

Enterprise Systems & Curriculum

Professor David Douglas
Director, Enterprise Systems



Information Systems
Walton College of Business
University of Arkansas

Enterprise Systems *Vision*

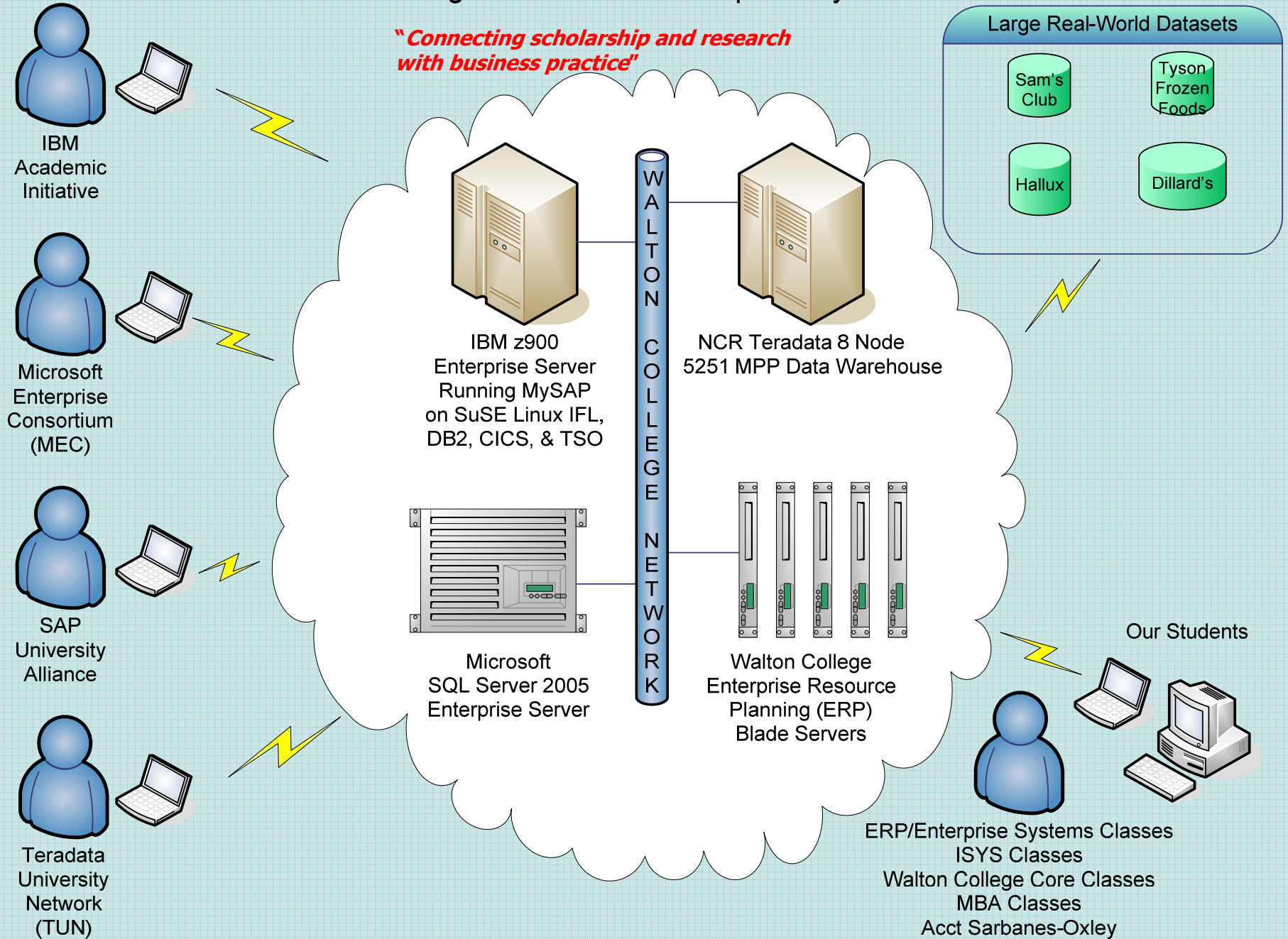
It is our vision for Enterprise Systems to be a premier world-wide source of academic enterprise curriculum and systems.

