December 2004

Change Management: The Forgotten Critical Success Factor In Enterprise Wide System Implementations

Susan Foster
Monash University

Paul Hawking
Victoria University

Andrew Stein
Victoria University

Follow this and additional works at: http://aisel.aisnet.org/acis2004

CHANGE MANAGEMENT: THE FORGOTTEN CRITICAL SUCCESS FACTOR IN ENTERPRISE WIDE SYSTEM IMPLEMENTATIONS

Susan Foster
School of Information Systems
Monash University
Victoria, Australia
Tel: 61 3 99032404
Email: Sue.Foster@sims.monash.edu.au

Paul Hawking & Andrew Stein
School of Information Systems
Victoria University
MMC 14428, Victoria University of Technology
Melbourne, 8001
Victoria, Australia
Tel: 61 3 96884031
Email: Paul.Hawking@vu.edu.au

ABSTRACT

Enterprise Resource Planning (ERP) systems have become an essential information systems infrastructure for large organisations. However ERP implementations are complex and fraught with problems. Similar to other information system projects many of these problems are not technological but rather human related. The impact of people issues on ERP implementations are often underestimated or overlooked. Effective change management strategies would address many of these issues. This research looks into the change management practices of Australian companies and identifies the main success factors and barriers associated with effective management strategies in ERP implementations.

Keywords
Enterprise Resource Planning systems, critical success factors, barriers and benefits, implementation issues, change management, resistance to change, organisational culture

INTRODUCTION

Enterprise wide systems are considered by many companies as essential information systems infrastructure to be competitive in today's business world and provide a foundation for future growth. A recent survey of 800 top US companies showed that enterprise resource plannning (ERP) systems accounted for 43% of these companies' application budgets (Somer & Nelson, 2001). The growth in the uptake of ERP systems is due to several factors; the need to streamline and improve business processes, better manage information systems expenditure, competitive pressures to become a low cost producer, increased responsiveness to customers and their needs, integrate business processes, provide a common platform and better data visibility, and as a strategic tool for the move towards electronic business (Davenport, 2003, Hammer, 1999; Iggulden, 1999; Somer et al, 2001).

However even with the purported benefits ERP systems provide, companies are faced with a number of complex issues in their implementation. Themistocleous et al (2001) found that 66% of ERP implementations incurred a cost overrun while 58% were delayed. This was further supported by a Standish Group report which found implementations took 2.5 times longer than companies expected and only achieved 30% of the promised benefit (Krumbholz et al, 2000).

Numerous critical success factors associated with ERP system implementations have been identified in past research and include: top level management support, clearly defined and implemented communication avenues, top level champion and management commitment to the change, avoidance of customisation, including key personnel on the project team, end user training with ongoing support, and well written and complete needs analysis reports and process reengineering (Aladwani, 2001; Bing et al 1999; Davenport, 2003; Frederico, 2000; Hammer, 1999; Markus et al, 2000; Markus & Tanis, 2000; Nah & Kuang, 2001; Shang & Seddon, 2000; Somer, et al, 2001;). Surprisingly, even though these factors have been identified and documented, organisations implementing ERP systems are still experiencing the same or similar problems.

In Australia, many of the larger companies have been working with ERP systems for a number of years, resulting in a significant level of implementation maturity (Hawking & Stein, 2002). However in a recent study

on benefit realisation these companies indicated that they did not achieve the level of benefits they had expected. The companies were asked to identify and rate the major barriers which prevented them from achieving the expected benefits. It was found that the main barriers were not technological but people related. In essence effective change management strategies would have limited the impact of these problems. Jennings (2004) states that strong change management is a primary requirement in the project phase, as it is here that "change events must be initiated, scheduled, communicated, monitored and ultimately measured" (p10). Although many companies have been through a number of implementations, change management issues still seem to be causing a significant negative impact on the potential success and benefit realisation (Stein & Hawking, 2002).

CHANGE MANAGEMENT

Change management is a broad term, which encapsulates many activities and is interpreted differently from company to company. Nah and Sieber (2001) define it as:

> "*the effort to manage people through the emotional ups and down that inevitably occur when an organisation is undergoing massive change*".

