Developing An International Business to Business Process Curriculum: Extending the Classroom Walls with ERP-Software

Yvonne Lederer Antonucci
Yvonne.L.Antonucci@Widener.edu
Management Information Systems, Widener University
Chester, PA, 19013, USA

and

Michael Zur Muehlen
ismizu@wi.uni-muenster.de
Department of Information Systems, University of Muenster
Steinfurter Str. 109-48149, Muenster, Germany

Abstract

As businesses progress into the 21st century, they have embraced an ERP driven, web-centric, business to business process orientation in an effort to remain competitive. In order to prepare students for this new process oriented e-business world, Universities need to develop curricula that not only expose students to the use of ERP systems but introduce organizational and technical issues that enterprises face when developing business to business processes. This paper describes the framework and continuing development of a cooperative curriculum between two Universities that address these issues of new e-centric business practices. The developed curriculum utilizes SAP R/3 and the web to link geographically dispersed students to address cross-cultural and inter-organizational issues revolving around ERP, helping students to understand the integration of business processes.

Keywords: Enterprise Resource Planning systems, business to business processes, inter-organizational workflow, process modeling , SAP R/3 Business Workflow, curriculum development

1. INTRODUCTION

In an effort to remain competitive, Organizations on a world-wide scale have focused on improving business processes for the past two decades. In their efforts of enabling business processes with information technology, we have seen the emergence and growth of Enterprise Resource Planning (ERP) systems in companies of all sizes (Greenbaum, 1999). As a result, ERP systems have introduced an integrated enterprise that is different from the traditional one (Hammer, 1999). Now there is an emphasis on process oriented business with an increased demand on teamwork. ERP systems have dissolved the boundaries between previously isolated departments, changing the way people work to a collaborative environment. However this has been an inward focus of integrating business processes within the enterprise. In parallel, the recent growth of the internet and web-based businesses on an e-commerce level concentrates on leveraging communication between organizations (The Economist, 1999). In fact, Forrester Research forecasts that Inter-organizational trade (e-business) of goods and services in America will double each year for the next 4 years from $43 billion in 1998 to $1.3 trillion in 2003 with business-to-business spending being far larger than consumer spending (The Economist, 1999). They also expect other countries such as Britain and Germany to have a similar growth. As a result, corporations are leveraging their investment in their ERP solution by extending the existing ERP system to support e-commerce (EarthWeb, 1999) As educators, we need to not only teach graduate and undergraduate business students the theory of this new E-Enterprise environment but have them experience the technical and organizational issues of new e-centric business practices.

This paper discusses the individual approaches of two universities at accommodating ERP-related subjects

within established curricula and outline the development of a joint curriculum that focuses on the utilization of SAP Business Workflow to enable inter-organizational processes. Several curriculum aspects are described such as the enhancement of curriculum with cross-cultural and inter-organizational issues revolving around ERP, the development of an international collaboration forum between universities, and the planned deployment of an inter-organizational process scenario.

2. METHODOLOGY

The recent integration of web-centric business platforms and e-commerce has introduced a new level of business process integration, the ability to support inter-organizational business processes. As businesses evolve in order to respond to this new web-centric business environment, so do universities. With this in mind, our initial collaboration began in 1999 with the goal of creating an inter-organizational, cross-classroom curriculum scenario of business-to-business processes. This curriculum was not intended to replace existing courses at each university, but to seamlessly integrate curricula of both partners.

Each university already had ERP-based courses implemented utilizing SAP R/3. Similar courses between the two universities that utilized SAP R/3 Business Workflow were targeted for a pilot. The collaboration provided the students an opportunity to experience international collaboration in a real-world setting and also enhanced the universities' capabilities of distant learning and teaching techniques. Specifically, a class from each university (16 students from the first university in the USA and 8 students from the second university in Germany) participated in joint classroom activities revolving around process modeling and inter-organizational workflow. These activities included:

1) Online Panel participation where students from each university participated in a real time panel discussion.
2) A global web-based discussion forum where each student interacted with students from the other university with the goal of resolving case questions and Business-to-business related issues. This forum was provided from a central web site.
3) Process analysis of a help-desk scenario between the universities in order to develop independent workflows (business processes) that needed to interact, thereby simulating and developing a business to business case study.
4) Cross-cultural teams where students from each University participated in the same case scenario.

A Business-to-Business web site was developed for our students to utilize as an online forum for collaboration (see Figure 1).

