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Research Paper

ANALYTICAL STUDY OF THE PERSPECTIVES FOR IMPLEMENTATION OF ERP

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Enterprise Resource Planning is a process for accounting-oriented computer information system that assists enterprises to define and plan on the resources required during the operation process of purchase, production, distribution, and strategic planning to satisfy customers' orders. Basically, it evolved from MRP-II which further was developed from MRP. In this survey based research work, an effort has been made to study the outlook of ERP implementation that is, factors contributing to ERP implementation, role of higher officials and successfulness of the project. The integration among business functions facilitates communication and information sharing, leading to dramatic gains in productivity and speed. Cisco Systems, for example, harnessed ERP to help it become the market leader in the global networking industry. Cisco's ERP system was the backbone that enabled its new business model Global Networked Business based on the use of electronic communications to build interactive, knowledge-based relationships with its customers, business partners, suppliers and employees. In the process, Cisco doubled in size each year and reaped hundreds of millions of dollars in both cost savings and revenue enhancements. Autodesk, a computer-aided design software company, reported a decrease in its order fulfillment times from two weeks to 24 hours after installing an ERP system. For this purpose a questionnaire has been prepared and forwarded to industries for their response. To accomplish this at this level, manufacturing industries are selected in India. For those industries it is proposed to carry out analysis from the collected data as such analysis has not been yet attempted.

Keywords: ERP, ERP implementation, Manufacturing industries

INTRODUCTION

American Production and Inventory Control Society (APICS) Chan-Hsing *et al.* (2005) defines Enterprise Resources Planning (ERP)

as an accounting-oriented computer information system that assists enterprises to define and plan on the resources required during the operation process of purchase,

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production, distribution, and strategic planning to satisfy customer's orders. It also effectively integrates and manages these resources so as to enhance overall performance and reduce costs.

ERP covers a wide range of fields, for example, purchase and sale management in distribution; production management, Material Requirements Planning (MRP), quality control, management of products in process, cost management, and project design change management, which represents a complete manufacturing process including research and development, production, product management, and total quality control. In addition, ERP also involves accounting, human resource, and decision-making resource management. The ultimate goal of ERP is to improve enterprise's operating cycle of planning, implementing, auditing, and improving, and to strengthen corporate internal control and auditing capabilities Chan-Hsing *et al.* (2005).

Enterprise resource planning or ERP consists of three word—enterprise, resource and planning. Among the three the last two words are insignificant compared to the first. Yes ERP packages do help in planning and also in managing the resources. There are many other software solutions that does the same thing—planning and resource management. It is the enterprise part that is important. ERP's true power and potential comes from the movement from traditional business model to the enterprise business model. ERP packages attempt to integrate all departments and functions across a company onto a single computer system that can serve all those different department's particular

needs. This kind of integration is a very difficult task. Building a single software program that serves the needs of people in finance as well as it does the people in human resources and in the warehouse. Each of those departments typically has its own computer system optimized for the particular ways that the department does its work. But ERP combines them all together into a single, integrated software program that runs off a single database so that the various departments can more easily share information and communicate with each other. That integrated approach can have a tremendous payback if companies install the software correctly.

Take a customer order, for example. Typically, when a customer places an order, that order begins a mostly paper-based journey from one in-tray to another in-tray around the company, often being keyed and re-keyed into different department's computer systems along the way. All that lounging around in in-trays causes delays and lost orders, and all the keying into different computer systems invites errors. Meanwhile, no one in the company truly knows what the status of the order is at any given point because there is no way for the finance department, to get into the warehouse's computer system to see whether the item has been shipped on, will have to call the warehouse and ask them to check the status of the shipment. This can be a quite tedious and frustrating experience.

An ERP system streamlines business processes by creating an enterprise-wide transaction structure that integrates the key functions of different departments within an integrated information system platform. Through the integration of these diverse

systems, organizations can gain a competitive advantage in the rapidly changing digital age ERP is therefore a key part of the information infrastructure of modern businesses. Recent research has shown that ERP projects have grown to become the largest information system project investment in companies worldwide. Furthermore, this trend is expected to continue for years to come Gattiker and Goodhue (2005).