In the context of the organisation, Goff (2000) defines change management as:

> " *a planned approach to integrating technological change. This includes formal processes for assessing the impact of the change on both the people it affects and the way they do their jobs. It also uses techniques to get users to accept a change caused by technology and to change their behaviour to take advantage of the new IT functionality*"

This definition implies that information technology projects require change management practices in order to fundamentally change the way people work and behave within an organisation and across organisational boundaries. ERP implementations often require existing business processes to be redesigned, including changes in business practices and employee tasks, culminating in possible employee head count reduction or redeployment (Davenport, 2003). This together with the large scale changes often required from these types of systems can lead to confusion and resistance within the workforce (Sumner, 1999).

Successful management of resistance to change is critical for the positive outcome of an implementation but is often the least acknowledged or understood by implementation teams (Rampton, Turnbull, Doran, 1999). Resistance can be defined as an expression of reservation, which arises as a response or reaction to change (Block, 1989). The perceptions of individuals play a fundamental role in the process of change and in the creation of resistance. When the change is perceived as a threat to one's security, then resistance is often the outcome (Neck, 1996).

In order to reduce employees' resistance to an ERP implementation, top management of the organisation must analyse sources of resistance and employ the appropriate set of strategies to counteract them (Sheth, 1981). This argument implies that resistance is a negative influence on and in conflict with, the organisational strategy. Therefore it is seen as something to be managed and ultimately eliminated. However contrary to this, others argue that resistance should be recognised as something to be utilised to support a successful change management initiative (Mabin, Foreson & Green, 2001). However, whichever approach is adopted, it is important to identify the areas of the company which are going to be impacted, the extent of this impact and clearly communicate this to all involved.

Successful change strategies include; a clear vision for change, communicating that vision articulately and clearly from a top down perspective; preparing a culture for change, setting strong leadership and providing an environment for participation. Developing a vision, describes a picture of the future shape of an organisation, gaining commitment to that vision and synchronisation of purpose and effort are clearly seen as important leadership qualities. This development of vision and mission clearly sets the scene for organisational change (Senge & Roberts, 1994 cited in Mabin et al, 2001). Once the direction for organisational change has been established, the next important step in the change process is influencing the culture of the organisation.

Organisational culture has a major impact and influence on successful change initiatives and is described as the shared understanding of how an organisation works (Schein, 1988; Handy, 1996; McAdams, 1996). A culture that has shared values, common aims and is open to change is conducive to success, while organisational cultures that are resistant to change either through rewarding tradition or fostering an environment of mistrust are likely to create an environment that can lead to implementation failures (John & Saks 1996). The ability to create trust by developing an environment where the people who make up an organisation feel change is required and then commit to that change process, are two of the most important leadership qualities in IS projects (Carlzon, 1989; Schermerhorn, 1998; Zand, 1997). Markus et al (2000) supports this tenet. Their research findings indicate

2

a culture resistant to change impedes ERP success. They state that "although project teams can design and execute change management programs, senior executives must work to make these efforts a success" (p7).

This paper documents research which endeavours to identify how Australian companies approach change management in relation to their ERP implementations. The findings will assist companies in planning their next ERP implementation project and would be applicable to many other IS projects.

RESEARCH METHOD

The primary objective of the study was to survey a range of information systems professionals in order to seek responses regarding current and historical ERP implementation details and change management success factors and practices originating from these implementations. More specifically the research posed the following questions:

- What is the role of change management in ERP implementations?
- What are the change management practices are employed by Australian companies to facilitate ERP Implementation?

Research Design and Methodology

In order to identify change management practices a survey instrument involving 30 questions covering four areas; demographics, change management metrics, success factors and change management practices was developed. Closed questions were used with Yes/No and five point Likert scale responses. Open-ended questions sought responses from the cohort allowing for qualitative data to be collected. The survey was distributed through the use of an email directing the respondent to a web site that incorporated a web based survey delivery platform. Several studies (Stanton and Rogelberg, 2000; Comley, 1996; Mehta and Sivadas, 1995) have compared email and Web based survey methods versus mail information collection methods and have proposed that email surveys compare favourably with postal methods in the areas of cost, speed, quality and response rate. It was necessary to preen the email address book to remove and amend email that had bounced back.

