TabulaDecimal Lab 2.0

Designing a Testbed-based Virtual Learning Laboratory for Information and Documentation Management Software

A master project presented to University of Barcelona and Pompeu Fabra University in partial fulfilment of requirements for the degree of interuniversity

Official Master in Management of Digital Contents
In the program of Information and Documentation in the Knowledge Society

Faculty of Library Sciences and Documentation
University of Barcelona and Pompeu Fabra University

Advisor: Josep Manuel Rodríguez Gairín
Collaboration: Miquel Centelles Velilla

by
Mehrad Golkhosravi

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URL:http://tabuladecimal.info

Author: Mehrad Golkhosravi
Email: mehrad[at]golkhosravi.org
Date: 2009
Approved by Chairman of the Supervisory Committee:
Dr. Crostofol Robira from University of Pompeu Fabra
Mrs. Alice Keefer from Univerisity of Barcelona
Mrs Ana Benito from Concatel
Place: University of Barcelona: Faculty of Library Sciences and Documentation
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1 Executive Summary

1.1 Project

The fundamental objective of the project TabulaDecimal Lab 2.0 is to design a Test-bed-based Virtual Learning Laboratory for Information and Documentation Management Software; a virtual laboratory for the use, experimentation and learning of applications shared by students, faculty and companies in software production and distribution.

The goals of the TabulaDecimal Lab 2.0 project are:

1. To improve the orientation process in academic studies of Library Sciences and Documentation in professional environment and to facilitate the adaptation ICT.
2. To institutionalize a learning-model based on the online "Test-bed-based learning " concept
3. To create an online learning laboratory for developing of major concepts of testing and experimenting digital management products in librarianship and documentation.
4. To create a knowledge community network using a variety of online communication tools to support the interactions among students and professors of the faculty on one hand and experts in professional world on the other hand to share their interest in the use, experimentation and innovation.

Following the above goals there are four major objectives:

1. To identify, categorize and describe the digital content management programs that are used in different subjects in the Master in Management of Digital Contents as well as Bachelor's Degree in Information and Documentation since 2010.
2. To integrate all selected software applications with teaching activities and incorporate related information and communication resources for individual and group to elaborate on the application software learning activities.
3. To improve learning process through direct access to installed software and learning tools used is professional level.
4. To promote the exchange of knowledge and experience through TabulaDecimal among three target groups.

1.2 Methodology

The methodology in the project is a “user-centred approach”. To do so the design plan of the project is based on the needs of the users. Firstly, the project manager staffs the project team “Staffing the project in Phase I”, in this phase the project manager explains the essential jobs and tasks for each team member of the project. There is a research process to identify users’ needs “Users Needs Analysis in Phase II. This phase is based

on the elicitation of users' needs and done by direct data gathering method. Deliverables of this phase will be user needs summary, user scenarios, business requirements and functional requirements.

After a scan of available products, preferably open source products, in system selection phase (phase II) the technical requirements and its integration with selected system is studies. After selection of the products for the system there are six workpackages concerning the design and the content of the TabulaDecimal as virtual lab based on Web 2.0. (phase IV)**.** Deliverables of the "Content and Architecture" phase are information and technical architecture as well as taxonomies for contents and navigation system of the lab.

In the implementation phase V the selected system will be installed in one of the serves. Throughout of the phase the technology persons will set up all selected modules and application according to the needs of the users. This team also creates group workspaces and configure the interface of the system.[1] All findings and results of the "Content and Architecture" phase are used in the "Implementation" phase. "Implementation" phase consists of fourteen workpackages.

In the appendixes there are documents concerning timescales and duration of each workpackage in the project. The last phase of the project, "Evaluation" is planned to be done after one year. Project will be staffed with Project Manager, Content Persons, Publication Person and Technology Persons.

The project begins in 4/05/2009 and is going to finish 13th January 2010 and the last phase of Evaluation and Assessment is planned to be started one year after the implantation in September 2010.

1.3 Conclusion

TabulaDecimal Lab 2.0 project is based on three main concepts of sharing, experimentation and innovation. Below there are major characteristics of TabulaDecimal as a virtual laboratory and community after implementation:

- A virtual space to encourages professional knowledge sharing and knowledge management among students and academic and professional experts
- A virtual place to discuss related to effective daily practices; improved productivity and services; and enables community members to work more efficiently at lower cost.
- Encourages cross-sector collaboration.

- Gives practitioners/students more effective ways to address problems/current issues.
- Challenges people, either professors or students, to be more creative and innovative.
- Promotes leadership, as a fundamental element in management in master GCD.

TabulaDecimal can be an initiative for future innovation in library studies and research in digital content. It will be a practical and useful bed in the educative long life learning process. The production system will be operational with the following direction: http://tabuladecimal.info

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2 Introduction

2.1 E-Learning, and Web 2.0

This section deals with a short history of e-learning , its origin in Spain and some general characteristics of virtual learning community and its relation with new technologies in online educative fields.

2.1.1 History and the origin

The origin of e-learning goes back to the early uses of technology to support learning, the use of training films, TV and videotapes. In mid-1970s, university courses were supplemented by e-mail and computer conferencing. With the advent of personal computers in the 1980s, the introduction of interactive, multimedia computer-based training is delivered on CDs or laser disks. With the birth of the World Wide Web in the early 1990s, online learning began; for example SchoolNet the first national educational networks in Canada in 1993, CL-Net in Europe in 1998. Majority of the early online learning activities occurred in universities where access to the Internet was more common and easy.

In Spain, distance learning began since 1962 with offering radio-phonic schools[2] which led to the creation the National Centre for Distance Learning[3] and later in 1975 known as national institute INBAD[4]; finally the INBAD institute merged with the CIDEAD[5] centre. In 1972, the UNED foundation pioneered working on distance learning in non-academic level, which later became the first independent private university in Spain in 1983. Finally, networked technologies such as the internet and World Wide Web dramatically, like everywhere, changed the education and training system with the pioneer Open University of Catalonia (UOC) from 1995 in Spain (Ruipérez, 2003: 24).

2.1.2 The characteristics of online learning community

The term e-learning is used in a variety of ways, the literature shows that is it often used interchangeably with terms such as ‘online learning’, ‘computer-based learning’, ‘web-based training’, ‘online resource-based learning’, ‘networked collaborative learning’ and ‘computer-supported collaborative learning’ [6]. There are some general characteristics which one can find in any e-learning system, such as:

1. Use of interactive learning packages involving text, graphics, audio, video and animation
2. Enhancement of traditional programmes by providing access to additional resources and information
3. Enhancement of a programme by providing additional support, e.g. using synchronous and asynchronous communications applications such as e-mail, discussion groups, chat rooms and video conferencing.
4. Delivery of an integrated programme where much of the learning is through online activities supported by communication tools. (Allan, 2002: 3)

In TabulaDecimal project, collaborative interaction of online learning is considered more important than the other aspects of e-learning. According to Lewis and Allan (2005: 11), virtual learning communities have raised during the last years for many reasons such as intensifying competition and globalization, new ways of working, the information explosion and the rise of knowledge management, developing and converging communication and information technologies and the need for continuous professional development. Consequently, people have begun to connect and work together to response to such an increasingly complex world.

2.1.3 Technology and E-learning

With the emergence of new technologies such as Web 2.0 there is a new phase of e-learning, known as E-learning 2.0 which supports a more social and collaborative approach to learning, a kind of social learning approach. One can differentiate E-learning 2.0 from early e-learning (E-learning 1.0), which was based on Web 1.0, simply by highlighting the main differences between Web 1.0 and Web 2.0 (See Figure1 and Figure 2):

Web 1.0	Web 2.0
read-only web	read-write web
content publishing	user-generated content
	social software

Figure 1 Web 1.0 v Web 2.0

E-Learning 1.0	E-Learning 2.0
online courses	sharing information and knowledge
	collaborative learning social learning
CONTENT	PEOPLE

Figure 2-E-learning 1.0 v E-learning 2.0

from What is social learning?

Generally speaking, E-learning 1.0 the focus is on using internet to copy the instructor-led experience; the content was designed to lead a student through the content, providing a wide and ever-increasing set of interactions, assessments. In other words, the users are consumers of information without generating or adding any new information. However, E-learning 2.0 by contrast is based on collaboration. It assumes that knowledge is socially constructed. Learning takes place through conversations about content and grounded interaction about problems and actions, (Brown and Adler, 2008: 16). In this way, the project of the TabulaDecimal uses E-learning 2.0 technologies in which employs common Web 2.0 tools such as social bookmarking, social networking, file sharing, blogging/RSS etc.

3 Definition and Analysis of the environment

3.1 Context analysis

This section is dedicated to present a brief description of the Faculty of Library Sciences and Documentation (Bid) of the University of Barcelona (UB) as the organization which supports the TabulaDecimal Lab 2.0 project; its objectives, mission and strategies as an institutional organization of the UB in the framework of the UB Horizon 2020 strategy.

3.1.1 Organization: Faculty of Library Sciences and Documentation

The Faculty of Library Sciences and Documentation of the University of Barcelona was established in August 1999 from the transformation of the School of Library Science and Documentation. Actually, it is the inheritor of an organization that was founded in 1915 and has appointed to the University of Barcelona since 1982, offering higher education in librarianship, documentation and archiving[7]. From the academic year of 2006-07 the faculty of Bid, with the collaboration of the "Communication Department" of the Pompeu Fabra University (UPF)[8], offers postgraduate studies under the new structure of university courses adapted to the European Higher Education Area (EHEA) calling the Official Master in Management of Digital Contents (GCD[9]). It is set in the framework of the faculty as a postgraduate education with full recognition, aimed at advanced academic training and professional specialization. The master of GCD adopts an eminently professional orientation and aims to train specialists in 'the organization of digital information and documentation for intranets', 'the design and structuring of web portals', 'the organization of digital libraries and documentation collections', and 'the creation of documentary products for publishing services'.[10]Regarding the objectives of master courses, it seeks to train specialists with the skills and techniques needed to implement projects from analyzing of the information environment of an organization to monitoring of project. Finally, the master courses are designed for students who wish to specialize in management of digital contents and professionals and to strengthen their knowledge of a particular area or move into an adjacent area of the same field[11].

3.1.2 Master Joint Committee

The Joint Committee of the master is the body responsible for the organizing, planning and running of the interuniversity master GCD. It is also responsible to analyze the

results which guarantee the quality of the master courses. Members of the committee are:

1. The general coordinator of the Master
2. The internal coordinators of each university
3. The committee secretary.

The major academic and administrative responsibilities of the committee are as follows:

A. Selection and admission of students.
B. Evaluation of applications and recognition of prerequisite credits in accordance with syllabus and master learning modules.
C. Establishing syllabus.
D. Analyzing the proposals of the coordinators of each university, in the admissions process, and to all admitted students.

3.1.3 Objectives of the Organization

Here there is a short review of the strategic objectives of the UB and the faculty of Bid as well as the informative objectives of master studies of GCD which leads one to motivations and objectives a project like TabulaDecimal; a project in improving the quality of learning as well as strengthening the relationship between teaching and investigation.

3.1.3.1 The Framework Plan Horizon 2020 and Strategic objectives of the Faculty of Bid

In the framework of the University of Barcelona calling “Plan Horizon 2020” there are two fundamental strategic objectives:

1. To promote the recognition of the UB at the international and European levels as a highly productive research institution offering a range of international postgraduate programs.
2. To consolidate and extend the university's commitment to society, to quality teaching for lifelong learning, and to the greater transfer of knowledge and technology (p.49).

In the second part of the Framework Plan Horizon 2020, it is proposed that the university should provide “the driving force for faculty and research staff to facilitate society’s engagement in lifelong learning, …[and] extend its involvement in community activities …to assume a more important role in the creation of social opinion and to provide thrust for teaching practices which combine academic learning and learning through community service, and which promote culture. Moreover, it focuses on the use of “ITs and documentation technologies” in the processes of monitoring, evaluating and

improving teamwork. For the UB, it is fundamental to support “the units and offices serving the University’s learning and teaching activities to harness and integrate IT resources and coordinate their use in both initial and lifelong learning” (p.22-27).
In March 2008, the Faculty of Bid presented its Strategic Plan with the motto of "2010, Facultat 2.0" responding to the request of the Vic-presidency of the Academic Policy and European Convergence (VPA) of the UB. The major idea of "2010, Facultat 2.0" comes from Web 2.0 and internet services in higher education environment, both social and technical nature to the students as academic Internet users.

3.1.3.2 Objectives of Master in Management of Digital Contents (GCD)

Academic objectives of the master course focus on helping the students and participants in the following activities:

1. Analyzing and evaluating information needs and documentation for the creation of digital products and services on the web.
2. Acquiring a working methodology for the design and planning of digital products and services.
3. Knowing and use of computer applications for the creation and development of digital products and services.
4. Establish and implement indicators for the evaluation of digital products and services.

3.2 Definition of the TabulaDecimal project

We have become familiar with organization in previous sections. This part deals with the strategy objective, motivation, objectives, SWOT analysis and the methodology used in TabulaDecimal.

3.2.1 The strategy Objective in TabulaDecimal

In the Strategic Plan, in a very limited sense, the Faculty developed the proposal of ‘a contract teaching-academic program of the Faculty for 2007-2008’, divided into two areas: the academic and teaching. The Draft no. 3 (26/01/07) includes strategic objectives of methodology, teaching materials, evaluation of learning process and innovation, as one of the operational objectives; to institutionalize a teaching model based on the "Testbed based learning". One of the actions that linked to this objective and should be developed during the years (2007-2008) - is the focus of research, development and public relations into the professional world by providing teaching spaces for ‘the development of experiments’ and ‘tests’, ‘the presentation of products and services’. This is, undoubtedly, the fundamental objective of the project

TabulaDecimal, a virtual laboratory for the 'use', 'experimentation' and 'learning' of applications shared by students, faculty and Production companies/distribution applications. Even there are projects like a site calling Opensourcescms <www.opensourcecms.com> (for demos), W3school.com (for Testbed-based School) and cadius.org (for community experts) that have developed similar experiences.[12]

3.2.2 Motivations for TabulaDecimal Project

The faculty of Bid is one the faculties of the UB which participates in many activities, such as conferences, international seminars and lectures and expositions. There is a intranet for staffs and professors as well as a blog calling 'Mòbils bid'[13] a small community of students participating in summer training works abroad. All of these shows there is a good incitation and encouragement among them by either professors and administrative staffs or students. Experts believe that people are the best source of information, particularly on a new topic and the best places to find people who know about the topic are the communities that are organized around that topic (Morville and Rosenfeld 2006). Participation in such communities does not have any sense if it is obligatory, because volunteerism is the base for long life learning. Whereas more resources exist now and management in digital contents is still a young field so there is much room for growth and fortunately, TabulaDecimal may be able to provide much of the resources and infrastructure one needs to make it happen in an organization like faculty of Bid.

There are four motivations for doing TabulaDecimal Lab 2.0:

- To improve the orientation process in academic studies of Library Sciences and Documentation toward professional environment
- To institutionalize a learning-model based on the online "Testbed-based learning " concept as the fundamental objective of the project
- To create an online Testbed-Based Learning laboratory
- To create a knowledge community network using a variety of online communication tools to support the interactions among students and professors of the faculty on one hand and experts in professional world on the other hand to share their interest in the use, experimentation and innovation.

3.2.3 TabulaDecimal Lab 2.0 Objectives

TabulaDecimal is based on four major objectives[14]:

- To identify, categorize and describe the digital content management programs that are used in different subjects in the Master in Management of

Digital Contents (GCD) as well as Bachelor's Degree in Information and Documentation since 2010.

- To integrate all selected software applications with teaching activities and incorporate related information and communication resources for individual and group to elaborate on the application software learning activities.
- To improve learning process through direct access to installed software and learning tools used is professional level.
- To promote the exchange of knowledge and experience through TabulaDecimal among three target groups.

3.2.4 The project SWOT analysis

I have employed SWOT analysis as my strategic planning method to evaluate and specify the objectives and identify the internal and external factors relating to goals of the TabulaDecimal. (See Figure 3 and Figure 4)

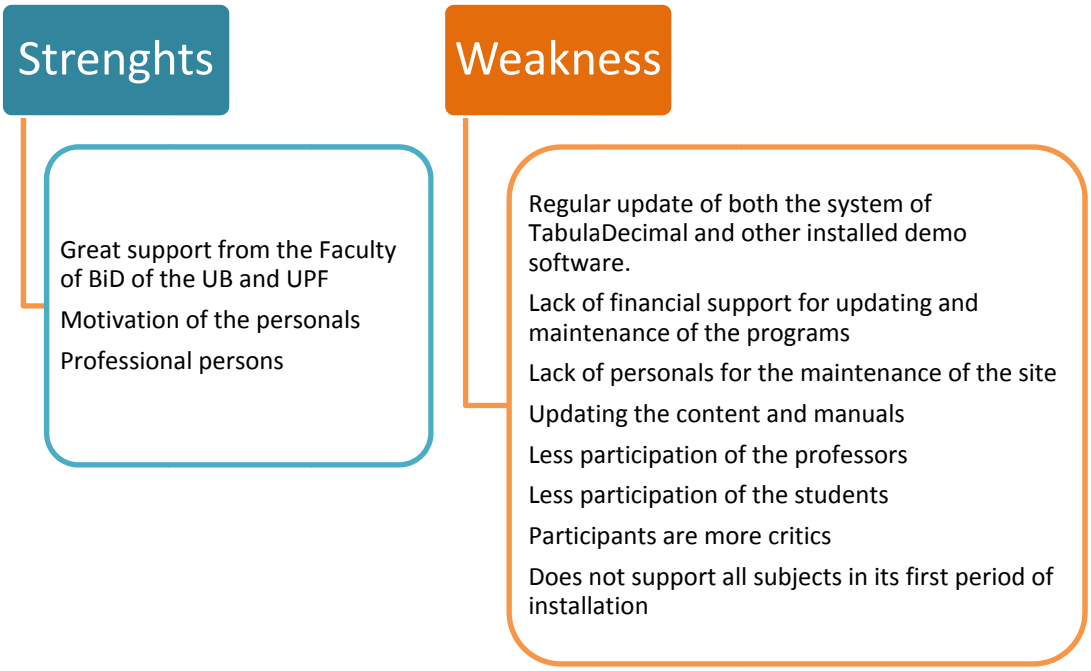

Figure 3 SWOT Internal factors

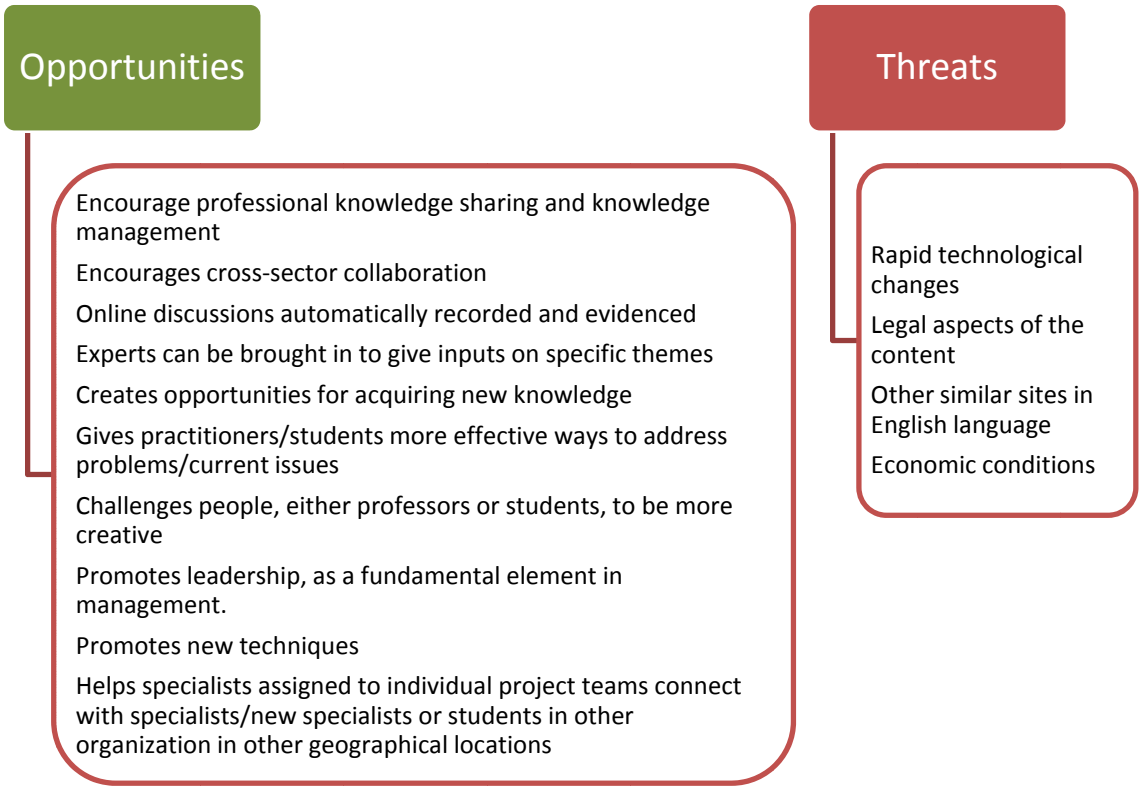

Figure 4 SWOT External factors

3.2.5 Methodology

The methodology in the project is a "user-centred approach". To do so the design plan of the project is based on the needs of the users. Firstly, the project manager staffs the project team "Staffing the project in Phase I" (see page 3), in this phase the project manager explains the essential jobs and tasks for each team member of the project. There is a research process to identify users' needs "Users Needs Analysis in Phase II (see page 41). This phase is based on the elicitation of users' needs and done by direct data gathering method. Deliverables of this phase will be user needs summary, user scenarios, business requirements and functional requirements.

After a scan of available products, preferably open source products, in system selection phase (see phase II on page 57) the technical requirements and its integration with selected system is studies. After selection of the products for the system there are six workpackages concerning the design and the content of the TabulaDecimal as virtual lab based on Web 2.0. (see phase IV on page 59). Deliverables of the "Content and Architecture" phase are information and technical architecture as well as taxonomies for contents and navigation system of the lab.

In the implementation phase V (see page 64) the selected system will be installed in one of the serves. Throughout of the phase the technology persons will set up all selected modules and application according to the needs of the users. This team also creates group workspaces and configure the interface of the system.[15] All findings and results of the "Content and Architecture" phase are used in the "Implementation" phase. "Implementation" phase consists of fourteen workpackages.

In the appendixes there are documents concerning timescales and duration of each workpackage in the project. (see page 88) The last phase of the project, "Evaluation" is planed to be done after one year. Project will be staffed with Project Manager, Content Persons, Publication Person and Technology Persons.

