RISK ASSESSMENT TOOL FOR KNOWLEDGE SHARING IN INTER-ORGANIZATIONAL NETWORKS

Ruba Aljafari, Surendra Sarnikar, Swetha Vemula
College of Business and Information Systems, Dakota State University, Madison, SD
{rhaljafari, ssarnikar, svemula}@pluto.dsu.edu

1. Introduction

Organizations are increasingly using collaboration technologies such as WIKI’s, blogs, and online communities to move towards collaborative inter-organizational network structures. While collaboration has many benefits, risks pertaining to knowledge sharing may arise when exposed valuable knowledge assets are transferred to other projects that may benefit competitors. Thus, the critical issue in such scenarios becomes the identification and assessment of knowledge sharing risks to help organizations design effective knowledge sharing strategies and protect strategic knowledge assets.

In this paper we describe a prototype DSS that implements our risk assessment framework for assessing knowledge sharing risks in inter-organizational networks (Aljafari and Sarnikar, 2009). It implements multi-criteria decision analysis algorithms to help rank strategic knowledge assets and probabilistic algorithms to help estimate risks.

2. Risk Assessment Framework

The risk assessment framework lays the foundation for a systematic process through which project managers can identify, value, and secure their knowledge assets. The following table illustrates a summarized description of the framework and the corresponding components and functionality of the prototype DSS.

Table 1. Risk assessment framework for knowledge assets

<table>
<thead>
<tr>
<th>KM Risk Assessment Processes</th>
<th>Prototype DSS Components and Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify Inter-organizational Knowledge Sharing Practices</td>
<td>Knowledge asset questionnaire and knowledge-base</td>
</tr>
<tr>
<td>Identify and value knowledge assets</td>
<td>Asset rating system and MCDA based algorithms for ranking strategic assets</td>
</tr>
<tr>
<td>Identify collaboration technology</td>
<td>Technology Knowledge Asset Matrix</td>
</tr>
<tr>
<td>Identify vulnerabilities/threats to knowledge assets and evaluate risk</td>
<td>Knowledge-based approach to identifying vulnerabilities and probabilistic algorithms for estimating risk</td>
</tr>
</tbody>
</table>

3. Prototype DSS

We have implemented a Decision support system that automates the risk assessment process through capturing, organizing, and analyzing important information about specific knowledge sharing scenarios. The prototype is implemented on a .NET platform using VB.NET and offers analytical capabilities such as ranking valuable knowledge assets and evaluating risks associated with sharing these assets. The tool helps evaluate knowledge sharing risks given particular business processes, collaborators, and collaboration technologies. In addition to implementing the previously described risk assessment process, the DSS also consists of a knowledge base for helping managers assess knowledge sharing risks.

References

A Knowledge Flow Management System for Community Software Development

J. Leon Zhao\textsuperscript{1,2}, Shaokun Fan\textsuperscript{1} and Daning Hu\textsuperscript{2}

1. Department of MIS, Eller College of Management, University of Arizona, Tucson, AZ 85721
2. Department of Information Systems, City University of Hong Kong, Kowloon, Hong Kong
jlzhao@cityu.edu.hk, fsk@email.arizona.edu, daninghu@cityu.edu.hk

Community software development (e.g., www.kuali.org) is a new paradigm of software development, which focuses on supporting collaboration and knowledge sharing among geographically distributed teams during software development. In such teams, special knowledge needs to be shared for executing tasks among team members. However, unmanaged knowledge flows are often inefficient for supporting group works due to the lack of 1) efficient mechanisms to coordinate knowledge sources, and 2) knowledge sharing mechanisms and platforms. Solutions for highly efficient and effective knowledge logistics (e.g., who needs which knowledge resources, when, how, and why) require new technological concepts, which go beyond current software systems such as groupware, workflow, and knowledge management systems. In this prototype system, we showcase a knowledge flow management system that integrates workflow and knowledge management via an Event Management System (EMS).

Knowledge flow refers to knowledge transfer processes from one individual to another in an organization. A knowledge flow management system has three parts: knowledge content, sender, and receiver.

The architecture of knowledge flow system is shown in Figure 1. The workflow component controls the overall software development process and the forum component is used as a communication platform. One major challenge in the design of knowledge flow management system is how to trigger knowledge flow. An event management system is developed to manage knowledge flows among participants. The knowledge discovery system is used to retrieve knowledge (e.g., documents, discussion threads and registered experts) from the forum based on the knowledge requirements in the software development process. For example, a project manager needs some knowledge about SOA when making a project scheduling decision. The workflow system will send a knowledge request to the EMS. Then, the EMS will trigger a knowledge flow as an event based on given parameters. The knowledge discovery system will be invoked to find useful SOA-related discussion threads in the forum and relevant experts who register in the forum. Then the project manager could use the discovered knowledge and interact with the experts via the forum. The knowledge flow event is terminated when the knowledge requirement is satisfied.
A DIFFERENT ANGLE ON NET NEUTRALITY – SHOULD WE CHARGE BROADBAND USERS RATHER THAN CONTENT PROVIDERS?

