

*Portals in Higher Education:
Beyond a mere integration of services
a drastic (r)evolution in IT organisation*

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Switzerland?



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Switzerland



Geneva?



Outline

- Concept of portal & Technology behind
- Organisation changes
- Virtual library in conclusion



Concept of Portal

- Web based
- Personalization
- Content Aggregation
- Single Sign On
- Presentation (and interaction) layer for the underlying Information System



Portals are web-based

- You access it via a browser:
 - With full capabilities: IE, Firefox, Opera, ...
 - With limited capabilities: Lynx, Blazer (Tréo from Handspring, now Palm Inc).
- The browser sends HTTP requests
- The portal answers with HTTP pages
- By the way, the web was born in CERN, in Geneva.



Blazer and Lynx



Lynx

- Lynx exists on Linux, and is a text-only browser.



PrincetonDemand

The Department Manager's Desktop

 Find in Page

Welcome Guest - Please Login: Name: Password: Login

Welcome **Help**

Search

Search: Princeton People, Princeton Web and the WWW



- Campus Directory Query
- Miscellaneous Campus Searches
- Other Search Options

Search People at Princeton

Submit

Search Princeton Web Pages

Submit

Search all World Wide Web Pages

Submit

Princeton Web Site



Princeton University



- Search
- Home
- About Princeton
- Admission & Aid
- Academics
- Administration
- Campus Life
- Library
- Research
- Alumni
- Visitors
- Desk References
- Emergency Info
- News & Events

Headlines

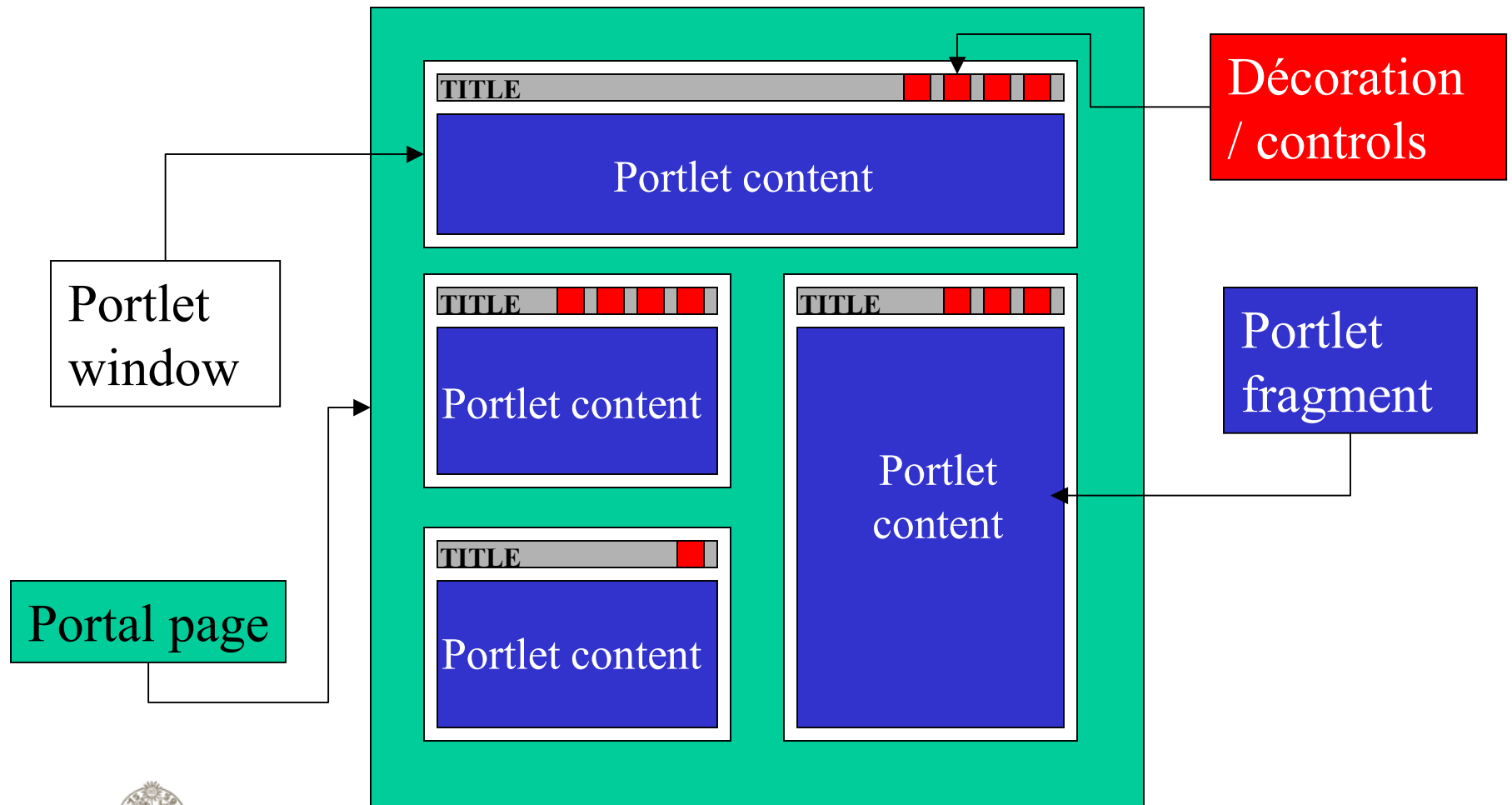
- [Kolligian](#) named director of counseling services
- [University](#) provides studio for innovative A.R.T. group
- [More...](#)

Announcements

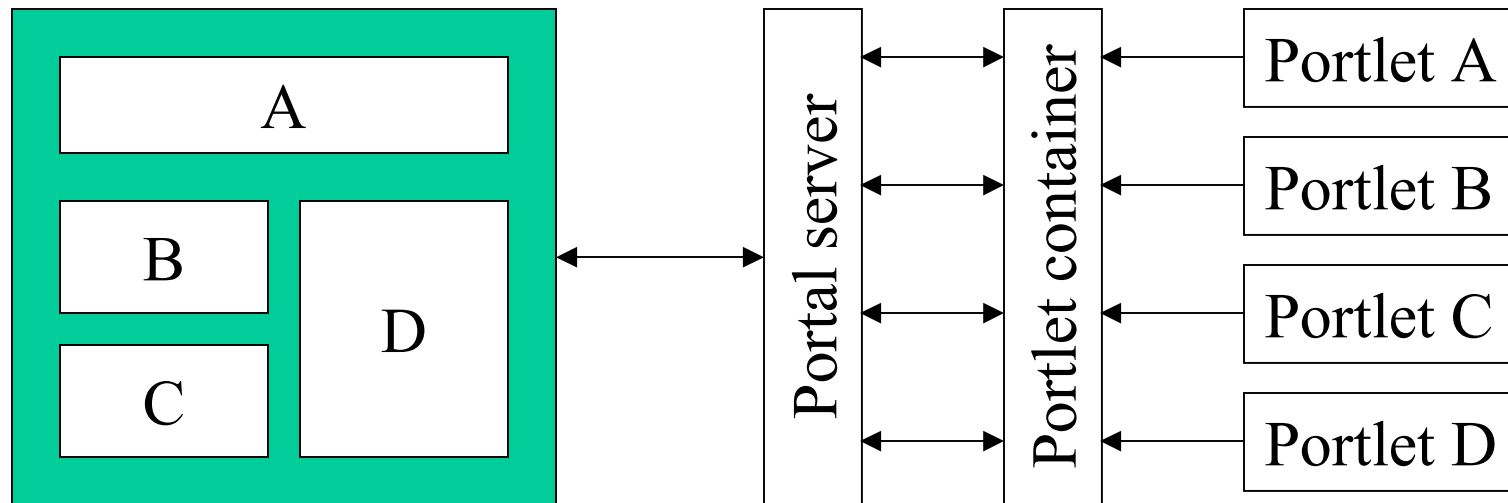
- [Biographer](#) to discuss writing and reading life stories, Sept. 27-29
- [Painter](#) Dorothea Rockburne to discuss her work, Sept. 28
- [Mike](#) Wallace to inaugurate Goodman Lectures, Sept. 28
- [Christie](#) to speak on political corruption, Sept. 29



