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TREBALL FINAL DE MÀSTER

MÀSTER EN ENGINYERIA INFORMÀTICA I LA SEVA GESTIÓ

Request for Information for the Supply of a Learning Platform for La Salle Open University

ALUMNE

PROFESSOR PONENT

ACTA DE L'EXAMEN
DEL TREBALL FI DE MÀSTER

Reunit el Tribunal qualificador en el dia de la data, l'alumne

D. **Xavier Gumara Rigol**

va exposar el seu Treball de Fi de Màster, el qual va tractar sobre el tema següent:

Request for Information for the Supply of a Learning Platform for La Salle Open University

Acabada l'exposició i contestades per part de l'alumne les objeccions formulades pels Srs. membres del tribunal, aquest valorà l'esmentat Treball amb la qualificació de

Barcelona,

VOCAL DEL TRIBUNAL VOCAL DEL TRIBUNAL

PRESIDENT DEL TRIBUNAL

ABSTRACT

In this project the requirements of a learning platform for a global, open and methodological innovative university, the first Open University of the Lasallian network, are presented. But choosing a Learning Management System for a new university that fulfill these requirements is not an easy task: more than 20 solutions can be found in the market, all with different features and prices.

To solve this, a bidding process was started at the end of 2009 to choose the most suitable learning platform for La Salle Open University. This bidding process was framed under a Request for Information and in this document a detailed review, starting with defining the learning methodology of the new University and ending with the selection of the best Learning Management System for La Salle Open University, is presented.

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INTRODUCTION

This project is framed in the context of the creation of a new university: La Salle Open University. But this new university it is not a common one; instead, it is global, open and methodologically innovative. What do these words mean?

By global we mean that the university will be accessible by people around the world no matter what country they are form. This is possible thanks to the ability to offers the degrees online.

By open we mean that it does not have an open entry policy meaning that students' previous academic achievements are not taken into account for entry. In the same way, it is not mandatory to have been enrolled into other courses to take the ones offered by La Salle Open University.

By methodologically innovative we mean that it uses learning methods that are original and adequate to the objectives of the studies.

La Salle has more than 73 institutions around the world. This fact provides La Salle Open University with a large network of colleges and universities to work with. With its kernel in Andorra, the university it is able to provide distant education in conjunction with other institutions, both Lasallian or not, around the globe to make the students belong to a reference institution in their country.

The technology of La Salle Open University facilitates its pedagogic method and must provide multimedia and multidirectional communication between the different users of the network. The use of TIC (Technologies of Information and Communication) opens a perspective that not only benefits education but also that allows a deeper transformation of the university organization itself.

Lasallian universities become a reference due to their potential at a world level. La Salle is present in 82 countries with 1037 schools, 80000 male and female teachers. To achieve this goal the Open University La Salle is striving to use the most advanced technology to ensure a stable and integrated platform to support an increasing number of users.

This document presents all the work done by La Salle Open University to acquire a Learning Platform that suits its needs. To do that a Request for Information (RFI) started at the end of last year.

In the first part of this document theoretical fundamentals about RFI and procurement can be found. The second part consists of all the practical work done regarding the RFI.

1 CHAPTER ONE: REQUEST SELLER RESPONSES

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In this chapter the characteristics of a Request for Information are provided and it is compared to other procurement processes like Request for Quotation, Request for Tender and Request for Proposal. The advantages and disadvantages regarding the process of outsourcing a LMS are explained and the last part of the chapter is devoted to the steps to follow when opening a RFI to acquire a Learning Management System (LMS) and its challanges.

1.1 Request for Information

A Request for Information (RFI) is a standard business process whose purpose is to collect written information about the capabilities of various suppliers. Normally it follows a format that can be used for comparative purposes.

As the name suggests, RFI gather information to help decide what step to take next. RFI's are therefore seldom the final stage, but instead are often used in conjunction with the other 3 requests detailed further in this chapter.

An RFI is a solicitation sent to a broad base of potential suppliers for the purpose of conditioning, gathering information, preparing for an RFP or RFQ, developing strategy, or building a database about:

- The suppliers, including: facilities, finances, attitudes, and motivations
- The state of the supply market
- Supply market dynamics
- Trends and factors driving change
- Alternative pricing strategies
- Supplier competition
- Breadth and width of product/service offerings, by supplier
- Supplier strategic focus, business, and product plans

RFIs may include a detailed list of products/services for which pricing is requested. The pricing should be used for comparative purposes, not as the basis of buying decisions. Through analysis of RFI responses, strategic options, lower cost alternatives, and cost reduction opportunities may be identified [(Mhay & Coburn, 2010)].

1.2 Request for Quotation (RFQ)

RFQ is best suited to products and services that are as standardized and as commoditized as possible to make the suppliers' quotes comparable. An RFQ is a solicitation sent to potential suppliers containing in exacting detail a list or description of all relevant parameters of the intended purchase, such as:

- Personnel skills or competencies
- Part descriptions/specifications or numbers
- Quantities/Volumes
- Description or drawings
- Quality levels

- Delivery requirements
- Term of contract
- Terms and conditions
- Other value added requirements or terms
- Draft contract

Price per item or per unit of service is the bottom-line with RFQ, with other dimensions of the deal impacting the analysis process as determined by the buyer. Supplier decisions are typically made following a comparison and analysis of the RFQ responses. RFQ are typically used as supporting documentation for sealed bids [(Mhay & Coburn, 2010)].

1.3 Request for Tender (RFT)

An RFT is an open invitation for suppliers to respond to a defined need as opposed to a request being sent to potential suppliers. The RFT usually requests information required from a RFI. This will usually cover not only product and service offerings, but will also include information about the suitability of the business.

It is not unusual for a buyer to put out unclear or vague business requirements for an RFT. This makes it challenging for the supplier to propose a solution. This is not the best use of a RFT. RFT should only be used when the buyer is clear on their requirements, and is also clear on the range of possible solutions that might fit the buyer's needs.

A RFT is not a very time or cost efficient method to source supply due to its lack of defined business requirements and open invitation for suppliers to respond [(Mhay & Coburn, 2010)].

1.4 Request for Proposal (RFP)

An RFP is a solicitation sent to potential suppliers with whom a creative relationship or partnership is being considered. Typically, the RFP leaves all or part of the precise structure and format of the response to the discretion of the suppliers. Indeed, the creativity and innovation that suppliers choose to build into their proposals may be used to distinguish one from another.

Effective RFPs typically reflect the strategy and short/long-term business objectives, providing detailed insight upon which suppliers will be able to offer a perspective. If there are specific problems to be addressed in the RFP response, those are described along with whatever root cause assessment is available.

While specific data, offerings and quotations may be sought; questions about the following will make up a significant portion of both an RFT an RFP:

- The specific items on which the suppliers are proposing
- Business requirements
- Performance measures
- Information
- Ideas
- Instructions on how to reply
- Due date

- How will we evaluate how feedback will work
- Describe the process for selection
- Request for cost breakdown (sometimes)
- Communication: cover letter (sets the stage), calls in advance
- Who to contact with questions [(Mhay & Coburn, 2010)].

1.5 Outsourcing

Outsourcing is having a major impact on e-learning and the technology side of training. Several new business models bring tremendous resource and cost savings for learning organizations. But outsourcing is not new in learning and development. Today, the term "outsourcing" really means three things:

First, it refers to the traditional use of vendor services like content development, a wide variety of learning programs, management and executive education, and many functional tasks.

Second, it refers to the outsourcing of training technology: learning management systems (LMS), e-learning content development, content integration and the hosting of complex LMS and learning content management system (LCMS) software.

Last, the term refers to the outsourcing of business processes, also called business process outsourcing (BPO). This area includes the outsourcing of help desks, vendor management, classroom administration and the training personnel themselves [(Bersin, 2005)].

Learning technology is changing rapidly: nearly one-third of the LMS vendors in the market three years ago have gone out of business. Why? Because the rapid rate of change in learning technology makes it hard for even seasoned technologists to keep up.

The economic benefits of outsourcing are real and significant. Outsourcing LMS technology and operations reduces costs in three areas:

- **Implementation costs:** Outsourcing companies save time and money by leveraging the outsourcer's IT investments and professional expertise. Implementations are simplified and streamlined because configuration options and customization options are typically limited. Research shows that in the first year of LMS implementation, companies implementing their own LMS spent an average of $392 per learner. Those using a hosted LMS spent an average of $328 per learner—a 16 percent savings [(Bersin, 2005)].
- **Operational costs:** Companies that manage their own LMSs spend more than twice as much per learner annually in LMS maintenance and upgrades than those companies using outsourced LMS [(Bersin, 2005)]. The dramatic cost savings are largely based on LMS outsourcers' ability to pass on economies of scale and efficiencies of centralization to their customers.
- **Reduction in technical staff:** Those companies that manage their own technology typically have a dedicated technical staff which is a big cost. The research shows that companies that use outsourced technology platforms are able to reduce their technical staffs by almost half, compared to companies with internally managed systems [(Bersin, 2005)].

While outsourcing isn't right for every organization, it is an option that should be considered and evaluated by managers on a periodic basis. Studies show significant cost and strategic benefits, including:

- Reallocation of staff for concentrated focus on content development and program management.
- Enabling learning executives and staff to spend more time with line managers and field operations.
- Freeing resources for measurement, evaluation and overall operational and quality improvement in training programs.
- Greater flexibility and responsiveness to meet business demands.

In general, those organizations that outsource report high levels of satisfaction within their staffs and from the clients they serve. These organizations also take a highly pragmatic, business driven approach to the learning function. Outsourcing is a trend that will continue to grow, especially the outsourcing of technology. Increasingly complex solutions, integration initiatives, budget and staff constraints, and the demand for diverse training resources are among the factors that will fuel the trend.

Companies need to consider outsourcing as part of the regular planning and budgeting process. When used under the right conditions, outsourcing can have near-term value to learning organizations and the clients they serve.

1.6 The LMS selection process

Selecting the appropriate LMS and/or learning content management system (LCMS) for an organization starts with identifying the learning strategy and requirements. Purchasing a learning management environment is a major investment, so it is important to clearly define and prioritize requirements in order to find the right LMS that will meet core requirements initially and grow to meet subsequent requirements in the future. Once a purchase is made, it is nearly impossible to replace it without significant additional costs, so it is crucial to understand the full scope of what an LMS should do for an organization [(Alvarado, 2010)].

There are more than 20 major LMS providers, and certainly not all of them follow the same business model. One provider may offer an installed solution, while another will only host content as an application service provider (ASP), and others will offer both.

Some LMS solutions are great for small to medium-sized companies while insufficient for large enterprises, while others focus on enterprise solutions that are too overwhelming for smaller companies, and still others try to balance their product by offering scalable solutions. There are many factors that may make a particular solution work in one environment and not in others.

It can also be a big mistake to select an LMS solely because of a pre-existing relationship with that vendor or that vendor's partner. The common thinking is that it will save a lot of money, when in fact it could cost even more if the LMS cannot meet core requirements that are crucial in meeting business objectives. It is best to include such an LMS in an evaluation, but it is equally important to evaluate the LMS based on its capability to meet requirements.

In summary, the following steps for selecting a LMS can be followed:

1. Determine the Learning Strategy

As a learning organization, there should already be a clear learning strategy in place. If not, now is the time to develop one. In developing a strategy, consider the target audience—their learning preferences, their locations, the resources that are available to them to attend learning programs, etc. Corporate goals and objectives should also be defined and the strategy aligned to them. Also take into account budget constraints, potential realized benefits and return on investment.

This is not a trivial task, and it can be a whole separate initiative in itself, so bear in mind the time invested in this step. A learning strategy should reflect how learning programs are delivered to the people who need them to accomplish business goals [(Alvarado, 2010)].

2. Document Requirements

Specific requirements should be defined in each of the areas mentioned previously. One of the key factors in finding the right LMS for an organization is matching an LMS to requirements, not the other way around.

It is also important to prioritize requirements in a range from core (high) to low. High-priority or core requirements are absolutely necessary for the LMS to meet within the initial implementation or launch of the system. Any core requirement that cannot be met should dismiss the LMS from consideration. Medium-priority requirements are essential to be met in the initial or subsequent phases of implementation. This means that the LMS may not be able to meet the requirement for the initial phase, but a new scheduled release appears to meet the requirement or there is a commitment from the LMS vendor to meet the requirement in the near future. Finally, low-priority requirements are “nice to have” and can be delayed indefinitely, but also run the risk of being promoted to medium priority, so these priorities still have a bearing on how willing or open an LMS vendor is to considering them.

Another consideration is where gaps in the requirements for a particular LMS can be filled with customization or extension of the LMS and how well the LMS adapts to such customizations or extensions. Customization refers to changeable parameters within the confines of the out-of-box design of the LMS, while extensions refer to the ability to integrate or interface additional functionality not originally included in the LMS design. Some organizations struggle with the “build or buy” question when it comes to LMSs, so it is important to note the options that may be open to organizations willing to apply additional resources to meet specific needs.

Also, consider hosted versus installed systems. Hosted systems are maintained by the LMS provider, which acts as an application service provider (ASP). The LMS provider typically grants access to users of the LMS and provides support for the system should problems arise. Modifications or customizations beyond what the application supports in configuration screens may need to be done by the ASP and can be restrictive. Installed solutions, on the other hand, are systems that are installed within a company’s network. The support of the hardware and applications would most likely fall on the IT organization, but there would be more control over customizations and extensions. Compatibility to

standards such as SCORM (Shareable Content Object Reference Model) and AICC (Aviation Industry CBT Committee) should also be considered [(Alvarado, 2010)].

3. Research LMS Companies

In order to make the most appropriate decision, it will be necessary to research profiles of each potential LMS and/or LCMS vendor. Information is usually available on their Web sites. Additionally, research and comparison reports may also be available from research firms.

The focus should be on key areas surrounding the core or highest-priority requirements. LMS companies will usually work with a client to meet lower-priority requirements through partnerships, customization or future releases. From these reports, a manageable list of companies that requests for proposals can be sent to should emerge [(Alvarado, 2010)].

4. Prepare the Request for Information (RFI)

The RFP should be prepared based upon the requirements. In the RFP, it is not necessary to indicate priorities of requirements, nor list them in any specific order, so that each requirement is responded to equally. Each requirement should be as specific as possible so that the LMS vendor can respond directly to the requirement rather than provide a general response.

Scenarios should also be included in the RFI. Scenarios describe very specific situations that the LMS/LCMS needs to accommodate. This will give a clear indication as to how the LMS vendor can meet specific situations.

A proposed project plan for implementation based on the requirements should also be requested. The project plan must include timelines relative between the start and the end of the project. This will provide an estimate as to how long the vendor perceives implementation will take, ownership for each task and the details of the tasks themselves. If the LMS vendor has had enough experience in implementation, it should already have a template of a project plan that could easily be applied in a proposal.

Finally, provide a short response time for the RFI. This will give an indication as to how hard a company will work for the business and can be a strong indicator as to how they will perform in a business relationship. It should not be the sole indicator, however; there are other opportunities to establish this type of estimate [(Alvarado, 2010)].

5. Review the Proposals

The review team should have sufficient time to review the proposals and rate them according to the rating system that all agreed upon before. Each rating should also include comments for both positive and negative impressions. In this manner, quantitative measures of the ratings are not only considered, but also subjective impressions of each criterion.

Once again the focus will need to be on the core or highest-priority requirements. These are usually the requirements that must be present in order to consider the system. If even one of the core requirements cannot be immediately met by the LMS, that LMS should be

eliminated from the list. For this reason, only core requirements that truly represent imperative functionality should be incorporated.

The result of the review should lead to a short list of vendors [(Alvarado, 2010)].

6. Schedule Meetings and Demos

After the proposal review is complete, meetings and demos should be scheduled so that the vendors can answer specific questions and demonstrate their claims on the proposal. They should also be required to demonstrate the scenarios provided. This is crucial in determining how compatible or flexible their environment is. It is also important to make clear what part of the functionality is included out-of-box with minor configuration changes and what part requires customization beyond the quoted price.

If any of the review team needs to attend virtually, it would be good opportunity to utilize a vendor's distance-learning solution. This will provide the capability to experience part of the environment as the learning audience would.

Be sure to question any part of the functionality or implementation that is not clearly understood. It is important that the account representative is able to explain functionality clearly and without ambiguity. Additionally, the flexibility of the project plan should be explored. An organization should not be required to adhere to processes that conflict with internal processes [(Alvarado, 2010)].

7. Make the Selection

Finally, a selection can be made after carefully reviewing and internally discussing the impressions made by each vendor during each meeting. This is a serious and long-term investment, so it is important to have complete cooperation among the members of review team. It is also important to build in contingency plans in case certain features that are expected in the initial implementation are not done in time, or other unexpected delays or problems arise.

This is just a high-level view of an approach to thoroughly examining LMS/LCMS vendors and is flexible to shorten the cycle, although at the cost of quality. Consider that LMS solutions can be a huge investment and if implemented too quickly, can lead to enormous costs later in additional effort to meet requirements.

Potential results from employing the approaches discussed in this article are presented for demonstrative purposes only. Actual results may vary from application to application and are not guaranteed [(Alvarado, 2010)].

2 CHAPTER TWO: THE LEARNING STRATEGY

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This chapter is an introduction to the methodology and pedagogy of the courses that will be offered by La Salle Open University. This learning methodology is called Scenario Centered Curriculum (SCC) and is has been introduced by Dr. Roger Schank. The first two courses that La Salle offers are:

- A Master in eBusiness
- Master in Business Administration Experiential Online

In this chapter the methodology is explained as well as the contents of the course and the way the courses are structured and the role of the teacher as a mentor of the students.

2.1 Story Centered Curriculum (SCC)

The Story-Centered Curriculum (SCC) is founded on a constructivist model of how people learn [(Bransford, Brown, & Cocking, 2000)] and on the dynamic memory model of how human memory develops [(Schank, 1999)]. These theories suggest that people naturally learn by constructing new knowledge, building on what they individually already know and believe from their own prior experiences, as they confront new experiences that challenge their prior understanding.

The implication for instruction is that learning environments must place learners in experiences that will challenge their prior conceptions and allow them to compare what they are experiencing with what they previously believed. Noticing the differences leads to curiosity, which leads to learning. Even if the learning context is new, learners are likely to have some intuitions about it, and need to have the chance to act on their intuitions, or to realize they do not know what to do in the situation before they are ready to learn anything formally about it.

Once learners are immersed in the new experience and they attempt to maneuver within it, they begin to develop questions that result from a realization that there is something they need to learn before they can act, or because something surprising happens as a result of their actions. The learners will seek explanations to makes sense of that which surprised them, or they will seek instruction about the context and skills they may need to use in the context, so they can more knowledgeably develop a plan for their next actions.

SCC place students into a realistic context and asks them to do meaningful tasks within that context prior to receiving any instruction. They have the opportunity to bring their intuitions to bear on the problem and to either act on them or ask questions prior to moving forward. This allows learning to happen just-in-time, right at the moment the learners are curious to address issues that are challenging their intuitions (or lack of intuitions).

Quoting Dr. Roger Schank talking about Story Centered Curriculum: “the world has changed radically in the last 100 years, and the pace of change shows no sign of decreasing. Yet traditional teaching methods used in schools and universities have not kept pace. Time has come to redesign education, not only to keep up with our changing world, but also to take advantage of the great scientific advances in our understanding of how people learn.”

Dr. Roger Schank was the founder of the renowned Institute for the Learning Sciences at Northwestern University, where he is John P. Evans Professor Emeritus in Computer Science, Education and Psychology.