Hong Guo, Subhajyoti Bandyopadhyay, Hsing K. Cheng
University of Notre Dame, University of Florida, University of Florida
hguo@nd.edu, shubho.bandyopadhyay@cba.ufl.edu, hkcheng@ufl.edu

1. Summary
The net neutrality debate has brought out economic rationale for and against a variety of proposals of the broadband service providers (BSPs) to differentiate among different classes of users. Broadband users are characterized by the differing amounts of content they request online, as well as their valuation for such content. A BSP has two potential instruments for user discrimination – price discrimination and traffic prioritization (or degradation). We model four different pricing and prioritization options that cover many of the strategies that actual BSPs have adopted in the marketplace. By comparing these options, we find that imposing net neutrality may decrease the BSP’s profit. If net neutrality is not imposed, however, the BSP might degrade the heavy users or charge them more for a preferential data delivery depending on the various parameter values. These results are useful both for the broadband service providers as they mull over the introduction of the different pricing strategies and for policymakers who are dealing with the net neutrality issue.

2. Model schematic
The schematic shows the two different aspects of the net neutrality debate. The heart of the net neutrality debate is at the local loop of the BSP. Here, the BSP can charge either the content providers or the end consumers in order to make a data packet “non-neutral”. We explore six different strategies that the BSP might employ for user discrimination.

3. Main Findings
- With net neutrality in place, the BSP would prefer to charge a two-part tariff for Internet access, but without net neutrality, a BSP may choose to charge a uniform price and degrade heavy users or else charge a higher price to high type users for preferential delivery of their data packets, depending on the characteristics of users’ valuations for content and their usage patterns.
- Without net neutrality in place, we find that degrading the experience of the heavy users increases social welfare.
- Under certain conditions, the BSP’s user discrimination choice deviate from the social optimum. These conditions can be used to establish the criteria under which the social planner might wish to regulate the BSP’s actions in order to maximize the social surplus.
PROVISIA: Visualization of Data Provenance

Sudha Ram, Jun Liu, Arjhun Thiagarajan
Department of Management Information Systems, Eller College of Management,
The University of Arizona, Tucson, AZ 85721, USA

Data provenance refers to the source and processing history of data. We have clearly defined the semantics of provenance using the W7 model in our previous research (Ram and Liu 2007). We have designed and developed a PROvenance VI sualization System for the WikipedIA (PROVISIA) to harvest and visualize the provenance of Wikipedia articles. We use a subset of the W7 model by tracking the what, how, who, when and why of Wikipedia articles. In the Wikipedia context, what or events that affect a Wikipedia page are primarily creation, modification and destruction of the page. Other events may include “quality assessment” (e.g., a page may be designated as a featured page) or change in access rights (e.g., a page may be locked to prevent editing by anonymous editors). The “how” construct for a page may be sentence insertion/update/deletion, link insertion/update/deletion, reference insertion/update/deletion, reverts, etc. These are actions made by editors that may lead to the modification of a page. Who represents the editors of a Wikipedia page. When refers to the time an event occurs. Why, i.e., justification for a change, is recorded in the “comment” field in Wikipedia.

The architecture of PROVISIA is shown in Fig. 1. The Provenance Capture Module automatically harvests provenance from the Wikipedia. The harvested provenance is recorded in the provenance knowledge base which is implemented using a relational database. The Provenance Navigation Module consists of two major components: a provenance browser and a trend analyzer. The provenance browser visualizes the provenance of a Wikipedia page by tracking the various events that affected the page as well as details about these events. It allows the user to navigate to other Wikipedia pages based on data provenance. For instance, the visualization of the page “genome” indicates that an editor named AdamRetchless inserted 8 sentences on Nov. 30th, 2002. The provenance browser then allows a user to navigate to other pages edited by this person or even other pages created around the same time period. The trend analyzer shows how Wikipedia pages evolve over time. It allows visualization of the trail of changes for a specific page, in terms of the number of editors or the number of inserted sentences during its lifetime. It can also be used to compare the evolution paths of multiple Wikipedia pages based on the number of editors, the number of sentence insertions, and other provenance-related information.

![Figure 1: Architecture of PROVISIA](image)

