
TIM 50 - Business Information Systems

Lecture 7

Instructor: Terry Allen

UC Santa Cruz

10/19/2011

Most slides are by Professor *John Musacchio*

Outline

- Announcements
 - Information Management
 - Student Presentation (news)
 - Enterprise Applications
 - Enterprise Resource Planning
 - CISCO case
-

Announcements

- **Business Paper proposals due today!**
 - **Online Forum on course web page**
 - alternative way to earn participation points!
 - how it relates to class
 - Use terminology from class
 - **Make-up class *here*, Friday 10/28**
 - **Assignment 2 will post tonight, due 10/28**
 - **Reading for next time (10/24):**
 - Messerschmitt 3.4 - 3.6 (pp. 83-98)
 - Alibris Case (reader pp. 137-148)
-

TIM 50

<http://courses.soe.ucsc.edu/courses/tim50/Fall11/01>

Instructor

- **Terry Allen** (terry_allen@hotmail.com)
 - Office Hours:
 - Mon. & Wed., 7:00 - 8:00 p.m. here and in E2-563
 - Tues., 4:00 - 5:00 p.m. in E2-563
 - Tues., 5:00 - 6:00 p.m. in E2-563 *if*
 - Students are still dropping in at 5:00 p.m., or
 - You have asked in advance by email for me to stay late, or
 - Some other student has asked me to stay late

TA

- **Huascar Sanchez** (hsanchez@soe.ucsc.edu)
 - Office Hour: Wednesday, 10:00 - 11:00 a.m. in Jack's Lounge
 - **TBD ()**
 - Office Hour: TBD
-

Announcements

Forthcoming presentations

- 10/24/2011
 - ?? (news story)
 - ?? (Alibris Case)

 - **Send me your slides the night before**
 - Failing to do so may result in loss of points (after 9 p.m.)
-

Information Management (Review)

©Copyright David G. Messerschmitt, 2000. This material may be used, copied, and distributed freely for educational purposes as long as this copyright notice remains attached. It cannot be used for any commercial purpose without the written permission of the author.

What is Information?

- **Data**
 - Numbers, Character strings, etc.
 - **Information**
 - Recognizable patterns of data organized so as to inform or influence the user in some way
 - **Knowledge**
 - Concepts, relationships, truths, principles derived from information, leavened with some amount of judgment
 - **Wisdom**
 - Insight or judgment acquired from extensive knowledge and (usually) experience
-

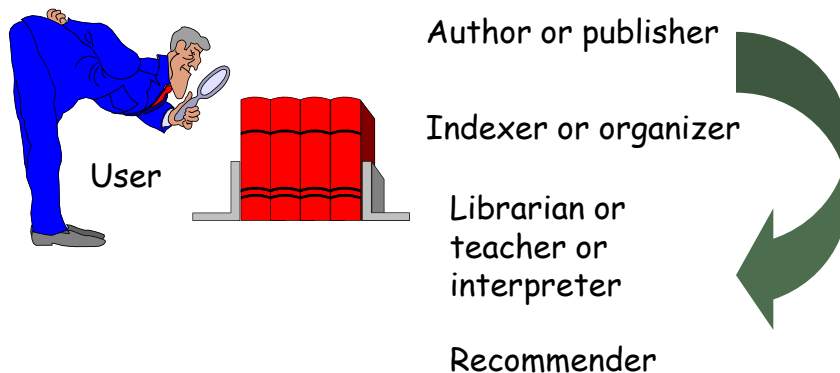
Classify these

- "XV", "SF", 34, "CN", 16
 - The 49-ers won Super Bowl XV by a score of 34 to 16.
 - The National Football Conference wins 17 out of 20 Super Bowl's on average.
 - The best team usually wins.
-

Classify these

- 47, 560, 134
 - My bank account has 47\$ in it :-)
 - My net worth, including my bank account and subtracting the debts is 560\$
 - At the rate my net worth is increasing, and given my age and expectations for retirement income, I can't retire until age 134...
-

Roles in information access



Adapted from slides for *Understanding Networked Applications*
By David G Messerschmitt. Copyright 2000. See copyright notice

In the Networked Era...