However, if ERP projects are not implemented properly, the results can be disastrous, since the rate at which ERP projects fail is surprisingly high, with serious consequences including failure to fulfill anticipated functions and cost/schedule overruns Chan-Hsing *et al.* (2005) and Chuck and Eric (2007). Many companies have seen no alternative but to terminate their ERP projects during the implementation phase once their resources have become depleted because of mismanagement. For instance, Dell Incorporated abandoned its ERP project after committing two-years and expending \$200 mn. Waste Management Incorporated aborted its ERP implementation after spending \$45 mn of an estimated \$250 mn budget (Abdinnour-Helm *et al.*, 2003). Failed ERP projects have even led to problems as serious as bankruptcy Wong *et al.* (2005). So an active implementation of ERP is required to avoid above disastrous.

Active management of ERP implementation refers to the management's ability to react to the changing environment in the long implementation process, and take appropriate action to manage the inherent risks. Several streams of study have proposed foundational theories on ERP implementation.

One such stream focuses on the interaction between ERP and organizations (Soh *et al.*, 2000; Somers and Nelson, 2004; and Gattiker and Goodhue, 2005) and makes the observation that ERP implementation is closely intertwined with complex organizational factors. Take organization's culture for example, organizational culture affects an organization's shared beliefs, ideologies, and norms that influence organizational behavior (Pfeffer, 1981; and Schein, 1996) and therefore plays a critical part in ERP implementing. Besides, ERP requires high computer self-efficacy among employees because organizational changes resulted by the ERP implementation require a large-scale use of computers, which presents different learning process for different types of organizations. Therefore, different types of organization's experience different organizational fitting process Wu *et al.* (2008), which makes implementation of ERP, face both technical and social uncertainties that cannot be predefined in full, and must, of necessity, be actively managed. Another stream concentrates on risk factors in ERP implementation. Such studies point out explicit key risk factors, such as process fit and user fit, which contribute to the failure of ERP implementation if left unchecked. Other studies investigate risk factors in different ERP implementation phases and note that by actively managing problems that evolve over time so that better ERP implementation can be achieved.

Various studies focused the attention to "change management" where ERP implementation will involve changes to business processes (Bancroft, 1996; Holland

et al., 1999; and Parr *et al.*, 1999) as they strongly support change management, supply chain management, and organizational performance improvement.

According to Chan-Hsing *et al.* (2005) organizations decide to implement ERP's for different reasons:

- The need to improve the performance of current operations,
- The need to integrate data and systems,
- The need to prevent a competitive disadvantage or a business risk from becoming critical.

LITERATURE REVIEW

Amin Hakim and Hamid Hakim's study reveals that the various factors of implementation of ERP in number of companies that leads to successful implementation of ERP. Also their study reveals the decision-making process for ERP implementation from three perspectives; strategic, tactical and executive are examined.

Al-Mudimigh *et al.* (2001) suggested that ERP implementation is a socio-technical challenge that requires a fundamentally different outlook from technologically-driven innovation, and will depend on a balanced perspective where the organization as a total system is considered. ERP implementation is considered to rely on behavioral processes and actions. ERP implementation is a process that involves macro-implementation at the strategic level, and micro-implementation at the operational level.

Alessandro Spano and Benedetta Bello article reports the results of a research aimed at investigating the impact of an ERP system on organizational processes and individual

employees in a public sector organization (Italian Regional Council).

Ada *et al.* (2005) study firstly examines the current literature concerning ERP implementation problems during implementation phases and causes of ERP implementation failure. A multiple case study research methodology was adopted to understand "why" and "how" these ERP systems could not be implemented successfully.

Adel (2001) describes an integrated, process oriented approach for facing the complex social problem of workers' resistance to ERP.

Claire and Georges (2008), study suggests ERP implementation using five-stage model: selection of the vendor and software, deployment and integration, stabilization, progression, and evolution.

Chan-Hsing *et al.* (2005), study aims to help enterprises successfully implement ERP system by proposing strategies and tactics to tackle the common problems encountered in implementing ERP system.