Reference:
As a result of the knowledge economy the university as an institution is becoming increasingly important. Students are getting academic education in diverse phases of life including off-campus and part-time. Further, large portions of the contemporary university IT architecture emerged throughout the 1980:s and 1990:s when the computing capabilities in academia were technologically superior to compared to the average consumer setting and hence often heavily utilized by its students (Shields, 1995). However, as a result of the massive societal digitization these capabilities are now available in the homes or mobile phone of most citizens, decreasing incentives for students to utilize these systems. In many cases, as a result of the loosely coupled structure of universities (Weick, 1976), the information important for students reside in numerous isolated islands, often available by a device-independent hypertext interface but where semantics have been stripped. Hence, the coordination of this digitized information required remains a manual task for students. Using this backdrop of university IS, there seems to be plenty of incentives for universities to become more attractive by innovating on existing information systems and making them more available to students. Yet, building end-user services for all users and their devices may seem a Sisyphean task. Drawing upon theories of digital innovation, a modular service-oriented architecture is now being established. The functionality to enable by such architecture has previously been elicited through a number of workshops and surveys after a prototype was built (Albinsson et al. 2006) and evaluated (Lind & Rittgen 2009). The evaluation showed that for the prototype to be more useful, more services needed to be induced in the platform. E.g. a lot of existing university-related information (e.g. changes in class scheduling) is isolated from the everyday tools of the student (e.g. Google Calendar). Hence, we have built a platform that is based on the concept of a toolkit (von Hippel & Katz 2002), enabling users to modify and transfer information previously considered “sticky”. Moreover, since universities are lacking resources to produce all end-user services themselves, this toolkit will be made publically available (Chesbrough 2005) allowing users and third-party vendors to produce new plug-ins as new technologies are diffused by students and new sources of information are being published by universities enabling students (Sanchez & Mahoney 1996).

References


PROTOTYPE „BUDDY FUSION“

David Rueckel¹, Bernhard Pflug², Tobias Noiges², Katharina Steininger¹

¹Department of Business Informatics – IE, Johannes Kepler University Linz, Austria
²Department of Telecooperation, Johannes Kepler University Linz, Austria

david.rueckel@jku.at, bernhard.pflug@gmail.com, tobias.noiges@gmail.com, katharina.steininger@jku.at

Keywords: Online Social Networks, Visualization, Management, Facebook, Prefuse

1. Purpose and Motivation

Purpose of the prototype is the merger of contacts and its possible visualization within online social networks. Especially driven by the trend of using web 2.0 techniques, individuals are supported managing their private and business driven social networks. The aim is to develop a prototype that enables a user to administrate his contacts within diverse online social networks supported by a graph-driven GUI.

2. Prototype Description (Functional)

Especially in science the use of visualization is a common technique to describe complex relations and to offer a deeper understanding of these relations. The fundamental work on the visualization of social networks was done by Moreno (1932) by pointing out five principles when constructing an image of social networks:(1) draw graphs, (2) draw directed graphs; (3) use colors to draw multigraphs; (4) vary the shapes of points to communicate characteristics of social actors; (5) show that variations in the locations of points can be used to stress important structural features of the data (Freeman 2000). These principles are obtained setting up this prototype. At the current state of development the prototype is able to import data from online social networks, display the networks featuring all diverse social network services with nodes and lines and offer the user the opportunity to merge identical persons existing in separated online social networks into one single node. Furthermore a search query can be conducted and the visualization is multi layered according to the different social network services using different colors.

3. Prototype Description (Technical)

Java SE 1.5 was used as programming language. Several java-based frameworks provide additional functionality, such as the prefuse visualization framework for interactive and dynamic visualization of the social networks and their actors, the facebook-java-api as a means to query Facebook for user data, and the open-social-java-api to access social networks which are members of Google’s Open Social Initiative.

4. Future Plans

First, basic statistical information may enable analysis of multidimensional relationships between friends. Another enhancement of the prototype will be the implementation of a three dimensional visualization that might improve clarity of inter-network relations. Furthermore a data crawler is planned which continuously reads-out user data from networks and stores them persistently. This data could then be visualized in a cumbersome timeline-like fashion, enabling users to explore what their contacts were doing at a certain moment (for which data was recorded by the crawler) back in time.

Literature


AN INTEGRATED MODEL FOR CUSTOMER SERVICE SUPPORT: A QUEUEING ANALYSIS

Wael Jabr†, Radha Mookerjee†, Yong Tan‡, Vijay Mookerjee†
†University of Texas at Dallas, ‡University of Washington
wmj051000@utdallas.edu, radham@utdallas.edu, ytan@u.washington.edu, vijaym@utdallas.edu

1. Background
User forums are fast becoming a popular way for firms to support their software products. These forums supplement the traditional customer support tools such as help desks and online knowledge bases. Both the firm and the user derive utility from such forums. Users receive quality and timely responses through peer-to-peer support. Firms see some support requests being channeled away from the help desk thus reducing their costs of providing support through costly channels. It is therefore in the firm's interest to ensure that user forums stay resourceful and vibrant and to divert user support away from the help desk.

2. Methodology
To analyze the tradeoff between the user forum and the help desk, we model the user forum as an M/G/1 PS system and derive the delay incurred by users when arriving. The help desk is modeled as an M/M/1 queue with an infinite waiting room for which we derive the corresponding delay.

A user with an issue that requires resolution has the option of visiting the forum or the help desk. Each of these options is coupled with a disutility the user incurs due to waiting for an answer (figure 1).

Disutility in the Forum = \(D(\tau_F) = d*\tau_F\)
Disutility in the Help Desk = \(D(\tau_H) = D*\tau_H\)

The firm’s objective function is to minimize the costs of its technical support which are incurred by running both the help desk and the user forum. It also aims at minimizing the delay costs incurred by users. The firm can manipulate the flow \(p\) of issues to the forum or the help desk by adjusting the delays.

\[\text{MinCost}_{\mu_H} = \text{ForumDelayCost} + \text{HelpDeskDelayCost} + \text{HelpDeskOperationCosts}\]

We model two scenarios: 1) the user has the choice between the forum and the help desk and 2) once the choice is made between the forum and the help desk, the user who arrives to the forum can find her issue already posted and join the queue waiting for an answer or she initiates a new thread.