Prior to joining Northwestern, he was Professor of Computer Science and Psychology at Yale University and Director of the Yale Artificial Intelligence Project. He has also served as Visiting Professor at the University of Paris VII, Assistant Professor of Computer Science and Linguistics at Stanford University and Research Fellow at the Institute for Semantics and Cognition in Switzerland.

In addition, Dr. Schank served as the Distinguished Career Professor in the School of Computer Science at Carnegie Mellon University. He is a fellow of the AAAI and was founder of the Cognitive Science Society and co-founder of *The Journal of Cognitive Science*. He holds a Ph.D. in Linguistics from the University of Texas.

In 1994, Dr. Schank founded Cognitive Arts Corporation, a company that designs and builds high quality multimedia simulations for use in corporate training and for online university-level courses. Cognitive Arts has partnered extensively with Columbia University.

In 2002 he founded Socratic Arts, a company devoted to making high-quality e-learning affordable for both businesses and schools.

A revolutionary in the field of education, Dr. Schank is the author of more than 20 books on learning, language, artificial intelligence, education, memory, reading, e-learning, and storytelling. The most recent are *Virtual Learning, Coloring Outside the Lines: Raising a Smarter Kid by Breaking All the Rules, Scrooge meets Dick and Jane, Engines for Education,* and *Designing World Class E-Learning*.

While the traditional educational model puts students in a passive position, simply sitting and listening to teachers lecture, Dr. Schank's educational systems give students an active role and motivate them to seek out the knowledge they need to solve the challenges facing them.

The dynamic Story-Centered Curriculum (SCC) provides a carefully designed apprenticeship-style learning experience in which the student encounters a planned sequence of real-world situations that foster the development and application of knowledge and skills in an integrated fashion. Students face exactly the right progression of challenges to stretch and build their abilities.

Mentors pay the expert role, providing one-on-one coaching, help, and feedback to the student, while encouraging self-directed learning. Through these mechanisms, the SCC provides accelerated experiential learning. What's more, the realistic nature of students' experiences ensures that they will retain what they have learned and prepares them to apply their knowledge immediately and effectively in the real world.

La Salle Open University aims to offer the best learning-by-doing curricula in the world starting with the Master in e-Business (MEB) and the Master in Business Administration Experiential Online (MBAOL).

2.2 Master in e-Business (MEB)

E-Business is the system re-engineering of business processes to take advantage of the efficiency afforded by information technology and electronic communications. It may involve something as simple as establishing a retail website, or it may require a change as profound as completely overhauling the way a Fortune 500 company processes orders. Regardless of the scope of the project, building e-Business systems requires application of technology to actual commercial situations.

The MEB program at La Salle Open University consists of 14 real-world team projects in e-Business consulting in which students must solve realistic problems incorporating a spectrum of current e-Business issues. The final nine weeks of the program are spent working on actual projects contributed by industrial sponsors [(Salle, 2010)].

In the new era of digital economy, business models have evolved and companies have an urgent need to be more and more competitive, which involves the adoption of new strategies based on electronic business.

The MEB responds to the business market needs to train IT specialists, which are responsible for the leadership in technologic projects management that gives business an added value.

The MEB, which can be full time or part time, introduces a very detailed focus on key aspects of the analysis, conception and development of e-commerce projects. This is why a basic knowledge on programming is required. The program includes issues such as decision making to launch or expand technologic projects, mobile and web interface design or the implementation of privacy policies or electronic payment mechanisms, among others.

The Master is based on the performance of practical cases, just as a working professional would do it. Each case has a real time project schedule; therefore the tasks are done within weeks, just as it would in a real company.

This program switches from passive listening to dynamic task, and it provides real environments that make the student be a part of the decision making process, team working and performance of activities related to their future job.

2.2.1 Objectives of the program

The objectives of the program are:

- Provide the student with a wide experience in basic technologies used in electronic business.
- Provide the student with a business strategic vision and a clear orientation to leadership in technological projects.
- Increase innovation to launch technological projects, or to expand them on a small o big scale.

2.2.2 Entrance Profile

- Professionals that will have to manage projects on technological innovation and activity development of electronic commerce as managers and technicians of communication and information technologies, R+D staff, engineers, marketing

managers or experts on other activity sectors (such as public administration, telecommunications, computers, banking, assurance companies, technological consultancy, pharmaceutical industries or research, among others)
- Experts with knowledge on Communication and Information Technologies, with a university degree and with some experience.
- People, with or without a university degree, that may want to know the basic technologies used in the electronic business environment.
- Project managers that are responsible for the delivery of solutions with a high degree of technology and business.
- Managers with capacity of influence in the e-business and e-commerce strategies in companies.
- Entrepreneurs that want to launch their own business or expand their companies, on a small or big scale.

2.2.3 Exit Profile

- E-commerce consultancy specialists.
- Obtain the abilities required to create and reinforce an e-commerce company.
- Ability to transform a traditional company into an e-commerce model.
- Manage application and solution development and technological solutions in a company.
- Provide tools and e-business strategies to create a difference and an advantage in companies.

2.2.4 Educational Program

Here are presented the 13 modules that form the MEB. They are done one at a time in groups of five people:

1 - Ubiquitous Computing [Health care industry]

Students will learn the impact of ubiquitous computing in business processes, while you give your advice to a big health care centers net that wants to increase its benefits, promote security and improve speed and quality of their health care attention. Students will evaluate the viability of the use of ubiquitous computing technologies (such as radiofrequency identification) for the client/hospital and will recommend a solution and an implementation strategy for the next five years.

2 - Requirements Elicitation and Analysis [Health care industry]

Students will identify, collect, and document requirements for a customized people-and asset-tracking system using the technology previously recommended to their client-hospital. In this task, students learn about requirements gathering, developing use cases and models, and designing system specifications—skills that they will revisit in various tasks throughout the programs.

3 – Contextual Design [Retail industry]

Students will take the first steps in developing a B2C ecommerce site by conducting a preliminary contextual inquiry to gather the requirements of the prospective users of the

website. In teams they will select users who fit specific profiles; prepare interview questions; conduct the contextual inquiry; and develop flow, cultural and sequence models that will inform the design of the website.

4 – User Interface Design and Testing [Retail industry]

Students will take the next steps in developing their client's B2C ecommerce site. In the first part of the course, the teams will develop a prototype user interface in HTML; perform a heuristic analysis of another team's prototype; and then refine their own prototype based on another team's heuristic analysis and recommendations. In the second part, the teams will conduct usability testing, refining their prototype in response to the usability feedback; and present their final UI design to the client.

5 – Network Technology [In-house corporate strategy/Telecommunications industry]

Student will prepare a primer for corporate executives on the past, present, and future of mobile voice and data networks. In the process, they will learn about the capabilities and limitations of present 3G networks; the goals and potential enhancements of next-generation 4G networks; and the differences between the capabilities, deployment, and migration paths of Long-Term Evolution (LTE) and WiMAX technologies. Finally, you will predict which competing standard—LTE or WiMAX—will dominate the future of mobile networks.

6 – Privacy Technology [Banking industry]

Students will learn about online privacy policies and use financial services privacy technologies, including P3P, to protect customer data. They will survey the privacy practices associated with the websites of various financial services firms; review the client's proposed privacy practices; design both human- and machine- readable privacy policies to appear on the client's website; and deliver the files necessary to protect the client's website.

7 – Enterprise Resource Planning and Supply Chain [Logistics/Manufacturing industry]

Students will recommend a customized Enterprise Resource Planning (ERP) solution for a small manufacturing company seeking to improve visibility with its supply chain, decrease costs, increase timeliness, and provide more information to customers and suppliers. They will also perform a qualitative and quantitative comparison of current ERP offerings focusing on the manufacturing environment and prepare a report and recommendation tailored to the needs of the client.

8 – E-Payment Methods [Logistics/Retail industry]

Students will recommend a worldwide ePayment solution for an international retail client that wants to implement Scan-Based Trading (SBT). SBT allows retailers to pay their suppliers when the goods are sold, rather than when being delivered, which is advantageous to both retailers and suppliers. Students will have to identify and analyze all the data requirements of the system; recommend a banking structure to conduct the foreign exchange transactions necessary; and design a payment system that enables daily payments

in a number of different currencies, appropriate communication of payment data, and tracking the retailer's flow of money around the world.

9 – Database and Detailed Design [Finance and banking industry]

Students will design a database-driven, banking website based on a domain model and set of use cases. In the process, they will learn to:

- Produce a data base logical design
- Model entities and relationships using an entity-relationship diagram (ERD)
- Map ERDs to database table definitions and normalize them;
- Map use case scenarios into UML Sequence Diagrams (SDs)
- Create a UML Design Class Diagram from a Domain Model
- Create a site diagram to model a set of user interface screens and their relationships

10 – Web Services and Integration [In-house/Retail industry]

Students will develop an online store for a small business utilizing eBay web services and they will learn about the architecture of the eBay application-programming interface (API) and develop a web service client either by directly managing XML or via a language-specific software development kit (SDK).

11 – Web Application Development [Banking industry]

Students will apply their Java programming skills to build a prototype of a browser-based Mutual Fund web application, based on a set of use cases and draft entity-relationship diagram (ERD). Students will also learn to design a three-tier web application using a model view controller (MVC) design pattern, download, install, and configure J2EE tools and technologies, and implement a web application on top of these J2EE tools and technologies.

12 – Optimizing Web Pages for Search Engines [Banking industry]

Students will recommend a solution to a banking client who is seeking to increase significantly the search-results ranking of its web site. They will have to analyze the websites of the client's competitors and recommend changes to the client's web site. Students will learn how search engines work and how to ensure that a website ranks higher than competitors do by popular search engines.

13 – Data Mining and Customer Relationship Management [Banking industry]

Students will use data mining techniques to analyze a client's historical customer data, predict customer-buying preferences, and make recommendations on how to sell and market new products to customers. In the first part of the task, students will have to select which products to sell to new customers. In the second part, they will have to predict which new products will succeed. In the process, students will learn to apply various data mining techniques, including k-nearest neighbor (k-NN), similarity matrix, decision tree and other algorithms; interpret confidence factors regarding data mining and analysis; and integrate data mining techniques into launching a new products.

14 – Mobile Commerce [Logistics/Transportation industry]

Students will design and develop a mobile trip assistant solution for a public transportation authority. They will learn to evaluate different design options associated with the development, deployment, and maintenance of mobile services and design mobile solutions that address the unique usability challenges associated with the use of mobile devices, such as cell phones, and strike a compromise between the functionality they offer and their ability to run across a broad range of mobile access devices. Students should also consider what new revenue opportunities this presents for the transit authority and make recommendations on how to monetize this new application.

2.3 Master in Business Administration Experiential Online (MBAOL)

The Master in Business Administration Experiential Online (MBAOL) is a program designed to equip students for the world of global business in the digital age. The program's online learning environment mirrors that of real-world work situations. Courses require students to resolve real business challenges, working in diverse teams and taking responsibility for developing and managing their own work styles. By working through realistic business scenarios, students will gain practical understanding of finance, management, entrepreneurship, ethics, corporate governance, team building, sales and marketing. Through online simulations, students will carry out such projects as taking a business online, launching a new product, reengineering a supply chain, and designing a new product or service as a joint venture [(BES La Salle, 2009)].

The Experiential MBAOL is a dynamic online program designed to equip entrepreneurs to meet the challenges and opportunities of the increasingly digital and global age. Based on real life simulations, MBAOL provides a new approach to the learn-by-doing concept. Through interactive role playing of real business scenarios, students gain practical and memorable experience as opposed to more traditional and academic MBA programs.

With the setting of long-term business goals, students actively perform within realistic timeframes in the job positions to which they aspire in real life. The simulations involve actual decision-making processes and practical job-related tasks. The value of teamwork is learned through interaction with fellow students, whilst continuous coaching and support is provided by industry experts. And the overall result is a real business experience.

Based on the 'learn by doing' concept, the Experiential MBAOL is an innovative online course that actively steers students through real business scenarios. By means of interactive role playing and memorable story-telling, students actually perform in the roles and challenges they will take on in the marketplace after graduating. They learn to develop, demonstrate and defend their own management style whilst leveraging the power of teamwork. The course program is flexible yet structured, with pre-defined activities and timelines for deliverables as well as scheduled online meetings with mentors and fellow students.

The course provides effective learning by moving on from traditional classroom methods and content to real life, experience-based training that enables students to acquire the practical skills they will need in their desired future jobs.

This unique online MBA course involves both synchronous and asynchronous e-learning, follow-up and teamwork. Under expert supervision and tutoring, students work with diverse teams within international environments throughout this exceptional and exhilarating journey of learning and self-development.

2.3.1 Objectives of the course

The aim of the La Salle Open University MBAOL is to train and enable entrepreneurs to excel in their chosen field of business management as well as to fulfill their professional aspirations.

Based on its sound knowledge and understanding of MBA student career goals, La Salle Open University has identified the key activities and steps required to enable students to achieve professional success in their particular area of interest, from international business administration to innovation management.

The curriculum has been drawn up by La Salle together with experienced business, industry and learning experts. Its dynamic online format provides a global and cross-cultural dimension that prepares students for the increasingly international business environments of the 21st Century.

2.3.2 Student Profiles

The Experiential MBA Online is designed for managers, junior executives and entrepreneurs who are eager to develop their management skills in order to succeed in the challenging business world of tomorrow.

2.3.3 Course Programme

The Experiential MBA Online is composed of a series of modules and is based on a SCC. With interactive learning methods that involve taking on real-life roles and activities, students develop the skills, experience and confidence they require to succeed in their future jobs.

By assuming different roles such as consultants, managers, directors, etc., students perform and gain experience in a wide variety of business scenarios. Throughout the programme they interact with their fellow players and are guided and stimulated by expert mentors.

The course comprises six modules, five of which are mandatory:

Cash Crisis

In this course students will be playing the role of a financial analyst at a consulting firm who is asked to help a struggling bodega (winery) analyze their past and current financial situation to identify issues and problems. Working in a team, they will also learn more about the bodega's day-to-day business and the wine industry to better determine underlying issues and possible solutions. Students will then prepare financial forecasts of possible solutions to address these issues and present these to the bodega owner.

Marketing a Product Launch

In this course students will be playing the role of a marketing professional to plan and execute the launch of a new Web-based product. Working in a team of marketers, students

will segment a market, analyze customer wants and needs, help develop a budget for the product launch, analyze market research findings, and implement product launch activities.

Supply Chain Management

In this course students will be playing the role of a junior consultant working for a firm that specializes in Supply Chain management and reengineering. In pursuit of new business opportunities, a consulting partner at the firm asks for their help on a proposal to optimize the Supply Chain of an established technology company that is introducing a new line of PDAs. Working in a team, students will analyze key segments of the prospective client's Supply Chain to identify current problems and ultimately recommend a solution that solves the problems most effectively given the company's business infrastructure.

Investment Readiness

In this course students will be playing the role of an analyst at a consulting firm that helps small-to-medium-sized technology companies secure the funding they need to carry out their operational plans. Working in a team, students will begin by helping the consulting firm choose a company from a pool of applicants. Then, they will help the chosen company prepare for potential investors by articulating a value proposition and business model, performing financial analysis, and developing a business plan and an executive summary presentation. Ultimately, their goal is to help the company negotiate a final deal with investors.

Ethical Governance and Change Management

Students immerse themselves in the story of an international pharmaceutical company engaged in a hostile takeover of a smaller, but highly successful competitor. Students experience the tough negotiations, the elimination of dedicated and talented individuals, and the painful shuffling of roles and responsibilities that accompany major change in a modern corporation. Students also confront the complicated (and sometimes conflicting) relationship between social responsibility, legal responsibility, and profit motive, as they witness the company's attempt to establish a new research facility in a blighted town as a consequence of the merger.

Plus one of the following modules:

Going Online

In this course students will be playing the role of a user interface designer to design an e-commerce site. Working in a team and utilizing a user-centered approach called "Rapid Contextual Design," they will determine user wants and needs, generate ideas on how to support those needs, define requirements for the site, develop and test the layout of the site, and analyze proposals from companies for building the site.

Selling and Implementing Solutions

Students begin their work as new project managers at a premier event-planning company, World Class Events. Students begin by qualifying and prioritizing opportunities to propose

work to prospective clients, pitching to senior management which of the proposals should receive the greatest budget, based on potential profitability, likelihood of winning, and other relevant considerations. Students learn they will be proposing work for an automotive event entailing a multi-city caravan, as well as a showcasing and test drive event for electric cars. Students create a project scope document for the sales effort, first planning and attending a simulated meeting with event-planning experts to determine a vision for the event, including risks and open questions for the client. They then engage in a role-play call with the client, introducing World Class Events and clarifying the project vision.

2.4 Format of the courses

Because student teams operate independently with minimal supervision, the students must learn to organize themselves, divide workload, become familiar with relevant technologies, and separate important from irrelevant reference material to complete the assigned work on schedule. Through this learn-by-doing process, students not only absorb new technologies, but also acquire job-critical skills such as time management, team organization, and the ability to produce professional work product and to deliver effective and persuasive presentations.

All the programs are based on a learning-by-doing system. It is a system in where the student learns by doing and participating on real projects, just as they would do in the working market. It is a learning process based on the working experience and not on content. You learn by doing and not by passively listening to a teacher, reading or memorizing contents.

Learning is performed on line. It is a flexible program, but includes activity schedules, deliverables and on line meetings with the team work and with the mentors.

In these courses the student is playing a realistic job role and complete tasks similar to those completed by professionals in that role in the real world. Students will learn about and practice the skills needed to complete the tasks as they move through the scenario.

Each week there is one cohort meeting with the mentor and all the classmates. In addition, each student will meet with their mentor three more times per week with his team or study group, one time being a "reading group" giving opportunities to discuss the weekly readings in more depth. Additional meetings with classmates or mentor may be scheduled on an as-needed basis. Email and other common software will likely be used. Depending on whether the student and/or his classmates are working remotely or not, the technologies used to communicate may vary.

Each task includes performance support to help the student. These include *Step-by-Step Guides,* readings, websites, and other documents. When needed, students may have to complete additional research on their own. Classmates and your mentor will also be available to help you.

The mentor will be meeting with students and providing feedback both during and after tasks to help students along the way.

To provide the documents a website is provided to the students. As can be seen in Figure 1 at the top of the pages students will find the information on the course, and the tasks of that course.

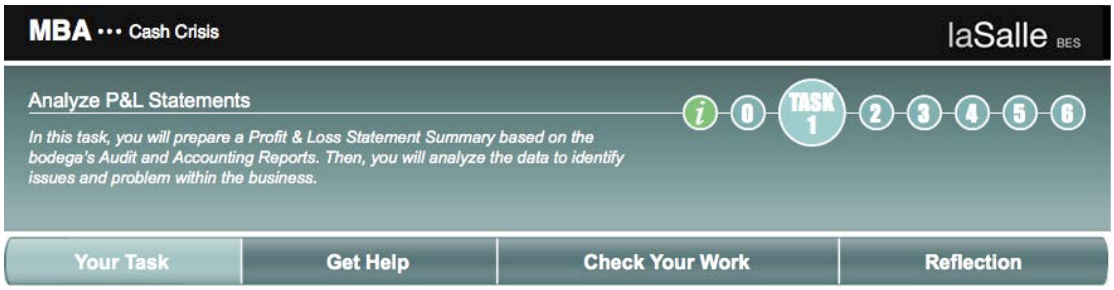


Figure 1. Menu of the website.