Chuck and Eric (2007) examined the relationship between the success of ERP system adoption, extent of Business Process Improvement (BPI) and organizational performance and investigated the associations between the outcomes of these initiatives.

Ngai *et al.* (2008) identified a comprehensive set of CSF's of ERP implementation like business plan, project champion role, software/system development, ERP team work, ERP strategy and ERP

methodology, ERP vendor, national culture, evaluation of performance.

Eric *et al.* (2008) study explores the interaction patterns among the ERP implementation success factors from a co variation (co-alignment) perspective.

Elisabeth *et al.* (2003) article identifies success factors, software selection steps, and implementation procedures critical to a successful implementation.

Gargeya and Brady (2005) article identifies the ability to implement ERP with minimal customization requires assistance from several other factors, primarily streamlining operations and re-engineering the business - both of which will help the organization to run in a more straightforward manner.

Hsiu *et al.* (2005) study investigates the relationship between ERP implementation practices and a firm's competitive strategy.

Liang *et al.* (2007) develops and test a theoretical model to investigate the assimilation of enterprise systems in the post-implementation stage within organizations.

Jose and Joan (2001) seek to analyze the relevance of critical success factors along ERP implementation phases. The ERP implementation methodology is used as the ERP implementation reference model.

Motwani *et al.* (2002) This research examines what factors facilitate or inhibit the success of ERP projects and what actions can be taken to bring troubled ERP projects under control.

Liang-Chuan *et al.* (2008) objective of this paper is to propose an active ERP implementation management perspective to

manage ERP risks based on the Real Options (RO) theory, which addresses uncertainties over time, resolves uncertainties in changing environments that cannot be predefined.

Mary *et al.* (2006), examines eight dimensions of culture and their impact on how ERP implementation teams are able to effectively share knowledge across diverse functions and perspectives during ERP implementation.

Pramod and Thapliyal (2010) suggested that ERP solutions are the revolutionizing the way industries produce goods and services. ERP systems bring lot of benefits to the industries by tightly integrating various departments of the industry.

Upadhyay *et al.* (2010), attempts to explore and identify issues affecting Enterprise Resource Planning (ERP) implementation in context to Indian Small and Medium Enterprises (SMEs) and large enterprises.

Shih-Wei and Yu-Chieh (2008) examines ERP performance at the post-implementation stage, particularly from the perspective of managerial intervention.

Botta-Genoulaz *et al.* (2005) noticed that in industries the stakes control of integrated systems cannot be limited to the phases of implementation or deployment. Better use of these information systems drives industries to new organizations and to continuous adaption of industry's strategy.

Young (2007) article intends to serve three goals. First, it will be useful to researchers who are interested in understanding what kinds of questions have been addressed in the area of ERP. Second, the article will be a useful

resource for searching for research topics. Third, it will serve as a comprehensive bibliography of the articles published during the period. The literature is analyzed under six major themes and nine sub-themes.

METHODOLOGY ADOPTED

Research method adapted to survey is collection of data through questionnaire. Method of data collection is quite popular, particularly in case of big enquiries. It is being adopted by private individuals, research workers, private and public organizations and even by governments (Table 1). In this method a questionnaire is sent (usually by post) to the persons concerned with a request to answer the questions and return the questionnaire. A questionnaire consists of a number of questions printed or typed in a definite order on a form or set of forms. The questionnaire is mailed to respondents who are expected to read and understand the questions and write down the reply in the space mean for the

purpose in the questionnaire itself. The respondents have to answer the questions on their own. The method of collecting data by mailing the questionnaires to respondents is most extensively employed in various economic and business surveys.

We are using this type of method. For which the major issues were highlighted from the literature survey and considered for enclosure in the questionnaire. The questions were laid out in such a way to cover all aspects of ERP that had been identified as being important from the literature survey. Scaled questions are used in which the multiple choices are provided giving some idea of a development in size or order of something. In some questions the Likert scale is also used to get respondent's attitude by asking them the extent of their agreement or disagreement. Binary response questions are also used which offer only two alternatives, i.e., yes or no.

