ICT Change Agents: 
Global Actors in Financial Services Technology Projects 

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Received 4 November 2008; Received in revised form 27 September 2009; Accepted 22 February 2010 

Abstract 

The global demand for web-based applications regarding financial products and services drives the financial sector to innovate through Information and Communication Technology (ICT) projects. The ICT projects are launched for the diffusion (spread) and implementation of new software or hardware by using web-based platforms in order to offer innovative financial products and services across the branch bank system. These projects are initiated, diffused, managed and implemented by global actors, so-called ICT change agents. Despite the increased recruitment of ICT change agents, there is relatively little research available regarding ICT change agents in financial services projects. Specifically, little consideration is given to the interaction processes between formal and informal ICT change agents’ roles. Based on a case study methodology in Australia and Germany, this research indicates that deadline-oriented projects drive ICT change agents to play various formal and informal roles. Their formal roles are performed in accordance with organisational settings and project management standards, whereas their informal operations are due to the rapid-changing and global nature of ICT technologies. The findings are summed up in a new framework which indicates that both types of roles impact on the outcomes of financial services technology projects. 

Keywords: ICT change agents, Formal roles, Informal roles, Financial services projects 

1. Introduction 

The contemporary dynamic global environment is changing the landscape of various sectors. Consequently, companies foster innovation in order to remain competitive in the global world (Young et al., 2008). Globalisation is occurring at a rapid pace (Longhi, 2005) and time has been a key factor in the competitive process (Stalk and Hout, 1990). An increasing number of global rivals accompanied by time-driven competition induce companies to integrate their processes (Longhi, 2005). In order to consolidate their financial products and services faster than their rivals, banks invest millions of dollars in Information and Communication Technology (ICT) projects. ICT projects are temporary undertakings proposed to develop, implement and diffuse new electronic components (hardware) and applications for computers and mobile phones (software). For example, the four major Australian banks planned, as at mid-2008, to invest AU$2 billion in ICT projects in the coming years (Woodhead, 2008). Similarly, the major German banks are under pressure to provide a variety of financial products and services by using ICT. 

Banks and other financial institutions continue to rely on ICT change agents for the initiation, diffusion (spread), management and implementation of technology projects. Given
the dynamic global environment, ICT change agents are often under pressure to deliver set project goals on time. Despite the continuing demand for ICT change agents, there is only a small strand of research that investigates ICT change agents’ activities. While a few studies (Kendra and Taplin, 2004; Weiss and Anderson, 2004) highlight the formal roles of ICT change agents, little is known about whether ICT change agents use informal networks in order to achieve defined project goals. This empirical study is among the first which seeks to provide evidence that, apart from the formal roles, the informal activities of ICT change agents are also significant in delivering set project outcomes. In other words, this paper is primarily concerned with the practices of these key individuals in the process of ICT innovation that Dodgson et al. (2005) call “innovation technology”. Thus, project management in financial services of ICT technology projects serves only as an instrument to address the research question: “What formal and informal roles of ICT change agents affect financial services project outcomes?” Moreover, this paper delineates the findings of ICT change agents’ roles and project outcomes in a conceptual framework for future research.

The paper is organised into seven sections; the next section outlines the change agents’ roles in the literature, section three details the case study methodology while section four sets out and explains the empirical results. Section five provides the findings and a discussion of this research. Section six sets out a conceptual framework for future research, and section seven closes with a conclusion.

2. Change agents’ roles in the literature

In the 1970s and 1980s, banks were at the forefront of ICT innovation (Game and Pringle, 1981) by introducing new retail technology in ATMs (Child and Loveridge, 1990). Then, mounting financial deregulation through the 1990s in all advanced economies created an ICT platform for the development of a plethora of financial products and services with the aim to obtain a competitive edge (Jones, 2000). Further, Moncrief (2008) points out that the financial services industry is being induced by new financial regulations, especially Basel II, to invest in ICT. The enormous growth of ICT technology has given rise to a major increased use of change agents who have the ability to cope with technical and organisational complexities in the industry.

The following review of literature discusses varying roles of a change agent within an organisational structure, project management, ICT, innovation, diffusion and an informal network.

A change agent role within an organisational structure is embedded in an organisational chart and is classified as internal or external. The role reveals whether an individual is employed permanently inside (internal role) or outside (external role) a company. Internal change agents are executives (Gibson et al., 2006) or managers (Saka, 2003) while external change agents occupy consultant roles. Both internal and external change agents participate in the initiation process of projects.

