Association for Information Systems
AIS Electronic Library (AISeL)

ACIS 2009 Proceedings

Australasian (ACIS)

12-2009

A "Framework of Ideas" to Support an Action Research Study of ICT- Enabled Organisational Change in the Not-for-Profit Sector

Nicole L. Howard
School of Computer and Information Science, University of South Australia, Nicole.Howard@unisa.edu.au

Paul A. Swatman
School of Computer and Information Science, University of South Australia, paul@swatman.net.au

Follow this and additional works at: http://aisel.aisnet.org/acis2009

A "Framework of Ideas" to Support an Action Research Study of ICT-Enabled Organisational Change in the Not-for-Profit Sector

Nicole L. Howard
Paul A. Swatman
School of Computer and Information Science
University of South Australia
South Australia, Australia
Email: [nicole.howard\paul.swatman]@unisa.edu.au

Abstract

This paper develops a theoretic framework which may be used to guide research into effective organisational change. The focus of our work is restricted to (i) ICT-mediated organisational change and (ii) change within a Non-Profit-Organisation (NPO) and, therefore, the framework of ideas presented here is focussed on a characteristic of NPOs: an unusually highly intrinsically motivated workforce. This focus has suggested that more than usual attention is paid to individual employees and the granularity of the underlying study for which this framework has been defined is set accordingly. The framework is, however, not necessarily restricted in its scope of application to such organisations, or to such organisational change. We encourage the use of the framework beyond the boundaries we have set for our project.

Keywords

Organisational change, intrinsic motivation, ICT adoption, motivation crowding theory, non-profit organisation

INTRODUCTION

The initial adoption and ongoing acceptance of information and communication technology (ICT) within organisations are complex processes with significant technological, social and organisational challenges. Introducing information and communications systems based upon on ICT-enabled infrastructure to non-profit organisations (NPOs) and expanding the use of both the technology and the enabled systems within such organisations is an ever-more frequent response to meeting the increasingly rapid changes occurring within the non-profit sector worldwide (Klemz, Simon and Kumar, 2003). However, ICT-enabled organisational change within NPOs, indeed the adoption and sophisticated use of ICT in general, has proved to be problematic (Denison and Johanson, 2007; DCTIA, 2005). The characteristically, fundamentally vocational – and significantly voluntary – nature of the workforce within this sector means that barriers to ICT adoption must be dealt with through a change process within which the intrinsic motivation of staff, clients, volunteers and other stakeholders is preserved – or, if possible, enhanced.

Howard and Swatman (2009) report a preliminary cycle of action research exploring the problems of organisational change within a large non-profit organisation and focusing on the mutual interaction of an organisational change initiative and the motivation of the workforce. The theoretic framework for the intervention and analysis was Motivation Crowding Theory (MCT). It was found that using an adaptable multi-perspective, participatory and educational organisational change process has the potential to enhance intrinsic motivation within the workforce.

Our project extends these ideas and focuses on developing an effective organisational change methodology suitable for the non-profit sector – and, within this sector, particularly NPOs delivering social services – so they might effectively respond to the increasing pressure placed on them to operate effectively in an increasingly competitive context whilst maintaining their existing (comparative) strategic advantage which derives from their intrinsically motivated workforces (Benz, 2005). As a first step in developing this methodology, (a step which we report here) it is necessary to review and synthesise theories, methodologies and frameworks relevant to the focal concerns of this research: organisational change, worker motivation and ICT adoption from the perspectives of the management, psychology, information systems and to a limited extent, economics fields. As this paper shows, these literatures are, in part, silos – each failing in important ways to be informed by the others.

Previous research demonstrates that motivation has an impact on ICT adoption and the success of implementing change within organisations (see, eg: Davis et al., 1992; Venkatesh et al., 2003; Gardner and Ash, 2003; Markus, 2004; Likert, 1967). Whilst participatory initiatives have been explored in the management and ICT literature as potential mitigating factors, continuing high failure rates indicate that this is not enough.

This paper outlines the various theories, methodologies and frameworks reported in the various literatures covering our focal areas of concern; 1) organisational change, 2) motivation and finally 3) ICT adoption, motivation and organisational change. We demonstrate weaknesses within each from the point of view of applicability within this research project and, finally, develop a theoretic framework as a synthesis of theories outlined in this paper. By studying the interplay between an ICT-enabled organisation change initiative and its impact on worker motivation in the setting of a representative NPO with its highly intrinsically motivated workforce we will "spiral towards understanding" and evolve (and, preliminarily, test) an effective methodology to reduce the likelihood of long term failure in both ICT adoption and organisational change within an NPO.

Summarising then, NPOs need to implement systematic information systems but attempts to do so have met largely with failure. There is strong evidence to suggest that problem is not in the information systems per se but the organisational change process surrounding adoption and that this is a consequence of misunderstanding the motivation of the workforce in this sector.

ORGANISATIONAL CHANGE

The literature on organisational change is extensive and offers various theories, models and methods. Nonetheless, it seems that organisations still find it difficult to implement systemic change successfully (considered over the long term).

