

TIM 50: Business Information Systems

Summer 2017

Lecture #1 (6/27/17)

Agenda for L1

1. Example: my.ucsc.edu
2. Course objectives, structure, organization & workload
3. Structured problem-solving
4. Basic definitions for Info Systems, ...
5. Business concepts

2. The Course

Objectives, - - - - - workload, grading
(See Syllabus for details)

3. Structured Problem-Solving (SPS)

The structured problem-solving template is on the class web-site ("google it")

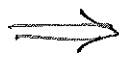
When you solve problems you are asked & answer questions:

What is the real problem you want to solve?



Define the problem

What is the process or plan or approach for solving the problem?



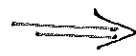
Planning the treatment to solve the problem

I need to implement my plan



Execute the plan & obtain the results

Is my result correct?



Checking your work!

What have I learned?



Learning & Generalizing

Important Course Guidelines:

1. Cutting class is not an option
2. Please do not misuse IT (cell-phones, tablets) in the classroom.
3. Take notes

Disadvantages (of manual processes)

1.4

- Labor intensive (costly)
- Time intensive
- Error prone
- Hard to scale

One solution to these problems:

Use software & information technology to automate as many of the transactions & business processes as possible.

Question: How can information systems (IS) and information technology (IT) be used to automate (in our example) student transactions?

Another statement of the same problems:

How can student information be management?

How can the university provide campus solutions to the students?

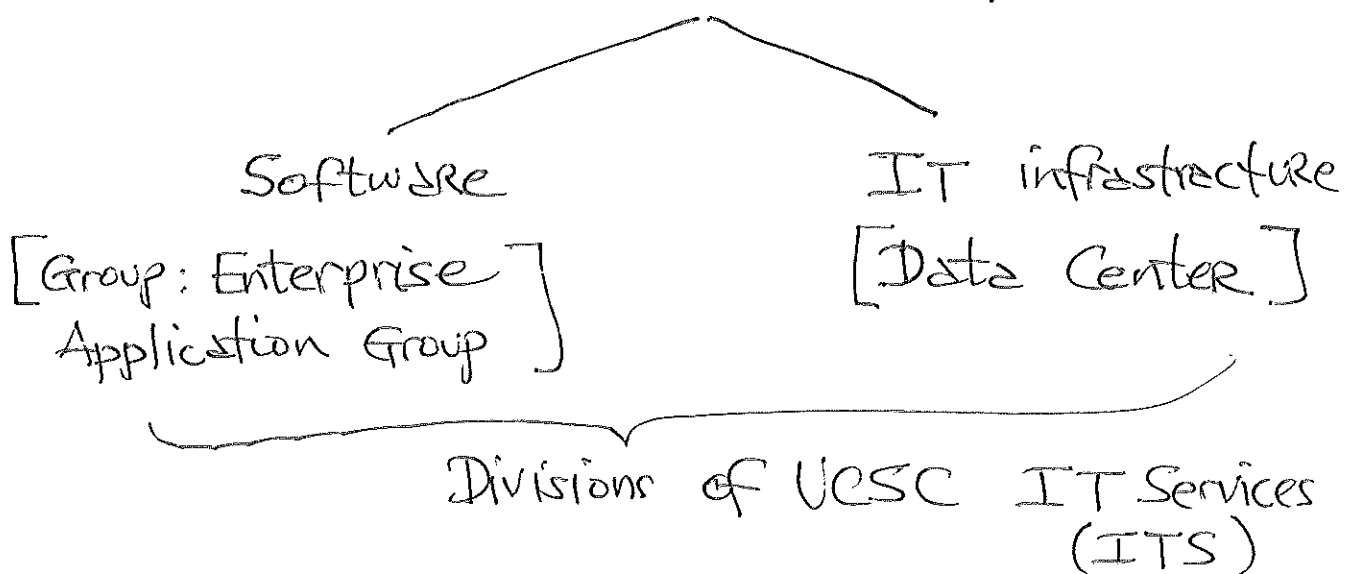
Advantages of IT solutions:

1.5

- Reducing costs (in the long run)
 - Speed
 - Reliable (less prone to errors)
 - collect & process information from customers \Rightarrow can identify patterns (business intelligence) & thereby improve service
 - Relatively easy to scale
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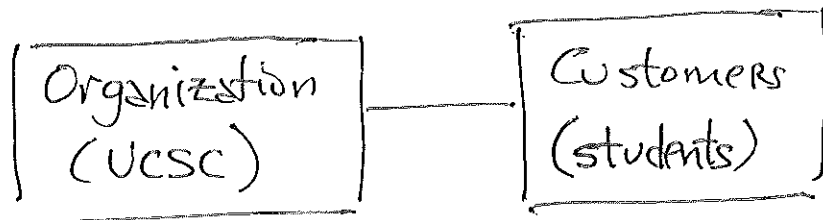
The Application which automates & manages student transactions at UCSC is called my.ucsc.edu.

