

Active Learning Model for Teaching B2B e-Marketplaces

Jože Gričar

Andreja Pucihar

Gregor Lenart

eCommerce Center, Faculty of Organizational Sciences

University of Maribor

Kidričeva cesta 55a, 4000 Kranj, Slovenia

Gricar@FOV.Uni-Mb.si Andreja.Pucihar@FOV.Uni-Mb.si

Gregor.Lenart@FOV.Uni-Mb.si

ABSTRACT

In this paper, we describe experience with teaching e-Commerce courses at the Faculty of Organizational Sciences, University of Maribor that focus on e-marketplace adoption. E-marketplaces are new business models using recent e-commerce technologies. Our teaching model presents several approaches. Some examples are: European Commission sponsored research projects like eMarketServices, eBusiness and W@tch reports. Also use of e-marketplace technology platforms (Oracle Exchange) for hands-on experiences and prototype development for company-sponsored student projects. This model demonstrates an example of knowledge transfer from research and technology providers to companies and other organizations using student-led projects.

Keywords: e-commerce, e-marketplace, course description, prototype

1. INTRODUCTION

E-marketplaces are new business models using recent e-commerce technologies. E-marketplace can be defined as a virtual marketplace where buyers and suppliers meet to exchange information about product and service offerings, and to negotiate and implement business transactions (Archer and Gebauer, 2000). Furthermore, in the age of the Internet and with the emergence of new information and communication technologies, the e-marketplace is a Web-based information system; where multiple suppliers and multiple buyers can undertake business transactions via the Internet (Russ, 2001). E-marketplace uses Internet technologies and standards to distribute product data and to facilitate online transactions (Segev et al., 1999).

E-marketplace enables sellers to enter new markets, to find new buyers, and to increase sales. Conversely, an e-marketplace gives a buyer access to a broader range of products and services offered by sellers. A buyer has the option to quickly compare various offerings by price and performance. E-marketplace services support the exchange of large amounts of data regarding supply and demand between buyers and sellers, and the implementation of the business transactions (DeSisto, 2000; Lenz, 2000).

Currently there are no business-to-business e-marketplaces operating in Slovenia (Gajšek and Pucihar 2004). However,

Telekom Slovenije, various IS providers and some government institutions (Government Center of Informatics), have expressed interest in using an e-marketplace environment. In addition, some companies are looking for opportunities to establish private e-marketplaces to involve all their partners within the supply chain.

Some Slovenian organizations have already joined international e-marketplaces. Generally these organizations are manufacturing organizations that export goods. Typically Slovenian organizations enter the e-marketplace at the request of an important large buyer that wants to find the best offer (Pucihar 2002, Pucihar and Podlogar 2003). One initial success, in 2002, involved Organization Iskraemeco winning an important part of a supply contract for measuring equipment from an e-auction at the FreeMarkets e-marketplace (Pucihar and Pecarz, 2004). There are few examples of Slovenia entering e-marketplaces in e-procurement, which is typical for other countries. E-marketplace procurement enables buyers to be more selective and generally improves savings.

It appears that one of the major reasons for Slovenia's lack of e-marketplaces is lack of knowledge and awareness. Research regarding e-marketplace adoption, using a sample of 119 large Slovenian organizations, shows that few organizations have any knowledge or experience with e-marketplaces. Only 23.5 per cent of companies cited at least

one business-to-business e-marketplace that is of interest to their organization. Only 11 per cent of the organizations already have the experiences of doing business in the e-marketplace. Three quarters (75.6 per cent) of the organizations have no experience. Results may be more positive when we survey organizations' about future adoption of e-marketplaces. More than half of the organizations (56.3 per cent) are thinking about adopting e-marketplaces in the near future (Pucihar, 2002; Pucihar and Podlogar 2003).