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[1] I have found out that TabulaDecimal team project would have the aportiunity of using the faculty of Bids Intranet
[2] bachillerato radiofónico
[3] Centro Nacional de Enseñanza Media a Distancia
[4] Instituto Nacional de Bachillerato a Distancia
[5] Centro para la Innovación y Desarrollo de la Educación a Distancia
[6] In Spanish Educacion Virtual, Aprendizaje Virtual etc.
[7] (Decree 226/1999 of the Generalitat de Catalunya, 27 July, DOGC, 9 August) for more information see A short history of the Faculty in Resum històric <http://www.ub.edu/biblio/introduccio/resum-historic.html>
[8] Communication Department of the Pompeu Fabra University <http://www.upf.edu/decom/>
[9] In Catalan is Màster oficial en Gestió Continguts Digitals (GCD)
[10] <http://www.ub.edu/biblio/mgcd.html >

[11] General information concerning Master in Management of Digital Contents at the University of Barcelona “Información general”<http://bd.ub.es/gcd/index.php/informacion-general>
[12]Applicaton form of financial support for AGAUR prepared by Josep Manuel Rodriguez Gairin in 2007.
[13] Mòbils bid :<http://mobilsbid.blogspot.com/>
[14] The AGAUR application
[15] I have found out that TabulaDecimal team project would have the aportiunity of using the faculty of Bids Intranet

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4 A Learning Community Model for TabulaDecimal Lab 2.0

This section deals with the project of TabulaDecimal as virtual laboratory and its role in virtual learning process of the student of master in the faculty of the Bid. Moreover, there are general characteristics of TabulaDecimal as an online learning community where professor's role is going to change to a guide/facilitator role.

4.1 Users interaction with TabulaDecimal and other members

The UB Virtual Campus of the University of Barcelona is a virtual campus powered by an open source Learning Management System (LMS), Moodle, which permits professors and students to be able to communicate with each other. See Figure 5 and Figure 6 to have a general overview of the position of UB virtual campus and the TabulaDecimal.

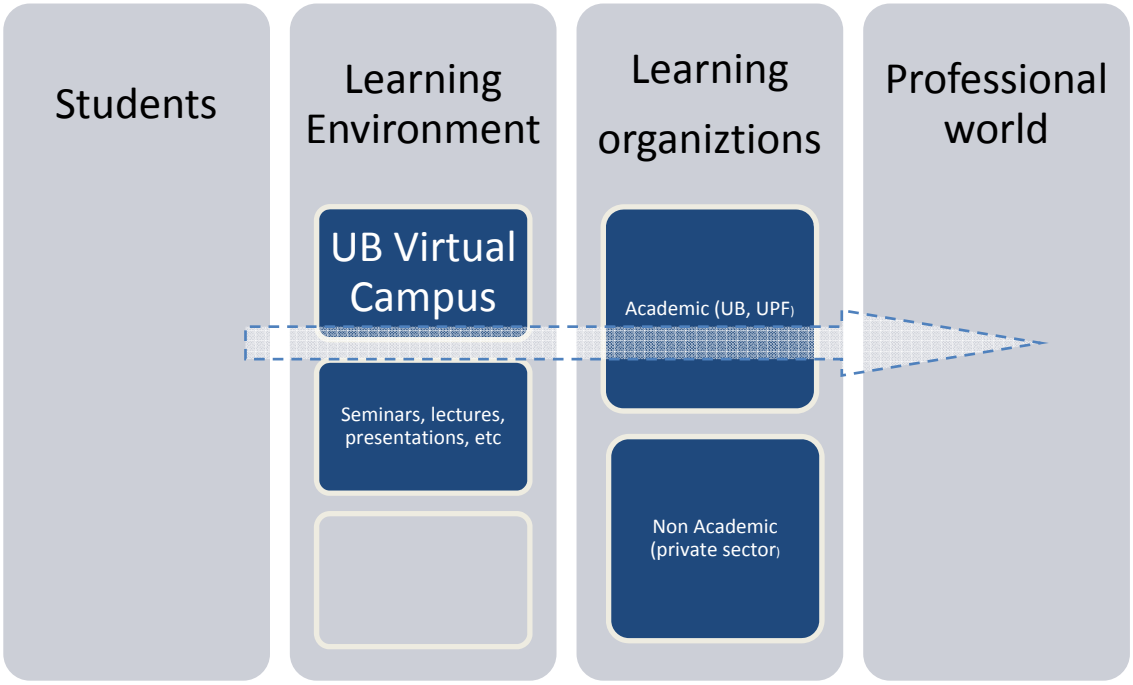


Figure 5 Learners interaction with Learning system and professional world BEFORE the installation of TabulaDecimal

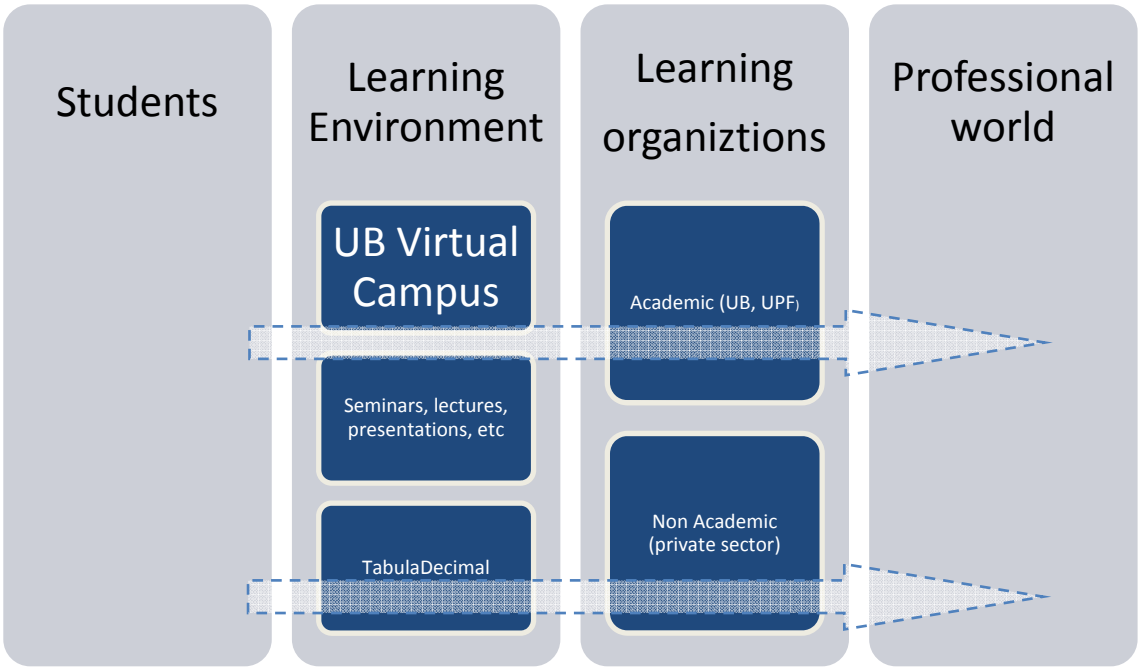


Figure 6 Learners interaction with Learning system and professional world AFTER the installation of TabulaDecimal

These figures show how students as members of the TabulaDecimal interact with the academic and non-academic organizations and institutes. However, there is no access to UB Virtual Campus for non-academic sector. Its relation with the UB Virtual Campus will be a complimentary role. In other words, access to virtual space of TabulaDecimal is not limited to each academic year like UB Virtual Campus. The students have the opportunity to interact with the private sector in a virtual space directly. The private sector has the opportunity to see, participate and interact in an online virtual learning community of future experts.

4.2 TabulaDecimal a Learning Community

TabulaDecimal Lab 2.0 is based on three main concepts of sharing, experimentation and innovation. Below there are major characteristics of TabulaDecimal as a virtual laboratory and community:

- Encourages professional knowledge sharing and knowledge management among students and academic and professional experts
- Encourages multi-professional working.
- It will be a virtual place to discuss related to effective daily practices; improved productivity and services; and enables community members to work more efficiently at lower cost.
- Encourages cross-sector collaboration.
- Supports online discussions automatically recorded and evidenced.
- Facilitates that experts can be brought in to give inputs on specific themes.
- Provides flexibility in time, pace and place.

- Creates opportunities for acquiring new knowledge.
- Gives practitioners/students more effective ways to address problems/current issues.
- Challenges people, either professors or students, to be more creative and innovative.
- Promotes leadership, as a fundamental element in management in master GCD.
- Free collaborative activities of TabulaDecimal promote new techniques.
- Facilitates specialists assigned to individual project teams connect with specialists/new specialists or students in other organization in other geographical locations

4.3 A shift from "tutor" to "facilitator" in TabulaDecimal

The TabulaDecimal project would help to change the roles of trainers, facilitators, experts and project leaders in the academic learning process of the faculty as public organization. Nowadays, the attitudes towards tutors, trainers, leaders or experts is changed, in other words, the function that they perform within a learning community like TabulaDecimal is redefined. It leads remove some barriers to learning imposed by traditional hierarchical structures. Here there is Goodyear's argument in the following table (in Lewis and Allan 2005):

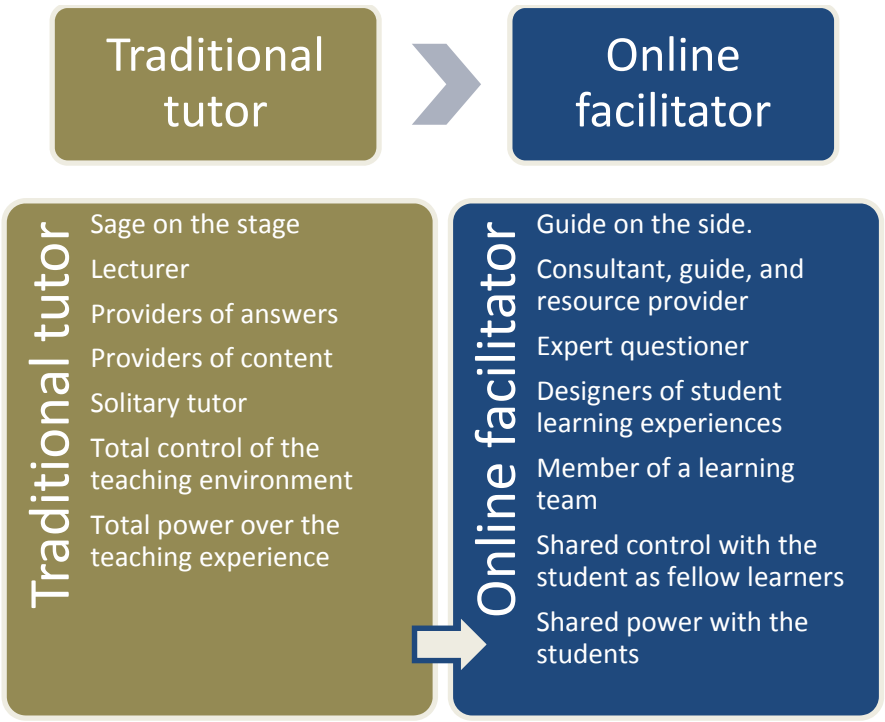


Figure 7 shift from tutor roles to online facilitator roles

See The Project plan section 5.5.5 Types of users and figures 15 and 16 to become familiar with the role of facilitator in TabulaDecimal.

5 TabulaDecimal Project Plan

TabulaDecimal Lab 2.0 comprises six key phases and each phase includes workpackages and tasks.

1. Staffing the Project
2. Users Needs Analysis
3. Content and Architecture
4. Implementation
5. Evaluation and Assessment

In this section there are three documents the millstones, timescales and Gantt chart.

5.1 Milestones of the project

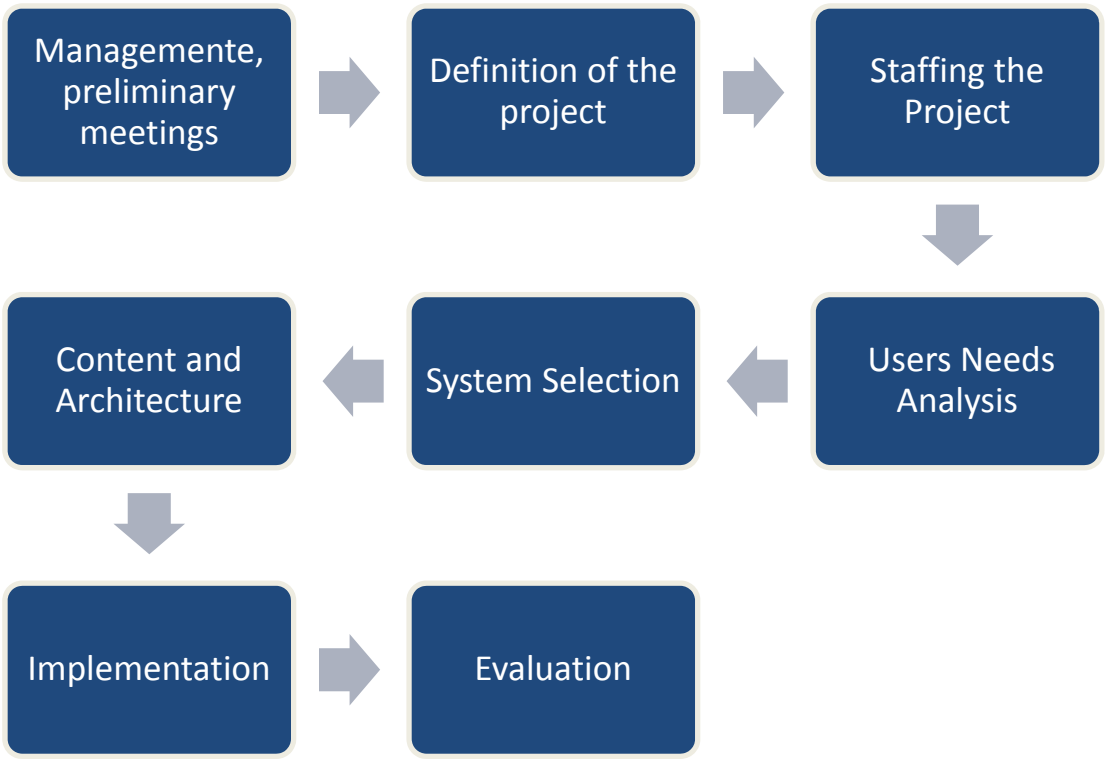
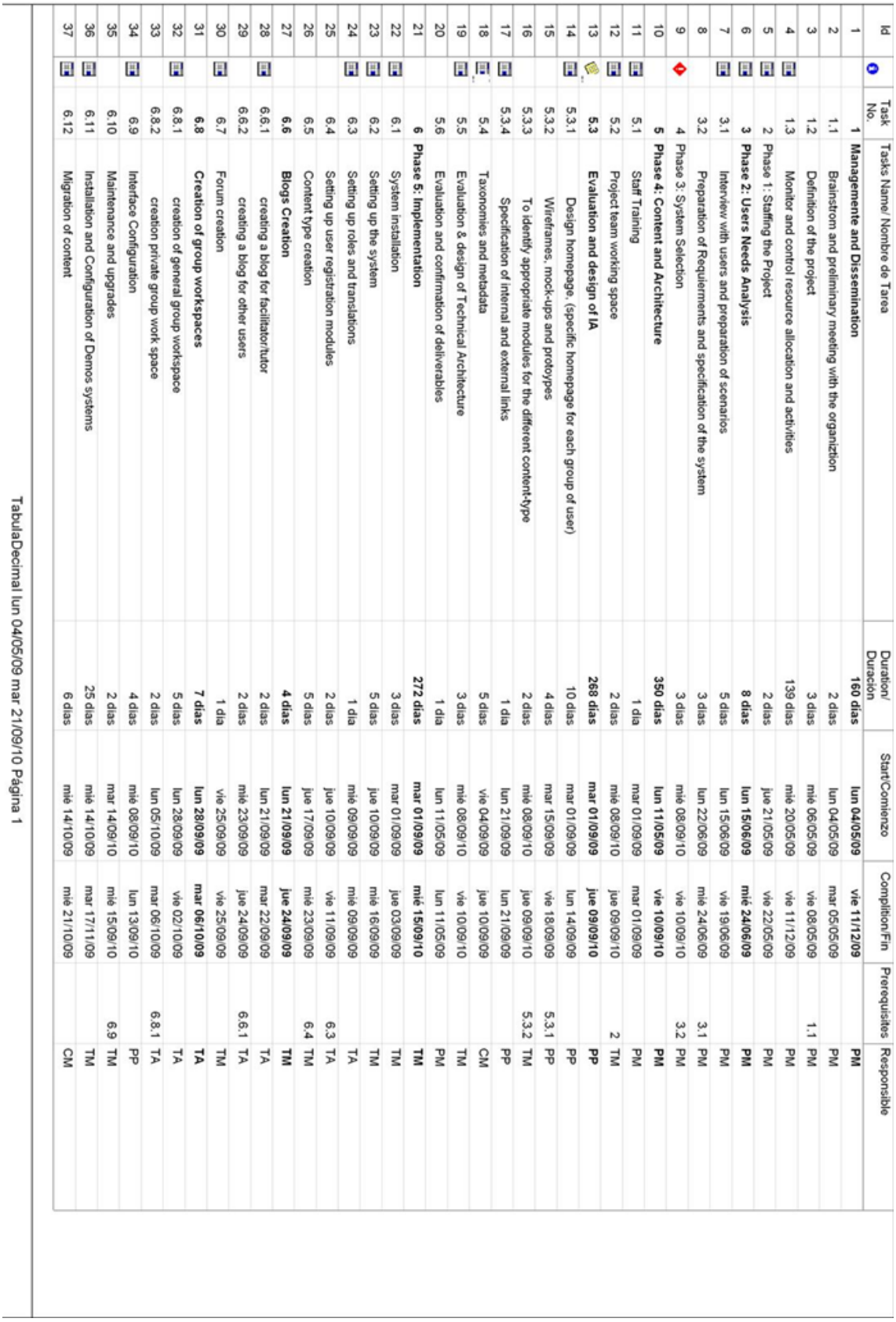


Figure 8 5.1 Milestones of the project

5.2 Timescales and project effort



Id	Task No.	Tasks Name/ Nombre de Tarea	Duration/ Duración	Start/Comienzo	Compltion/Fin	Prerequisites	Responsible
1	1	**Managemente and Dissemination**	**160 días**	**lun 04/05/09**	**vie 11/12/09**		**PM**
2	1.1	Brainstrom and preliminary meeting with the organization	2 días	lun 04/05/09	mar 05/05/09		PM
3	1.2	Definition of the project	3 días	mié 06/05/09	vie 08/05/09	1.1	PM
4	1.3	Monitor and control resource allocation and activities	139 días	mié 20/05/09	vie 11/12/09		PM
5	2	Phase 1: Staffing the Project	2 días	jue 21/05/09	vie 22/05/09		PM
6	3	**Phase 2: Users Needs Analysis**	**8 días**	**lun 15/06/09**	**mié 24/06/09**		**PM**
7	3.1	Interview with users and preparation of scenarios	5 días	lun 15/06/09	vie 19/06/09		PM
8	3.2	Preparation of Requierments and specification of the system	3 días	lun 22/06/09	mié 24/06/09	3.1	PM
9	4	Phase 3: System Selection	3 días	mié 08/09/10	vie 10/09/10	3.2	PM
10	5	**Phase 4: Content and Architecture**	**350 días**	**lun 11/05/09**	**vie 10/09/10**		**PM**
11	5.1	Staff Training	1 día	mar 01/09/09	mar 01/09/09		PM
12	5.2	Project team working space	2 días	mié 08/09/10	jue 09/09/10	2	TM
13	5.3	**Evaluation and design of IA**	**268 días**	**mar 01/09/09**	**jue 09/09/10**		**PP**
14	5.3.1	Design homepage. (specific homepage for each group of user)	10 días	mar 01/09/09	lun 14/09/09		PP
15	5.3.2	Wireframes, mock-ups and prototypes	4 días	mar 15/09/09	vie 18/09/09	5.3.1	PP
16	5.3.3	To identify appropriate modules for the different content-type	2 días	mié 08/09/10	jue 09/09/10	5.3.2	TM
17	5.3.4	Specification of internal and external links	1 día	lun 21/09/09	lun 21/09/09		PP
18	5.4	Taxonomies and metadata	5 días	vie 04/09/09	jue 10/09/09		CM
19	5.5	Evaluation & design of Technical Architecture	3 días	mié 08/09/10	vie 10/09/10		TM
20	5.6	Evaluation and confirmation of deliverables	1 día	lun 11/05/09	lun 11/05/09		PM
21	6	**Phase 5: Implementation**	**272 días**	**mar 01/09/09**	**mié 15/09/10**		**TM**
22	6.1	System installation	3 días	mar 01/09/09	jue 03/09/09		TM
23	6.2	Setting up the system	5 días	jue 10/09/09	mié 16/09/09		TM
24	6.3	Setting up roles and translations	1 día	mié 09/09/09	mié 09/09/09		TA
25	6.4	Setting up user registration modules	2 días	jue 10/09/09	vie 11/09/09	6.3	TA
26	6.5	Content type creation	5 días	jue 17/09/09	mié 23/09/09	6.4	TM
27	6.6	**Blogs Creation**	**4 días**	**lun 21/09/09**	**jue 24/09/09**		**TM**
28	6.6.1	creating a blog for facilitator/tutor	2 días	lun 21/09/09	mar 22/09/09		TA
29	6.6.2	creating a blog for other users	2 días	mié 23/09/09	jue 24/09/09	6.6.1	TA
30	6.7	Forum creation	1 día	vie 25/09/09	vie 25/09/09		TM
31	6.8	**Creation of group workspaces**	**7 días**	**lun 28/09/09**	**mar 06/10/09**		**TA**
32	6.8.1	creation of general group workspace	5 días	lun 28/09/09	vie 02/10/09		TA
33	6.8.2	creation private group work space	2 días	lun 05/10/09	mar 06/10/09	6.8.1	TA
34	6.9	Interface Configuration	4 días	mié 08/09/10	lun 13/09/10		PP
35	6.10	Maintenance and upgrades	2 días	mar 14/09/10	mié 15/09/10	6.9	TM
36	6.11	Installation and Configuration of Demos systems	25 días	mié 14/10/09	mar 17/11/09		TM
37	6.12	Migration of content	6 días	mié 14/10/09	mié 21/10/09		CM

TabulaDecimal lun 04/05/09 mar 21/09/10 Página 1

Figure 9 Timescale and project effort I

Id	Task No.	Tasks Name/ Nombre de Tarea	Duration/ Duración	Start/Comienzo	Completion/Fin	Prerequisites	Responsible
38	6.13	Tuning and Quality Assurance	3 días	mié 08/09/10	vie 10/09/10	PM	
39	**6.14**	**Users of guides**	**7 días**	**mar 05/01/10**	**mié 13/01/10**	**PP**	
40	6.14.1	Guide for back-end	5 días	mar 05/01/10	lun 11/01/10	PP	
41	6.14.2	Guide for front-end	3 días	lun 11/01/10	mié 13/01/10	TM	
42	7	Evaluation and Assessment	10 días	mié 08/09/10	mar 21/09/10	PM	