How does an organization (UCSC) design & deploy an application such as my.ucsc.edu



1. Business Information System example

UCSC is a business organization



Business problem:

How does UCSC (administration) handle transactions with its customers?

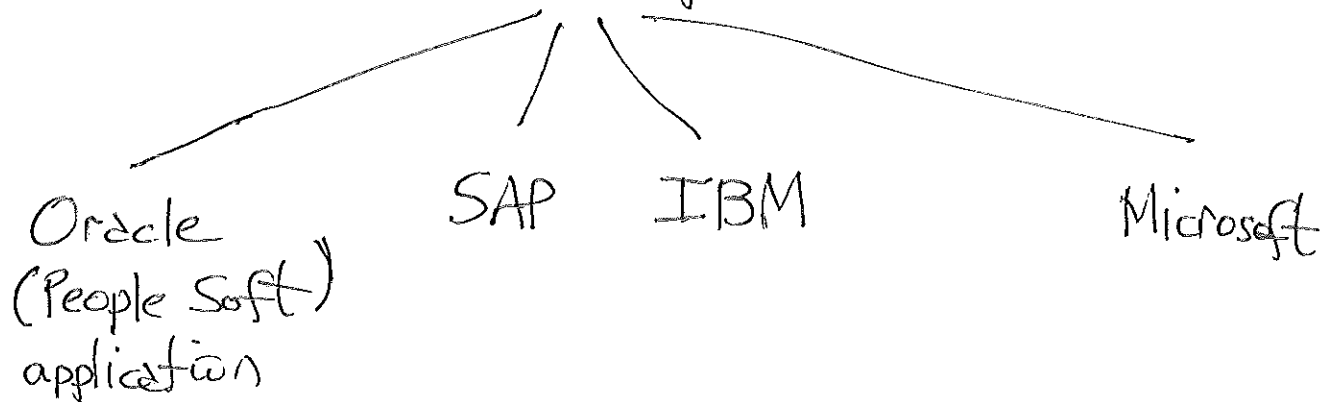
Transactions: → Enrolling in classes
 pay tuition (billing)
 Housing
 Meal plans
 Grade information
 • • • • •
 • • • • •

Each transaction involves a business process, which is the set of actions required to enable a transaction.

How were these transactions done 25 years ago
 - Mostly manual (a lot of paperwork)

Process for design & deployment of my.ucsc.edu 1.7

1. The Enterprise Application Group defines the problem, requirements for the software (# of users, transaction volume, features, ...), & then determines the solution options:



Based on a set of selection criteria (cost, performance, user-interaction, hardware compatibility, ...)

select one (two) options



The UCSC Ent. app group selected People Soft/Oracle application & architected a solution for using this software.

2. Design & specify the IT infrastructure to support & deploy the software application

1.8

These decisions are made by the Data Center Group in consultation with the enterprise application group

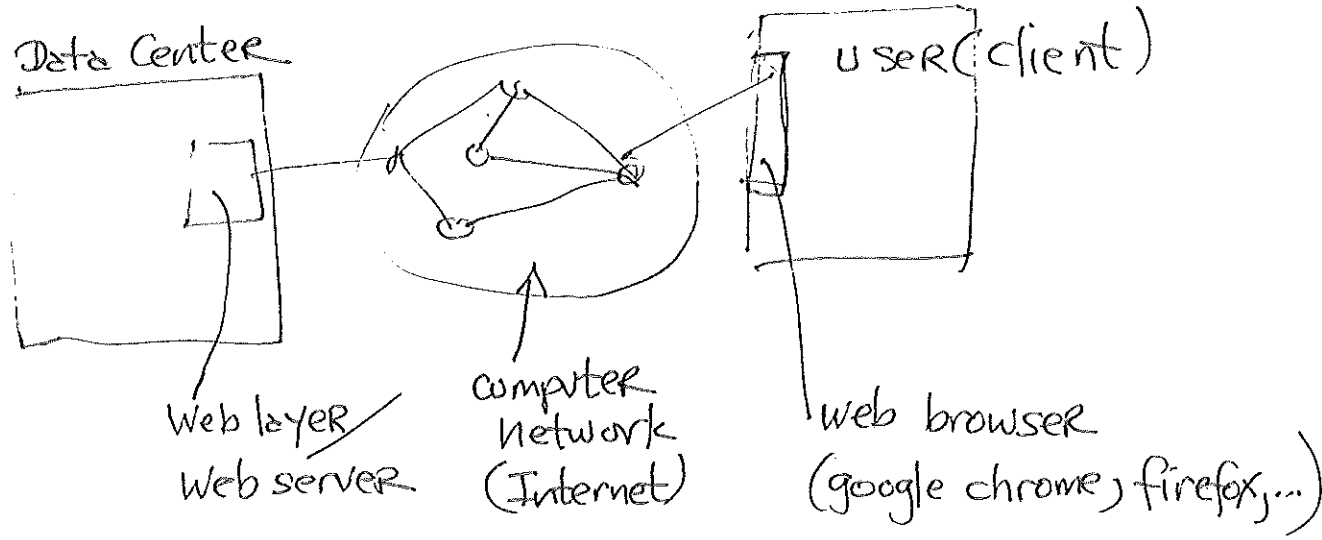
(a) Hardware decisions:

People Soft runs on a SOLARIS operating system which are typically run on SUN computer server architectures \Rightarrow both People Soft & Sun were a part of Oracle

(b) Design Issues:

- How do we layer the IT architecture?
- What hardware/software should be used at each layer.

3. How does The customer interact with the application (e.g. my.ucsc.edu)

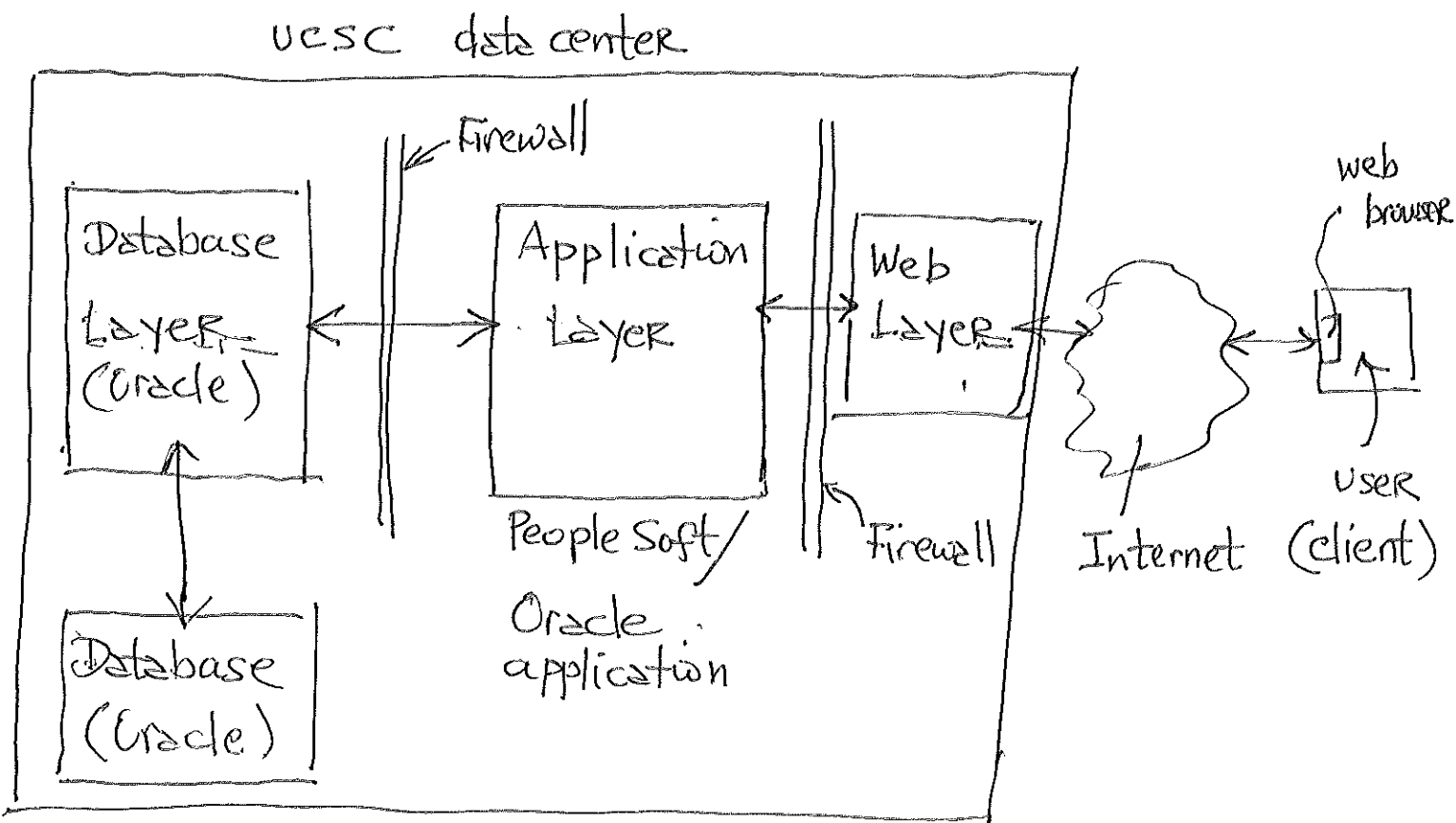


Client uses ① web browser and ② a computer network (Internet, www) to locate the web server for the application.