E-marketplaces become more and more important for Slovenian organizations. Beginning May 1, 2004, Slovenia became a member of European Union. From that moment, Slovenian organizations are challenged to compete in the larger European market. Slovenian organizations export 66 per cent of their annual GDP into EU countries (Chamber of Commerce and Industry of Slovenia, 2004). Therefore, they should be prepared for innovative approaches to selling goods and services to foreign markets. Organizations must be competitive in every step of business and e-marketplaces definitely enhance competition.

As a learning institution, our mission is to identify the needed business environment knowledge, to create it and to transfer it to our customers – students and companies. In this teaching model, we see the possibility to create awareness about business-to-business e-marketplace innovative e-commerce practices. At the University of Maribor, Faculty of Organizational Sciences e-marketplace teaching is supported by the use of European Commission sponsored research projects, eMarketServices and eBusiness W@tch reports, by use of e-marketplace technology platforms for hands-on experiences and through student prototype development projects for use in interested companies. Students present results from seminar papers and prototypes to these companies. This new information creates opportunities for companies to achieve competitive advantage by using new business-to-business e-commerce models, such as e-marketplaces.

2. COURSE DESCRIPTION

This e-Commerce course prepares students for understanding and doing business electronically on e-marketplaces. The course is run in a traditional setting with a student project component. At the beginning of the course, students are introduced to e-commerce and e-marketplaces background in traditional lectures. At the beginning of the course, students form project teams. Teams of three students propose a project which is jointly discussed in class with the faculty. In addition to lectures, students participate in computer classroom exercises using Oracle Exchange e-marketplace. Students also use an eMarketServices portal for selecting the most suitable e-marketplace for the sponsoring organization. They develop a prototype and present it to an organization. Students then assess an organization's e-commerce readiness with a survey and interviews within the organization. The final course requirement is a seminar paper with

recommendations for the project sponsor. Seminar papers are the basis for the final student assessment.

The students at the Faculty of Organizational Sciences, University of Maribor, who take e-commerce classes, explore the possibilities of adopting an e-marketplace in an organization. First, a course outline, methodology, literature, and students' project are discussed. Since 2002 students have been encouraged to explore the latest eBusiness W@tch Reports (European Commission, 2002, 2003, 2004) in order to get an insight in e-commerce development throughout the European Union. Faculty recommend that they investigate the sector studies to be well informed about the current state of e-commerce usage in organizations comparable to those of the Slovenian project. It is also recommended that students compare data collected from Slovenian organizations with data from other EU organizations

Annually, executives and representatives from within as well as from outside Slovenia present e-commerce and e-markets experience with the latest e-business technology. In 2001, we held a classroom videoconference with representatives of FreeMarkets e-marketplace from Pittsburgh, Pennsylvania in the USA. This videoconference gave students an international perspective of the possibilities where e-marketplaces can be useful. In 2002, Slovenia's Iskraemeco Sales and IT Manager presented the initial e-marketplace success for a Slovenian company. The Iskraemeco organization won an important part of a supply contract for measuring equipment using e-auction at the FreeMarkets e-marketplace (Pucihar and Pecarz, 2004). This case allowed students to gain insights about the entire process within an e-marketplace participation - from preparation, to registering process on e-marketplace, to reverse auction participation and bidding process with other invited suppliers, to contracting and order fulfillment processes. This case was also presented in following two years. Each year the local branch executive of WLW (Wer Liefert Was) e-marketplace is invited to present services available for their customers. WLW e-marketplace operates in 15 languages including Slovene.

These real-life resources give students up-to-date business-to-business practices in e-marketplaces for Slovenia, EU countries as well as the USA. This is excellent preparation for projects with the project sponsors in Slovenia.

3. STUDENT PROJECT

3.1 Selecting of project sponsoring companies

A group of three students choose two project sponsors – existing business partners, one being a buyer, the other being a seller. The organization may be a large or small business company or government agency. In each organization, a project sponsor (problem owner) and a technologist (information specialist) are identified. By agreeing to work with students, the two entities explore possibilities that will make the business more competitive.