TabulaDecimal lun 04/05/09 mar 21/09/10 Página 2

Figure 10 Timescale and project effort II

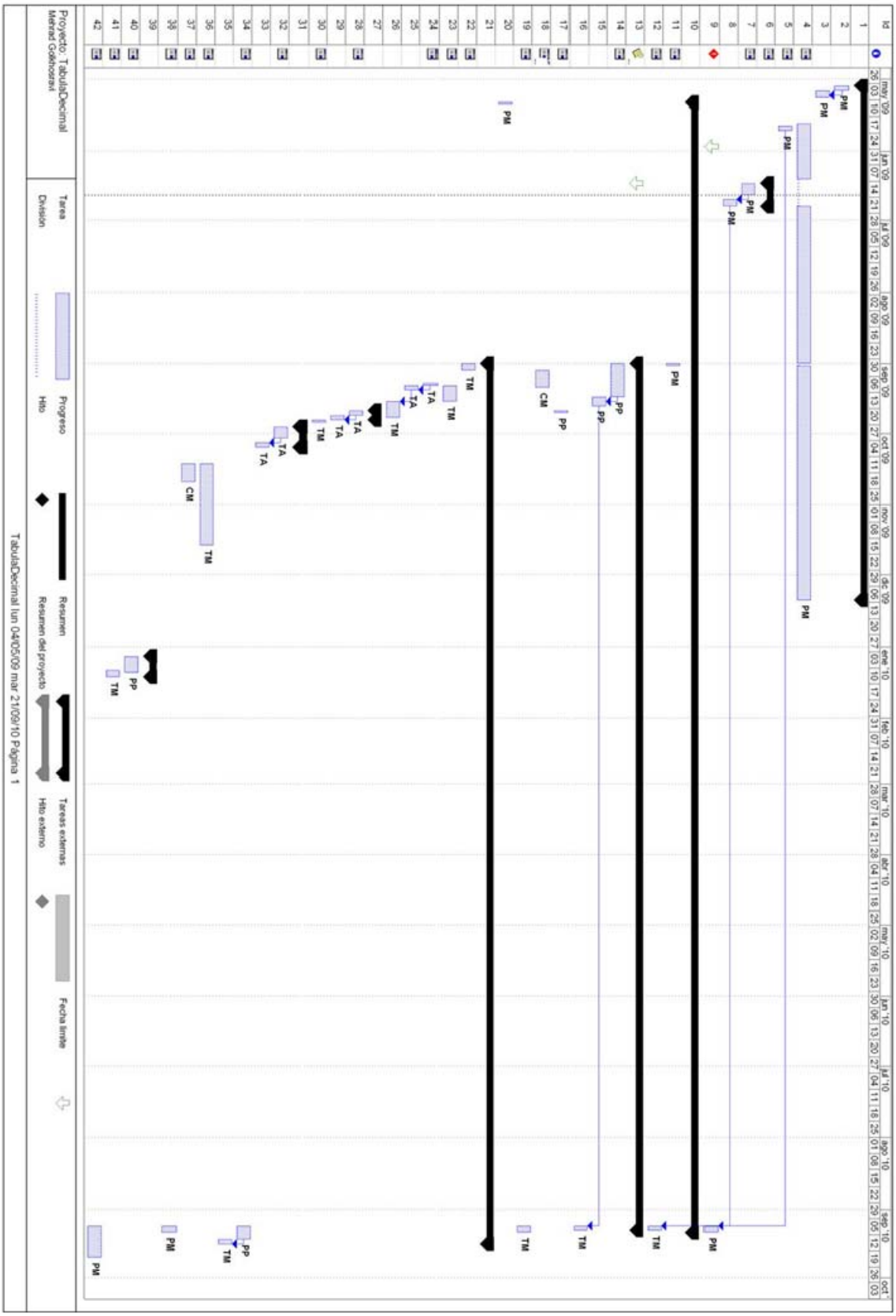


Figure 11 Gantt chart

5.3 Phase I: Staffing the Project

The major problem, particularly in present critical economic situation, is money. However, we need the staff members to accomplish certain key tasks. This part deals with the essential jobs and tasks of the people we need for TabulaDecimal project. It is clear before starting any activities it should be clear that:

- Who has the power to authorize the creation of a page?
- Who creates the text on the page?
- Who creates the images?
- Does anyone proofread the page? (Who?)
- Does anyone verify the page's correctness? (Who?)
- Who designs the page?
- Who approves the design?
- Who is responsible to insert the text into the system?
- Does anyone have to verify or approve the page before it goes live? (Who?)
- Who puts it on the live web server?
- Does anyone check the page once it's live? (Who?)
- Does any body installs documental and information software in the serve? (Who?)

To do so I have proposed four major responsibilities for each phase: management, content management, information architecture and interface and finally technical issues. In the following figure, you can see the project management structure.

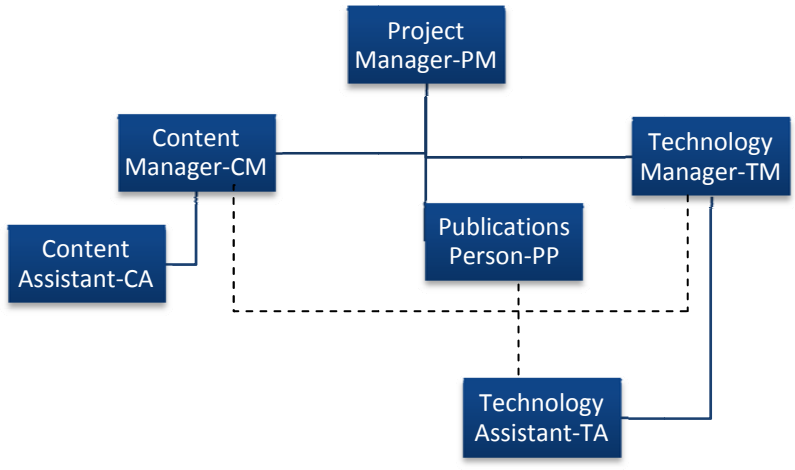


Figure 12 Project Management Structure

———: direct management relation
- - - - - - -: indirect relation; collaboration by cases

5.3.1 The Project Manager

He is the ultimate authority for the project collaborating with the faculty on one hand and with other responsible of the project the other hand. Actually, he is the link between the faculty and its goals and the project and its goals. He justifies any activities in the project; having the authority to answer the fundamental questions such as: “how long it takes to finish this phase?” and “why are we doing this?” Then from the start-up planning process of the project, his participation is essential. After the project is ready for implementation, he becomes responsible for doing major changes to the system and ensuring that the lab continues to fulfil the needs of the faculty as the major sponsor of the project. He is the one who analyses the situation both the system and its link with the faculty to run the project. It is recommended that the coordinator of the Master studies with the help of the commission of the master choose one of the professors of master as an appropriate project manager.

The project manager does the following tasks:

- Establish the organizational goals for the project.
- Manage the project staff
- Manage the budgets; it is the business side of organizing resources for the project.
- Collaborating mostly during the start-up phase.
- Create and enforce the project plan
- Collaborating after the system is up and running. Doing the user needs analysis

5.3.2 The Content Persons

They are responsible for any digital content publishing in TabulaDecimal. They do the core work of understanding the content and collecting it. The content persons will handle much of the collection work, as well as the construction of the content model itself. Their tasks are as follows:

- Create the collection planning and activities. This includes any authoring, conversion, and tagging needed.
- Create the appropriate content model for the system. They define what is in the system and how it is structured.
- Administer the system during deployment and while it’s up and running. They have a close collaboration with the technology persons in this responsibility.
- Creating and maintaining the metadata and tagging taxonomy for content in the system, as well for as new content that comes into it. They have to ensure that the applied metadata to incoming content is complete and consistent.
- To manage content creation staff if is needed such as content analyst, content processor.

- The first content person is Content Manager (CM) and the second person is considered as Content Assistant (CA) in the project.

5.3.3 The Publications Person

He is the one how knows the publications that will produced in the TabulaDecimal. The Publication Person (PP) covers all design tasks for all the publications and works closely with the technology person to create output interface and templates.

- Doing interface and output design. He works with the content person and others within the faculty to determine what the publications should consist of.
- Designing the required publications based on the content. Additionally, he does graphic design and layout tasks and, in general, establishes the publication standards and schedules. He builds the output templates with the technology person.
- Providing the output document specifications that the technology person executes. He tests the work of the technology person to identify problems and bugs. He is the chief editor of all the publications at runtime.
- Making sure the system is publishing the correct content on an ongoing basis and identifying problems that may originate in any stage of the collection, management, or publishing processes.

5.3.4 The Technology Persons

They determine technical requirement and suggest appropriate content management system (CMS) software for the project. They have to have enough experience in the selected system. They connect and support the content and publications persons. In TabulaDecimal the responsibilities of the technology persons are as follows:

- Responsible for all necessary infrastructures, including acquiring and configuring hardware and software. In particular, the technology persons select, install, and configure the selected system for TabulaDecimal.
- They select, install and configure the software applications as demo systems. They work closely with the Content Person in this responsibility.
- Responsible for all programming, including any programming needed for content processing, implementing the content model, creating functionality not provided by the software system and templates.
- Responsible for all connectivity, meaning that they must ensure that the system is able to get content from other systems within the faculty and outside of it.
- They assist in administering the TabulaDecimal system after rollout, essentially handling any technical issues that are beyond the expertise of the content person or the publications person.
- Technology persons are Technology Manager (TM) and Technology Assistant (TA) of the project.

There is a list of all participants in the project:

1. Project Manager (PM)
2. Content Manager (CM)
3. Content Assistant (CA)
4. Publication Person (PP)
5. Technology Manager (TM)
6. Technology Assistant (TA)

5.4 Participation of staffs during the project

The following graphic (figure 15) shows the percentage of the participation of staffs throughout the project. Technology Assistant dedicates more time than the rest of the group particularly in Implementation phase. His dedication is nearly 47 percent.

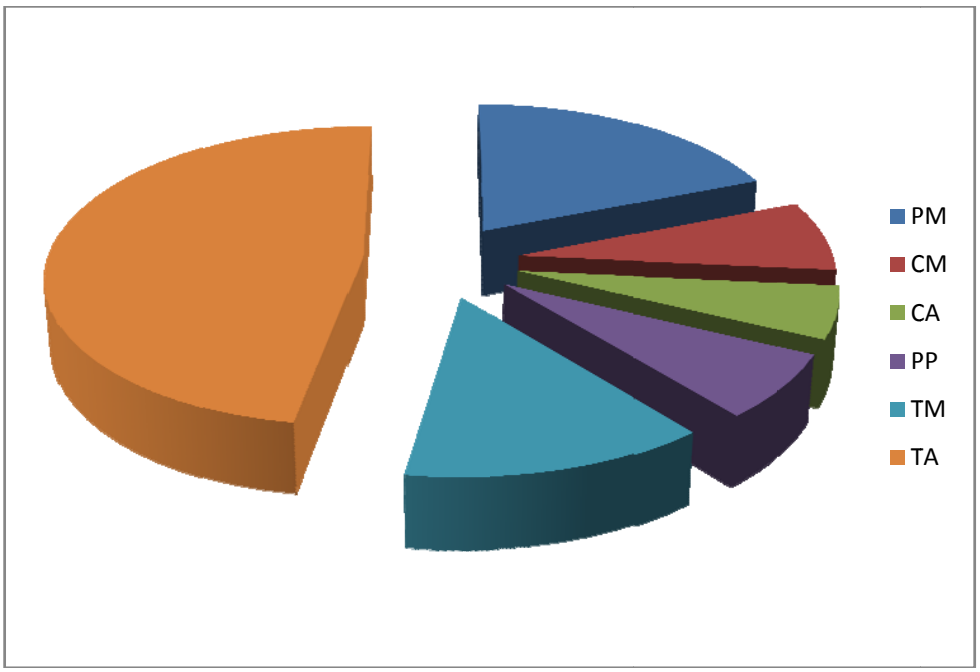


Figure 13 Participation staff during the project

See implementation Phase (V) for more details of each staffs tasks.

5.5 Phase II: Users Needs Analysis

5.5.1 At the beginning

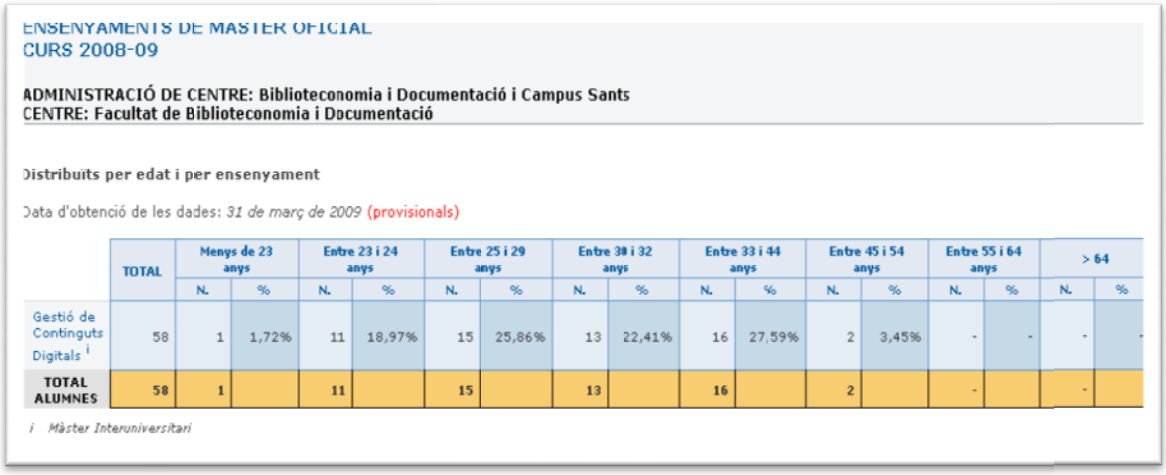
The purpose of the analysis is to study and describe the issues, themes and common areas of concern that users may experience when trying to access resources at TabulaDecimal. The major part of the analysis is based on scenario-based analysis. For some experts such a method calling Scenario-based User Needs Analysis (SUNA) is focused on elicitation and analysis of users needs "encapsulated in day in the life of" type scenarios and the management of collaboration (Helvert and Fowler: 2003), two fundamental key concepts in the project of TabulaDecimal.

5.5.2 Who are the users?

At first, it seems that there would be many different types of users attending the master courses. However, it seems impossible to provide a list of all the different types of user and their resources requirements. The students of the faculty of Bid have had access to virtual campus of the since the 2006-07 academic year when the system was installed as pilot. It means that the faculty has the experience of virtual learning for nearly more than two years. On the other hand, the admission requirement for the official Master in Management of Digital Contents is holding one of the following qualifications[1]:

- Degree in Documentation,
- Diploma in librarianship and Documentation, (students should do some prerequisite subjects)
- Degree in Audiovisual Communication,
- Telecommunications Engineering
- Computer Engineering.
-

The required qualilification shows that candidates who have some knowledge and skills in the management of digital contents either gained professionally or on training courses run in/outside the university. Statistics shows there more new students studying the inter-university, UB-UPF, master studies. According to the "Organització i Atenció a Estudiants i Centres" of the UB at the moment there 58 registered student studying the master GCD, 39 women and 19 are men. Majority of users are between 23-44 years all, but the percentage of the students between 33-44 years old is higher than the rest. (see Table 1)



ENSENYAMENTS DE MÀSTER OFICIAL
CURS 2008-09

ADMINISTRACIÓ DE CENTRE: Biblioteconomia i Documentació i Campus Sants
CENTRE: Facultat de Biblioteconomia i Documentació

Distribuits per edat i per ensenyament

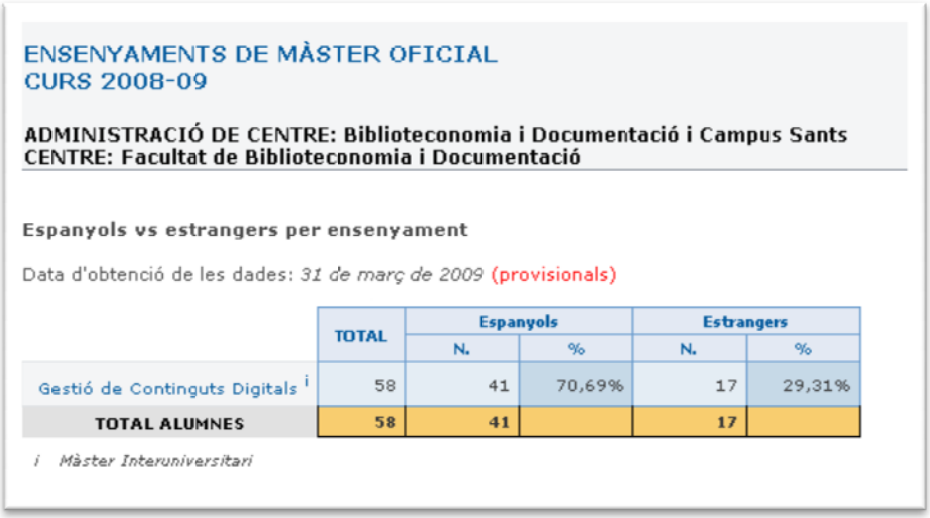
Data d'obtenció de les dades: *31 de març de 2009* (provisionals)

	TOTAL	Menys de 23 anys		Entre 23 i 24 anys		Entre 25 i 29 anys		Entre 30 i 32 anys		Entre 33 i 44 anys		Entre 45 i 54 anys		Entre 55 i 64 anys		> 64	
		N.	%	N.	%	N.	%	N.	%	N.	%	N.	%	N.	%	N.	%
Gestió de Continguts Digitals [i]	58	1	1,72%	11	18,97%	15	25,86%	13	22,41%	16	27,59%	2	3,45%	-	-	-	-
TOTAL ALUMNES	**58**	**1**		**11**		**15**		**13**		**16**		**2**		**-**		**-**	

i Màster Interuniversitari

Table 1-Average ages of master students from: Estadística estudiants - ensenyaments adaptats a l'espai europeu < http://www.ub.es/acad/dades_academiques/estadistiques/master.php?F=5>

The statistics shows nearly each of three students is coming from abroad. In other words, the master studies are international studies, students from various countries with different cultures and languages such as Brazil, Venezuela, Colombia, Chile, Mexico and Iran. This language need, should be considered in localization of CMS of TabulaDecimal.



ENSENYAMENTS DE MÀSTER OFICIAL
CURS 2008-09

ADMINISTRACIÓ DE CENTRE: Biblioteconomia i Documentació i Campus Sants
CENTRE: Facultat de Biblioteconomia i Documentació

Espanyols vs estrangers per ensenyament

Data d'obtenció de les dades: *31 de març de 2009* (provisionals)

	TOTAL	Espanyols		Estrangers	
		N.	%	N.	%
Gestió de Continguts Digitals [i]	58	41	70,69%	17	29,31%
TOTAL ALUMNES	**58**	**41**		**17**	

i Màster Interuniversitari

Table 2- Nationality of master students from: Estadística estudiants - ensenyaments adaptats a l'espai europeu < http://www.ub.es/acad/dades_academiques/estadistiques/master.php?F=5>

5.5.3 Three Personas for TabulaDecimal

There are three personas for people who might use TabulaDecimal in the near future:

- Persona A: an Area and marketing Manager of a company
- Persona B: a student of Master in Management of Digital Contents
- Persona C: a professor of the Faculty of BiD

Here is a persona for an area and marketing manager of an imaginary company, BcnDigiDoc, collaborating with the BiD faculty and might be a potential user of TabulaDecimal in the near future[2]:

---

[1] Here one can find general information about master courses at the UB and UPF <http://www.giga.ub.edu/acad/pops/jfitxes/1/M0J04.php>

[2] The idea of preparing personas is taken from The Content Management Handbook by Martin White p. 36-39. In this book the technique is used to prepare as an essential study creating information architecture through personas. I have used http://www.usability.gov/templates/ for some guidelines and examples of fictional persons.

Persona A

Xavier Gonzalez Perez i Puig

BcnDigiDoc Area and Marketing Manager

- 40-years-old
- Married, 2 children and lives in Sabadell
- Master in Information and Communication Technologies (ICTs)
- Very comfortable using a computer, advanced internet user, with high-speed connection at work and DSL at home for him and his family.
- Uses email extensively; uses the web about more than 2 hours a day
- Member of delicious social networking
- Speaks English and French perfectly
-

Xavier spends most of his time at work requesting and reviewing new offers from companies who need to find design solutions for their digital business environment from the perspective of usefulness and easiness. Last year he was collaborated with the faculty of BiD at the University of Barcelona presenting some seminars concerning “Infrastructure service Management in Spain” and “Enterprise Content Management in Cataluña”. He is very interested in to receive new feedbacks for their new products. He tries to stand out for the social commitment of his company while he collaborates with academic and no profitable organizations and participants in educational and research programs.

He uses email extensively at work and uses the web on average about 2.5 hour a day to do quick fact checking and research and find out about new developments. Actually, he finds he is relying more on the web to provide him with quick and easy access to timely information. He looks for recently graduated students of universities to offer the short-time projects for the companies, which are collaborating with BcnDigiDoc. For him, BcnDigiDoc is the national leader in solutions for the enterprise management content to facilitate companies in access and use of internet and on-line services.

Tasks:

- attends and performs briefings
- prepares economic analysis for committee members and staff
- oversees contractors assisting with research and with creating and maintaining emergency preparedness programs
- attends in some seminars and master defences

Informational and Practical Goals:

- To understand which programs and software are being used and taught in academic level
- Having access to manuals and authentic materials for some of open source products; particularly, in Spanish and Catalan.
- Shares his experience with other experts particularly in recent academic methodologies
- Seeks recent developments and publications in area of interest
- Looks for potential new experts for future projects of in BcnDigiDoc

The second persona is a student of master:

Persona B

Marisa Machado

Student of Master in Management of Digital Contents

- 31-years-old
- Single, from Brazil and lives in Barcelona
- Bachelor degree in Documentation
- Comfortable using a computer, advanced internet user, DSL connection at home.
- Uses email extensively; uses the web about more than 1.5 hours a day
- Member of Facebook social networking
- Speaks English and Spanish perfectly and started Catalan course in the centre.
-

Marisa works in the Centre de Cultura Contemporània de Barcelona (CCCB). She works for the register and conservation unit as a part-time job. She spends most of her time giving support in digitalizing documental materials for the centre and also helps people in selection of books and electronic recourses.