For each task, there are typically four sections, accessed through the tabs running across the top of the screen. Each section contains important materials students will need to review to complete their task. The four sections are:

Section 1: Your Task

Each task begins with an email from their supervisor or others describing the assignment and directing the student to his tasks. In addition, there may be email attachments in the form of text documents or video, or other items which contain important information students need to complete your task.

Section 2: Get Help

Once students have read through the task, they must go to the *Get Help* section to receive detailed instructions and assistance to help complete their work. This section provides several different kinds of help, each with its own purpose:

- *Step-by-Step Guide:* This resource provides detailed, step-by-step instructions for completing their assigned task. This guide will be especially useful in helping through the challenging parts of the task, and will refer to key resources needed to complete the task successfully.
- *Resources:* This provides information on which parts of our books will help students complete the tasks and links to other print materials and websites that will help complete your work. Resources are divided into sections, organized by topic.

Beyond the help included in *Get Help* section, there is also a *General Skills Resources* that provides help with non-subject matter related skills students will use repeatedly throughout the course.

Section 3: Check Your Work

This section provides guidance on checking your work to ensure students have completed the task appropriately and tells exactly what material needs to be submitted, and how students should name the deliverable(s). The mentor will provide guidance on how to submit the work, e.g., where to email it.

Section 4: Reflection

At the end of some tasks reflection questions can be found in the section titled Reflection. The questions will help students step outside of their roles and think about what they have learned, and how it can be applied to other situations in their day-to-day life. The questions may also highlight connections between what they may have learned in one task and concepts from previous tasks in the course.

Some skills students will excel are: teamwork, collaborating at a distance, managing conflict, negotiation, project management, time management, taking notes, conducting research, evaluating web sources, doing research, writing, developing an outline, writing a thesis statement, building an argument, writing an essay, writing an Executive Summary, creating and delivering effective presentations and using PowerPoint.

2.5 Being a professor in SCC

To be an effective professor in this environment, you need to allow your students to work from their own intuitions and to use their best thinking to move forward so they can see where their intuitions fall short, or where they require modification. You cannot simply *tell* them what they need to know; you need to let them *ask questions*, and *explain* ideas to you. If they cannot figure out what to ask, help them by asking them challenging questions about, for example, when, how, and why to apply what they are learning, or about comparing different methods of solving a problem. Get the students *explaining*, *convincing*, and *questioning*. The more they talk (and the less you talk), the more they will learn. Allow them to teach each other. You listen, and guide as needed only. Sometimes the only guidance the group will need is for you to rephrase what they have said in clearer terms and to ask them if they are right in their thinking.

2.5.1 The role of the professor

Professors in SCC need to play a variety of types of roles throughout each course. Sometimes the roles are not very clearly distinguished in a single session with students; the professor might think of them more as putting on different "hats," and letting students know explicitly which hat they have on when they can.

In some programs, especially those that are large, different people may divide these roles in ways that work for the types of expertise the various professors bring to the program. It might be that one person is going to play all of the professor roles, but program administrators may choose to divide the roles if they choose.

The key professor roles are:

- Faculty
- Coach
- Role player

2.5.1.1 Faculty

The professor should take on this role when in a more formal, "instructional" or facilitation-type of situation, but be careful not to jump to a traditional model of didactic instruction.

This is the role of the lead facilitator and subject-matter expert for the course. Professors should adopt this role when:

- Kicking-off or wrapping-up a task.
- Leading a weekly cohort meeting.
- Working with students rigorously on clarifying concepts and using skills.
- Giving feedback on students' task deliverables.
- Grading.

Students will see you as their course faculty when you act as the subject matter expert on content and skills relevant to the course performance objectives, outline your expectations as they relate to students' grades, and facilitate cohort meetings in which you set the direction for the whole group to follow.

2.5.1.2 Coach

The coach is the role that most closely aligns with the "mentor to the apprentice" model. The coach holds the hands of the individual students and student teams to help them along in a more intimate way than in the cohort meetings. The coach should:

- Ensure everyone is managing well in the program.
- Help teams strategize on how to learn in the program, what to learn, and checks progress on learning.
- Help configure teams that will work well together.
- Help teams identify and troubleshoot issues in working together.
- Provide feedback and guidance on early drafts of deliverables.
- Assess how well individual students are grasping required concepts and skills and help them improve upon their abilities by working with them, challenging them, teaching them, and observing and directing their thinking process.
- Determine what each team member is contributing to the whole of the team, in part to form effective teams in the future and in part to assign final course grades.
- Facilitate peer-evaluations at the end of each course to help students give and receive constructive feedback to each other, and to serve as input for the mentor in determining course grades for each student.

2.5.1.3 Role player

Often a course will require that students interact at some level with characters in the scenario story, either to get feedback on a presentation or deliverable, or to get scenario-related data from a relevant character's perspective. When this is needed, the professor may play this role (e.g., the fictional client, boss, etc.). However, it is better when a professor from another cohort or other subject-matter expert plays the role, so students do not have as much trouble imagining that the role player is actually the character, as opposed to the professor who works with the students on a regular basis. Constraints sometimes do not allow for a separate role player, though. If you must serve in both the coach and role player roles, be sure to remain in-role for the duration of the relevant interaction with the students, until the students have completed their work with you as the character. Give them relevant feedback in role, and then, when they are done, or if there is a natural stopping

point, you may break out of character, and tell them you are doing so, to give feedback from your perspective as a mentor, rather than from the character's point of view.

2.5.2 Methods of instruction in SCC

There are two primary methods of instruction in a Scenario-Centered Curriculum. One borrows from "Cognitive Apprenticeship," in which the mentor:

1. Demonstrates (models) how to do the work (by doing it on an analogous problem, or telling stories that make meaningful points that are analogous to the given situation)
2. Offers ample support to students as they do the work initially, and gradually reduces support as the students increasingly master the concepts and skills
3. Guides students in reflecting on what they learned to help them generalize the lessons so they understand better what they learned and how what they learned applies outside the learning situation [(Ray Bareiss, 2009)].

The other borrows from the Socratic Method of instruction, but not overly literally. Here it really means to teach by questioning. Ask students to explain ideas to you. Ask them to critique each others' work products in front of you. Ask them a question to answer their questions, so they think more deeply to arrive at their own conclusions.

A third strategy that can be highly effective in teaching is good story-telling. Stories may not be a primary means of instruction, but certainly should be an important part of your overall arsenal of teaching strategies. Stories can serve as a supplement to experience, because when we hear them, they are almost like having an experience ourselves. They can evoke an emotional response, we can often relate to them on a personal level, and they may be memorable.

Good stories for learning have interesting details that are memorable, and have a clear point that is relevant to the lesson the teller wants to teach. Often the point of the story relates to a surprise—something the listener would not have expected to happen in the story, or something a character in the story would not have expected to happen. Making sense of the surprise provides the lesson from the story. Mentors should tell their own personal stories when they can, but sometimes others' stories can be effective as well.

Ultimately, the most important thing you need to do in your job is to help students get curious. You want them asking questions and you want them actively seeking answers to questions. If you are lecturing, you are probably telling students more than they care to know at a given moment, and you are going beyond answering their questions. You also cannot know if they are listening or understanding. Short answers will sometimes be efficient, necessary ways of handling direct student questions, but try to rely more on modeling, questioning, and facilitating discussions in which students teach each other and problem-solve as a group.

2.5.3 Should's and Should not's

This section is intended to give more insight into when mentors should and should not talk in their role as professor in a SCC, and the sorts of things they should say when they do say something.

Rule #1: Be ignorant

When asked a question, a good mentor claims ignorance. Your favorite response to a student question should be: *I really don't know. What do you think?*

Rule # 2: Let it be okay to have weaknesses

It is important to realize that not every student is suited for every role. In a well-designed SCC, there will be many roles to play on a project team, and every student will have different talents. It is not necessary, as it is in traditional courses, that every student has the same level of achievement. Some students will never get it about something. That is okay. It is important to let students move on when they are stuck. It is important to let students work harder at one thing than another because they are better at it or more interested in it. A good mentor recognizes when a student can be unstuck and lets it "be okay" if he can't be unstuck.

Rule #3: Know when to tell and when to keep quiet

3a: You can tell a student the answer when the answer is a small missing fact that the student would have to spend inordinate amounts of time attempting to figure out on his own.

3b: You can tell a student the answer when his following the wrong course of action might lead to danger or a recovery period that is excessively long, given the situation.

3c: Don't tell the student anything if you know he can figure it out on his own.

3d: Don't tell the students anything if the reason he does not know the answer is basic laziness of thought or deed.

3e: Don't tell the student anything if what he needs to know has been written down somewhere and that writing is accessible.

3f: Don't ever tell the student an answer when the performance objective of the exercise is the discovery of that answer.

Rule #4: Make suggestions…carefully!

Suggestions are good. In fact, the real role of a mentor is to make suggestions. Of course, there are suggestions and there are suggestions. When suggestions look like TRUTH they are bad. When mentors present them as something to think about, they are good.

4a: When a student is misdirected and needs re-pointing, it is a good time to make suggestion. If the student is headed south when he should be headed north, it might just take him 1000 miles to realize his mistake. The 1000-mile journey is mostly a waste of time. After 10 miles, it might be a good idea to point out that the weather seems to be getting warmer.

4b: When the student has found the information he needs, but somehow he hasn't realized it, it's a good time to suggest he considers more closely what he's seeing.

4c: When the student is spinning his wheels and accomplishing nothing, putting him on a solid footing and letting him start driving is a good idea, especially if he is so stuck he will never get out on his own. A mentor needs to recognize when this is the case. This is the essence of the art of teaching.

Rule #5: Lie…sometimes.

This might seem like an odd idea: Lie to your students. We don't mean by this saying the exact opposite of the truth in a factual situation. Rather, there are times when a student has an idea, and to get them to think through the idea fully, they need to express it, understand its ramifications, play with the idea a bit, and come to realize its faults. This won't happen sufficiently if your response to the idea is to expand upon it yourself or even simply to ask a student more questions about the idea.

It is a better strategy to deny what the student has said by adopting what seems to him to be a patently absurd stance. Typically, students get emotional in such a situation; they get fired-up in an attempt to show you what a dope you are. They work hard to come up with a reasoned argument. You should work just as hard to show why they are wrong. It doesn't matter whether they are wrong or not. Say things you don't believe if it will advance the cause of the students thinking harder about how to defeat you. It is not your job to show the student how smart you are, nor to earn the student's respect for your good ideas. It is much better to make the student think hard.

Rule #6: Hold their hand, but not too tightly.

Holding a student's hand while they attempt to do something can be very tempting, but it is possible to hold the hand of the student too much, to have them follow your lead and seem to understand, only to find out that when left to their own devices they cannot do the work on their own. Don't put words in the student's mouth and don't hold the hand that is doing the actual work too tightly.

6a: Generic strategies are worth telling students (at the right time). Hand holding with generalities is more useful than hand holding with specifics. "Now turn the wrench another quarter inch" is exactly what not to say. "When using a wrench, turn the wrench a little more when you think you've turned enough," is a good general principle.

6b: Specifics that are about skills students will do the same way repeatedly, on the other hand, can be suggested. Reminding a kid who is learning to hit a baseball to keep his elbow up is one of those things that you cannot say too often. Keeping your elbow up is easy to fail to do because you don't realize that you are not doing it; it has to become second nature through much repeated practice and reminders. Helping a student get something to become second nature is what handholding is all about when done correctly.

Rule #7: Make them do it again, and again, except when it's enough.

Practice is the essence of learning to do things correctly. Recognizing when a student has gotten it right versus when they have accidentally succeeded is critical in teaching. Good mentors know when a student needs more practice. Good mentors also know when the rest

of the practice that was originally planned can be skipped because the student got it faster than expected.

7a: Make the student do it one more time when the student believes they've finished but really they can do better.

7b: Let them stop when feedback on the current attempt would make success trivial and tedious.

Rule #8: Know when enough is enough.

A good mentor knows when a student needs to be relieved of his frustration. Often this means simply telling the student to stop doing something and letting him do it later, or letting the student do some other problem instead. Also, as stated in rule #2, sometimes this means helping the student realize that the problems he is working on are simply not his future career, letting him drop it altogether, and letting that be okay.

2.5.4 Grading in a SCC

Grading in a SCC is a bit different than in more traditional courses for a few reasons:

- The focus of an SCC is on the practice of skills and use of knowledge as required to accomplish a task that is related to the performance objectives of the course/curriculum, as opposed to testing how well a student memorized or understood a concept.
- Teams often co-develop work products, rather than individuals.
- In addition to the professor's feedback and grading, students assess each others' work and contributions to the team process.

Below are grading guidelines suggested by professors who currently teach in SCC degree programs:

- Approximately 20% of the grade should be based on individual work; 80% on the team's work.
- A small portion of the grade may include student participation, but too much emphasis on student participation leads to frivolous comments that do not add value to discussions.
- You can sometimes pair teams and have them review each others' deliverables. Each individual person reads the deliverable of the other team and submits feedback to the team and the professor. The benefit of this process is that the professor can assess student-critics' understanding of task concepts and skills by the quality of their critiques, and everyone receives ample feedback from their peers.
- Always have work products that are attributable to individuals as a part of tasks/courses to help you assess individuals' abilities and progress.
- Have team members use a Peer Evaluation Form at the end of each course to review and provide feedback about others' work, and for your use in helping to determine individual contributions to the team's process and products.
    - Remind students to complete these forms after they finish their final course deliverables.
    - Collect the forms and compile the feedback.

    - Meet with individual students to provide anonymous feedback culled from all students' input and your observations.
    - Finally, consider both your observations and peer feedback, in addition to a student's individual assignment work, when calculating the student's individual grade for the course.
- Another way to consider the contributions of an individual on a team is to use your subjective perception having seen the team in action, and from the teams' peer assessments. A helpful trick is using the aerospace metaphor of "lift over drag" – did the person lift the team more than drag, or vice versa?

3 CHAPTER THREE: LEARNING PLATFORM REQUIREMENTS

CHAPTER THREE: LEARNING PLATFORM REQUIREMENTS

The purpose of this chapter is to define the high level requirements of a learning platform that allows a learning methodology based on SCC in terms of the needs of the end users and the devices for whom has to be available the platform: personal computer and mobile devices.

This document intends to give a vision that reflects the scenario, the users and the requirements of the learning platform. It is out of the scope of this section (and project) any study that includes enrolment integration, electronic payment or the support desk.

3.1 Scenario

The chosen platform must allow working with the previously mentioned new methodology of learning based on scenarios in the context of the new European Higher Education Area (EHEA). Furthermore, the content has to be accessible from web navigators from personal computers and mobile devices (PDA and mobile).

3.1.1 Project Based Learning (PBL)

According to Project Based Learning (PBL) and SCC, a degree is defined as a group of projects of limited duration in which the student will be involved in one at the time. These projects have a very defined structure as commented in the previous chapter, that is resumed here in a more abstract way.

- **Presentation of the project.**
  This part includes everything the mentor gives to the student with the aim of being able to fulfill the objectives of the project. It is composed by:
    - Definition of the project. It is the statement of the Project with the objectives to fulfill formatted as an email or a letter of presentation.
    - A step-by-step guide, with the logical steps to follow, with the aim of fulfilling the objective of the project. This work plan is formed by activities, known with the name of tasks that must be accomplished in a concrete period of time. Every task can include the development of a deliverable that consists on any element (document, piece of code, file, presentation, etc.) that must be delivered to the mentor by the student.
    - Support material for the student to help him execute the tasks of the Project. This material can be video, audio, documents, intern links (basic bibliography, course notes, etc.), sheets to deliver the deliverables, etc.
    - References. It is additional material not mandatory to visit (links to other websites o web resources) to fulfill the objective of the project but that the professor considers relevant give it to the student for the project.
    - A list of Frequently Asked Questions (FAQ) that students use to answer themselves while developing t
    - A Calendar with the important dates of the project. These dates are the start and the finish of the project and its task to fulfill.

- **Collaborative space.**
  This part corresponds to the collaborative space available to the students to fulfill the objectives of the project. Every group has its own and independent space where every member of the group can create the following activities:
  - Forum.
  - Wiki.
  - Chat.
  - Web videoconference.
  - Question-based tests.
  - File sharing.

- **Qualifications.**
  Space that allows the students take a look at its grades in the gradable tasks, the rubrics of the competences, the grades of the group work and the final grade of the project. The mentor in this space, can take a look and edit the qualifications of its students.

3.1.2 European Higher Education Area (EHEA)

For the integration with the new European Higher Education Area (EHEA) it is wanted, not only grade the contents but also grade the competences that a student may acquire during the degree.

In more detail, a professor must be able to qualify every competence defined in the project and has to be able to grade the project with a global score calculated taking into account the grades of different deliverables and other grades (like the group work score and the individual score).

In global, when a student takes a look at his grades of the degree has to be able to see a final note for every one of the projects that belong to the degree and the rubric for each competence assigned to the course. The grade of each competence has to be the mean of every project that develop that same competence.

3.1.3 Output devices

One of the objectives of the platform is that the user can access to the contents of the projects by mobile devices (PDA and mobile telephones) in the same way that in a web explorer for personal computers. For that reason, a custom interface must be developed for these devices.

3.2 Description of the users

In this section the roles that the platform must include are detailed. In the tables its profiles are described.

3.2.1 Administrator

Represented by	System Administrator
Description	User with knowledge of system administration responsible for the installation, configuration and steadiness of the platform in a server. Also its responsibility is to perform the maintenance of

	the server (backup, updates,…).
Responsibilities	• Offer support regarding the system. • Do frequent backups. • Update the operating system and the platform and configure its changes. • Answer to technical doubts. • Security issues. • Optimal configuration of the system. • Document the configuration of the system. • Document the recuperation plans. • Manage the learning platform. • Manage the registered users in the platform.
Success criteria	• Satisfaction criteria of the users according the learning platform. • Time online of the platform.
Implication	Always (24x7).
Deliverables	Learning platform working perfectly.
Commentaries	It is a very important role because has to maintain online the server and its components and not fail.

3.2.2 Support technician

Represented by	Technical Engineer / FP Technician
Description	User with basic knowledge of web programming and the way the learning platform works. He will be in charge of uploading the necessary resources for the correct development of a project and of providing technical and use support to every user in the platform.
Responsibilities	• Create the course for the degree • Create the course for the projects (inside the degree) • Upload the presentations of the projects • Enroll students to the projects • Create groups of workmates • Technical support during the projects
Success criteria	• Satisfaction level of the students and mentors according the creation of the project and the fast enrollment of the groups of people • Content available for PC, mobile and PDA. • Technical support service satisfaction level for students

	and mentors that have requested it
Implication	• Enrollment period • Start of the project • Punctual maintenance during the project
Deliverables	Project space created and groups configured. Document with a summary of the incidences.
Commentaries	Role that acts as assistant to mentors in the technical aspects of the course.

3.2.3 Manager of the degree

Represented by	Academic coordinator of the degree
Description	User responsible for the day to day of the degree (group of projects of the same theme)
Responsibilities	• Answer doubts to students by email and by forums. • Solve complains of professors and students. • Promote the participation of students and professors in the improvement of the degree in both methodology and contents (punctual or general). • Determinate what contents can be visualized publicly without being enrolled in a project. • Take a look and interpret the statistics of the projects of the degrees to improve student experience. • Receive and act to warnings triggered by the statistics system of the platform.
Success criteria	• Satisfaction level of students and professors. • Activity of the students and professors in the forums of the degree. • Efficiency resolving complains received. • Efficiency resolving suggestions and commentaries of students and professors.
Implication	• During all the degree.
Deliverables	Complain reports, students and professors commentaries as well as solutions.
Commentaries	It is in charge of the degree, its success, popularity and he has to ensure a high percentage of satisfaction in students and professors.