With this foundation, the course is run in traditional setting,

consisting of groupwork, visits to the organizations, and student presentations in organizations with class discussions, prototype development with a class presentation before the presentation to the organization. Students submit a formal student project proposal that includes the project sponsor's name and position in organizations, problem description, process analysis and project goals. All proposals are reviewed and approved by the faculty.

3.2 Use of eMarketServices for selecting of e-marketplace

eCommerce Center Faculty of Organizational Sciences from University of Maribor joined the eMarketServices project as the Slovenian National Contact Point for dissemination project results. Beginning in January 2004, eMarketServices received co-funding from the European Commission/DG Enterprise. The aim is to make it easier for companies in Europe, and around the world, to use e-marketplaces for international business. This role as an official European portal strengthens eMarketServices' as a leading international source for information on B2B e-marketplaces (www.eMarketServices.com).

In the eCommerce Course students explore available e-marketplaces by using the eMarketServices portal (www.emarketservices.com). The eMarketServices portal provides free information with a general overview of e-marketplaces, case studies and reports from various industries, key factors needed to be considered for selecting the e-Marketplace and a global directory of almost 900 e-marketplaces - sorted by industry and geographical focus. Students also explore the Iskraemeco case study (Pucihar and Pecarz, 2004) that describes use of e-marketplaces from the Slovene perspective.

Students use the eMarketServices portal to gain information about e-marketplaces for the selected project. Based on organization's expectations, the environment and type of business process, the students identify three e-marketplaces from eMarketServices directory that are applicable for each of the two organizations. From these three, they propose the most suitable e-marketplace to the project sales and procurement executive.

3.3 Computer Labs

Students use e-commerce technology for e-marketplace development during the course in computer lab exercises. In 2002, the local Oracle Branch Office approved Oracle Exchange, a hosted application, for student use. Students also use a web browser to access a pre-production version of Oracle Exchange e-marketplace that is intended for training Oracle professionals. This allows students to explore and to present e-marketplace services for a variety of business scenarios. Some examples are: e-auctions (buyer's and seller's), RFQs, e-Catalogue trading.

Oracle Exchange is used as a hosted solution in Oracle's Austin Datacenter in the USA. There is no server administration or software installation needed by the

faculty. Server administration and software upgrades are made by Oracle professionals. Faculty prepare written a user guide and also coaches students using Oracle Exchange e-marketplace in the computer lab. Since the web browser user interface is easy to use, there is no major difficulty in using the program. This enables students to focus on business processes that could be performed in the e-marketplace and not being concerned with the technology. Students develop a prototype e-solution in order to demonstrate a trading process on an e-marketplace for the selected organizations.

3.4 Prototype development and its presentation in companies

Oracle Exchange e-marketplace allows students to develop a prototype that provides a practical insight into specific trading scenarios. The organization's products or services (name, code, description) and basic trading conditions (price, quantity, and costs) are used to develop a realistic scenario. Students do not utilize the order fulfillment process.

Figure 1 presents an example of one such scenario designed and performed with e-marketplace. In this trading scenario, a supplier creates a catalogue, where buyers search for products and services. A buyer creates a buyer's auction where selected suppliers are invited to participate. Invited suppliers acknowledge auction participation. After the auction is opened, suppliers place bids. When the auction is closed, the buyer awards the supplier that placed the winning bid. This is followed by buyer's order creation and closed with the supplier's order confirmation.

Since e-marketplace services and trading mechanisms are not dependant on a particular technology, the use of Oracle Exchange e-marketplace enables students and organizations to explore almost any service that is available in a typical e-marketplace. Students present the prototype solution to both organizations, preferably at a joint meeting of the representatives of both organizations. They collect written feedback about the prototype from the representatives. Most successful e-marketplace prototypes are promoted in a student bazaar session at the annual Bled eCommerce Conference (Pucihar et al., 2002; Pucihar et al., 2003; Pucihar et al., 2004) and the annual Merkur Day - Undergraduate and Graduate Students eCommerce Conference (Jordan 2003).