She has started the master because she would like to strength her knowledge in the management of digital content in general and digital repository systems and management of electronic records in particular.

She likes playing chess online in her free time. Sometimes she goes to the UB sports club to play tennis.

Tasks:

- doing master works
- digitalizing material in her work
- helping people in selection of e-resources

Informational and Practical Goals:

- To have access to manuals and authentic materials relating to subject in master
- To develop her skill in digital content management
- Testing various systems and programs during the course
- Shares her experience with other students and ex-students
- To communicate with non-academic experts
- Looks for future job opportunities
- Not to have to spend too much time doing the research because her life is hectic and she has a lot of outside interest

The third persona is a professor of master studies in the faculty:

Persona C

Maria Teresa Anglada

Professor of the Faculty of Information Sciences and Documentation

- 43-years-old
- Married, a son and lives in Barcelona
- PhD in Philosophy of Information and Communication
- Senior lecturer in the Bid faculty of the UB and collaborates with Universitat Autonoma de Barcelona (UAB) and Universitat Oberta de Catalunya (UOC)
- Very comfortable using a computer, advanced internet user, with high-speed connection at work and DSL at home.
- Uses email extensively; uses the web about more than 2 hours a day
- Member of Cadius social networking experts' community in information architecture and Web design and also a member of "Information Architecture Institute" community in the US http://iainstitute.org
- Speaks French and English perfectly
- She participates in international conferences on information architecture in web and virtual community.

Maria Teresa started working at the UB as the Programme Director for Work-Based Learning programmes for PAS and her research interest is focused on the potential of e-learning to improve practice in the academic workplace. She works with other professors from other departments and universities on a number of projects in the public and private sector as well.

Maria Teresa collaborates with the faculty of BiD at the UB in three subjects of "Elaboració i gestió de projectes", "Estadística aplicada a la recerca en informació i documentació" and "Organització i representació". She uses email extensively and uses the web on average about 2 hour a day to do quick fact checking and research and find out about new investigations. Actually, she finds she is relying more on the web to provide her with quick access to information. She looks for new ideas for future investigation. Now, she is writing a book about virtual learning and teaching in library and information sciences and EU universities "Educación virtual en Bibliotecomoia y Documentación y las universidades Europeas". In her spare time she enjoy mountain climbing and fishing in the rivers with her family in Puigcerdà at weekends.

Tasks:

- attends and performs national/international conferences and seminars
- prepare teaching material and revising them each year such slides, web-based learning materials and articles etc
- writes academic papers concerning information architecture and electronic management systems in information and documentation
- attends in master and PhD thesis defences as a member of tribunal

Informational and Practical Goals:

- Seeks recent developments and publications in area of interest

• Shares learning material with other professors and experts • Not to have to spend too much time doing the installation and technical issues because she has a lot of things to do • To do investigations on online learning community in higher education • Shares her experience with other experts particularly in recent academic methodologies • Improve her teaching quality • New investigation projects and new ideas

5.5.4 Writing Scenarios

It is intending that part of the user needs analysis would include developing scenarios of representative students and future users of the TabulaDecimal, but it is not possible to do so at this stage of the project. The ideal methodology is preparing questionnaires to study the interaction level of students and professors with similar learning communities, particularly Virtual Campus UB, which would lead us to statistical information for understanding needs of the users. This was due to being cost-effective and time-consuming process. Therefore, it is decided to have some interviews with three potential types of users; students, professors and people from private sector to prepare three generic scenarios for each group. It may be useful at some later stage to develop specific scenarios for each major group of users to describe the users' needs.

Here there are items that mentioned by the interviewers that are going to bear on the design and operation of the TabulaDecimal in organizing contents and Implementation phase:

- What information would they expect from a laboratory like TabulaDecimal, considering objectives?
- Their commitment and participation in the laboratory
- The compromise of professors/facilitators in the Faculty of BiD, this may include major stumbling block to development of the TabulaDecimal

5.5.4.1 Scenario A: An ICT Businessman and Innovating the Work

Xavier Gonzalez Perez i Puig
Xavier Gonzalez Perez i Puig has heard that the Faculty of Library Sciences and Documentation of the UB has created a virtual lab, calling TabulaDecimal, for information and documentation management software. He feels that it might be an interesting site to join. He does not know much about the lab, therefore, he starts asking questions from the coordinator of the master studies to get information that how it works. He wants to find out what programs are using for students at this level. After some days he joins the site as non-academic members, naturally he does not find many members for he knows the site is recently created. He wants to look for a list of applications that are being used in the faculty as part of the subject materials. He finds some articles and manuals for Alfresco, but he should register to be able to download and read more articles. Even he finds out there is a demo site that he can enter as administrator to test how Alfresco works. He thinks it is an interesting idea to make a brief report concerning his experience with Alfresco for the company and it helps them to choose the appropriate product for clients. In he reads that TabulaDecimal facilitates the private sector to receive feedbacks for

their products if they install a version in the laboratory for students.

Next week he joins the TabulaDecimal and offers them to install a free version of one of the BcnDigiDoc's enterprise content manager. He goes to the faculty to present the product and explain to students that how it works. A bit later he opens his own blog in TabulaDecimal were some students participate and ask questions about this newly installed content management system.

He is happy because has access to profiles of the students and their CV in TabulaDecimal.so he can find some people for collaborating for his future project and

5.5.4.2 Scenario B: A student Compares Administrative Functions of Two Systems

Marisa Machado

Maria Machado started master in Management of Digital Contents in September 2010, in her second term she is doing two subjects of "Sistemes de Gestió de Continguts al web" and "Preservació i Conservació". She has to write an analytic comparison between two systems of Alfresco and Joomla. In this work she has to analysis three major requirements in each of systems. Actually each group should choose a pair of system and study them:

- Metadata requirements
- Administrative functions
- Controls and security

Since two days ago she has been looking for manuals and other sources in internet with her colleges. She has problem in managing time with her friends in the faculty. So they decide to work by email and forum in virtual campus. At the beginning, she thought it would be interesting to get some ideas from manuals and books, but she finds out she needs to install these programs somewhere to be able to test. Finally, she decides to tell her friends that we need to test a demo site of both systems to be able to see how they really work and compare their requirements and functions. She calls Montse, one of her classmate, where she can install the program in a server considering that they do not have time to do the installation just to compare two products. Montse tells Maria Teresa that she does not need to install any software there is virtual lab in the faculty calling TabulaDecimal where she can find nearly all programs relating to master subject.

She joins the TabulaDecimal next day, and then she goes directly to search if there is something about Alfresco back-end and Joomla!, there are four/five articles and manuals concerning both programs. Within five minutes, she finds TabulaDecimal a useful site where she can enter Alfresco and "try out" the system as an administrator. Each system listed there provides for

members a demo so they can interact without having to go through the tedious process of installing multiple systems.

Maria Teresa is very happy because even she can communicate with the other students of previous courses to get ideas for doing her works, particularly for her final project of master.

5.5.4.3 Scenario C: a professor based on Persona C

Maria Teresa Anglada

Maria Teresa knows there is a small project in the faculty calling TabulaDecimal where professors can put their manuals and teaching resources which independent the virtual campus, she thinks it will be a good idea to have a look.

She finds out that there is no limitation of time in joining TabulaDecimal either students or professor can continue working in it when academic year finishes. Actually, there is expiration date for participants like Virtual Campus of the UB that finishes each academic year. Even there is no limit in level of participants then ex-students will keep their access to the system after graduation. Moreover, she can create her blog and group work for long-term projects.

Maria Teresa decides to test the TabulaDecimal to see how it works, she starts moving some of her teaching materials from virtual campus with the collaboration of the content person of the project within a week, for she is very interested in to receive feedbacks for her materials and share her idea with both amateur and experts. She believes that students have something to say.

In subject of, “Organització i representació” she asks the students to analyse the web of the faculty and study basic principles of information architecture of the site such as organization, labelling, navigation and search systems. For the final project of the subject, she divides into four groups and asks them to propose a suitable content management system for the content of the web of the faculty. To do so, she recommends them to enter TabulaDecimal and try out demos installed in the system. She explains to them that there is no need to install any software; they just have to enter and study the manuals and comment of the software in TabulaDecimal either commercial or free software systems.

She thinks that now it is the time that students should start interacting with each other on near-real cases to enter the professional world. In addition, they save so much time if they do not want to involve technical areas while sharing their idea with other experts and professors.

5.5.5 Types of users

At the moment there is no specific users, however many of the resources and systems that will be available in the TabulaDecimal are already being used in the different subjects and courses in a similar manner through the year. Moreover, the experience of how they installed, operated and supported are used as a guide in the implementing process of the project. Thus, describing the different types of user is useful for having a basis for future analysis and estimating the support needed for each type of user in general and the systems administrators in particular sense. The following figure shows how three potential groups of users become professional users interacting with other groups.

Figure 14- Three potential groups of users

5.5.5.1 Beginners

This type of users of the TabulaDecimal will have a fear of the unknown for they just are interested in doing the work required as quickly and simple as possible. They need to be made comfortable with technology and subject. Actually, all beginners start with a new system and speed of progress and interaction with system and other members depend on their level of motivation and previous experience. This type of users certainly need an introductory session with the support staff (administrator of the system or one of the facilitators who dominate the system administration) to start using the system of TabulaDecimal. It is expected because nearly all of the learning resources and materials will have some e-learning and IT components that they are using them for more than one purpose.

It is clear that users that have difficulty with the information technology will have problems with in their learning process. So it is imported to give the support from the level of how to login and access programmes to demos and manuals. On the other hand,

there are some questions concerning the proxies if is going to apply for some teaching resources and material in the TabulaDecimal.

5.5.5.2 Advanced Beginners

Majority of users of the TabulaDecimal are considered as beginners who are advanced in using computer and IT systems particularly in information science and documentation. It means that they have more experiences than the beginners do so they, naturally, have less fear of failure. This type of the user will have a mental model of how the different systems work and interact with each other. This type of users at this level, need support when carrying out new tasks, for example in using new functions in group-works and discussion forums. However, they will have some weeks experience working with the system.

5.5.5.3 Proficient Users

This type of users is able to solve simple problems and have sufficient knowledge to some complex series of tasks. In other words, they have a good mental model of each system than the advanced beginners. In TabulaDecimal, proficient users/members will be doing a variety of tasks in the system and can be used as support staff for helping other users' lower level. Many of the professors in the faculty can be regarded as proficient users. This is because they have enough knowledge to learn the system, experience problems, reach solutions and giving new ideas for improving the system in the future.

5.5.6 Results of the Scenario

The intention of the scenarios are to provide a means of walking through what needs to be available in a straightforward manner and it helps the responsible of the publication and content to prepare business and functional requirements of TabulaDecimal. Indeed, this analysis is the beginning of a process to describe the learning, teaching and experimenting needs of users in the system and is intended mainly as a discussion document from which a more detailed specification can be written when more information and resources are available.

5.5.6.1 Information Workflow in TabulaDecimal

The Information workflow in TabulaDecimal is according to needs of three types of users of the system. In other words, each type of user participates according to their

interests and needs. The following figure shows the input of information to the system. And Figure 16 shows output of information from the system. In fact, you can see what information is available for each group of users.

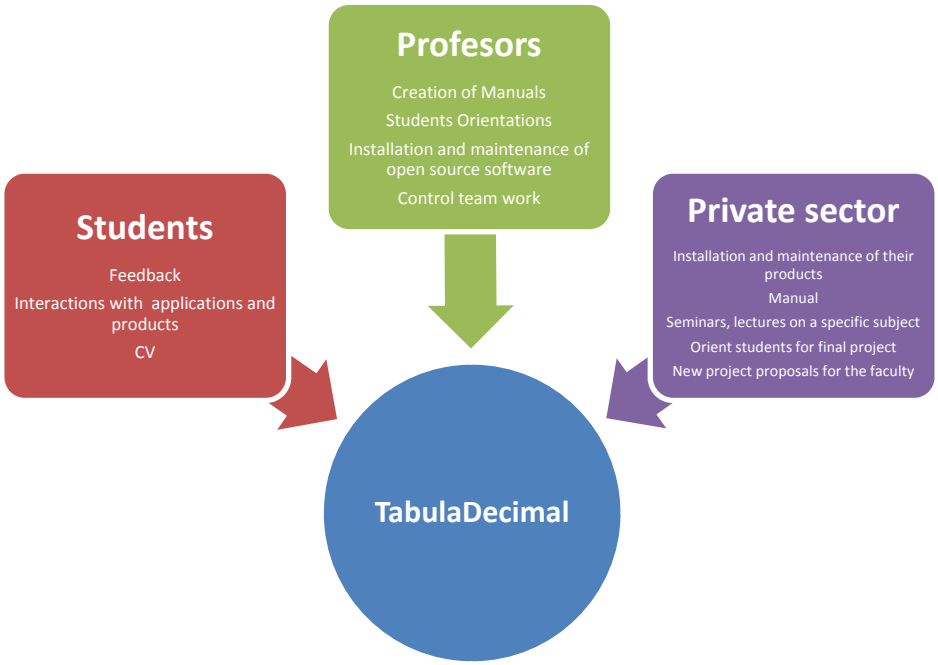


Figure 15 - Entrance of information into system

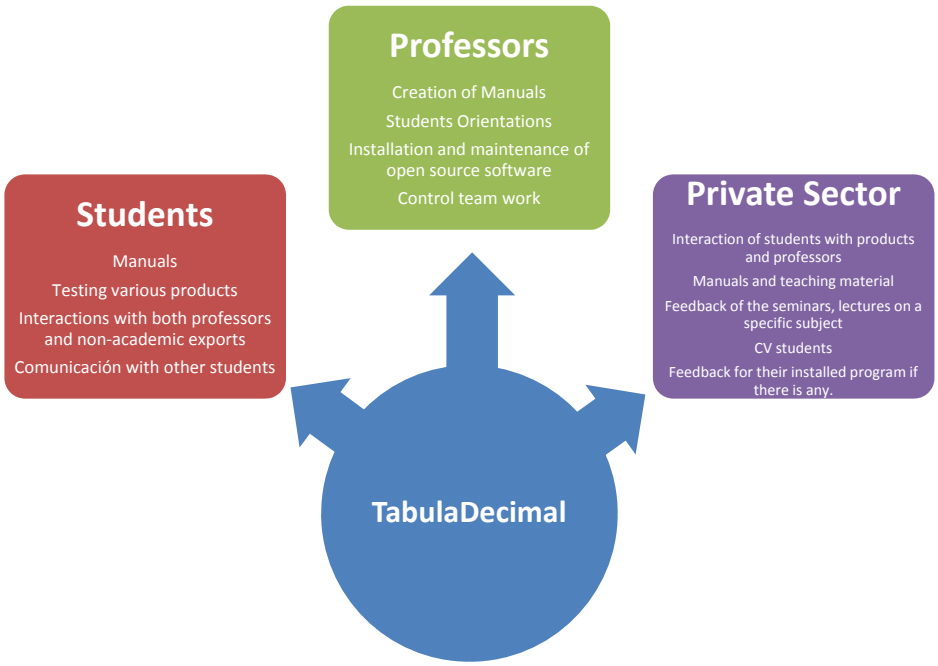


Figure 16- Output of information from the system

5.5.6.2 Business requirements

At this part of the process, the goal is to define user requirements as the final result of the user needs analysis. In the requirement document there should be requirements concerning software are going to be installed and the system requirements as the

platform of the TabulaDecimal. Collaborators, particularly professors, in creating the content play a very important role during the project. For classifying and organizing the necessary applications according to their type of software and type of use, there is questionnaire for professors. See appendix.

The result of the interview will be a list of all applications and software needed to be taught in the faculty.

5.5.6.3 Functional requirements of the system

Functional requirements for TabulaDecimal are divided into major parts of:

1. Security
2. Platform and interface
3. Workflow and approval process
4. User features
5. User management
6. Communication and collaboration
7. Content creation management

There are some main requirements that the system for selected system (see System Selection in 5.6. Phase III) should have, such as:

- possibilities for administrators, facilitators and students to register
- possibility to create discussion groups / discussion forums
- possibility to attach/download files in the discussion forum
- possibility to have joint file archive for the participants
- having a system of “Latest News-function”
- possibilities to work in a project organisation
- etc.

For this, there is a sample of system requirement checklist in the appendixes. (see 12.2 System Requirements Checklist)

5.6 Phase III: System selection

At the University of Barcelona majority of sites are not based on dynamic CMS. There are some that are like CRAI or some pages of the Master Course established open source systems such as Typo3, Moodle and Joomla.

There is a learning management system at UB's Virtual Campus that will allow both students and teachers to conduct educational activities in a digital space, but the services and educational tools of this virtual campus are not fully developed. In other words, the UB Virtual Campus does not exploit all the possibilities offered by the content manager

and does not cover the needs of students and faculty demand, particularly in the program of Master in Management of Digital Content.
Students turn to other digital sources (search engines, forums, manuals, repositories ....) to perform certain tasks and practices, knowing that not all the resources on the web are valid at the academic level. TabulaDecimal as a well designed virtual community allows a more productive participation of students and professors of the Master, and companies collaborating with the faculty. Therefore, the implementation of such a virtual laboratory would fulfil the current needs of the educational system. It would also bring other benefits in future projects in both academic and business world.
According to the preliminary study of the needs and requirements, Drupal and Moodle are two recommendable systems for TabulaDecimal. Drupal is proposed as the selected product in this project. For it fulfils the requirements of our future system and users need.

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6 Compliance of the project with the objectives and Implementation:

6.1 Phase IV: Content and Architecture

This phase consists of six workpackages of Staff Training, Project team working space, Evaluation and design of IA, Taxonomies and metadata, Evaluation & design of Technical Architecture, Evaluation and confirmation of deliverables.

This section consists of two phases of Content and Architecture and Implementation. Each includes workpackages relating to each project staff and his responsibility throughout the related phase. The total partners' effort per hour is estimated in "resources estimation".

6.1.1 Workpackage 5.1: Staff training

Objective: training of the project staff and collaborators in the project

Tasks:

1. training of the content persons
2. training of the publication persons
3. training of technology assistant
4. training of the possible collaborators (internal/external)

Methodology: the technology persons will collaborate with the publications and content persons. The project manager approves the permission of the access of new collaborator into the intranet.

Result: staffs will becomes familiar with their tasks and the project before doing any task

Resource estimation (m/h):

- (PM) 4 h
- (CM) 8 h
- (CA) 8 h
- (PP) 8 h
- (TM) 8 h
- (TA) 8 h

6.1.2 Workpackage 5.2: Project team working space

Objective: Creation of a collaborative working space for project team

Tasks:

- Creation a working group in **intranet** of the faculty

Methodology: The project manager creates a working group either in **intranet** of the faculty with the collaboration of technology persons

Result: availability of collaborative space for project team and anybody who collaborates in the project. The space works as management system throughout the life of the project.

Resource estimation (m/h):

- (TM) 1 h
- (TA) 8 h
-

In the following figure there is an example of working space for the project:

There is another alternative spacework such as Google Docs where you can create and edit web-based documents, spreadsheets, and presentation store documents online and access them from any computer for more details you can see docs.google.com/

6.1.3 Workpackage 5.3: Evaluation and design of IA

Objective: Design the contents and information architecture

Tasks:

- Creation of content model for the system to define what is in the system and how it is constructed.

- Design homepage and decide whether it is necessary to create a specific homepage for each type of users. (see Figure 17 for a sample)
- Wireframes, mock-ups, prototypes
- To study selected software and identify appropriate modules for the different content-type (see appendix 12.6 for possible installed modules in Drupal)
- To specify internal and external links

Methodology: the technology persons will collaborate with the publications person.

Result: the project manager approves the structure of the site as well as the navigation system.

Resource estimation (m/h):

- (PM) 4h
- (CM) 10h
- (CA) 0h
- (PP) 40h
- (TM) 8 h
- (TA) 20 h
-

Here there is basic design of the TabulaDecimal for more proposed design see appendixes at the end of this document.

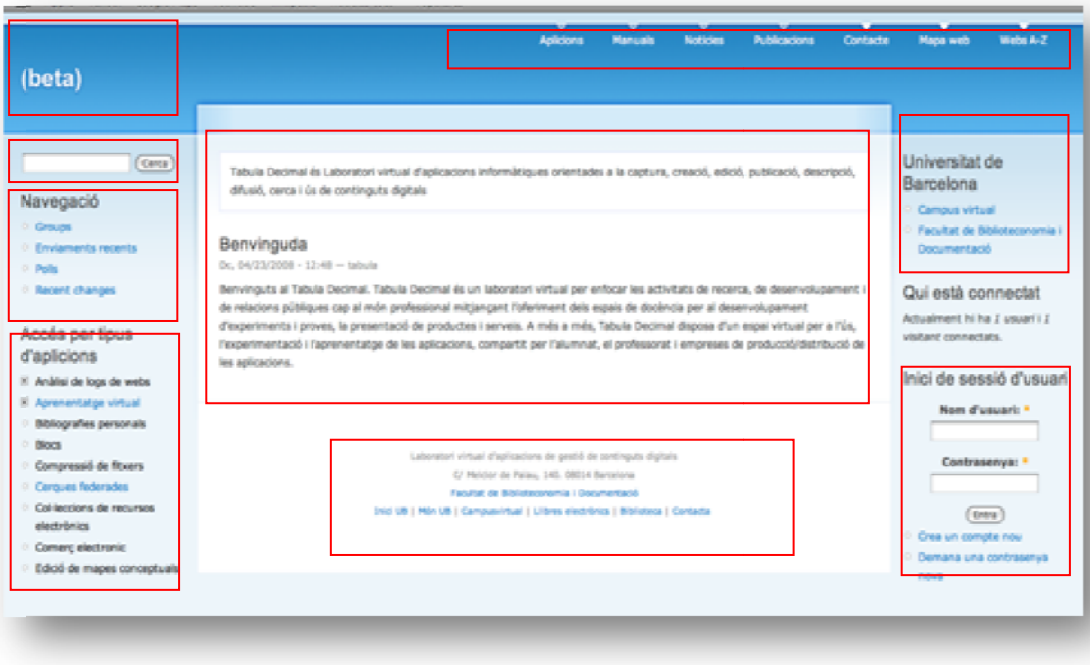

Figure 17 Basic interface of TabulaDecimal

6.1.4 Workpackage 5.4: Taxonomies and metadata

Objective: Creation and application of the taxonomies and metadata

Tasks:

- To create taxonomy for academic subjects
- To create taxonomy for type of the programs
- To create taxonomy for different types of the group
- To create taxonomy for different type of use for each software/ application
- To create taxonomy for different types of content for creating tags

Methodology: the content person should create all taxonomies with the collaboration of the content analyst and the final results of the users' needs analysis

Result: These taxonomies serve for the administration part of the system to organize and categorize different contents and parts of the system. Moreover, these taxonomies after applying into the system, particularly in Drupal, permits to having a useful research system. Even users can add new tags to their personal tags participating in labelling subjects and organization system.