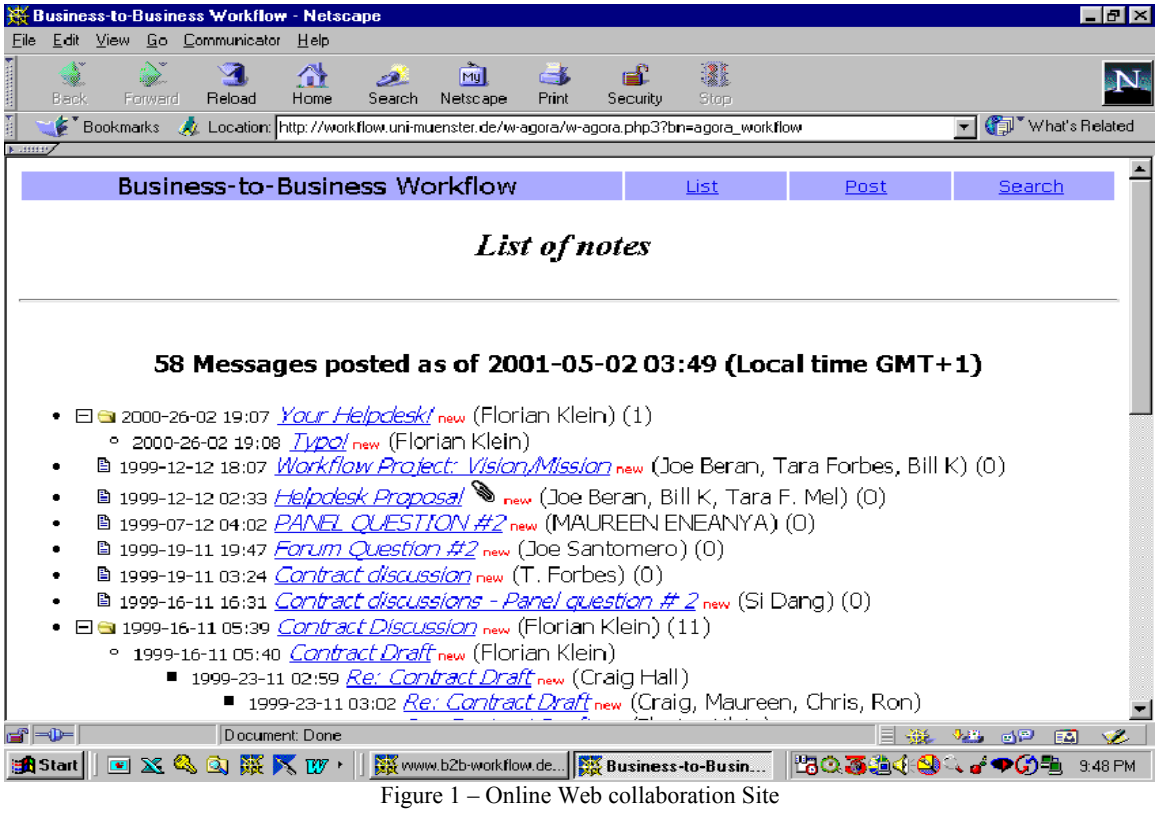

Figure 1 – Online Web collaboration Site

Throughout the course, students from both Universities were required to participate in panel discussions utilizing this web site's discussion forum. In addition, the students from each University worked on the same case scenario within groups with each University representing separate organizations.

As a result, the classroom-to-classroom (C2C) process case scenario that was developed was a help-desk process with IT outsourcing, involving up to three parties; (1) The customer, (2) the IT outsourcing company, and (3) the hardware/software vendor (see figure 2). In this case scenario the classes of each University extend their activities to include role-based models with the first University playing the role of the customer (business requests), and they in turn outsource the help desk to the second University who plays the role of the provider.

The premise behind the help-desk scenario was to leave as much design freedom to the individual participants as possible, while maintaining a close integration of the process interfaces. The students from each participating University negotiated and resolved inter-organizational issues prior to implementing the desired business process in SAP R/3. Once the implementations were complete, student groups from each University posted their proposed business processes and powerpoint presentations on the web site, at which time the students were able to evaluate each other's process. This demonstrated how the collaboration worked and gave the students the opportunity to evaluate similarities and differences in approaches taken, and teach them how to handle the personal bias that affects reengineering efforts with multiple modelers from different backgrounds.

Extensions of the Current Collaboration:
Initially, two Universities have been involved with this inter-organizational process collaboration. The help-desk scenario is designed for a third University to play the role of the hardware/software vendor, allowing for an additional player in future collaborations. Subsequent scenarios are proposed to enhance C2C supply chain management and procurement. The current outsourcing scenario lends itself to extension possibilities for all partners involved. This way the results of earlier seminars and courses can be re-used and students will learn to integrate a new solution into an existing infrastructure, as it is the case in most real-life IT projects.

