

The Phenomena of Uncontrolled Communication as Resistance during the Implementation of an Enterprise Resource Planning System

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ABSTRACT

This paper uses case study methodology to examine the phenomena of uncontrolled or informal communication (rumours) in an organization in the process of planned change accompanying the implementation of an enterprise resource planning system (ERP). This case study shows the effects of staff resistance, and detrimental rumours in particular, during the course of an information systems implementation in a large organisation. The information systems literature identifies that staff resistance to a new system implementation can influence negatively on both the course of the implementation and user uptake of the system as shown in the modified technology acceptance model (TAM). The staff perceptions in this case shows that rumours may fuel negative perceptions about the new system if not effectively managed, and result in staff displaying resistant behaviours. The findings from this study recommend that staff perceptions are monitored and appropriate management strategies employed to more effectively ameliorate uncontrolled communication in organisations adopting new technology.

Keywords: communication, rumours, perceptions, change management, attitudes, power

Staff resistance to change within an organisation is not new nor is resistance to the use of a new information system. This paper discusses the effects of uncontrolled communications (rumours) as a method of resistance at University X during the implementation of a new large-scale information system known as an Enterprise Resources Planning (ERP) system. This paper reviews pertinent literature, and proposes a modification of the Technology Acceptance Model that includes the social influences of organisational context, and rumour activity. In the last section of this paper, we identify implications for practice and propose that monitoring staff perceptions of change can assist management to alleviate the affects of rumours before they become a concern to the wider organisational community. This paper examines the proposition that uncontrolled communication (rumours) can negatively affect an implementation and adoption of new technology and using the case study at University X develops recommendations for strategies to ameliorate these negative consequences.

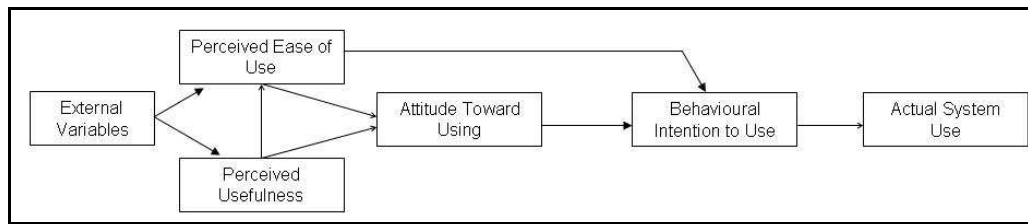
BELIEFS AND RUMOURS

The literature reports the phenomenon of staff resistance accompanying new system implementations from the 1980s by Markus (Markus 1983; Markus, Axline, Petrie and Tanis 2000) and more recently by Goodwin (2005), and Randolph and Main (2005). If organisations do not manage resistant behaviours effectively during a new technology implementation, Amoako-Gyampah and Salam, (2004) show that this leads to increased negative perceptions about the changes resulting from that implementation and its adoption.

Negative perceptions in the form of rumours about the usefulness of a new system can influence the way the users of the new system perceive it and may minimise engagement with the system. The resistance discussed in this paper takes the form of “dread” rumours (Bordia and DiFonza, 2004) a form of unauthorised and subsequent miscommunication amongst staff members. This promotes active resistance in the form of developing shadow information systems (informal systems developed by staff), blaming the lack of system training and avoidance of meetings. Furthermore, hidden agendas, as a form of covert action during meetings demonstrate poor cooperation with those implementing the system. Political power plays emerge, with staff fearing the loss of control of their immediate work environment (Randolph and Main 2005). Rumours play a major part in magnifying the underlying fear of staff to changes in the work environment, and can surround major changes, and due to their uncontrollable nature, lack the legitimacy of official communications. Bordia and DiFonza (2004), in their research, have linked the level of anxiety felt by those participating in spreading rumours to the momentum and longevity of the rumour. Once the first wave of discussion starts, it is very difficult to stop the momentum, particularly when the word spread is ‘dread’. This is particularly relevant when there has not been any communication for the rationale for change, and rumours circulate amongst subgroups of an organisation in an attempt to provide an explanation to those events. These events in the workplace environment will present a different perspective for each subgroup affected by that change, and therefore the reaction of each group may be different (Morgan, 1998). The concept map of University X appearing on page 7 at Figure 4, puts the effect of the rumours into an organisational context and links these effects back to the staff perceptions of communication and training.