Resource estimation (m/h):

- (PM) 1 h
- (CM) 20 h

In appendix 12.5., there is a structure of the site with the taxonomy proposed for TabulaDecimal

6.1.5 Workpackage 5.5: Evaluation and design of Technical Architecture

Objective: To provide and design document for the evaluation of available technologies and equipments

Tasks:

- To specify equipment
- Pepare and installation of hardware
- Structure of the system with various databases and two servers

Methodology: the technology persons will collaborate with the publications person.

Result: the project manager approves the structure of the site as well as the navigation system.

Resource estimation (m/h):

- (TM) 10 h
- (TA) 30 h

The following figure is a basic schema of TabulaDecimal system

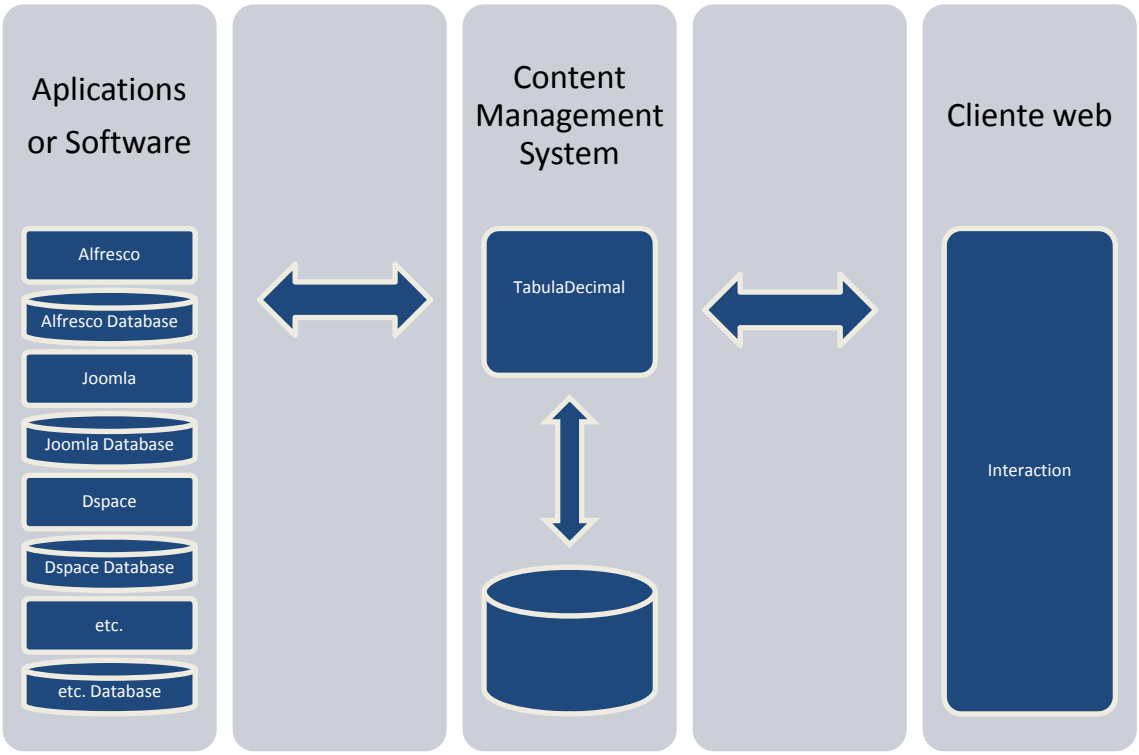

Figure 18 basic schema of TabulaDecimal system

In TabulaDecimal it is supposed the selected applications are already installed and tested in the Demo server, so that we can link from TabulaDecimal CMS toward each application in Demo server. See workpackge 6.11: Installation and Configuration of Demo systems for more details.

6.1.6 Workpackage 5.6: Evaluation and confirmation of deliverables

Objective: To have a meeting with all members of the team to evaluate and confirm the results

Tasks:

- Meeting with the members and collaborators in the project to clarify any doubt
- To review the implementation plan
- To do some possible changes in the implementation phase
- To confirm the final draft of the implementation phase
-

Methodology: the project manager holds a meeting with all participants of project.

Result: the project manager approves the implementation plan of the site.

Resource estimation (m/h):

- (PM) 10 h
- (CM) 8 h

- (PP) 8 h
- (TM) 8 h

6.2 Phase V: Implementation

In the implementation phase, the selected system, for example Drupal, will be installed in one of the serves. Throughout of the phase the technology persons will set up all selected modules and application according to the needs of the users. They also create group workspaces and configure the interface of the system. All findings and results of the "Content and Architecture" are used in the "Implementation" phase.

The "Implementation" phase consists of fourteen workpackages.

In appendix 12.9 Implementation checklist, there is a checklist of all tasks in this phase. The project manager and other staff should use during the phase.

6.2.1 Workpackage 6.1: System installation

Objective: Installation the core of the system for platform

Tasks:

- installing the detailed version of DrupalEd
- Creating the database and the database user
- Initial configuration of the site (such as site-email and site name etc)
- Enable core modules in admin/build/modules
- Creating new admin accounts for each manager group to be able to have access to the system
- upgrading the core to Drupal 5.18

Methodology: the technology persons should fallow the instruction in the "start-up" manual of Drupal available online and pdf format in www.drupal.org.

Result: the installed core of the systems permits to work on a basic technological base to start the implement and develop the system.

Resource estimation (m/h):

- (TM) 8 h
- (TA) 16 h

6.2.2 Workpackage 6.2: Setting up the system

Objective: Setting up the foundation of the system

Tasks:

- enabling add-on modules and accessible theme (zen_trevor theme is the most accessible one)
- installation and configuration of modules and theme for administration part
- installation and configuration of modules and theme for user part

- create roles according to the taxonomies of the users
- create content types according to the appropriate metadata and taxonomies

Methodology: the technology persons will collaborate with the publications and content persons

Result: there is a list of modules in the appendix 12.6.

Resource estimation (m/h):

- (CM) 4h
- (TM) 8 h
- (TA) 40 h

6.2.3 Workpackage 6.3: Setting up roles and translations

Objective: creating roles and installation the translation with local module of drupal

Tasks:

- creating roles for facilitator
- creating roles for students
- creating roles for private sector/ non academic members
- installing different language ".po" files (GNU gettext portable object files) to English core. Spanish, Catalan, Portuguese
- setting up language module for each role
- setting up language for default site (Catalan)

Methodology: the technology persons will collaborate with the publications and content persons

Resource estimation (m/h):

- (TA)8 h

6.2.4 Workpackage 6.4: Setting up user registration modules

Objective: configuration and setting of registration of the users

Tasks:

- understanding the rights of each type of the users
- creating of the accounts (user-based/admin-based)
- customizing the registration process
- installation of additional modules for creating user accounts such as:
- the *userplus* module to creating mass account and improving management
- *csv* file module
- *LDAP* integration modules
- *Legal* module

Methodology: the technology persons with the collaboration of the content person and project manager configures the related modules

Resource estimation (m/h):

- (PM) 2h

- (CM) 4h
- (TM) 8 h

6.2.5 Workpackage 6.5: Content type creation

Objective: creating content types for manuals and applications (manuals i aplicacions)

Tasks:

- creating the content type with the help of identification, submission Form settings, workflow settings and comment settings
- adding new fields and assigning taxonomies
- assigning privileges and permission
- Installation of three main module for content type:
    1. Bibliography module
    2. OAI-PMH module
    3. Biblio Facets module
-

Methodology: the technology persons with collaboration of the content person

Resource estimation (m/h):

- (CM) 4h
- (CA) 4h
- (PP) 40h
- (TM) 8 h
- (TA) 10 h

6.2.6 Workpackage 6.6: Blogs creation

Objective 1: creating a blog for facilitator/tutor in the system

Tasks:

- up load and enable FCK editor module, configuring and assigning permissions
- create content types for the facilitator blog
- add the sample content views for the created blog and assignments
- sample users and testing the applications

Methodology: the technology persons will collaborate with the publications and content persons

Resource estimation (m/h):

- (CM) 2h
- (CA) 2h
- (PP) 1h
- (TM) 2 h
- (TA) 10 h

Objective 2: creating a blog for other users (students and private sectors) in the system

Tasks:

- setting up, configuring and assigning permissions

- create content types for the students and private sectors blog
- add the sample content views for the created blog and assignments

Methodology: the technology persons will collaborate with the publications and content persons

Resource estimation (m/h):

- (CM) 2h
- (CA) 2h
- (PP) 2h
- (TM) 2 h
- (TA) 10 h

6.2.7 Workpackage 6.7: Forum creation

Objective: creation of forum and social networks

Tasks:

- Installing the forum module
- Creating sample containers
- Create forum types for each type of users
- Configuring each sample forums
- Assigning permission to sample forums

Methodology: the technology persons

Resource estimation (m/h):

- (TM) 1 h
- (TA) 8 h

6.2.8 Workpackage 6.8: Creation of group workspaces

Objective 1: creation of group workspace with modules and configure them with content type applications in the system

Tasks:

- install and configure the organic groups modules:
  - organic groups
  - organic groups access control
  - organic views integration
  - organic groups vocabulary
- add useful links to organic group content
- adjusting the system to work with organic group module. In doing this task, the technology persons should work with the content person to separate the content types into three major categories:
  - content types that can be used to create groups
  - content types that can be posted into groups
  - content types that are never posted into groups
- creating the group types according the appropriate taxonomy/category

- configuring and setting up each group type (as a defaults according to content type, group email notification, registration form control, group directory control, etc)
- assignments and permissions to group nodes (such as research group, activity group etc)
- creating menus for groups
- creating additional group manager for facilitators and private sectors

Methodology: the technology persons are the responsible of this work package, content person and publication person collaborate to confirm the final result of the work.

Resource estimation (m/h):

- (TM) 8 h
- (TA) 40 h

Objective 2: creation private group work space

Tasks:

- installation of coherent access module
- configuring the installed module according to the readme documents
- preparing a short guide text in catalan and Spanish for the user to configure the module

Methodology: the technology persons

Resource estimation (m/h):

- (CM) 1h
- (PP) 2h
- (TM) 4 h
- (TA) 20 h

6.2.9 Workpackage 6.9: Interface Configuration and Final Design of the site

Objective: configuration of interface for the main pages

Tasks:

- setting the home page “inici/inicio”
- creating the primary and secondary menus as well as a separate administration menu
- enable/visible blocks for specific roles/specific pages
- enable/visible themes for specific setting and identifying a global theme
- setting up toggle display
- setting up logo image and shortcut icon

Methodology: the technology persons with the collaboration of the publications person.

Result: navigational and menu structure, including setting a home page will be ready. Also general design elements will be configured before pilot test.

Resource estimation (m/h):

- (PP) 2h
- (TA) 20 h

6.2.10 Workpackage 6.10: Maintenance and upgrades

Objective: Configuration all necessary application relating to the maintenance and upgrading them for beta version.

Tasks:

- configuration of the poormanscron module
- backing up
- the database
- the core codebase
- settings.php file
- the files directory
- An alternative option for previous task (2.a) is installation of DB maintenance module, however is no recommendable for security issues.
- Periodic upgrades should be considered as part of maintenance process. The alert is received by update status in admin/build/modules
- Registering in Drupal Hispano http://www.drupal.org.es as well as Drupal Lengua Catalan http://drupal.cat/ for receiving news, incidents and upgrades from the Drupal

Methodology: the technology persons should prepare a report for the maintenance process. This report is used as a part of Guide for back-end

Resource estimation (m/h):

- (TA) 16 h

6.2.11 Workpackage 6.11: Installation and Configuration of Demo systems

Objective: Installation of the selected installable demo systems and applications

Tasks:

- Installation the systems: such as Joomla, Dspace etc in server A (Linux)
- Creation of the Database
- Configure the system
- Enable core modules and default extensions
- Assigning rights and roles of the users as demo access
- create technical dates of the site and the server “fichero de gestion tecnico” in the collaborative space of the project
- Installation the systems or application in server B (Windows)

Methodology: the technology persons should fallow the “start-up” manual of each program available online if it is opensource. Otherwise the company which proposes the software should install the demo program either in their server or in the server s of A or B, explaining the data access.

Result: creation of a technological bed for the "try out" software in two servers.

Resource estimation (m/h):

- (TM) 40 h
- (TA) 160 h

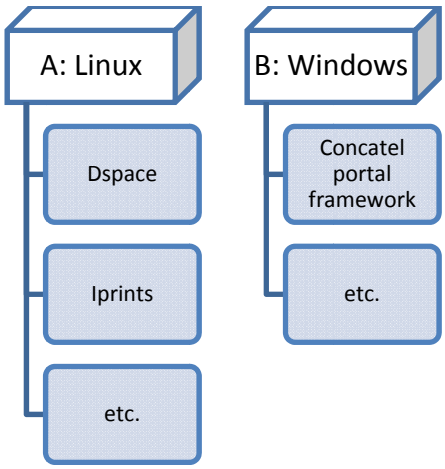

Figure 19 Two servers for different operation systems

6.2.12 Workpackage 6.12: Migration of content

Objective: Input information of minimum five applications or software into the system

Tasks:

- Select five software as demo
- Reuse available manuals either in Catalan or Spanish in the faculty
- Create five contents for each software

Methodology: the content persons should fallow the "start-up" manual of the system available in intranet. He creates new contents into the system and is responsible to do it. Otherwise, the company which proposes the software should install the demo program either in their server or in the server s of A or B, explaining the data access.

Result: TabulaDecimal with minim content in the system and content persons become familiar with the system.

Resource estimation (m/h):

- (CM) 8h
- (CA) 40h

6.2.13 Workpackage 6.13: Tuning and Quality Assurance

Objective: Pilot testing of the system and of training

- training of the back-end users
- training of the front-end users

Methodology: the technology persons will collaborate in the support to explain the back-end of the system .The content person should train the front-end user in two sessions.

Result: the feedback of the pilot testing prepares the system for launching the system.

Resource estimation (m/h):

- (CM) 4h
- (TM) 8 h

6.2.14 Workpackage 6.14: Users Guides

Objective: Creation of guides for both administrator and the users

Tasks:

- design a manual of use for the administrator of the system
- design a manual guide for users (for example how to create new content, to change their desktop and themes, to change their profile etc)
- apply help guide in the system as a complimentary default help of Drupal in Admin part

Methodology: the technology persons will collaborate with the publications and content persons. The project manager approves the final draft of the guides and checks the system for the “help” “ajut”

Result: first draft of manuals of use

Resource estimation (m/h):

- (PM) 8h
- (PP) 8 h
- (TM) 8 h
- (TA) 20 h

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7 Financial Data of the Project

7.1 Man labour rates

In this project, the rate of the salary is calculated for each grade of staff by de dividing the sum of the annual salary for that grade by the relevant number of working days and hours. The Table of Salaries in Spain, particularly in Catalonia (see 12.8 Table of Salaries in Catalonia), at the end of this document details the rates of annual salary in Catalonia. Figure 20 show the participation rate per hour for each staff:

Personal	Labour rate/ per hour
Project Manager PM	190
Content Manager CM	75
Content Assistant CA	56
Publication Person PP	69
Technology Manager TM	136
Technology Assistant TA	474
Total Time	1072

Figure 20 Staffs participation rate per hour

In the following table the total cost of participants and collaborators in the project is estimated. But this estimation will be a part of the salary of personal of the University of Barcelona, in other words, the estimated 55328 euros will not be an extraordinary cost for the project.

Personal	Hour effort	Overheads	Labour rate per hour (€)	Total (€)
Project Manager /PM	190	5	70	**13300**
Content Manager /CM	75	5	70	**5600**
Content Assistant /CA	56	5	40	**2440**
Publication Person/ PP	69	5	65	**4958**
Technology Manager /TM	136	5	70	**9870**
Technology Assistant /TA	474	5	40	**19160**
			Total	**55328 €**

Figure 21 Table of Staff Salary

There are also some alternative human resources such as hiring students with collaborative grants; Beca de Colaboración con la facultad and Beca de Colaboracion con la UB.

7.2 Equipment and Technology recourses

For the project it is necessary to prepare Hardware and Software resources as well as manuals and reference books related to the different phases and workpackages:

- Software like MS office, Adobe captivate, Adobe Photoshop, Adobe Dreamweaver, etc
- Manuals and reference books relating to Drupal as selected system, and PHP, mySQL
- Consumable material such as paper, CDs, etc.
- 2 Personal computers with characteristics that is mentioned in the Appendix (the cost of operating system is calculated in the total cost of the computer)
- 2 Servers for two types of software operating system (Linux and Windows) the server with windows the cost of the operating system is included

[Note1: majority of the programs' licence are available in the faculty so the 300 euros estimated in the project can be removed]

[Note2: the cost of operating system is calculated in the total cost of the computer]

Technology recourses and equipments	Cost / €
2 Servers	4442
2 personal computers	1528
Software programs	300
Manuals and Reference Books	50
Consumable materials	100
Total	6420

[Note: the cost of **1528 EUROS** can be excluded in the case of availability of free system during the project period]

7.3 Other costs

Concept	Cost / €
Installation (light, water, telephone, internet ADSL)	550
Other materials in the office	200
Total	750

Table 3 Other costs

7.4 Total Cost of the TabulaDecimal project

Name of Resources	Cost / €
Human resources and staff	55328
Equipment and technology resources	6420
Other costs	750
Total	62498
Overhead (5% of total cost)	3124,9
Estimated Total cost	65622,9

Table 4 Total costs

[Note: 5 percent of the total cost of the project is calculated as unpredictable cost during the project.]

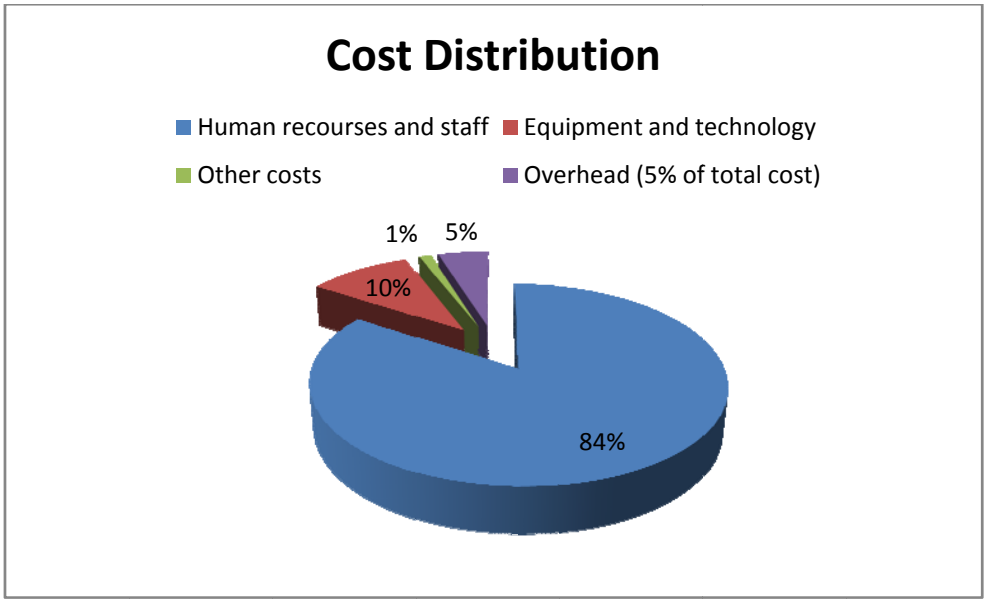

Figure 22 Total cost distribution

7.5 Financial support for the project

In Spain, particularly in Catalonia, there are organizations which can be considered as potential patron for TabulaDecimal project in the future, organization like:

- Los programas de estudios y análisis del ministerio http://web.micinn.es/contenido.asp?dir=04_universidades/aa2conbap/02@Titulados/15@PEA
- In Generalitat de Catalunya Agencia de Gestió d'Ajuts Universitaris i de Recerca. http://www.gencat.net/agaur/

- At the University of Barcelona for projects and innovation in educative projects, los proyectos de innovacion docente in http://www.bib.ub.edu/suport-docencia/activitats/pmid/

8 Phase VI: Evaluation and Assessment

Evaluation is concerned with establishing a process which results in gathering information and data to enable to assess the value of the TabulaDecimal by identifying its outcomes and impact, identifying issues during the process of its life cycle, nearly six months after the installation, and management of the system. See timescale in the appendixes.

8.1.1 Workpackage Evaluation

Objective: To improve the usability, value and quality of the site.

Tasks:

- Analysis of the content and material
- Analysis of the design
- Analysis of the environment (usability, navigability and searchability)
- Analysis of the interactivity

Methodology: the project manager will study mentioned indicators to determine whether the laboratory is meeting its goals and satisfying users' needs. The functionality and quality assessment of the laboratory will grantee to main objectives of the project.

Result: final report

Resource estimation (m/h):

- (PM) 20h

The evaluation process of any virtual learning environment can be studied by answering the following questions (Lewis and Allan):

1	Learning Environment	Yes	No
2	Is it easy to access?		
3	Do security systems work without being too cumbersome?		
4	Is the structure and layout of the learning environment intuitive?		
5	Is the design of the environment attractive and visually pleasing?		
6	Is it possible to take different routes through the learning environment?		
7	Do all facilities (e.g. links, quizzes, surveys) work?		
8	Is it up-to-date?		
9	Learning Materials		
10	Are the learning materials easy to access and quick to download?		

11	Is there a clear statement of aims, learning outcomes or objectives?		
12	Do the learning materials arouse your interest, as a learner?		
13	Do the learning materials use clear language?		
14	Is the content organized into manageable chunks?		
15	Is the content relevant?		
16	Do they provide a variety of routes through the materials?		
17	Do the learning materials use supporting images and diagrams?		
18	Are there opportunities to practice, e.g. activities and quizzes?		
19	Is there personalized feedback?		
20	Is the material up-to-date?		
21	Facilitators and experts		
22	Are the facilitators in supporting the community?		
23	Did they have the appropriate level of specialist knowledge and skills?		

9 Conclusion

Whereas TabulaDecimal Lab 2.0 is based on three main concepts of sharing, experimentation and innovation. Below there are major characteristics of TabulaDecimal as a virtual laboratory and community after implementation:

- A virtual space to encourages professional knowledge sharing and knowledge management among students and academic and professional experts
- A virtual place to discuss related to effective daily practices; improved productivity and services; and enables community members to work more efficiently at lower cost.
- Encourages cross-sector collaboration.
- Gives practitioners/students more effective ways to address problems/current issues.
- Challenges people, either professors or students, to be more creative and innovative.
- Promotes leadership, as a fundamental element in management in master GCD.

TabulaDecimal can be an initiative for future innovation in library studies and research in digital content. It will be a practical and useful bed in the educative long life learning process. The system, in production state, will be operational with the following direction: http://tabuladecimal.info.