Portal page and portlets



Portlet container / Portal server



JSR 168 portlet

- JSR ?
 - Java Specification Requests



- The new language for developing on the web is Java



Portlet modes

- Indicates the function a portlet is performing.
- The content displayed is modified only when a portlet is changing a mode.
- portlet modes:
 - **VIEW**: generates markup (HTML) reflecting the current state of the portlet.
 - **EDIT**: provides content and logic that lets a user customize the behavior of the portlet.
 - **HELP**: provides help information about the portlet.
 - **Custom** Portlet Mode: provides a specific piece of functionality, in addition to the standard modes.



Portlet states

- Portlet container -> window state -> portlet
- When the portlet changes state it is only the view size that will be modified
- Portlet states:
 - **NORMAL**: the portlet shares the page with other portlets. The portlet should restrict the size of its rendered output in this window state.
 - **MAXIMIZED**: the portlet is the only portlet in the page. The portlet generates richer content.
 - **MINIMIZED**: the portlet renders minimal output.
 - **Custom Portlet States**: provide additional functionality in addition to the standard states.



Configuration of Portlets

```
<portlet-app>
...
<custom-portlet-mode>
<description>Creates content for Cut and Paste</description>
<name>clipboard</name>
</custom-portlet-mode>
<custom-portlet-mode>
<description>Provides administration functions</description>
<name>config</name>
</custom-portlet-mode>
...
</portlet-app>
```

➤ XML language



Portlets

Portlets use several technologies.

- Languages:
 - **HMTL** and javascript for rendering output
 - **Java** for the logic of the application
 - **XML** for the configuration
- Softwares:
 - **Portlet container**
 - **Portal server**



WSRP standard

- Web Services for Remote Portlets (OASIS group)
- Few documentation
- Few implementations
- Uses **SOAP** as interface between portlets and portlet container
- May be used in conjunction with JSR168



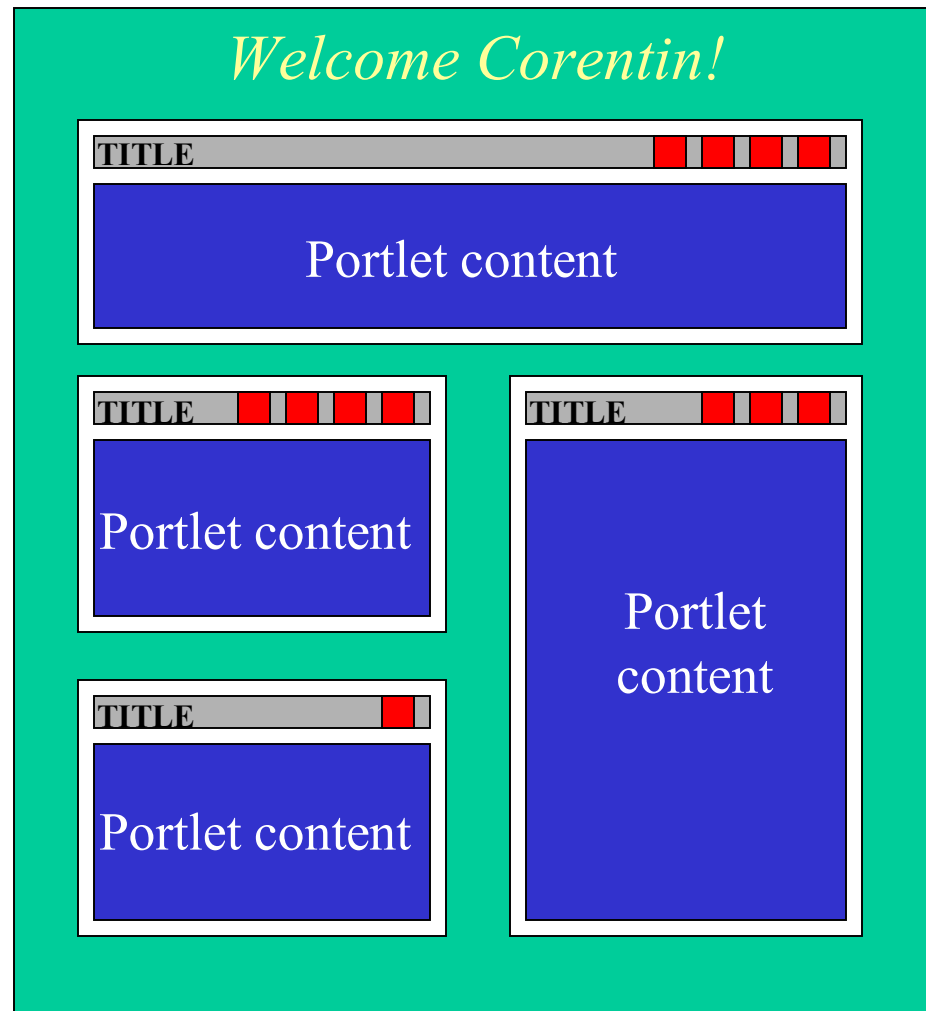
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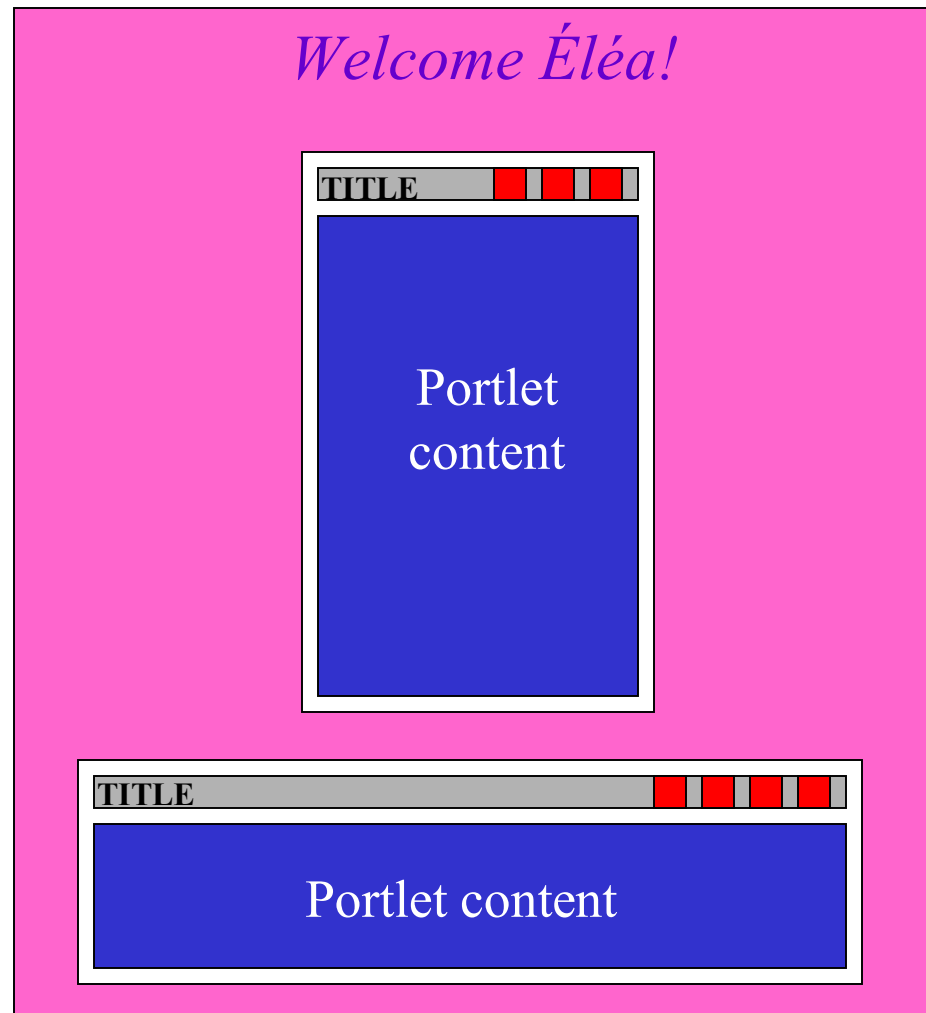
Personalization