3.2.4 Manager of the project

Represented by	Academic coordinator of the project.
Description	User responsible for the day to day of a determinate project.
Responsibilities	• Answer doubts to students by email and using the general forums of the project. • Solve complains of professors and students. • Promote the participation of students and professors in the improvement of the project in both methodology and contents. • Determinate what contents can be visualized publicly without being enrolled in a project. • Take a look and interpret the statistics of the project to improve student experience. • Receive and act to warnings triggered by the statistics system of the platform regarding the project.
Success criteria	• Satisfaction level of students and professors. • Activity of the students and professors in the forums of the degree. • Efficiency resolving complains received. • Efficiency resolving suggestions and commentaries of students and professors.
Implication	• During all the project.
Deliverables	Complain reports, students and professors commentaries as well as solutions.
Commentaries	It is in charge of the project, its success, popularity and he has to ensure a high percentage of satisfaction in students and professors. This role is in between the manager of the degree and the mentor. This role can be taken by the same person that takes the role of the manager of the degree or the mentor but it is better that these three roles remain in separate people.

3.2.5 Mentor

Represented by	Pedagogue / Psychologist/ Project Manager
Description	User with deep knowledge in online learning methodologies and work group. He will be responsible to track the progress of each student during a project.
Responsibilities	• Individual tracking of the student.

	• Tracking of the class as a whole. • Periodic report. • Final report. • Evaluate transversal competences of the students.
Success criteria	• Satisfaction ratio of the students in relation to the mentor. • Availability and response time to a question.
Implication	• The entire course. • Evaluation period.
Deliverables	• Periodic and final reports. • Transversal competences grades of the students.
Commentaries	The mentor has a maximum number of students at his charge. He might be able to mentor all the students of a project or some students of different projects at the same time if the number of students enrolled to a project is small..

3.2.6 Subject matter expert

Represented by	MSc Engineer
Description	This user knows the subject related to the project and online learning technologies. He will be in charge of answer students doubts about the subject of the project and grading them.
Responsibilities	• Offer support to the students about the content of the subject of the project using forums, videoconferences, electronic mail, etc. • Answer doubts about the content of the project. • Evaluate the project. • Chose what files can be seen publicly without registering to the project.
Success criteria	• Satisfaction level of the students in relation to the subject matter expert. • Availability and response time to questions.
Implication	• The entire course. • Evaluation period.
Deliverables	Evaluation information.
Commentaries	While a mentor can mentor different projects at the same time, every project will have different subject matter experts.

3.2.7 Student

Represented by	Student.
Description	User that is enrolled in the project base course.
Responsibilities	• Do the work. • Work in groups. • Evaluate his group mates.
Success criteria	Fulfill the objectives of the project.
Implication	The entire course.
Deliverables	Presentation of the deliverables.
Commentaries	They can be national or international students.

3.2.8 Guest

Represented by	Any external person.
Description	User not enrolled in any project that is interested in specific contents of the projects.
Responsibilities	• Copy, modify and distribute the contents according to the license this contents are distributed.
Success criteria	Visualization of the contents without having to be authenticated in the platform.
Implication	Punctual.
Deliverables	None.
Commentaries	It can be an user that comes to the platform through an online search engine, a link in another page… He seeks for information about a concrete topic.

3.3 Functional Requirements

3.3.1 Platform

The basic requirements of the Learning Platform are:

- To have the basic features of a Learning Management System (LMS) like: user administration, communication and collaboration tools, management of virtual classrooms (create activities, resources, materials,…), track the student, qualifications, etc.
- To be able to manage different degrees with different projects each. They can be taught concurrently and with groups of different students.
- To include qualification tools to grade individual and collaborative activities.

- To be able to manage skills and its rubrics, categories of skills (with infinite levels of deepness) and its qualification, both in projects and in degrees (automatic grade according to the grades of competences in projects).
- To be able to store indefinitely all the projects that have finished so that students can see its content when the degree is over.
- To include two different languages: Spanish and English.
- To include evaluable activities that allow to perform polls, workshops (multiple revisions of a same document) and deliver deliverables to grade students.
- To include communication tools like forums, wikis, talk-rooms and web videoconference.
- To include tools to manage groups of students inside the projects.
- To allow the configuration and creation of user groups by the technical support guy or by the students themselves according to their preferences (past job experience, proximity, complementary roles, etc.).
- To allow the access of a guest user to the contents marked as public in projects. In these cases the guest has to have easy access to the information that allows him to enroll to this degree if he wants to.
- To have some kind of help system implemented inside the platform contextualized for the different roles. Explanations on how a form works and how to administrate the platform must be implemented.
- To have some kind of report tool that must be handled by the administrator of the platform.
- To have some kind of warning and alert feature that informs the users that request it about the changes and news items that occur inside the virtual classrooms. The platform must inform visually any change in the resources and activities. If the option is activated by the student, he can receive this updates by electronic mail or by Short Message Service (SMS).
- To allow mentors and administrators to send electronic mails and SMS to multiple users and groups of users.
- To allow students to answer forum messages through electronic mail.
- To allow access through mobile devices to take a look to the presentation of the project, the collaborative space and qualifications.
- To allow students to create new topics in the forums and answer to the ones created by other students and their mentors through mobile devices.
- To include the effort and the progress of the student in every project in other platforms like business oriented social networks (LinkedIn, Xing,…), social networks (Facebook, MySpace,…) and electronic portfolios (Mahara, Elgg,…).

3.3.2 Initial screen

- The initial screen is defined as the first screen that an user sees when login. This screen changes according to the type of user that is login to the platform:
    - **Administrator:** he will see all the degrees and projects. Also the tools accessible by an administrator of the platform.
    - **Student:** he will see the projects he is enrolled in as well as the degree (if he is enrolled in all the projects of the degree).

  - **Guest:** he will see all the projects and degrees that have public resources inside.
  - **Subject matter expert and mentor:** they will see the list of projects they are teachers of.
  - **Support technician:** he will see a list of all the projects he provides technical support.
  - **Manager of the degree:** he will see a list of all the projects that belong to the degree they manage.
  - **Manager of the project:** he will see a list of the projects he manages.
- If an student is enrolled in one of several projects inside a degree (but not all the projects of the degreee) he will only see those projects that he is enrolled and he will not see any information about the degree they belong to. If a student enrolls into "separate" projects the platform must inform him that these courses belong to a common degree he could enroll if he does X more projects.

3.3.3 Calendar

- The platform has to include a calendar, in each project, that allows including important events of the project like the initial and ending date, delivering dates for each deliverable and the dates of the web videoconference sessions.
- The calendar must take into account the location and time zone of the user.
- If a student has the option of receiving mails and SMS notifications the calendar must send a notification to him one week before and one day before the start of the project, task or activity.
- The calendar with the absolute dates of the project, must be generated automatically with a relative calendar (day 1, …, day N) and an initial date marked by the mentor. The calendar has to take into account the holidays (previously added by the platform administrator) and in case an event is scheduled in a holiday the calendar must re-schedule it automatically to the next day.
- When clicking in an event in the calendar, all the material related with that event must appear highlighted in the main page of the project.
- The calendar must provide, both to the student and mentor, a chronological list of the events of the project.

3.3.4 Personal profile

- The user must be provided with a place where he can see and edit its personal information.
- In this profile card the user must be able to see his record of projects.
- In this page he must be able to manage warnings and alerts.

3.3.5 Gradebook

- The platform must include a place where all the qualifications of the student in a degree can be seen. In this place grades of the projects and competences must be shown to the student.
- The platform also has to include a place where the student can see the partial grades of the projects including deliverable grades and competence qualifications.

- When showing a competence grade, the student must be notified whereas he is improving or not in each competence (taking into account the grade of the same competence in the last project that the student has done) with an indicator by the grade of the competence.
- When the gradebook has been updated the student has to be notified by electronic mail or SMS (depending on the configuration of the notification system of the user).
- The values of the grades must be numeric and between 0 and 10 with two decimals precision.

3.3.6 Courses and projects

- Each degree must be able to handle 20 projects by average (orientative data).

3.3.7 Tasks and deliverables

- The work plan of the projects is based in tasks and deliverables related with the materials and with the calendar of the project.
- The deliverables can be individual or group based.
- The deliverables must be delivered online with tools that allow uploading files to the learning platform. If it is a demonstration or an oral presentation the presentation will be online web videoconferences.
- The platform must allow unlimited deliverables, that means, if an student does not pass a task, he has to deliver the work again.

3.3.8 Alerts

- The warning and alerts feature uses electronic mail and/or SMS. The user must configure what notifications wants to receive and over what devices.
- The alerts feature must take into account time zones of different users. Notifications must be sent during daylight.
- The alerts feature has to be able to notify events that belongs to a group like:
    - New messages in a forum.
    - New topics in a forum.
    - Wiki updates.
    - Start of a chat session (be able to configure when in advance you want to be warned).
    - Start of a questionnaire.
    - End of a questionnaire.
    - End of a workshop.
    - Start and end of a web videoconference.
    - Creation of a new activity or resource.
    - End of an activity (be able to configure when in advance you want to be warned).
- At a project level the notifications the platform must provide are:
    - Creation of new resources, tasks, deliverables, materials and references.
    - Updates or modifications of the work plan (resources, tasks, deliverables, materials and references).
    - Publishing and editing qualifications.
    - Delivering dates.

  - Updates of the FAQ section.
  - Notification when a deliverable has been delivered correctly.
- To have visual alerts in the main body of the projects, resources and collaborative activities.

3.3.9 Groups

- The groups of students are assigned by projects. Inside a degree a student can belong to different groups in each project he is enrolled.
- In each project, each group has to be provided with their own work space where every member of the group must be able to create the following activities:
  - Forum.
  - Wiki.
  - Chat.
  - Web videoconference.
  - Polls.
  - Questionnaires.
  - Workshop.
- The members of a group must be able to create activities and resources in the collaborative space of the group and edit them, but they cannot modify or erase the activities or messages of other members.
- The platform must allow adding or erasing members to a group during the execution of the project.
- A group if formed by 5 students (orientative data).

3.3.10 Stats engine

- The statistics to provide to mentors and managers at a project level are:
  - **Visited files:** number of visited files by each student and date of visitation.
  - **Links visited:** number of bibliographic references visited by each student and date of visitation.
  - **Forums:** total number of created forums, number of answers and number of visits. Date of these actions.
  - **Wiki:** number of created wikis, number of modifications and number of visits by user and date.
  - **Chat**: statistics of the number of chat sessions that an user has participated and date of the event.
  - **Web videoconference**: number of videoconference sessions that every enrolled user has participated into.
  - **Polls**: number of polls where the user has participated and number of polls created by this user.
  - **Questionnaire**: number of created and answered questionnaires by date.
  - **Workshop:** number of created and modified files by student and by date.
  - **Mean, minimum and maximum grade:** for every deliverable and the total of the project.
  - **Mean, minimum and maximum grade:** of the competences that evaluate this project.

    - **Number of enrolled students** in the project and statistics according to their home country.
    - **Number of passed students** per total of students enrolled.
- All the statistics must be comparable with the statistics historic of previous editions of the project.
- At a degree level, the statistics desired are:
    - **Mean, minimum and maximum grade:** of each one of the projects and global for the degree (per years).
    - **Mean, minimum and maximum grade:** of the competences gradable in this degree.
    - **Number of enrolled students** in every project of the degree.
    - **Number of enrolled students** in the degree and statistics according to its home country.
    - **Number of passed** students per total of students enrolled.
- In the feature of SMS notification, number of messages sent to every user per project.
- It is desired to have a complementary quality module that allows introducing rules for every previous parameter mentioned defining a threshold. If some parameter is over the threshold the manager of the project and the manager of the degree have to be warned about that issue by electronic mail.

3.3.11 Administrator role

- Must be able to manage the competences of the different degrees.
- Must be able to create polls to evaluate mentors (in a project level) so that students can evaluate the job of the mentors.
- Manage the doubts and problems that may raise during the projects thanks to the incidences resolution system.

3.3.12 Support technician

- Must be able to upload the contents of the project, with all its resources and activities.
- Must be able to create groups.
- Must be able to enroll students to a project.

3.3.13 Manager of the degree

- Must be able to create collaborative activities in the work space of a degree.
- Can contact the students enrolled in the degree by electronic mail and SMS.
- Follow the participation of a student inside a degree and its projects.

3.3.14 Manager of the project

- Must be able to create collaborative activities in the work space of a project.
- Can contact the students enrolled in the project by electronic mail and SMS.
- Follow the participation of a student inside a project.

3.3.15 Mentor

Must be able to:

- Evaluate the transversal competences of the projects in which he is mentor.

- Contact the students through electronic mail and SMS.
- Modify dates inside the calendar.
- Follow the participation of a student and a group of students inside a project.
- Create activities and resources in the collaborative spaces of the groups.

3.3.16 Subject matter expert

Must be able to:

- Grade the projects.
- Modify the contents of the description of the project.
- Can contact students through electronic mail and SMS.
- Modify dates inside the calendar.
- Track the students inside the work groups.
- Create activities and resources in the collaborative spaces of the groups.

3.3.17 Student

The student must be able to:

- Activate or deactivate the option to receive alerts by electronic mail.
- Activate or deactivate the option to receive alerts by SMS.
- Create forums, wikis, chats, web videoconferences, polls, quizzes and workshops in the collaborative space of the group, but not edit or remove the activities of their group mates.
- Participate in the activities that others members of the group create.
- The students have to be able to peer review the other members of the group.
- Communicate with the mentors and students via electronic mail through the platform.
- Configure, according to its preferences, the platforms that he wants to use to tell others his abilities, ideas and work in the projects.
- Participate in the collaborative activities created in the degree space.
- Participate in the collaborative activities created in the project space.

3.4 Non-Functional requirements

3.4.1 Performance and quality of the software

- Reasonable performance and response time of the system.
- High support to concurrent users.
- High usability level.
- Easy to maintain, scalable and modifiable.
- Error recovery.
- Automated back-ups.
- Compatibility with PC, mobile phones and other mobile devices.

3.4.2 Server

- Operating System: depends on the platform.
- Application web server: depends on the platform.
- Database managing system: depends on the platform.

Some platforms can have other concrete server requirements.

3.4.3 Client

- Operating System: multiplatform.
- All the functionalities have to be operative from any PC web navigator (Internet Explorer, Firefox, Safari, Chrome, Opera...) and mobile web navigator (Safari for iPhone, Opera Mini, Windows Mobile browser, Blackberry browser...).

4 CHAPTER FOUR: RESEARCH OF LMS COMPANIES

CHAPTER FOUR: RESEARCH OF LMS COMPANIES

Prior to the launch of the Request for Information (RFI), some Learning Management Systems (LMS) were analyzed in order to know if they were suitable to use for a project based learning platform. In this chapter some solutions and conclusions are presented about what advantages and disadvantages brings each one of the solutions.

Both open source and proprietary LMS are analyzed as can be seen in Table 1. The first part includes the list of the LMS analyzed and the evaluation criteria. The second part includes the evaluation of each LMS and at the end we indicate the possible candidates to be used as a learning platform for La Salle Open University according to the evaluation criteria.

Open source	Propietary
• Moodle 1.9.6	• Blackboard 9 (Bb + Web CT + ANGEL)
• Sakai 2.6.1	• Desire2Learn
• ATutor 1.6.3	• eCollege
• Dokeos FREE	• Dokeos PRO
• .LRN	• SharePoint
• Claroline	• JoomlaLMS
• OLAT	• Virtàgora 2009
• eFront	• Nexos (Symmetric)
• ILIAS	
• Metacoon	

Table 1. List of open source and proprietary LMS analyzed.

The creation of a platform from scratch supposes a high cost of development and maintenance. Because of that it has been discarded in this project. With alternatives that adjust to the proposal or that require a little modification or adjustment in order to fulfill the requirements it is not needed to assume the costs of creating a LMS from scratch. Using a non La Salle platform, whereas it is open source of proprietary, exists a global knowledge of the platform around the world. It reduces the costs of maintenance and upgrade because updates have not to be developed, just installed.

4.1 Criteria

The evaluation criteria picked for the selection of the LMS are the following:

- Diffusion and popularity
  - Support from third parties (professional services and publications)
  - Measuring brand strength
- Technical and functional criteria
- Economic criteria

4.2 Support from third parties

To analyze the third party support three sources of information have been used. They allow knowing what is the professional demand that the different LMS generate and also the publications that talk about them.

From professional services Elance [(Elance.com)], a portal for information of *freelance* professionals, and Guru [(Guru.com)], a similar portal, have been used.

From publications, the online store Amazon [(Amazon.com)] has been used to measure the number of books generated by every LMS. The result can be viewed in Table 2. Moodle, Sakai and ATutor are the best rated open-source LMS and Blackboard and eCollege are the best rated proprietary LMS.

LMS	Elance	Guru	Amazon
Moodle 1.9.6	150	73	177
Sakai 2.6.1	7	1	150
ATutor 1.6.3	4	3	0
Dokeos	3	1	10
.LRN	1	0	0
Claroline	2	0	0
OLAT	0	0	0
eFront	2	0	0
ILIAS	5	0	0
Metacoon	0	0	0
Blackboard 9	44	40	204
Desire2Learn	0	0	0
eCollege	5	4	0
SharePoint	3	1	0
JoomlaLMS	1	0	0
Virtàgora 2009	0	0	0
Nexos	0	0	0

Table 2. Third party support for the LMS analyzed.

4.3 Brand strength

For the brand strength, three estimators have been used:

- Number of daily pages viewed according to Alexa [(Alexa.com)].
- Job offers related to the platform.
- Number of web searches in the net.

4.3.1 Daily pages

In Figure 2 the number of daily visits from the main pages of the LMS studied can be seen. In the figure, the LMS with more visits are shown; the other do not appear in the graphic because of its low number of visits.

The analysis has been done thanks to the portal Alexa [(Alexa.com)]. The results are not 100% accurate but with enough credibility to take them into account.

The commercial solutions Blackboard and eCollege are the most visited and Moodle is the open source platform with more page views.

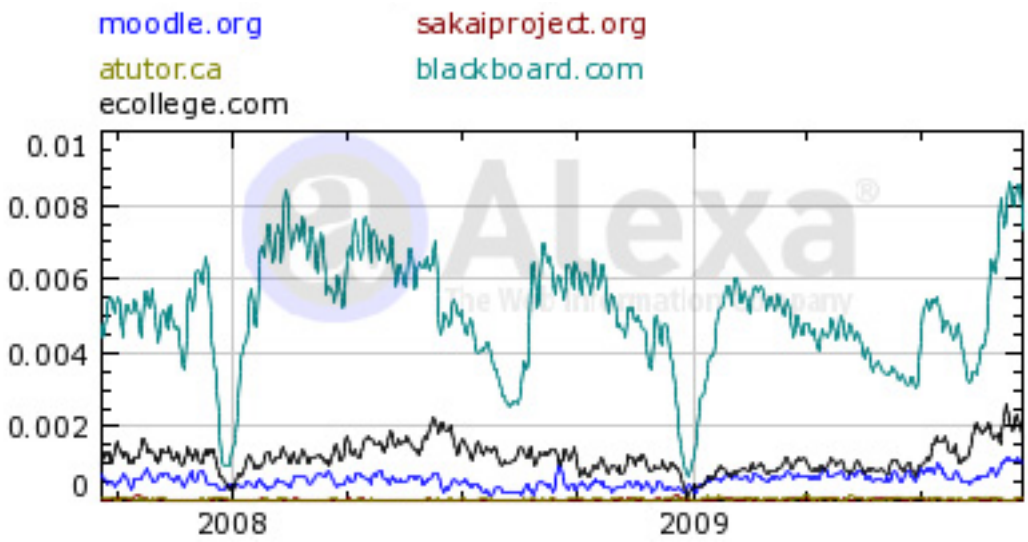


Figure 2. Daily visits comparative in Alexa.