Enterprise Systems

- **Consists of four major hubs and support systems**
 - **IBM zSeries**
 - **Microsoft Business Intelligence**
 - **SAP**
 - **Teradata—Data Warehousing & Business Intelligence**
- **Access to large, real-world datasets**

Walton College of Business Enterprise Systems

*"Connecting scholarship and research
with business practice"*



Large Dataset

- **Sam's club**

- >750 Million rows in scan table

- **Dillard's Dataset**

- >120 million rows in transaction table

- **Tyson's Dataset**

- R/3 Dataset
- SAP cube on z900

- **Hallux**

- Synthetically generated music oriented dataset
- Sufficiently large with more than 20 tables

IBM (Academic Only)

■ **Z900**

- **Transaction processing**
- **Databases**
- **Programming**
- **Open Source**
 - **Web development in Linux environment**
- **Service oriented architecture**
- **ERP applications**
 - **Linux-SAP Business Intelligence / Portal with DB2 in z/OS**

■ **Distributed**

- **Rational**
- **DB2**

Microsoft (Academic Only)

■ Business Intelligence Suite

- Data warehouses
- Cube building
- Business analysis
- Data mining
- Excel interface
- Report Services

SAP (Academic Only)

- **Three courses at Undergraduate**
 - **WCOB 4213 ERP Fundamentals**
 - **WCOB 4223 ERP Configuration & Implementation**
 - **ISYS 4233 Seminar in ERP Development**
- **Three Graduate Courses**
 - **WCOB 5213 ERP Fundamentals**
 - **WCOB 5223 ERP Configuration & Implementation**
 - **ISYS 5233 Seminar in ERP Development**
- **MBA, Business Intelligence and ERP – z900**

Certificate Programs

- **SAP Certificate**

- 9 hours

- 2 ERP courses plus 3rd ERP course or approved elective

- **SAS Certificate (new)**

- 12 hours

- Courses that include --statistics, databases, business intelligence and SAS Enterprise Miner

Teradata (Academic Only)

- **New Teradata Intel unit**
 - **Dell PowerEdge 2800**
 - **SUSE Enterprise Linux**
- **Teradata External Users**
 - **Database classes**
 - **Data warehouses**
 - **Cube building**
 - **Data exploration & business analysis**
 - **Data mining**

External Student & Faculty Accounts over last 2 academic years

Number of faculty	Number of courses	Number of students
471	91	1941

Number of International universities – 59 in 28 countries*

Number of USA universities – 155 located in 36 states**

International Universities



Australia
Canada
Chile
Denmark
England
France
Germany
Greece
Hong Kong
India
Ireland
Israel
Italy
Jamaica
Lebanon
Malaysia
Mexico
Netherlands
Nigeria
Portugal
Qatar
Romania
Slovenia
South Korea
Spain
Switzerland
Thailand
Turkey
Ukraine

Enterprise Computing: Bridging the gap to Generation-Y with RDz and LINUX Web

Gen-Y born between 1980-1995

Gen-Y Students :

- Have grown up using technology
- Use technology differently than Boomer generation
- Use different technology



(1) Coates (2007), Phillips (2009), Gardner & Eng (2005), McManus (2004)

Gen Y Technology Usage

- Gen-Y spend more time online, watch less TV, engage in more social computing activities, such as instant messaging; and use more social networking sites like MySpace than any other generation-Forrester Research Inc.
- "(Older consumers) tend to use the new technology to do old things," Forrester analyst Ted Schadler said. "Younger consumers use the new technology to do new things."
 - 45% of Gen-Y use data services with Cell Phones
 - 27% of Gen-X use data services with Cell Phones
 - 14% of Boomers use data services with Cell phones

Generation Y Learning Styles

- Gen-Y Students are
 - Visual, creative, self-directed
 - Become impatient more quickly
 - Efficient multi-taskers
 - Need IMMEDIATE feedback on their actions
 - Tech Savvy
 - Image driven (want to put their stamp on things)
- Long Procedural Exercises no longer suits Gen-Y learning Style



(1) Coates (2007), Phillips (2009), Gardner & Eng (2005), McManus (2004), Gonsalves(2006), NAS(2006)