Sample

The sample were key contacts from member companies of the SAP Australian User Group. As SAP is the leading vendor of ERP systems in Australia with approximately 75% of the market (McBride 2003), the User Group is representative of approximately 65% of the Australian SAP customer base. The original email listing contained 166 potential respondents. A number of emails were undeliverable due to members of the cohort moving positions, having incorrect email addresses, changing email addresses or automatic out-of-office responses. There were two unusable replies, leaving a total of 37 usable responses. The overall response rate once removing the undeliverable addresses was 24%.

RESULTS

Demographics

Responses were received from 37 IS professionals. The data was analysed to present position, organisation type, and size from a revenue and employee perspective. A summary of responses are presented in Tables 1, 2 and 3. Respondents were predominantly high in the organisational structure being either an IT or SAP manager. As key contacts for the user group, their status within their companies would indicate their involvement in the decision making process with regards to any ERP implementations and the associated change management strategy. Accordingly they should have an understanding as to the type of information required by the survey. The companies represented most industry sectors and were large in size from both a revenue and employee perspective.

Table 1. Position of Respondents

Position	No
SAP Manager	30
IT Manager	4
SAP Administrator	3

Table 2. Companies by Industry sector

Industry Sector	No.
Public Service	9
Energy/Natural resources	4
Financial Services	1
Health Services	2
Manufacturing	10
IT Services	3
Retail/Wholesale	6
Consumer Markets	2

Table 3. Size of Companies

Number FTEs	No	Revenue($millions)	No
>1000	22	Large(>1000)	11
502-1000	6	Large-Med(750-1000)	3
101-500	8	Med-Large(500-749)	2
<100	1	Medium(250-499)	6
		Small(<250)	15

ERP Profile

Respondents were asked to identify: when their first implementation occurred, providing information about their company's experience with ERP systems (Table 4), number of ERP users (Table 5) and the number of implementations and upgrades which the company had been involved in (Table 6).

Table 4. Year of Implementation

Year	No
<=1995	1
1996	6
1997	5
1998	10
1999	6
2000	4
2001	2
2002	3

Table 5. SAP User Numbers

SAP Users	No
21-100	7
101-250	7
251-500	10
Greater 501	13

Table 6. No. of Implementations

Upgrade/Implementations	No
0	1
1	8
2	10
3	8
4	4
5	1
>5 – 10	4
>10	1

Nolan and Norton (2000) argued that it is important to consider a company's history with ERP systems when discussing their impact. They believe that companies learn from their implementation experiences and therefore it is important when conducting research to indicate the level of experience a company has had. Accordingly they proposed a maturity model of ERP implementations which included the following categories:

- Beginning – implemented SAP in the past 12 months,
- Consolidating – implemented SAP between 1 and 3 years
- Mature – implemented SAP for more than 3 years.

Applying this model to the data indicates that 76% of the sample can be classified in the Mature phase, while 16% are in the Consolidating phase and 8% in the Beginning phase. Indicating the sample should have extensive experience with their ERP implementations. This is reinforced by the majority of companies involved with at least two upgrades or implementations.

Change Management Defined

Respondents were asked to provide a short description or definition of change management in order to assess their understanding of this concept. From an analysis of the definitions, the following keywords were obtained:

Manage/coordinate	42%	Training	16%
Communication	29%	Planning	11%
Transition	29%	Monitoring/Assessment	11%
Processes	18%		

Based on the responses an aggregated definition was developed:

Change management is defined as the process of assisting the organisation in the smooth transition from one defined state to another, by managing and coordinating changes to business processes and systems. It involves the effective communication with stakeholders regarding the scope and impact of the expected changes, to assist them to cope and adapt to the transition.

Change Management Importance and Success

Respondents were asked to rate on a five point Likert scale the degree of importance their organisation placed on change management (Table 7) and how successful they considered their change management program (Table 8). This provided an insight into how respondents viewed the importance of change management and how successful they considered their organisations were in implementing change management strategies.

