Teaching ERP Implementation with Microsoft Dynamics Sure Step

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Abstract: This paper presents ideas of teaching Enterprise Resource Planning (ERP) implementation using Microsoft Dynamics Sure Step in a college classroom. The presentation outlines a general approach and topics related to ERP implementation. Microsoft Dynamics and Sure Step Methodology is introduced. Ideas for classroom activities, student learning outcome and results from the sample assignment are included.

INTRODUCTION

Enterprise Resource Planning (ERP) system has been an integral part of business information systems for decades (Jacobs, 2007). An extensive body of research has explored various ERP-related topics including, but not limited to, implementation, optimization, management, ERP tools, studying ERP, and educational issues related to ERP (Schlichter and Kraemmergaard, 2010).

At many universities, ERP system courses are offered as part of undergraduate as well as graduate-level business curriculums. This paper presents ideas of teaching ERP implementation using Microsoft Dynamics Sure Step in a college classroom. The next section outlines a general approach and topics related to ERP implementation. Microsoft Dynamics and Sure Step Methodology is then introduced. Ideas and suggestions for classroom activities are provided (Example of assignment instructions and sample questions are included in the Appendix section).Student learning outcome results from the sample assignment are also included, followed by discussion and conclusion.

TEACHING ERP IMPLEMENTATION

One of the topics often covered in an Introduction to ERP class is ERP implementation, a complex and dynamic process in which an organization adopts an ERP software (Monk and Wagner, 2012; Motiwalla and Thompson, 2012). Teaching ERP implementation often starts with the System Development Life Cycle (SDLC), a conceptual model guiding software development and maintenance process. Traditionally, SDLC is the main methodology used to create, adopt, and maintain information systems including ERP systems. However, with the wide selection of off-the-shelf ERP software, it is often cost prohibitive for organizations to create their own ERP system compared to purchasing and customizing the software to fit their needs. Hence, ERP implementation is much less about creating software but adopting and customizing already-made software to fit organizations (Adnan et al., 2004). Both SDLC and ERP implementation share many similar aspects including the ultimate goal of successfully implementing an information system in an organization. Similar to SDLC, the process of ERP implementation is broken into various stages or phases. This approach allows a large, complex system to be more understandable and manageable.

Microsoft Dynamics and Sure Step Methodology

Microsoft Business Solution is one of the Tier I ERP software vendors offering various ERP software packages such as Dynamics AX, Dynamics CRM, Dynamics GP, and Dynamics NAV (Panorama Consulting Solutions, 2016; Bradford, 2014). Microsoft Dynamics is a sounded software option to use in the classroom as it is a well-established software from a reputable company. With the support from the Microsoft Dynamics Academic Alliance program (DynAA, please visit www.microsoft.com/dynamicsAA for more information), adopting the Microsoft Dynamics software for classroom use is very affordable, requiring a relatively low monetary investment because it may be deployed using a cloud platform (e.g., Schultz, 2015).

Microsoft Dynamics Sure Step Methodology is the ERP implementation methodology for Microsoft Dynamics ERP software. The systematic, end-to-end, and scalable approach of this methodology may be used to guide the ERP implementation effort throughout the whole system life cycle. Microsoft Dynamics Sure Step Model breaks down ERP implementation into six primary phases: Diagnostic, Analysis, Design, Development, Deployment, and Operations phases. Each phase consists of a set of activities and tasks, resulting in deliverables that usually provide input to the next activities in the phase or the next phase in the methodology.

Suggested Classroom Activities

To promote interest on this topic, students should be assigned to read a few articles about ERP implementation, with both positive as well as negative outcomes. To maximize active learning and the value-added time in the face-to-face classroom, these readings could be assigned as a part of class preparation in a blended teaching approach.

In the classroom, students are presented the concepts of ERP implementation, methodologies, and related process (see Bradford, 2014; Motiwalla and Thompson, 2012). Class discussions could proceed by asking students, individually or in small groups, to identify appropriate implementation methodologies utilized in each case read previously and explain why [they think] the company utilized that approach. ERP success factors may also be discussed during the class period.