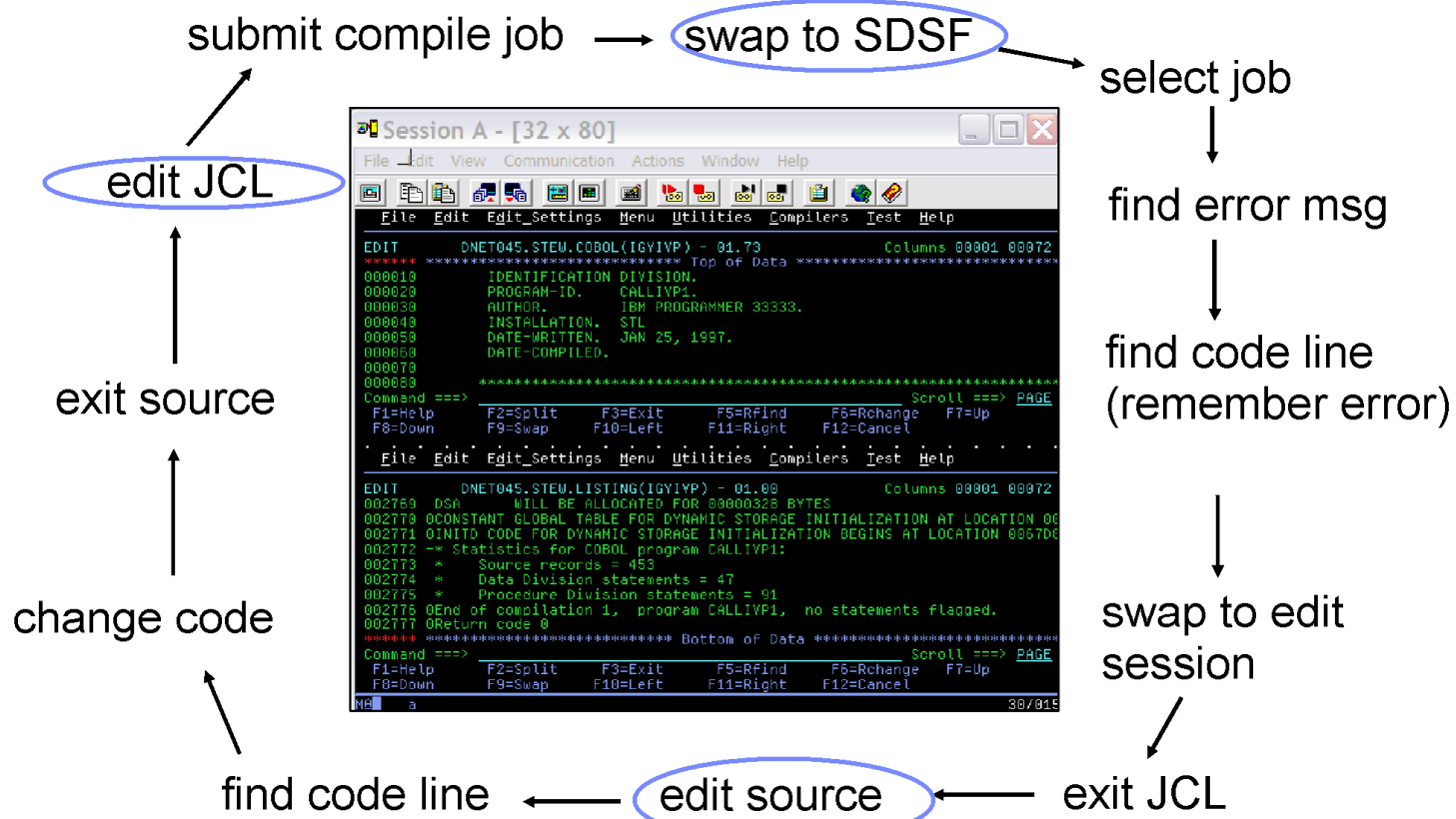
Attempts to Address Gen Y Learning Characteristics on System z