User Corentin



Personalization

User Éléa



Personalisation

- There exist, embedded in the portal, a special portlet for configuration.
- The user can change almost everything:
 - Colours
 - Mapping of portlets
 - Which portlet
 - ...



MijnUvA
UNIVERSITEIT VAN AMSTERDAM

I. van Amsterdam

info | onderwijs | **persoonlijk** + X

User Preferences Actions
Turn Preferences Off | New Tab | New Column | Add Content

Studentenmail + X

Totaal 2 / 2 niet gelezen

Mail Administrator 29 Aug 04 05:06 **Welcome I. van Amsterdam** 02 Sep 04 18:51 **Mail aan zelf**

Direct naar webmail

Mijn bookmarks + X

Studiejob

Bewerk

Studieresultaten + X

code	omschrijving	uitslag	studielast	datum
V206	Microbiologie II	8	5.7	15-06-2001

Direct naar Ctis
Ga naar Studieweb



Classic design

Entertainment

Unnamed

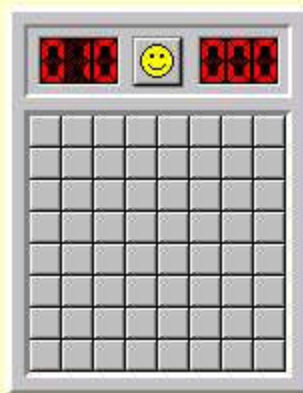
News

Number Guessing Game



This is a number guessing game.
I am thinking of a number between 1 and 100.
What's your guess?

Minesweeper



Daily Business Cartoon



© 2003 Ted Goff tedgoff@tedgoff.com <http://www.tedgoff.com>



"If you would like your call
to drift forever, formless
and unknown, press 1."

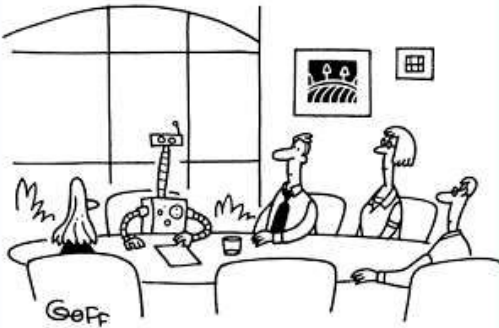
HULK design

Entertainment Unnamed News

Daily Business Cartoon



© 2003 Ted Goff tedgoff@tedgoff.com http://www.tedgoff.com



"I realize this transition period will be difficult for some of you."

Number Guessing Game



This is a number guessing game. I am thinking of a number between 1 and 100. What's your guess?

 Submit

Word of the Day



A new word is presented every day with its definition and example sentences from actual published works.



- **bilious:** Dictionary.com Word of the Day
bilious

Minesweeper



Groups Manager



- Root Groups
 - All categories
 - Applications
 - Development
 - Entertainment
 - News
 - Everyone
 - Faculty
 - Guests
 - Staff
 - Students
 - Graduate Students
 - Prospective Students
 - Undergraduate Students

Search for a whose name

Permissions Manager



- Groups Manager
- uPortal Channel Subscription
- uPortal Channel Publication



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Content Aggregation

- Portlets are windows on different parts on the Information System of the University:
 - Financial system
 - Human Ressources
 - Logistics
 - Student records
 - ...



Content Aggregation

- Systems managed by different departments / people using different technologies
- Each vendor has its portal:



SIS+ Academic

Logistics

- Quick Bio
- Contact Us
- Academic Records & Registration
 - Academic Advisor
 - Academic Progress Report for another UD major and/or minor
 - Grade Reports
 - Request for Change of Graduation Term
 - Change of Major
 - Change of Minor
 - Request for Enrollment Verification (Insurance, Loan Deferment, etc.)
 - Request for Student Copy of Transcript
 - Registration Planner (Fall, Winter, Spring)
 - Late Registration and Drop/Add
 - Semester Enrollment
 - Contact Us

Library

Course Schedule

Instructor	Days	Time	Bldg	Rm
CISC280- 050PROGRAM DEVELOPMENT TECH				
DECKER K	TR	11 :00AM-12 :15PM	KRB	205
CISC360- 050COMPUTER ARCHITECTURE				
SCOGGIN J	MW	1 :25PM-2 :30PM	GOR	223
CISC372- 050PARALLEL PROGRAMMING				
POLLOCK L	TR	9 :30AM-10 :45AM	PRN	331
CISC475- 050OBJECT ORIENTD SOFTWARE ENGINEER				
SAYDAM T	MW	7 :00PM-9 :00PM	SMI	209

Library Resources

Titles on Loan	Due date
Frida Kahlo : a spiritual biography	09/09/2005
Maya Angelou [sound recording]	09/15/2005
Christians and Muslims : from double standards to mutual understanding	10/02/2005

Titles on Hold
Frida Kahlo, Diego Rivera, and twentieth-century Mexican art : the Jacques and Natasha Gelman collection

Library Subject Guides
ENGL PHIL ART

Student records

My Office

College	Degree	Major	Rel	Conc	Minor
	Degree 1: AS	BSAS	CIS		

HR

Expected Graduation Term...

My Advisor: Alison, Francis
Office of Public Relations
150 South College Ave
4321
demo@demo.udel.edu

My Final Exams

Course	Date	Time	Location
CISC280011	12/13/2004	07:00PM-10:00PM	KRB 205
CISC360010	12/14/2004	12:00PM-02:00PM	GOR 223
CISC372010	12/15/2004	09:00AM-12:00PM	PRN 331
CISC475011	12/16/2004	05:00PM-07:00PM	SMI 209

Complete exam schedule

Courses Search

Term: Fall 2004

Course No.:

Student registration

My Official Addresses

Local Address:
200 Academy Street
Newark, DE19716-2974
302-123-4567

Permanent Address:
Av. Doca de Souza Franco
Brazil, Belem, PA19702-2974
91-765-4321

Bookmarks

- Academics
 - Academic Calendar
 - Advisement
 - Bookstore

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Single Sign On (SSO)

- Users want to authenticate once



- But each vendor has its way to authenticate





Welcome to myUBC,
Your personal gateway to information and services at UBC!

Help

Please log in.