Microsoft Dynamics Sure Step is then introduced as the ERP implementation methodology for Microsoft Dynamics solutions, along with the Microsoft Dynamics Sure Step program as a tool to facilitate the overall implementation process. The class assignment for this portion, provided in the Appendix section, allows students to have hands-on experience using the Sure Step program to learn the details of each phase in the methodology and to explore the process flows and documentation supporting the overall implementation project. The answer key(s) to the sample questions are available from the authors upon request.

Student Learning Outcomes

A Sure Step assignment was required by students enrolled in a 15-week ERP System class (see the Appendix section for instructions and sample questions). A total of 14 students, which was the full class enrollment, completed the assignments with an average score of 79% and a median score of 85%. The assignment was completed outside the class time and took about 3 hours to complete. The direct evidence of student learning outcomes for this assignment are provided in Table 1.

Table 1: Student learning outcome results of Microsoft Dynamics Sure Step assignment

Outcomes	% of students received each rating				
	>=90%	>=80%	>=70%	>=60%	<60%
1. Identify and order phases of ERP implementation following Sure Step methodology	71.43%	7.14%	7.14%	0.00%	14.29%
2. Define various components of Microsoft Dynamics Sure Step model	64.29%	0.00%	14.29%	21.43%	0.00%
3. Describe different project types and deliverables supported by Sure Step methodology	50.00%	14.29%	14.29%	0.00%	21.43%
4. Navigate the Sure Step program	35.71%	14.29%	14.29%	14.29%	21.43%
5. Locate documents related to each phase of implementation	57.14%	0.00%	0.00%	0.00%	42.86%

DISCUSSION

The results in Table 1 indicate that the majority of students were able to achieve the learning outcomes specified for this assignment. They demonstrated the knowledge of the Microsoft Dynamics Sure Step Methodology and the majority of them successfully navigated the Sure Step program. A number of students had some difficulty locating required documentation for a specific phase of implementation (objective 5). Based on these results, additional guidance in the classroom may be necessary to ensure that students can locate relevant documents required for each phase of implementation.

CONCLUSION

Pedagogically, hands-on experience with computer software helps solidify the concepts as well as increases student confidence on the subject matter (Chou, 2001; Gist, Schwoerer, & Rosen, 1989). ERP software vendors play a significant role in ERP education in college. They often provide ERP software, technical support, and user training at little or no cost. However, the university still has to find an appropriate hardware platform to run the program. The infrastructure for ERP could cost thousands of dollars regardless of the class sizes or the number of students. As a result, it is often economically infeasible for smaller universities to offer an ERP class using the same/similar platform as larger universities.

Sure Step methodology is a viable approach for teaching ERP implementation methodology in a college classroom for many reasons:

- It is an established methodology used in well-known ERP software packages
- It is a flexible methodology that may be applied to many scenarios
- The methodology is well documented with training materials and available to educators enrolled in the Microsoft Dynamics Academic Alliance (DynAA) program.
- Sure Step software provides hands-on experience and active learning in the classroom. The program is available also through the DynAA program.

APPENDIX

Microsoft Dynamics Sure Step Sample Assignment

Learning objective: At the end of this assignment, students should be able to
1. Identify and order phases of ERP implementation following Sure Step methodology
2. Define various components of Microsoft Dynamics Sure Step model
3. Describe different project types and deliverables supported by Sure Step methodology
4. Navigate the Sure Step program
5. Locate documents related to each phase of the implementation

Instructions: In this assignment, you will learn about Microsoft Dynamics Sure Step, the methodology for implementing Microsoft Dynamics Solutions.
1. Download and install Sure Step 2012. The software is available at http://dynaa.azurewebsites.net/LCS/ (Sure Step 2012 Install link)
2. Download the Sure Step Book. Also available at http://dynaa.azurewebsites.net/LCS/ (Sure Step Book (Zip file) link)
3. Unzip the Sure Step Book (Zip file). You will need the following two chapters for this assignment
    *   Chapter 1: An Introduction to Microsoft Dynamics Sure Step
    *   Chapter 2: Implementation Phases and Offerings
4. Answer the following questions.