4

Table 7 Importance of Change Management

Importance of Change Management				
Not Important				Very Important
1	2	3	4	5
		1	10	24

The respondents gave an overwhelming yes when asked if change management was important to their ERP implementation, yet indicated that their organizations were no where near world class in change management operations. This is an interesting finding when considering the respondents likely involvement in the development of the change management strategy.

Table 8 Company's success with Change Management

Company's Ability to Implement Change				
Poor				World Class
1	2	3	4	5
1	8	22	4	0

Change Management Budget Metrics

To quantify the importance of change management, respondents were asked to indicate what level of their total implementation budget was allocated to change management and to indicate what percentage of their change management budget was allocated to training (Table 9). From previous experiences the researchers felt that many people considered change management as another term for training. Accordingly to determine the extent of this belief the sample were asked to differentiate between the resources allocated to each activity. The majority of respondents indicated that their organisations spent less than 10% on change management practices and a significant number of organisations spent less than 20% of the change management budget on training. While at the other end of the spectrum 5 companies committed nearly their entire change management budget to training. Gartner believes companies should allocate at least 17% of their implementation budget towards training. And infer companies allocating less than 13% of their implementation costs to training, are 3 times more likely to see their ERP projects run over time and over budget when compared with companies that allocated 17% (Burleson, 2001).

Table 9. Change Management Budget Metrics

Change Management Budget (% of implementation budget)	#	Training Budget (% of change budget)	#
<5%	2	<20%	13
5-10%	19	21-40%	4
11-15%	5	41-60%	6
>15%	7	61-80%	6
		81-100%	5

Respondents were required to indicate the size and makeup of their change management team (Table 10). The majority of companies used external personnel to assist with their change management strategy. Although only two companies relied solely on this resource. The change management team was usually representative of a number of stakeholders supported by external personnel. The size of the change team tends to indicate that the team was responsible for managing change and utilised others to implement the change program. There appeared to be no relationship between the size of the change team and the number of SAP users.

Table 10. Change Management Team

Team Resource	#
Hired external consultants as experts, facilitators, or advisors	23
Cross-functional team	20
Senior executive steering committee or team	20
Department-based team	13
Involved employees at many levels in the change team	12
Our company did not designate such a team to manage any of the change	4

Change Management Methodology

As mentioned previously SAP's implementation methodology (ValueSAP which incorporates ASAP) includes procedures for change management. The respondents were asked to indicate if they used SAP's methodology for change and whether they found it adequate (Table 11). Only 28% of the respondents used the SAP methodology to support their change management strategy and nearly all companies who used it felt it was suitable for their needs.

Table 11 Use of SAP's Change Methodology

Adoption of SAP's Change Methodology	#	Appropriateness of Methodology	#
Yes	10	Yes	9
No	24	No	1

Change Management Success Factors and Barriers

Respondents were asked to rank (from 1 to 5) the top five critical success factors for effective change management and the barriers which prevent this. The results are displayed in Table 12 and 13. Whilst adequate resources was rated as the top success factor, communication based factors were ranked in three of the next 6 factors.

Table 12. Change Management Critical Success Factors

Critical Success Factor	Rating
Adequate resources given for the change	2.3
A well-communicated, shared understanding of this need for change	2.2
Open and consistent communications at all levels of the organization	2.1
Participation and support by all management levels within the organization	1.7
Visible and continuous executive sponsorship	1.4
Being in touch with those affected by the change	1.4
Sufficient pre-implementation training of those who will deliver the change	1.1
Structured approach to managing change	1.1
Recognizing employees for contributions to the change initiative	0.9
A compelling need for change that is critical for the organization's success	0.8
Clear channels of safe feedback	0.5
Training to prepare change team members	0.3
Personnel changes to support the new organization	0.2
Offering small gifts to employees for contributions to the change initiative	0.0
Offering salary bonuses or promotions to employees at key milestones	0.0
Offering some savings to employees for success in cost-saving changes	0.0

Lack of communication was considered the major barrier, with employee resistance, management support and inadequate resources listed as the next three main barriers.

Table 13 Barriers for Change Management

Barrier	Rating
Lack of communication and channels for feedback	2.7
Employee resistance to change	2.3
Not all management levels were engaged in the change	2.1
Inadequate resources or budget	2.0
Shifting focus or changing priorities too soon	1.6
Executives out of touch with those affected by the change	1.6
Executives sending out inconsistent signals	1.5
Management behaviours are not supportive of the change	1.3
Executives not directly involved with project	1.2

Respondents were required to rate (from 1 to 5) the importance they placed on various change management practices and how well they considered their company implemented these practices (Table 14).