The organisational change literature has been reviewed four times in the *Journal of Management's Yearly Review* series, with the first such review appearing in 1987 (Armenakis and Bedeian, 1999; Elias, 2009). Four other major reviews were completed between 1974 and 1990; two of these appearing in edited books and two in the *Annual Review of Psychology* (Pasmore and Fagans, 1992). This suggests that the field of organisational change or organisation development is evolving, is problematic and is multi-disciplinary.

A relatively recent review by Armenakis and Bedeian (1999), focuses on theory and research covering four common issues: content, context, process and criterion (commonly assessed outcomes), they also review affect and behaviour in organisational change, and notice that, in the short term, most change efforts reach their intended goals, nearly all of which are economic and are easily measurable (e.g. increasing production, lowering costs etc) but have longer term negative side–effects, e.g., diffuse impacts on staff resulting in lower workplace morale, and organisational commitment (Armenakis and Bedeian, 1999). One commonly accepted explanation for this is that, whilst the change process is occurring, workers temporarily adopt or willingly take part in the process, this fails to change their underlying behaviour/motivation so, ultimately, rejection occurs – suggesting that fundamental behavioural change is necessary to ensure longer lasting success of change initiates (Armenakis and Bedeian, 1999; Likert, 1967; Elias, 2009; Oakland and Tanner, 2007).

Management Theories

One of the classical management theories, "scientific management", which became popularly known as "Tayolorism" was developed and reported by Frederick Taylor in *The Principles of Scientific Management* (1911). A few years later Frank and Lillian Gilbreth released *Applied motion study* (1917), both were exploring ways, through scientific study, of increasing productivity through simplifying technical work aspects (Helms-Mills et al., 2009).   These approaches tended to view the workforce as essentially interchangeable "production units". Since this time the fields of psychology and sociology have become more influential in the study of management. During the 1920's for example Elton Mayo conducted the Hawthorne studies which surprisingly led to the realisation that "*money was not the sole motivator for workers.*" (Helms-Mills et al., 2009, p.27) and that "*people are inherently social beings*" (Whitely and Whitely, 2007, p.159) and according to Morgan (1997) worker motivation became a hot issue for researchers.

This refocusing of the domain is outlined in Miner's (1984) survey on theories in organisational science (an investigation of the state of this field) resulting in a list of 35 theories (out of 110) being rated on their validity and usefulness. It was found that those theories which rated highly on both validity and usefulness were motivation theories arising predominately from the psychological field (Miner, 1984).

Elias, (2009) and Armenakis and Bedeian, (1999) both note that most organisational change literature focuses on macro (organisation-wide) issues rather than individual or worker concerns (micro) and is generally limited in scope focusing on a narrow set of considerations. Elias (2009) goes on to observe that, more recently, researchers in this field have begun focusing their attention on the micro-level issues such as how change affects organisational commitment.

Models and Frameworks

It is generally accepted that management is responsible for successfully enabling organisational change – managers' leadership qualities and actions have a direct influence on workers acceptance of change. Models

have been developed to help management understand and guide the organisation through these processes; yet according to Gilley et al., (2009, p.75) *"organisational leaders lack a clear understanding of or ability to engage the steps necessary to implement change successfully"*.

Perhaps the most widely recognised and referenced change model is Lewin's (1951) *Three step change process*, which is representative of the traditional or classical approach to management. Lewin (1951), arguing in the context of changing group standards to lift performance; says that short lived change is not enough to sustain a permanent change and that (1) unfreezing, (2) moving and (3) freezing processes need to occur to ensure permanency of the new standard.

Many multistep frameworks have been built on the foundation of Lewin's early work. Kotter (1995), for example, suggests an eight-step model focusing on the importance of leadership that consists of; (1) establishing a sense of urgency, (2) creating a guiding coalition, (3) developing a vision and strategy, (4) communicating the change vision, (5) empowering broad based action, (6) generating short term wins, (7) consolidating gains and producing more change, and (8) anchoring new approaches in the culture (Kotter, 1995). Whilst this approach is more human centred than Lewin's original change process, it remains, (like Lewin's work) centred on an unvoiced and underlying concept that change is designed for and "imposed" on the organisation by management and pays little attention to addressing the motivation of staff who are stakeholders and actors in (i) the initial system; (ii) the desired system; and (iii) the system of change itself.

In considering staff motivation as a factor in increasing productivity, Hackman and Oldham (1976) created the job characteristics model, which could be characterised as a model of work redesign, outlining how work processes can be designed to increase motivation (Helms-Mills et al., 2009) along similar lines to Herzberg's motivation-hygiene theory (Sachau, 2007). The model highlights the relationship between job characteristics and a worker's intrinsic motivation to perform effectively in his/her job, and the consequent effects on productivity (Hackman and Oldham, 1976). The model links the core job characteristics to a worker's psychological state in order to produce behavioural outcomes (Hackman and Oldham, 1976; Helms-Mills et al., 2009). Behavioural outcomes, it seems, are indicators of successful long term change.