Projects are characterised by being formal, planned and temporary. The outcome of a project is based on three criteria. According to Buttrick (2005), the three criteria that underpin projects are resources, budgets and timelines.

Every project consists of distinct phases. This research applies the Western Australian Innovation Centre (2005) framework that highlights four project management phases: initiation, planning, execution and close-out. This four-phase framework is also suggested by other institutions (Oxford Brookes University, 2008). In each project management phase, various tasks are undertaken. In the initiation phase, a business case is presented while in the planning phase, a project is structured regarding the resources, budgets and timeframes. In the execution phase, a project is carried out in a target financial services setting. In the final
project management phase, a project is verified in accordance with set project goals. In all of the project management phases, change regarding tasks needs to occur. Such change involves a process (Lewin, 1948) that contains complexity (Buchanan, 1993) and risks (Kotter, 1996). Lewin's research was among the first which defined the beginning and the end point of a change process (Braun, 2003). Meanwhile, a new way of understanding has emerged that highlights that change is underpinned by the dynamic nature of an ongoing process (Braun, 2003).

Change, as described above, differs from innovation. Osborne and Brown (2005) argue that change implies the continuous development of established organisational products, processes and services. Kanter et al. (1992) specify that change “… is a consequence of the inherent potential for development associated with every entity”. As a result, change can be planned in advance and managed according to set formal rules; for example, the alteration of different tasks through the project management phases (Buttrick, 2005) that allow for the examination of best practice.

By comparison, Osborne and Brown (2005) observe that innovation discontinues with past events in terms of introducing new ideas in an organisation that requires new knowledge. Consequently, innovation is a dysfunctional process that brings disorder and abnormality (Dodgson, 2000) until new knowledge is acquired. So, new knowledge means the ability to learn from one’s own experiences through reflection and risk taking (Kotter, 1996) and experimenting with theoretical new ideas (Dodgson et al., 2005) before implementing them in projects.

The risks within projects can be calculated (Chapman and Ward, 2003). However, the diffusion and implementation of software or hardware in ICT projects with significant innovation also involve complexity that leads to uncertainty, which cannot be calculated. Radical ICT innovation, for example, the introduction of an entirely new ICT system has a higher uncertainty (Tidd et al., 2005) than an incremental ICT technology which is characterised by regular updates (Miles, 2005). Radical and incremental ICT innovations are created, managed and implemented by ICT change agents within projects.

Various types of ICT change agents participate in technology projects, for example, project managers, managers and ICT professionals. Project managers are accountable for technology projects (Kendra and Taplin, 2004) while managers mainly perform the boundary role which implies a strong linkage between the internal departments and external providers of knowledge (Johannessen, 1994). Other types of ICT change agents (e.g. ICT professionals) design, implement (Weiss and Anderson, 2004), and consult towards ICT innovation (Winston, 1999).

In contrast to the ICT change agents’ literature, which highlights particular types of actors concerned with ICT technologies, the literature on innovation and diffusion examines change agents in general. Baker (1994) portrays a change agent as a marketer who spreads innovation. Rogers (1995) refers to an influencer role which accelerates the diffusion process of innovation. In the diffusion process, a change agent performs the roles of promoter and terminator (Rogers and Shoemaker, 1971). The role of a promoter fosters the diffusion of innovation, while the terminator role completes the innovation process (Rogers and Shoemaker, 1971). In a similar vein, Witte (1973) suggests that a change agent performs the role of knowledge promoter. In the innovation and diffusion literature, change agents are viewed as the key actors who perform formal roles.

Due to uncertainty in the innovation and diffusion processes, key actors increasingly operate in informal networks. The informal networks help to exchange tacit and personal knowledge face-to-face (Swan et al., 1999). Studies concerned with key actors in informal networks have emerged from the knowledge management literature. For example, Awazu (2004) has examined the roles of key actors in informal networks without calling them
explicitly “change agents”, but with similar functionality as suggested by scholars who have investigated change agents (Rogers, 1995; Rogers and Shoemaker, 1971).

According to Awazu (2004), key actors perform five informal roles in informal networks. These roles are: Central connectors, boundary spanners, gatekeepers, bridges and experts. The central connectors collect data about knowledgeable individuals who can educate others. The boundary spanners connect the local network with external networks. The gatekeepers control the incoming and outgoing data in a network. The bridges develop a link between individuals with distinct skills and educational backgrounds, for example, they improve the communication process between executives and experts. The experts advance their knowledge through the experimentation and exchange of information with others. While Awazu’s (2004) research has been focused on key individuals within informal networks in general, a recent empirical study shows that these informal roles are predominately performed by ICT change agents in informal networks within public sector settings compared to private sector settings (Jagodic, 2008).