4.3.2 Work tendency

Regarding the number of job offers, the web Indeed [(Indeed.com)] has been used. Indeed is a portal specialized in finding job offers. It brings the opportunity to plot statistics about job trends and market needs.

The result, as can be seen in Figure 3, shows a huge amount of job offers from Moodle during the last months.

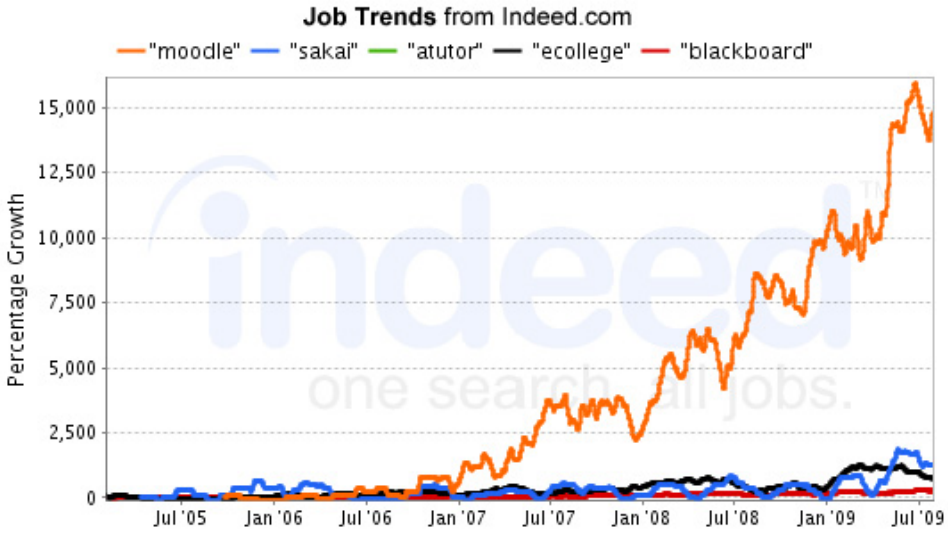


Figure 3. Job trends related to LMS.

4.3.3 Google Trends

Finally, Google Trends has been used to measure the brand strength [(Google)]. This Google tool i able to represent a line plot of searches acording to a keyword in Internet.

As it can be seen in Figure 4, Moodle as open source platform and Blackboard as commercial are the platforms that generate most of the searches.

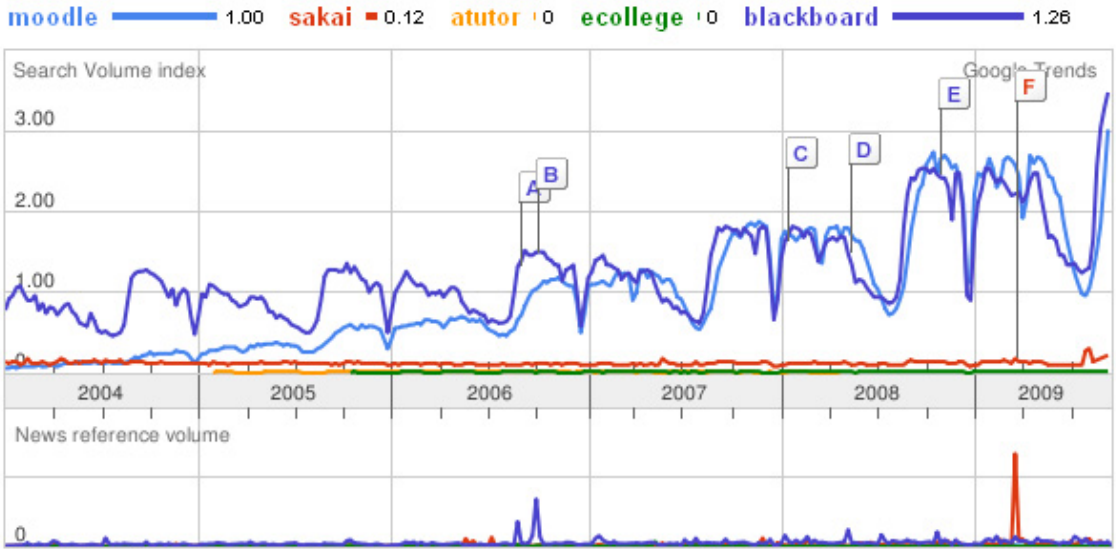


Figure 4. Search tendencies in Google Trends.

4.4 Technical and functional features

From the description of the functional requirements of the platform a table of features has been extracted. This way the different platforms are easier to compare.

For every solution it can be found the list of features. To mark if they fulfill or not this requirement the following symbols have been used:

- Green if the platform allows the indicated option.
- Red if the platform does not allow this option and its cost of implementation is so high that makes it unviable or for development into a second phase.
- Features that require an observation are marked in orange. Usually it means that with few resources the feature can be developed and included in the platform.

4.4.1 Moodle 1.9.6

Type	Feature		Obs.
LMS	Basic features (register, administration, users,…)	✓	*1
	Management of user profile	✓	
	Blogs	✓	
	Projects historic (read only)	⚠	* 2
	Languages (Spanish and English)	✓	
	Time zones management	✓	
Help	Contextualized help	✓	
	Incidents report	⚠	*3
Methodology and competences	Degree management	✓	
	Link competences to degrees	⚠	*4
	Projects management inside a degree	✓	
	Link competences to projects	⚠	*4
	Student group management	✓	
	Intelligent creation of students	✗	
	Collaborative spaces management	⚠	*5

Profiles	Administrator	✓	
	Support technician	✓	
	Manager of the degree	✓	
	mentor	✓	
	Mark resources as public	✓	
	Subject matter expert	✓	
	Student	✓	
	Not being able to modify or erase other students work	⚠	*6
	Guest	⚠	*7
Collaborative space	Forum	✓	
	Mail when posting a new topic	✓	
	Answering topics via electronic mail	✗	
	Wiki	✓	
	Chat	✓	
	Web videoconference	✗	
	Polls	✓	
	Questionnaires	✓	
	Workshop (multiple revision of a work)	✓	
Qualifications	Look up qualifications	✓	
	Evaluation of deliverables (subject matter expert)	✓	
	Evaluation of competences (mentor)	⚠	*4
	Automatic calculation of the final grade of the project	✓	
	Automatic calculation of the final grade of the degree	⚠	*8
	Automatic calculation of the final grade of the competences	⚠	*8
	Visual alert showing improvement or worsening in competences	⚠	
	Peer review of students	✓	
Devices	PC	✓	
	Mobile and PDA	⚠	*9
Alerts	Visual alert of news items and modifications in resources	⚠	*10
	Visual alert of news items and modifications in activities	⚠	*10
	Configuration of what alerts receive by electronic mail	⚠	*10
	Configuration of what alerts receive by SMS	✗	
	Send mail to multiple recipients	✓	
	Send SMS to multiple recipients	✗	*11
Calendar	Calendar for every project	✓	
	Relative calendar (with festive days control)	✗	
	Date management: start/end, deliverables and video sessions	✓	
	Events related into project page	⚠	
	Chronologically listed events	✓	*12
Tasks and deliverables	Documents upload tool	✓	
	Unlimited calls when delivering documents	✓	
Output interface	Business oriented networks (LinkedIn, Xing,…)	✗	
	Social networks (Facebook, MySpace,…)	✗	
	Electronic portfolios (Mahara, Elgg,…)	✗	
Stats	Statistics: recount and graphics	⚠	*13
	Quality system with threshold warning	✗	

*** Observations:**

1. Regarding the changing of passwords, it has to be taken into account that if the authentication is made using external LDAP without write access, then the change of the password must be done by an external form programmed to do that. The user that has lost his password can be redirected to this form in Moodle.
2. The historic of projects can be retained so that students can view them later, but users will continue to have the same role than before.
   To solve it, the role of the users can be changed to a guest role so that they can access in read only mode to the contents they have created in their courses.
3. In an easy way, it can be added in the footer of the Moodle page (piece of code that gets printed in every page of the platform) a link to a form that allows the user to report any problem.
4. Despite Moodle allows the management of competences inside a course, the features of the module that allow it do not fulfill the requirements of the project so a new module needs to be created to manage competences.
5. The students cannot create new activities, just participate in the ones that create the support technician. To give freedom to the student, the collaborative space must be understood as a new group where the student would have write rights in it.
6. It can be achieved creating a new course format in Moodle.
7. The guest profile can be created, but taking into account that the user must authenticate in the first place. The username and password must be published somewhere.
8. A module that relates different courses (all of them belonging to the same degree) needs to be created to calculate the final mark and the final competences mark.
9. The MLE-Mobile module must be installed.
10. Only in few activities and resources.
11. An external service can be contracted to do it. Dina Hosting [(DinaHosting)] is an example. It won't be synchronized with the resources (when somebody creates a new topic a SMS cannot be sent) but the mentor can send SMS to all the classroom or specific students at any time.
12. Only following events.
13. Only *logs* can be looked up, an automatic system of counting is not made.

4.4.2 Sakai 2.6.1

Type	Feature		Obs.
LMS	Basic features (register, administration, users,…)	✓	
	Management of user profile	✓	
	Blogs	✓	
	Projects historic (read only)	⚠	*1
	Languages (Spanish and English)	✓	
	Time zones management	✓	
Help	Contextualized help	✓	
	Incidents report	✗	
Methodology and competences	Degree management	✓	
	Link competences to degrees	✗	

	Projects management inside a degree	✓	
	Link competences to projects	⚠	*2
	Student group management	✓	
	Intelligent creation of students	✗	
	Collaborative spaces management	⚠	*3
Profiles	Administrator	✓	
	Support technician	✓	
	Manager of the degree	✓	
	mentor	✓	
	Mark resources as public	✓	
	Subject matter expert	✓	
	Student	✓	
	Not being able to modify or erase other students work	✓	
	Guest	✓	
Collaborative space	Forum	✓	
	Mail when posting a new topic	✗	*4
	Answering topics via electronic mail	✗	
	Wiki	✓	
	Chat	✓	
	Web videoconference	✗	
	Polls	✓	
	Questionnaires	✓	
	Workshop (multiple revision of a work)	⚠	*5
Qualifications	Look up qualifications	✓	
	Evaluation of deliverables (subject matter expert)	✓	
	Evaluation of competences (mentor)	⚠	*2
	Automatic calculation of the final grade of the project	✓	
	Automatic calculation of the final grade of the degree	✗	
	Automatic calculation of the final grade of the competences	⚠	*2
	Visual alert showing improvement or worsening in competences	⚠	*6
	Peer review of students	⚠	*5
Devices	PC	✓	
	Mobile and PDA	✗	
Alerts	Visual alert of news items and modifications in resources	✗	
	Visual alert of news items and modifications in activities	⚠	*7
	Configuration of what alerts receive by electronic mail	✗	
	Configuration of what alerts receive by SMS	✗	
	Send mail to multiple recipients	✓	
	Send SMS to multiple recipients	✗	
Calendar	Calendar for every project	✓	
	Relative calendar (with festive days control)	✗	
	Date management: start/end, deliverables and video sessions	✓	
	Events related into project page	✗	
	Chronologically listed events	✗	
Tasks and deliverables	Documents upload tool	✓	
	Unlimited calls when delivering documents	✓	
Output interface	Business oriented networks (LinkedIn, Xing,…)	✗	

	Social networks (Facebook, MySpace,…)	✗	
	Electronic portfolios (Mahara, Elgg,…)	✗	
Stats	Statistics: recount and graphics	⚠	*8
	Quality system with threshold warning	✗	

***Observations:**

1. The user could be marked as inactive once the course has ended.
2. The Matrix tool allows evaluating competences and skills. But this tool understands that a competence is evaluated only by one deliverable and modifications must be made in order to use the Matrix tool to evaluate all the competences that an student may acquire.
3. The platform does not allow the activities to be from the same group, a new course as a collaborative space where the users have administration privileges.
4. Electronic mails cannot be received but if the Messages tool is activated, a module is shown when entering a course that informs you about internal messages received and the number of forums that have received a new message from a user.
5. The Matrix tool allows inserting comments to other user items.
6. The Matrix tool allows indicating the progress or worsening in the selected competences but it is local to a course and not global of a degree.
7. In some of the activities it is possible to activate it (like in the forums) using the Messages tool.
8. Some activities like the forums have statistics, but it is not generalized.

4.4.3 ATutor 1.6.3

Type	Feature		Obs.
LMS	Basic features (register, administration, users,…)	✓	
	Management of user profile	✓	
	Blogs	✗	*1
	Projects historic (read only)	✗	
	Languages (Spanish and English)	✓	
	Time zones management	✗	
Help	Contextualized help	✓	
	Incidents report	✗	
Methodology and competences	Degree management	✓	
	Link competences to degrees	✗	
	Projects management inside a degree	✓	
	Link competences to projects	✗	
	Student group management	✓	
	Intelligent creation of students	✗	
	Collaborative spaces management	⚠	*2
Profiles	Administrator	✓	
	Support technician	✓	
	Manager of the degree	✓	

	mentor	✓	
	Mark resources as public	✗	
	Subject matter expert	✓	
	Student	✓	
	Not being able to modify or erase other students work	✗	
	Guest	✗	
Collaborative space	Forum	✓	
	Mail when posting a new topic	✓	
	Answering topics via electronic mail	✗	
	Wiki	✗	
	Chat	✓	
	Web videoconference	✗	
	Polls	✓	
	Questionnaires	✓	
	Workshop (multiple revision of a work)	✗	
Qualifications	Look up qualifications	✓	
	Evaluation of deliverables (subject matter expert)	✓	
	Evaluation of competences (mentor)	✗	
	Automatic calculation of the final grade of the project	✓	
	Automatic calculation of the final grade of the degree	✗	
	Automatic calculation of the final grade of the competences	✗	
	Visual alert showing improvement or worsening in competences	✗	
	Peer review of students	✗	
Devices	PC	✓	
	Mobile and PDA	✗	
Alerts	Visual alert of news items and modifications in resources	✗	
	Visual alert of news items and modifications in activities	⚠	*3
	Configuration of what alerts receive by electronic mail	⚠	*3
	Configuration of what alerts receive by SMS	✗	
	Send mail to multiple recipients	✓	
	Send SMS to multiple recipients	✗	
Calendar	Calendar for every project	✗	
	Relative calendar (with festive days control)	✗	
	Date management: start/end, deliverables and video sessions	✓	
	Events related into project page	✗	
	Chronologically listed events	✗	
Tasks and deliverables	Documents upload tool	✓	
	Unlimited calls when delivering documents	✗	
Output interface	Business oriented networks (LinkedIn, Xing,…)	✗	
	Social networks (Facebook, MySpace,…)	✗	
	Electronic portfolios (Mahara, Elgg,…)	✗	
Stats	Statistics: recount and graphics	✗	
	Quality system with threshold warning	✗	

*** Observations:**

1. Blogs can be created but inside a group of users, there is not a blog for each user.
2. Blogs, forums, file storage and links are allowed.
3. Some activities are allowed.

4.4.4 Virtàgora 2009

Type	Feature		Obs.
LMS	Basic features (register, administration, users,…)	✓	
	Management of user profile	✓	
	Blogs	✓	
	Projects historic (read only)	⚠	*1
	Languages (Spanish and English)	✓	
	Time zones management	✗	
Help	Contextualized help	⚠	*2
	Incidents report	⚠	*3
Methodology and competences	Degree management	✓	
	Link competences to degrees	⚠	*4
	Projects management inside a degree	✓	
	Link competences to projects	⚠	*4
	Student group management	✓	
	Intelligent creation of students	✗	
	Collaborative spaces management	✓	
Profiles	Administrator	✓	
	Support technician	✓	
	Manager of the degree	✓	
	mentor	✓	
	Mark resources as public	✗	
	Subject matter expert	✓	
	Student	✓	
	Not being able to modify or erase other students work	✗	*5
	Guest	✗	
Collaborative space	Forum	✓	
	Mail when posting a new topic	¿	
	Answering topics via electronic mail	✗	
	Wiki	✓	
	Chat	✗	*6
	Web videoconference	✓	*7
	Polls	✓	
	Questionnaires	✓	
	Workshop (multiple revision of a work)	✗	
Qualifications	Look up qualifications	✓	
	Evaluation of deliverables (subject matter expert)	✓	
	Evaluation of competences (mentor)	⚠	*4
	Automatic calculation of the final grade of the project	✓	
	Automatic calculation of the final grade of the degree	⚠	
	Automatic calculation of the final grade of the competences	⚠	*4

	Visual alert showing improvement or worsening in competences	⚠	
	Peer review of students	✗	
Devices	PC	✓	
	Mobile and PDA	✓	*8
Alerts	Visual alert of news items and modifications in resources	⚠	*9
	Visual alert of news items and modifications in activities	⚠	*9
	Configuration of what alerts receive by electronic mail	✓	
	Configuration of what alerts receive by SMS	✓	
	Send mail to multiple recipients	✓	
	Send SMS to multiple recipients	✓	
Calendar	Calendar for every project	⚠	*10
	Relative calendar (with festive days control)	✗	
	Date management: start/end, deliverables and video sessions	✓	
	Events related into project page	✗	
	Chronologically listed events	✓	
Tasks and deliverables	Documents upload tool	✓	
	Unlimited calls when delivering documents	⚠	
Output interface	Business oriented networks (LinkedIn, Xing,…)	✗	
	Social networks (Facebook, MySpace,…)	✗	
	Electronic portfolios (Mahara, Elgg,…)	✗	
Stats	Statistics: recount and graphics	✗	*11
	Quality system with threshold warning	✗	

***Observations:**

1. What contents are accessible must be determined.
2. There is a Help module in the platform but at this moment is not activated by the administrators.
3. The system offers a 24x7 help desk for students. Specific conditions to be read in the SLA.
4. It requires modifying the platform but it is possible to do it.
5. The student is an administrator of his collaborative space so he/she can manage activities created by other students.
6. The chat is available just in the synchronous room tool, not as a standalone tool. The synchronous room is thought for online meetings of groups, not for one to one meetings.
7. The videoconference system works voice over IP and at this moment does not work properly. A new system is being analyzed although La Salle wants to keep its system and if possible integrate it into the platform.
8. The mobile version of the platform is a reduced one.
9. Not in every resource nor activity.
10. There is not a visual calendar in the platform although it won't be difficult to include it because temporal activities are allowed.
11. The Learning Office package can be contracted where they include a tracking of the students and mentors.