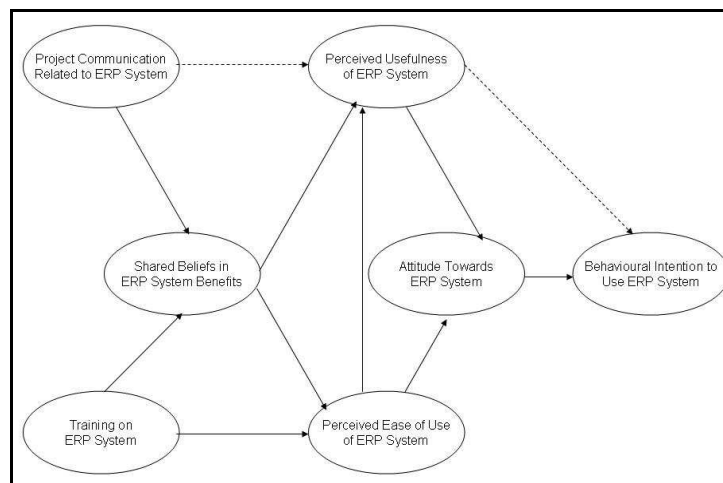
A number of researchers have suggested that the lack of effective user involvement in the implementation process of an ERP system projects leads to negative perceptions and poor engagement with the outcomes of the implementation. Lack of user involvement has been shown to lead to increased staff resistance to the use of the new system as shown in the diagram below (Figure 1, page 4) (Jaacks and Kurtz 1999; McCredie and Updegrove 1999; Smith, 2000; McConachie, 2001).

Figure 1 Technology Acceptance Model (Davis, Bagozzi and Warshaw, 1989)



The technology acceptance model (TAM) shown at Figure 1, depicts the area where the external variables, such as the lack of user involvement, affects the perceived system usefulness and ease of use that eventually leads to low engagement of users with the new system (Davis, Bagozzi and Warshaw, 1989). The TAM, as modified by Amoako-Gyampah and Salam (2004), shows the influence that external factors such as project communication and training have on the user's acceptance of a new system, (Figure 2), and the authors claim that project communication has little effect on the user's perceived usefulness of the new system.

Figure 2 Extended Technology Acceptance Model [unconstrained model] (Amoako-Gyampah and Salam, 2004)



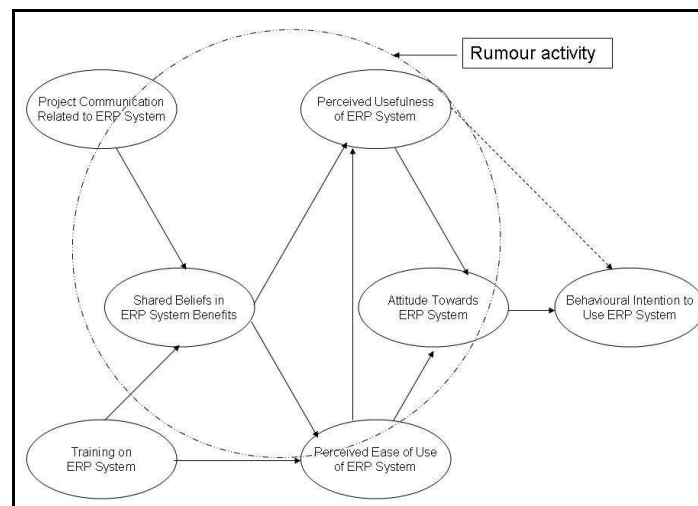
Amoako-Gyampah and Salam (2004) showed in their research that both training and communication influence the shared beliefs users formed about the benefits of technology implementation, which in turn affects the perceived ease of its use and ultimately, the user's adoption and use of the system. In their papers discussing the extended TAM, Amoako-Gyampah and Salam depict three possible models, one of which is the unconstrained model as shown at Figure 2. In relation to this model, they discuss the statistical non-significance of project communication affecting the perceived usefulness of the ERP system.