The phenomenon of change agents is subject to different interpretations by various scholars in the fields of organisational development (Buchanan and Badham, 2008), innovation (Rogers, 1995) and ICT (Weiss and Anderson, 2004). Research by Buchanan and Boddy (1992) suggests that change agents’ activities are closely interrelated with organisational settings. Nevertheless, it is apparent that a great number of researchers neglect to differentiate between general change agents’ activities and specific ICT change agents’ operations within financial services projects. In particular, there is still only a preliminary understanding of the innovation role of change agents in organisations (Jiménez-Jiménez and Sanz-Valle, 2008). Thus, the role of change agents in ICT projects has been primarily discussed in local organisational settings. The increasing globalisation of financial products and new technologies may impact on formal ICT change agents’ project activities and drive them to tap into skills of people within informal networks. Yet, as Powell and Grodal (2005) confirm, “relatively few studies, however, link informal ties to the innovation process, and there is scant research on informal interorganizational relations”. Therefore, this study aims to bridge that gap by providing valuable insights into informal ICT change agents’ activities in ICT innovation processes and fusing them with theory.

3. Case study methodology

The choice of a specific research method is determined by the issue that needs to be investigated. A case study method is applied to emerging phenomena (Eisenhardt, 1989) because it serves a theoretical purpose (Strati, 2000). Usually, multiple cases are undertaken in case studies (Hammersley and Gomm, 2000) and the distinct nature of every case allows for comparison among them (Yin, 2003). Each case study provides rich data for insights into specific settings (Wood et al., 2001). Consequently, this research adopts the concept that cases are found in specific settings (Harper, 1992) and allows for the examination of actors’ roles (Reitz, 1977). George and Bennett (2005) conclude that cases increase the validity of data because they allow for the construction of theoretical concepts.

As a result, the theory emerges from empirical data that was guided by grounded theory (Strauss and Corbin, 1997). This means that the multiple cases increase the validity of interview data. In every interview, a participant was asked to describe the formal and informal activities that they performed in the project. Each participant’s own description was compared with the explanation and names of roles that have already been recognised in the literature on change agents. By matching the explanation in the literature with the participant’s description, the name of a formal or informal role could be clearly identified. An exception was made only for any new role which had not been identified in the literature on change agents. In such
In those multiple cases, data was gathered via interviews and documents on the large scale diffusion and implementation of software or hardware components (ICT projects) regarding financial products and services that had company wide impacts on their branch bank systems. Interviews are the preferred technique for data collection in qualitative studies for various reasons (King, 2004). Firstly, emerging phenomena are usually collected via interviews (Holstein and Gubrium, 1995). Secondly, the dialogue in an interview between a participant and a researcher allows for the collection of contemporary data (Hunt and Eadie, 1987). The interaction between interviewer and interviewee also increases the quality of interview data. In addition, Gaskell (2000) claims that a large number of interviews does not enhance the quality of data. In other words, more interviews do not necessarily deliver better quality data.
The potential participants were not explicitly named as ICT change agents in the financial sector, so the selection of target participants for interviews was a demanding task. Henry (1990) proposes using snowball sampling when the target population is challenging to identify. In a similar vein, Neuman (2006) suggests that the snowball approach is based on links between individuals in a network. This means that one participant recommends another ICT change agent to interview.

Table 1 provides an analytical account of the 19 multiple cases in this study. Appendix A provides more detailed descriptions of the 19 project cases. Every case discloses the type of ICT project and ICT change agent followed by the job title, executed core work in the project phase, and formal and informal roles. It is evident that the majority of financial services projects are incremental by nature including the updates of already implemented technologies. For example, previous old applications were transformed to a new web-based platform relating to Cash Pooling System (see Appendix A). Incremental ICT projects were also initiated to increase the performance and develop new functions of already existing services, for example, building the customer analytic records (see Appendix A). Only two ICT projects developed radical innovations within their banks. In Case 7 it related to providing a new solution in the field of infrastructure and data management. In Case 8 it related to offering direct banking with web-based technology. Depending on the job title and skill, ICT change agents carried out their core work in the particular project phase.