4.4.5 Blackboard 9

Type	Feature		Obs.
LMS	Basic features (register, administration, users,…)	✓	
	Management of user profile	✓	
	Blogs	✓	
	Projects historic (read only)	¿	
	Languages (Spanish and English)	✓	
	Time zones management	✓	
Help	Contextualized help	✗	
	Incidents report	✗	
Methodology and competences	Degree management	✓	
	Link competences to degrees	⚠	*1
	Projects management inside a degree	✓	
	Link competences to projects	⚠	*1
	Student group management	✓	
	Intelligent creation of students	✗	
	Collaborative spaces management	⚠	*2
Profiles	Administrator	✓	
	Support technician	✓	
	Manager of the degree	✓	
	mentor	✓	
	Mark resources as public	✗	
	Subject matter expert	✓	
	Student	✓	
	Not being able to modify or erase other students work	✓	
	Guest	¿	
Collaborative space	Forum	✓	
	Mail when posting a new topic	✓	
	Answering topics via electronic mail	✗	
	Wiki	✓	
	Chat	✓	
	Web videoconference	✓	
	Polls	✓	
	Questionnaires	✓	
	Workshop (multiple revision of a work)	✗	
Qualifications	Look up qualifications	✓	
	Evaluation of deliverables (subject matter expert)	✓	
	Evaluation of competences (mentor)	⚠	*1
	Automatic calculation of the final grade of the project	✓	
	Automatic calculation of the final grade of the degree	✗	
	Automatic calculation of the final grade of the competences	⚠	*1
	Visual alert showing improvement or worsening in competences	✗	
	Peer review of students	✗	
Devices	PC	✓	
	Mobile and PDA	⚠	*3
Alerts	Visual alert of news items and modifications in resources	✗	
	Visual alert of news items and modifications in activities	✗	

	Configuration of what alerts receive by electronic mail	✗	
	Configuration of what alerts receive by SMS	✗	
	Send mail to multiple recipients	✓	
	Send SMS to multiple recipients	✗	
Calendar	Calendar for every project	✓	
	Relative calendar (with festive days control)	✗	
	Date management: start/end, deliverables and video sessions	✓	
	Events related into project page	✗	
	Chronologically listed events	✗	
Tasks and deliverables	Documents upload tool	✓	
	Unlimited calls when delivering documents	✗	
Output interface	Business oriented networks (LinkedIn, Xing,…)	✗	
	Social networks (Facebook, MySpace,…)	✗	
	Electronic portfolios (Mahara, Elgg,…)	✗	
Stats	Statistics: recount and graphics	✗	
	Quality system with threshold warning	✗	

***Observations:**

1. It is possible to install an external plug-in that allows the evaluation of competences. That plug-in has not been tested and for that reason it is unknown if it fulfill the requirements of the platform.
2. The group tool does not include a Wiki and the students only can post in the forums that the support technician creates.
3. An iPhone application is available.

4.4.6 Nexos by Symmetric

Type	Feature		Obs.
LMS	Basic features (register, administration, users,…)	⚠	*1
	Management of user profile	✓	
	Blogs	✓	
	Projects historic (read only)	¿	
	Languages (Spanish and English)	¿	
	Time zones management	¿	
Help	Contextualized help	✓	
	Incidents report	✗	
Methodology and competences	Degree management	✗	
	Link competences to degrees	✗	
	Projects management inside a degree	✗	
	Link competences to projects	✗	
	Student group management	⚠	*2
	Intelligent creation of students	✗	
	Collaborative spaces management	✓	
Profiles	Administrator	¿	
	Support technician	¿	
	Manager of the degree	✓	

	mentor	✓	
	Mark resources as public	✓	
	Subject matter expert	✓	
	Student	✓	
	Not being able to modify or erase other students work	✗	
	Guest	✓	
Collaborative space	Forum	✓	
	Mail when posting a new topic	✗	
	Answering topics via electronic mail	✗	
	Wiki	✓	
	Chat	✓	
	Web videoconference	✗	
	Polls	✗	
	Questionnaires	✗	
	Workshop (multiple revision of a work)	✗	
Qualifications	Look up qualifications	✗	
	Evaluation of deliverables (subject matter expert)	✗	
	Evaluation of competences (mentor)	✗	
	Automatic calculation of the final grade of the project	✗	
	Automatic calculation of the final grade of the degree	✗	
	Automatic calculation of the final grade of the competences	✗	
	Visual alert showing improvement or worsening in competences	✗	
	Peer review of students	✗	
Devices	PC	✓	
	Mobile and PDA	✗	
Alerts	Visual alert of news items and modifications in resources	✗	
	Visual alert of news items and modifications in activities	¿	
	Configuration of what alerts receive by electronic mail	✗	
	Configuration of what alerts receive by SMS	✗	
	Send mail to multiple recipients	¿	
	Send SMS to multiple recipients	✗	
Calendar	Calendar for every project	✓	
	Relative calendar (with festive days control)	✗	
	Date management: start/end, deliverables and video sessions	✓	
	Events related into project page	✗	
	Chronologically listed events	✗	
Tasks and deliverables	Documents upload tool	✓	
	Unlimited calls when delivering documents	✗	
Output interface	Business oriented networks (LinkedIn, Xing,…)	✗	
	Social networks (Facebook, MySpace,…)	✗	
	Electronic portfolios (Mahara, Elgg,…)	✗	
Stats	Statistics: recount and graphics	¿	
	Quality system with threshold warning	¿	

***Observations:**

1. Administration controls of the platform are required to automatically create the group and projects spaces.
2. The hierarchical qualification of groups and projects is understood in a different way in Nexos: the groups are the ones that create projects and not the groups are created by projects. Although it is possible to develop a learning model based in projects it is not the desired solution.

4.5 Economical criteria

From the economical side, these parameters have been used:

- Cost of modifying the platform to adapt it into a project based learning model.
- Maintenance cost of the platform (monthly).
- Support to administrators and end users of the platform (monthly).

Furthermore, as this costs are variables in function of the number of registered students and the number of concurrent students that use the platform three control points in time have been defined in Table 3.

	# AU	#CU (%)	#CU (max)
Initially	50	5	12,5
After first year	200	10	25
After third year	6000	10	600

Table 3. Parameters to economically evaluate the LMS.

It has also to be taken into account the generalized advantages that the open source LMS bring. They are:

- They provide the source code of the application.
- They can be distributed under any one of the reference licenses [(Open Source Initiative)] considered by the Open Source Initiative.
- Can be modified, copied and distributed freely, according to the terms established in the respective licenses.

4.5.1 Moodle "as is"

Like can be observed in the section 4.4.1, Moodle brings a lot of the features that are requested for the learning platform of a project based learning system. And the ones that does not have can be achieved and added through some modifications.

In the case that this modifications are not made, some features won't be available being the most important: historical of projects without possibilities of modification, qualifications and competences management, collaborative spaces where the students control de content management, alerts and statistics.

The principal advantage is that development, testing and integration phases would not be required, but the global experience of students, mentors and other staff that would use the LMS would not be complete.

Another advantage would be the posibility to outsource the mainentenance of the platform to specialized Moodle partners that offer this service as a ASP. After contacting some of them, in Table 4 can be found their prices:

	CR [(Classroom Revolution)]	MRooms [(Moodle Rooms)]	Generazion [(generazion)]	CV&A [(CV&A Consulting)]
Initially	$799.95/y	$1/usr/y	2.000€/y	635€/m
1st year	$799.95/y	$1/usr/y	2.000€/y	635€/m
3rd year	$3799.95/y	$5/usr/y	3.700€/y	635€/m

Table 4. Cost of outsourceing Moodle with an ASP.

Regarding CR (Classroom Revolution) [(Classroom Revolution)] the cost includes the hosting, technical support, backups, unlimited courses, updates and unlimited bandwidth.

In MRooms (Moodle Rooms) [(Moodle Rooms)] that define themselves as the biggest Moodle partner in the world they offer an ASP solution in function of the number of users registered at the platform and the bandwidth used. A summary of their costs can be found in Table 5. It is important to remark that in the clients of MRooms can be found the Louisiana State University (LSU) that has more than 35.000 students registered.

In Generazion [(generazion)] they offer two kinds of ASP for Moodle:

The first one consists in hosting the platform in a shared served with space limited to 5GB but without limiting the bandwidth. This model belongs to the service "Startup" and details can be found in the document "Presupuesto de Servicios en Moodle, Servicio *Startup*" [(Generazion Consulting, 2009)]. The costs of installation and maintenance of the server of Moodle are 1.500€ annually plus 500 € optional if it is desired to hire a bag of 10 support hours. This service would be enough for the first years, but it would be required to move to a dedicated server when the number of registered users surpasses the 1000. The budget for the second ASP model, the dedicated server, can be found in the document "Presupuesto de Servicios en Moodle, Servicio *On-Demand*" [(Generazion Consulting, 2009)] and would be used from the 3rd year being the anual budget 3.200 € for the server detailed in the mentioned document plus the support (10 annual hours at 50 € the hour).

Some clients of Generazion are: CEPADE (Univesidad Politécnica de Madrid), Instituto Agustín Millares (Universidad Carlos III de Madrid), Fundación Pablo VI (Universidad Pontificia de Salamanca), Proyecto Cevirtual (Cámaras de Comercio españolas), Colegios Safa, Formación Caja Madrid and Panda E-Campus de certificación (Panda Software).

In CV&A [(CV&A Consulting)], the proposal of hosting Moodle in a dedicated server costs 635 € per month where are included the following features:

- Personalized plan of 5GB of space and 100GB of monthly bandwidth.
- Hosting and backups (350€).
- Maintenance (175€).
- Telephone support (2h monthly, 110€).

	Basic	Standard	Premier
Price	$1/user	$3/user	$5/user
Installation	Included	Included	Included
Storage	2.5 GB/package	10 GB/package	30 GB/package
Monthly Bandwidth	50 GB/package	200 GB/package	600 GB/package
Community Support	Included	Included	Included
Updates & Upgrades	Included	Included	Included
Support Tickets		25/package	50/package
mPowerment System		Included	Included
E-portfolio			Included
Digital Repository			Included

Table 5. Costs of Moodle Rooms ASP.

4.5.2 Sakai

Sakai is an open source platform that fulfills most of the requirements of the project: while it has some interesting features for the future platform like the fact of allowing the easy creation of collaborative spaces, there are some important features like the availability of the platform in mobile devices that are not yet implemented and represent a major handicap for this project. For this reason it has been discarded of the project.

4.5.3 Virtàgora

In the case of Virtagora, proprietary LMS offered by the company GEC S.A., a viability study has been done to adapt their LMS to the interests of La Salle Open University.

The total amount of money that would cost the adaptation of the platform (including consultancy, implantation, development and input/output interfaces) is 85000€ approximately. With that price, some of the features would be out of the scope: like the relative calendar or the chat tool. The length of the project would be 4 months and a half, and at the end of this period La Salle Open University would have Virtàgora up and running.

About maintenance and support, Virtàgora is commercialized in an ASP model and includes the services of:

- Support via tickets with an SLA of 95%
- Phone support to end users (optional)
- Answering questions to the platform administrator
- Technical maintenance of the platform
- Licenses for 250 active users with 2,5% of concurrency
- Availability of the system with an SLA of 98%
- System administration services
- Hosting, communications and backup

The price of the service depends on the number of users. A relation of monthly prices depending of the number of active users in the platform can be seen in Table 6. This prices

are valid taking into account a 2,5% of concurrent users. Taking into account that the final platform is going to have to handle between a 5% and a 10% of concurrent users, a new budget can be found in Table 7.

Tramo de usuarios	PVP mes	PVP usuario/mes
0-250	1.175	4,70 €
250 - 500	1.814	3,63 €
500 - 750	2.465	3,29 €
750 -1000	3.116	3,12 €
1000 -1500	4.000	2,67 €
1500 - 2000	5.237	2,62 €
2000 - 2500	6.139	2,46 €
2500 - 3000	6.899	2,30 €
3000 - 4000	8.573	2,14 €
4000 - 5000	10.246	2,05 €
5000 - 6000	11.920	1,99 €
6000 - 7000	13.430	1,92 €
7000 - 8000	14.920	1,86 €
8000 - 9000	16.410	1,82 €
9000 - 10000	17.900	1,79 €

Table 6. ASP prices according to number of users.

	# AU	#CU (%)	PVP per month	PVP user/month
Initially	50	5	1.175,00 €	23,50 €
After 1st year	200	10	1.175,00 €	5,88 €
After 3rd year	6000	10	19.494,00 €	3,25 €

Table 7. Cost for 5% and 10% of concurrent users.

The platform allows the students to upload videos in their own channel so video streaming prices (Table 8) have also to be taken into account since they are not included in the given price.

4.5.4 Blackboard

The greatest advantage of using Blackboard in this project would be the fact that the platform has a tool that allows collaborative work in an easy way. It is just necessary to create a new activity "Group" and a group of activities to work in groups are created automatically. The only problem is that this activity does not include a Wiki and that Blackboard does not allow competence evaluation.

Blackboard allows installing pieces of code with Building Blocks, a set of plug-ins that offers new features to the platform. One of these, EAC Outcomes, allows the evaluation of generic competences.

4.5.5 Nexos

The use of Nexos has been discarded because it does not offer management tools for a system administrator. It is an interesting collaborative tool but is not prepared for learning activities but for project management.

Visiones / mes	GB/mes	PVP mes
900	20	300,00 €
1.800	40	510,00 €
2.700	60	660,00 €
3.600	80	780,00 €
4.500	100	873,00 €
5.400	120	942,00 €
6.300	140	990,00 €
7.200	160	1.023,00 €
8.100	180	1.056,00 €
9.000	200	1.089,00 €
9.900	220	1.122,00 €
10.800	240	1.155,00 €
11.700	260	1.188,00 €
12.600	280	1.221,00 €
13.500	300	1.254,00 €
14.400	320	1.287,00 €
15.300	340	1.320,00 €
16.200	360	1.353,00 €
17.100	380	1.386,00 €
18.000	400	1.419,00 €
18.900	420	1.452,00 €
19.800	440	1.485,00 €
20.700	460	1.518,00 €
21.600	480	1.551,00 €

Table 8. Videostreaming prices for Virtàgora.

4.5.6 SMS services

Like it has been said before, the services of sending SMS it is not included in any of the solutions that have been presented. Dina Hosting [(DinaHosting)] offers this service and its prices can be found in Table 9.

# SMS	Price	cts/SMS
50	4,5 €	9,0 cts
100	8,7 €	8,7 cts
1000	85,00 €	8,5 cts
5000	410,00 €	8,2 cts
20000	1.580,00 €	7,9 cts

Table 9. Prices of SMS services by Dina Hosting.

5 CHAPTER FIVE: THE RFI PROCESS

CHAPTER FIVE: THE RFI PROCESS

After the study of the possible platforms suitable to be the learning platform for La Salle Open University, the Request For Information (RFI) process could start.

This chapter includes the documents and the templates used in the process, the calendar and timing of the process and a description of the members of the hearing committee.

5.1 Participants

The RFI document was sent to the following companies:

- GEC S.A. (Virtàgora 2009)
- CV&A Consulting (Spanish Moodle reseller)
- Moodle Rooms (Moodle reseller)
- Avanzo (Blackboard reseller in Spain)
- Setival (Sakai reseller in Spain)
- Classroom Revolution (Moodle reseller)
- eCollege (eCollege)
- Generazion (Moodle reseller)

5.2 Description of the Process

The RFI process consisted on different vendor presentations offering their learning platforms in front of a hearing committee formed by La Salle Open University representatives. The presentations must include everything necessary to know by La Salle to make a purchase decision.

After having attended all the presentations, the members of the hearing committee were the ones that decided which was the next step in the process. A summary of the process can be read at the end of this chapter.

All this was explained in the RFI document sent to the different vendors. This document can be found in Appendix I. This document included further instructions for the vendors and the timing of the process. The document is structured this way:

- Introduction
- Special Instructions to Bidders
    - Objectives
    - Response Format
    - Time Table
    - The La Salle University Contact
    - Process
- General Conditions and Bidder Instructions
    - Response Submission
    - Acceptance of Submissions
    - Contact with La Salle University Representatives
    - Supplier Responsibilities
- Appendix A: Scorecard
- Appendix B: Pricing Tables for Proposed Solution
- Appendix C: Acknowledgement

5.3 The Scorecard

In the RFI document, the scorecard (Figure 5 and Figure 6) used to rate the proposals was included so that the vendors could know what was important for La Salle Open University when acquiring a learning platform.

Although this scorecard is sent to vendors as information, the members of the hearing committee are the ones that have to fill it with marks after each presentation of the vendors.

Evaluation matrix				
Name Provider				
		Weighting	Rating	Score
Quality of response				
	Timely delivery	3		0
	Pricing format& Breakdown	3		0
	General quality	3		0
Staff management				
	Experience of the vendor proposed project team	3		0
	General approach	3		0
Account management				
	Strategic	4		0
	day-to-day/Customer Service	5		0
Quality (ISO)				
	ISO 9000/2000, other	2		0
	ISO 14000	2		0
Communication Tool				
	Discussion Forum	5		0
	Discussion Management	5		0
	Blogs	3		0
	Wikis	4		0
	Video conferencing	5		0
	File exchange	5		0
	Internal Email	4		0
	Mail notification/Alert	4		0
	SMS notification	3		0
	Online Journal and notes	3		0
	Progress review/qualification	5		0
	Competences management	4		0
	Real time Chat	4		0
	White Board	5		0
Productivity Tool				
	Bookmarks	3		0
	Calendar	5		0
	Searching within course	4		0
	Orientation/Help Tutorials	4		0
Student Involvement Tools				
	Group Work	5		0
	Project management configuration	5		0
	Community networking	4		0
	Student Portfolio	5		0

Figure 5. Scorecard used for rating the proposals.

LMS Administration				
	Authentication	5		0
	Course Authorization	5		0
	Multi-lingual	5		0
	Usage & statistics reports	4		0
	Registration Integration	5		0
Servers administration				
	System Availability	5		0
	Bandwidth	5		0
	Storage	5		0
	Fail over capability	5		0
	Backup and archive	5		0
	Security Alarm and Alert	5		0
Course Delivery tool				
	Content Sharing/Reuse. Central Repository	5		0
Hardware/Software				
	Database requirements	3		0
	Client browsers compatibility	5		0
	Mobile compatibility	4		0
	OS	3		0
Required Services/Licensing				
	Worldwide Coverage	5		0
	Customer service customer support	5		0
	Training	4		0
	Cost/license	5		0
	Optional Extra	4		0
	Open Source	3		0
References				
	Market presence	5		0
	Customer references(same industry)	5		0
Others				
	Vendor Viability	5		0
	Invoicing & Payment Terms	5		0
	Project management	4		0
	Implementation Risks	5		0
	Contractual Period	4		0
Total				**0**
rating:				
1	not described			
2	in place, but needs specification			
3	normal			
4	good, gives something extra			
5	100% in-line with RFP request			

Figure 6. Scorecard used for rating the proposals.

In order to know what does it mean each row of the scorecard an explanation was given to them before the RFI process started:

5.3.1 Quality of Response

5.3.1.1 Time delivery

- Time delivery of the Request For Information (RFI).
- Minimum time: 15 days (final schedule inside RFI information)
- Has the response been delivered on time?

5.3.1.2 Pricing format & Breakdown

- Each cost element and sub-element is clear.

- Direct costs and indirect costs detailed (if applicable).
- Detailed calculations for all materials, supplies, services and other direct costs.
- For any subcontract proposed, submit a separate breakdown.
- Travel expenses.
- Are the prices clear and understandable?

5.3.1.3 General quality

- How complete is the response?
- Have we received everything we requested from each vendor?

