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Business Process Automation and Managerial Accounting: An SAP Plug and Play Module

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Interim Status Report

The Thinkfinity Initiative for Innovative Teaching, Technology and Research

Cornerstone III: Interdisciplinary Programs, including Informatics

**Proposal Title: Business Process Automation and Managerial Accounting: An
SAP Plug & Play Module**

By

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Date: 11/14/2009

A) The outline of original goals

The primary aim of our project is to develop an Enterprise Resource Planning (ERP) platform that enables students at Pace to understand how different interdisciplinary areas in cross-unit and/or cross-enterprise decision making are related. ERP can help us do this since it allows a firm to automate and integrate its business processes, share common data and practices across the entire enterprise, and provide and access information in a real-time environment.

The objectives of our project are:

- to enhance interdisciplinary training and courses for students;
- to enhance understanding of process changes and improvement;
- to enhance understanding of the effective use of technology;
- to investigate the process management issues that focus on organizational structures, leadership styles and team empowerment and how they affect technology adaptation, resistance to and management of change, and information management.
- to benefit the Pace community since the results of our project development can help improve training and use of technology in the entire institution - it is not necessarily restricted to student learning, but can also be used for staff training.

B) What progress have you made towards your original goals on your project to date?

Dr. Picheng Lee went to one of SAP University Alliance campuses located in Chico, California for five days from June 22 to June 26, 2009 to go through intensive training on using SAP to configure business processes and accounting systems. We then use the Internet Demonstration and Evaluation Systems (IDES) of mySAP to develop and configure a hypothetical company called Speedwell Motor. Speedwell Motor does not have a production facility, but it purchases finished items from external suppliers and sells them to customers. Following the SAP way, we define its organizational structures, master data files, and rules to support core business processes such as buying (materials management), selling (sales & distribution), and tracking (financial accounting/controlling). The case in point is intended to help prospective users understand the basic concepts of business process automation with a special focus on managerial accounting function. We have documented the entire walk-thru exercises, procedures, and kept revising them to date. We have also had some accounting major students walk through our developed exercises.

C) Has your project impacted students? If so, how many?

In total, twenty-five students (10 graduate and 15 undergraduate students) have followed through our protocol development in the initial phase of this project.

D) Has your project impacted other faculty members? If so, how many?

In the current phase of the project, the involvement of other faculty members is not emphasized. However, Dr. Picheng has shared his SAP workshop materials with Dr. Kaustav Sen (Lubin School of Business) and Dr. Chienting Lin (CSIS) in the hope that other faculty members will incorporate SAP course materials into their courses.

E) What are your next steps?

The next phase deals with the full-scale introduction of our products (see Appendix 1 below) to the Pace community. As stated in our original proposal, it is our belief that the ability of students at Pace to address the following concerns is crucial to the overall success of our project:

- How does ERP change the managerial, technical, and sociopolitical responses of the firm in a supply chain setting?
- How should we respond to this change and advance the knowledge of ERP in a multi-layered supply chain?

We will thus commit a significant amount of resources towards building a learning package or workshop. The aim of this task is to enhance students' learning experience. Students are required to analyze and follow through the case in point (see Appendix 1). We will present problematic situations or business scenarios with a technological dimension in the context of information quality and productivity. Students' competence will be measured by assigning case-oriented exercises that must be completed using the IDES of mySAP. In this learning package, the emphasis is on the following five areas: strategic information technology planning, accounting information reporting, managerial information reporting, core business processes, and cost of service operation.

Further, we will describe a learning assessment framework for the development of ERP-based business processes. Specifically, we will develop a paper entitled "Technology Impact Assessment for Advanced Process Solutions". We will then make every attempt to present our findings in the International Conference on Continuous Process Improvement (CPI 2010). This two-day conference, held at Shanghai university, is co-sponsored by Pace university. In our studies of learning assessment, we will first rely on decision tools such as the Analytic Hierarchy Process (AHP) and the Analytic Network Process (ANP). Both the AHP and the ANP are multi-criteria,

multi-level decision models that allow for the development of priority weights for items based on policy/decision makers' professional evaluation. The ANP, however, also allows for the possible interdependencies among and between levels of elements along a hierarchic structure. Both models will be used as learning assessment tools to evaluate different end users' perceptions and provide a basis for social actions in a complex business environment. As shown in the Figure (A) of Appendix II, four different factors have emerged: managerial aspects, technical aspects, sociopolitical aspects, and Multidimensional competence. We will also develop the ANP model (see the Figure (B) of Appendix II) that links four factors considered in our AHP model to three dimensions of job performance. The development of our model is in line with the ERP concept. By drawing on that of Verville et al. (2007), we will also go through extensive exercises to find answers to the following questions:

- what problems are you aware of with the proposed ERP-based systems?
- what opportunities would a new system allow for?
- what functionalities would be needed to increase financial performance (e.g. revenue)?
- what functionalities would be needed to increase process quality?
- what functionalities would be needed to avoid additional costs?
- what functionalities would increase customer service?

To allow relevant concepts to emerge from the data (e.g. our field interview notes), it is important to define and give them meaning, and create boundaries around the meaning of the concepts. To this end, we will develop construct analytic codes via the process of focused coding (McAdam et al. 2008, Charmaze 2006).