User
Author or publisher
Indexer or organizer
Librarian
Recommender

How are these roles being changed by networked computing?

Adapted from slides for *Understanding Networked Applications*
By David G Messerschmitt. Copyright 2000. See copyright notice

Finding useful information..

- **Search**
 - Item search
 - Topic search
- **Browse**
 - "Explore" in a less definite way in order to find useful information
 - Iterate/refine searches
- **Navigate**
 - Follow directions/links to find information
 - On the web you do all of these!

Others can help....

- **Author:**
 - Hyperlink
(Reference to related information)
 - **Author or third party:**
 - Index
(List of content)
 - Metadata
(Description of content)
 - **Third party:**
 - Reviews or recommendations
(judgment of content)
-

Adapted from slides for *Understanding Networked Applications*
By David G Messerschmitt. Copyright 2000. See copyright notice

Exercise

**Give an example of the following functions in
the context of movie rentals:**

Hyperlink

Index

Metadata

Recommendation

Adapted from slides for *Understanding Networked Applications*
By David G Messerschmitt. Copyright 2000. See copyright notice

Authors - Publishers

Creates information - verifies, makes available



Indexers

Classifies information

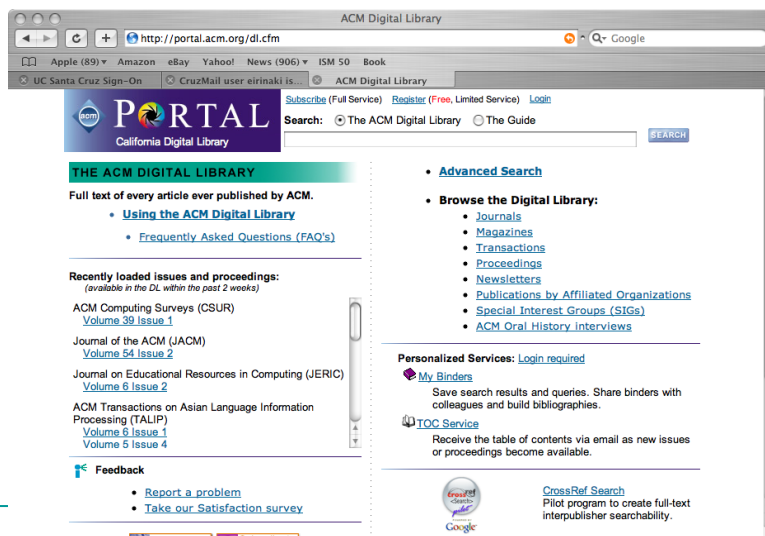


Indexers/Organizers - Librarians

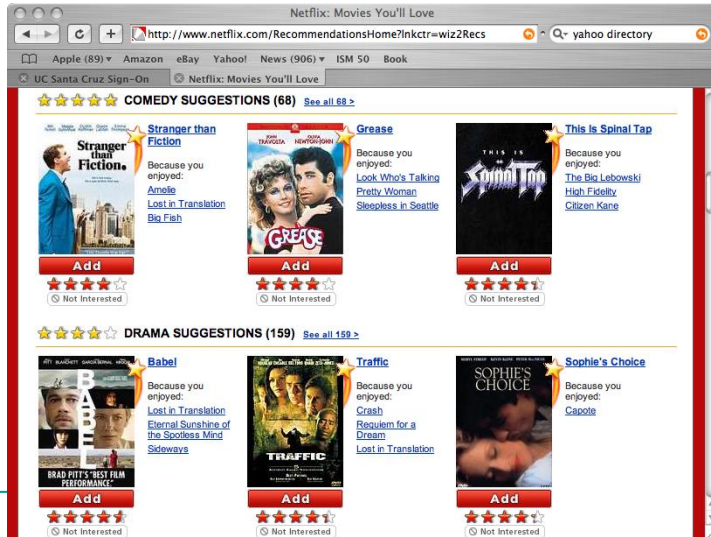
(assists and guides user to needed info)



Librarians



Recommenders



Recommenders

amazon.com Magdal... Amazon.com Electronics See All 40 Product Categories Your Account | Cart | Your Lists | Help | NEW

Browse Brands & Products | Top Sellers | Camera & Photo | Computers & PC Hardware | Software | Audio & Video | Today's Deals | Outlet, Used & Refurbished

Search Electronics GO Find Gifts

Prime Sign up for Amazon Prime today

What do customers ultimately buy after viewing this item?