In the upcoming semester, the help-desk scenario will be extended to include the web simulating business process integration across company boundaries (see Figure 3). "This is accomplished through the exchange of transactions between companies based on open Internet standards" (Kasturi, 2000, p43). This requires a platform that allows the direct data exchange between the two individual SAP R/3 systems. Currently an XML based web environment has been implemented for this purpose. This will allow a true simulation of extending the ERP to the web, thereby providing the ability of each University to monitor a help-desk request through the web page. In addition, we are exploring the use of an ERP portal, such as MySAP.com, to create a learning community and platform for the help-desk process scenario. This would provide the capability of multiple Universities to collaborate and simulate a B2B process-oriented environment without pre-defined collaboration plans.

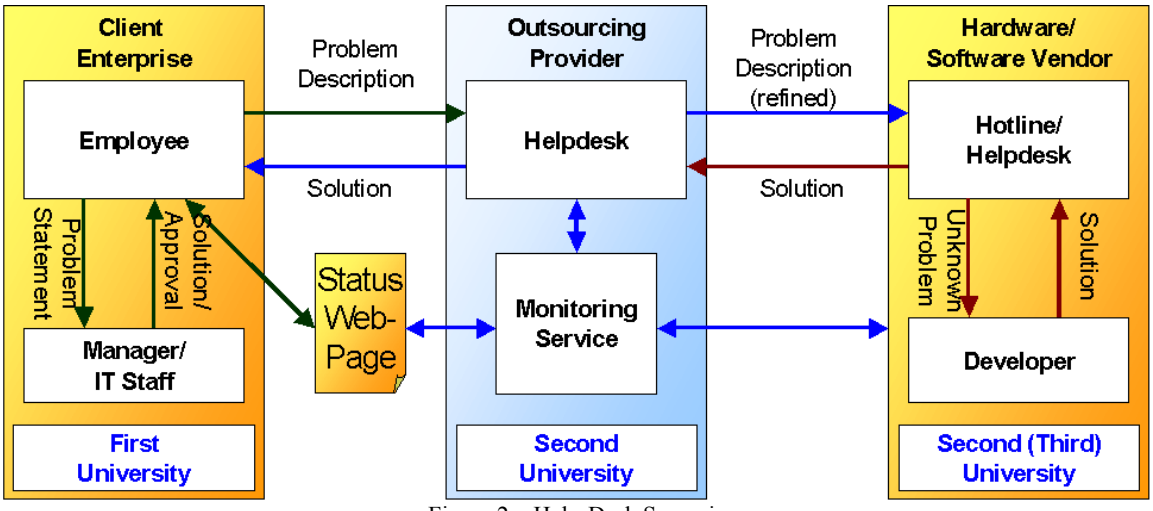

Figure 2 – Help-Desk Scenario

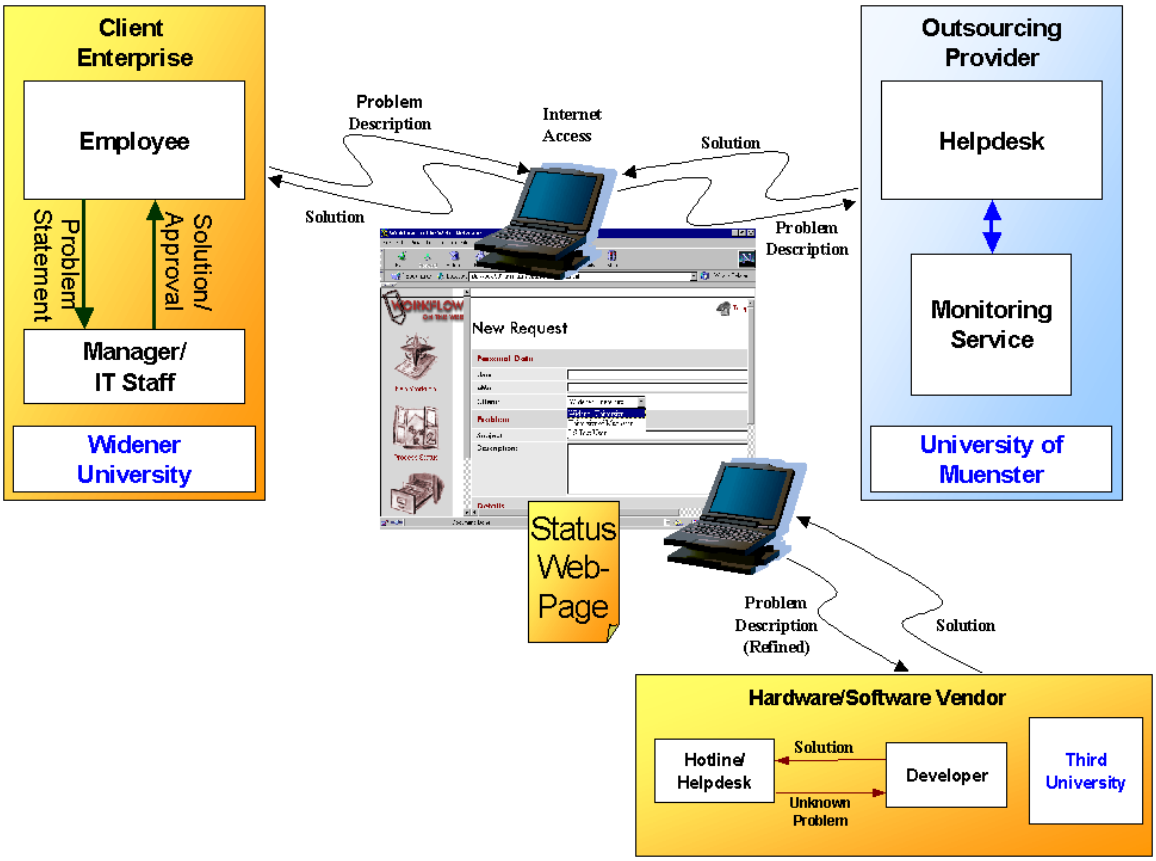

Figure 3 – Web-based Help-desk scenario

3. CONCLUDING REMARKS

The new business paradigm incorporates the interactions of businesses worldwide, therefore Universities need to present opportunities for students that give them the environment to build those web-based B2B international skills.

This paper presented the joint curriculum development between two Universities that strives to enhance curriculum with cross-cultural and inter-organizational issues revolving around ERP and business-to-business development.

The proposed outcome of this collaboration created a scenario that simulated a business-to-business (B2B) process between two Universities thereby creating a classroom-to-classroom (C2C) process. Subsequent courses will use scenarios to develop and utilize supply chain and procurement between two organizations. These scenarios will be used to underlie the importance of B2B enterprise systems for students including; process modeling, Inter-organizational issues in analyzing and designing B2B ERP systems, cross-cultural issues in business process integration, and outsourcing of business processes utilizing a coordinated ERP.