More recently, Oakland and Tanner (2007) introduced the Organisational Change Framework which clearly demonstrates that organisational change thinking, whilst it has evolved, has not 'separated the machine from the organisation', so to speak. Whilst they agree that behaviour is important and is the source of what *"makes the processes work or not"* based on people's beliefs and values, *"which is management's responsibility to influence"* (Oakland and Tanner, 2007, p.17), they believe it is ultimately the processes (incorporating organisation and resources, and systems and controls) that drives behaviour to successfully implement change, (and of course behaviour makes the processes work). From this framework it is clear to see that behaviour is important in successfully implementing change, as is the underlying motivation for that behaviour which seems to be missing from this framework.

There exist many more theories and models of, and methods to, undertake organisational change including business process reengineering (BPR), contingency theories, and so on. In this paper, for reasons of brevity we have focused, above, on a representative selection associated with the human resources branch of business management. It has become apparent that despite much theorising, over a number of years, there is growing recognition of the importance of intrinsic motivation in workers to organisational change efforts. This issue again deserves reflection and further research linked to empirical trials leading to successful implementation in real-world organisational change initiatives.

Observations from Howard and Swatman (2009) empirical study in the NPO suggest intrinsic motivation can play a significant positive role in implementing organisational change. Elias (2009) suggests the type of person who might exhibit signs of high intrinsic motivation; that these workers are more amenable to change and, therefore, employers whose industry undergoes a lot of change should look to hiring these types of people. Any change strategy needs to take into account an employees psychological processes (such as intrinsic motivation) as this has a direct relationship on whether the change effort will be a success or failure (Elias, 2009; Armenakis and Bedeian, 1999; Gilley et al., 2009; Likert, 1967).

Intrinsic motivation is, however, inherently difficult to measure. Frey & Jegen (2001, p.591) concede *"it is difficult if not impossible to determine which parts of an employee's motivation to perform his or her job are intrinsic and which are not"*. In his exploratory study investigating three antecedents of attitudes towards change, those being; internal work motivation, growth need strength and locus of control, Elias (2009) seems to agree, pointing out that there is a gap in the literature between intrinsic motivation, which he terms as "internal work motivation" and attitudes towards organisational change.

One key problem for researchers and, indeed, change managers, in this field, then, is how to measure a given worker's level of intrinsic motivation (or, at the least, to be able to compare intrinsic motivation levels before

and after and intervention). Only when we can do that can we reliably investigate how intrinsic motivation levels can be maintained, or possibly enhanced, during an organisational change process.

MOTIVATION

Worker motivation is driven by numerous needs and desires, such as money, security, personal satisfaction and so on. Another important factor is the intrinsic motivation or a person's internal drive to carry out a task, their job, or participate in an organisational change initiative such as using new technology, or undertaking a different process to achieve a goal, such as implementing a new document management system.

Motivation of workers to undertake and continue with organisational change initiatives is imperative for the initiative to be successful (Armenakis and Bedeian, 1999; Likert, 1967; Elias, 2009; Oakland and Tanner, 2007). Various organisational methods and models such as those outlined above have tried to take worker motivation into consideration, eg by including participatory initiatives such as including workers in the change process at nearly every stage. Unfortunately, mere inclusion of participatory initiatives has proven insufficient to sustain successful organisational change; introducing the intrinsic motivation concept into organisational change initiatives (largely ignored by the organisational field (Gagne and Deci, 2005; Osterloh and Frey, 2007)), whilst difficult to determine, measure and apply in work settings (Gagne and Deci, 2005; Frey and Jegen, 2001; Deci et al., 1999; de Charms, 1968), may lead to organisational change initiatives being a long term success.
Before looking at a selection of these theories it is important to give a definition of intrinsic motivation and its relationship to extrinsic motivation. According to Deci, et al., (1999, p.65),

> *"Intrinsic motivation energizes and sustains activities through the spontaneous satisfaction*
> *inherent in effective volitional action. It is manifest in behaviours such as play, exploration,*
> *and challenge seeking that people often do for no external rewards."*

When discussing the concept of intrinsic motivation (and it is a concept according to deCharms because "*There is simply no objective phenomenal reality that can be defined as a motive*" (deCharms, 1968, pp. 257-258)), it is important to consider extrinsic motivation.   Deci et al. (1999) point out that since 1961 various theorists have argued that external events, including rewards, affect motivation and behaviour. They review, evaluate and interpret 128 studies in four previous meta-analysis of the literature on the effects of rewards on intrinsic motivation and point out that rewards can be seen as a metaphor for the broader issue of control and freedom (Deci et al., 1999) which are both altered during an organisational change initiative. Further work by Deci and various other authors, including Benabou and Tirole, (2003), Frey, (2000), and Grepperud and Pedersen, (2006) have extended the investigation into the relationship between intrinsic and extrinsic motivation. Enough evidence exists in the literature to convince readers that extrinsic motivation affects intrinsic motivation and, as Frey and Jengen (2001) point out, it is therefore an empirically relevant concept.

There have been various descriptive terms used for intrinsic and extrinsic motivation, for example deCharms uses the Origin/Pawn (free/forced) terms for understanding the effects of personal causation in motivation (deCharms, 1968 p. 273; Notz, 1975) and Herzberg uses the terms Movement/Motivation when describing his motivation-hygiene theory whereby 'movement' relates to extrinsic motivation (fulfilling hygiene needs) and 'motivation' being intrinsic (fulfilling motivator needs), (Ambrose and Kulik, 1999; Sachau, 2007) and Davis et al., (1992) uses the terms usefulness (extrinsic motivation) and enjoyment (intrinsic motivation) to investigate their effects on the intention to use technology.