Table 1: Response of Each Question by Different Companies

S.No.	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
1.	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2.	10	10	10	10	10	10	10	10	10	10	5	10	10	10	10	10
3.	9	8	3	8	4	5	2	8	5	1	6	7	9	10	3	8
4.	2	3	2	1	1	3	2	3	3	2	3	2	3	2	3	3
5.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7.	3	3	1	1	3	1	1	1	3	1	3	3	1	1	1	1
8.	3	2	2	1	1	2	5	2	2	2	4	3	2	2	2	2
9.	1	1	1	2	1	1	1	1	1	1	1	2	1	1	1	1
10.	1	2	1	4	4	1	2	1	3	1	1	4	3	1	1	1
11.	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1
12.	4	3	4	1	2	4	3	4	3	4	4	1	3	4	4	4

Table 1 (Cont.)

S.No.	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
13.	4	5	4	3	3	5	4	3	5	4	4	1	5	4	5	5
14.	1	2	1	1	1	2	1	1	2	1	1	1	2	1	2	2
15.	3	1	3	2	4	1	3	1	1	3	3	2	1	3	1	1
16.	2	4	2	1	1	4	2	6	4	2	4	2	4	2	4	4
17.	1	1	1	2	2	1	1	1	1	1	1	2	1	1	1	1
18.	1	1	1	3	1	1	1	1	1	1	1	3	1	1	1	1
19.	4	5	5	3	3	5	5	3	5	5	4	3	5	4	5	5
20.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21.	2	2	2	1	1	2	2	2	2	2	2	1	2	2	2	2
22.	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
23.	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
24.	1	2	2	1	1	2	2	2	2	2	2	1	2	2	2	2
25.	2	2	4	3	2	2	1	5	2	3	3	3	2	4	2	2
26.	4	5	4	2	2	5	4	2	5	3	3	2	5	4	5	5
27.	2	1	1	2	2	1	1	2	1	1	2	2	1	2	1	1
28.	2	1	1	4	2	1	1	2	1	1	3	2	1	2	1	1
29.	2	1	1	3	2	2	2	2	2	1	3	2	1	2	1	1
30.	2	1	1	3	2	2	2	2	3	1	2	2	1	2	1	1

Note: C represents code for each Company.

CONCLUSION

From the research work, we conclude that for the successful implementation of ERP following things need to be considered:

- Top management and middle management support is necessary during ERP implementation so that there is a good understanding between them and ERP packages provider, without their support it's quite difficult to understand about various departments.
- Consultants hired plays very crucial role and they have to be accurate because they provides the path between the management and the ERP packages provider.

- Team leaders of ERP implementation should be experienced so that they can lead their teams in a better way.
- The most important are the end user who actually works on the packages; they not only have good experience but should have the proper knowledge of the packages.

Based on the research work and the conclusion, following future scope has been prepared:

- Analysis of the research undertaken can be carried out.
- Research can be enhanced to more companies.
- Sections in questionnaire can be enhanced and improved.