3. Findings
For both scenarios, we derive the delays in the help desk, in the initiators queue and in the joiners queue. We also derive the optimal processing rate at the help desk \(\mu_H\) that minimizes both the firm costs and the delays.

4. Implications
The technical support manager can easily derive the optimal processing rate in the help desk that decreases the overall costs and delays in both the help desk and user forum. Given the pool of answerers in the forum, managers can strike a balance between the costly use of the help desk and the mostly free use of user forum.
Traditionally, negotiation has been very much a human enterprise. We created an agent-based negotiation engine which provides software agents that serve as surrogates for human negotiators in bounded business tasks. As computerized agents can unambiguously capture a negotiator’s decision variables necessary for forming a negotiation strategy, the research prototype was used to effectively manipulate the effects of key strategy variables in agent-to-human negotiation experiments (Yang et al., 2009). Furthermore, the prototype was developed in a “software-as-a-service” model that allows an e-business owner to make use of negotiation services through an easy-to-follow web portal. This demonstration illustrates how to create and configure the negotiation agent as well as to embed the agent to an e-business owner’s web storefront.

Suppose A is an e-business owner dealing with multiple business partners. Instead of employing human sales personnel, A can choose to subscribe to a software agent provided by the negotiation service to handle routine negotiations on his/her behalf (Figure 1). To do this,

1) A logs in the negotiation service portal and creates one (or multiple) agent(s). The web interface shows four negotiation service modules: “Name Your Agent”, “Assign Your Agent the Negotiation Task”, “Tell Your Agent the Negotiation Strategy”, and “Specify Service Parameters”. The first three modules guide A to create a name for his/her negotiation agent, to set up task information (e.g., define issues, elicit preference and construct utility functions), and to customize strategy parameters (e.g., define bottom line utility, target utility, concession pattern, message accompanying offers) respectively. The last module instructs A to copy/paste a set of HTML code that embeds the agent in A’s web storefront.

2) These key strategic parameters are then stored in a repository.

3) These parameters are used with a strategy algorithm pool.

4) If a business partner B browses Party A’s web catalog and decides to use the negotiation function, B will be redirected to the negotiation service which handles the actual negotiation process with B on behalf of A. Once negotiation is completed, the service returns B to A’s website for confirmation.

Figure 1. Overall Architecture of the Negotiation Service Engine for e-Business Owners

USING “CASH FOR CLUNKERS” AND OTHER CURRENT CASES TO TEACH DATABASE CONCEPTS

Steven Alter
University of San Francisco
alter@usfca.edu

1. Goal and approach

A key difficulty in teaching database topics in introductory IS courses is that the examples are trivial and uninteresting. The students get lost quickly in details of database software such as Microsoft Access and miss the big picture about why data organization and access through database technology is important to business. A double whammy: They never attain fluency in using database software and they never see the importance of the topic.

A different approach to databases starts with real-world database problems and asks the students to identify the relevant data, the difficulties in obtaining or accessing that data, the relevant data integration issues, and the challenges in assuring or least evaluating the accuracy of the data. A recent example is the “cash for clunkers” program in which the US government paid up to $4500 to individuals who would trade in old gas guzzlers for newer cars that obtain much better mileage. Newspaper articles reported substantial frustration by car dealers who were not receiving reimbursements in a timely manner. (e.g., Mitchell, J. and Linebaugh, K. “Clunkers Plan Needs a Tuneup,” Wall Street Journal, Aug. 14, 2009) An interesting exercise for students is to read several of those articles and apply them from a database perspective, even though they were not written as database articles. (Similar exercises can be done with newspaper or magazine articles about health care, customer loyalty cards, JetBlue's problems on Valentine's Day2008, annual job performance appraisals, and news or business topics.)

2. Learning Goals and Summary of a Sample Exercise

- Understand how data requirements in real world situations derive from work systems.
- Learn to identify data requirements in real world situations, and conceptualize those data requirements in the form of a relational database.
- Recognize data integration issues when data comes from multiple sources.
- Recognize data integrity issues, especially when data comes from multiple sources.

Sample business problem: The “cash for clunkers” program encountered many complaints about late payments to auto dealers offering rebates for purchases involving the trade-in of an old gas-guzzling car. Keeping track of the purchase and rebate transactions required a database, at least conceptually.