As in the organisational change literature, there exist a number of bodies of theory in the motivational literature including: drive; cognitive; behavioural; and need theories. Ambrose and Kulik (1999) demonstrated the diversity of motivational theories by summarising over 200 studies of work motivation published between 1990 and the end of 1997 in the context of seven traditional motivational theories: (1) motives and needs, (2) expectancy theory, (3) equity and justice theory, (4) goal-setting, (5) cognitive evaluation theory, (6) work design and (7) reinforcement theory.

The review within this paper focuses our attention to intrinsic motivation, looking at those theories most relevant to this concept. Of particular interest will be theories of self determination: cognitive evaluation theory leading to motivation crowding theory.

Theories of Self-determination

It is generally agreed that motivation is based on three psychological needs: self-determination, competence and interpersonal relatedness and involves the experience of personal choice (Deci and Ryan, 1985, p. vii; p. 38), as a result Edward Deci and Richard Ryan developed Self-determination theory (SDT) as a motivational theory based on the prior research of Heider and deCharms into the "*perceived-locus-of-causality*" (Deci and Ryan,

1985, p. 7). SDT comprises of three mini-theories, the most well known being cognitive evaluation theory (CET), followed by organismic integration theory and finally causality orientations theory. It is CET that we are most concerned with here.

Basically CET deals with the effects of external rewards on intrinsic motivation underlying which are psychological needs for competence and autonomy (Deci et al., 1999). As mentioned above, theorists have been arguing, since 1961, that external events affect intrinsic motivation and thus behaviour (Deci et al., 1999). For example deCharms (1968, p.329) hypothesised that introducing an extrinsic reward (for task completion) to an originally intrinsically motivated task may reduce motivation rather than enhancing it. He goes on to say that there was very limited evidence (at that time) to prove it. In response Deci (1971) was the first to publish studies relating to this hypothesis; exploring the effects of rewards (money, in this case) on intrinsic motivation (Deci and Ryan, 1985; Notz, 1975). Up until 1999 a total of 128 studies had been completed relating to this hypothesis, which is contrary to the operant theories (Deci et al., 1999) which underpin New Public Management (see Hood, 1991).

According to Deci et al., (1999) the reliability, robustness and their practical outcomes of these studies are debated despite the number of them which have been reported. Given that all the studies were "*well controlled experiments*" with participants ranging from pre-school to college age, (Deci et al., 1999, p.653) it is understandable that the studies could be questioned, particularly the generalisation of effects to mature populations, in a wide range of settings and variety of tasks (Notz, 1975). Some field studies have been undertaken in this area as outlined below, but it is clear further studies need to be undertaken in the field, taking into consideration the reactive effects which may be produced in a non-experimental setting (Notz, 1975).

The field of economics offers evidence of field studies which have been undertaken looking "*at the net outcome composed of the relative price effect as well as the crowding effec*t" in Osterloh and Frey, (2007, p.439). Here they list five field studies with the most well known example argued by Titmuss (1970), (as reported in Osterloh and Frey, 2007), that paying blood donors for giving blood undermines intrinsic motivation. Similarly conclusions from the study reported in Howard and Swatman (2009) showed intrinsic motivation can drive organisational change and organisational change can both enhance and reduce intrinsic motivation, demonstrating that field studies leading to compelling results can be undertaken in respect of intrinsic motivation.

Motivation crowding theory

The well-known economist, Bruno Frey introduced the intrinsic motivation concept and deCharms' hypothesis into the (micro)economics literature in 1997 as the 'crowding-out theory' based on CET (Osterloh and Frey, 2007), although Frey and Stutzer (2006) say that motivation crowding theory (MCT) is also known as CET.

Frey & Jengen (2001) use the term "crowding-out" to describe the following effect: if people perceive external influences via rewards or regulations to be controlling them, these external influences tend to *crowd-out* their intrinsic motivations. This is consistent with the other research presented in this paper however; Frey (1994) suggests that the social sciences have not considered the relationship that exists between external interventions (rewards), intrinsic motivation and the resulting behaviour. He takes this one step further by discussing the 'motivational spill-over effect' whereby "*the area in which an external intervention is applied need not be the same as the one where intrinsic motivation is affected*" (Frey 1994, p.348). This is consistent with the findings from the pilot study reported by Howard and Swatman (2009) where the organisational change initiative (external intervention) was argued to have increased the intrinsic motivation of the rest of the organisation in the NPO considerably who were volunteering to take part in the next phase of the project.

Given that people working or volunteering within NPOs typically exhibit high levels of intrinsic motivation (Benz, 2005; Yeung, 2004), and NPOs rely on this motivation to play an important role in their workforce's effectiveness (Leete, 2000; Frey & Jengen, 2001; Benz, 2005) it is not surprising for Frey (2000) to discuss crowding effects and volunteering in particular, he goes on to say it is expected to play a larger role here than in many other sectors of society, given that the underlying motivation for volunteering is intrinsic motivation. It can also be argued that since NPOs rely on the intrinsic motivation of all their staff (paid and volunteer) then this also plays a larger role than in the commercial or Government sectors.