The core tasks of these ICT change agents in Table 1 are reflected in the formal and informal roles. For example, in cases 10, 13, 14, 16 and 18 the change agents perform exclusively formal roles because they are concerned only with the planned change process while all others play formal and informal roles due to their tasks regarding change and innovation management in financial services technology projects.

It is evident that the financial services employ nearly the same number of internal and external ICT change agents. These ICT change agents are involved in many ICT projects simultaneously. Because they specialise in particular project tasks, they perform identical roles in different ICT projects. This is due to the web-based technology and similarly adopted best project management practice. In other words, it could be argued that every visible single case reflects further hidden multiple cases from other incremental ICT projects. Table 1 demonstrates that data assembled could be identified as having a repetitive nature. The project outcomes of all 19 cases were specifically measured in terms of resources, budgets and timelines. Thus, there was no need to interview other ICT change agents regarding their formal and informal roles and project outcomes, or obtain additional project documents from similar organisational settings.
Table 1. Cases in the Australian and German financial sector.

<table>
<thead>
<tr>
<th>Cases</th>
<th>ICT project type</th>
<th>ICT change agent type</th>
<th>Formal job title</th>
<th>Core work in project phase</th>
<th>Formal role in core project phase</th>
<th>Informal role within informal network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case 1</td>
<td>Incremental</td>
<td>Internal</td>
<td>Manager</td>
<td>Close-out</td>
<td>Knowledge promoter</td>
<td>Facilitator</td>
</tr>
<tr>
<td>Case 2</td>
<td>Incremental</td>
<td>Internal</td>
<td>Manager</td>
<td>Close-out</td>
<td>Tester</td>
<td>Influencer</td>
</tr>
<tr>
<td>Case 3</td>
<td>Incremental</td>
<td>Internal</td>
<td>Manager</td>
<td>Planning</td>
<td>Planner</td>
<td>Knowledge promoter</td>
</tr>
<tr>
<td>Case 4</td>
<td>Incremental</td>
<td>External</td>
<td>Manager</td>
<td>Execution</td>
<td>Implementer</td>
<td>Knowledge promoter</td>
</tr>
<tr>
<td>Case 5</td>
<td>Incremental</td>
<td>Internal</td>
<td>General manager Project manager</td>
<td>Planning</td>
<td>Strategic planner Project manager</td>
<td>Influencer</td>
</tr>
<tr>
<td>Case 6</td>
<td>Incremental</td>
<td>Internal</td>
<td>Chief</td>
<td>Initiation</td>
<td>Strategic planner</td>
<td>Influencer</td>
</tr>
<tr>
<td>Case 7</td>
<td>Radical</td>
<td>External</td>
<td>Manager</td>
<td>Planning</td>
<td>Adviser</td>
<td>Knowledge promoter</td>
</tr>
<tr>
<td>Case 8</td>
<td>Radical</td>
<td>Internal</td>
<td>Manager</td>
<td>Close-out</td>
<td>Coordinator Tester</td>
<td>Knowledge promoter</td>
</tr>
<tr>
<td>Case 9</td>
<td>Incremental</td>
<td>Internal</td>
<td>Auditor</td>
<td>Close-out</td>
<td>Reviewer</td>
<td>Influencer</td>
</tr>
<tr>
<td>Case 10</td>
<td>Incremental</td>
<td>External</td>
<td>Project manager</td>
<td>Execution</td>
<td>Coordinator Provider of records</td>
<td>No</td>
</tr>
<tr>
<td>Case 11</td>
<td>Incremental</td>
<td>External</td>
<td>Consultant</td>
<td>Execution</td>
<td>Adviser Provider of records</td>
<td>Influencer</td>
</tr>
<tr>
<td>Case 12</td>
<td>Incremental</td>
<td>External</td>
<td>CEO Project manager</td>
<td>Planning</td>
<td>Strategic planner</td>
<td>Knowledge promoter</td>
</tr>
<tr>
<td>Case 13</td>
<td>Incremental</td>
<td>External</td>
<td>CEO Project manager</td>
<td>Planning</td>
<td>Strategic planner</td>
<td>No</td>
</tr>
<tr>
<td>Case 14</td>
<td>Incremental</td>
<td>Internal</td>
<td>Manager</td>
<td>Execution</td>
<td>Implementer</td>
<td>No</td>
</tr>
<tr>
<td>Case 15</td>
<td>Incremental</td>
<td>External</td>
<td>CEO</td>
<td>Initiation</td>
<td>Technology architect</td>
<td>Influencer</td>
</tr>
<tr>
<td>Case 16</td>
<td>Incremental</td>
<td>Internal</td>
<td>Manager</td>
<td>Execution</td>
<td>Provider of records</td>
<td>No</td>
</tr>
<tr>
<td>Case 17</td>
<td>Incremental</td>
<td>Internal</td>
<td>Software developer</td>
<td>Initiation</td>
<td>Knowledge promoter</td>
<td>Knowledge promoter</td>
</tr>
<tr>
<td>Case 18</td>
<td>Incremental</td>
<td>External</td>
<td>Consultant</td>
<td>Initiation</td>
<td>Analyst</td>
<td>No</td>
</tr>
<tr>
<td>Case 19</td>
<td>Incremental</td>
<td>External</td>
<td>Consultant</td>
<td>Execution</td>
<td>Software developer</td>
<td>Knowledge promoter</td>
</tr>
</tbody>
</table>