On the contrary, from the case study data discussed in this paper, we show that project communication can affect the perceived usefulness of the system as well as users' perceptions of other areas the system. Communication strengthens shared beliefs and when that communication is unofficial or uncontrolled, these shared beliefs can affect these beliefs as shown at Figure 3. The diagram below

(Figure 3) shows that whilst training can facilitate the user's acceptance of a system, it will not entirely overcome all resistance.

Shared beliefs as depicted in Figure 3, affect the way staff perceives the new system and their attitudes towards adopting it and rumours circulating amongst staff can further affect this situation. Staff belonging to a particular group or department, will compare their situation and perspective with other groups or individuals (Shibutani, 1955).

Figure 3 Extended Technology Acceptance Model with Rumour Activity (adapted from Amoako-Gyampah and Salam, (2004).



If this comparison between subgroups and individuals occurs, there will be a discussion amongst those staff members and this could be the start of a rumour circulating (Michelson and Mouly, 2002). In a discussion on informal communication, Crampton, Hodge and Mishra (1998) report the benefits of rumour fulfilling a social function by drawing different work groups together. In the case of University X, rumours circulating amongst the various subgroups acted as a catalyst to combine the different groups, resulting in the development of a unified resistant front to the ensuing change.

Butler and Fitzgerald, (2001) also indicate that the level of communication between the user and developer/implementer is a major factor for success during the change process accompanying a new information system. In addition Jaacks and Kurtz (1999), and McCredie and Updegrave (1999) stress the importance of timely and comprehensive training for all levels of the organisation to assist in the user acceptance of the new system. They also emphasize the importance of regular communication about the changes occurring as a result of the implementation, in language that is understood by those at all levels of the organisation, so that all staff understand what is happening (Frantz, 2001). Therefore, the level and type of communication and to some extent, appropriate training can positively affect the perceptions of users and thus the level of use of the new system and can minimize the level of staff resistance and the impact of rumours in an organisation.

Further, lack of communication can cause major tensions during the implementation of a new information system, especially between the users of the old system and the implementers of the new system. A possible cause of this may be the differing perceptions as to the need for the new system or a skewed view of the rationale for the implementation, with differing views held by the staff affected. Davenport (2000) suggests that many technology implementations fail due to lack of user acceptance and the understanding of the need for change. Each person affected by the change has his or her own world-view of why this change is happening and communication about the need for change should be clear to all levels of the organisation.

RESEARCH METHODOLOGY AND DATA COLLECTION

Case study at University X

This case study, drawn from one author's thesis, describes the resistant behaviours in the form of uncontrolled communications as displayed by staff surrounding the implementation of a new information system in an Australian university. The research undertaken at University X was part of a study examining the issues, as perceived by staff, affecting an ERP system implementation in three Australian universities. The study reported that the existing administrative systems were unable to continue providing the required information and processes to ensure legislative compliance and management of an increasingly large and complex organisation.

University X is a regionally based Australian university with a number of regional and international campuses across multiple sites. University X, in conjunction with a corporate implementation partner, implemented an ERP system that involved re-engineering related administrative processes. Senior management at University X viewed the decision to implement an ERP system as an important investment of substantial resources, designed to improve operational efficiency and productivity while advantageously positioning the university in the global higher education environment. Uncontrolled communication (rumours), however, negatively affected the course of the ERP implementation at University X. Poor communication strategies employed by senior managers were reported as provoking further uncontrolled communication among the staff throughout the University (Fisher and Walker-Gibbs, 2007).