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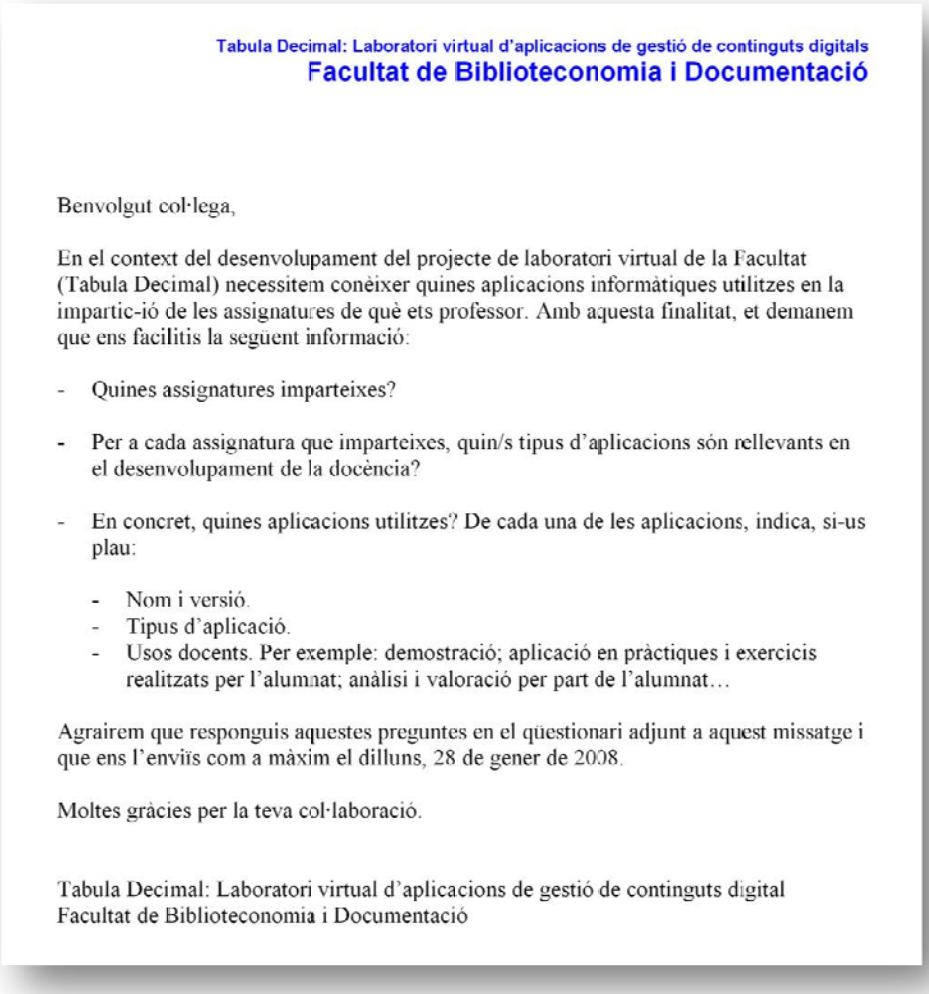
12 Appendixes

12.1 Questionnaire for professors

The letter and the questionnaire are sent by a collective email to all professors participating in the master studies.

12.1.1 Introductory letter for professors



Tabula Decimal: Laboratori virtual d'aplicacions de gestió de continguts digitals
Facultat de Biblioteconomia i Documentació

Benvolgut col·lega,

En el context del desenvolupament del projecte de laboratori virtual de la Facultat (Tabula Decimal) necessitem conèixer quines aplicacions informàtiques utilitzes en la impartic-ió de les assignatures de què ets professor. Amb aquesta finalitat, et demanem que ens facilitis la següent informació:

- Quines assignatures imparteixes?
- Per a cada assignatura que imparteixes, quin/s tipus d'aplicacions són rellevants en el desenvolupament de la docència?
- En concret, quines aplicacions utilitzes? De cada una de les aplicacions, indica, si-us plau:
  - Nom i versió.
  - Tipus d'aplicació.
  - Usos docents. Per exemple: demostració; aplicació en pràctiques i exercicis realitzats per l'alumnat; anàlisi i valoració per part de l'alumnat…

Agrairem que responguis aquestes preguntes en el qüestionari adjunt a aquest missatge i que ens l'enviïs com a màxim el dilluns, 28 de gener de 2008.

Moltes gràcies per la teva col·laboració.

Tabula Decimal: Laboratori virtual d'aplicacions de gestió de continguts digital
Facultat de Biblioteconomia i Documentació

12.1.2 Questioner for preparation of selective software

Tabula Decimal: Laboratori virtual d'aplicacions de gestió de continguts digitals

Facultat de Biblioteconomia i Documentació

Qüestionari sobre les aplicacions informàtiques que utilitzen els professors.

Nom i Cognoms:

Assignatura i ensenyament:

Aplicació informàtica	Versió	Idioma	Tipus d'aplicació informàtica	Ús docent de l'aplicació informàtica

Assignatura i ensenyament:

Aplicació informàtica	Versió	Idioma	Tipus d'aplicació informàtica	Ús docent de l'aplicació informàtica

12.2 System Requirements Checklist

Functionality/Features	Required	Optional	Notes
Hosting & Support			
Software-as-a-Service (SaaS)/hosted delivery model	*		
Methods of data exchanges and encryption supported			
Interoperability with other modules/applications (describe)			
Help Desk support for multiple languages (list)			
Help Desk support for multiple time zones (list)			
Security Capabilities			
Password and user IDs determine secure authentication	*		
Set authentication rules based on hard life time, idle life time and Single-sign-on life time	*		
Configurable security settings (password characteristics)	*		
Automated system to help users who have forgotten passwords	*		
Login encryption/validation	*		
Platform & Interface			
Based on Microsoft .NET and is database independent for flexibility			
System can feed into HRIS/ERP systems using a Web services API			
Built in wizards to guide administrator on difficult tasks			
Student interface available in multiple languages / multibyte characters supported			
Integrated with UB virtual Campus (Moodle LMS) functionality	*		
Integrated analytics tools such as Knowledge Advisors			
Integrated Product Library (document repository)			
Links to other training sites or resources (Online Resources)			
System is modular, allowing deployment of only required functionality (turning on or off features and modules)			
Manage interface branding themes and specify user settings			

Provide different themes to multiple domains			
Ability to create and manage text and branding of the login page			
Specify the colors in the user interface			
Specify the layout of the user interface			
Text branding of the site through the user interface, including configurable text for navigation links			
Ability to modify/customize the user interface			
User configurable home page			
Customizable Contact Us page			
Business rule definition configurable on a domain-by-domain basis			
Integration with virtual meeting/classroom tools			
Integrated performance and talent management tools			
Single-sign-on functionality with third party tools			
Calendar – displaying all instructor-led classes in the system			
Workflow & Approval Process			
Create a custom workflow and a custom approval form for student to complete without intervention from vendor			
Approval Manager module may be in use without affecting whether other modules may or may not be used			
Include custom user attribute as an automatic trigger for approval flow			
Include values for course duration and cost as triggers for approval flow			
Identify specific individuals who have permission to approve			
User Features			
Ability to personalize and configure user interface and functionality (i.e. modules on or off) per domain without vendor assistance			
Ability for user to select a specific view for the calendar (day/week/year) and modify time zone			
Forgotten password/change password automated			

responses			
Change user name			
Access Help (search for topic/context sensitive)			
Ability for a new user to request an account			
Ability to view and manage short-cuts			
Ability to select specific dashboards to display			
Ability to view dashboard data, regardless of role (Student as well as Administrator)			
Ability for users to select specific language			
Ability for user to select time zone			
Request permission to waive a prerequisite			
Update/adjust/create learning plan			
Filter views of learning plan (i.e. by training type)			
User Management			
Configurable permissions/roles - Create and manage new roles/permissions			
Create, change and view user information/profile			
Copy an existing role			
Create custom fields in user profiles without intervention from vendor			
Advanced search includes custom user fields			
Web services API to allow user data to be imported			
Ability to create and manage user groups			
User can belong to multiple user groups			
Ability to create (or batch upload) new users			
Set/change user status (i.e. active/inactive/deleted)			
Define student to supervisor relationship			
Designate/change a user's supervisor			
Add users in subjects (individual, groups/batch)			
Communication & Collaboration			
Automated reminder notices via email			
Manage event communications by enabling or disabling as well as recipients easily through user interace			
Mass distribute communication to students by domain			
Edit and manage content of notification message			

Ability to turn on or off notification events			
Online access to course materials (e.g. supplemental material)			
Fully integrated live webcasting and virtual meeting capabilities			
Web-based calendaring and scheduling			
Live text chat capability		*	
Ability to send emails to user's email address listed in their profile			
Create and launch new events			
Identify multiple hosts per new event			
Automatic register/de-register notification via email			
Ability to send emails to selected users			
SCORM 2004 compliant		*	
SCORM 1.2 compliant		*	
AICC compliant		*	
Support for online training, instructor-led training, and informal learning objects to be assigned and tracked by the management system			
Allow administrator to select option for student to mark a user defined training object as complete			
Can disable a learning activity or course without removing it from the system			
Set duration of the accessibility based on registration date (setting a expiration period)		*	
Ability to set an expiration date for a linked learning object so that it no longer links to any learning plans			
Student can self-register for learning offerings			
Student can unregister from all learning offerings			
Student can unregister from instructor-led training			
Assign importance ranking on resources for the system to indicate what/who is available			
Assign multiple instructors to a group work, class and/or session			
Assign resources at the session level			

Access online resources (ie PDF instructor has posted for a subject)			
Create/edit reason to drop students from learning activities			
Registration with manager approval			
Registration confirmation via email			
Manage the waitlist and roster			
Manage a registration request queue (approve/deny)			
Courses can be grouped into curriculum and topic areas in the catalog			
Create, modify and delete learning plan templates			
Manually assign a learning plan to students (individually/user group/globally)			
Automatically assign learning plans using defined criteria (including user groups or custom user fields)			
Edit a learning plan template (and auto-update for assigned users)			
Edit the contents of a learning plan for all users			
Edit the contents of a learning plan for specific individuals			
Set due dates for entire plan completion (i.e. certification deadline)			
Update due dates for plan completion for multiple students en mass			
Set auto-reminder email for assigned students / instructors / managers / administrators regarding due date for entire learning plan			
Recurrence for courses can be set automatically based on rules			
Set auto-reminders for recurrences using rules			
Assign learning activity due dates for employees		*	
Built-in testing and survey creation tool		*	
Tests and surveys that can be assigned to multiple learning objects (re-used)			
Ability to set passing scores for tests		*	

Ability to require passing score on test to complete the course		*	
Set how many times a test can be attempted			
Select duration of test or make it unlimited		*	
Tests can be auto-graded by system			
Web-based student notes feature (per subjects)			

12.3 Comparison of the six products for the system of TabulaDecimal

The following table is generated automatically by www.cmsmatrix.org/ which helps the project team to select a product for TabulaDecimal.

Last Updated	5/12/2009	5/12/2009	5/12/2009	5/12/2009	5/12/2009	5/12/2009
System Requirements	Drupal 6.10	Joomla! 1.5.10	Moodle 1.9	OpenCms 7.0.5	TYPO3 4.2.6	WordPress 2.2.1
Application Server	PHP 4.3.5+	Any that supports PHP (Apache recommended)	PHP 4.3.3+	Tomcat, JBoss, Resin 3, Websphere 6	PHP 5.2+	Apache recommended, any server that supports PHP and MySQL
Approximate Cost	Free	Free	0	Free	Free	Free
Database	MySQL, Postgres	MySQL	MySQL, Oracle, MSSQL, Postgres	Oracle, MySQL, PostgreSQL, MS SQL Server, DB2, AS400 and HSQL	MySQL, PostGreSQL, Oracle, MSSQL	MySQL version 4.0 or greater
License	GNU GPL	GNU/GPL v2	GNU GPL	GNU LGPL	GNU GPL	GNU GPL
Operating System	Any	Any	Any	Any	Any	OS Independent
Programming Language	PHP	PHP	PHP 4.3 or later	Java 1.4. +	PHP	PHP version 4.2 or greater
Root Access	No	No	No	No	No	No
Shell Access	No	No	No	No	No	No
Web Server	Apache, IIS	Apache	Any	IIS, Apache	Apache, IIS	Apache, mod_rewrite
Security	Drupal 6.10	Joomla! 1.5.10	Moodle 1.9	OpenCms 7.0.5	TYPO3 4.2.6	WordPress 2.2.1
Audit Trail	Yes	No	Yes	Yes	Yes	Limited
Captcha	Free Add On	Free Add On	No	Yes	Free Add On	No
Content Approval	Yes	Yes	Yes	Yes	Yes	Yes
Email Verification	Yes	Yes	Yes	No	Yes	Free Add On
Granular Privileges	Yes	No	Yes	Yes	Yes	Yes
Kerberos Authentication	No	No	Yes	No	Free Add On	No
LDAP Authentication	Free Add On	Yes	Yes	Costs Extra	Free Add On	No
Login History	Yes	Yes	Yes	Yes	Yes	Free Add On
NIS Authentication	No	No	No	No	Free Add On	No
NTLM Authentication	Free Add On	No	Yes	No	Free Add On	No

N						
PLUGGABLE AUTHENTICATION	YES	YES	YES	COSTS EXTRA	FREE ADD ON	YES
PROBLEM NOTIFICATION	NO	NO	YES	YES	YES	FREE ADD ON
SANDBOX	NO	NO	YES	YES	YES	LIMITED
SESSION MANAGEMENT	YES	YES	YES	NO	YES	FREE ADD ON
SMB AUTHENTICATION	NO	NO	NO	NO	FREE ADD ON	NO
SSL COMPATIBLE	YES	YES	YES	YES	YES	YES
SSL LOGINS	NO	YES	YES	YES	YES	FREE ADD ON
SSL PAGES	NO	YES	YES	YES	FREE ADD ON	LIMITED
VERSIONING	YES	FREE ADD ON	YES	YES	YES	FREE ADD ON
SUPPORT	DRUPAL 6.10	JOOMLA! 1.5.10	MOODLE 1.9	OPENCMS 7.0.5	TYPO3 4.2.6	WORDPRESS 2.2.1
CERTIFICATION PROGRAM	NO	NO	YES	NO	YES	NO
CODE SKELETONS	YES	NO	YES	NO	FREE ADD ON	NO
COMMERCIAL MANUALS	YES	YES	YES	YES	YES	NO
COMMERCIAL SUPPORT	YES	YES	YES	YES	YES	NO
COMMERCIAL TRAINING	YES	YES	YES	YES	YES	NO
DEVELOPER COMMUNITY	YES	YES	YES	YES	YES	YES
ONLINE HELP	YES	YES	YES	YES	YES	YES
PLUGGABLE API	YES	YES	YES	YES	YES	YES
PROFESSIONAL HOSTING	YES	YES	YES	LIMITED	YES	YES
PROFESSIONAL SERVICES	YES	YES	YES	YES	YES	NO
PUBLIC FORUM	YES	YES	YES	YES	YES	YES
PUBLIC MAILING LIST	YES	NO	YES	YES	YES	YES
TEST FRAMEWORK	FREE ADD ON	YES	YES	YES	FREE ADD ON	YES
THIRD-PARTY DEVELOPERS	YES	YES	YES	YES	YES	YES
USERS CONFERENCE	YES	YES	YES	YES	YES	YES
EASE OF USE	DRUPAL 6.10	JOOMLA! 1.5.10	MOODLE 1.9	OPENCMS 7.0.5	TYPO3 4.2.6	WORDPRESS 2.2.1
DRAG-N-DROP CONTENT	FREE ADD ON	NO	YES	LIMITED	FREE ADD ON	YES
EMAIL TO DISCUSSION	FREE ADD ON	FREE ADD ON	YES	NO	FREE ADD ON	LIMITED
FRIENDLY URLS	YES	YES	YES	YES	YES	YES
IMAGE RESIZING	FREE ADD ON	YES	YES	YES	YES	LIMITED
MACRO LANGUAGE	FREE ADD ON	YES	NO	NO	YES	FREE ADD ON
MASS UPLOAD	FREE ADD ON	YES	YES	YES	FREE ADD ON	FREE ADD ON

Prototyping	Limited	Yes	No	No	Free Add On	No
Server Page Language	Yes	Yes	Yes	Yes	Yes	Yes
Spell Checker	Free Add On	No	Free Add On	Free Add On	Yes	Free Add On
Style Wizard	Limited	No	Yes	No	Yes	No
Subscriptions	Free Add On	Costs Extra	Yes	Costs Extra	Free Add On	Yes
Template Language	Limited	Yes	No	Yes	Yes	No
UI Levels	No	Yes	Yes	Yes	Yes	Yes
Undo	Limited	No	Yes	Yes	Yes	Free Add On
WYSIWYG Editor	Free Add On	Yes	Yes	Yes	Yes	Yes
Zip Archives	No	No	Yes	Limited	Free Add On	Free Add On
Performance	Drupal 6.10	Joomla! 1.5.10	Moodle 1.9	OpenCms 7.0.5	TYPO3 4.2.6	WordPress 2.2.1
Advanced Caching	Yes	Yes	Yes	Yes	Yes	Free Add On
Database Replication	Limited	No	Yes	Costs Extra	Free Add On	No
Load Balancing	Yes	Yes	Yes	Costs Extra	Yes	No
Page Caching	Yes	Yes	Yes	Yes	Yes	Free Add On
Static Content Export	No	No	No	Yes	Free Add On	Limited
Management	Drupal 6.10	Joomla! 1.5.10	Moodle 1.9	OpenCms 7.0.5	TYPO3 4.2.6	WordPress 2.2.1
Advertising Management	Free Add On	Yes	No	No	Free Add On	No
Asset Management	Yes	Yes	Yes	Yes	Yes	Limited
Clipboard	No	No	Yes	No	Yes	No
Content Scheduling	Free Add On	Yes	No	Yes	Yes	Free Add On
Content Staging	Free Add On	No	Yes	Limited	Free Add On	No
Inline Administration	Yes	Yes	Yes	Limited	Yes	No
Online Administration	Yes	Yes	Yes	Yes	Yes	Yes
Package Deployment	No	No	Yes	Limited	Yes	No
Sub-sites / Roots	Yes	Yes	Yes	Yes	Yes	No
Themes / Skins	Yes	Yes	Yes	No	Yes	Yes
Trash	No	Yes	No	Yes	Free Add On	No
Web Statistics	Yes	Yes	Yes	No	Free Add On	Free Add On
Web-based Style/Template Management	Yes	Yes	Yes	Limited	Yes	Yes
Web-based Translation Management	Yes	Free Add On	Yes	No	Yes	Limited
Workflow Engine	Limited	No	Yes	Free Add On	Limited	No

Interoperability	Drupal 6.10	Joomla! 1.5.10	Moodle 1.9	OpenCms 7.0.5	TYPO3 4.2.6	WordPress 2.2.1
Content Syndication (RSS)	Yes	Yes	Yes	Costs Extra	Yes	Yes
FTP Support	Limited	Yes	Yes	No	Yes	Free Add On
UTF-8 Support	Yes	Yes	Yes	Yes	Yes	Yes
WAI Compliant	Limited	No	Yes	Limited	Free Add On	Limited
WebDAV Support	No	No	Yes	Yes	Free Add On	No
XHTML Compliant	Yes	No	Yes	Yes	Yes	Yes
Flexibility	Drupal 6.10	Joomla! 1.5.10	Moodle 1.9	OpenCms 7.0.5	TYPO3 4.2.6	WordPress 2.2.1
CGI-mode Support	Yes	Yes	Yes	No	Yes	No
Content Reuse	Limited	Yes	Yes	Yes	Yes	No
Extensible User Profiles	Yes	Yes	Yes	Yes	Free Add On	No
Interface Localization	Yes	Yes	Yes	Yes	Yes	Yes
Metadata	Yes	Yes	Yes	Yes	Yes	Yes
Multi-lingual Content	Yes	Free Add On	Yes	Yes	Yes	Free Add On
Multi-lingual Content Integration	Free Add On	Free Add On	Yes	Yes	Yes	Free Add On
Multi-Site Deployment	Yes	Free Add On	Yes	Yes	Yes	No
URL Rewriting	Yes	Yes	No	Yes	Yes	Yes
Built-in Applications	Drupal 6.10	Joomla! 1.5.10	Moodle 1.9	OpenCms 7.0.5	TYPO3 4.2.6	WordPress 2.2.1
Blog	Yes	Yes	Yes	No	Free Add On	Yes
Chat	Free Add On	Free Add On	Yes	No	Free Add On	Free Add On
Classifieds	Free Add On	Free Add On	Yes	No	Free Add On	Free Add On
Contact Management	Free Add On	Yes	Yes	No	Free Add On	Free Add On
Data Entry	Free Add On	Free Add On	Yes	No	Free Add On	No
Database Reports	No	Free Add On	Yes	Costs Extra	Free Add On	No
Discussion / Forum	Yes	Free Add On	Yes	Free Add On	Free Add On	Free Add On
Document Management	Limited	Free Add On	Yes	No	Free Add On	No
Events Calendar	Free Add On	Free Add On	Yes	Free Add On	Free Add On	Free Add On
Events Management	Free Add On	Free Add On	Yes	No	Free Add On	No
Expense Reports	No	Free Add On	Yes	No	Free Add On	No
FAQ Management	Yes	Yes	Yes	Free Add On	Free Add On	Free Add On
File Distribution	Free Add On	Free Add On	Yes	No	Free Add On	Free Add On
Graphs and Charts	No	Free Add On	Yes	No	Free Add On	No

