Connecting IS Across Disciplines: Building the Modern Knowledge Worker

Catherine Dwyer
Seidenberg School of Computer Science & Information Systems
Susanne O’Callaghan
Lubin School of Business
Pace University
New York, NY
Always on, always connected

- Web 2.0 has created greater cultural expectations for 24/7 access to information
- Enterprise Systems (ES) integrate the processes and activities of all components of the firm, supporting a “real time” picture of organizational activity
- For firms, this “real time” access is delivered by ES to executives, managers, and customers
Our Research Question

- What are the critical knowledge areas from information and communications technology (ICT) needed by accounting professionals that will work in firms support by 24/7 information flows?
  - Enterprise Systems (ES)
  - Modeling business processes and controls for this environment
Knowledge Workers

Knowledge workers “use information communications technology (ICT) to create, acquire, process, synthesize, disseminate, analyze, and use information to be more productive,” (Magal, 2009, p. 5)

Interdisciplinary programs with a strong technology component are designed to deliver skill sets needed by knowledge workers
Interdisciplinary Programs

- Interdisciplinary programs use a knowledge view and curriculum approach that consciously applied methodology and language from more than one discipline
- (Campbell, 2010) shows these lead to better student outcomes
Knowledge of Enterprise Systems and the CPA Exam

- Accounting is one of the largest programs at Pace University
- Concern about CPA pass rate
- Business Environment and Concepts (BEC) section includes material related to the structure of ICT and the management of audit controls
- Many students at Pace have difficulty passing the BEC section
Course Content

- CIT396B – Advanced Information Technology for Accounting Applications
- All class meetings took place in a computer lab
- Classwork included hands on exercises with ACL (enterprise audit software)
- Course also include instruction in modeling business processes using UML (Unified Modeling Language)
Limitations of Flowcharts

- Does not distinguish steps taken by different actors
- Does not segregate the actions taken by information systems
UML

- UML is a set of multiple diagrams, it has become the standard modeling language for software development
- It has the ability to capture multiple actors and document where and how information systems act within a process
- Model Driven Architecture – UML can create models that can converted to executable code
- Therefore the operations of the software is bound to the model
UML Activity Diagram

Student

- Access Library Catalog

Library Clerk

- Selects “title” search option

System

- Title Search Input Form is Displayed

- Systems creates lists of matches

- Prints out book call number
Student

- finds book and removes from shelf
- Brings book to checkout
- Hands ID and book to clerk

Library clerk

- Scan Student ID
- Scan book
- Prints receipt
- Returns book, ID, receipt

System

- System identifies student via barcode
- Book is marked as on loan to borrower with due date

End
Welcome to the Standards & Interoperability (S&I) Framework's Wiki

Register for the Wiki  Getting Started as a Volunteer  Explore the S&I Initiatives  FAQs  Contact

Quickly Access This Week's Key Activities

Announcements

- The LRI All Hands Call will be held from 3:30-4:30pm ET on Monday, November 7
  - Join the WebEx and Dial-In: 662 246 907, Access Code: 662 246 907

Working together to solve healthcare interoperability challenges

The Standards and Interoperability (S&I) Framework was launched on January 7th. ONC is looking for volunteers to collaborate on interoperability challenges critical to meeting Meaningful Use objectives for 2011. The Office of the National Coordinator for Health Information Technology (ONC) welcomes you and appreciates your interest in the Standards and Interoperability (S&I) Framework and our 2011 Framework initiatives. This wiki is designed to allow prospective and current S&I Framework participants to quickly reach the information they need.

S&I Framework HiTSC Presentation

On Wednesday, August 17th, Jitin Asnaani and several of our initiative members gave a presentation to the HIT Standards Committee on our progress and key findings. That presentation can be found here.

This Week's Key Activities

Certificate Interoperability (CI) Initiative

- The analysis conducted under the Certificate Interoperability Initiative has been completed. A summary of the report was delivered to the HIT Standards Committee on August 17th, 2011. To view the full report, please click here.
Course Results and Assessment

- Included in final exam direct questions from the BEC section of the CPA exam
- We have evidence this material improves the pass rate, although it is a small sample (seven in the first class)
- However students had no other preparation other than taking the class and access to the CPA review book on reserve at the library
Table 1: Pass Rate for BEC Section of CPA Exam (First time takers of the exam).

<table>
<thead>
<tr>
<th>Population</th>
<th>BEC Pass Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Average-All Jurisdictions-All Candidates</td>
<td>47.5%</td>
</tr>
<tr>
<td>Average-New York State-All Candidates</td>
<td>41.0%</td>
</tr>
<tr>
<td>Pace University Undergraduates</td>
<td>27.2%</td>
</tr>
<tr>
<td><strong>Difference – New York State Average and Pace Average</strong></td>
<td><strong>13.8% Below</strong></td>
</tr>
</tbody>
</table>
Table 2: Assessment of CIT396B Students Mastery of BEC Topics.

<table>
<thead>
<tr>
<th>Topic</th>
<th>% Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Continuity</td>
<td>75%</td>
</tr>
<tr>
<td>Database</td>
<td>45%</td>
</tr>
<tr>
<td>General Computing Concepts</td>
<td>88%</td>
</tr>
<tr>
<td>IT controls</td>
<td>65%</td>
</tr>
<tr>
<td>Security</td>
<td>83%</td>
</tr>
<tr>
<td>Total</td>
<td>73%</td>
</tr>
</tbody>
</table>

2008 Pass Rate for Pace Undergrads: 27.2%
ICT baseline skills for business professionals

- Curriculum must prepare students for fully connected workplace
- Fluent in their own discipline
- Strong grasp of the methods and advantages of ES
- Understand business processes at the transaction level and the aggregate level
- Understand what business logic is guiding automated processes
Questions?

- Catherine Dwyer cdwyer@pace.edu
- Susanne O’Callaghan socallaghan@pace.edu

- Funding for this project was provided by the Pace University ThinkFinity Program supported by Verizon, Inc.
start

Have card?

no

find card

yes

go to library

search book

sign out book

end