2000

Major Issues with SAP Financials in Queensland Government

She-I Chang
Queensland University of Technology, sx.chang@student.qut.edu.au

Guy G. Gable
Queensland University of Technology, g.gable@qut.edu.au

Major Issues with SAP Financials in Queensland Government

She-I Chang[1], Guy G. Gable[2]
Information Systems Management Research Centre, Queensland University of Technology
sx.chang@student.qut.edu.au, g.gable@qut.edu.au

Abstract

This short paper reports a research project that seeks to give improved understanding of client-centered ERP lifecycle support issues in order that research, management and educational resources can be allocated and implemented effectively. The paper presents (1) the study background; (2) the research context and object; (3) the research questions and aims; (4) previous literature on major IS issues employing the Delphi method; (5) the research strategy and design; (6) progress to date; (7) expected benefits and outcomes; and (8) limitations and future research suggestions.
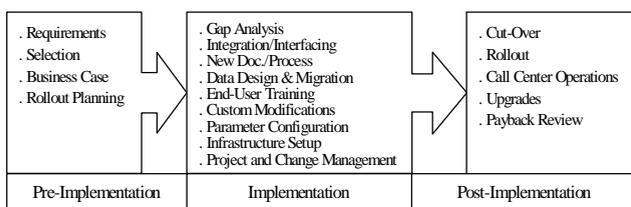
Keyword: ERP, ERP Lifecycle, Delphi Method, Key IS Issues Studies

Background

Organizations world-wide are moving away from developing information systems in-house and are spending billions of dollars each year on implementing Enterprise Resource Planning (ERP) systems and other packaged software (Price Waterhouse IT Surveys, 1995; AMR Research, 1998). Although ERP sales have plateaued or declined in late 1999 for the main vendors (e.g., due to Y2K curtailment in IS activity and to saturation of large organizations), IDC (1999) predicts the ERP market will continue to grow by more than 21 percent through to 2005.

The '90s global rush to implement ERP systems and the resultant massive installed base of this software, provide the rationale for this study (the need for research into packaged software is further espoused in Gable et al 1997a, 1997b, 1998a, Gable 1998b). The three key players involved in ERP life-cycle support; namely vendors, implementation partners, and user organizations; must continually make difficult judgments on major issues in relation to the ERP lifecycle (Figure 1) (Davenport, 1998; Dailey, 1998; Gable et al, 1998a). As the number of organizations implementing ERP increases and ERP applications within organizations proliferate

Figure 1 - The Stages of ERP lifecycle

Pre-Implementation	Implementation	Post-Implementation
. Requirements . Selection . Business Case . Rollout Planning	. Gap Analysis . Integration/Interfacing . New Doc./Process . Data Design & Migration . End-User Training . Custom Modifications . Parameter Configuration . Infrastructure Setup . Project and Change Management	. Cut-Over . Rollout . Call Center Operations . Upgrades . Payback Review

(Davenport, 1996; Bancroft, 1998; Hiquet et al, 1998; Shtub, 1999), improved understanding of client-centered ERP lifecycle issues is required in order that research, management and educational resources can be allocated and implemented effectively.

The Research Context and Object

Since 1983, the Queensland Government Financial Management System (QGFMS) has been successfully developed to provide a high quality, client-responsive financial management system to all state government agencies. To remain relevant, the QGFMS must continue to evolve in support of new initiatives aimed at improving the effectiveness of the budget sector. In 1995, an ERP system, SAP Financials, was chosen to become the "new generation" QGFMS. Since that time, SAP Financials has been implemented across 28 state government agencies.

Based on Pinsonneault and Kraemer (1993) arrangements, the current study's unit of analysis is the individual stakeholder or project team member who has had substantial involvement with the SAP Financials lifecycle implementation, management and ongoing support. These individual staff members of the three key players are being identified at all levels (e.g., strategic, technical and operational users) and in all roles (e.g., project management, process management, knowledge management, change management) for participation in the study.

The Research Questions and Aims

The study intends to systematically identify and rigorously analyze responses to the major research question: "What do you consider have been the major issues in implementing, managing and/or supporting the SAP Financials in [your agency]?"

Having gathered and synthesized weighted issues, we aim to compare responses across (1) government agencies, (2) management levels within agencies, (3) clients, vendors and implementation partners, (4) different size agencies, and (5) other differentiating contextual factors (e.g. unique combinations of R/3 modules implemented, timing of implementation, etc.). Further, we aim to identify (data driven analysis) (6) other meaningful combinations of respondents through cluster analysis on issue weights.

