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A Transformational Model to Understand the Impact of Enterprise Systems for Business Benefits

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Abstract

Over the years many organizations have implemented an enterprise system (ES), also called enterprise resource planning (ERP) system, to streamline the flow of information and improve organizational effectiveness to produce business benefits which justify the ES investment. The effectiveness of these systems to achieve benefits is an area being proactively researched by both professionals and academia. However, most of these studies focus on ‘what ESs do’ rather than ‘how ESs do it’. The purpose of this study is to better understand how organizations derive benefits from utilization of an ES and its data. This study utilizes a transformational model of how ES data are transformed into knowledge and results to evaluate the impact of ES information on organizational functions and processes and how this can lead to business benefits. The linkage between expected outcomes, utilization of ES data in decision-making processes, and realized or unrealized benefits provides the reason for this study.

Findings reveal that the key benefits commercial firms seek from an ES include improving information flow and visibility, integration and automation of functions, cost reductions by reducing inventory, and achieving process efficiencies for both internal and external operations. The various tools and methods businesses use for transforming ES data into knowledge include the use of data warehouses and business intelligence modules that assist in extraction and manipulation of data, and reporting on particular data objects. Web portals are actively utilized to collaborate between stakeholders and access real-time information. Business tools such as KPI reporting, balanced scorecards and dashboards are used to track progress towards realizing benefits and establishing analytical decision making.

Findings emphasize that benefit realization from an ES implementation is a holistic process that not only includes the essential data and technology factors, but also includes other factors such as business strategy deployment, people and process management, and skills and competency development. Findings reveal that business organizations generally lack in producing value assessments that often lead to weak business cases and insufficient benefit models which cannot be used for benefit tracking. However, these organizations are now realizing that it is not enough to put in an ES and expect an automatic improvement. Organizations are now establishing analytical and knowledge-leveraging processes to optimize and realize business value from their ES investment.

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List of Publications

The presentations and publications that have been published from this research so far are:

Journal Publications and Book Chapters

1. Mathrani, S., Viehland, D., & Rashid, M. A. (forthcoming 2010). Enterprise Systems Maturity: A Practitioners' Perspective, *Pacific Asia Journal of the Association for Information Systems* (<http://journal.ecrc.nsysu.edu.tw/pajais/>).
2. Mathrani, S. & Viehland, D. (2009). Business Benefits from Enterprise Systems Implementation in Small and Medium-sized Organizations, *the Australasian Journal of Information Systems*, vol. 16, no. 1, pp. 31-50 (<http://dl.acs.org.au/index.php/ajis>).
3. Mathrani, S., Rashid, M. A., & Viehland, D. (2009). The Impact of Enterprise Systems on Business Value, *Handbook of Research on Enterprise Systems*, Idea Group, Pennsylvania, USA (<http://www.igi-global.com/downloads/pdf/9697.pdf>).
4. Mathrani, S., Rashid, M. A., & Viehland, D. (2009). Enterprise Systems in Small and Medium-sized Enterprises, *Handbook of Research on Enterprise Systems*, Idea Group, Pennsylvania, USA (<http://www.igi-global.com/downloads/pdf/9697.pdf>).

Conference Papers

1. Mathrani, S. and Viehland, D. (2007). *Business Benefits from Enterprise Systems Implementation* at the 18th Australasian Conference on Information Systems (ACIS 2007), December 5 - 7, 2007, Toowoomba, Australia (<http://www.acis2007.usq.edu.au/assets/papers/70.pdf>).
2. Mathrani, S., Viehland, D., & Rashid, M. A. (2007). *Enterprise Systems Implementations in New Zealand: A Practitioner's Perspective* at the 11th Pacific Asia Conference on Information Systems (PACIS 2007), 4 - 6 July 2007 at Auckland, New Zealand (<http://aisel.aisnet.org/pacis2007/112/>).
3. Mathrani, S. and Viehland, D. (2007). *Leveraging Knowledge-Driven Technologies for Business Success* at the 9th International Conference on Decision Support Systems (ICDSS 2007), January 2- 4, 2007, Kolkata, India (<http://www.cba.uni.edu/ICDSS2007/eProceedings.htm>).
4. Mathrani, S., Viehland, D., & Rashid, M.A. (2005). *Creation and Utilization of Knowledge: Key to Success* at the 5th Global Conference on Flexible Systems Management (GLOGIFT 2005), held on 27 - 29 December at Bhopal, India (www.indianjournals.com/ijor.aspx?target=ijor:glogift2k5&volume=1&issue=1&article=chap026&type=pdf).
5. Mathrani, S. & Viehland, D. (2005). *Using Knowledge-based Processes to Improve Enterprise System Effectiveness* at the International Conference in Knowledge Management in Asia Pacific (KMAP 2005) held on 28 - 29 November 2005 at Wellington, New Zealand (<http://kmap2005.vuw.ac.nz/papers/Using%20Knowledge%20based%20Processes.pdf>).
6. Mathrani, S. (2005). *A Contextual Framework to Understand the Impact of Enterprise Systems for Business Benefits* at the Qualitative Research in Business Symposium (QRIB 2005) held by College of Business, Massey University Albany campus on 28 October, 2005 at Albany, New Zealand (<http://qrib.massey.ac.nz>).

7. Mathrani, S. (2005). *A Contextual Framework to Understand the Impact of Enterprise Systems for Business Benefits* at the 2nd IIMS Postgraduate Conference (IIMS-PGC 2005) held at Massey University, Albany campus, on the 27 October 2005 at Albany, New Zealand (<http://www.massey.ac.nz/~iimspg/2005conference/call.html>).
8. Mathrani, S. (2005). *A Contextual Framework to Understand the Impact of Enterprise Systems for Business Benefits* at the Doctoral Consortium of the 9th Pacific Asia Conference of Information Systems (PACIS 2005) on 6 – 7 July, 2005 at Bangkok, Thailand (<http://www.pacis2005.ku.ac.th/>).