Hands-on component: Produce a prototype of the database using Microsoft Access. Include tables such as auto dealer, buyer, transaction, trade-in car, purchased car, and automobile type (brand, model, and year)

3. Teaching note

Students read one or two newspaper accounts of the cash for clunkers program. (They can do this in class or before class.) Working individually or in teams, they identify problems that were encountered. Prodded by the discussion of the problems, they summarize the work system through which people in various roles authorize, perform, record, and check the transactions. A good template for doing this is a one-page work system snapshot (the work system’s customers, products and services, processes and activities, participants, information, and technologies). Since newspaper or magazine articles about this topic are not designed for this exercise, and do not explicitly identify all of the relevant steps, participants, or information, the students must make assumptions about how the process occurs and what information is used. Different individuals or teams make different assumptions, and produce different summaries of the work system, including the information that is required. The discussion emphasizes that a real world analysis would involve interviews rather than just making assumptions for the purposes of a classroom exercise. A classroom discussion moves to integration issues and integrity issues involving the source of some of the information. For example, this work system seems to require DMV (Department of Motor Vehicles) information from 50 states. How would that information be obtained and validated? Separately, individuals or student teams set up a database prototype including at least four tables. A follow-on discussion compares prototypes and identify data omissions and to clarify requirements, noting that a real-world analysis and design effort would require much more to go beyond simply making assumptions about the requirements.
TYSON FOODS, BUSINESS INTELLIGENCE VIA SAP’S BEx ANALYZER

David Douglas & Paul Cronan
University of Arkansas

1. Learning Objectives:
   - Be able to compare/contrast Data Warehouse terminology with SAP’s Data Warehousing terminology
   - Be able to construct important business intelligence problems/opportunities with SAP Tyson’s Frozen Food cubes hosted at the University of Arkansas (UA)
   - Be able to find solutions to business problems/opportunities using SAP’s BEx Analyzer against Tyson Frozen Foods cubes hosted at the UA

2. Target Audience
   - Business students or other students involved in decision making in their curriculum-- with or without data warehouse background

3. Business Context
   The UA hosts a SAP Business Intelligence instance consisting of cubes derived from a R/3 dataset from Tyson Foods, Inc. Business cases can be constructed for IT students or students with some SAP background as well as other students involved in decision making.

Case 1 for students with some SAP background: Using the Frozen Foods Inc. Profitability Analysis Cube, construct a diagram of the ETL data flow to create the cube. Explain the purpose of each phase and transformation of the process diagram in this specific ETL process

Case 2 for decision making students: Using the Frozen Foods Inc. Profitability Analysis Cube create BEx analyzer queries to answer Tyson management questions.

Management question 1: Tyson Management wishes to know which sales organizations had the highest Gross Sales and Net Sales for Protein 1 and Protein 61.

Management Question 2: Tyson management wishes to know the following for May 2004–June 2004:
   - Question 2.a Which Ship-to-party that bought Protein 21 had the highest increase in gross sales between May 2004 and June 2004 and the amount of the increase?
   - Question 2.b Show the top 5 Profit centers that had the highest increase in gross sales between May 2004 and June 2004 including amount of increase for each profit center. Also, show the bottom 5 Profit centers that had the largest decrease in gross sales between May 2004 and June 2004 including the amount of decreases.
   - Question 2.c The top three customers in terms of highest gross sales increase between May 2004 and June 2004 for each product group.

4. Hands-On IT skills
   Hands-on can be directed to students that have some background in SAP BI or any students involved in decision making. They use the UA SAP BI system and BEx Analyzer – Excel based.

5. Teaching Note
   Prior to class, review data warehouse concepts, demonstrate BEx; form groups and determine solutions to case questions.

6. IS/IT Domains
   Business Intelligence/Data Mining, Database Warehousing
AN INNOVATIVE APPROACH TO TEACHING
IT GOVERNANCE, RISK AND CONTROLS

Justin Greis and V. Ramesh
Ernst & Young and Indiana University
Justin.Greis@ey.com and venkat@indiana.edu

1. Summary of Learning Objectives

The objective of the course is to blend practical industry business and technology issues with the rigor of academic analysis in the areas of IT Governance, Risk and Controls. The key objective of this exercise is to enable students to clearly understand the issues in Identity and Access Management (IAM), the link between IAM and Logical Access Controls as well as the factors to consider in making a business case for [and choosing to invest in] IAM in an organization.

The primary challenge lies in making the business case both for and against implementation of Identity and Access Management as a means of addressing both tactical control deficiencies and enablement of key business initiatives. Students are required to prepare both a CIO and CFO perspective and debate the issue in front of a simulated executive board; however, they are not told which side they will be presenting until minutes before the debate begins.

2. Target Audience

Primarily graduate students in Information Systems Master’s programs or as a module in an MBA core course. It is also possible to use this in a senior-level undergraduate IS course on Security or Information Assurance. No pre-requisite knowledge is assumed, although some exposure to security, business case analysis and/or control concepts can be helpful.

3. Business Problem

Investment decisions in enterprise automation and control technologies are often made without fully exploring the tangible (i.e. cost savings, revenue generation, etc.) and intangible (i.e. efficiencies, productivity, SLA optimization, etc.) benefits of the investment. Identity and Access Management solutions are typically implemented in response to audit findings/issues as a means of strengthening the control environment yet are rarely linked to the strategic enablers that IAM can offer such as customized customer/vendor portals, workflow, business intelligence, CRM and other organizational drivers. Executives are realizing that controls can be embedded in strategic enabling technology such as IAM in order to achieve compliance, embed governance and enable the business. This exercise is designed to familiarize students with arguments for and against making such an investment. It forces them to think like CFO and CIO in order to defend both the fiscally conservative and technologically progressive positions on the issue.