Thus further questions of the issues include: (1) What is their relative importance? (2) What differences and

similarities exist across predefined demographic groupings? (3) What differences are observed across clusters of respondents identified from the data? (4) What differentiates these clusters of respondents?

In a more prescriptive mode, we seek to understand: (5) The extent to which the major issues might be ameliorated through improved knowledge management, and (6) Where clients, vendors and implementation partners should focus their energies in order to avoid, minimize, or eliminate these major issues? More broadly, we seek to understand what implications and recommendations this study suggests for improved ERP lifecycle implementation, management and support.

Previous Literature on Major IS Issues Employing the Delphi Study

During the past thirty years IT/IS has played an influential role in organizations. The overall importance, and in particular, the rapidly changing character of IS, demands ongoing assessment of major issues in the IS field. The "Delphi Method" (DM) has been used to evaluate strengths and weaknesses of IS relative to developmental planning, and to identify key issues and problems in IS. The identification and prioritization of key issues in IS that are critical to US-based IS managers, was the focus of a study by Dickson and Nechis (1984), who used a revised Delphi method. A similar approach for investigating critical IS issues was used in subsequent studies (i.e., Brancheau and Wetherbe, 1987; Niederman, Brancheau and Wetherbe, 1991; and Brancheau, Janz and Wetherbe, 1996 in the USA; in Australia Watson, 1989 and Pervan, 1993; Dexter, Janson, Kiudorf and Laast-Laas, 1993 in Estonia; and Dekleve and Zupancic, 1996 in Slovenia), to investigate critical information systems management issues.

Watson and Brancheau (1991) recommend that using the Delphi method is appropriate for comparing and contrasting current findings with those of earlier studies, and contributes to a cumulative IS discipline. Nonetheless, identifying and prioritizing IS issues critical

to respondents (e.g., account managers, quality control managers, project managers, project consultants, IT/IS executives/managers, business managers) has been undertaken in many countries, and many different research methodologies have been used making comparison of findings across studies difficult, if not suspect.

Similarities among these major IS studies include: (1) a sample, starting list of issues is provided; (2) a heterogeneous respondent group is surveyed; (3) 3-4 consensus rounds are applied; (4) a 10-point item scale is used; (5) reasonable consensus is achieved; and (6) a final list of 20-30 issues is summarized. Important methodological features of these DM-type prior studies are summarized in Table 1.

The Research Strategy and Design

Owing to a relatively small amount of mostly practitioner and some academic literature, which exists in the area of major issues with ERP lifecycle support, the research strategy conducted in this reference study can be described as exploratory, descriptive, and comparative. A DM-type, 2-round, non-anonymous, open survey was conducted using personalized email with attached survey instrument.

This Delphi approach is particularly appropriate for the reference study. First, questionnaires are used to solicit expert opinion. This means that the respondents can be geographically remote. Second, though respondents are known to the researchers, confidentiality and anonymity amongst respondents is ensured, thus dominant individuals are unable to overly influence the results. Third, because respondents are known to the study team, the researchers are able to group respondents based on various demographics and follow up ambiguous and missing details. Fourth, an email-out is inexpensive and can be completed in a short time. Fifth, an open-ended survey allows respondents to fully express and delineate their views. Sixth, a two-round questionnaire enables information feedback, thereby stimulating reflection,

Table 1 - The Comparison of Delphi-Type Major IS Issues Studies

Researchers	Respondents	Number of Rounds	Method of Prioritizing	Starting Set of Issues	Final number of Issues	Number of Respondents	Response Rate
Dickson et al 1984.	American SIM members	4 rounds,	ranking	No	19	52, 102, 62, 54	Not reported
Brancheau and Wetherbe 1987	American SIM members	3 rounds,	ranking	Yes	20	90, 54, 68	50%, 62%, 76%
Watson 1989	Australian IS executives	3 rounds,	10 point scale	Yes	36	52, 55, 48	26%, 28%, 24%
Niederman et al. 1991	American SIM members	3 rounds,	10 point scale	Yes	25	114, 126, 104	47%, 52%, 49%
Pervan 1993	Australian IS managers	3 rounds,	10 point scale	Yes	27	88, 97, 88	29%, 32%, 29%
Dexter et al. 1993	Estonian IS professionals	3 rounds,	10 point scale	No	30	10, 24, 24	35%, 85%, 85%
Dekleve and Zupancic 1996	Slovenian IS managers	4 rounds,	10 point scale	No	26	105, 163, 129, 148	32%, 49%, 69%, 80%
Brancheau et al. 1996	American SIM members	3 rounds,	10 point scale	Yes	20	78, 87, 83	36%, 40%, 38%

movement toward a certain level of consensus or difference, and a greater depth of insight emerges. Seventh, the Delphi quantitative scores allow statistical summarization and comparison to demonstrate group consensus or differentiation. Finally, because many previous studies investigating IS issues have employed Delphi, comparing and contrasting findings with those of earlier studies may be possible (note possible difficulties mentioned earlier), and contributes to the cumulative information systems discipline. Thus, Delphi is deemed an appropriate method, since a major goal of this study is to systematically identify, analyze and determine the relative importance of major ERP lifecycle issues.