1. Microsoft Dynamics Sure Step model divides a full Microsoft Dynamics implementation project into six primary phases. Please match the phase name to the correct order.

    | _____ Phase 1 | a. | Analysis |
    | _____ Phase 2 | b. | Deployment |
    | _____ Phase 3 | c. | Development |
    | _____ Phase 4 | d. | Operations |
    | _____ Phase 5 | e. | Diagnostic |
    | _____ Phase 6 | f. | Design |

2. Match each project type to its description (Hint: Use Microsoft Sure Step program to locate information about each project type)

    _____ This project type is the standardized approach for implementing Microsoft Dynamics solutions in complex single-site deployments, or in global/multi-site organization wherein country/site specific unique business needs have to be factored on top of a core solution.

    _____ This project type can be used in situations characterized by a limited scope, where the basic application features are desired, and/or where the large majority of the customer's business processes are not considered as complex.

    _____ This project type utilizes an iterative approach to implementing Microsoft Dynamics Solutions at a single site requiring specific features and moderate-to-complex customizations.

    _____ This project type can be used for implementing Microsoft Dynamics solutions at a single site requiring specific features and moderate-to-complex customizations.

    a. Standard
    b. Enterprise
    c. Upgrade
    d. Rapid
    e. Agile

3. Microsoft Dynamics Sure Step provides diagnostic and implementation guidance at an Industry level and at a vertical and subvertical (or solution) level. On the Dynamics Sure Step program, use the filter buttons to view Client ready Deliverable related to Dynamics AX for Manufacturing Industry. Which TWO documents are provided to support the Operation phase?
    a. Project Closeout Report
    b. Health Check for Microsoft Dynamics AX
    c. Project Review Document
    d. Disaster Recovery Test Results

4. Fit Gap Analysis is used to match organizational requirements to an ERP system. On the Microsoft Sure Step Program, go to Fit Gap and Solution Blueprint activity page. Locate the diagram for Fit Gap and Solution Blueprint Process Flow. According to the diagram, how long does it take to conduct requirement gathering workshops?
    (Hint: Fit Gap and Solution Blueprint is one of the Decision Accelerator Offerings.)
    a. 1-2 Days
    b. 2-3 Days
    c. 3-4 Days
    d. 4-5 Days

5. Jacob is a system analyst at ABC Inc. His latest project is to assist with the Microsoft Dynamics AX implementation following the Sure Step methodology (this is an Enterprise project type). Working on the Analysis phase, Jacob needs to gather data migration requirements from the end users as well as IT department. Which one of the follow activities is NOT a part of the Gather Data Migration Requirements process?
    (Hint: On the Sure Step 2012 program, apply appropriate Product and Project Type filters. Locate the information on Analysis Phase and look for a sub-process called Gather Data Migration Requirements.)
    a. Identify Data Migration Requirements
    b. Identify Data Migration Approach
    c. Design Data Migration Requirements
    d. Document Data Migration Requirements

REFERENCES

Kraljic, A., Kraljic, T., Poels, G. & Devos, J. (2004). "ERP Implementation Methodologies and Frameworks: A Literature Review" *Proceedings of the 8th European Conference on IS Management and Evaluation ECIME2014*, 309 -316.

Bradford, M. (2014). *Modern ERP: Select, Implement, and Use Today's Advanced Business Systems*. Lulu.com.

Chou, H. W. (2001). Effects of training method and computer anxiety on learning performance and self-efficacy. *Computers in human behavior*, *17*(1), 51-69.

Gist, M. E., Schwoerer, C., & Rosen, B. (1989). Effects of alternative training methods on self-efficacy and performance in computer software training. *Journal of applied psychology*, *74*(6), 884.

Jacobs, F. R. (2007). Enterprise resource planning (ERP)—A brief history. *Journal of Operations Management*, 25(2), 357-363.

Monk, E., & Wagner, B. (2012). *Concepts in Enterprise Resource Planning*. Cengage Learning.

Motiwalla, L. F., & Thompson, J. (2012). *Enterprise systems for management*. Upper Saddle River, NJ: Pearson Education.

Panorama Consulting Solutions (2016). ERP Database. Retrieved from http://panorama-consulting.com/resource-center/erp-database/.

Schlichter, B. R., & Kraemmergaard, P. (2010). A comprehensive literature review of the ERP research field over a decade. *Journal of Enterprise Information Management*, 23(4), 486-520.

Schultz, T. (2015). Virtual machines for Dynamics AX instruction and investigation. *Proceedings of DYNAA 2015*. Retrieved from http://clcloud.com/DYNAA2015/papers/P004DYNAA2015.pdf.