- Rational Developer for Systems z (RDz)
- Linux Web Development

Rational Developer for z

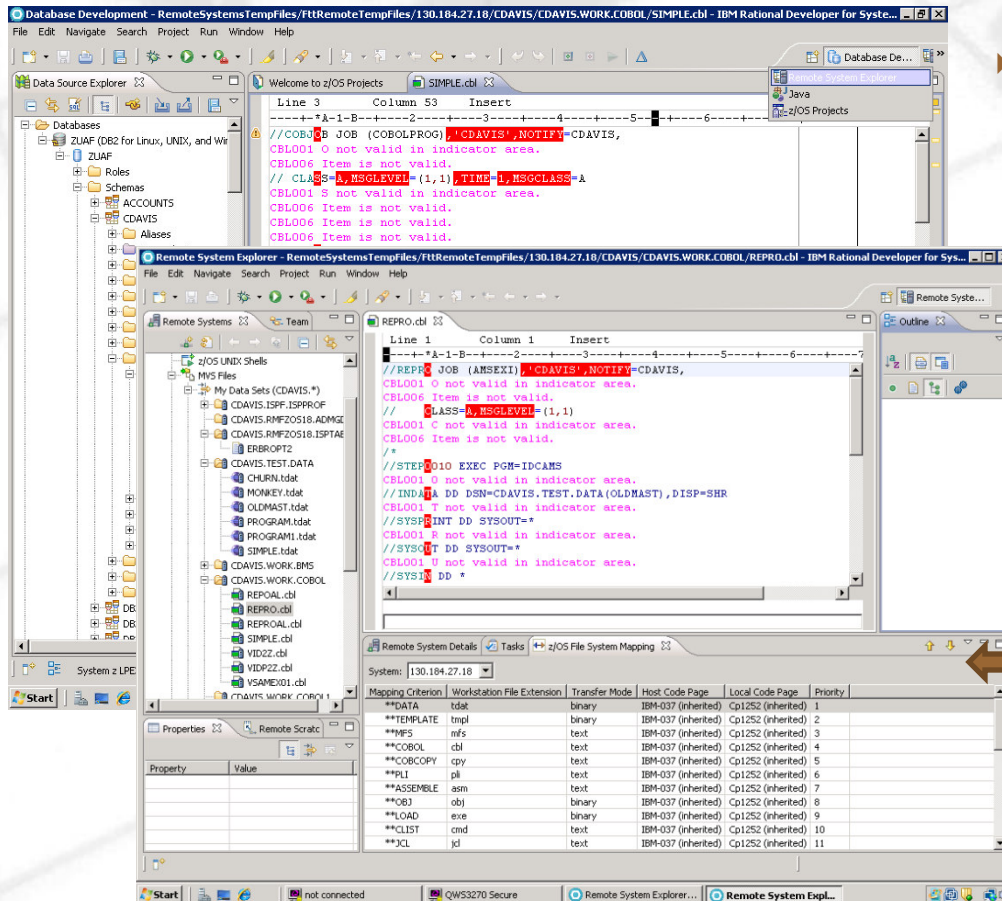
- **Integrated Development Environment (IDE)**
 - **GUI based**
 - **Multiple views and perspectives for multitasking**
 - **Immediate feedback on syntax**
 - **Helps students understand inter-relationships in the z environment**

ISPF based Development



- Multiple screens/sessions and multiple disparate tools
- 20 x 80 characters of content

Rational Developer for System z



- ▶ Programmer can simultaneously:
 - ▶ Debug a COBOL Program
 - ▶ Create a data table in DB2
 - ▶ Browse local files and PDS
 - ▶ Run SQL against DB2
 - ▶ Check their JES output

Rational Developer uses Views and Perspectives to Organize Development Work

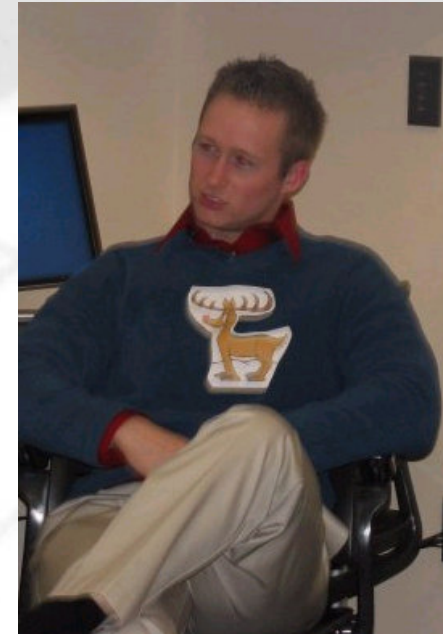
Linux Web Development

- **Gen-Y have more personal relationship with various types of media (Gardner & Eng, 2005)**
- **Gen-Y are image driven, they want to put their stamp on things (NAS, 2006)**
- **Gen-Y use technology in a social/community environment(McManus, 2004)**
- **Incorporate Multiple Web Development projects using Linux on z**
- **Projects are based around general guidelines allow individual or group to develop their own themes**
- **Have students “dress to match their Web theme” for presentation of project**