3.5 Assessing an organization's e-Commerce readiness

Students participate in an e-readiness assessment of the two organizations where the project will be run. Based on suggestions developed by the eBSN (European eBusiness Support Network) for SMEs, a questionnaire was developed and used in Slovenian organizations for the first time during the 2003-04 academic year. The questionnaire was piloted with selected organizations in fall of 2003, as a part of the student project. The final questionnaire contains questions about eBusiness indicators that are published in annual eBusiness W@tch reports.

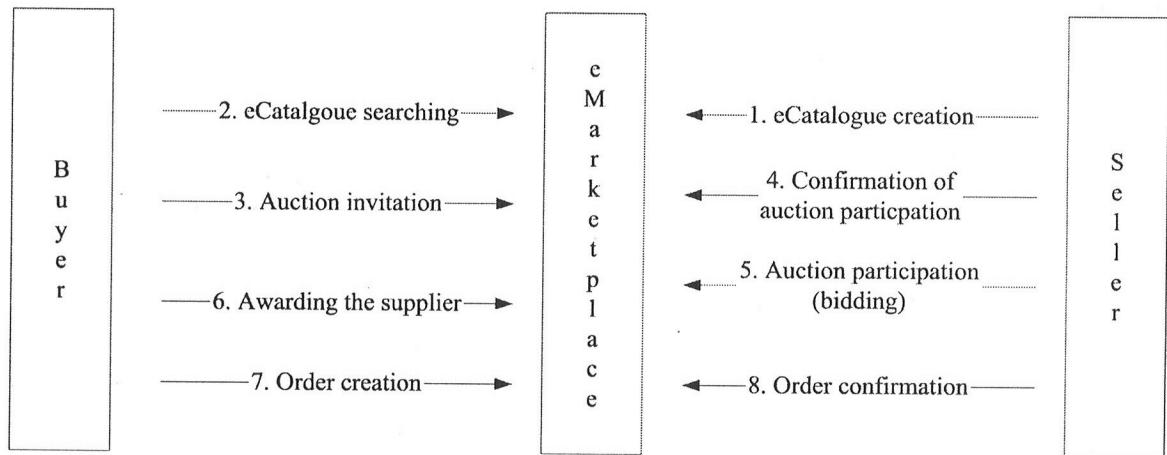


Figure 1: Scenario of trading processes on e-marketplace

The questionnaire consists of two parts. Part One relates to e-business technology availability while Part Two relates to e-business technology usage in the procurement and sales process of the organization. The questionnaire was updated after the pilot. To date, it has only been used in Slovenian organizations. Future plans may use it in nearby countries. Knowledge sharing continues to grow with other universities and institutions in neighboring countries.

Questionnaire results show the organization's e-commerce readiness. Students also collect data about use of internet technology in the organization and its usage for procurement and sales processes. In addition they look for data about the current use of e-marketplaces for the procurement and sales processes. After compiling this data, students are better able to assess an organization's current technology along with the organization's willingness to use new business models. Students also compare the collected data with eBusiness indicators from eBusiness W@tch reports to benchmark companies against European counterparts. Later, the data are analyzed by faculty for research on the current status and e-commerce development of Slovenian organizations.

4. STUDENTS ASSESMENT

The final seminar paper, which is the first part of a student's assessment, summarizes the entire project. In addition the seminar paper analyzes the buying and selling business processes in both partnering organizations. Current available technologies and opportunities for e-marketplace use are also explained. Students document the prototype solution in detail. At the conclusion the students recommend the most suitable e-marketplace along with suggestions for its use.

Students present the prototype to representatives from both organizations, preferably at the same time. Students also include a written report of the prototype presentation in the

final seminar paper. Copies of this paper are provided to both participating organizations.