Welcome

About myUBC

myUBC Login

CWL Login:

Password:

Login

To customize myUBC and access personalized services, enter your Campus-Wide Login (CWL) login name and password above, then press the "login" button. Your login is securely encrypted to ensure your privacy.

Don't have a CWL account? Register at www.cwl.ubc.ca.

Protect your privacy - close all browser windows when logging off myUBC!

myUBC News

Aug 16, 2004

Sophos PureMessage Anti-Spam/Anti-Virus Installation

Over the next two weeks, ITServices will be installing our new anti-spam/anti-virus solution to greatly increase the number of spam e-mail messages we identify, and to block e-mail borne viruses. After an extensive testing period we have selected Sophos PureMessage as our solution, and it correctly identified over 99% of spam during our tests.

We will begin deploying PureMessage on our mail-relay cluster at 6:30am on Tuesday, August 17th. This cluster scans e-mail destined for Interchange, Exchange, and several other e-mail servers at UBC. We will initially add a single new mail-relay to our existing cluster, and we will be replacing our current mail-relays with a new cluster of 5 servers by the end of August. No changes should be necessary for users to take advantage of this enhanced service.

If you have set up your e-mail client to filter spam using our existing X-UBC-Warning: [SPAM] e-mail header (see [detailed instructions](#)), you will notice no difference other than much more spam being correctly identified. If you have set up custom spam filtering using the X-Spam-Level: XXXXX header you may need to adjust the number of X's you use chosen to filter on. A level of 6 X's is a low risk setting that will catch most spam, while 4 X's would be a higher risk setting that would catch more spam, but also more legitimate messages. A level of less than 4 Xs is strongly discouraged.

ITServices is please to be bringing you this greatly enhanced anti-spam and anti-virus service. If you require any assistance, you can contact the IT Service Center at

Campus-wide Login Subscription

CWL required for myUBC access!

A Campus-wide Login (CWL) ID is now required to log in to myUBC. Campus-wide Login is a service for processing your login name (User ID) and password when you log in to myUBC. Please register for your CWL login name - which should be the same as your current Interchange/Netinfo account. Just click on the link below and complete the

Single Sign On (SSO)

- Liberty Alliance (SUN, HP, Novell, ...)
- Passport (Microsoft for Single Sign In)
- SAML (Security Assertion Markup Language)



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Presentation/Interaction layer for the Information System

- The portal is the **single entry point** to the information system for the users
- Excepted heavy administrative work
 - Everything should be accessible via the portal
 - The users must have the reflex to use the portal, as its default web page
 - Need of a **killer application**



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Organisational issues

- At the IT department
 - Personalization
 - Content Aggregation
 - Single Sign On
 - Presentation (and interaction) layer for the underlying Information System
- In the Institution at large