Table 14 Adoption of Change Management Practices

Approach	Importance to Respondent	Importance to Company
Trained people for the change	4.4	3.4
Identified what is and is not working with the current situation	4.3	3.3
Communicated the need for the change clearly and widely	4.3	3.3
Maintained the change after the implementation	4.2	3.3
Developed a business case to explain the need for change	4.0	3.5
Described the changes needed for the change to succeed	4.0	3.0
Assessed the success of the change	3.9	3.0
Structured for the change in the Project Phase	3.8	2.9
Modelled the change from the top	3.8	2.7
Used a pilot program to demonstrate success before roll-out to target group	3.7	3.0
Identified specific changes in behaviour needed to implement the change	3.5	2.5
Rewarded people for taking on the change	3.1	2.2

Employee Resistance

As employee resistance was identified as being an important factor for the successful implementation of an ERP system (Aladwani, 2001), respondents were asked to identify practices used to help lessen this resistance. The results (Table 15) reinforce the importance of communication and a personalised approach to change issues.

Table 15. Practices To Lessen Employee Resistance

Practice	Rating
Direct face to face communications about the behaviour	25
Question and answer sessions and open discussions at meetings	23
Team communication meetings and performance reviews	20
Re-communication of goals and needs for change	19
Immediate team or sponsor intervention	18
Open, safe communications channels for feedback	18
Focus on goals and what needs to happen to meet the goals	18
Coaching for performance	10
Development of personal progress plans	6

DISCUSSION

The results indicated that in many cases respondents were aware of the importance of effective change management in ERP implementations. However even with this awareness and their position in the company, many felt that their companies struggled with change management issues. It is also interesting to note that many of the companies involved in the survey were onto their 4th or 5th ERP implementation/upgrade but were still struggling with the change process. There was little evidence of a link between the success in implementing change and the level of budget allocation yet the number one success factor was adequate resources. This implies that the strategy development and its implementation is where companies struggle. Knowing what they want to achieve but not knowing how to approach it.

> *"…we underestimated the resistance to change. Lack of trust in central operations, lack of direction from site management and lack of standard policies and procedures meant that each hospital re-invented the wheel"*

However once the change strategy had been developed appropriate resources are critical. In Canada Post's implementation, they were advised by Gartner to determine their change management budget and then double it. They did this and added a further 50%. Their resounding response was "*we got it right*" (Sapphire 2003).

7

The respondents to a large extent indicated that the success factors and barriers were mirror images of each other. Effective communications and management support dominated the success factors. Two-way communications and a need to "be in touch" with those affected by change all signal the feedback nature of implementations. Obstacles to their ERP implementation had little to do with lack of software functionality or major technical issues, but were related to lack of management support for change management strategies and poor communication practices. A number of the respondents commented on the lack of management support and understanding,

> "…Unwillingness of nominated representatives to be involved in the change management process which resulted in entire areas not knowing about the changes"

> "….Insufficient management awareness of SAP capability, leading to sub-optimal use of SAP in the business".

> "A big part of our issue was lack of management support for implementation due to changes in management team and direction mid-stream".

The practices, which were identified as strategies to address employee resistance, include many of the successful communication practices. However the offering of various rewards or incentives was not deemed to be important for implementing change.

Even though Australian companies have been working through a number of major implementations with their ERP systems for a number of years, resulting in a level of maturity they still consider change management issues impact on the success and benefit attainment.

Future research issues

Although the literature indicates change management is an issue in enterprise wide implementations, are the same issues evident from country to country? Do Australian companies that implement enterprise wide systems experience different issues? Further, if companies know what should be done in regard to change management strategies at the Project Phase, why are the same problems occurring? Do the problems impact differently across the various industry sectors if organisational culture is a contributing factor? These are some of the many questions which have arisen from the research with provides the foundation for future research.

