internet technology. This would extend the reach for cross-divisional users. The efficiency gains came from speed, accuracy and security of account transactions. The beneficiaries were other business partners (divisions) and independent partners. The result was considerable cost savings and greatly improved online sales.

*'We are beginning to recognise the potential benefits of leveraging our business processes and functionality through the new Web-based environment.'*

Case 4. The (PSDF) Prisons Management System was the development of the generic web-based application with a SQL backend, to replace the existing spreadsheet and paper based management solution. The PMS is database application that provides an easy to use tool that integrates all prisoner related information via a secure web-based interface. The primary beneficiaries are the Heads of department's and Court judges who demand timely information to make strategic decisions; e.g. Prisoner report cards and profiles. In addition, benefits will be able to be realised when the PMS application is integrated into other applications, such as the Police and other related organisational systems. These benefits will be measured through cost savings in development effort, resources and effective communication.

*'We are realising benefits of leveraging our organisation's data through integration.'*

## 4.2 Evaluation of Project Benefits realisation and Success

Table 2 summaries the project behaviour across the four cases. Consistent with the research objectives, specific constructs were established concerning each component of the PCM framework. The data gathered on each construct was analysed for its positive or negative influence on project implementation or overall effectiveness of change. This is documented with either a plus (+) or a minus (-) sign. The patterns in Table 2 indicate several important indicators that have implications for both research and practice.

<b>Components</b> <i>Constructs</i>	<b>Benefits Realisation</b>	<b>Most Successful</b>	<b>Least Successful</b>
<b>Strategic Initiatives</b> <i>stimuli</i> <i>formulation scope</i> <i>decision making</i> <i>strategy led</i>	pro-active in reacting incremental in practice champion leadership IT aligned to strategy	pro-active & reacting incremental champion emergence Business a IT driven	reactive revolutionary central autocratic IT strategy lead
<b>Cultural Readiness</b> <i>change agents &amp;</i> <i>leadership</i> <i>risk aversion</i> <i>extent of open communicat.</i>	need for change leader  welcome change open communication	+  welcomed  +	-  cautious  targeted
<b>Learning Capacity</b> <i>adaptation</i>  <i>improve efficiency</i> <i>learning type</i>	*learning induced by IT change learn to be efficient learning from feedback	learning from others  learning by doing double-loop	response to IT change learning by doing single-loop
<b>Knowledge Capability</b> <i>external information use</i>  <i>declarative knowledge</i>	collaboration with partners and competitors *acknowledge knowledge is a corporate asset	boundary spanners  focus on core competencies	technology gate keeper R&D resources IT development
<b>IT Leveragability</b> <i>use of Internet technology</i>  <i>role of IT</i>	superior IT not required but * ensure IT is adequate intrinsic to work operations	+ superior enabling & socio- technical	- poor dominant factor
<b>Relationship building</b> <i>inter-organisational</i> <i>linkages</i>  <i>cross-functional</i> <i>cooperation</i>	* Trust and commitment not imperative but needs collaboration for emergence Data alignment is essential	cooperative  superior (data alignment)	non-cooperative/ competitive  poor (data alignment)
<b>Change Mgt Practice</b> <i>mgt's. readiness to change</i> <i>pattern of change</i> <i>scope of change</i> <i>managed change</i>	* Mgt committed to communicate change at all levels all aspects in evolutionary change pattern more successful	committed  +  improvement well managed process for change	resistant  -  radical change alleviation of dissatisfaction,
<b>Project Mgt Practice</b> <i>Project measurement</i>  <i>use of tools and techniques</i>  <i>team-based structure</i>	use IT project metrics with feedback educate about techniques  * reward teaming	use IT project metrics  adequate/superior  +	No improvement feedback loop poor (tools training)  -

Table 2. Benefits Realisation and Success Factors

Those constructs identified by (\*) were seen as 'satisficing' factors, that is, they needed to be present but not necessary to be excellent. These involve components other than strategy and cultural readiness organisational readiness. In some cases, both positive and negative (+ & -) contributions were found from one component variable. For VBFA, leadership was found to exhibit (+ & -) contributions. In some instances, respondents chose multiple values for a specific construct. Table 2 is especially useful in separating those constructs that have variance across the range cases examined and those that have none, e.g. For stimuli all four case were the same, proactive but reacted very differently to stimuli.

While the most successful organisation had positive characteristics, not all characteristics were seen to be equally important or indeed to directly influence success. To be successful, management must support a *proactive* way the organisation *reacts* to the stimuli. Those with significant impact on the project success are in bold type (+) or (-). If we assume these ratings reflect the presence of facilitators and inhibitors, then the initial findings indicate that a successful project should have facilitators in all components, including the planning and management levels, e.g. VBFA.

Interestingly, while the project was rated highly successful there was strong opposition from their city partner operations to implement the same system. This came from the counterpart city firemen who had not been exposed to the participative development process.