- 74% buy the item featured on this page:
Canon PowerShot A630 SMP Digital Camera with 4x Optical Zoom ★★★★★
\$215.40
- 9% buy
Canon PowerShot A540 6MP Digital Camera with 4x Optical Zoom ★★★★★
- 7% buy
Canon PowerShot A640 10MP Digital Camera with 4x Optical Zoom ★★★★★
\$279.99
- 5% buy
Canon PowerShot A710 IS 7.1MP Digital Camera with 6x Image-Stabilized Optical Zoom ★★★★★
\$259.99

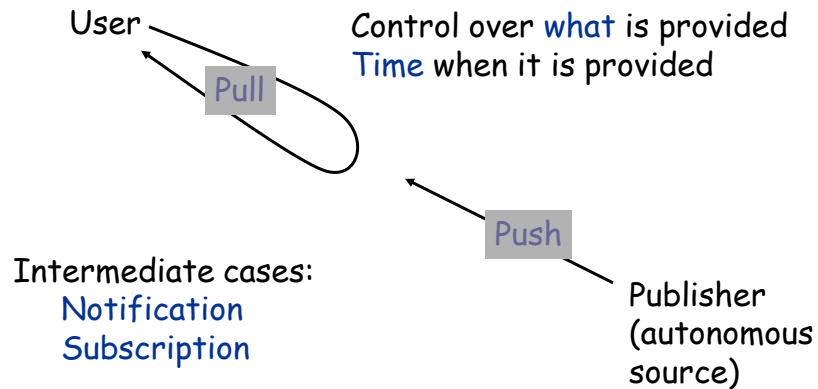
Customers who bought this item also bought

- Lexar Media 1 GB Secure Digital Memory Card (SD1GB-231) (Retail Package) by Lexar
- Sony BCG-34HE4 Super-Quick Worldwide Battery Charger with 4 AA NiMH Batteries by Sony
- Canon PSC-65 Deluxe Soft Case for A550, A560, A570IS, A630, A640, A700 & A710IS Digital Cameras by Canon
- 2GB Secure Digital by SanDisk

▶ Explore similar items : Electronics (22) Camera & Photo (13)

See larger image and other views (with zoom)
See all product images
See all 43 customer images
Share your own customer images

Push vs. pull



Adapted from slides for *Understanding Networked Applications*
By David G Messerschmitt. Copyright 2000. See copyright notice

Question

What are some differences between push and pull with respect to:

- invasiveness with respect to the user?
- suitability of the information received?
- timeliness of the information received?

Adapted from slides for *Understanding Networked Applications*
By David G Messerschmitt. Copyright 2000. See copyright notice

Characteristics of information pull and push

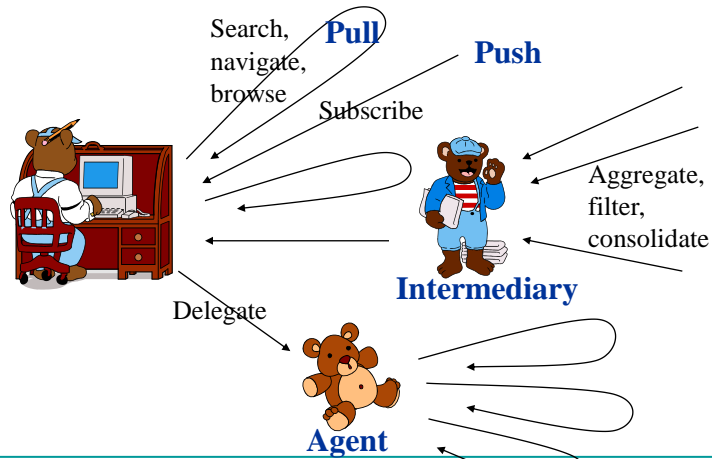
	Pull	Push
Control	User requests specific information	User subscribes to information in general
Notification	User submits question- publisher answers	Publisher provides useful notifications- user decides what to do
Timing	Information is user-directed	Information provider-directed