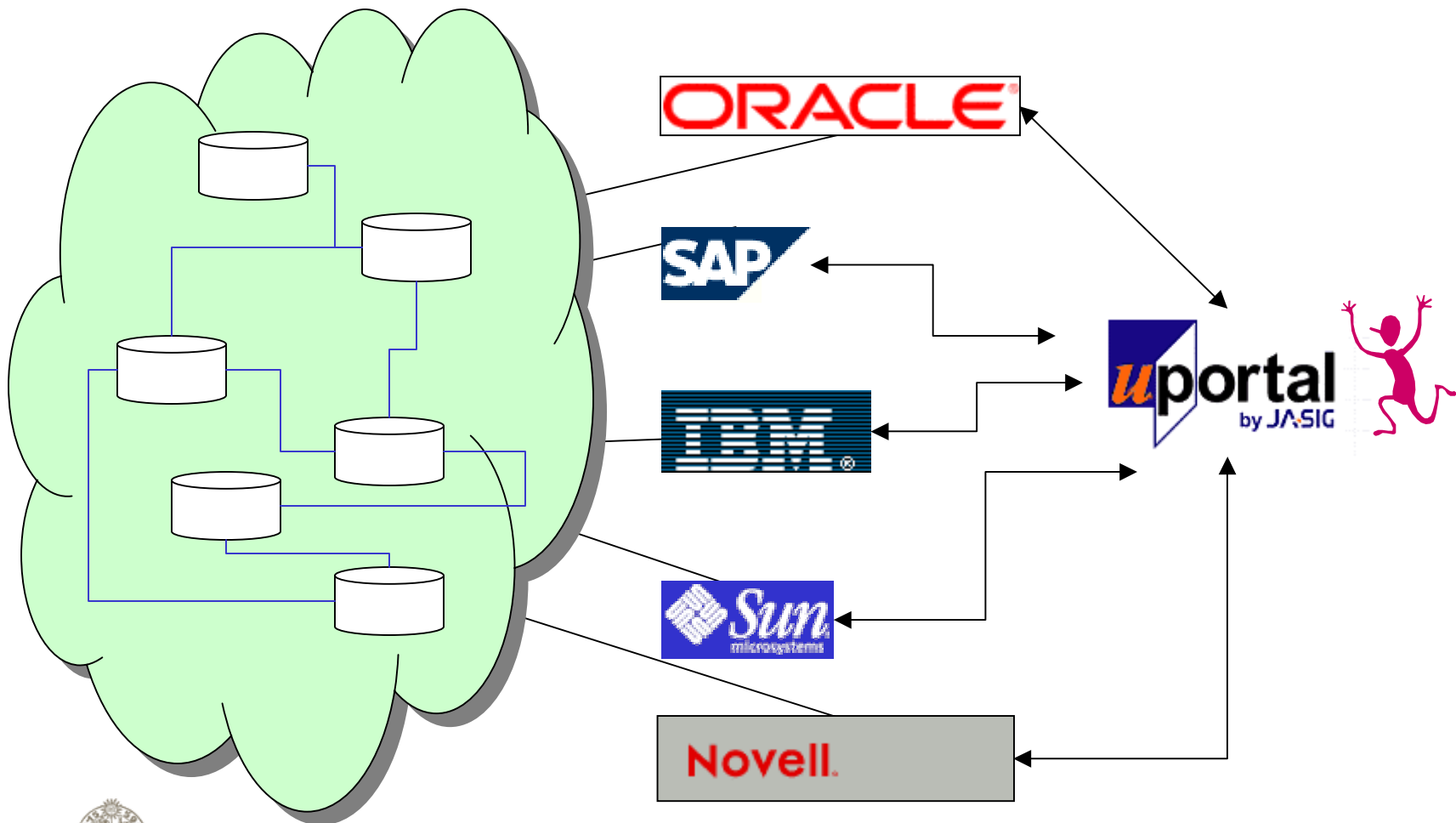


Single Sign On

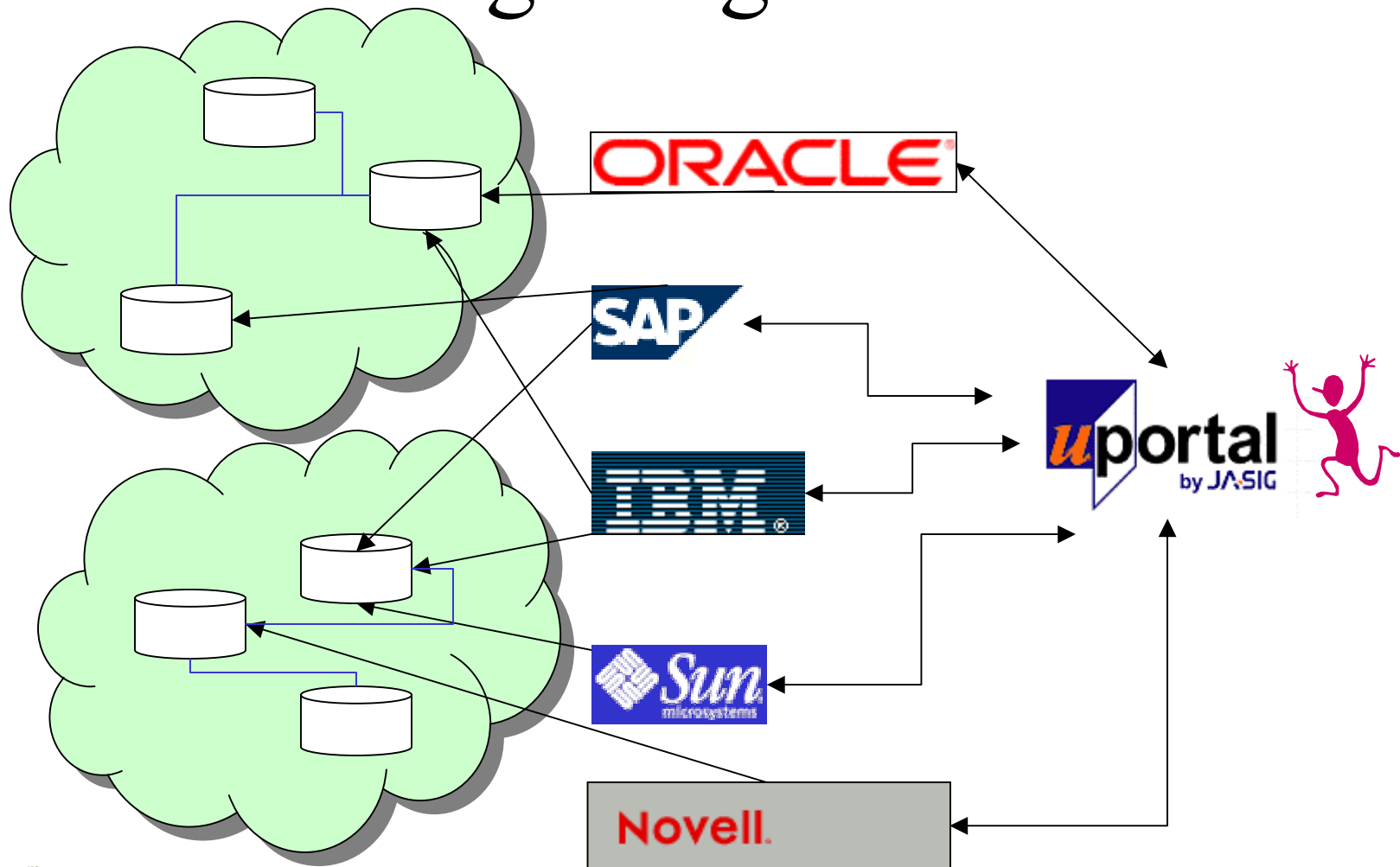
- The need of a single sign on:
 - Oracle has its SSO
 - Novell has its SSO
 - SAP has its SSO
 - Whatever vendor has its SSO
 - None SSO is compatible with another SSO
- Impossible to change the behavior of the Novell group, the Sun group, the Microsoft group, the Oracle group... « Our technology is the best »



Single Sign On



Single Sign On



Single Sign On

- And worse: The portal has sometimes its own SSO.
- Solutions:
 - Use a dedicated solution from an external vendor
 - Agree on a common authentication and autorisation schema

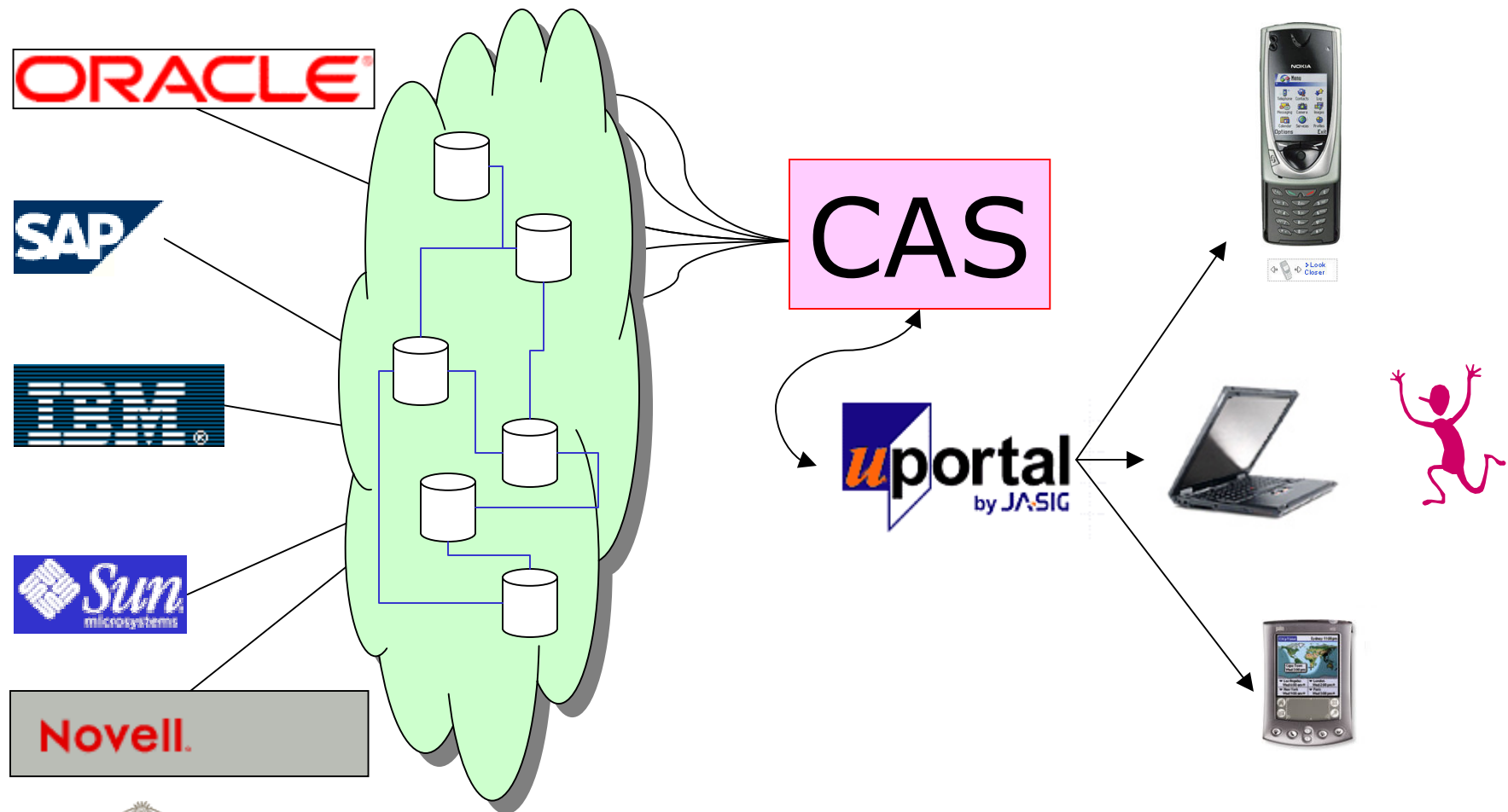


Authentication / Autorization

- Authentication done by a central server, fed by the numerous authentication servers (email, Novell accounts,...)
- Authorization (for the portlets) processed by a distinct server, using a notion of group