4. Empirical results

Financial services technology projects are run on a global scale. In order to save costs, some projects include joint work from other countries such as New Zealand and other Asian nations. A chief argues that this strategy is planned for the following reasons:

… to consolidate all the businesses to one platform … to simplify the technology that supports those businesses, particularly, the credit card technology … it’s primarily to allow, in particular, smaller countries to benefit from a rationality that we have developed for Australian business … and to reduce the overall operating costs by having one platform instead of many platforms … (Case 6).
One of the managers revealed that banks need to implement innovation across extended organisational boundaries. His project aimed “to consolidate 68 branches worldwide to one internet platform” (Case 16).

Besides the cost factor, bank business owners assess technology projects according to their return on investment. A general manager argued that

… we needed to demonstrate to the business owners that they would get a return … people have choices where they invest their project dollars and we actually had to convince the owners of that money that this project would get them a higher return than other projects (Case 5).

In accordance with the business model, the banks’ technology projects are commonly centred on effective financial management.

Financial services are part of a world market. So, financial services are “... highly driven by economic trends within the bank community ...” (Case 9). Consequently, “... nowadays, the banks continually consider merging with each other ...” (Case 9). These global economic trends transform ICT change agents into global actors who perform varying activities in financial services. These activities are classified in the context of the organisational structures, project management phases and informal networks that are aggregated in Table 2.

Table 2. ICT change agents’ roles in financial services.

<table>
<thead>
<tr>
<th>ICT change agents’ formal roles in organisational structures</th>
<th>Project management phases</th>
<th>ICT change agents’ formal roles in technology projects</th>
<th>ICT change agents’ informal roles in informal networks</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO, Chief, General manager, Project manager, Manager, Consultant, Auditor, Software developer</td>
<td>Initiation</td>
<td>Strategic planner, analyst, initiator of change, technology architect, knowledge promoter</td>
<td>Knowledge promoter, influencer</td>
</tr>
<tr>
<td>Planning</td>
<td>Strategic planner, project manager, planner, adviser</td>
<td>Knowledge promoter, influencer</td>
<td></td>
</tr>
<tr>
<td>Execution</td>
<td>Coordinator, adviser, implementer, software developer, provider of records</td>
<td>Knowledge promoter, influencer</td>
<td></td>
</tr>
<tr>
<td>Close-out</td>
<td>Knowledge promoter, tester, reviewer, coordinator, terminator</td>
<td>Knowledge promoter, influencer, facilitator</td>
<td></td>
</tr>
</tbody>
</table>

As depicted in Table 2, the activities of ICT change agents embrace various formal and informal roles. The formal roles of ICT change agents are visible in organisational structures and technology projects, while the informal roles are concealed in informal networks.

5. Findings and discussion

As noted previously, this paper is among the first that is guided by the research question: “What formal and informal roles of ICT change agents affect financial services project outcomes?” The identified ICT change agents’ roles from Table 2 will be discussed in the context of three specific aspects.
Roles in an organisational structure

The formal roles of ICT change agents are reflected in their job titles and visible in organisational structures. This study discovered four ICT change agent job titles: Project manager, manager, consultant, and software developer. These four roles were already examined prior to this research. The findings of Kendra and Taplin (2004) identified an ICT project manager, the role of a manager as ICT change agent was highlighted by Johannessen (1994), and an ICT consultant by Winston (1999). Weiss and Anderson (2004) found that ICT professionals are ICT change agents, for example, in their roles as software developers. In contrast to the previous studies, this present research discovered that the role of a project manager and manager could be internal or external, while the role of a consultant is more likely to be external and the role of a software developer is usually occupied internally. Internal and external change agents have already been identified by Gibson et al. (2006).