Groupware	Free Add On	Free Add On	Yes	No	Free Add On	No
Guest Book	Free Add On	Free Add On	Yes	No	Free Add On	Free Add On
Help Desk / Bug Reporting	Free Add On	Free Add On	Yes	No	Free Add On	No
HTTP Proxy	No	No	No	No	Free Add On	No
In/Out Board	No	No	Yes	No	No	No
Job Postings	Free Add On	Free Add On	Yes	Costs Extra	Free Add On	Free Add On
Link Management	Free Add On	Yes	Yes	Yes	Free Add On	Yes
Mail Form	Free Add On	Yes	Yes	Yes	Yes	Free Add On
Matrix	No	No	No	No	Free Add On	No
My Page / Dashboard	Free Add On	No	Yes	No	Free Add On	Yes
Newsletter	Free Add On	Free Add On	Yes	Free Add On	Yes	Free Add On
Photo Gallery	Free Add On	Free Add On	Yes	Yes	Free Add On	Free Add On
Polls	Yes	Yes	Yes	Free Add On	Free Add On	Free Add On
Product Management	Free Add On	Yes	Yes	Costs Extra	Free Add On	No
Project Tracking	Free Add On	Free Add On	Yes	No	Free Add On	No
Search Engine	Yes	Yes	Yes	Yes	Yes	Yes
Site Map	Free Add On	Free Add On	No	Yes	Yes	Free Add On
Stock Quotes	Free Add On	Free Add On	Free Add On	No	Free Add On	No
Surveys	Free Add On	Free Add On	Yes	Free Add On	Free Add On	Free Add On
Syndicated Content (RSS)	Yes	Yes	Yes	Free Add On	Free Add On	Yes
Tests / Quizzes	Free Add On	Free Add On	Yes	No	Free Add On	Free Add On
Time Tracking	Free Add On	No	Yes	No	Free Add On	Free Add On
User Contributions	Yes	Yes	Yes	Limited	Yes	Yes
Weather	Free Add On	Free Add On	No	No	Free Add On	Free Add On
Web Services Front End	Limited	Yes	No	No	Free Add On	Free Add On
Wiki	Free Add On	Free Add On	Yes	No	Free Add On	Free Add On
Commerce	Drupal 6.10	Joomla! 1.5.10	Moodle 1.9	OpenCms 7.0.5	TYPO3 4.2.6	WordPress 2.2.1
Affiliate Tracking	Free Add On	Free Add On	No	No	Free Add On	No
Inventory Management	Free Add On	Free Add On	Yes	No	Free Add On	No
Pluggable Payments	Free Add On	Free Add On	Yes	No	Free Add On	No
Pluggable Shipping	Free Add On	Free Add On	No	No	Free Add On	No
Pluggable Tax	Free Add On	Free Add On	No	No	Free Add On	No
Point of Sale	No	Free Add On	No	No	No	No
Shopping Cart	Free Add On	Free Add On	No	Free Add On	Free Add On	No

SUBSCRIPTIONS	**FREE ADD ON**	**FREE ADD ON**	**NO**	**NO**	**NO**	NO
WISH LISTS	FREE ADD ON	FREE ADD ON	YES	NO	FREE ADD ON	NO

12.4 Design and interface of the system

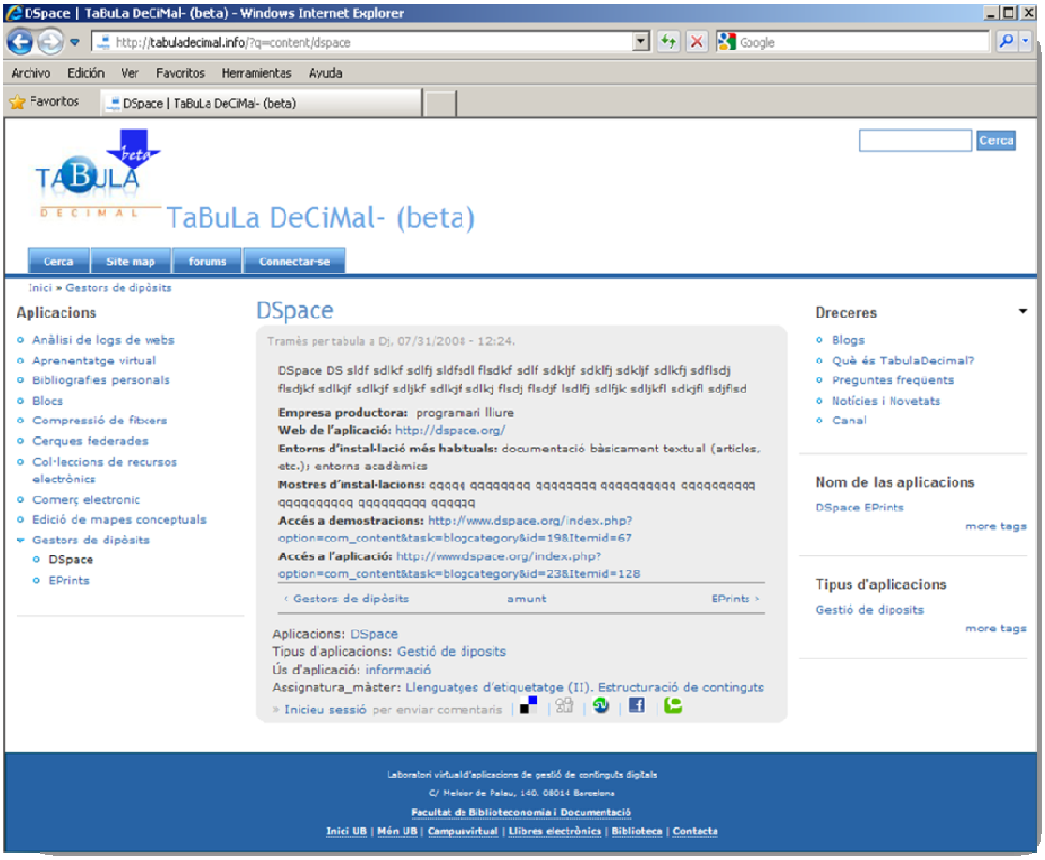


Figure 23 Design of the page as non-registered user

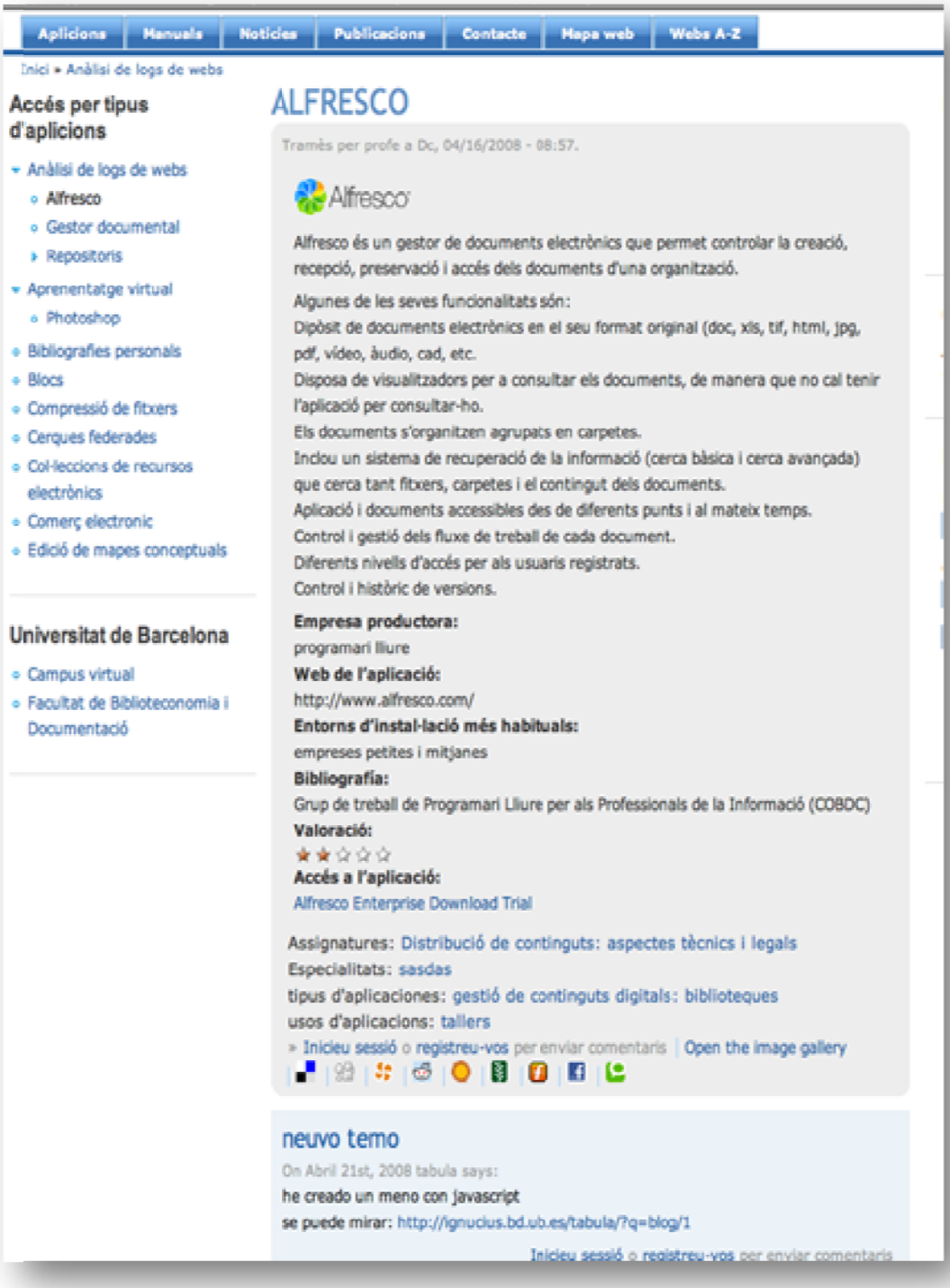


Figure 24 TabulaDecimal when you are registered user

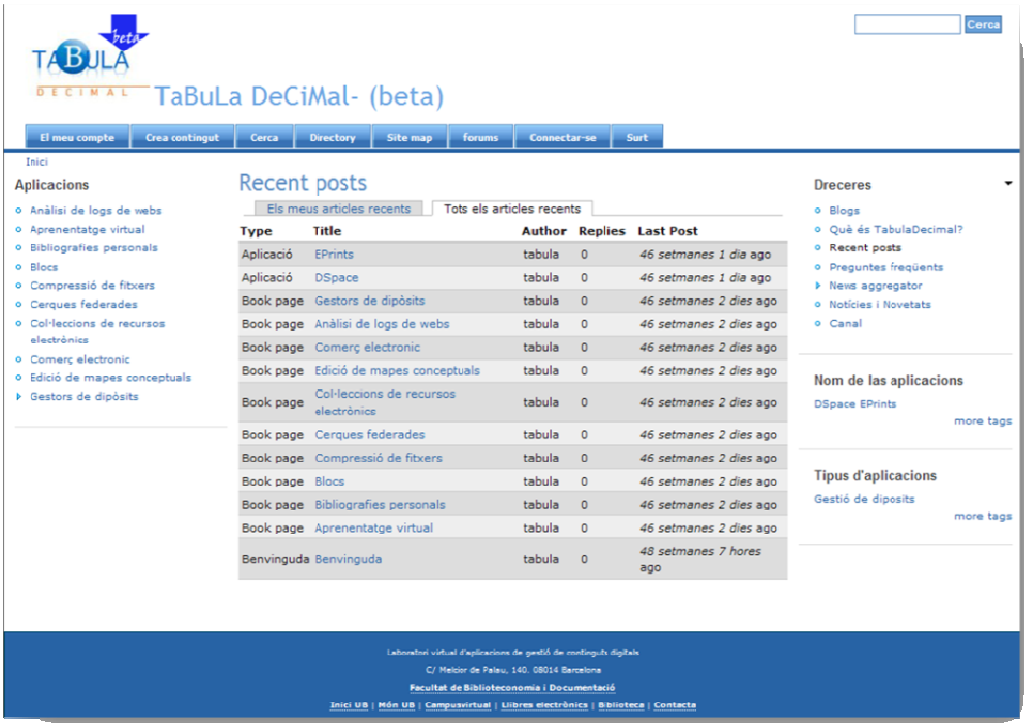


Figure 25 TabulaDecimal Recent posts page as registered user

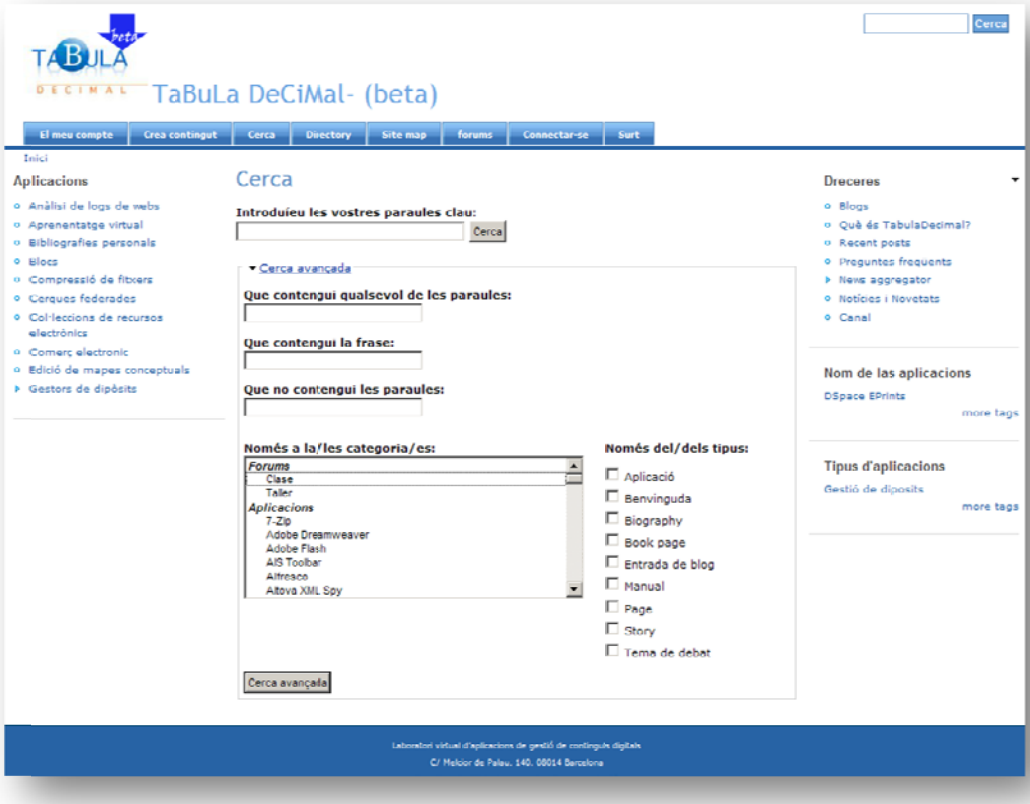


Figure 26 TabulaDecimal search system

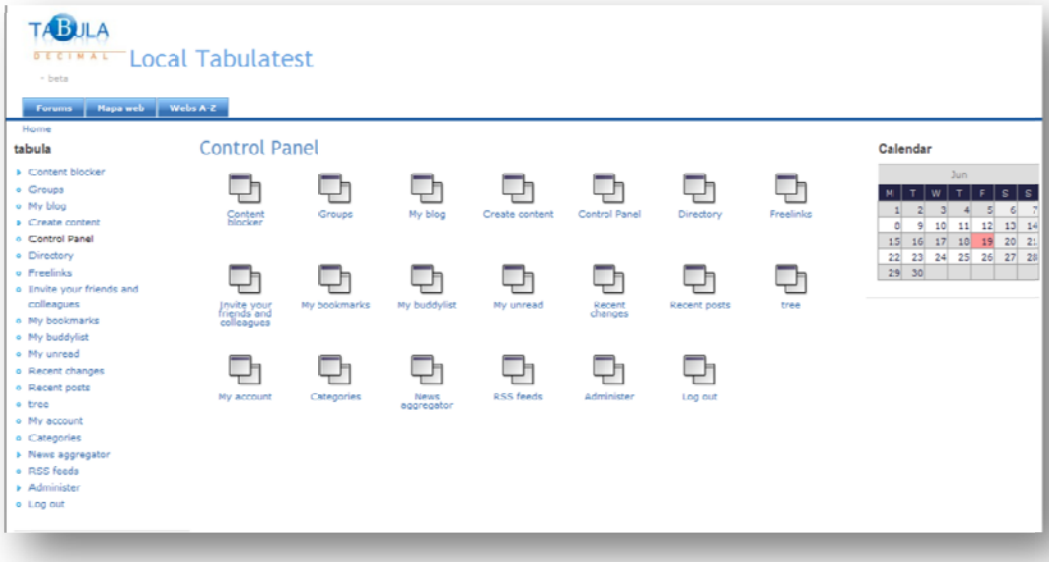


Figure 27 Control panel in TabulaDecimal

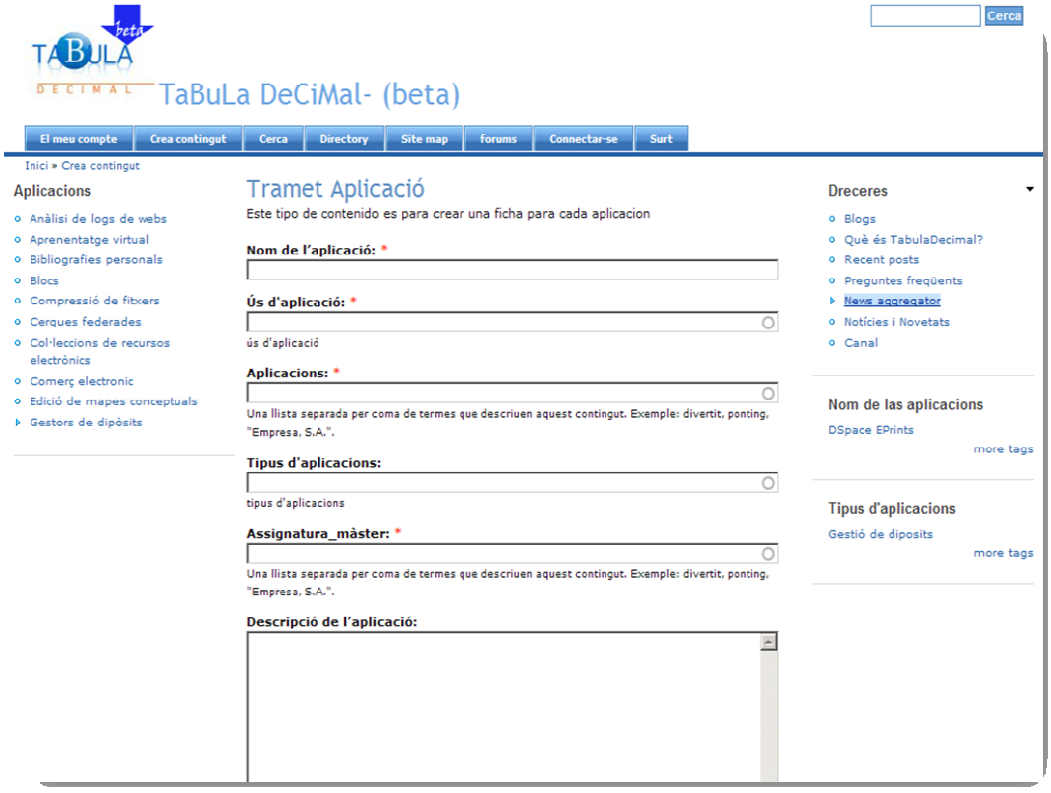


Figure 28 New content creation

12.5 Structure of the site and taxonomies

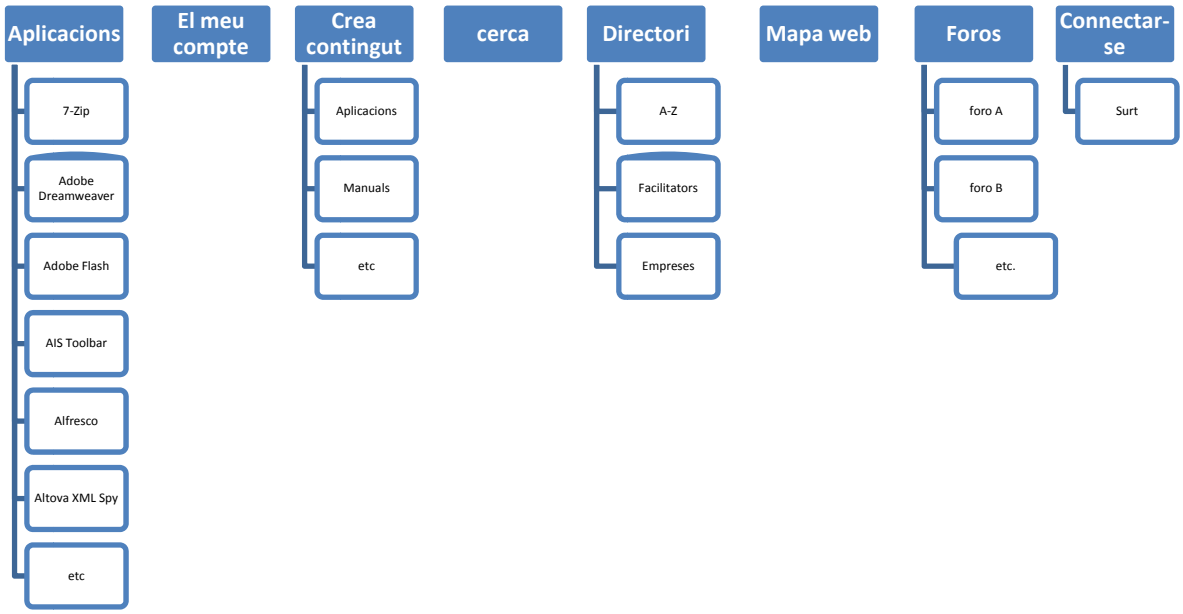


Figure 29 possible Structure for TabulaDecimal

12.5.1 Dreceres

- Blogs
- El meu blog
- Freelinks
- Què és TabulaDecimal?
- Recent posts
- Preguntes freqüents
- News aggregator
- Fonts
- Notícies i Novetats
- Contact
- Canal

12.5.2 Forums

- Clase
- Taller

12.5.3 Aplicacions (llista de aplicacions)

- 7-Zip
- Adobe Dreamweaver

- Adobe Flash
- AIS Toolbar
- Alfresco
- Altova XML Spy
- Apache
- Archon
- Audacity
- Biblio 3000
- BSCW
- CD Isis
- DaDaBIK
- DSpace
- EPrints
- Genisis
- Gimp
- InMagic
- Java Runtime Environment
- Jaws
- JHOVE
- LAME
- LAME 3.96.1
- Lavasoft Ad-Aware
- Magnolia
- MAGpie
- Map THIS!
- Media Player Classic
- Micronet S.A.
- Microsoft .NET Framework
- Microsoft Access
- Microsoft Office Document Imaging
- Microsoft Photo Editor
- Microsoft Project
- Microsoft Visual Studio .NET
- MMCompView
- Neotrace Pro
- NirSoft
- OLReg Application
- Ominpage
- Oratrix GRiNS Player
- Paint Shop Pro
- Paint.net
- PDF Creator
- phpMyadmin
- Piscosearch
- ProCite
- PuTTY
- Redianet Class

- RefWorks
- Sherlock
- SPSS
- StatsReader
- The Archivists' Toolkit
- TopStyle Lite
- TRID
- Usort-Ezcalc
- VTLS
- Wink
- WinRAR
- WinZip
- Xml Pad
- ZoomText

12.5.4 Practiques i tallers

- base de dades
- catalogació
- crear pagina web
- fitxers gràfics
- format fitxers
- Padcast
- test de usuari