REFERENCES

1. Abdinnour-Helm S, Lengnick-Hall M L and Lengnick-Hall C A (2003), "Pre-Implementation Attitudes and Organizational Readiness for Implementing an Enterprise Resource Planning System", *European Journal of Operational Research*, Vol. 146, No. 2, pp. 258-273.
2. Ada Wong, Chau Patrick Y K, Scarbrough Harry and Davison Robert (2005), "Critical Failure Factors in ERP Implementation", in 9th Pacific Asia Conference on Information Systems (PACIS 2005), July, Bangkok, Thailand.
3. Adel M Aladwani (2001), "Change Management Strategies for Successful ERP Implementation", *Business Process Management Journal*, Vol. 7, No. 3, pp. 266-275.
4. Al-Mudimigh A, Zairi M and Al-Mashiri M (2001), "ERP Software Implementation: An Integrative Framework", *European Journal of Information Systems*, pp. 216-226.
5. Alessandro Spano and Benedetta Bello (2009), "The Impact of Using an ERP System on Organizational Processes and Individual Employees", Italian Regional Council.
6. Amin Hakim and Hamid Hakim (2010), "A Practical Model on Controlling the ERP Implementation Risks", *Information Systems*, Vol. 35, pp. 204-214.
7. Bancroft N (1996), *Implementing SAP/R3*, Manning Publications, Greenwich.
8. Benaroch M and Kauffman R J (2000), "Justifying Electronic Banking Network Expansion Using Real Options Analysis", *MIS Quarterly*, Vol. 24, No. 2, pp. 197-225.
9. Bingi P, Sharma M K and Godla J K (1999), "Critical Issues Affecting an ERP Implementation", *Information Systems Management*, Vol. 16, No. 3, pp. 7-14.
10. Botta-Genoulaz V, Millet P-A and Grabot B (2005), "A Survey on the Recent Research Literature on ERP Systems", *Computers in Industry*, Vol. 56, pp. 510-522.
11. Chan-Hsing Lo, Chih-Hung Tsai and Rong-Kwei Li (2005), "A Case Study of ERP Implementation for Opto-Electronics Industry", *International Journal of the Computer, the Internet and Management*, Vol. 13, No. 1, pp. 13-30.
12. Chuck C H Law and Eric W T Ngai (2007), "ERP Systems Adoption: An Exploratory Study of the Organizational Factors and Impacts of ERP Success", *Information & Management*, Vol. 44, pp. 418-432.
13. Claire Berchet and Georges Habchi (2008), "The Implementation and Deployment of an ERP System: An Industrial Case Study", *Computers in Industry*, Vol. 59, pp. 548-564.
14. Davenport T H (1998), "Putting the Enterprise into the Enterprise System", *Harvard Business Review*, Vol. 76, No. 4, pp. 121-133.
15. Elisabeth J Umble, Ronald R Haft and Michael Umble M (2003), "Enterprise Resource Planning: Implementation Procedures and Critical Success Factors", *European Journal of Operational Research*, Vol. 146, pp. 241-257.

16. Eric TG Wang, Sheng-Pao Shih, James . Jiang and Gary Klein (2008), "The Consistency Among Facilitating Factors and ERP Implementation Success: A Holistic View of Fit", *The Journal of Systems and Software*, Vol. 81, pp. 1609-1621.
17. Gargeya V B and Brady C (2005), "Success and Failure Factors of Adopting SAP in ERP System Implementation", *Business Process Management Journal*, Vol. 11, No. 9.
18. Gattiker T F and Goodhue D (2005), "What Happens After ERP Implementation: Understanding the Impact of Interdependence and Differentiation on Plant-Level Outcomes", *MIS Quarterly*, Vol. 29, No. 3, pp. 559-585.
19. Griffith T L, Zammuto R F and Aiman-Smith L (1999), "Why New Technologies Fail?", *Industrial Management*, Vol. 41, pp. 29-34.
20. Holland C P, Light B and Gibson N (1999), "A Critical Success Factors Model for Enterprise Resource Planning Implementation", in Proceedings 7th European Conference on Information Systems, in J Pries-Heje, C Ciborra, K Kautz, J Valor, E Christiaanse, D Avison and C Heje (Eds.), *Copenhagen Business School*, pp. 273-287.
21. Hsiu Ju, Rebecca Yena and Chwen Sheu (2005), "Student Perceptions of Psychological Contracts in the Business School Class Room: Exploring Differences Between the USA and Taiwan".
22. James D, Russell S and Seibert G (2002), *Oracle E-Business Suite Financials Handbook*, McGraw-Hill/Osborne, California.
23. Jones M C, Cline M and Ryan S (2006), "Exploring Knowledge Sharing in ERP Implementation: An Organizational Culture Framework Star, Open", *Decision Support Systems*, Vol. 41, No. 2, pp. 411-434.
24. Jose Estevez and Joan Pastor (2001), "Analysis of Critical Success Factors Relevance Along SAP Implementation Phases".
25. Laudon K C and Laudon J P (2007), *Management Information Systems: Managing the Digital Firm*, Prentice-Hall, New Jersey.
26. Liang-Chuan Wu, Chorng-Shyong Ong and Yao-Wen Hsu (2008), "Active ERP Implementation Management: A Real Options Perspective", *The Journal of Systems and Software*, Vol. 81, pp. 1039-1050.
27. Liang H, Saraf N, Hu Q and Xue Y (2007), "Assimilation of Enterprise Systems: The Effect of Institutional Pressures and the Mediating Role of Top Management", *MIS Quarterly*, Vol. 31, No. 1, pp. 59-87.
28. Markus M L, Tanis C and Van Fenema P C (2000b), "Multisite ERP Implementations", *Communications of the ACM*, Vol. 43, No. 4, pp. 42-46.
29. Mary C Jones, Cline M and Ryan S (2006), "Exploring Knowledge Sharing in ERP Implementation: An Organizational Culture Framework", *Decision Support Systems*, Vol. 41, pp. 411-434.
30. Moon Young (2007), "Enterprise Resource Planning (ERP): A Review of the Literature", *Mechanical and Aerospace Engineering*.