4. Teaching Notes

The case on IAM is delivered in the following format:

1. Students are assigned a set of reading materials on how to make a case for IAM. They are also introduced to leading practice control frameworks such as COBIT and ISO27001.

2. Two groups (4 – 5 students) are assigned the case and are given the week to prepare positions for and against the investment in IAM, each representing the CIO and CFO respectively.

3. Students must submit a presentation and summary memo for both sides of the debate; but sides are chosen through a coin toss at the beginning of class.
4. The groups make their presentation to the CEO (played by the instructor) and the board of directors (the rest of the class). One group represents the CIO (proponent of IAM), while the other represents the CFO side (opposed to the investment in IAM technology).

5. The groups that are not presenting are given an individual assignment that forces them to gain a good understanding of the core issues in the case. This allows them to be active participants during the Q & A portion of the debate.

6. The instructor serves as both debate moderator and leads the Q&A session after closing arguments have been delivered by both student teams.

7. After the key issues in the case are brought via the debate, the instructor and/or a guest speaker presents key materials around the concept of Identity and Access Management reinforcing the key issues in the case:
   - IAM satisfies both compliance/controls as well as enables strategic objectives of an organization.
   - Benefits of IAM are often cost savings that are difficult to quantify. Strategic benefits of enabling key organizational drivers are even more difficult to measure and quantify.
   - IAM satisfies one of the most fundamental IT governance concepts: identifying the “who has access to what” and thereby embedding accountability in key IT controls.
EXTENDING BUSINESS INTELLIGENCE CURRICULA WITH DASHBOARD DESIGN

Sonja Hecht, Jörg Schmidl, Holger Wittges, Helmut Krcmar
Technische Universität München
{hecht|schmidl|wittges|krcmar}@in.tum.de

1. Motivation

It is a well known fact that the fate of an organization largely depends on its managers’ ability to make the right decisions. In the last decades an evolutionary line of tools has been developed to support the decision making process. Management Information Systems have been deployed, that collect decision-relevant data. In the beginning they provided static lists that were generated in batch runs, today sophisticated Business Intelligence (BI) tools allow for real-time drill down into operational and strategic information as well new ways of analyzing the data. While the acquisition, cleansing and distribution of data are supported by the new generation of tools quite well, there is still need to focus on “the last mile” to the user: visualization of the results. Most tools have means to represent data, but only few of them offer a suitable tool for easily creating visualizations that aggregate all the information in one spot and allow interaction with the data through a visual interface. While it might look like yet-another BI front end solution, dashboards facilitate the interaction with the data and offer a direct feedback channel to the user, that allows to interactively explore the data and its relation. Something that has the potential to change the way managers derive their decisions. Due to these developments, we present this curriculum to motivate the extension of traditional BI curricula by dashboard design. In spite of the fact that current dashboard tools often require no coding and are promoted to be end user tools, designing dashboards that really do increase user productivity in decision situations still remains an expert activity and should be taught as part of a comprehensive BI curriculum.

2. Learning objective

Learning objective of this teaching module is to

- understand capabilities and limitations of dashboards for data visualization and decision support,
- understand and be able to apply the various steps of the dashboard development process, from requirements analysis up to physical implementation and its relation to the overall BI process,
- understand the importance of HCI aspects in the design of dashboard applications.

3. Curriculum details

<table>
<thead>
<tr>
<th>Table 1. Curriculum details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target audience</td>
</tr>
<tr>
<td>Business problem</td>
</tr>
<tr>
<td>Hands-on IT-skills component</td>
</tr>
</tbody>
</table>
BUSINESS PROCESS INTEGRATION PROJECT USING SAP

Bipin Prabhakar
Indiana University
bkprabha@indiana.edu

Enterprise Resource Planning Systems are widely used in Fortune 5000 firms and are also being increasingly deployed in mid-market enterprises. Forrester Research estimates that in 2008, the ERP applications market had total revenues of $38 billion with a projected growth rate of 6.9% reaching $50 billion in 2012 (Hammerman, Leaver and Donnelly, 2008).

Teaching ERP systems is challenging because it is difficult to get the students to go beyond point-and-click to understand how business processes are integrated by these systems. ERP teaching material available from the SAP University Alliance (SAP UA) can be used to teach students how to use SAP systems as well as how to configure the system. The Business Process Integration course material (as well as other configuration courses available through the UA) walks the student through the process of configuring an ERP system through a series of exercises. After completing the exercises, students will be familiar with the configuration of the various core modules of SAP. In order to help students integrate this knowledge, they need to be able to configure a system based on business process descriptions rather than configuration instructions. This can be achieved by assigning students a project requiring them to use a business scenario as the basis for configuring a system.