Central Authentication Server



Groups Manager



- ▼ Root Groups
 - ▼ All categories
 - ▶ Applications
 - ▶ Development
 - ▶ Entertainment
 - ▶ News
 - ▼ Everyone
 - ▶ Faculty
 - ▶ Guests
 - ▶ Staff
 - ▼ Students
 - ▼ Graduate Students
 - ▼ Prospective Students
 - ▶ Undergraduate Students

Search for a whose name

Permissions Manager



- Groups Manager
- uPortal Channel Subscription
- uPortal Channel Publication

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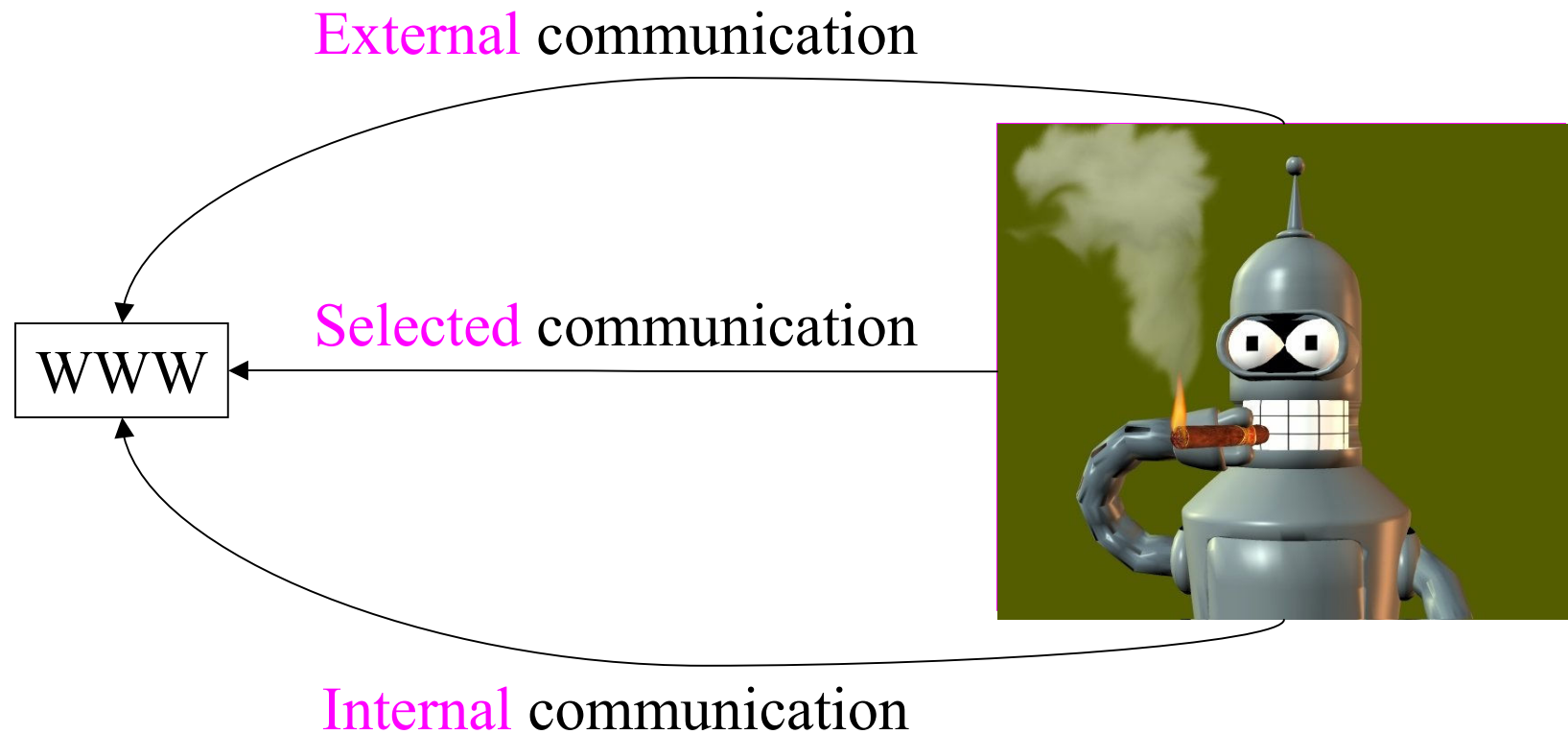


The Web curve of growth

- A very basic web site maintained by the central computer services
- A myriad of departemental web sites
- The University management imposes a graphical line and uses the web as its internal and external communication tool
- Common in [Western Europe](#).
- Exception in [Croatia](#)? Not [really](#).
- The web becomes less and less easy to read



Where the web stands today



Problems

- Difficulty to address the good public
- Visitors of the web site get lost among internal information
- Staff or students don't find the information pertinent to them



Solution (?)

- The traditional web for External communication
- The portal for dedicated information
 - But how can we make the users migrate to the portal?
 - Proposing, only via the portal, a tremendous application, a « killer app »
- Eg. The book exchange, or the flat renting



uPortal 2.1.1 - Microsoft Internet Explorer

File Edit View Favorites Tools ?

Précédente Recherche Favoris Média


Adresse https://uportal.unige.ch:8443/uPortal2/tag.f0081d9e6d67bb8a.render.userLayoutRootNode.uP?uP_root=root&uP_sparam=activeTab&acti OK Liens

UNIVERSITÉ DE GENÈVE [Home](#) | [Channel Admin](#) | [Preferences](#) | [Logout](#)

Bienvenue MICHAEL A PORTA Votre connexion a réussi. 28 Septembre 2004

[UniGe](#) | [Horaires Examens](#) | [Procès-Verbal Examen](#) | [Logements](#)

[Offres de logement pour les étudiants](#)