Project Example: Santa's Christmas Bookshop



The screenshot shows the 'Santa's Book Shack' website. At the top, there is a banner with the text 'Santa's Book Shack' on a white diagonal ribbon against a background of vertical red, green, and white stripes. To the right of the banner are two buttons: 'VIEW BY CATEGORY' and 'MANAGE BOOKS'. Below the banner is a section titled 'Manage Books' with a link 'Add a Book'. Underneath, there are two book entries. The first entry is 'Amazing Peace: A Christmas Poem' by Maya Angelou, with a small image of the book cover and a 'Delete' button. The second entry is 'Dr. Seuss' with a 'Delete' button. The word 'Christmas' is partially visible on the right side of the page.

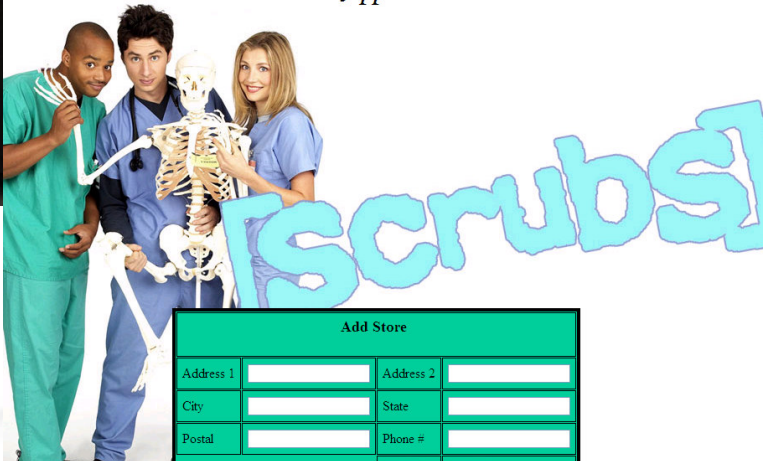


<http://130.184.27.19:1080/~uoas013/Santa/index.php>

Example Project: Scrubs-4-Less



Web Application



URL:

<http://130.184.27.19:1080/~uoas028/uoas028scrubs/mailman.html>

Example Project: Top Gear



First Gear Episode Guide

Web Application

Click on the episode record
you want to delete

Episode ID	Season	Episode	Airdate	Features	Cameo	Challenge
32	4	2	23 May 2004	Porsche 911 GT3, Ferrari 360, 1968 Dodge Charger, Audi 80 1.8E, Rover 416GTi	Jordan	The best car for £100

<http://130.184.27.19:1080/~uoas017/firstgear/index.html>

Introduction To Enterprise Servers

■ Objectives

- To be able to explain the benefits of a z Series in an appropriate computing environment
 - RAS, Parallel Sysplex, consolidation, TCO, etc.
- To be operational proficient working in the TSO/ISPF environment
 - Create PDSs, members, copy/edit, etc.
- To be able to develop knowledge and skills to develop illustrative applications
 - Cobol, JCL, VSAM, DB2
- To be able to explain the benefits of zLinux in an appropriate computing environment
- To be operational proficient working with zLinux
- To be able to develop data driven open source Web applications
 - Linux, Apache, MySQL(& DB2), PHP

RDZ

Enterprise Transaction Systems

■ Objectives

- To be able to explain the need for transaction systems such as CICS and Tuxedo
- Understand how all the pieces of a transaction monitor fit together
- Be able to develop transaction systems using RDz
 - Traditional CICS using BMS, COBOL, VSAM, DB2
 - Typical menu driven systems
 - More modern systems that include Java-based Web interfaces and uses the Web Services features of CICS for more Systems Oriented Architecture transaction systems

Conclusion

- **Continue to improve our Linux development environment**
- **Curriculum development initiatives for Transaction Processing class using RDz**
- **Enrollments for “Intro to z” class has grown from less than 10 students to more than 50 students – undergraduate & graduate class**

Vision-University of Arkansas Cloud



Partners for z Cloud

IBM

**Applications including
open source**

SAP

R3/Business Intelligence

SAS

Business Intelligence

**University of
Arkansas
Courses**

**Higher Education
External Hub**

- Asia
- Africa
- South America

**External Hub
Users—**
•Selected
**Public
High Schools**

Support of Platforms

**IBM -- Rational and RDz, z Series Intro,
transaction processing, DB2, BI**
SAP – Linux on z Series running DB2
SAS – SAS with emphasis on BI