Figure 2 depicts the overall reference study design, which includes six major phases: (1) Define Strategy & Context; (2) Review Literature; (3) Conduct Data Collection; (4) Perform Data Analysis; (5) Interpret Findings; and (6) Suggest Future Research Opportunities. In the diagram, the rectangles represent processes or phases of the research framework. Other symbols represent input/output information flows.

Figure 2 - The Over Research Design
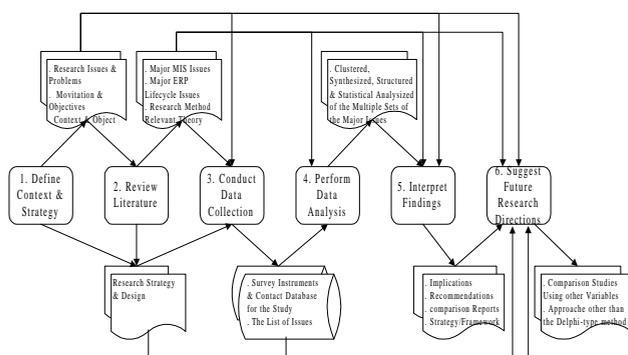
Progress to Date

The study is being piloted in five Queensland Government agencies that implemented SAP Financials as a team. As Table 2 demonstrates, 111 questionnaires were distributed to individuals who have had substantial involvement with the five government agencies' SAP Financials project. Seventy-one questionnaires were returned yielding a 64% response rate. Sixty-one valid questionnaires were eventually obtained from the first round survey, providing a net response rate of 55%. 274 issues were identified from the 61 respondents, or 4.5 issues per respondent on average. Table 3 provides a profile of the respondents' roles with SAP Financials in their agency, and the duration of their involvement.

The raw data has not yet been fully collected and no statistical analysis has yet been completed at this stage. A rationalized, reduced and structured set of major issues, consisting of approximately 10 major issues and 30 sub-issues is aimed to be constructed.

Expected Benefits and Outcomes

If members of the IS community (academic and professional) are to serve the public effectively, they must be aware of current major issues with ERP, a significant phenomenon in IS. Professional societies serve the community by arranging conferences, sponsoring guest lectures, and disseminating information through their publications. Educators and trainers need current information on key concerns to help graduates develop the necessary skills to address these issues. Researchers will be more successful in attracting sponsorship if they undertake studies that are closely aligned to the concerns of the marketplace.

More specifically, key players involved in ERP lifecycle support stand to benefit from a better understanding of client-centered issues. Software vendors seek to redress negative perceptions that ERP implementation duration and costs are difficult to manage, and to improve customer support and satisfaction. Consulting firms seek to streamline implementation and share the savings with clients; and both software vendors and consultants seek to increase the size of the ERP market through reduced costs and increased benefits to clients. Also, to the extent that software vendors and their implementation partners are more attuned to client-centred issues, they will be well placed to further support clients throughout the ERP lifecycle. Potential benefits to clients from identifying and analyzing ERP lifecycle support related issues include: rationalized and more effective support from both the software vendor and implementation partner, improved ability to react to a changing environment, lower costs, and an ERP that more accurately reflects business needs.

Acknowledgements

References

AMR Research, "AMR Research Predicts Industrial Enterprise Applications Market Will Reach $72.6 Billion By 2002", *AMR*, www.amrresearch.com/press/981102.htm, 1997.

Bancroft, N. H. *Implementing SAP R/3: How to introduce a large system into a large organization*, London: Manning/Prentice Hall, 2nd ed, 1998.

Brancheau, J. C. and Wetherbe, J. C. "Key Issues in Information Systems Management", *MIS Quarterly*, March, 1987, pp. 22-45.

Brancheau, J. C., Janz, B. D. and Wetherbe, J. C. "Key Issues in Information Systems Management: 1994-95 SIM Delphi Results", *MIS Quarterly*, June, 1996, pp. 225-242.