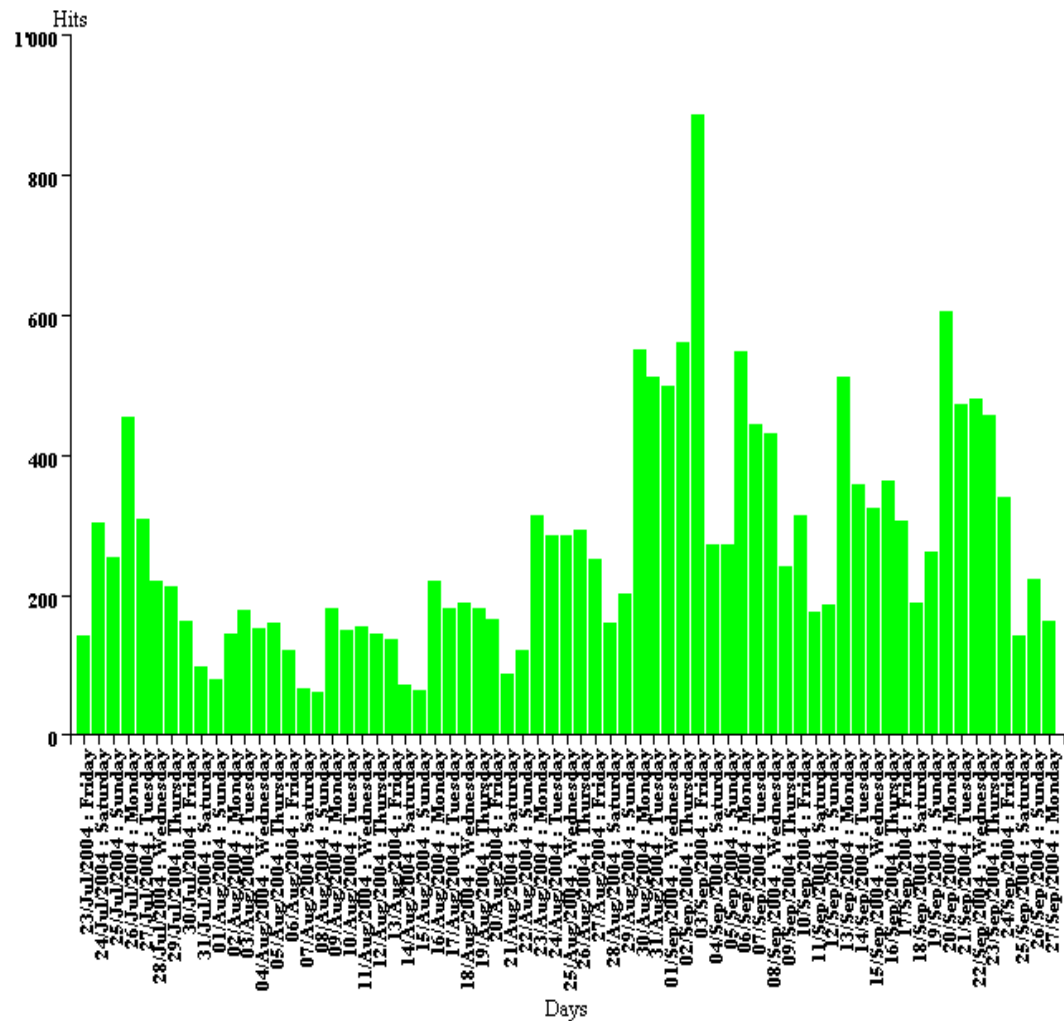


Annonces de logement pour les étudiants

Accès aux offres par date de parution *	Toutes les offres par date de parution
Accès aux offres par date de disponibilité *	Toutes les offres par date de disponibilité
Offres de courte durée pour l'été *	Offres pour l'été
Appartement *	Offres par catégorie
Bouquet *	Offres par quartier
Prix: Mini <input type="text" value="Pas de limite"/> Maxi <input type="text" value="Pas de limite"/> *	Offres par tranche de prix
Parution dès le: JJ <input type="text"/> MM <input type="text"/> AAAA <input type="text"/>	Offres parues depuis une date

UNIVERSITÉ DE GENÈVE

13/Aug/2004 : Friday	138
14/Aug/2004 : Saturday	71
15/Aug/2004 : Sunday	64
16/Aug/2004 : Monday	219
17/Aug/2004 : Tuesday	181
18/Aug/2004 : Wednesday	189
19/Aug/2004 : Thursday	180
20/Aug/2004 : Friday	165
21/Aug/2004 : Saturday	88
22/Aug/2004 : Sunday	122
23/Aug/2004 : Monday	313
24/Aug/2004 : Tuesday	286
25/Aug/2004 : Wednesday	286
26/Aug/2004 : Thursday	293
27/Aug/2004 : Friday	250
28/Aug/2004 : Saturday	161
29/Aug/2004 : Sunday	201
30/Aug/2004 : Monday	551
31/Aug/2004 : Tuesday	511
01/Sep/2004 : Wednesday	499
02/Sep/2004 : Thursday	560
03/Sep/2004 : Friday	888
04/Sep/2004 : Saturday	273
05/Sep/2004 : Sunday	272
06/Sep/2004 : Monday	547
07/Sep/2004 : Tuesday	444
08/Sep/2004 : Wednesday	430



Dedicated information

- Users have to be gathered in **groups**
- To compose the groups, we must use an **integrated** information system
- **Portlets** must be associated to groups
- The groups, the portlet descriptions and their associations must be stored in an **autorisation server**



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Integrated Information System?

- Groups are derived from the content of the information system(s).
- If the Information System is not integrated, there is a severe risk of not being able to create the group due to the dispersion of information



CWebProxy Examples

New Tab

Developers

News

Admin Tools

ICG Demo

Groups Manager



Root Groups

- ▼ All categories
 - ▶ Applications
 - ▶ Development
 - ▶ Entertainment
 - ▶ News
- ▼ Everyone
 - ▶ Faculty
 - ▶ Guests
 - ▶ Staff
- ▼ Students
 - ▼ Graduate Students
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Life-cycle of documents in the web?

- Who is producing documents:
 - owners of a web space
 - webmasters
- Who knows better to which public a document is pertaining:
 - the writer of the document
- When a « out-of-date » document is suppressed from the web site:
 - sometimes



The document formatting

- Webmasters have proposed tools to the web writers: CMS – Content Management Systems.
- The web writers have done a long way to learn HTML, then the CMS way
- The web-masters will also be the portal-masters
- The web-writers will also be the portal-writers
- We cannot propose another tool for the portal.
- We must use the CMS for the portal, with minor alterations



The choice of a CMS

- Should output documents in **XML**
- Should attach to documents the intended **public** (in terms of « group »)
- Should attach to documents the intended **media** for diffusion (web, email, portal, newsgroup, whatever)



Beyond documents

- The portal is an integration of services, more than a simple channel for documents
- Portal useful for:
 - Applications with a **lot of users**
 - Applications with **minimum of controls**
 - **Peer-to-peer** applications (student-to-student, staff-to-staff) like « classified »



Today on Campus

Time	Event
	Academic/Administrative Graduate Student Reception, 11:00 a.m. - 12:00 p.m. at the Bob Carpenter Center.
	Academic/Administrative Multi-ethnic Student Reception, 4:30 p.m. - 5:30 p.m. at the Bob Carpenter Center.
	Exhibition "American Wood Engravers," an exhibit featuring work by Lynd Ward, Fritz Eichenberg, Rockwell Kent, Leonard Baskin and Barry Moser. Information Room, Morris Library. For information, call 831-2231.
	Exhibition An exhibit of new UD art professor Lance Winn's work. Recitation Hall. For information, call 831-2244.
10:00am	Exhibition "John DePol: Artist and Engraver" exhibition. Special Collections Exhibition Gallery, Morris Library, 10 a.m.-5 p.m. For information, call 831-2231.
11:00am	Exhibition "A Century of African-American Art: The Paul R. Jones Collection." Mechanical Hall and University Gallery, 11 a.m.-4 p.m. For information, call 831-8037.
11:00am	Program Graduate Student Reception. Concourse level, Bob Carpenter Center, David M. Nelson Athletic Complex, 11 a.m.-noon For information, call 831-8479.
12:15pm	Workshop Fall 2004 History Workshop in Technology, Society and Culture. "Integrating Delaware," a lecture by Annette Woolard-Provine, independent scholar. 203 Munroe Hall, 12:15-1:45 p.m. For information, call 831-8413.
1:00pm	Exhibition "Mineral Collection at the University of Delaware" and "Petrified Wood: Plants from the Past." Mineral Room, Penny Hall, 1-4 p.m. For information, call 831-8242.
1:00pm	Program Job Jamboree. This event, with 150 companies in attendance, kicks off the recruiting season for the Campus Interview Program. Bob Carpenter Center, David M. Nelson Athletic Complex, 1-4:30 p.m. For information, call 831-8479.
3:00pm	Athletics Women's tennis vs. Saint Joseph's. Delaware Field

Search UD

 UD Web, UD People
[Advanced Search](#) | [Find it!](#)

UD Classifieds



- Love Seat/Recliner
- Computer for sale
- Four month old kitten
- Dell PowerEdge 400SC and LCD monitor
- 4-Draw dresser for sale
- Large dresser for sale
- Typewriter/ Word Processor
- FITNESS INSTRUCTORS NEEDED
- Camaro for Sale
- Summer Sublet

Headline News

Top stories - news headlines from around the web, refreshed every 15 minutes

powered by **moreover**

- [Health Insurance for the Self-Employed!](#)Ad - www.healthinsurancesavings.com Sep 28 2004 12:22PM GMT
- [Jeanne left expensive tab in Florida](#) MSNBC Sep 28 2004 12:22PM GMT
- [U.S. Forces Capture Head of Suspected Iraq Militant Cell](#) Washington Post Sep 28 2004 12:09PM GMT
- [Jordan: Iraq unsafe for poll](#) CNN Sep 28 2004 10:22AM GMT
- [Relief, cleanup efforts begin](#) CNN Sep 28 2004 9:40AM GMT
- [Jordan king: Iraq unsafe for poll](#) CNN Sep 28 2004 6:52AM GMT

No more queues at secretariats?

