

The NetLab, work at  
Fernando Pessoa

*Away day*

14th September, 1997  
CSEG group  
Lancaster University

**DEREM** 1997 © Luis Manuel Borges Gouveia

The slide features a large, light gray diamond shape on a white background. The title 'The NetLab, work at Fernando Pessoa' is positioned in the upper left. The subtitle 'Away day' is centered within the diamond, with the date and group information below it. A vertical bar on the left side is split into a light gray top half and a black bottom half. The 'DEREM' logo and copyright notice are at the bottom left.

## Agenda

- introduction the environment
- the infrastructure
- the concept / vision
- experiments within
- the opportunities

## Introduction the environment Fernando Pessoa University

- located on OPorto (second city in Portugal)
- merging result of two Institutes in the year of 1994
- four departments, 20 courses, 3 postgraduate
- 4500 students, 250 lectures, 80 staff



University Fernando Pessoa is the merging result of two Institutes in the year of 1994. The University Fernando Pessoa had a significant growth last year, with more students, lecturers and more activity regarding extra curricula like conventions, seminars, debates, oriented small courses and workshops.

Now the University (1997 figures) has 4500 students, 250 lecturers and an support and administrative staff of about 80 people. The students belong to four different departments: Administration Sciences (Ciências da Administração), Communication Sciences (Ciências da Comunicação), Political and Behavioral Sciences (Ciências Políticas e do Comportamento), Science and Technology (Ciência e Tecnologia).

Presently the University offers twenty graduate courses and three post-graduations.

## Introduction the environment CEREM - Multimedia Resource Center

- start late 1995; three groups: computing group, media group, graphics and printing group;
- 15 staff (1 PhD, 3 MSc, plus 3 PhD and 1 MSc students)
- goals: research and development, course support, enabling and supporting technologies, media integration, technology transfer



The Multimedia Resource Center at University Fernando Pessoa is a research and development project, started in late 1995 with the aim of leveraging efforts in several related areas. The main research areas improve the way humans use information and communicate. One major CEREM goal is the creation of a multidisciplinary group to stimulate projects on digital content and to produce multimedia resources for course support. The CEREM is also responsible for the management of information technology labs and infrastructures at University Fernando Pessoa.

Luis Manuel Borges Gouveia

Beyond the creation of the CEREM was the need to integrate the work of different groups like the Radio and TV one, the Computation Group and Publications and Desktop publishers group. Since their creation these groups have evolved each one in their own direction. The possibility to integrate all the work done is now a common interest in part due to the growing evolution of the digital world and also due to the sophistication of the ongoing projects. For last (but not the least) CEREM wants to be a consistent interface to the outside market not just to support activities but first to make the most correct specifications of “real life” human needs on information and technology applications.

## Introduction the environment CEREM - Computing group

- Areas of research:
  - adaptive, cooperative interface agents
  - cooperative, distributed information systems
  - synthetic environments
  - IT-based learning environments

The activity of the CEREM's computing group covers four main areas:

- *Human Machine Interaction* with large information repositories, exploring agent-based and learning techniques.
- *Virtual Reality* utilization for the representation of corporate information, and for the study of human environment interaction.
- *Distributed and Cooperative Information Systems*, using agent-based interfaces to an object-oriented modeling of large volumes of data.
- IT-based learning environments, using multimedia facilities and networks to augment education results and learning capabilities.