The collaboration has provided the ability to present several curriculum aspects such as;

1) international aspects;
2) inter-organizational processes;
3) collaborative business processes;
4) B2B environment (platform);
5) Online panel discussions with universities internationally; and
6) Pedagogical case sharing of international cases.

The stages of the collaborative curriculum development included;

1) implementation of a help-desk outsourcing case across three independent companies;
2) web-access, XML-based message exchange;
3) use of multi-paradigm workflow technology; and
4) B2B process integration.

This joint venture has already given the participating students the opportunity to utilize state-of-the-art technology in addition to obtaining experience on an international level. Future collaboration promises to simulate the new E-enterprise environment, enabling

these Universities to embrace the business challenges of the 21st century.

4. REFERENCES

Cooke, Dudley P., and William J. Peterson. (1998). "SAP Implementation: Strategies and Results", The Conference Board.

EarthWeb. (1999). "ERP, componentization, and e-commerce", October 1999, EarthWeb, http://erphub.earthweb.com/scalability_991005.html

Greenbaum, Joshua. (1999). "The Origin and Future of ERP Outsourcing", http://www.erp-outsourcing.com/main.htm.

Hammer, Michael. (1999). "Up the ERP Revolution: When Used Effectively, ERP Can Integrate Enterprises By Breaking Traditional Boundaries And Fostering Teamwork", Informationweek, February 8, 1999.

Kasturi, Rajeev (2000). "Introducing SAP's Internet Business Framework", Intelligent ERP, April 10, 2000.

SAP & IntelliCorp. (1996). "Business Process Design with the SAP R/3 Reference Model and Object-Oriented Information Engineering", SAP Whitepaper, http://intellicorp.com/ooieonline/sapwhitepaper.html.

Slater, Derek. (1999). "An ERP Package for You…and You… and You… and Even You", CIO Magazine, February 15, 1999.

Survey Business and the Internet: "The Net Imperative", The Economist Newspaper Limited, June 26, 1999, http://www.economist.com/editorial/freeforall/19990626/su9828.html