Application

Intrinsic motivation, SDT and CET studies have been applied to a few areas most notably; education, psychotherapy and behaviour change, sports, with only a few studies conducted in organisational settings (Deci and Ryan, 1985; Gagne and Deci; 2005) and to a very limited extent information systems research pertaining to technology adoption.

That motivation is an important factor in person's work life, influencing behaviour and a person's sense of self (Deci and Ryan, 1985) has been recognised in the literature, particularly highlighted above in the organisational change sector. McGregor's Theory Y and Likert's System 4 Management Model, for example, are participative methods and styles of management that have proven to be successful in organisational change initiatives (Deci and Ryan, 1985; Likert 1967). Theory Y and Ouchi's Theory Z are very similar with the focus on people and their motivations based on varying organising concepts (Theory Y – autonomy; Theory Z – trust), (Deci and Ryan, 1985). Despite this, CET is difficult to apply in organisational settings and, as a result SDT was developed as a broader theory explaining various types of extrinsic motivation (Gagne and Deci, 2005). More recently Gagne and Deci (2005) developed an SDT summary model of work motivation to help guide further research and testing of work motivation particularly in organisational settings. There remains, however, a limited number of studies in the field.

Since both CET and SDT are difficult to apply in organisational settings, it is no wonder that they have not been fully or successfully applied within the IS/IT field. The extent to which the intrinsic motivation concept has been canvassed within the IS/IT literature, however, is very limited and, it seems, mainly restricted to studies of Internet/website usage and eCommerce, (eg why people are motivated to shop online or undertake internet banking). Very limited application of the concept has been made in studies of the usage of personal computers and other such personal devices though there has been some discussion with reference to the Technology Acceptance Model (TAM) and its variants (e.g. the Unified Theory of Acceptance and Use of Technology) where the focus has been narrowly limited to a reaction of the potential user to characteristics of the innovation. It should be noted that these applications are consistent with the free choice concept inherent in intrinsic motivation.

ICT ADOPTION, MOTIVATION AND ORGANISATIONAL CHANGE

It seems that Davis et al., (1992) were the first to report application of the intrinsic motivation concept to technology adoption, (though in a restricted way – they consider motivation to use the innovation per se, but do not treat "selfless" motivation to use the technology for the good of the task or the organisation). Davis adapted the theory of reasoned action (TRA) to underpin the technology acceptance model (TAM) (Davis et al., 1989). Briefly, TRA is a social psychology model used to predict a person's behavioural intention (BI) by considering their attitude (A) and subjective norm (SN) toward that behaviour. Originally TAM predicted a person's behaviour intention (BI) by considering the attitude (A) towards using a system and its perceived usefulness (U), Davis et al.(1989) later added the subjective norm construct to TAM2 (Legris et al., 2003; Venkatesh et al., 2003). This generated much interest in the 1990's and especially in 2000 and 2001; but the concept of intrinsic motivation, for reasons which are not clear, appears to have fallen out of fashion in the IS/IT literature after this time.

TAM and TAM2, it seems, did not fully consider the underlying motivational forces that lead towards a person's behaviour, in fact Legris et al., (2003) suggest that significant factors are indeed missing from the models. Combined intrinsic and extrinsic motivation has a significant influence on a person's intentions regarding an activity and ultimately their behaviour (Lin, 2007). Davis et al., (1992) recognised this by undertaking two studies looking at the usefulness (extrinsic motivation) and enjoyment (intrinsic motivation) and their effects on the intention to use technology. Venkatesh and Speier, (1999) have termed this a 'motivational model'.

Davis et al., (1992) concludes by saying "*voluntary computer use is driven, to a large extent, by perceived usefulness*" (Davis et al., 1992, p.1112) and secondarily by how much a person enjoys using computers and that ease of use has effects on both usefulness and enjoyment. Davis et al., (1992) concedes that enjoyment (intrinsic motivation) and limited satisfaction can undermine technology adoption as demonstrated in two previous studies by Kraut, Dumais and Koch (1989), and Turner, (1984) (as reported in Davis et al., 1992), where despite increased productivity, job satisfaction had fallen. Clearly, user satisfaction, ease of use and intrinsic motivation all play an important role in technology adoption, despite the limited scope of research on intrinsic motivation within this field.

From the IS literature it seems that the concept of intrinsic motivation is represented in different ways which could be contributing to confusion about its importance with regard to IS/IT adoption. For example, "*Venkatesh (2000) models it as a determinant of perceived ease of use (effort expectancy)*" (Venkatesh et al., 2003, p.455), whereas Davis et al., (1992) discusses it as having a direct effect on the intention to use technology. For the purposes of this research project we are looking at the effect *intrinsic motivation to undertake the task within the organisation* has on an employee's fundamental flexibility and willingness to change for the perceived good of the task or the organisation and, thus, on the acceptance and use of ICT as part of an organisational change initiative.

Venkatesh et al., (2003) created the Unified theory of acceptance and use of technology by reviewing and consolidating constructs of previous models and theories of acceptance consisting of; (1) theory of reasoned action, (2) technology acceptance model (TAM), (3) motivational model, (4) theory of planned behaviour (TPB), (5) combined TAM and TPB, (6) model of PC utilization, (7) innovation diffusion theory and (8) social cognitive theory. At this stage of the project further research is required to develop and postulate a theory which will evolve and be tested during the empirical work.