31. Motwani J, Mirchandani D, Madan M and Gunasekaran A (2002), "Successful Implementation of ERP Projects Evidence from Two Case Studies", *Int. J. Production Economics*, Vol. 75, pp. 83-96.
32. Ngai E W T, Law C C H and Wat F K T (2008), "Examining the Critical Success Factors in the Adoption of Enterprise Resource Planning", *Computers in Industry*, Vol. 59, pp. 548-564.
33. Parr A, Shanks G and Darke P (1999), "Identification of Necessary Factors for Successful Implementation of ERP Systems", in O Ngwenyama, L D Intra, M D Myers and J I DeCross (Eds.), *New Information Technologies in Organisational Processes*, pp. 99-119, Kluwer Academic Publishers, Boston.
34. Pfeffer J (1981), "Management as Symbolic Action: The Creation and Maintenance of Organizational Paradigms", in Cummings L L and Staw B M (Eds.), *Research in Organizational Behavior*, Vol. 3, pp. 1-52, Jai Press, Greenwich, CT.
35. Pramod Kumar and Thapliyal M P (2010), "Successful Implementation of ERP in Large Organization", *International Journal of Engineering Science and Technology*, Vol. 2, No. 7, pp. 3218-3224.
36. Schein E H (1996), "Culture: The Missing Concept in Organization Studies", *Administrative Science Quarterly*, Vol. 41, No. 2.
37. Sheng Y P, Pearson M and Crosby L (2003), "Organizational Culture and Employees' Computer Self-Efficacy", *Information Resources Management Journal*, Vol. 16, No. 3, pp. 42-58.
38. Shih-Wei Chou and Yu-Chieh Chang (2008), "The Implementation Factors that Influence the ERP (Enterprise Resource Planning) Benefits", *Decision Support Systems*, Vol. 46, pp. 149-157.
39. Soh C, Kien S S and Tay-Yap J (2000), "Cultural Fits and Misfits: Is ERP a Universal Solution?", *Communications of the ACM*, Vol. 43, No. 4, pp. 47-51.
40. Somers T M and Nelson K G (2004), "A Taxonomy of Players and Activities Across the ERP Project Life Cycle", *Information & Management*, Vol. 41, No. 3, pp. 257-278.
41. Upadhyay P, Basu R, Adhikary R and Dan P K (2010), "A Comparative Study of Issues Affecting ERP Implementation in Large Scale and Small Medium Scale Enterprises in India: A Pareto Approach", *International Journal of Computer Applications*, Vol. 8, No. 3, October, pp. 23-28.
42. Wang E T G., Klein G and Jiang J J (2006), "ERP Misfit: Country of Origin and Organizational Factors", *ME Sharpe*, pp. 263-292.
43. Wu L C, Ong C S and Hsu Y W (2008), "Active ERP Implementation Management: A Real Options Perspective", *Journal of Systems and Software*, Vol. 81, pp. 1039-1050.
44. Yen H R and Sheu C (2004), "Aligning ERP Implementation with Competitive Priorities of Manufacturing Firms: An Exploratory Study", *Int. J. Production Economics*, Vol. 92, pp. 207-220.

45. Young B Moon (2007), "Enterprise Resource Planning (ERP): A Review of the Literature", *Mechanical and Aerospace Engineering*.

APPENDIX

Questionnaire on ERP Implementation

Section 1: Company Profile

1. Please state your principal area/region of business?

- Hong Kong
- Mainland China
- India
- Other countries please specify...