Dailey, A. "SAP R/3: Managing the Life Cycle", *GartnerGroup Symposium/Itxpo 98*, 28-30 October, Brisbane Australia, 1998.

Davenport, T. E. "Holistic Management of Megapackage Change: The Case of SAP," *Proceedings of the AIS Americas Conference on Information Systems*, August 16-18, 1996, pp.51a-51c.

Davenport, T. H. "Putting The Enterprise Into The Enterprise System", *Harvard Business Review*, July-August, 1998, pp. 121-131.

Deans, C. P., Karwan, K. R., Goslar, M. D., Ricks, D. A. and Toyne, B. "Key international IS issues in the U.S.-based multinational corporations", *Journal of Management Information Systems*, 7, 4, 1991, pp. 27-50.

Dexter, A. S., Janson, M. A., Kiudorf, E. and Laast-Laas, J. "Key information techonology issues in Estonia", *The Journal of Strategic Information Systems*, Jun, 1993, pp. 139-152.

Dickson, G. W. and Nechis, M. "Key Information Systems Issues for the 1980's", *MIS Quarterly*, September, 1984, pp. 135-159.

Gable, G.G.; van Den Heever, Roelf; Erlank, Steve; Scott, Judy. "Large Packaged Software: the need for research", *Proceedings of the 3rd Pacific Asia Conference on Information Systems*, Brisbane, Australia, 1-5 April, 1997a, pp.381-388.

Gable, G.G.; van Den Heever, Roelf; Erlank, Steve; Scott, Judy. "Using Large Packaged Software in Teaching: the case of SAP R/3", *Proceedings of the AIS Americas Conference*, Indianapolis, USA, 15-17 August, 1997b.

Gable, G. G.; Scott, J.; Davenport, T. "Cooperative EWS Life-cycle Knowledge Management," *Proceedings of the Ninth Australasian Conference on Information Systems*, 29 September – 2 October 1998, Sydney, Australia, 1998a, pp.227-240.

Gable, G. G. "Large Package Software: a Neglected Technology", *Journal of Global Information Management*, Vol 6, No 3, Summer, 1998b, pp.3-4.

Hiquet, B. D., Kelly, A. F., Kelly-Levey and Associates. *SAP R/3 Implementation Guide: A Manager's Guide to Understanding SAP*, USA: Macmillan Technical Publishing, 1998.

Niederman, F., Brancheau, J. C. and Wetherbe, J. C. "Information Systems Management Issues for the 1990s", *MIS Quarterly*, December, 1991, pp. 474-500.

Pinsonneault, A. and Kraemer, K. L. "Survey Research Methodology in Management Information systems: An Assessment", *Journal of Management Information Systems*, Vol. 10, No. 2, 1993, pp. 75-105.

Price Waterhouse, "Information Technology Survey", *Price Waterhouse*, London, 1995.

Shtub, A. *Enterprise Resource Planning (ERP): The Dynamics of Operations Mangement*, 2nd Ed., The Netherlands: Kluwer Academic Publishers Group, 1999.

Watson, R. T. and Brancheau, J. C. "Key issues in information systems management: An international perspective", *Information & Management*, 20, 1991, pp. 213-223.

Watson, RT, Kelly, GG, Galliers, RD and Brancheau, J. C. "Key issues in information systems management: an international perspective", *Journal of Management Information Systems,* 13(4), 1997, pp. 91-115.

Table 2 - The First Round Result of Respondents by Agencies

Agencies Involved	Non-Respondents	Not able to Participated	Respondents	No of Surveyed	No of Issues Collected
Corporate Services Agency	15	2	33	50	136
	14%	2%	31%	46%	50%
Department of Natural Resources	4	2	12	18	53
	4%	2%	11%	16%	19%
Department of Primary Industries	12	4	3	19	14
	11%	3%	3%	17%	5%
Forestry Business Group	7	1	6	14	37
	6%	1%	5%	13%	14%
State Water Project	2	1	7	10	34
	2%	1%	6%	9%	12%
Total Count of Row	40	10	61	111	274
Total % of Row	37%	8%	55%	100%	100%

Table 3 Profile of Respondents

Roles of Involvement	Count	Tot	Duration of Involvement	Count	Tot
Not Indicated	11		Not Indicated	12	
Steering Committee Member	8		Within 1 year	24	
Project Manager	2		1 to 2 years	26	
Consultant	9		2 to 3 years	8	
Business Process Team Member	15		3 to 5 years	1	71
Power User	13				
Trainer	3				
Help Desk Team Member	1				
Change Management Team Member	4				
Developer	3				
Administrator	2	71			