12.5.5 Recursos docents

- bibliografía
- estudis de casos
- exercici
- manual
- pràctica
- tutorial

12.5.6 Tipus d'aplicacions

- Anàlisi de logs de webs: Paquets
- Aprenentatge virtual
- Bibiliografies personals
- Blocs
- Cerques federades
- Col·leccions de recursos electrònics
- Comerç electrònic
- Compressiò de fitxers
- Edició de mapes conceptuals
- Editors gràfics
- Fòrums
- Gal·leries d'imatges
- Gestió de continguts digitals

- Gestió de diposits
- Gestió integrada de biblioteques
- Gestors documentals
- Motors de cerca
- Portals
- Referéncies bibliogràfiques
- Traballe en grup
- Visionadors de vídeo
- Web ASP
- Wiki

12.5.7 Ús d'aplicació

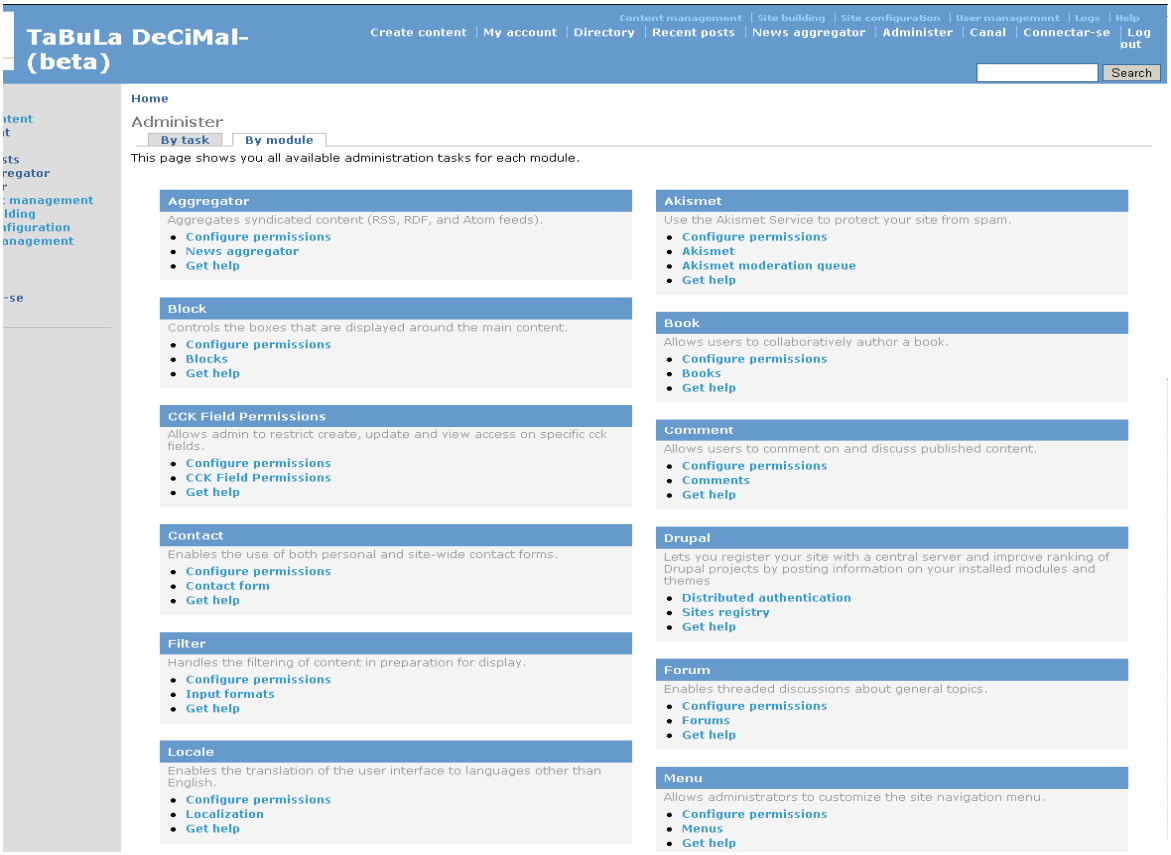
- avaluació
- experimentació
- informació

12.5.8 Assignatura

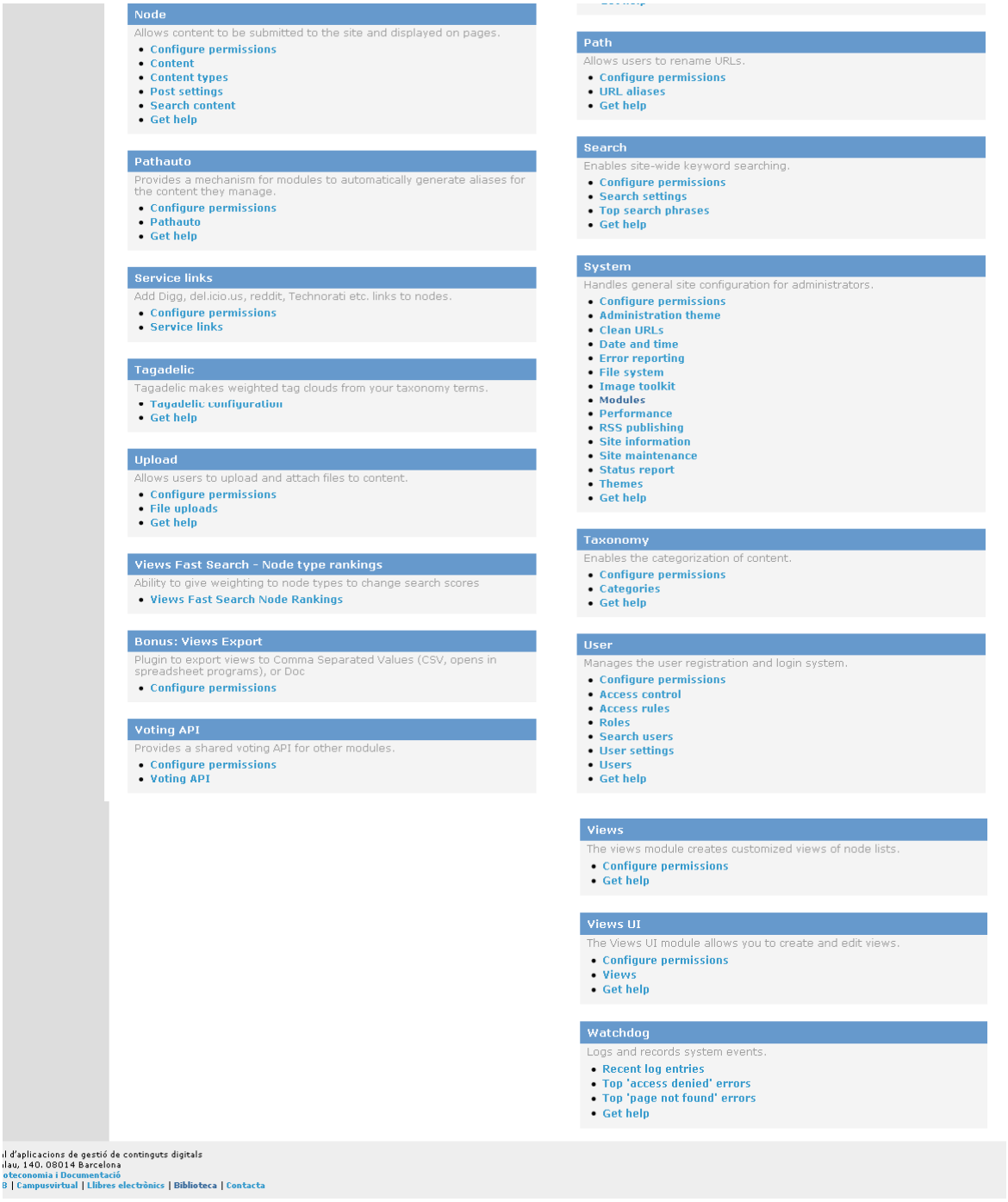
- Assignatura_diplomatura
- Assignatura_llicenciatura
- Assignatura_màster
- Fonaments en edició electrònica
- Fonaments en l'organització i la representació de la informació
- Fonaments en xarxes i internet
- Sistemes informàtics
- Administració de base de dades
- Programació per al web
- Distribució de continguts: aspectes tècnics i legals
- Avaluació de continguts digitals
- Organització i representació
- Estructuració de continguts amb XML
- Sistemes d'indexació i de recuperació de la informació
- Visualització, usabilitat i accessibilitat
- Anàlisi de l'entorn de la informació
- Estudis d'usuaris i anàlisi de l'ús de la informació
- Elaboració i gestió de projectes
- Sistemes de gestió de continguts al Web (CMS)
- Metodologia de recerca en informació i documentació
- Estadística aplicada a la recerca en informació i documentació
- Espais virtuals d'institucions museístiques
- Lingüística de corpus
- Control comptable i pressupostari per a gestors culturals
- Preservació i conservació

12.6 Modules of Drupal for the system

(Implementation phase: Workpackage 1 and 2) there is a list of application for installation:



See next page for the rest of the moduls.



Node
Allows content to be submitted to the site and displayed on pages.
- Configure permissions
- Content
- Content types
- Post settings
- Search content
- Get help

Pathauto
Provides a mechanism for modules to automatically generate aliases for the content they manage.
- Configure permissions
- Pathauto
- Get help

Service links
Add Digg, del.icio.us, reddit, Technorati etc. links to nodes.
- Configure permissions
- Service links

Tagadelic
Tagadelic makes weighted tag clouds from your taxonomy terms.
- Tagadelic configuration
- Get help

Upload
Allows users to upload and attach files to content.
- Configure permissions
- File uploads
- Get help

Views Fast Search - Node type rankings
Ability to give weighting to node types to change search scores
- Views Fast Search Node Rankings

Bonus: Views Export
Plugin to export views to Comma Separated Values (CSV, opens in spreadsheet programs), or Doc
- Configure permissions

Voting API
Provides a shared voting API for other modules.
- Configure permissions
- Voting API

Path
Allows users to rename URLs.
- Configure permissions
- URL aliases
- Get help

Search
Enables site-wide keyword searching.
- Configure permissions
- Search settings
- Top search phrases
- Get help

System
Handles general site configuration for administrators.
- Configure permissions
- Administration theme
- Clean URLs
- Date and time
- Error reporting
- File system
- Image toolkit
- Modules
- Performance
- RSS publishing
- Site information
- Site maintenance
- Status report
- Themes
- Get help

Taxonomy
Enables the categorization of content.
- Configure permissions
- Categories
- Get help

User
Manages the user registration and login system.
- Configure permissions
- Access control
- Access rules
- Roles
- Search users
- User settings
- Users
- Get help

Views
The views module creates customized views of node lists.
- Configure permissions
- Get help

Views UI
The Views UI module allows you to create and edit views.
- Configure permissions
- Views
- Get help

Watchdog
Logs and records system events.
- Recent log entries
- Top 'access denied' errors
- Top 'page not found' errors
- Get help

12.7 Type and cost of proposed equipments

This computer is suggested as personal computers for staffs from www.ahtec.com in Barcelona.

AHTEC
Modelo y Configuración seleccionados:
Ordenador Ahtec Stratos Inspire G31 Series
Ahtec Stratos Inspire G31 Series
Placa ECS G31T-M2 Intel G31+ICH7
Caja micro ATX Ahtec EN-PM2F0113 color plata
Fuente de alimentación 350W. de serie
Intel® Core 2 Duo E5200 (2.5Ghz | 2MB) [+283.620€] ref9994644
1024MB DDR2 667Mhz (1x1024MB) ref9992156
160GB 7200rpm Serial ATA
No necesito un 2º disco duro
Tarjeta de Video integrada en placa
DVD±R/RW Dual Doble Capa
No necesito un 2º Óptico
Lector tarjetas interno 20 en 1 incluido ref9989986
5.1 AC 97 compatible integrado
Red GigaLAN integrada
Teclado y Ratón óptico Logitech color negro con cables [+ 10€]
Microsoft Windows XP Profesional [+129€]
Software Microsoft Windows Live OneCare 2.0 [+ 17,50€]
Microsoft Office Profesional 2007 OEM [+219€]
No necesito Altavoces
Garantia Standard de 24 meses
Tranporte incluido en Península y Baleares
No recojo en un centro Ahtec
Precio IVA incluido: 764.00 euros
Precio sin IVA: 658.62 euros

Table 5 Personal Computer Characteristics

This system is suggested as server for two systems it is consulted from www.ahtec.com in Barcelonan.

AHTEC
Modelo y Configuración seleccionados:
Ahtec Server Scala 5400
Servidor Ahtec Scala 400
Placa Intel Server Board S5000VSATAR
Intel SC5400 con fuente de 670W.
No necesito Kit para conversión de Pedestal a Rack con guias
No necesito fuente redundante de 670W.
Quad-Core Intel Xeon E5405 (2.00Ghz/12MB/1333FSB/FCLGA) [+1206.034€]
No necesito un 2º procesador
1024MB (1GB) FBDIMM DDR2 667Mhz ECC (1x1GB)
1º HDD 1000GB 7200rpm Serial ATA [+110€]
No necesito adaptador HotSwap SATA para 6 discos
No necesito llave activación RAID 5 para SATA
No necesito adaptador HotSwap SAS para 4 discos
No necesito controladora RAID 5 4xSAS
Gráfica integrada en placa
Grabador DVD+-R/RW interna incluida
Integradas 2 tarjetas red 1Gbit Intel
Microsoft Windows Server Standard 2003 R2 [+599€]
No necesito Pack de Licencias
Teclado y Ratón óptico Logitech color negro con cables
Tranporte incluido en Península y Baleares
Precio IVA incluido: 2221.44 euros **Precio Sin IVA: 1915.034 euros**

12.8 Table of Salaries in Catalonia

TAULA SALARIAL 2008 - Taula d'equivalències

Categories	Salari desembre 2007	Taula salarial 2008	*Increment*	Grup professional
Titulat de grau superior	20.781,77 €	**22.100,00 €**	*6,34%*	GRUP 1
Titulat de grau mig, Cap Superior (oficials majors)	17.414,20 €	**18.600,00 €**	*6,81%*	GRUP 2
Cap de primera, Caps d'equip informàtic, Caps de delineació, Analistes, Programadors d'ordinadors	16.838,59 €	**18.000,00 €**	*6,90%*	GRUP 3 Nivell 1
Cap de segona, Caps d'exportació, Administradors de test, Coordinador de qüestionaris, Delineants / Projectistes, Programadors de màquines auxiliars	16.246,29 €	**17.300,00 €**	*6,49%*	GRUP 3 Nivell 2
Encarregats	15.358,00 €	**16.400,00 €**	*6,78%*	GRUP 4 Nivell 1
Oficial de primera, Controladors, Operadors, Delineants, Caps de màquines bàsiques, Tabuladors	15.197,46 €	**16.200,00 €**	*6,96%*	GRUP 4 Nivell 2
Perforistes, Verificadors, Classificadores	14.994,13 €	**16.000,00 €**	*6,71%*	GRUP 5 Nivell 1
Oficial de primera conductor	14.919,00 €		*7,25%*	
Oficial de segona	14.810,37 €	**15.800,00 €**	*6,68%*	GRUP 5 Nivell 2
Coordinador d'estudis, Cap d'enquestes, Inspectors entrevistes	14.808,53 €		*6,70%*	
Oficial de segona; mecànics; fusters	14.081,36 €	**15.000,00 €**	*6,52%*	GRUP 5 Nivell 3
Dibuixants, Operadors màquines bàsiques, Entrevistadors, Enquestadors	14.186,86 €	**14.700,00 €**	*3,62%*	GRUP 6 Nivell 1
Bedells majors	13.809,56 €		*6,45%*	
Ajudants operadors, Reproductors de planells, Operadors multicopistes i fotocopiadores	12.366,07 €	**13.200,00 €**	*6,74%*	GRUP 6 Nivell 2
Auxiliar	11.305,10 €	**12.100,00 €**	*7,03%*	GRUP 6 Nivell 3
Bedells	11.846,52 €	**12.000,00 €**	*1,30%*	GRUP 7 Nivell 1
Mossos, Peons	11.568,19 €		*3,73%*	
Auxiliar de primera ocupació	10.425,46 €	**11.100,00 €**	*6,47%*	GRUP 7 Nivell 2
Ordenances, Vigilans	10.356,99 €		*7,17%*	
Netejadors	9.917,21 €	**10.600,00 €**	*6,88%*	GRUP 7 Nivell 3

Desembre 2008

comfia ccoo *sectorial de serveis administratius i tècnics de catalunya* CCOO
Via Laietana, 16 - 2n - 08003 BARCELONA - Tel. 93 481 27 45 - Fax 93 310 71 17
correu electrònic: comfia-cat@comfia.ccoo.es - http://www.comfia.net/catalunya

12.9 Implementation checklist

6.1	**System installation**		
6.1.1	Installing the detailed version of DrupalEd		
6.1.2	Creating the database and the database user		
6.1.3	Initial configuration of the site (such as site-email and site name etc)		
6.1.4	Enable core modules in admin/build/modules		
6.1.5	Creating new admin accounts for each manager group to be able to have access to the system		
6.1.6	Upgrading the core to Drupal 5.18		
6.2	**Setting up the system**		
6.2.1	enabling add-on modules and accessible theme (zen_trevor theme is the most accessible one)		
6.2.2	installation and configuration of modules and theme for administration part		
6.2.3	installation and configuration of modules and theme for user part		
6.2.4	create roles according to the taxonomies of the users		
6.2.5	create content types according to the appropriate metadata and taxonomies		
6.3	**Setting up roles and translations**		
6.3.1	creating roles for facilitator		
6.3.2	creating roles for students		
6.3.3	creating roles for private sector/ non academic members		
6.3.4	Installing different language ".po" files (GNU gettext portable object files) to English core. Spanish, Catalan, Portuguese		
6.3.5	setting up language module for each role		
6.3.6	setting up language for default site (Catalan)		
6.4	**Setting up user registration modules**		
6.4.1	understanding the rights of each type of the users		
6.4.2	creating of the accounts (user-based/admin-based)		
6.4.3	customizing the registration process		
6.4.4	installation of additional modules for creating user accounts such as:		
6.4.5	the userplus module to creating mass account and improving management		
6.4.6	csv file module		
6.4.7	LDAP integration modules		
6.4.7	Legal module		
6.5	**Content type creation**		
6.5.1	creating the content type with the help of identification, submission Form settings, workflow settings and comment settings		
6.5.2	adding new fields and assigning taxonomies		
6.5.3	assigning privileges and permission		
6.5.4	Installation of three main module for content type:		
6.5.4.1	Bibliography module		
6.5.4.2	OAI-PMH module		
6.5.4.3	Biblio Facets module		
6.6	**Blogs Creation**		
6.6.1	creating a blog for facilitator/tutor		
6.6.1.1	up load and enable FCK editor module, configuring and assigning permissions		
6.6.1.2	create content types for the facilitator blog		

6.6.1.3	add the sample content views for the created blog and assignments		
6.6.1.4	sample users and testing the applications		
6.6.2	creating a blog for other users		
6.6.2.1	setting up, configuring and assigning permissions		
6.6.2.2	create content types for the students and private sectors blog		
6.6.2.3	add the sample content views for the created blog and assignments		
6.7	**Forum creation**		
6.7.1	Installing the forum module		
6.7.2	Creating sample containers		
6.7.3	Create forum types for each type of users		
6.7.4	Configuring each sample forums		
6.7.5	Assigning permission to sample forums		
6.8	**Creation of group workspaces**		
6.8.1	creation of general group workspace		
6.8.1.1	install and configure the organic groups modules:		
6.8.1.1.1	organic groups		
6.8.1.1.2	organic groups access control		
6.8.1.1.3	organic views integration		
6.8.1.1.4	organic groups vocabulary		
6.8.1.2	add useful links to organic group content		
6.8.1.3	adjusting the system to work with organic group module. In doing this task, the technology persons should work with the content person to separate the content types into three major categories:		
6.8.1.3.1	content types that can be used to create groups		
6.8.1.3.2	content types that can be posted into groups		
6.8.1.3.3	content types that are never posted into groups		
6.8.1.4	creating the group types according the appropriate taxonomy/category		
6.8.1.5	configuring and setting up each group type (as a defaults according to content type, group email notification, registration form control, group directory control, etc)		
6.8.1.6	assignments and permissions to group nodes (such as research group, activity group etc		
6.8.1.7	creating menus for groups		
6.8.1.8	creating additional group manager for facilitators and private sectors		
6.8.2	creation private group work space		
6.8.2.1	installation of coherent access module		
6.8.2.2	configuring the installed module according to the readme documents		
6.8.2.3	preparing a short guide text in catalan and Spanish for the user to configure the module		
6.9	**Interface Configuration**		
6.9.1	setting the home page “inici/inicio”		
6.9.2	creating the primary and secondary menus as well as a separate administration menu		
6.9.3	enable/visible blocks for specific roles/specific pages		
6.9.4	enable/visible themes for specific setting and identifying a global theme		
6.9.5	setting up toggle display		
6.9.6	setting up logo image and shortcut icon		

6.10	**Maintenance and upgrades**		
6.10.1	configuration of the poormanscron module		
6.10.2	backing up		
6.10.3	the database		
6.10.4	the core codebase		
6.10.5	settings.php file		
6.10.6	the files directory		
6.10.7	An alternative option for previous task (2.a) is installation of DB maintenance module, however is no recommendable for security issues.		
6.10.8	Periodic upgrades should be considered as part of maintenance process. The alert is received by update status in admin/build/modules		
6.10.9	Registering in Drupal Hispano http://www.drupal.org.es as well as Drupal Lengua Catalan http://drupal.cat/ for receiving news, incidents and upgrades from the Drupal		
6.11	**Installation and Configuration of Demos systems**		
6.11.1	Installation the systems: such as Joomla, Dspace etc in server A (Linux)		
6.11.2	Creation of the Database		
6.11.3	Configure the system		
6.11.4	Enable core modules and default extensions		
6.11.5	Assigning rights and roles of the users as demo access		
6.11.6	create technical dates of the site and the server “fichero de gestion tecnico” in the collaborative space of the project		
6.11.7	Installation the systems or application in server B (Windows)		
6.12	**Migration of content**		
6.12.1	Select five software as demo		
6.12.2	Reuse available manuals either in Catalan or Spanish in the faculty		
6.12.3	Create five contents for each software		
6.13	**Tuning and Quality Assurance**		
6.13.1	training of the back-end users		
6.13.2	training of the front-end users		
6.14	**Users of guides**		
6.14.1	design a manual of use for the administrator of the system		
6.14.2	design a manual guide for users (for example how to create new content, to change their desktop and themes, to change their profile etc)		
6.14.3	apply help guide in the system as a complimentary default help of Drupal in Admin part		