Additionally, this current research discovered key individuals who act only as ICT change agents within financial services projects on a short-term basis. This role of short-term key ICT change agent within technology projects is performed by CEOs, chiefs, general managers and auditors. These individuals provide ICT projects with specific knowledge relating to financial services. The present study found that CEOs, chiefs and general managers promote a corporate strategy with change and/or innovation. This paper confirms the findings by Gibson et al. (2006) and Kotter (1996) that leaders act as change agents in order to drive the change and innovation processes. They are supported by auditors who verify whether the ICT projects are executed in accordance with financial services guidelines. This paper suggests that an ICT change agent is a broad term that encompasses various types of change agents who work as a team in financial services technology projects.

Roles in project management

This study shows that technology projects in financial services apply standard project management frameworks, as suggested by Buttrick (2005), emphasising defined resources, budgets and timeframes. In the present research, emerging ICT change agent roles are discussed in the context of the project management framework of Western Australian Innovation Centre (2005).

ICT change agents perform core project roles in every project management phase. In the initiation phase, ICT change agents act as initiators of change and knowledge promoters, while they perform the roles of planners in the planning phase. In the execution phase, they play the role of a software developer. Finally, in the terminator role, ICT change agents complete a technology project. These core project management change agents’ roles have already been discussed in the non-project management literature in different contexts. Rogers and Shoemaker (1971) identified the roles of initiators and terminators in the diffusion of innovations, whereas the role of a planner was suggested by Beckhard (1969). In the 1960s, change agents planned different activities; for example, in distinct tasks related to organisational processes, compared to an ICT project context, the planning is specifically about ICT innovation, resources, budgets and timelines. A developer role within organisational processes is examined by Hamlin et al. (2001), whereas the present research found that an ICT change agent in the role of a software developer is accountable for the design of ICT innovation. This present study identified that the role of software developer is denoted by the job title and, at the same time, by the project work of this ICT change agent in the execution phase. A knowledge promoter role can be traced back to the study by Witte (1973) that was concerned with innovation.

Apart from core project management roles, there are distinct project roles that are grounded in financial services. For example, Varney (1977) suggested more generally the role...
of a strategic planner. The present study discovered that a strategic planner role in financial services has a recurring nature. In response to global financial customer demands, ICT projects need to consider and execute a corporate strategy in the role of a technology architect. The role of a technology architect is an essential role at the beginning of an ICT project. This present research found that a technology architect has not been previously identified in the literature. A technology architect is a new role that has emerged as a consequence of fusing different ICT technologies into a technology system that needs to be in accordance with a corporate strategy in the financial sector.

Further project roles discovered in this research are analyst, adviser and implementer which are closely linked with financial services. Prior to this research, Hunt (1972) referred to the role of an analyst that was concerned with a problem-solving activity to a change agent. The present study found that, apart from a problem-solving activity, the current analyst role of an ICT change agent also examines new technologies in detail in terms of return on investment of a technology project. This present research confirms the findings of Hamlin et al. (2001) and Buchanan and Huczynski (1997) by arguing that the roles of advisers and implementers are also performed by ICT change agents in order to diffuse ICT innovation and execute defined project tasks within financial services.

Roles in an informal network

According to Von Stamm (2003), informal networks are essential for the exchange of knowledge. This present study advances her findings by arguing that fast changing technology drives the majority of ICT change agents to use informal networks. Due to the disruptive nature of ICT innovation (Christensen, 1997), ICT change agents perform the ongoing role of a knowledge promoter. This informal role dates back to the formal role of knowledge promoter as observed by Witte (1973). In other words, the hyper-speed of ICT innovation drives ICT change agents’ behaviour towards informal networks. Moreover, this present research found that the informal behaviour of a financial services ICT change agent is aligned with promoting innovation which is rooted in the core roles of influencer and facilitator. Both roles were discussed in the literature as formal activities: influencer (Rogers, 1995) and facilitator (Mantel et al., 2005). This empirical research contradicts the more general study by Awazu (2004) regarding the informal network roles. In the complete study set out in Jagodick (2008), Awazu’s five informal roles specified previously have mainly been performed in public sector settings, rather than in the private sector as assumed in Awazu (2004).