Teaching objectives: Enable students to 1) develop business process blueprints from a business scenario 2) translate these business blueprints to SAP configuration based on best practices and 3) develop an understanding of the integration necessary between functional modules to support business processes.

Pre-requisites: Understanding of business processes. SAP configuration using one of the configuration courses available through the SAP University Alliance

Target Level: Graduate

Project Description: Students are given a business scenario based on a client engagement by a consulting company. The scenario given is significantly more complex than the company they configured using the SAP UA materials. The new company is global and is both a trading good and manufacturing organization with sourcing done from multiple global plants. The company also uses multiple currencies and is liable for taxes in multiple jurisdictions. Students work in teams to develop SAP business blueprints and create a straw-man organizational structure for the organization. Then they review SAP best practices for each of the business process for the industry sector of the company. Finally, they configure the SAP from scratch.

A completed project will be demonstrated at the conference. Business blueprints developed by students will be available for review at the conference.

References

SAP University Alliance available at: http://www.sdn.sap.com/irj/uac

TEACHING CASE ON SOA AND WEB SERVICES IN A SYSTEM ANALYSIS AND DESIGN COURSE

Harry Jiannan Wang
Assistant Professor of MIS
Department of Accounting and MIS
Lerner College of Business and Economics
University of Delaware, Newark, DE 19716
hjwang@lerner.udel.edu
http://udel.edu/~hjwang/

This teaching case is part of a MBA/Graduate elective course titled “System Analysis and Design” offered by the Department of Accounting and MIS at the University of Delaware.

Target Audience: MBA/Business Graduate Students
Pre-requisite Knowledge: basic concepts of system analysis and design and knowledge of using business process management systems

The learning objectives are:

- Understand the basic concepts of SOA and Web Services
- Understand how system integration can be easily implemented by leveraging SOA and web services techniques
- Learn how to orchestrate web services using process engine to provide added business value
- Learn how to browse web service repository (or web service catalog) to understand the basic functionalities of services (WSDL address, inputs, outputs, data types, etc.)

Teaching Note:

- The first part of the lecture should be using the lecture slides to introduce the basic concepts in SOA and Web Services, which should be about 45 minutes.
- The second part of the lecture is a lab session, where the students complete an exercise on service orchestration using process management systems. This lab offers students hands-on experience with Web Services and helps them understand how SOA and Web Services can provide added-value to businesses with minimal programming effort. This lab can be completed in 45 minutes.
- The deliverables from the lab are evaluated as a graded assignment.

Appendix A: Lecture Slides
Appendix B: Lab Instructions
Appendix C: Assignment Instructions

Appendix A, B, and C can be downloaded at SSRN:
http://ssrn.com/abstract=1494564
A New Development and Distribution Model for Enterprise Software in Education

Chris Coppola, Anthony Potts
Kuali Foundation, Sakai Foundation, rSmart
chris.coppola@rsmart.com, anthony.potts@rsmart.com

Introduction: In the past seven years colleges and universities have devised a new model for developing and distributing mission-critical enterprise software systems. This new model—Community Source—can be described as a convergence of the Cathedral and Bazaar models described in Eric Raymond’s seminal paper, The Cathedral and the Bazaar.

The Community Source model is exemplified by the Kuali and Sakai communities. It blends the open, collaborative nature of open source projects with the rigorous planning and management that is typical of proprietary software development. This new model is changing the very nature of the way software is produced and consumed in education.

Best of Breed Application: This demonstration will focus on two topics—first, the structure of the Kuali community, and second on the Kuali Rice middleware. The Kuali community’s governance and organizational patterns exemplify the Community Source model. The Kuali Foundation is a not-for-profit organization that provides infrastructure and coordination mechanisms to facilitate effective community collaboration. Within the Kuali Foundation major software projects are organized to build mission-critical systems such as financials, student services, and research administration. Each of these projects has a similar governance structure and community development methodology.

Kuali software is built on a common set of software services and middleware. The project that produces this middleware stack is called Kuali Rice. This demonstration will show the Kuali Rice architecture and the use of enterprise workflow technology.

Demonstration: The best-of-breed demonstration will deal with community governance and organization and the Kuali and Sakai software systems produced using this model.

Contribution: The Community Source model and the open software that is now being produced using this model contribute a unique and effective solution for coordinating IT investments in support of education.

References:
Kuali Community - http://www.kuali.org/
Sakai Community - http://www.sakaiproject.org/
A DATA-DRIVEN APPROACH TO IT COST OPTIMIZATION

Craig Crawford, Bob Leto and Todd Smyth
Ernst & Young
Craig.Crawford@ey.com, Robert.Leto@ey.com, Todd.Smyth@ey.com

1. Introduction

As a component of our overall Enterprise Cost Reduction (ECR) service offering, we have developed an innovative approach to IT Cost Optimization (ITCO) using a highly data driven methodology to prioritize and quantify areas of focus within the IT organization. To meet the data needs of this approach we have built a custom analysis framework to increase the efficiency and effectiveness of the engagement teams performing the analysis. This tool leverages company data from various sources in order to paint a holistic picture of cost optimization opportunities, often overlooked by traditional cost reduction initiatives.