It is important to remember that implementing ICT in an organisation causes change and this change has an impact on worker motivation and thus their behaviour, conversely worker motivation has proven to have an effect (negative and positive) on ICT adoption and implementing change. It is worth noting here – though we cannot deal with the issue in this paper – that this suggests the need to incorporate ideas from adaptive structuration theory (Giddens, 1984), drawing on the work of DeSanctis and Poole (1994), within the empirical research design.

Many believe that IT project management and organisational change management approaches are sufficient to ensure successful ICT enabled organisational change initiatives;

> *"Yet experts estimate that as many as 75% of organisational change efforts involving technology*
> *fail (even when the technology performs acceptably) because of people's negative reactions*
> *to changes in their work, organizational business processes and the technology they use."*
> (Markus, 2004).

Technochange, as Markus (2004) terms it is technology-driven organisational change, with the focus being on behavioural changes. Whilst this sounds like it is exactly what is needed to overcome the current difficulties faced the paper itself does not offer any solutions on how to change behaviours other than using a prototypical approach to technochange.

Like many other researchers Gardner and Ash (2003, p.23) realise that tension does exist between people, technology and change agents and suggests that "*emergent change, although difficult to manage in a conventional sense, can be shaped, harnessed or purposefully orientated under certain conditions*" and Keen (1981) using Leavitt's diamond classification of an organisation (Figure 1) agrees that technology, people, task and structure are all interrelated and when one section, such as technology, is changed the others will mutually adjust. Whether that mutual adjustment is accepting of the change or not plays a crucial role in the development of both organisations and the people within it.
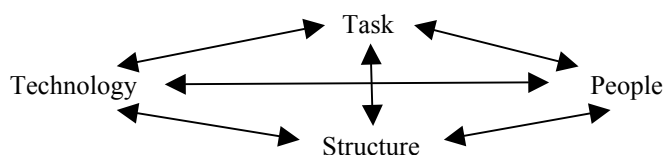

Figure 1: The Leavitt "Diamond" components of the organisation (from Keen, 1981, p.25)

The terms 'emergent', 'prototypical approach', 'pilot study', and 'incremental' used in Gardner and Ash, (2003), Markus, (2004), and Keen (1981) suggest, just like the organisational change literature does, that a more adaptive style of ICT enabled organisational change is required to ensure a more successful outcome than has previously been reported. Developing an effective methodology for ICT enabled organisational change within the framework of MCT in a highly intrinsically motivated workplace (the NPO) using a cyclical approach as outlined in Figure 2 will enable the researchers to develop an adaptive approach to ICT enabled organisational change.

CONCLUSION AND FUTURE WORK

The framework of ideas which we have outlined in this paper guides an action research study looking at the effect intrinsic motivation has on an employee's flexibility and willingness to change for the good of the task of the employee's organisational role, and/or of the organisation as a whole. This study will be undertaken within, and in partnership with, the NPO "UnitingCare Wesley, Adelaide". The context for the study is an organisation-wide organisational change project resulting from an internally and externally-driven need to systematise, and partially automate, information and communication systems in respect of both structured (eg forms, databases) and unstructured (eg free text documents, such as letters; conversation notes) data. The overall structure of the research programme is illustrated in Figure 2.
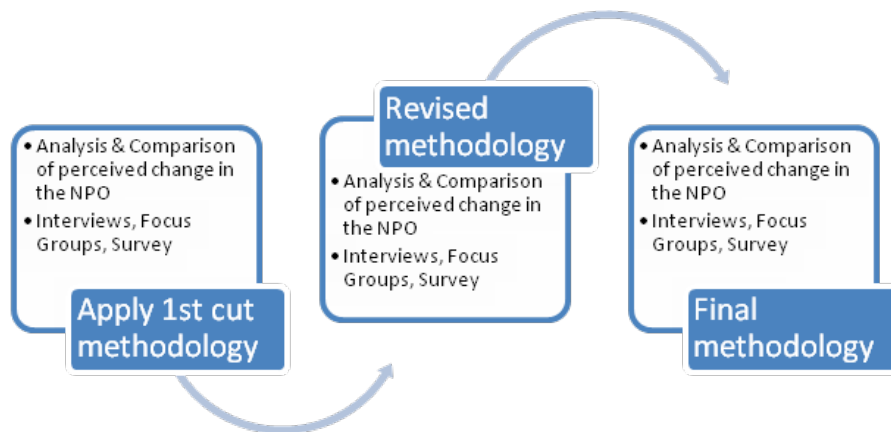
Figure 2: Research Approach

Work is currently continuing along two paths:

(1) The empirical research. The first action research cycle, guided by the theoretic framework described here, is in progress. In this phase of the research, data collection will take the form of observations arising from being embedded within the organisation; informal and semi-formal interviews with staff within the NPO experiencing the change process; focus group sessions and occasional surveys. Documents accessed during the process and artefacts of all kinds created during the process also form data and are being rigorously collected. The qualitative data will be coded on the basis of the critical and evolutionary use of a coding scheme derived initially from the theoretic framework described.