2. Your industry sector belong to:

- Business services
- Community and social
- Construction
- Communications
- Engineering
- Finance
- Insurance
- Import/Export
- Logistics
- Manufacturing
- Transport
- Utility
- Whole sale/Retail
- Any other, please specify...

3. Please state your job title:

- Business/System analyst
- Consultant
- Chief executive officer
- Chief technology officer
- Data base administrator
- IT manager internet specialist
- Project manager
- Programmer
- Other, please specify...

APPENDIX (CONT.)

4. Please Describe the Size of Organization:
 - Small
 - Medium
 - Large
5. Any ERP system implemented or in the process or implementation in your organization?
 - Yes
 - No

Section 2: Business and Management Profile

6. Which department initiated the idea for adopting an ERP system?
 - IT department
 - Senior management
 - Finance department
 - Third party IV consultant
 - Third party IV ERP vendor
 - Other, please specify...
7. Did you find it necessary to re-engineer the business processes?
 - Prior to implementation
 - As a part of implementation
 - After implementation
 - No engineering done
8. In your Industry, What are the prime goals of implementing ERP? (You may tick more than one, if applicable).
 - Gain competitive advantage
 - Be an ERP implemented company
 - Meet customer needs
 - Gain more profits
 - Other(s) if any please specify....
9. Was ERP implementation in your industry successful?
 - Yes
 - No
10. Which ERP software availed by your industry.....
11. What was the reaction of Top and Middle management during ERP implementation?
 - Supportive
 - Unsupportive

APPENDIX (CONT.)

Section 3: Technical Profile

12. Which was the most challenging phase of ERP implementation?
- Planning
 - Design
 - Transition
 - Implementation
13. What percentage of Business has improved after ERP implementation?
- Up to 20%
 - 21% to 40%
 - 41% to 60%
 - 61% to 80%
 - 81% to 100%
14. Do you get proper information required with ERP implementation?
- Agree
 - Strongly agree
 - Disagree
 - Strongly disagree
15. What percentage of operational disruption was during Testing and Go-Live?
- Up to 20%
 - 21%-40%
 - 41%-60%
 - 61%-80%
 - 81%-100%

Section 4: ERP implementation

16. How long was the implementation of the ERP system?
- Under 9 months
 - 9 months to 1 year
 - 1 year to 1.5 years
 - 1.5 to 2 years
 - 2.5 to 3 years
 - Over 3 years
17. How the end users responded towards ERP implementation?
- Supportive
 - Unsupportive

APPENDIX (CONT.)

18. Your industrial head of ERP is accountable to:

- CEO/Managing director
- Chief financial officer
- Chief operating officer
- Other(s) If any please specify...

19. What percentage of target was achieved after ERP implementation?

- Up to 20%
- 21% to 40%
- 41% to 60%
- 61% to 80%
- 81% to 100%

20. Did your business process improve with ERP implementation?

- Yes
- No

21. Was there any delay in ERP implementation?

- Yes
- No

If yes, give delay in percentage.....

22. What are the reasons for delay in ERP implementation?

- Inefficient budget
- Resistance from employees
- Poor planning by consultants
- Other(s) if any please specify....

Section 5: Budget/Finance

23. What sort of Budget was involved for ERP enforcement?

- Fixed budget
- Unlimited budget

24. Was there any over Budgeting while ERP enforcement?

- Yes
- No

If yes, give percentage of over-budgeting.....

25. Approximate expenditure for ERP Implementation.....

APPENDIX (CONT.)

26. How much financial benefits improve after ERP implementation?

- Up to 20%
- 21% to 40%
- 41% to 60%
- 61% to 80%
- 81% to 100%

Section 6: Employees

27. How is the Communication between management & employees during ERP implementation?

- Excellent
- Good
- Fair
- Poor

28. How proficient the project team of ERP implementation?

- Excellent
- Good
- Fair
- Poor

29. Atonement of employees with current ERP solutions?

- Excellent
- Good
- Fair
- Poor

30. Atonement of executives with current ERP solutions?

- Excellent
- Good
- Fair
- Poor



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