2. IT Cost Optimization Methodology

Our methodology utilizes a phased approach to assessing areas of focus for cost reduction, redirection or reinvestment. The first phase involves a rapid assessment of the client’s operations via data requests. The nature of the data received drives additional client conversations and fact gathering. After the first wave of data is received, analyzed and compared against industry and competitive spend levels, a checkpoint is held with project sponsors to assess the appropriateness of the initial conclusions. The second phase consists of a deep-dive into the underlying IT spend drivers across the organization (as conveyed via data and client interviews). The service culminates with a series of quantified and actionable recommendations for areas of change. Our teams are structured with several key roles including the data liaison, data manager and data consumers. The roles have been structured to maximize the efficiency of teams. As a professional services firm, we have designed our approach to minimize rework and maximize data consumption; thus allowing us to quickly show value and achieve the immediate needs of our clients.

3. Spend Analyzer® Methodology

We have leveraged several best-in-class products and consolidated them into a common framework. Source information is rendered in such a way that the end-user is presented a consistent format to analyze client information regardless of source. Real-time updates are enabled via web delivery of the shared interface. End-users are presented with an intranet interface which allows them to modify and share results with the rest of the team in a collaborative environment. The Spend Analyzer® presents data in numerous formats to best suit the needs of the practitioner: grids, pivot tables, pivot charts (linked to pivot tables) and dynamic reporting interfaces. The tool was designed to be leveraged not just across the IT optimization reviews, but also across any data driven project with highly unique data inputs. The ultimate power of the tool lies in its ability to consolidate and link massive amounts of structured and unstructured data to show a business-centric view of IT and the various areas of cost savings. Since the recommendations are based on actual company spend data, results are indisputable and provide a clear roadmap for organizational change based on the report outputs.

4. Spend Analyzer® Tools

The current iteration of Spend Analyzer® leverages technology including Microsoft SQL Server, Analysis Services, Reporting Services and Office Web Components in a .Net framework. The tool presents user information in a cleansed analysis view as well as in a benchmark comparison report using 3rd party data.
5. **Demonstration**

We will present our methodology for a data-driven IT Cost Optimization project. We will also demonstrate the Spend Analyzer® tool including the various data and user interfaces.

6. **Contribution**

This methodology demonstrates a highly data-driven approach to IT Cost Optimization. Unlike traditional approaches to cost optimization initiatives, heavily leverage qualitative client interviews, our approach is supported by organizational data and industry benchmarks to support the qualitative stakeholder interviews. The tool demonstrates the enablement of data-driven analysis crossing numerous source systems in a common framework.

7. **Results**

Using our proven ITCO approach, methods and tools, we have demonstrated results in the real economy, identifying IT cost saving ranging from 15% to 30% for our clients. The Spend Analyzer® accelerates the data discovery and analytic process, allowing us to identify actionable IT cost opportunities within the first few weeks of an engagement.
COMMUNITIES OF INFLUENCE AT WORK: 
UNIVERSITIES AND SAP
Heather Czech Matthews
SAP University Alliances

1. Introduction

ERP applications are integrated software suites that are becoming mature technologies in many organizations today. There is some evidence that nearly 80% of all world business transactions are conducted either directly or indirectly (through the supply chain) on an ERP system. Accordingly, students in today’s universities need to understand this important technology and students with an understanding of the integrated nature of ERP systems in general have been valued in the job market. The Business Suite from SAP AG is used in over 900 universities globally to enhance the education of students.

The challenges in today's economy have hit universities as well as the business community, yet the job market for SAP-literate graduates remains strong. Within the first month of opening the University Alliances job board over 150 jobs were posted there and there are estimates that the global need for SAP literate graduates is about 30,000. In all organizations, including universities, people are being asked to do more with less, be transparent and accountable, and partner with each other to achieve common goals. SAP calls this the Clear Enterprise and the University Alliances (UA) Team works to help universities become part of this program. In addition to the free use of the software, the UA provides extensive curriculum, free training to faculty and numerous networking opportunities for member schools.

This session highlights the mission and benefits of the SAP University Alliances program in North America. We present examples of schools who have successfully incorporated SAP products into classes across the Business and Computer Science curricula. We demonstrate the value proposition to 1) Deans through networking opportunities with key SAP customers and partners, 2) faculty to enhance their own skill sets while they build the marketability of students, and of course, 3) students who receive the ultimate benefit of a good job upon graduation. We have evidence that SAP literate graduates not only receive more job offers but are among the highest paid graduates of their programs. Whether the student has a functional knowledge of the use of ERP to complete integrated business processes or has more depth in the technical aspects of ERP systems administration or development, data show that these students receiving job offers even in this challenging economy. Please check us out and join our public community today for free at http://uac.sap.com or contact us at uap.na@sap.com.

Key Features of our Presentation
1) SAP University Alliances Program -- what is it, how do schools participate, what do students learn about SAP?
2) Benefits to UA members
3) Call to action -- next steps: how to join and how to incorporate SAP products into business and IT courses