## Infrastructure

- Start late 1995, with ethernet 10 Mbps LAN in labs and classrooms, with DHCP **170** entry points and **1** server (Windows NT, intel box)
- In 1996: LAN segmentation with **300** entry points, included library; start of a www, ftp, mail, proxy, mail and news server, with a 64KB WAN ISDN line, **5** servers (include Sun boxes)
- In 1997: LAN segmentation (some with 100 Mbps), **400** entry points **10** servers (with Solaris, Linux, NT)

## Infrastructure (II)

- notebook as a pre-requisite for entry university (minimal specs)
  - In 1995: hw 486 DX 50MHz Intel processor with 4MB RAM and 270 MB HD; sw DOS/Windows for Workgroups + MS Office Pro
  - In 1996: hw Pentium 100 MHz with 8 MB RAM and 840 MB HD, multimedia; sw Windows95 + MS Office Pro
  - In 1997: hw Pentium 133 MHz with 16 MB RAM and 1 GB HD, multimedia; sw Windows95 + MS Office Pro
- we have found a problem: the Bill Gates sindroma!

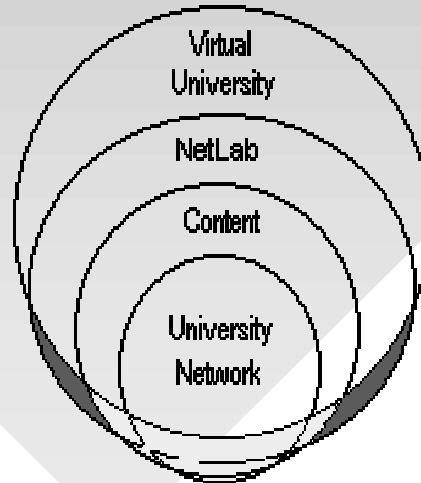
Every student can connect to NetLab using their own computer or through the campus facilities. Students will be able to use networked facilities, and set up projects on their area: Advertising, Marketing, Anthropology Studies, Communication, Business on-line.

The first year students of all courses have a notebook as a pre-requisite for entry university. Based on this entry specification the introduction of computers in the university day to day has changed dramatically.

The massive presence of notebook computers now takes part of the IT infrastructure of the University. This affect in a different way the needs and the use of a CWIS.

## The concept NetLab

- network infrastructure, content oriented
- links computer resources
- experimental education lab
- entry points to virtual campus
- prototype for local information society
- emphasis interpersonal communication among students



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## The vision



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## The experiments

### Cost for students (hw & sw):

min specs for less than US\$1625 (with Ethernet Pc-Card).  
Students can pay in four years US\$2200 (US\$45,84 per month)

### Number of systems

year	students	% covered	lectures	% covered
1995	1100	25,6%	50	21,7%
1996	800	38,7%	20	28,0%
1997	400	53,5%	30	40,0%
total	2300 of 4500		100 of 250	

And about upgrades!

The more common upgrades are related with hardware performance:

memory upgrades (plus 4 MB, or 8 MB or 16 MB)

extra monitor (15'' colour SVGA monitor)

a printer(low cost InkJet Printers or Laser)

In software, the most importance upgrade is the operating system, followed by MS Office Pro. Over the project years the use of shareware and freeware have huge increase (consequence of Internet use).

The University Labs have 40 Intel boxes with 17'' colour monitors (each year they are replaced by new models and the older ones are allocated to services and lectures offices).