Implications for the IS Community

It is a common catch cry of project managers "…we underestimated the impact of change management". If change management is one of the major critical success factors of IS projects, one must question how the IS academic community is addressing this issue from both a research and teaching perspective. It appears that it is being ignored on both fronts. In discussions with other IS academics from different universities, the importance of change management is understood, but is believed to be the domain of other disciplines. Unfortunately the problem in many cases, is that graduates of these disciplines are not those responsible for the IS project implementations. Therefore graduates are being produced who have little understanding of the importance of this critical factor to IS implementation success.

The role of change management and the various change strategies need to be incorporated into the IS curriculum. This needs to go beyond the simplistic concept of consulting end users about their needs. There are a number of existing change management tools and case studies which could be easily integrated into curriculum to provide students with an understanding of issues and how they could be addressed. Until change management is recognised as an important part of the IS curriculum then graduates are only going to realise its importance in a project when it is too late.

In terms of IS research a perusal of previous ACIS conference papers identify change management as being important, but do not seem to adequately address how the change process should be improved. If organisational change management is considered the domain of other disciplines then there may exist tools and methodologies that could be effectively applied to IS projects and more specifically ERP implementations

CONCLUSION

Programs which establish positive attitudes towards the use of new technology by employees are identified as one of the critical success factors associated with ERP systems implementation (Markus and Benjamin, 1997). Aladwani (2001) asserts that effective implementation of information systems requires the establishment of five core competencies, among which is the use of change management strategies to "promote the infusion of the information system into the workplace" (p32). Accordingly this has led companies to place increasing emphasis, time and money on change management programs.

The purpose of this paper was to explore the change management factors that impact on ERP implementations. The research findings indicated that although respondent organisations had been through at least one ERP implementation, they continue to signal problems with change management. Further research should be conducted into the nexus of organisations, culture, change management strategies and global software implementations.

REFERENCES

Aladwani, A. M. (2001). Change Management Strategies for Successful ERP Implementation. *Business Process Management Journal*, 7(3).

Bingi, P. Sharma M.K. and Godla J.K. (1999). Critical Issues Affecting An ERP Implementation. *Information Systems Management*, Vol. 16, No. 3, Summer, 7-14.

Block, P. (1989) "Flawless consulting", in McLennan, R. (Edn.) *Managing Organisational Change*. Englewood Cliffs, NJ: Prentice-Hall.

Burleson, D. (2001) Four factors that shape the cost of ERP accessed May 2004 located at http://techrepublic.com.com/5100-6315-1054263.html

Carlzon, J. (1989). Moments of Truth. Harper and Row: New York.

Comley, P. (1996). The Use of the Internet as a Data Collection Method, Media Futures Report. Henley Centre: London.

Davenport, T. (2003) "Enterprise Systems Revisited: The Director's Cut" Accenture

Davenport, T. (2000). Mission Critical: Realizing the Promise of Enterprise Systems, Boston, Massachusetts: Harvard Business School Press.

Deloitte, (1999). ERPs second wave, Deloitte Consulting.

Federico, M (2000). Lessons from the Trenches: The human element Powers change. Leadership Report, Winter 2000 pp 1 – 6.

Goff, L. J. (2000). Change Management, 2000, Accessed September 2002, located at http://www.computerworld.com/news/2000/story/0,11280,41308,00.html.

Handy, C. (1996). The gods of management. *Executive Book Summaries*, 18(2), 1-8.

Hammer, M. (1999). How Process Enterprises Really Work, *Harvard Business Review*, Nov./Dec. 1999

Hawking, P., and Stein, A. (2002). The ERP market: An Australian Update, Proceedings of IRMA2002 Conference, Toronto, Canada, May 2002, 176-192.

Iggulden, T. (Editor) (1999). Looking for Payback, *MIS*, June 1999, 75-80.

Isabella, L. (1990). Evolving interpretations as a change unfolds: How managers construe key organizational events". Academy of Management Journal, 33, 1, pp 7-41.

Jennings, T. (2004). Change Management: An Essential Tool for IT Governance. White paper, March 2004, pp1-17.

Johns, G. & Saks, A., (1996) Organizational Behaviour, , Toronto Canada: Pearson Education.