Due to progressive globalisation which demands competition in time, financial services ICT change agents are driven to perform different informal roles than public sector ICT change agents in order to deliver set project outcomes. Continuing globalisation of financial services supported by cutting-edge ICT innovation drive the majority of ICT change agents to perform varying formal and informal roles (see Table 1). These formal and informal roles affect the outcomes of financial services ICT projects (see Appendix A).

6. Implications for research and practice

Globalisation is characterised by an increasing number of competitors that force companies to innovate rapidly (Longhi, 2005). In this context, financial services need to develop best current global practice swiftly through innovation processes. Most innovation is coming from outside an organisation (Kanter, 1983), so ICT change agents rely on the internal and external sources of knowledge using formal activities and informal networks to develop and manage innovation from a global perspective.

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Figure 1 shows that ICT change agents’ activities are influenced by financial services settings, globalisation and ICT innovation. In particular, the arrows illustrate that the formal components and an informal process impact directly on ICT change agents’ roles. Formal roles are visible and embedded in an organisational structure and project management, while informal roles are non-visible and emerge from an informal network. Bidirectional arrows highlight that in a financial services project, ICT change agents link these formal components and informal processes in order to deliver set project outcomes.

As depicted in Figure 1, globalisation and ICT are the driving forces beyond ICT change agents’ activities. Consequently, those drivers induce ICT change agents to connect their activities in distinct roles. In order to meet project management requirements in a time of globalisation, ICT change agents perform formal roles, whereby in informal roles they act in a corresponding manner to the fast pace of ICT innovation which needs to be diffused swiftly within financial services.

The roles reveal whether the ICT change agents’ prime work is centred on change or innovation. For example, Cases 10, 13, 14, 16 and 18 in Table 1 show that some project managers and managers are primarily focused on the formal management and implementation of the ICT change process rather than discontinuous ICT innovation. Consequently, these five cases perform only formal roles within an organisation structure and project management phases. The other 14 cases in this study depict global ICT change agents who develop, manage, implement and diffuse ICT innovation, performing both formal activities within an organisational structure in various project management phases and informal operations within informal global networks. In particular, it is evident that when radical innovation is diffused and implemented in financial services, then ICT change agents rely on informal networks and also need to perform the role of knowledge promoter. This means that financial services need to set up new training programs that assist in differentiating between change (based on existing rules) and innovation (based on new ideas). As noted in the literature, change requiring minor alterations to tasks does not carry much complexity or risk, but both of these elements rise significantly when innovation enters into the technology project. This implies that informal networks are not required in a change process without significant ICT process innovation.
Thus, this paper suggests that ICT change agents within financial services need to be trained according to Table 2. This table illustrates that ICT change agents play specific team roles formally and informally in order to deliver formal project outcomes. In other words, the standard project management training (Buttrick, 2005) and general informal network roles (Awazu, 2004) are unsuitable for the ICT projects within financial services. By way of illustration, the set ICT change agents’ training within financial services needs to be focused on global linkers who can interact deliberately, as well as spontaneously, with different people formally and informally and connect the informal processes with formal project tasks ad hoc. A further step would be to rename ICT change agents as innovation agents. This would underpin that the global actors foremost deal with innovation rather than change.

The analysis in this paper also clearly indicates that the conceptual framework in Figure 1 can be used to obtain the services of global ICT change agents by specifying the informal as well as formal roles that such change agents need to conduct in position descriptions and related key selection criteria (if appointing internal change agents) and in tender documents (if appointing external change agents). Following on from this selection process, specific KPIs (Key Performance Indicators) for each change agent can be explicitly set up using the same framework in Figure 1. In learning organisations (Garvin, 1993) that operate with learning cycles (experiment, experience, reflection, consolidation), the clear requirement for learning networks (Bessant et al., 2003) to build innovative capability provides a further opportunity for financial service organisations to adopt the conceptual framework in Figure 1 as a clear method of incorporating formal components and informal processes.

Additionally, the conceptual framework in Figure 1 has been developed schematically by systematising the findings from the previous section into a conceptual framework for future research in order to investigate how different formal and informal roles tie to different project outcomes. Due to new government regulations and political developments, it seems reasonable to assume that these global actors will increasingly deal with politics inside ICT projects that could result in new roles for technology change agents.