- Students can do their updates **themselves**: inscription for exams, courses,...
- Faculty can do their work **themselves**: entering **marks** for the students, filing a reimbursement form,...
- Secretariats are no more a **bottleneck** for the processes
- Everything with the **same** interface, **whenever** and **wherever** they want, with almost **any web browser**



Organisational issues

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New orientations for software development

- The culture of **sharing**:
- Central IT departments (HR, financial, student management) have to **make data available**
- Developers (both traditional and webmasters) need to **share**:
 - the code
 - the documentation
 - the standards
- Everything should be available in a **central repository**



New orientations for production services

- Users can access their portal from **anywhere**, at **anytime**, via **any browser** or exotic device
- The **uptime** of the servers should be longer than today
- The **Helpdesk** services will be pushed at the front line



A change in the nature of jobs

- Traditional:
 - Developers
 - System engineers
 - Helpdesk
 - webmasters
- New:
 - Integrators
 - Middleware engineers
 - portalmasters



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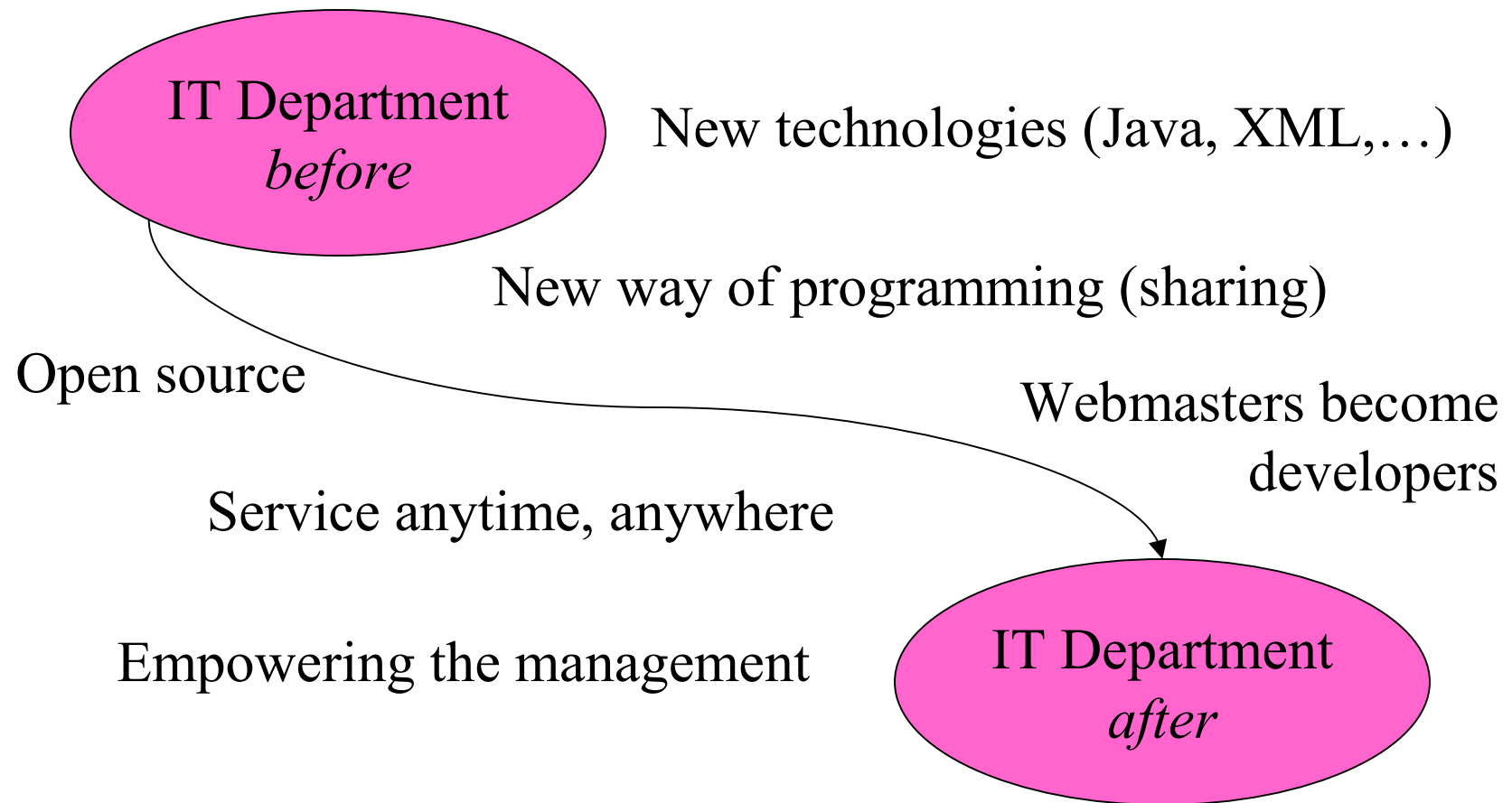


Organisation: from IT to top-management

- The top-management must be empowered by the new technology
- The portal is a unique opportunity for them
- They don't know it
- The IT department must tell them, and tell them how to organize themselves
- Otherwise: **no funding**



New frontiers



Outline

- Concept of portal & Technology behind
- Organisation changes
- **Virtual library in conclusion**



Virtual libraries

- Libraries are the foundations of Universities
- Even with the ability of users to browse the Internet, the libraries are still the reference
- BUT
- Libraries are not prepared to face the digital age
- Eventually, libraries will host the knowledge, and the means to access this knowledge, in a personalised way
- The virtual libraries project must be defined and launched



Notes to the users

- Be gentle with your IT department staff
- If you give them nice projects, they will surprise you





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Today at UD **Academics** **Finances**

SIS+ Financial

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My Financial Aid

Term	Description	Offer	Accept	Paid
2002	University Merit Scholarship	1500.00	1500.00	1500.00
2002	Federal Direct Loan	5000.00	5000.00	1000.00
2003	Tuition Remission	5110.00	5110.00	

Semester Bill

Date	Description	Charges	Credits	Balance
	PREVIOUS BALANCE			60.00
09-04-02	Tuition-Undergrad P/T Non-R	2432.00		
09-04-02	Semester Payment		0.00	
09-27-02	Fee Waiver		2432.00	
	CURRENT DUE			60.00

UD1 Flex

ID Card Status:	Active
Remaining Meals this Week:	5
Point Balance:	375
Flex Account Balance:	\$100.00
PrintLess Printing Allocation Balance:	\$5.00

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