The second part of the student assessment is a 10-minute prototype presentation for other student groups. Three to four groups -- of the three-student project teams -- present project findings. Discussion following each presentation seeks to identify the most innovative ideas in the prototypes as well as offer possible improvements for both the prototype and its presentation. The final grade is based on the seminar paper, the student's project presentation and the student's contribution to discussion during the final presentation.

5. CONCLUSIONS

By offering the e-commerce course in the format described in this paper students get involved in real business processes while using the latest e-commerce technologies for e-marketplaces. Use of pre-production Oracle Exchange e-marketplace enables students to develop e-marketplace prototype solutions which are presented to project sponsors in the companies. The aim of this approach is to create greater awareness and to offer opportunities and to explain benefits or possible threats for organizations doing business in an e-marketplace. This is accomplished by close cooperation between students and the selected organizations. In conclusion, students present the seminar work and prototype to the organizations. Use of this approach encourages the acceleration of e-marketplace adoption in the organizations. In this method, students are not learning only about e-marketplace adoption but also learning how to test new e-business models in a real-life environment.

An indirect goal of the student's project is to encourage the organizations to consider e-marketplace adoption in order to enhance its competitiveness (Gricar et al. 2004, 224). For example, one group of students developed a prototype for a

pharmaceutical company that resulted in a 3-hour presentation for a session of 23 purchasing and sales managers. This presentation resulted in the company deciding to further explore the possibilities of using reverse auctions with their current suppliers.

In addition to creating an awareness among students and project organizations, the goal of this approach is to enhance sharing knowledge about the use of e-markets to Slovenian companies within the region as well as to demonstrate the possibility of greater competitive advantage in international business. This exposure comes from various activities organized by the Center of eCommerce at the Faculty of Organizational Sciences at the University of Maribor in Slovenia. Some examples are: the Graduate Student Bazaar, workshops and panel discussions at the annual Bled eCommerce Conference; the annual Merkur Day--an undergraduate and graduate student eCommerce Conference where students present prototypes; and through Business and Government Executive Meetings.

This approach offers an excellent example for knowledge transfer to companies by engaging them in student projects. It also demonstrates that research can meet actual business needs in the area of eBusiness development and links educational issues to the European Commission ICT diffusion policy (Selhofer 2004, 189).

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AUTHOR BIOGRAPHIES

Jože Gričar is Professor of Information Systems and Chairman of Department of



Informatics at the Faculty of Organizational Sciences, University of Maribor. His current research includes: eCommerce and regional & international development. He is a manager of a Slovenia's eCommerce Project (1988-2004) involving 40 business and government organizations. Since 1995, he has served as a Director of eCommerce

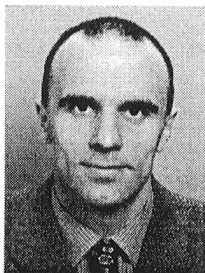
Center at the University of Maribor and since 1988 has been the Chair of the annual Bled eCommerce Conference. He serves on the editorial board of the International Journal of Electronic Commerce, EM - Electronic Markets, Information Systems and e-Business Management, Communications of AIS - CAIS.

Andreja Pucihar is Associate Professor of Information Systems at the Faculty of



Organizational Sciences, University of Maribor. Since 1995, she has been a member of the eCommerce Center at the University of Maribor and Head of the eMarket laboratory. Her current research includes: eCommerce, eBusiness eMarketplaces and Process Innovation.

Gregor Lenart, Ph.D. is a Teaching Assistant at the Faculty of Organizational Science,



University of Maribor. He is also member of eCommerce Center and Head of e-Collaboration laboratory. He has assisted the Bled eCommerce Conference Chair since 2003. During his research projects he developed several prototypes and presented his work at the international eCommerce Conferences in Bled. His current

research includes eCommerce, Group Support Systems and e-Collaboration.



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