(2) The development of motivation measuring instruments. It is important that we accurately measure the intrinsic motivation of staff using a control group (not undergoing the change process) compared with those undertaking change. Whilst it has been agreed that it is generally problematic to do so, further work needs to be undertaken to decide what type of measurement tool will be used. Deci and Ryan, generally use two types of measurement tools in controlled experiments, those being free choice and self report (questionnaire). From initial research it seems the free choice measure is less appropriate for organisational studies. The most promising form of measurement would be the self report tool; however, when satisfaction and/or attitudes are measured it is difficult to discern if you are measuring intrinsic or extrinsic satisfaction (Deci and Ryan, 1985, p. 299). Briggs et al., (2008) has argued for a Yield Shift Theory based approach to measuring satisfaction in the context of novel ICT adoption resulting in changed professional work patterns and we are currently exploring this path. Deci and Ryan's Self Determination Theory website at Rochester University provides a number of questionnaires for researchers to use designed to measure motivation in a number of different settings and perspectives, ranging from laboratory experiments, health and sporting perspectives to school settings. While there seems to be no instrument suitable for direct application in organisational settings, an adaptation maybe feasible. At this stage of our programme of research, the issue of measuring motivation remains open.

REFERENCES

Ambrose, M.L., and Kulik, C.T., 1999, 'Old Friends, New Faces: Motivation Research in the 1990s', *Journal of Management,* vol. 25, no. 3, pp. 231-292.

Armenakis, A.A., and Bedeian, A.G., 1999, 'Organizational Change: A Review of Theory and Research in the 1990s', *Journal of Management,* vol. 25, no. 3, pp. 293-315.

Benabou, R., and Tirole, J., 2003, 'Intrinsic and Extrinsic Motivation', *Review of Economic Studies,* vol. 70, no. 3, pp. 489-520.

Benz, M., 2005, 'Not for Profit, but for the Satisfaction? - Evidence on Worker Well-Being in Non-Profit Firms', *KYKLOS,* vol. 58, no. 2, pp. 155-176.

Briggs, R.O., Reinig, B.A., and Vreede, G., 2008, 'The Yeild Shift Theory of Satisfaction and Its Application to the IS/IT Domain', *Journal of the Association for Information Systems,* vol. 9, no. 5, pp. 267-293.

Davis, F.D., Bagozzi, R.P., and Warshaw, P.R., 1992, 'Extrinsic and Intrinsic Motivation to Use Computers in the Workplace', *Journal of Applied Social Psychology,* vol. 22, no. 14, pp. 1111-1132.

Davis, F.D., Bagozzi, R.P., and Warshaw, P.R., 1989, 'User Acceptance of Computer Technology: A Comparison of Two Theoretical Models', *Management Science,* vol. 35, no. 8, pp. 982-1003.

DCITA, 2005, *Information and Communication Technology Transforming the Nonprofit Sector – A Discussion Paper,* Australian Government Department of Communications, Information Technology and the Arts, Canberra.

de Charms, R., 1968, *Personal Causation - The Internal Affective Determinants of Behavior*, Academic Press, Inc., New York.

Deci, E.L., and Ryan, R.M., 1985, *Intrinsic Motivation and Self Determination in Human Behaviour*, Plenum Press, New York.

Deci, E.L., Koestner, R., and Ryan, R.M., 1999, 'A Meta-analytic Review of Experiments Examining the Effects of Extrinsic Rewards on Intrinsic Motivation', *Psychological Bulletin,* vol. 126, no. 6, pp. 627-668.

Denison, T., and Johanson, G., 2007, 'Surveys of the use of information and communications technologies by community-based organisations', *The Journal of Community Informatics,* vol. 3, no. 2.

DeSanctis, G., and Poole, M.S., 1994, 'Capturing the Complexity in Advanced Technology Use: Adaptive Structuration Theory', *Organization Science,* vol. 5, no. 2, pp. 121-147.

Elias, S.M., 2009, 'Employee Commitment in Times of Change: Assessing the Importance of Attitudes Toward Organizational Change', *Journal of Management,* vol. 35, no. 1, pp. 37-55.

Frey, B.S., 1994, 'How Intrinsic Motivation is Crowded out and in', *Rationality and Society,* vol. 6, no. 3, pp. 334-352.

Frey, B.S., 2000, 'Motivation and Human Behaviour', in *Risk, Trust and Welfare*, ed. P Taylor-Gooby, Macmillan, London, pp. 31-50.

Frey, B.S., and Jegen, R., 2001, 'Motivation Crowding Theory', *Journal of Economic Surveys,* vol. 15, no. 5, pp. 589-611.

Frey, B.S., and Stutzer, A., 2006, *Environmental Moral and Motivation*, University of Zurich, Zurich.

Gagne, M., and Deci, E.L., 2005, 'Self-determination theory and work motivation', *Journal of Organizational Behavior,* vol. 26, no. 4, pp. 331-362.

Gardner, S., and Ash, C.G., 2003, 'ICT-enabled organisations: a model for change management', *Logistics Information Management,* vol. 16, no. 1, pp. 18-24.