5.3.2 Staff management

5.3.2.1 Experience of the vendor proposed project team

- Structure of the proposed project team.
- Experience of the proposed project team.
- Direction, consulting, management, technological and training specialists?

5.3.2.2 General approach

- Of the proposed project team.

5.3.3 Quality (ISO)

5.3.3.1 ISO 9000/2000, other

Some of the requirements in ISO 9001:2008 (which is one of the standards in the ISO 9000 family) include:

- a set of procedures that cover all key processes in the business;
- monitoring processes to ensure they are effective;
- keeping adequate records;
- checking output for defects, with appropriate and corrective action where necessary;
- regularly reviewing individual processes and the quality system itself for effectiveness; and
- facilitating continual improvement.

5.3.3.2 ISO 14000

- The ISO 14000 is a standard for environmental management systems that is applicable to any business, regardless of size, location or income.
- The aim of the standard is to reduce the environmental footprint of a business and to decrease the pollution and waste a business produces.
- The ISO 14000 environmental management standards exist to help organizations minimize how their operations negatively affect the environment.

5.3.4 Communication Tool

5.3.4.1 Discussion Forum

Possible features for a discussion forum:

- Spell-checker.

- Ordering of the discussions by date, thread or poster.
- Search over discussion forum.
- HTML editor.
- Mathematic equations in posts.
- Enable or disable posts to be sent to their email.
- Receive posts by email as daily digests of subject lines or whole posts.
- RSS syndication.

5.3.4.2 Discussion Management

- Instructors can allow students to create discussion groups.
- Instructors can set up moderated discussions where all posts are screened.
- Posts may be peer reviewed by other students.
- Instructors can view statistical summaries of discussions displaying participation which can be used to generate grades.
- Forums can become visible on a certain date.
- Forums can become locked on a certain date (can read but not post).
- Forums and categories can be sorted.
- Unlimited forums and categories.
- Supports sticky and announcement topics.
- Users control email notification and profile options.
- Bookmark functionality for favorite topics.
- Search functionality across a site's forums.
- "Watch" functionality for hot topics.
- Mark discussion as read functionality.
- Ability to move, delete, lock, and unlock topics.
- Ability to lock a topic, allowing users to read topic postings, but not respond.
- Ability to restrict a forum and/or topic to a specific group or section.
- Ability to grant fine grained permissions on a role or group basis. Permissions include:
    - Category access
    - Forum access
    - Ability to post Sticky, Announcements, or Task topics
    - Read only Forums
    - Enable Karma
    - Enable Bookmarks
    - Enable Attachments
    - Allow Download of existing attachments
    - Ability to set number of allowed attachments, file upload size, and types of allowable attachment extensions.
    - Set users as moderators
    - Disallow moderation in specific forums
    - Ability for roles edit, delete, move, lock and unlock topics
- Discussions can be shared across courses, departments, or any institutional unit.

5.3.4.3 Blogs

- Authoring entries.
- Editing entries.
- Publishing entries: title, body, permalink, post date.
- Comments.
- Categories.
- Tags.
- Trackback.
- Syndication.
- Static pages defined in the blog.
- Export posts.

5.3.4.4 Wikis

- Page editing: wikitext, WYSIWYG.
- Access to HTML and CSS.
- Record of the changes made to wiki pages: who, when and what.
- Backlink feature: all the pages that link to a given page.
- Search feature.

5.3.4.5 Video conferencing

- Their own system or integration to our video conferencing system: Adobe Connect.
- Quality of the image.
- Quality of the sound (VOIP, telephone).

5.3.4.6 File exchange

- Students can submit assignments using drop boxes.
- Students can share the contents of their personal folders with other students.

5.3.4.7 Internal Email

- Students can use the built-in email functionality to email individuals or groups.
- Students can use a searchable address book.
- Instructors can email the entire class at once at a single address or alias.

5.3.4.8 Mail notification/Alert

- Configuration of the notifications.
- Takes into account the time zone of the student.
- New forum posts notification.
- Wiki modifications notification.
- Videoconference (start) notification.
- Delivery deadline notification.
- Delivery sent correctly notification.
- Qualifications posted notification.

5.3.4.9 SMS notification

- Configuration of the notifications.
- Takes into account the time zone of the student.
- New forum posts notification.

- Wiki modifications notification.
- Videoconference (start) notification.
- Delivery deadline notification.
- Delivery sent correctly notification.
- Qualifications posted notification.

5.3.4.10 Online Journal and notes

- Students can make private notes about their course.
- Students can create a private "Notes" folder (and sub-folders) for their classes in the Resources tool of their workspace and attach documents or create and publish notes.

5.3.4.11 Progress review/qualification

- Tasks qualifications.
- Course qualifications.

5.3.4.12 Competences management

- Management of competences.
- Task competences qualifications.
- Course competences qualifications.
- Improvement in the performance of the competences.

5.3.4.13 Real time Chat

- The chat tool supports limited/unlimited simultaneous group discussions.
- Students can create new rooms.
- Instructors may moderate chats and suspend students from the chat rooms.
- The chat tool supports a structured way for students to ask questions and instructors to provide answers.
- The system creates archive logs for all chat rooms.
- Instructors can create new chat rooms. Only one chat room may be set as the default at any given time.
- Instructors may moderate chats and suspend students from the chat rooms.

5.3.4.14 White Board

- The whiteboard supports image and PowerPoint uploading.
- The whiteboard supports mathematical symbols.
- The software supports group web browsing.
- The software supports application desktop sharing.
- The software can archive a recording of whiteboard sessions for future viewing.

5.3.5 Productivity Tool

5.3.5.1 Calendar

- Instructors and students can post events in the online course calendar.
- Instructors can post announcements to a course announcement page.
- Students have a personal home page that lists all courses in which the student is enrolled, new email and all course and system-wide events from their personal calendar.

- Students can view their grades on completed assignments, total points possible, course grade, and compare their grades against the class performance.
- Students can subscribe to RSS feeds to be notified of changes to materials.

5.3.5.2 Searching within course

- Students can search all course content.
- Students can search all discussion threads.
- Students can search chat or virtual classroom session recordings.

5.3.5.3 Orientation/Help Tutorials

- The system includes online tutorials for students that help students learn how to use the system.
- Students can access context sensitive help for any tool.
- The system includes online tutorials for students that help students learn how to use the system.

5.3.6 Student Involvement Tools

5.3.6.1 Group Work

- Instructors can assign students to groups.
- The system can randomly create groups of a certain size or a set number of groups.
- Each group can have its own discussion forum.
- Each group can have its own chat or whiteboard.
- Each group can be given group-specific assignments or activities.
- Groups may be private or instructors can monitor groups.
- Students can self-select groups.

5.3.6.2 Project management configuration

- Ability to easily manage groups of students (creation, editing, deletion).
- Ability to enroll and unroll students at any moment of the course.
- Students cannot modify the participation items of other students.

5.3.6.3 Community networking

- Students can create online clubs, interest, and study groups at the system level.
- Students from different courses can interact in system-wide chat rooms or discussion forums.

5.3.6.4 Student Portfolio

- Students can create a personal home page in each course.
- Students can export work to its own portfolio.
- Students can configure the visualization privileges of their own portfolio.

5.3.7 LMS Administration

5.3.7.1 Authentication

- Administrators can allow guest access to all courses.
- The system can authenticate against an external LDAP server.
- The system can authenticate using the Kerberos protocol.
- The system supports Shibboleth.

- The system supports the Central Authentication Service (CAS).
- The system can authenticate against IMAP, POP3 or secure NNTP.
- Administrators can set up fail-through authentication against a secondary source (e.g. the system's own database) in the event that the primary source (e.g. LDAP server) fails.
- The system can support multiple organizational units and virtual hosts within a server configuration.

5.3.7.2 Course Authorization

- The system supports restricting access based on roles and roles can also be customized by the service provider.
- Instructors or students may be assigned different roles in different courses.
- Administrators can create an unlimited number of custom organizational units and roles with specific access privileges to course content and tools.
- Administrators can distribute the permissions and roles across multiple institutions or departments hosted in the server environment

5.3.7.3 Multi-lingual

5.3.7.4 Usage & statistics reports

- Number of visited pages.
- Number of visited files.
- Links visited.
- Forum posts, visits, responses.
- Wiki, chat, video conference stats.
- Mean, minimum and maximum qualification.
- Number of enrolled students.
- Number of passed students.
- Comparison with others editions of the same course.

5.3.7.5 Registration Integration

- Instructors can add students to their courses manually or allow students to self-register.
- Administrators can batch add students to the system using a delimited text file.
- Administrators can transfer student information bidirectionally between the system and an SIS using delimited text files.
- The software supports data interchange with student information systems through an event-driven API.
- The software supports integration with SCT Banner, SCT Luminis, Datatel, PeopleSoft 8 or customized integration with other SIS or portal systems.
- The software is compliant with the IMS Enterprise Specification for Student Data.
- Administrators can transfer student information bidirectionally between the system and an Student Information System using IMS Enterprise Specification v1.1 XML files via web services.

5.3.8 Servers administration

5.3.8.1 System Availability

- Reliability.
- Network monitoring and reporting.
- Integrated software & hardware support.
- Redundancy.
- Scalability.
- Full Managed Service.
- Expertise.
- Power.
- Performance.
- Client responsibilities.

5.3.8.2 Bandwidth

5.3.8.3 Storage

- Shared/dedicated server.

5.3.8.4 Fail over capability

- Reliability.

5.3.8.5 Backup and archive

- Data loss policy.
- Number of leveled backups.
- Localization of the backups.

5.3.8.6 Security Alarm and Alert

- Physical security.
- Data security.

5.3.9 Course Delivery tool

5.3.9.1 Content Sharing/Reuse. Central Repository

- Instructors can share content with other instructors and students through a central learning objects repository.
- The repository can be system-wide or for individual organizational units.
- Tools are available to enable version tracking and linking to specific versions as well as the creation and management of workflows for collaborative content creation and review.
- The repository supports IEEE LOM and metadata application profiles such as, Dublin Core, Cancore, and custom profiles.
- For any content in the repository, users can view reports displaying every course in the system that is currently using the selected item.

5.3.10 Required Services/Licensing

5.3.10.1 Worldwide Coverage

- Experience in the field.

5.3.10.2 Customer service customer support

- Software versions.
- Administrator support.
- Teacher support.
- Student support.
- Methods of support delivery.
- Costs of support delivery.
- Response details.

5.3.10.3 Training

- Of the future administration team.

5.3.10.4 SLA

- Global availability.
- Planed interventions and maintenance.
- Functional support.
- Telephonic assistance.
- Commitment in solving incidences.
- Personal Data protection.
- Course material protection.

5.3.10.5 Cost/license

- Software versions costs (updates).

5.3.10.6 Optional Extra

- Free upgrades.
- Design of the interface.
- FTP access.
- Others.

5.4 Members of the Hearing Committee

The members of the hearing committee where chosen because of their experience in their fields. This experience is crucial to evaluate a learning platform acquisition. Despite all being related to the field of learning and e-learning, all of them come from different backgrounds and field of work inside a University. This fact makes the team heterogeneous and capable of select an appropriate vendor to supply a learning platform for La Salle Open University.

The members of the hearing committee were:

5.4.1 Marc Segarra

Marc Segarra has a Graduate in Multimedia by La Salle Engineering. At this moment is the head of development of La Salle E-learning Institute in La Salle Engineering. He is the leadership of different technical projects including edit@ project. In La Salle, he is also responsible for the technological platforms of distance learning, specially its application to blended learning studies.

He is part of the committee because of his experience in learning platforms.

5.4.2 Jordi Margalef

Jordi Margalef is the general secretary of La Salle Engineering. He is part of the hearing committee because he will be in charge of the admission process in La Salle Open University and is interested in the way the platforms can integrate to the Information Systems that La Salle already has.

5.4.3 Amal Le Collen

Amal Le Collen is the director of Project Management Executive Programs at Business School La Salle. Previously, she has worked at Epson Europe as Interface Manager and Project Manager latter for EMEA initiatives.

She is part of the committee because she is the project manager of La Salle Open University project.

5.4.4 Albert Cubeles

Albert Cubeles has a degree in physics and it is associated professor at La Salle. He has a teaching experience of more than 10 years and he has published several articles in the field of learning. He has participated in several R+D projects and for 8 years has participated in the masters programs in La Salle. He was the Chief Executive Officer of CONZENTRA and has worked as a Project Manager in different companies such as PHILIPS or ORIGIN. Mr. Cubeles is the director of the project management and companies' management courses in La Salle.

He is part of the hearing committee because he will be using the learning platform everyday in La Salle Open University as a teacher.

5.4.5 Lluís Vicent

Dr. Lluís Vicent (Technical Telecommunications Engineer, Electrical and Telecommunications Engineer, Master in E-learning and PhD by the Ramon Llull University) has been teaching in Telecommunications, Computer Science and Multimedia Engineering in La Salle since 1996. He has worked in different fields of the university profession: teaching, research, technology transfer and management. He is introduced in this last field in 2003, where he becomes the head of the Blended Learning Studies Department in La Salle Barcelona.

He has developed research and managed research in different areas. Since 1993 he runs the research group in Learning Technologies being the main researcher in e-learning technologies in La Salle. His work has been published in different journals and conferences. His research lines include Internet technologies applied to education and learning. He is the author of three books for the learning of mathematics, electromagnetism and image processing and the editor of more than 15 books for the online learning of Telecommunications and Computer Science Engineering. Since 2008 he is the head of La Salle E-learning Institute for the research and learning in this area.

He is part of the committee because of his experience in the use and testing of learning platforms.

5.4.6 Marc Llebaria

Marc Llebaria is the director of the Master in E-business and Master in Technology in Business in La Salle Open University.

He is part of the hearing committee as a degree manager that will have to use the platform every day at his workplace.

5.4.7 Francesc Xavier Francesch

Francesc Xavier Francesch is the responsible of the management, update and backups of the current learning platform (eStudy) in La Salle Engineering at Barcelona. He is part of the committee as a technical role interested in the administrative features of the platform and also its integration to other Information Systems that La Salle Open University might use.

5.4.8 Xavier Gumara

Xavier Gumara is Technical Engineer in Multimedia and Management of Computer Science and currently pursuing a degree in Management of Information and Communication Technologies. He has worked in the edit@ project and Campus project, as a developer. Since 2009 he has been involved in the publishing of Scenario Centered Curriculum courses online. He has researched, published and presented in conferences about Learning Technologies.

He is the manager of the Request for Information due to his experience in learning platforms and his Management of ITC experience.

5.5 The Process

The RFI document (Appendix I) was sent December 1st, 2009. Five of the eight companies answered the RFI: GEC S.A., CV&A Consulting, Moodle Rooms, Avanzo and eCollege. As stated in the document, the bidders could ask their questions about the process and La Salle Open University would answer them in the following days.

The document with all the questions and answers can be found in Appendix II and was send December 10th, 2009 to all the bidders whether they have answered the request or not.

After having received and reviewed the document, eCollege declined to participate in the process due to short timeline offered. There were four companies left: GEC S.A., CV&A Consulting, Moodle Rooms and Avanzo.

La Salle Open University offered time to vendors to prepare a presentation with their proposal. The four presentations took place these days:

- **GEC S.A.:** December 16th, 2009.
- **Moodle Rooms:** December 17th, 2009.
- **Avanzo:** December 17th, 2009.
- **CV&A Consulting:** December 23rd, 2009.

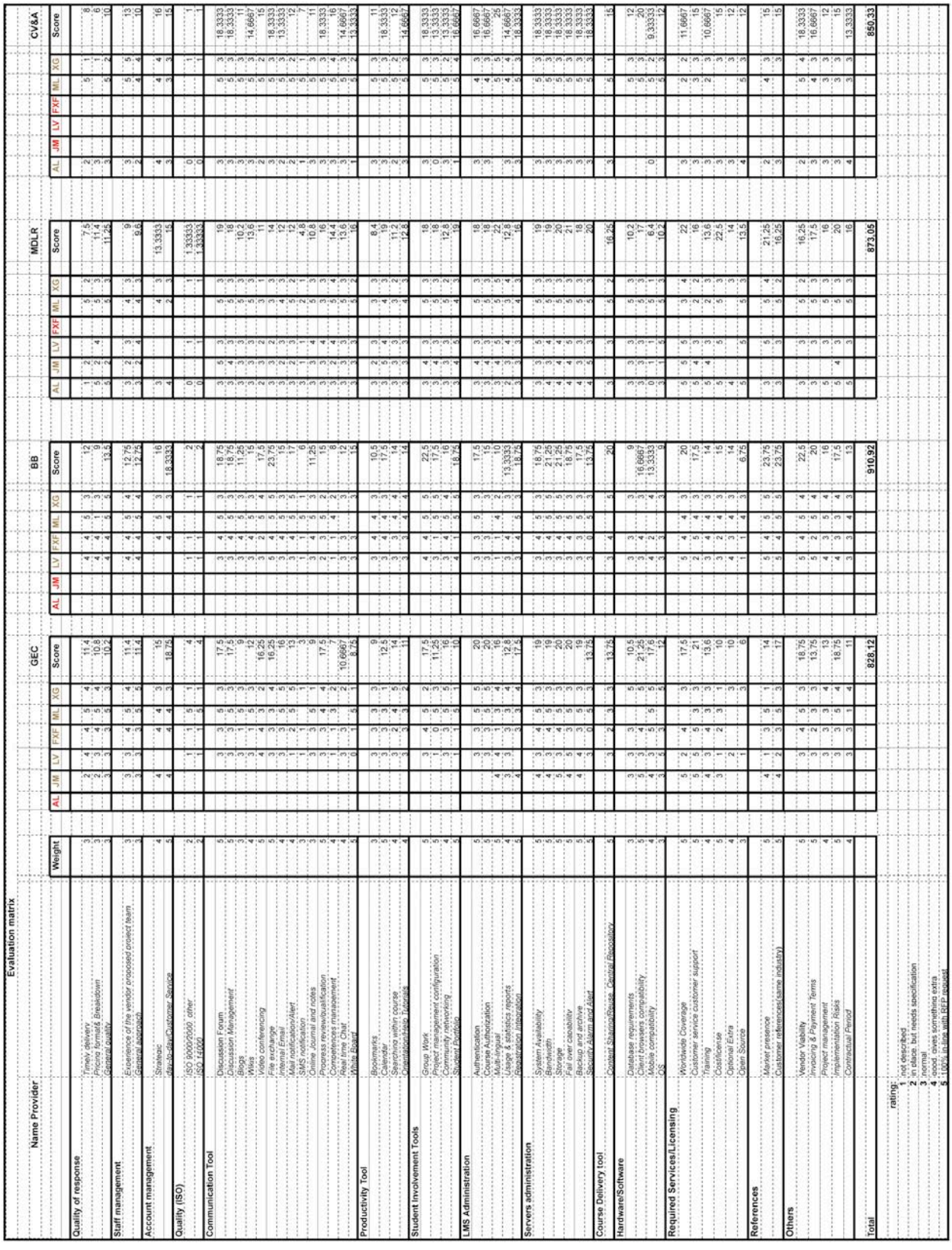
After having reviewed the documentation of the four vendors all the members of the hearing committee that have attended the presentations filled in the scorecard with their scores. The results of this first round can be seen in Table 10.

A meeting was held January 11th, 2010 to present the results to the members of the committee. The committee decided to keep two of the proposals for the next round. The two proposals where: Moodle Rooms and Blackboard, the ones that got the highest score in the review. The other two proposals: GEC S.A. and CV&A Consulting were discarded and informed by telephone of the decision.