Proper roles of push and pull in a workgroup

Pull: work	Push: attention
Brainstorming	Notification of topic
Accessing documents	Notification of document availability
	Reminder of deadlines
<i>Newsgroups and Web</i>	<i>Email</i>

Adapted from slides for *Understanding Networked Applications*
By David G Messerschmitt. Copyright 2000. See copyright notice

Some modalities of information access



Adapted from slides for *Understanding Networked Applications*
By David G Messerschmitt. Copyright 2000. See copyright notice

25

Student Presentations

- 10/19/2011
 - Sean Phillips (news story)
 - Lee Der Lan (Cisco Case)

Enterprise Applications

Applications

- **What is an application?**
 - Computer software that performs useful capabilities for a user or organization
 - Stores, manipulates, and/or communicates information.
 - **An organizational application**
 - Supports an organization
 - **Often called enterprise application**
 - (An enterprise is an organization with a mission (usually commercial, of course))
 - **Managing an organization:
coordination+communication**
-

Types of organizational applications

1. **Departmental**
 - Supports a single functional department
 - Example: An accounts management application for an accounting department.
 2. **Enterprise**
 - Support enterprise-wide processes and goals.
 - Example: coordinate information between functional departments involved in fulfilling an order.
(or manufacturing, or other cross-functional process.)
 3. **Commerce**
 - Supports the purchase/delivery of goods/services
 - Example: product support over the Internet
 - Example: product returns handling
-

Classification of organizational applications

- **Worker Collaboration**
 - Example: video conferencing
 - **Operations (Manufacturing) and Logistics**
 - Example: coordinate movements of goods between sites.
 - **Decision Support**
 - Summarize info for execs.
 - **Knowledge Management**
 - Organize and retrieve knowledge in company's documents and databases
 - **Customer outreach**
 - Can the network offer new ways to connect to customers?
-

Examples of organizational applications

- **Customer care (software4u.com)**
 - FAQ -knowledge base
 - Customer service & tech support
 - **On-line Bookselling (books4u.com)**
 - Specialized software to interface with: customers, stock exchange, Customer's bank
 - **On-line Stock Trading (stocks4u.com)**
 - Information provider
 - **Floral delivery service (flowers4u.com)**
 - Suppliers and small businesses without IS
-

Departmental Applications

- **On-line Transaction Processing**
 - record and process data from business transactions.
 - Info resides in Database Management System (DBMS)
 - **Workflow**
 - A workflow application supports ongoing repetitive tasks.
 - Example: An application that passes a case summary of a customer from customer service to tech support.
-

Business Process Re-engineering

- Also called **Business Transformation**
 - **Radical re-thinking and re-design of business processes**
 - Enabled by Networked Information Systems
 - Minimize cost/time, increase efficiency, improve quality
 - Combine what people can do well with what computers can do well
 - **5 phases**
-

Business Process Re-engineering

- **Analysis**
 - of business requirements and costs
 - **Design**
 - of individual activities
 - of information and materials' flow
 - **Development**
 - of application
 - **Deployment**
 - Including training, testing, installation (may have pilots)
 - **Operation**
 - Supporting the application (production, sales, distribution etc.)
 - **Analogous to a software application's lifecycle**
-

Enterprise Resource Planning (ERP)

So what exactly is ERP??