We believe that the action plan presented here will help to set the stage and create the circumstances for the implementation of ERP-based business processes.

Reference:

Charmaz, K., 2006. *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*, Sage, Thousand Oaks, CA.

McAdam, R., D. Leonard, J. Henderson, S. Hazlett. 2008. A Grounded Theory Research Approach to Building and Testing TQM Theory in Operations Management. *Omega – International Journal of Management Science*, 36, 825-837.

Verville, J, Palanisamy, R., Bernadas, C., Halington, A., 2007, ERP acquisition Planning: a critical dimension for making the right choice, *Long Range Planning*, 40, pp.45-63.

Appendix I
Table of Contents

Introduction to Speedwell Motor

 Speedwell's Organization Structure

 External Organizations

 Sales Organizations

 Sales Divisions

 Distribution Channels

 Sales Areas

Purpose of the document

Step 1 – Login to SAP

Step 2 – Create Material Master

Step 3 – View and create G/L Account

 Create G/L Account

 Verify Account Creation

 Post a transaction to the account created.....

Step 4 – Understand Purchase Order

 Create Finished Product

 Create Vendor details

 Create info record.....

 Create Purchase Order.....

 Check stock of Materials.....

 Post Purchase Order

 Check the Stock of Material after receiving the goods.....

 Post Invoice

 Show Account Balance for the vendor.....

 Post Outgoing payment

| | |
|-----------------------------------------------------------------------------------------------------|--|
| Verify Account Balance..... | |
| Step 5 – Understanding Production planning | |
| Create Material Master Data for Finished Product | |
| Create Material Master Data for Semi finished product | |
| Create Material Master Data for Semi finished product | |
| Create Material Master Data for raw material | |
| Create Material Master Data for raw material | |
| Create a Bill of Materials (BOM) for Finished Product A1-XXX..... | |
| Create a Bill of Materials (BOM) for B1-XXX | |
| Create a Bill of Materials (BOM) for C1-XXX | |
| Create Independent Requirements for material..... | |
| Run Master Production Scheduling for material 110-XXX (Finished Product)..... | |
| Run Material Requirements Planning (MRP) for material B1-XXX..... | |
| Analyze MRP results for all the materials. | |
| Step 6 – Creating Production Order..... | |
| Release the Production Order to the Shop Floor..... | |
| Process the Production Order..... | |
| Perform the completion confirmation for the order. | |
| Receive quantity of completed production order. | |
| Display completed order. | |
| Display the material document..... | |
| Step 7 – Understanding Customer and Sales order Management..... | |
| Creating Customer Master Record..... | |
| Link Customer to Material | |
| Create Sales Order..... | |
| Display the sales order and record the scheduled delivery date. Error! Bookmark not defined. | |
| Create the delivery for the sales order..... | |

Transfer stock from Warehouse Management
Update order.....
Create an invoice (Bill) for the delivery.....
Examine your Progress.....
Collect Cash.
Display Summary Graph for Customer.....
Step 8- Report Generation
 Profitability Analysis report.....
 Balance Sheet
Income statement

Appendix II
Perceptions of ERP systems under AHP and ANP Hierarchy

Figure (A):

AHP Hierarchy – Perceptions of ERP systems

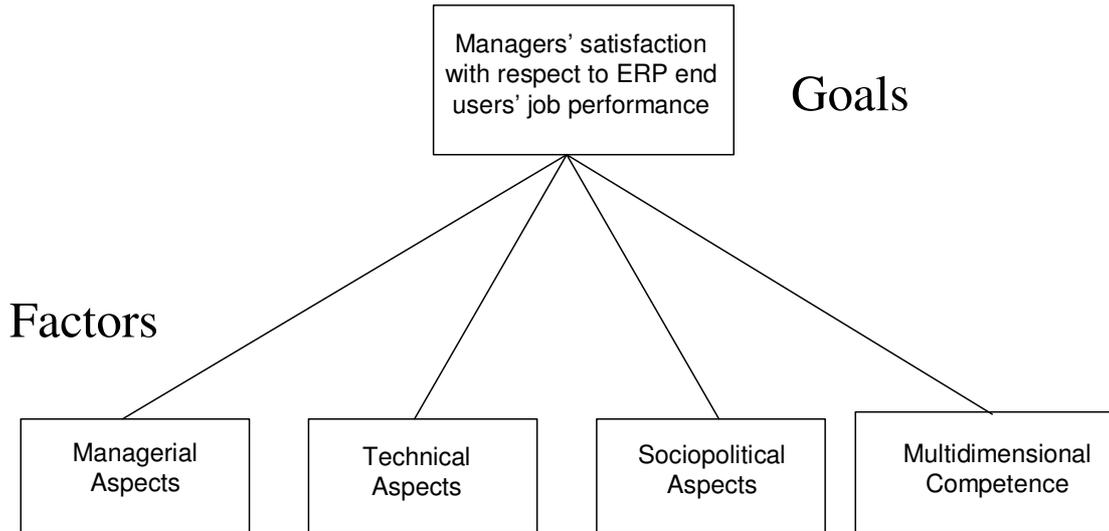


Figure (B):

ANP Hierarchy – Perceptions of ERP systems