Since the late 1990s, there has been an increasing use of integrated information systems known as ERPs in most large businesses and organisations and, more recently, globally, in the higher education sector. In the last decade, there has been increasing government pressure on universities to operate as businesses. Growth in student numbers and declining government funds are factors that have driven the need for universities to improve the administrative efficiency of their operations (Allen and Kern, 2001). For many universities a common strategy has been to implement ERPs (Allen and Kern, 2001). ERPs are commercial software packages designed to assist organisations to integrate existing administrative systems in the areas of finance, human resources, supply chain information, and

customer information (von Hellens, Nielsen and Beekhuyzen, 2005). Universities introduced ERPs with the aim of improving and integrating their administrative systems and efficiency while at the same time providing a focus on improved customer service by offering e-commerce strategies (Frantz, 2001). The university in this case study was operating in a period of rapid expansion combined with the need to increase compliance with government regulations which influenced senior executives of the University to implement the ERP system sooner rather than later.

The evolution within this institution generated increasingly complex demands on administrative systems to support the management of the organisation, which in turn focused attention on the information systems necessary to support this function. In addition to changes in the structure and focus of the institution, University X, faced, along with other universities in Australia, the need to respond to the increasing information needs that the federal government required from it (Oliver and Romm, 2002). The planned three phase ERP system implementation was initiated in June 1999 with the first stage implemented being finance, the second was student and it was proposed for a third stage to be the Human Resources (HR) module (Oliver and Van Dyke, 2005).

Data Collection

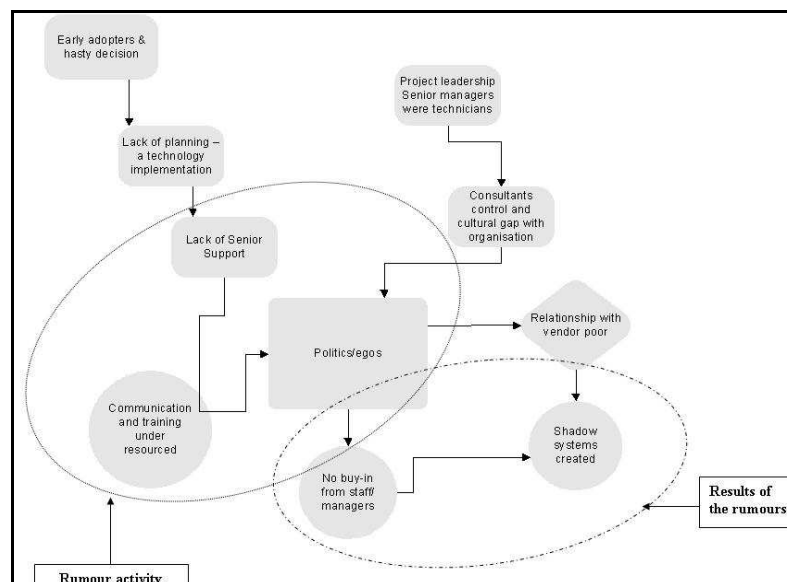
Whilst all staff in University X had some view of the ERP implementation, the participants came from those involved either directly or indirectly in ERP implementations. The first phase of the study was conducted in March 2001 with data gathered from seven focus groups at University X consisting of an invited representative sample of staff selected based on their membership of particular subgroups and position in the university. The knowledge and experience of the systems implementation led the choice of the focus group participants. The participants consisted of groups of managers, academics, and administrative staff and the focus groups had six to eight participants. This number was decided on as between six to twelve participants is considered as optimum for appropriate focus group discussions (Morgan, 1998). The focus groups were conducted by an external facilitator with no prior knowledge of the participants or the ERP implementation, thereby minimising the possibility of bias.

The next phase involved in-depth semi-structured interviews with eleven staff in various subcultures/roles and at various levels at University X during 2002. These participants were not previously focus group participants. The rationale for the choice of the different subcultures of staff in this strategy was that staff at various levels and functions in the university had different views of the ERP implementation depending upon their experience of the implementation and the effect it had on them. The range of differing views gained through the focus groups from the different stakeholder groups influenced the choice of staff for the interview phase. The interview data was categorised to discover emergent themes, and the themes pertinent to this paper are organisational context, rationale for the implementation, communication, staff attitudes including staff morale issues, perceived benefits of the implementation.