Enterprise Computing Steering Committee

First Name	Last Name	Company
Rita	Carney	Wal-Mart Stores, Inc.
Del	Clark	Conoco Phillips
Gary	Cooper	Tyson Foods, Inc.
Ken	Mangold	J.B. Hunt Transport Services, Inc.
Judy	Mitchell	Deloitte
Joe	Rarey	Teradata
Brent	Gierke	Colgate-Palmolive Company
Greg	Heger	IBM Corporation
Bill	Holder	Dillard's Inc.
Edward	Roberts	Acxiom Corporation
Mark	Shackelford	Baldor Electric Company
Leo	Sharum	Data-Tronics Corporation

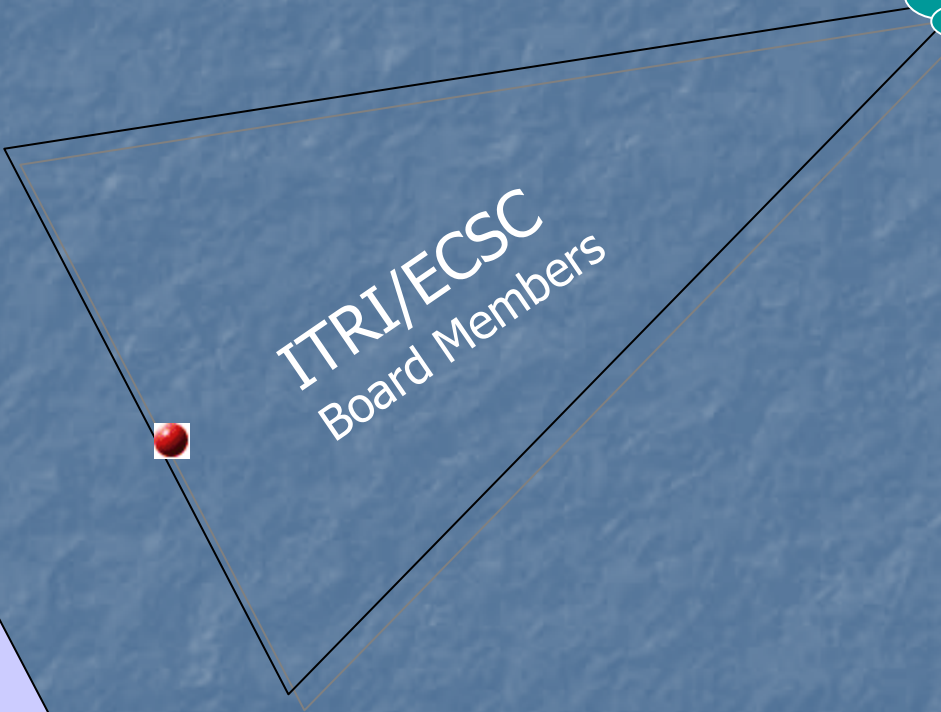
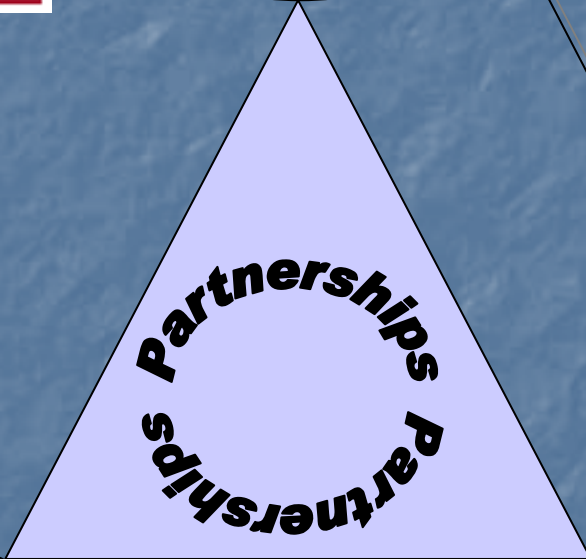
Building the Next Generation of Enterprise Computing Experts



Academics

Vendors

Customers



Supplying Enterprise Skills

IT Day



SAP

(two short videos on Enterprise Website)

<http://enterprise.waltoncollege.uark.edu/systems.asp?show=SAP>

- Gary Cooper - CIO of Tyson Foods Inc.
- ERP Simulation Competition



Marty Schoenthaler

General Manager, Information Systems, Global Services