Material (Manufacturing) Requirements Planning - MRP

- The precursor of ERP
 - MRP: A production planning and inventory control system
 - Take:
 - Product Demand forecasts
 - Inventory Balances
 - Replenishment Lead Times
 - Develop a production schedule for a single plant
-

MRP

- Initially was a planning tool
 - WHAT items are required
 - HOW MANY are required
 - WHEN are they required
 - Later other functionalities were added
 - Order Processing
 - Product Costing
 - The planning tool begins to take more and more of an active role in the business processes
-

A desire to Link Across Functional Departments



- Each functional department had its own *legacy application*
 - Programmed in different languages
 - Different data formats
 - Often some data was shared between departments by duplicating it.
-

MRP evolves into ERP

- ERP applications support different business processes that are standardized across organizations
 - Accounting, sales, HRM, material management, CRM, supply chain management, project management, etc...
 - Key features:
 - Multi-functional
 - Integrated
 - Modular
-

Information Integration

- Key issue
 - Should integrate different data/applications
 - **CONSTRAINT: Legacy Applications**
 - Applications developed using obsolete technology and worked well for many years...
 - e.g. most commercial applications were built using COBOL
 - ...until not anticipated problems occurred
 - e.g. the Year 2000 (Y2K) problem
 - Some applications were built 40 years ago
 - The programmers used last 2 digits to represent the year: "1/1/00" => 1900 or 2000?
 - Y2K made many enterprises replace their legacy systems with ERP solutions
-

ERP

- How would you design an ERP?
 - Design a user interface for each module
 - Ask user to fill in certain "fields" at particular times.
 - Set up a sequence of events
 - E.g. When the sales department enters an order, that event triggers an event at the manufacturing department.
-

Fundamental options

- **Build in-house?** *using a company's own funds, staff, or resources.*
 - **Customize the off-the-shelf application to existing organization?** *refers to products that have already been designed and made*
 - **Mold organization to off-the-shelf application?**
 - Adapt business processes to "Best practices"
 - When there exist compliance requirements or when process is a commodity
 - **If all companies use the same "best practices" how can they gain competitive advantage?**
 - Can ERP vendors even penetrate the 'trade secret' barrier?
-

ERP Implementation

- **Very complex application**
- **Typically not implemented "in-house"**
 - Purchase off-the-self solution and customize it
 - Adapt existing applications to "speak" with ERP modules
 - Hire consultants to help you (e.g. KPMG, Accenture)
- **Top-5 ERP Vendors [Gartner Dataquest (2005)]:**



ORACLE®

sage

Microsoft®



Decision Support

- ERP support enterprise operations AND managerial decisions
 - Provision of timely Information -as it happens
 - Tools for data summarization and presentation - data aggregation and usmmarization
 - Knowledge management & discovery - search tools
-

Decision Support

- Knowledge management systems: Turn data and information into knowledge
 - Data warehouses store operations' historical data
 - Provide functionalities for summarizing, aggregating, reporting on these data
 - OLTP (on-line transaction processing) vs. OLAP (on-line analytical processing)
 - Data mining is the process of *discovering* patterns in large amounts of data
 - We will elaborate later in the quarter
-

The CISCO Case

Cisco Summary

Success Factors

- Cross-Functional Team of top people
 - People from across the company involved
- Hungry Vendors
 - Oracle and KPMG needed this to succeed
- Strong Support from Top Management
- Favorable Hardware Contract
- Rapid Prototyping -conference room pilots
- Aggressive pace

Good management or luck?

Cisco Summary

Challenges

- Poor testing Strategy
 - Inadequate Hardware
 - Software required more modifications than originally hoped.
-

Cisco Summary

What did it cost?

Costs Beyond original budget:

Non-IT Personnel In Project

- $80 \text{ personnel} \times 8 \text{ months} \times 160 \text{ hours / month} \times 100 \text{ hour} = \10 million

IT-Personnel beyond original 20

- $80 \text{ personnel} \times 4.5 \text{ months} \times 160 \text{ hours / month} \times 100 \text{ hour} = \5.7 million

Actually cost more than 15 million more than the original budget of \$15 million!

Was this really a success?!