Giddens, A., 1984, *The Constitution of Society Outline of the Theory of Structure,* University of California Press, Berkeley, CA.

Gilley, A., Gilley, J.W., and McMillan, H.S., 2009, 'Organizational Change: Motivation, Communication and Leadership Effectiveness', *Performance Improvement Quarterly,* vol. 21, no. 4, pp. 75-94.

Grepperud, S., and Pedersen, P.A., 2006, 'Crowding effects and work ethics', *Labour,* vol. 20, no. 1, pp. 125-138.

Hackman, J.R., and Oldham, G.R., 1976, 'Motivation through the Design of Work: Test of a Theory', *Organizational Behavior and Human Performance,* vol. 16, no. 2, pp. 250-279.

Helms-Mills, J., Dye, K., and Mills, A.J., 2009, *Understanding Organizational Change*, Routledge, Abingdon, Oxon.

Hood, C., 1991, 'A Public Management for all Seasons', *Public Administration,* vol 69 (Spring), pp. 3-19.

Howard, N.L., and Swatman, P.A., 2009, 'Organisational Change in the Third Sector and Implications for Organizational Networks', in Proceedings of the *22nd Bled eConference,* Bled, Slovenia, pp. 623-637, June 14-17.

Keen, P.G.W., 1981, 'Information Systems and Organizational Change', *Communications of the ACM,* pp. 24-33.

Klemz, J., Simon, G., and Kumar, A., 2003, 'IS Planning in Non-Profit Organizations: An Exploratory Study', *Proceedings of the 2003 International Association for Computer Information Systems Conference,* pp. 261-222.

Kotter, J.P., 1995, 'Leading Change: Why Transformation Efforts Fail', *Harvard Business Review,* March-April, pp. 59-67.

Leete, L., 2000, 'Wage equity and employee motivation in nonprofit and for-profit organizations ', *Journal of Economic Behaviour & Organization,* vol. 43, pp. 423-446.

Legris, P,, Ingham, J., and Collerette, P., 2003, 'Why do people use information technology? A critical review of the technology acceptance model', *Information and Management,* vol. 40, no. 3, pp. 191-204.

Lewin, K., 1951, 'Frontiers in Group Dynamics', in *Field Theory in Social Science*, ed. D Cartwright, Harper & Row, Publishers Incorporated, New York.

Likert, R., 1967, *The Human Organization: Its Management and Value*, McGraw-Hill, Inc., New York.

Lin, H-F., 2007, 'Effects of extrinsic and intrinsic motivation on employee knowledge sharing intentions', *Journal of Information Science,* vol. 33, no. 2, pp. 135-149.

Markus, M. L., 2004, 'Technochange management: using IT to drive organizational change', *Journal of Information Technology* vol. 19, no. 1, pp. 4-10.

Miner, J.B., 1984, 'The Validity and Usefulness of Theories in an Emerging Organizational Science', *The Academy of Management Review,* vol. 9, no. 2, pp. 296-306.

Morgan, G., 1997, *Images of Organization*, Sage Publications, Inc., California.

Notz, W.W., 1975, 'Work Motivation and the Negative Effects of Extrinsic Rewards', *American Psychologist,* vol. 30, no. 9, pp. 884-891.

Oakland, J.S., and Tanner, S., 2007, 'Successful Change Management', *Total Quality Management* vol. 18, no. 1-2, pp. 1-19.

Osterloh, M. and Frey, B., 2007, 'Does pay for performance really motivate employees?', in *Business Performance Measurement. Unifying Theory and Integrating Practice*, 2nd edn, ed. A Neely, Cambridge University Press, New York, pp. 433-448.

Pasmore, W.A., and Fagans, M.R., 1992, 'Participation, Individual Development, and Organizational Change: A Review and Synthesis', *Journal of Management,* vol. 18, no. 2, pp. 375-397.

Sachau, D.A., 2007, 'Resurrecting the Motivation-Hygiene Theory: Herzberg and the Positive Psychology Movement', *Human Resource Development Review,* vol. 6, no. 4, pp. 377-393.

Venkatesh, V., and Speier, C., 1999, 'Computer Technology Training in the Workplace: A Longitudinal Investigation of the Effect of Mood', *Organizational Behavior and Human Decision Processes,* vol. 79, no. 1, pp. 1-28.

Venkatesh, V., 2000, 'Determinants of Perceived Ease of Use: Integrating Control, Intrinsic Motivation, and Emotion into the Technology Acceptance Model', *Information Systems Research,* vol. 11, no. 4, pp. 342-365.

Venkatesh, V., Morris, M.G., Davis, G.B., and Davis, F.D., 2003, 'User acceptance of information technology: toward a unified view', *MIS Quarterly,* vol. 27, no. 3, pp. 425-478.

Whiteley, A., and Whiteley, J., 2007, *Core Values and Organizational Change Theory and Practice*, World Scientific Publishing Co. Pte. Ltd., Singapore.

Yeung, A.B., 2004, 'The Octagon Model of Volunteer Motivation: Results of a Phenomenological Analysis', *Voluntas: International Journal of Voluntary and Nonprofit Organizations,* vol. Vol. 15, no. No. 1, pp. 21-46.

COPYRIGHT