RUMOUR AS RESISTANCE

The management of resistance to the new ERP system was an issue in this case study and most of the resistance took the form of uncontrolled or informal communications (rumours). Stakeholders affected by the new system perceived that there would be a redistribution of power amongst the staff because of the change. Randolph and Main (2005) reported that resistance is a typical reaction to perceived power redistribution and that resistant behaviour in the form of unconstructive political behaviour or the development of shadow systems was a likely occurrence. In response to the rumours at University X about the perceived ease of use and general usefulness of the new system, staff developed shadow systems. Figure 4 shows the functional areas where the rumours circulated and the effect of those rumours on the implementation.

Figure 4 Based on concept map for University X (Fisher, 2006)



This paper has previously identified the recurring themes of resistance by staff to the new ERP system and. in both the focus groups and interviews, it was reported that a variety of shadow systems were in constant use by many staff in many areas across the university as an alternative to using the new system. Rumours about the complexity and the difficulty of use of the new system promoted the use of these shadow systems and the subversive use of the old system amongst staff (Jones, Behrens, Jamieson and Tansley 2004). Staff perceived that to be able to access the information they required on a daily basis and to continue to undertake their tasks in the same ways that they had done previously they needed to use the old system alongside the new system. The use of shadow systems at University X because of the lack of perceived usefulness of the new system was widely adopted by staff.

Markus (1983) described a number of activities indicative of resistance to new systems in organisations such as frequent complaints about the new system, parallel operation of both the new and old systems, poor cooperation in dealing with problems and avoidance of the system. Numerous staff in different areas of the organisation displayed these behaviours, as described by Markus (1983),

and these actions were further encouraged by the rumours circulating amongst the various stakeholder groups. The descriptions of resistant behaviours cited from the case study in Table 1 and Table 2 below are examples of the types of resistant activity as described by Markus, (1983) and others.

Table 1 University X Focus Group Data – “Other Issues” Category (Fisher, 2006)

Grouping	Focus group participants comments
Faculty Managers	High conflict between Financial Services & project, rumours impacted staff, personality conflicts not managed.
Admin staff [a]	Rumours not managed. Staff suggestions as to what they wanted in the system were not listened to. People need ownership from the start
Admin staff [b]	Academics frustrated – funds going into the implementation of the system.
Academics	Frustration at length of time cannot access finance reports. Consultants viewed as running the implementation not the university.
Regional staff	Frustration at length of time cannot access finance reports.
HR staff	Relationship between financial services and project poor.
Finance services	Politics and rumours not managed.

One staff member at University X described during an interview, how she had two computers on her desk – one displaying the old system, and the other displaying the new system as this was the only way she felt able to accomplish her job. This example highlights the power of rumours to reinforce the perceptions of the staff that the new system was unreliable in comparison to the old system. Focus group comments at “Admin staff [a]” in Table 1 (above) support this example of the lack of usefulness of the new system and highlight the lack of meaningful engagement of users in the implementation process.

As shown in Table 2 the staff at University X expressed strong views particularly about replacing the existing finance system with the new ERP system.

Table 2 University X Interviewee Comments – “Other Issues” Category (Fisher, 2006)

Grouping	Interviewee’s comments
Senior managers	Academics switch off to Americanisation – language got in the way.
Managers	Consultants had tight deadlines set by University X itself. Politics of University X impeded projects.
Administrative staff	Staff cynical. Should have been a technical implementation. Have had to do our own databases and interfaces.
Academics	Ego of head of financial services. Relationship with vendor important and ours was impacted by project director’s ego — little support from vendor. We had too many modifications – will make upgrades to future systems difficult.
Technical staff	Head of financial services worked against the finance system implementation. Money being spent on the project not being spent on the university.
Project staff	Financial services director was a difficult character who would try to prevent things progressing

Rumours about the influence exerted by one senior staff member added to the staff perceptions that the decision to replace the existing finance system had been made in haste and without due consultation (Michelson and Mouly, 2002).