The Internet has 4 main layers:

http	Application layer	client web browser to UCSC web server
tcp	Transport layer	assembling packets
ip	Internetwork layer	routing packets
	Link layer	info packets moving from one node to another

Here is one layering of the IT infrastructure:



4-layer client-server architecture:

- Web-Layer is hosted by the Web Server
- App-Layer is - - - - - App Server
- DB-Layer is - - - - - DB Server
- Web-browser is hosted by the client's computer

4. Putting all the pieces together (for my.ucsc.edu)

Information flow (Use-Case)

1. Client uses her web-browser to locate the ucsc web server on the Internet & request the my.ucsc.edu application
2. web-server provides the home page for the application & the user-interface for using the application (presentation layer)
3. client "logs-in" to the application (to get past the Firewall or security layer)
4. client is allowed access to the application layer (hosted by the application server) for my.ucsc.edu & asks for:
 - class schedule
 - billing/accounts
 - grades
 -
 } transactions
5. application layer sends request to the data base layer (hosted by the DB server)

6. The DB server retrieves information from the (Oracle) Database & sends it to the application layer, which sends it to the client.

What are the key issues involved;

1.13

Business issues:

- What business problems & business processes need to be supported or enabled by IT?
- What are the benefits & drawbacks from using IT to solve the business problem.

IT issues:

- What is the software & hardware infrastructure required to solve the business problem?
- How do we select between traditional (hardware based) approaches & new approaches (e.g. virtualization, cloud computing) to implement the IT solution

Integration:

- Deploying the application & testing the application on users

4. Basic definitions

1.14

[Reading: Chapter 2 of EMIS by L²]

Global E-Business and Collaboration

(a) What is an information system (IS):

An IS is

- a combination of people, processes, and technology
- that collects, transforms, and disseminating information in an organization

(b) What is information technology (IT)

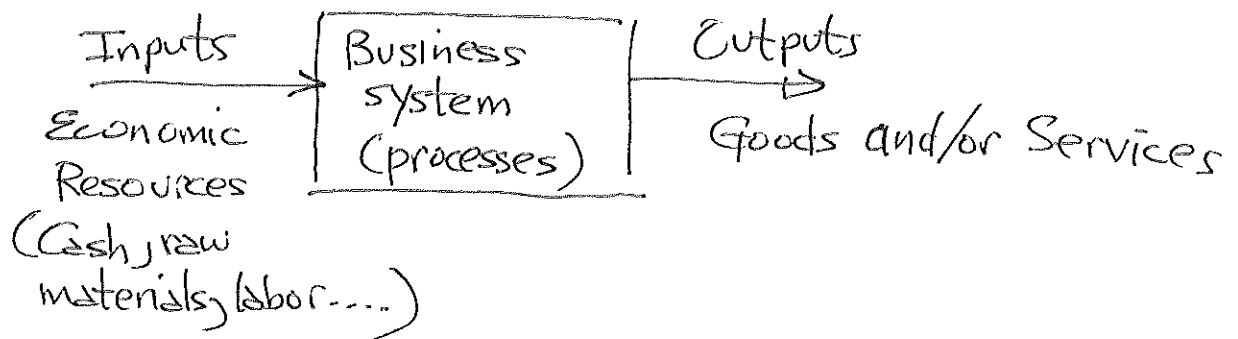
- IT is the technology used to enable & support an IS

- computer hardware, data-bases, networks, and software

What is a business?

A business is an organizational system where

- economic resources
- are transformed by various organizational processes
- into goods & services
- while making a profit



Related to Business, there are 2 important concepts

- Business functions
- Business processes

5. Business Issues

Business Function: is an area of specialization within the business or company or enterprise or firm

- Business Functions
- Product design and development
 - Marketing and Sales
 - Manufacturing
 - Human Resources
 - Finance and Accounting
 - etc,

Business Processes (BPs)

A business process is a well-defined sequence of actions to accomplish some desired result in a business, & usually involves several business functions

Example: Order Fulfillment process
(purchasing a customized DELL PC)

sequence
of
actions

- place the order (customer)
- receive/take the order & verify payment (Finance/Accounting)
- send a request for manufacture of the customized computer (Accounting to Manufacturing)
- assemble the computer (Manufacturing)
- package & ship computer to customer
- receive computer (customer)

Organizational Structure of a business & the types of Info Systems in the organization