7. Conclusion

The globalisation of financial products on web-based platforms has fostered the rise of the ICT change agents. Two distinct types of change agents participate in financial services technology projects. The first types are named as long-term ICT change agents with job titles such as project managers, managers, consultants and software developers. These roles could be performed by internal or external ICT change agents. The second types are labelled as short-term ICT change agents whose job titles of CEOs, chiefs, general managers and auditors are grounded in the financial services sector. The differences reflect that both types of ICT change agents have accumulated different sets of knowledge that are demanded in technology projects.

It is evident that both Australian and German financial services ICT change agents use similar standard practitioner project management frameworks. In the standard project management frameworks, ICT change agents’ roles are embedded in the formal context of project management phases and financial services settings. The project management roles refer to initiator of change, knowledge promoter, planner, software developer and terminator. By comparison, the roles linked to organisational settings are strategic planner, technology architect, analyst, adviser and implementer.

The nature of ICT innovation demands the fast diffusion of new ideas and, at the same time, exchange of technology knowledge on demand that is accumulated in informal networks. In informal networks, ICT change agents’ roles are centred on knowledge promoter, influencer and facilitator.
While standard project management highlights only the formal and planned tasks, it is evident that ICT change agents use informal networks in order to accomplish set formal project goals which are driven by globalisation and ICT innovation. The speed of globalisation of financial services and fast-changing ICT innovation lead to a greater linkage of formal and informal ICT change agents’ roles. A conceptual framework has been developed in this study to systematise the interaction between formal and informal activities and ICT project outcomes. Using this new conceptual framework, further research is necessary to determine to what extent political agendas emerging from the Global Financial Crisis will impact on ICT change agents’ activities and project outcomes.

Acknowledgements

We would like to thank Talia Barrett for her proofreading and academic support, and also two anonymous reviewers for their critical comments which helped considerably to enhance the quality of this paper.

References


Appendix A. Description of cases in the study.

<table>
<thead>
<tr>
<th>Cases</th>
<th>ICT project description</th>
<th>Performed formal roles to affect project outcomes?</th>
<th>Performed informal network roles to affect project outcomes?</th>
<th>Measured project outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case 1</td>
<td>Providing better functions regarding a banking product on the internet</td>
<td>Yes</td>
<td>Yes</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 2</td>
<td>Upgrading to a new technology infrastructure solution</td>
<td>Yes</td>
<td>Yes</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 3</td>
<td>Upgrading of the existing applications to a web based broker solution</td>
<td>Yes</td>
<td>Yes</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 4</td>
<td>Enhancing performance of existing applications</td>
<td>Yes</td>
<td>Yes</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 5</td>
<td>Upgrading of the customer analytic records</td>
<td>Yes</td>
<td>Yes</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 6</td>
<td>Consolidating different existing credit card technologies into one platform</td>
<td>Yes</td>
<td>Yes</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 7</td>
<td>Providing a new solution in the field of infrastructure and data management</td>
<td>Yes</td>
<td>Yes</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 8</td>
<td>Offering direct banking on web-based technology</td>
<td>Yes</td>
<td>Yes</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 9</td>
<td>Transforming old applications to a new web-based platform relating to Cash Pooling System</td>
<td>Yes</td>
<td>Yes</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 10</td>
<td>Replacing the existing client-server application through a web-based solution</td>
<td>Yes</td>
<td>No</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 11</td>
<td>Implementing a structured electronic guidance relating to a bank product</td>
<td>Yes</td>
<td>Yes</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 12</td>
<td>Strategic planning of a trouble management system</td>
<td>Yes</td>
<td>Yes</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 13</td>
<td>Providing worldwide bank branches with a trouble management system</td>
<td>Yes</td>
<td>No</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 14</td>
<td>Transforming existing application to a new operating system</td>
<td>Yes</td>
<td>No</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 15</td>
<td>Consolidating all intranets of a big bank</td>
<td>Yes</td>
<td>Yes</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 16</td>
<td>Consolidating 68 bank branches to one platform on the internet</td>
<td>Yes</td>
<td>No</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 17</td>
<td>Consolidating different projects to a call centre</td>
<td>Yes</td>
<td>Yes</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 18</td>
<td>Mail Services Support</td>
<td>Yes</td>
<td>No</td>
<td>Resources, budgets, timelines</td>
</tr>
<tr>
<td>Case 19</td>
<td>Improving a test management system</td>
<td>Yes</td>
<td>Yes</td>
<td>Resources, budgets, timelines</td>
</tr>
</tbody>
</table>