Kanter, R. M. (1995). Managing the human side of change", in The Organizational Behavior Reader. Englewood Cliffs, New Jersey: Prentice-Hall.

Krumbholz, M.., Galliers, J., Coulianos, N. & Maiden, N.A.M. (2000). Implementation Enterprise Resource Planning Packages in Different Organizational and National Cultures. *Journal of Information Technolog*y, 15, pp. 267 -279.

Mabin, V. J., Foreson, S. and Green, L. (2001). Harnessing resistance: using the theory of constraints to assist change management, *Journal of European Industrial Training*, 168-191.

Markus, M. L., Axline, S., Petrie, D. and Tanis, C. (2000). Learning from Adopters' Experiences with ERP— Successes and Problems, *Journal of Information Technology*, 15, 4 (December) 245-265 **Updated and Reprinted in** Peter Seddon, Graeme Shanks and Leslie Willcocks (Eds.) 2002 forthcoming. *Second Wave ERP: Implementing For Effectiveness*, Cambridge, UK: Cambridge University Press.

Markus, M. & Benjamin, L. (1997). The magic bullet theory in IT enabled transformation. Sloan Management Review, Vol 38, No 2, pp 55-68.

McBride G., (2003). SAP Partner Kick Off Presentation, Sydney.

Mehta, R. and E. Sivadas (1995). Comparing response rates and response content in mail versus electronic mail surveys. *Journal of the Market Research Society*, 37, 429-439.

Nah. F., Lee-Shang, L .J. and Kuang, J. (2001). Critical factors for successful implementation of enterprise systems. *Business Processes Managmnent Journal*, 7(3), 285-296.

Nah, F.H. and Sieber, M. (2001). A recurring improvisational methodology for change management in ERP Implementation, Accessed 30 July 2004, Located at: http://www.ait.unl.edu/fnah/sieberandNah.pdf

Neck, C. P. (1996). Thought self-leadership: a self-regulatory approach towards overcoming resistance to organizational change. *The International Journal of Organizational Analysis*, 4, 2, pp 202-16.

Nolan and Norton Institute, (2000). SAP Benchmarking Report 2000. KPMG: Melbourne.

Rampton, G. M., Turnbull, I. J. & Doran, J. A. (2001). "Human Resources Management Systems: A practical Approach". (3rd Edn). Ontario, Canada: Carswell Publishing.

Sapphire, (2003) Keynote Address, Canada Post, SAP Sydney

Sarkis, J & Sundarraj, R. P. (2003). Managing large-scale global enterprise resource planning systems: A case study at Texas Instruments. *International Journal of Information Management* vol 23, pp 431-442.

Schein, E. (1988). Defining Organisational Culture. Jossey-Bass: London.

Schermerhorn, J. (1998). Management for Productivity. New York: John Wiley & Sons

Shang, S. and Seddon, P. B. (2000). A comprehensive framework for classifying the benefits of ERP systems. Americas Conference on Information Systems**.**

Sheth, J. (1981). Psychology of innovation resistance, *Research in Marketing*, 4, 273-282**.**

Somer, T. and Nelson, K. (2001). The impact of Critical Success Factors across the Stages of Enterprise Resource Planning Systems Implementations, proceedings of the 34th Hawaii International Conference on System Sciences, 2001, HICSS.

Stanton, J. and Rogelberg, S. (2000). Using Internet/Intranet Web Pages to Collect Organizational Research Data. *Organisational Research Methods*, Vol. 4, No. 3, 199-216

Stein, A., and Hawking, P. (2002). Continuous Business Improvement and ERP Systems: An Australian Survey, Industry Report Commissioned by the SAP Australian User Group.

Sumner, M. (1999). Critical Success Factors in Enterprise Wide Information Management Systems Projects, Americas Conference on Information Systems, Milwaukee Wisconsin, August 13-15.

Themistocleous, M., Irani, Z., O'Keefe, R. M. & Paul, R. (2001), ERP Problems

and Application Integration Issues: An Empirical Survey, ll Proceedings of the 34th Hawaii International Conference on System Sciences, Hawaii.

Zand, D. (1997). The leadership triad, *Soundview Executive Book Summaries*, 19(6), Part 1, 1-8.

COPYRIGHT