Further, there is the implication that least successful projects will have inhibitors in both levels, especially in the area of cultural readiness and change management practice, e.g. LILF

While the project was rated moderately successful the opposition came from the partner reluctance to implement the same system due to the conflict of the established offline sales channels. The lessons learnt were two fold; (i) the use of a common platform needs the agreement of all functions, (ii) The internal and external marketing of the facility is essential to the acceptance of divisional business network and to foster end-user acceptance of the technological change in business practice. Once the initial benefits broke down user reluctance, management "assumed" responsibility and leadership for a new global strategy. Further, the lack of a coordinated corporate wide strategy by the parent company was viewed as the main obstacle for uptake of the system by the business partners. It highlights the need to evolve a coordinated corporate strategy and encourages the balancing of conflicting organisational knowledge when contemplating the adoption of e-business solutions.

## 5 IMPLICATIONS OF FINDINGS

### 5.1 Strategy and Planning Level

Strategic Initiatives - There tend to be strategic "stimuli" ranging from competitive pressures, continued market leaderships, customer expectations, employee dissatisfaction and/or organisation inefficiencies that trigger firms to undertake IT PCM. According to these findings, PCM has to be proactive to be successful, but by the way the organisation is reactive to the stimuli. This is viewed as a satisficing condition for project success. Incremental PCM may work but appears to be appropriate when risk aversion is welcomed. Also, incremental projects were perceived as revolutionary in nature.

Successful IT projects establish a goal/vision and unbiased team/individual champion that continues to push drive the organisation to find new innovative processes. These champions must be empowered to implement the changes within a culture of e-business readiness (Segev & Gebauer, 2001).

Cultural Readiness - To address complexities of change, each component must be aligned, along with the enabling technology, to the strategic initiatives (Hesterbrink, 1999):

An organisation attempting to change performance radically seems to require some "sense of urgency" in their business situation, which translates in turn into a compelling vision that is espoused throughout the organisation. To overcome pockets of reluctance to change, an organisation's vision for change

must provide an atmosphere of communication where individual concerns are not seen negatively but rather welcomed.

An important ingredient in the right organisational cultural mix for successful project is leadership from the top and initiatives from employees, together with an atmosphere of open communication, participation, committed cross-functional access to experts, and committed inter-organisational focus.

## 5.2 Development Level

**Learning Capacity** - Successful IT change projects are enabled in organisations that; (i) have a propensity to learn from best practice and customer needs, and (ii) exhibit learning whereby employees individually and collectively reflect on their past experiences, modify their course when necessary, and discover new opportunities, a new culture of the learning organisation.

**Relationship Building** - Successful IT projects require commitment between partner organisations to use common IT platforms and sharing of corporate information.

**Knowledge Capability** - Successful IT projects are enabled in organisations that leverage external information and experts, and focus on core competencies.

**IT Leveragability** - Successful IT projects involve the coalescence of IT and organisational change best practice, whereby IT plays a supportive, but not always commanding role that is linked to the business case for IT change. A balanced consideration of the social, technical, and business value elements should be maintained during implementation.

## 5.3 Management Level

The nature of change was observed to be a “participative” change activity resulting in an evolutionary change tactic. This was also, viewed as a “waterfall” progression of change, starting with an alleviation of dissatisfaction by employees and eventually working towards a well-managed IT implementation from the alleviation of dissatisfaction, with a vision for change by evolutionary change tactics, accompanied by a well-managed process for change.

To achieve this requires continuous articulation and recognition of the value of reporting results, as well as monitoring each individual’s contribution and accountability to the overall company's change effort. At the individual employee level, concern should be placed on how IT PCM will improve employee satisfaction and the quality of work life (Guha et al, 1997).

A well-defined transparent management approach should include; (i) a detailed *change plan*, (ii) the use objective and quantified metrics showing the value of change (MOV), (iii) continuously report (communicate) process metrics to senior management, and possess a well-documented rollout of the new e-business design.

## 6 CONCLUSIONS

An established research framework of project change management (PCM) was used to identify the factors for success of IT projects. The qualitative case methods provided content and discovery of elements that surround each construct to identify those facilitating and inhibiting factors that lead to ultimate project goals – stakeholder satisfaction. The results confirm that successful projects were found to have facilitators in all components of the PCM framework, including the change environment and management practice. There is the implication that the least successful IT projects will have inhibitors in both components, specifically with cultural readiness and change management.

The research framework was chosen as a method for its ability to examine complex relationship of project management and change management. This model is viewed as evolutionary in nature, and was case content driven. It is essentially a diagnostic tool for identifying factors contributing to success of new business models. It specifically explores the areas related to the successful learning organisation where the key issues remain as people oriented organisational issues. In a labour force of inter-divisional virtual teams, management will be more about motivation, and governance may be largely a question of self-regulation rather than control.

While broad generalisations from the four case studies are viewed as premature, various patterns of constructs were developed as indicators that have implications for both project management practice and education. These patterns of variances across the cases presented represent are indicators for success, failure, and a tendency to mediocrity - that is regarded as common practice.

Future studies will need to examine further the inter-relationship between project and change management. Change planning and reporting are identified as candidate activities for best practice by today's IT project managers. We observe the convergence of these two fields of management is necessary and sufficient to deliver stakeholder satisfaction.

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