Consequently, there was a great deal of resistance shown to this system implementation because of the rumours about the perceived absence of a rationale for replacing the existing finance system. Staff reported that there was significant conflict between the financial services director and the ERP project manager and staff perceived that this power struggle impeded the progress and therefore the uptake of the new system (Michelson and Mouly, 2002). Numbers of staff at University X reported that the new system could not provide the data and reports that they needed to be able to do their job. Reports of not being able to access the new finance system for a substantial period of the year during and after the implementation corroborated this situation. This further strengthened staff perceptions of the validity of the rumours about the new system and further lowered staff morale and trust of management (DiFonza and Bordia, 2000). One Faculty manager stated that, *"because of all the nonsense and rumours of what one says to another we lose respect for our leaders."* Additionally, staff at University X indicated that they were aware of academics that held the opinion that the university should have called on the expertise of its own staff to build its own system rather than buying a less than satisfactory customisable system.

Senior management at University X, by their use of a perceived poor communication strategy, appeared to increase staff negativity towards the new system implementation and therefore the staff resistance. In addition, as discussed earlier in this paper, most participants expressed difficulty understanding the rationale for implementing the finance module prior to the student administration module, as that system held the place of perceived highest priority. The staff perceived that the personality conflicts among senior managers involved with the implementation considerably affected the system implementation and resulted in an increase in staff resistance to the use of this system. Staff perception was that two senior managers held differing views as to the priority of tasks required for the implementation process, and this resulted in key staff not being available to assist at critical times of the implementation, thus influencing the schedule of the implementation. Staff reported in the focus groups and interviews that they were aware of this situation and that senior staff had not resolved it in a satisfactory way. Staff perceived the situation as having detrimentally affected staff views of the new system resulting in further escalation of rumours and ultimately the system's uptake by staff.

The findings at University X show that communication affected the way an ERP system implementation progresses and its eventual acceptance by staff. The literature and findings from University X case study data show that staff resistance to change is a feature of university ERP implementations (Allen and Kern, 2001). Different subgroups from University X had the opportunity to act as agents for positive change and innovation through their collective experience and knowledge (Hargadon, 1999), though this did not happen in this case. Instead, the groups became *pockets of*

resistance as a means of resistance to the power exerted by the management staff involved in the systems implementation. This power was displayed using jargon to show their superior understanding of the reasons behind the implementation. This use of in-group language to exclude or distance themselves from the systems users (Bourdieu, 1989) again created other focal groups within University X that separated the leadership group from the various user groups.

Communication from senior managers at University X about the impact of the implementation lacked substantive detail, and this led to the circulation of unconstructive rumours to fill in the gaps. When various groups are affected by a systems implementation it is likely, that any decisions taken by a committee or leadership group will affect each group differently considering the different interests of each group or field of activity (Bourdieu, 1984). For user groups to accept a new system, the groups need to see the usefulness of that system, and when that usefulness is not immediately apparent, as was the case at University X, these groups will form their own interpretation of that usefulness (Lin and Silva, 2005). When people choose to adopt a resistant attitude to change this may cause attitudinal conflict to the event being resisted (Devine, Tauer, Barron, Elliot and Vance, 1999). Attitudinal change to the event being resisted can be facilitated by committing resources to providing a positive experience for the user, for example by providing timely and effective communication and training (Bhattacharjee and Premkumar, 2004) thus, reducing the time for dread rumours to spread. One important strategic point to consider is the possible perception by users as to the difficulty in using the new system (Robey, Ross and Bourdreau, 2002) as was born out by this case study. This perception is reinforced by rumours spread amongst the different referent subgroups, further entrenching resistance. Staff at University X had undergone a number of ‘minor’ changes over a period of years and by the time the ERP was due for implementation, were change weary and therefore met the new change with resistance (McConachie, 2001).