## The experiments (II)

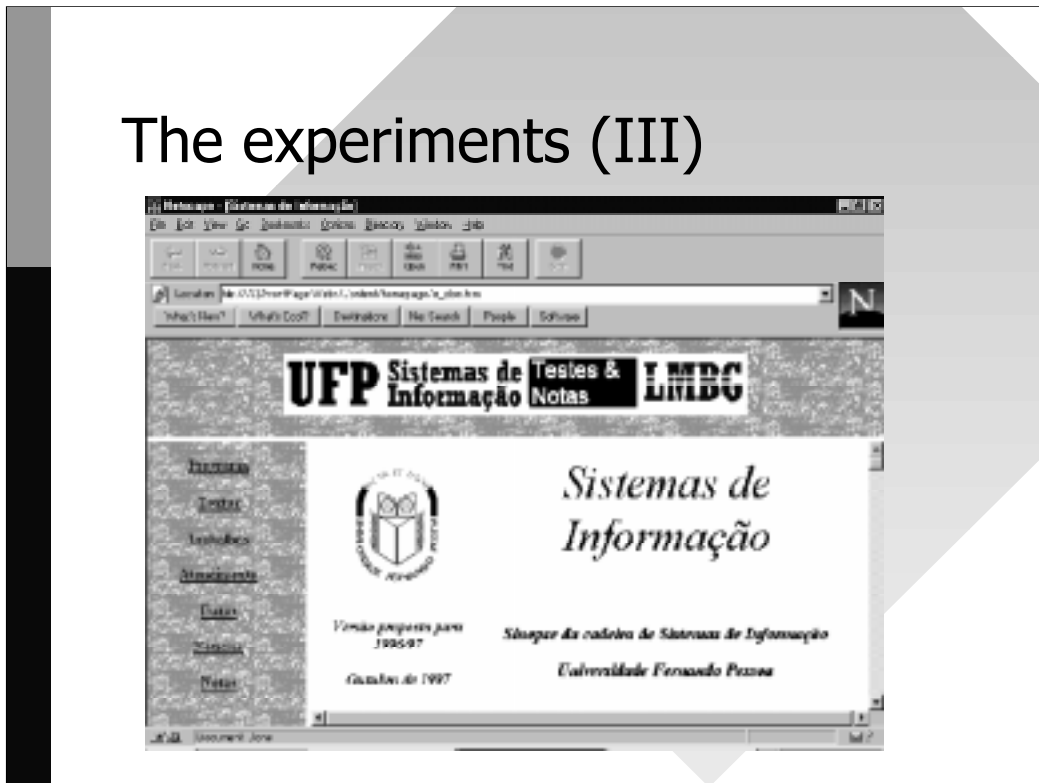
- How to put students using computers
  - modify and redefine evaluation of a class (Introduction to Computation)
  - free access to Internet and email accounts for everyone
  - give entry point to the network in classrooms, library and social areas (include labs)
  - give students space to publish their own Web pages and services
  - give students the management of a IRC server with outside access
  - let students use their own tudies as shared servers to provide "underground content" and use then to chat

But what is really different in this project?

- people centred and not technology oriented
- strong reinforcement of mobility
- share of technology investments between students and university
- relocate the use of instruments for information manipulation from classrooms to all spaces of the university (this bring new concepts of multidisciplinary projects; the class that never ends, new forms of interacting between students and students/lectures and some more)

One new project is a virtual enterprise incubator that permits a controlled environment to students create and test their ideas to a new business situation, service and so on. The main objective is to construct an infrastructure that permits students to simulate real world information society environment in order to refine services and products related with their speciality areas and technology.

## The experiments (III)



Internet use to class support.

The figure is a screen shot of the entry Web page of Information Systems.

There, students can see the programme, the electronic version of supporting materials, the assignments that they must do, information and interacting procedures to speak to lectures when they need, the important dates, a news board, their remarks (including statistics, last written exams and students works).

The system is open to outside world (via Web) where some questions arise like if it is legal to publish students remarks in web; is author protection to material possible and how; and what is the really impact of using this kind of service.

## The opportunities

**Redefining University as a *education lab* without physical boundaries like the classrooms walls**

**Harness the use of a virtual space to information interchange between net users that offer a *living organism* of ideas and regular meeting**

*The killer application of the 90s is people*

Pavel Curtis

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## Conclusion

- NetLab power users wanted!
- great opportunity to build new experiments in a high density computer community
- test new applications for usability and market potential
- test scale problems

I D E A S   W E L C O M E

Any questions or contact use the following email: [cerem@ufp.pt](mailto:cerem@ufp.pt)

some Web addresses related with this presentation:

University Fernando Pessoa:

<http://www.ufp.pt>

CEREM (and this presentation for download):

<http://www.ufp.pt/units/cerem/>

MMIG (special Man Machine Interface Group)

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