DiFonza and Bordia (2002), in their discussion of the level of rumour activity in an organisation, proposed that the higher the belief in the rumour, the higher the activity would be, and this proved the case at University X. Even though senior managers cited the proposed benefits of the new system and the expected increased productivity for the organisation, participants interpreted the cost savings as potential job losses. This subsequently lowered morale and encouraged more resistance via rumour, as staff sought to lessen the ambiguity of what they perceived as their future situation (Bordia and Rosnow, 1998). More and more rumours surfaced based on the latest evidence of a poor system, as perceived by the staff and these rumours lasted as long as the evidence supported them (Mishra, 1990). Staff commonly cited in the focus groups and interviews that there were announcements by senior executive staff members that the university would save 200 jobs and gain a 48% return on investment; and (separately by the implementation consultants) that cost saving to the university would be around five million dollars (Oliver and Van Dyke, 2005). This communication resulted in a high level of anxiety amongst staff concerning the loss of existing jobs resulting from the purchase and

implementation of the new ERP system, further fuelling more rumours. Comment was made by staff regarding the reports that stated the “*Vice-Chancellor’s comments about the prospect of the loss of 300 jobs*” (in actuality the quote from the Vice-Chancellor reported saving 200 jobs). As a result staff were concerned that they would lose their jobs and rumours about which jobs would be lost were rife (Burke and Wise, 2003). In reality the implementation of the new ERP system required in the longer term increased rather than decreased staff levels as reported by staff at University X.

The data from University X demonstrates the detrimental effect of irregular and unclear communication about the process of change and the staff perception that senior staff failed to manage “*the politics and rumours*” associated with the implementation. Staff resistance to the implementation of the ERP system at University X, as evidenced by the existence of rumours, personality conflicts, and shadow systems, was evident from this case study data and affected negatively the implementation and adoption of the ERP system.

CONCLUSION AND FURTHER RESEARCH

The case study discussed in this paper shows that uncontrolled communication as a feature of staff resistance is often associated with an ERP implementation. From the Amoako-Gyampah and Salam model of TAM (Figure 2, Page 3) a modified version of this Technology Acceptance Model (as in Figure 3, Page 4) is proposed as a useful model as this takes into account the effect of project communication and rumour activity. The results of the study indicate that undertaking strategies that positively affect the attitudes of staff towards the use of the new technology is beneficial in an organisational context. Finally, implications for future practice were identified to alleviate the affects of rumours and the consequent staff resistance.

The development of effective change management strategies informed by staff perceptions, including project communication and training strategies appropriate to the particular culture of the organisation was shown to be useful in minimizing staff resistance to change accompanying implementations of new systems (Fisher and Walker-Gibbs, 2007). This case exhibits the importance of effective project communication about the rationale for a systems implementation to all subcultures of staff in language understood by all levels of the organisation. Thus, the foregoing demonstrates that the development of appropriate strategies, including a need for regular communication and user involvement with the new system implementation processes is necessary to minimise possible staff resistance to the adoption and use of a new system.

Staff perceptions of the issues surrounding an ERP system implementation are a useful instrument to assist in enhancing the management of the course of a system implementation in a large organisation (Fisher and Walker-Gibbs, 2007). This paper recommends that staff perceptions are an indication to plan effective strategies appropriate for the particular culture of the organisation, and in this study was shown to be an important strategy to gain staff involvement and minimise potential resistance to an

ERP system implementation. Providing timely and comprehensive training for all levels of the organisation, based on the staff perceptions, assists in enhanced staff acceptance and utilisation of the new system. Regular and easily understood communication throughout all implementation phases regarding any changes promotes a shared understanding amongst staff to better prepare them for the changes to their work environment (Van Dyke and Sinclair, 2003). Monitoring the staff perceptions, and in particular in being able to ameliorate the possible effects of rumours, is therefore an important strategy for managing implementations of ERPs in organisations.

The findings reported in this paper led to the conclusion that further research is required into the area of the value of staff perceptions and this is specifically pertinent to the effects of rumour and staff resistance on the implementation and adoption of large-scale information systems.

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