A second round was held to discuss more specific topics from each vendor like competences compatibility, mobile access,… The meetings where held:

- Moodle Rooms: January 20th, 2010
- Blackboard: February 2nd, 2010

The same process of scoring the two proposals took place with the results that can be seen in Table 11. At the end, the MoodleRooms proposal was selected as the winner. The reasons of discarding GEC and CV&A on the first round and why MoodleRooms was chosen as the winner proposal can be read in the next chapter.



Evaluation matrix

Name Provider		GEC						BB						MDLR						CV&A					
	Weight	AL	JM	LV	FXF	ML	XG	Score	AL	JM	LV	FXF	ML	XG	Score	AL	JM	LV	FXF	ML	XG	Score	AL	JM	LV	FXF	ML	XG	Score
Quality of response																													
Timely delivery	3	1	2	4	4	5	4	11.4			4	4	5	3	12	1	2			5	2	7.5	2				5	1	8
Pricing formats& Breakdown	3	1	2	3	4	5	4	10.8			4	4	1	3	9	5	2	4		5	3	11.4	3				5	1	6
General quality	3	1	3	3	3	5	3	10.2			4	4	5	5	13.5	5	2			5	3	11.25	3				5	2	10
Staff management																													
Experience of the vendor crossed project team	3	3	3	4	5	4	5	11.4			4	4	5	4	12.75	3	2	3		4	3	9	3				5	5	13
General approach	3	3	3	3	5	5	4	11.4			4	4	5	4	12.75	3	2	4		4	3	9.6	2				4	4	10
Account management																													
Strategic	4	1	4	4	3		5	15			4	5	3	4	16	3	1			4	3	13.3333	4				4	4	16
day-to-day Customer Service	5	4	4	4	3		3	18.75			4	4	3	3	18.3333	4	1			2	3	15	3				3	3	15
Quality (ISO)																													
ISO 9000/2000, other	2	1	1	1	5	1	1	4			1	1	1	1	2	0	1	1		1	1	1.33333	0				1	1	1
ISO 14000	2	1	1	1	5	1	1	4			1	1	1	1	2	0	1	1		1	1	1.33333	0				1	1	1
Communication Tool																													
Discussion Forum	5			3	5	3	3	17.5			3	4	5	3	18.75	3	5	3		5	3	19					5	3	18.3333
Discussion Management	5			3	5	3	3	17.5			3	4	5	3	18.75	3	4	3		5	3	18					5	3	18.3333
Blogs	3			3	1	5	3	9			3	4	5	3	11.25	3	3	3		5	3	10.2					5	3	11
Wikis	4			3	1	5	3	12			3	4	5	3	15	3	3	3		5	3	13.6					5	3	14.6667
Video conferencing	5			4	4	3	2	16.25			3	2	5	4	17.5	2	3	3		3	1	11					5	2	15
File exchange	5			3	3	3	4	16.25			5	4	5	5	23.75	3	2	3		3	3	14					5	3	18.3333
Internal Email	4			3	3	5	5	16			3	4	5	5	17	3	2	3		4	3	12					5	3	15.3333
Mail notification/Alert	3			1	2	5	5	13			1	1	5	1	6	3	1	3		2	3	12					5	2	12
SMS notification	3			1	1	5	1	9			1	1	5	1	11.25	3	1	3		1	3	4.8					5	1	11
Online Journal and notes	5			3	3	4	4	17.5			2	3	5	2	15	3	3	4		5	3	16					5	3	18.3333
Progress review/qualification	5			1	1	3	2	7			1	1	4	2	8	3	3	4		5	4	14.4					5	4	16
Competences management	4			3	3	3	2	10.6667			3	3	4	3	12	3	3	3		5	3	13.6					5	3	14.6667
Real time Chat	4			3	1	5	1	8.75			3	3	5	3	15	3	3	3		5	2	16					5	2	13.3333
White Board	5			0	1	5	1	8.75			3	3	5	3	15	3	3	3		5	2	16					5	2	13.3333
Productivity Tool																													
Bookmarks	3			3	3	3	3	9			3	4	4	3	10.5	3	2	3		3	3	8.4	3				5	3	11
Calendar	5			3	3	3	1	12.5			3	4	4	3	17.5	3	5	4		4	3	19	3				5	3	18.3333
Searching within course	4			3	2	4	5	14			3	3	4	4	14	3	3	3		3	2	11.2	2				5	2	12
Orientation/Help Tutorials	4			3	3	3	2	11			3	3	4	4	14	3	3	3		4	3	12.8	2				5	3	14.6667
Student involvement Tools																													
Group Work	5			3	4	5	2	17.5			4	4	5	5	22.5	3	4	3		5	3	18	3				5	3	18.3333
Project management configuration	5			1	0	5	3	11.25			3	1	5	3	17.5	3	4	3		5	3	18	0				5	3	13.3333
Community networking	4			3	3	5	5	16			3	4	5	4	16	3	4	3		5	2	12.8	3				5	2	13.3333
Student Portfolio	5			1	1	5	1	10			4	1	5	3	18.75	3	3	3		4	3	13	3				5	4	16.6667
LMS Administration																													
Authentication	5			3	3	5	5	20			3	3	5	3	17.5	3	4	3		5	3	18					4	3	16.6667
Course Authorization	5			3	3	5	5	20			3	3	5	3	15	3	4	3		5	3	18					4	3	16.6667
Multi-lingual	5		4	4	1	3	4	16			1	1	4	2	10	3	4	5		5	5	22					5	5	25
Usage & statistical reports	4		3	3	3	3	4	12.8			3	4	5	3	13.3333	2	3	4		3	4	12.8					4	4	14.6667
Restricted Information	5		4	3	3	3	4	17.5			3	4	5	3	18.75	3	3	3		4	3	16					5	3	16.3333
Servers administration																													
System Availability	5		4	3	4	5	3	19			3	4	5	3	18.75	3	3	5		5	3	19					5	3	18.3333
Benchmark	5		4	4	4	5	3	19			3	4	5	5	21.25	4	4	4		5	3	20					5	3	18.3333
Server type	5		4	4	5	5	3	20			3	4	5	5	21.25	4	4	4		5	3	20					5	3	18.3333
Fail over capability	5		4	4	3	5	3	20			3	4	5	3	18.75	4	4	4		5	3	21					5	3	18.3333
Backup and archive	5		4	4	3	5	3	19			3	3	5	3	17.5	4	3	4		5	3	18					5	3	18.3333
Security Alarm and Alert	5		3	3	0	5	3	13.75			3	0	5	3	13.75	4	5	3		5	3	20					5	3	18.3333
Course Delivery tool																													
Content Sharing/Reuse, Central Repository	5		3	2	3	3	3	13.75			3	4	5	5	20	3	3	3		5	2	16.25	3				5	1	15
Hardware/Software																													
Database requirements	3		3	3	3	5	3	10.5			3	3	4	3	9	3	3	3		5	3	10.2					5	3	12
Client browsers compatibility	5		5	3	4	5	5	21.25			3	4	4	3	16.6667	3	3	3		5	3	17					5	3	20
Mobile compatibility	4		4	3	3	5	5	17.6			4	2	4	4	13.3333	0	1	1		5	3	6.4	0				5	2	9.33333
OS	3		4	3	4	5	5	12			3	3	5	3	0	3	1	5		5	3	10.2					5	3	12
Required Services/Licensing																													
Worldwide Coverage	5		2	4		3	3	17.5			5	4	4	3	20	5	5	5		3	4	22	3				2	2	11.6667
Customer service customer support	5		5	5	3	3	3	21			2	5	4	3	17.5	5	4	3		5	2	16	3				3	3	15
Training	4		3	4	3	3	3	13.6			3	4	4	3	14	5	4	3		2	3	13.6	3				3	3	15
Cost/license	5		3	1	2	3	1	10			3	2	4	3	15	5	4	5		5	3	22.5	3				3	3	15
Optional Extra	4		2	1		3	1	10			4	3	4	3	14	4	4	5		5	3	14	3				3	3	12
Open Source	3		1	1		3	1	6			1	1	4	3	6.75	5	5	5		5	3	13.5	4				5	3	12
References																													
Market presence	5		4	1	3	5	1	14			5	4	5	5	23.75	3	4	5		5	4	21.25	2				4	3	15
Customer references(same industry)	5		4	2	3	5	3	17			5	4	5	5	23.75	3	3	5		5	2	16.25	3				3	3	15
Others																													
Vendor Viability	5		3	4	5	3	3	18.75			5	4	5	4	22.5	3	3	5		5	2	16.25	2				5	4	18.3333
Invoicing & Payment Terms	5		3	2	3	3	3	13.75			5	2	5	4	20	3	3	5		5	3	17.5	3				4	3	16.6667
Project management	4		3	3	3	4	3	13			4	3	5	4	16	3	3	5		5	3	16	3				3	3	12
Implementation Risks	5		3	5	4	3	4	18.75			4	3	3	4	17.5	5	4	3		5	3	20	3				3	3	15
Contractual Period	4		3	3	1	4	1	11			3	3	4	3	13	5	3	3		5	3	16	4				3	3	13.3333
Total								828.12							910.92							873.05							850.33

rating:
1 not described
2 in place, but needs specification
3 normal
4 good, gives something extra
5 100% in line with RFP request

Table 10. Graded scorecard for the first round of meetings.

Evaluation matrix

Name Provider			MDLR								BB							
		Weight	AL	JM	LV	MS	FXF	ML	XG	Score	AL	JM	LV	MS	FXF	ML	XG	Score
Quality of response																		
	Timely delivery	3	5					3	3	9	5					3	3	9
	Pricing format& Breakdown	3	5		5			3	3	11	5		5			3	3	11
	General quality	3	5		5			3	4	12	5		4			3	4	11
Staff management																		
	Experience of the vendor proposed project team	3	3		3	4		4	3	10.5	5		4	4		4	4	12
	General approach	3	3		4	4		4	4	12	5		4	4		4	4	12
Account management																		
	Strategic	4	3			3		3	4	13.3333	5			3		3	5	14.6667
	day-to-day/Customer Service	5	4			3		3	3	15	2			4		3	4	18.3333
Quality (ISO)																		
	ISO 9000/2000, other	2	0			1			1	2	0			1			1	2
	ISO 14000	2	0			1			1	2	0			1			1	2
Communication Tool																		
	Discussion Forum	5	3		3	4		4	3	17.5	5		3	3		3	3	15
	Discussion Management	5	3		3	3		4	3	16.25	5		3	3		3	3	15
	Blogs	3	3		3	3		4	3	9.75	5		3	3		3	3	9
	Wikis	4	3		4	3		4	3	14	0		0	1		3	2	6
	Video conferencing	5	2		4	3		4	2	16.25	2		0	1		3	2	7.5
	File exchange	5	3		0	3		3	4	12.5	5		5	3		3	5	20
	Internal Email	4	3		1	3		3	3	10	5		1	4		3	3	11
	Mail notification/Alert	4	3		3	3		3	5	14	5		0	2		3	5	10
	SMS notification	3	3		0	1		3	1	3.75	2		0	2		3	1	4.5
	Online Journal and notes	3	3		3	3		3	3	9	5		3	3		3	3	9
	Progress review/qualification	5	3		3	3		3	4	16.25	5		4	4		3	4	18.75
	Competences management	4	3		3	3		2	3	11	2		0	1		3	4	8
	Real time Chat	4	3		3	3		3	3	12	5		3	4		3	3	13
	White Board	5	3		4	4		3	3	17.5	5		4	3		3	3	16.25
Productivity Tool																		
	Bookmarks	3	3		3	3		3	3	9	5		3	4		3	3	9.75
	Calendar	5	3		3	3		3	3	15	3		3	4		3	3	16.25
	Searching within course	4	3		4	3		3	3	13	5		4	4		3	3	14
	Orientation/Help Tutorials	4	3		4	3		3	3	13	5		4	3		3	3	13
Student Involvement Tools																		
	Group Work	5	3		3	3		3	3	15	5		4	5		3	5	21.25
	Project management configuration	5	3		3	3		3	3	15	5		3	4		3	3	16.25
	Community networking	4	3		3	3		3	3	12	5		3	3		3	3	12
	Student Portfolio	5	5		5	3		4	3	18.75	5		3	4		4	3	17.5
LMS Administration																		
	Authentication	5	3		3	3		4	3	16.25	3		3	1		4	3	13.75
	Course Authorization	5	3		3	3		3	3	15	3		3	3		3	3	15
	Multi-lingual	5	3		4	3		3	3	16.25	3		0	3		3	3	11.25
	Usage & statistics reports	4	2		4	3		3	3	13	3		4	4		3	3	14
	Registration Integration	5	3		3	3		3	3	15	5		3	3		3	3	15
Servers administration																		
	System Availability	5	3			3		3	3	15	5			3		3	3	15
	Bandwidth	5	4			3		3	3	15	4			3		3	3	15
	Storage	5	4			4		3	3	16.6667	4			3		3	4	16.6667
	Fail over capability	5	4			3		3	3	15	4			3		3	3	15
	Backup and archive	5	4			3		3	3	15	4			3		3	3	15
	Security Alarm and Alert	5	4			3		3	3	15	4			4		3	3	16.6667
Course Delivery tool																		
	Content Sharing/Reuse, Central Repository	5	5		5	3		3	5	20	5		3	4		3	5	18.75
Hardware/Software																		
	Database requirements	3	3			3		3	3	9	3			3		3	3	9
	Client browsers compatibility	5	3		2	3		3	3	13.75	3		3	4		3	3	16.25
	Mobile compatibility	4	0		5	2		3	2	12	3		2	3		3	3	11
	OS	3	3			3		3	3	9	3			3		3	3	9
Required Services/Licensing																		
	Worldwide Coverage	5	5		5	3		2	3	16.25	5		5	4		3	3	18.75
	Customer service customer support	5	5		3	3		2	3	13.75	5		4	4		3	3	17.5
	Training	4	5			3		2	3	10.6667	5			4		3	3	13.3333
	Cost/license	5	5		4	4		3	5	20	5		1	3		2	3	11.25
	Optional Extra	4	4		5	3		3	3	14	5			3		4	3	13.3333
	Open Source	3	5		5	4		4	3	12	2			2		1	3	6
References																		
	Market presence	5	2		5	3		3	3	17.5	5		2	4		3	4	16.25
	Customer references(same industry)	5	2			3		2	3	13.3333	5			3		3	3	15
Others																		
	Vendor Viability	5	3		4	4		3	3	17.5	5		5	4		3	3	18.75
	Invoicing & Payment Terms	5	3			1		3	3	11.6667	3			1		3	3	11.6667
	Project management	4	5			3		3	3	12	3			3		3	3	12
	Implementation Risks	5	5			3		3	3	15	5			3		3	3	15
	Contractual Period	4	5			3		3	3	12	5			4		3	3	13.3333
Total										793,92								783,5

rating:
1 not described
2 in place, but needs specification
3 normal
4 good, gives something extra
5 100% in line with RFP request

Table 11. Graded scorecard for the second round of meetings.

6 CHAPTER SIX: REVIEW OF THE PROPOSED SOLUTIONS

CHAPTER SIX: REVIEW OF THE PROPOSED SOLUTIONS

In this chapter the four solutions presented to the bidding process are presented and explained in detail. The items in the scorecard are used to determine if the solution is good enough as the learning platform requested for La Salle Open University.

For every item in the scorecard it is explained how they fulfil the requirement (or not).

6.1 GEC S.A.

GEC S.A. presented its own Learning Management System (LMS) to the bidding process. It is called Virtàgora 2009 and it has been build by an internal group of programmers and designers in GEC.

Quality of response

Time delivery: They offer a pilot environment (Virtágora standard platform) one month after the proposal's approval and a fully functional environment four and half months after the approval of the proposal.

Pricing format and breakdown: Their pricing format defines a variable cost based on the number of active users in the platform as requested.

General quality: Their widely used platform and their strict quality process ensure the quality of the environment delivered.

Staff management

Experience of the vendor proposed project team: GEC has created more than 70 new virtual environments in the framework of its Virtágora solution, which support over 200,000 users spread across more than 10 countries. GEC has implemented large international training environments, for example three of its clients: in the UK with a volume of 28,000 users, in France with 21,000 users and in Spain with 20,000 users.

General approach: GEC proposes a joint work team formed from the two organizations. All the GEC staff has a wide experience in this kind of project. This ensures that La Salle will have the better team.

Account management

Strategic: GEC's project management methodology, "7 keys to project management" starts with the proposal phase and its development in the execution phase. This methodology has been developed and improved throughout the 12 years of experience of the company, which has specialised in e-learning from the outset.

Day-to-day/Customer service: At the kick-off of the project they propose a schedule of regular meetings of management and monitoring. This schedule is absolutely flexible and it can be modified (with more or less meetings) each time that La Salle or the project requires it.

Quality (ISO)

GEC has a system security policy that is managed based on the ISO 27001 regulation. This specific regulation sets out the necessary requirements to establish, implement, maintain and improve an ISMS according to the "Deming cycle": PDCA (plan-do-check-act).

It is consistent with the best practices described in ISO/IEC 17799 (currently ISO/IEC 27002) and originates from the BS 7799-2:2002, developed by the British Standards Institution.

This regulation includes all the criteria shown in the 9000:2000 and 14000 regulations.

Communication Tools

Discussion forum: Multithreading forums with different level of permissions adapted to the communication and training needs and with statistics of use.

Discussion management: Users with privileges of administrators and/or project responsible are able to create and manage discussion forums.

Blogs and wikis: Blogs and wikis are available with different level of permissions, statistics of use and can be managed by the administrators, project responsible or any other user with this level of permission.

Video conferencing: The student can:

- See other delegates and speak to them, moderated by the expert in charge of the session.
- Work with the shared documents in a synchronized way and collectively work through exercises.
- Chat (in text format) with other students.

File exchange: Documental libraries can be accessed with different permissions adapted to the file exchange needs.

Internal email: Virtágora includes the Zimbra Webmail Engine (as a reference is used in the Yahoo Internet Email).

Mail notification/Alert: In the Home Page, the user can view the number and headers of their unread emails.

SMS notification: alumni (students) news items through text messaging, massive text messages sent to classroom, meeting times sent through text messaging and alerts.

Online Journal and notes: Notices and alerts linked to the schedule.

Progress review/qualification: Virtágora automates the task of calculate the progress and qualification of the students. This helps a lot the trainers, project responsible and administrators to reduce their dedication to this task drastically.

Competences management: Horizontal competences as well as specific subject matters can be managed into the platform

Real time chat: Available only inside of the videoconference's sessions.

White board: Inside the Adobe synchronous classrooms.

Productivity Tool

Bookmarks: SCORM content manages the bookmarks, so user can return exactly where he has left the course before.

Calendar: With dates of important events (milestones, tasks).

Searching within course: Comprehensive search allows searching for any content (forums, documents, news, courses, experts, …) and in any location

Orientation/Help Tutorials: Student, Tutor and Administrator User Manuals in pdf format is provided by default. eLearning Tutorials may be provided optionally with an additional fee.

Student Involvement Tools

Group work: Students or any other user with administration privileges, inside a classroom, can create and manage groups, roll and unroll students (document sharing, etc…)

Project management configuration: The administrators and project responsible can configure each project and adapt it to the training needs

Community networking: All student can interact with any other through forums, blogs, email and synchronous classrooms. They can also communicate via tutor-student

Student portfolio: The student, administrator and the responsible of the Lasallian schools will be able to view the student academic history.

LMS Administration

Authentication: All users must authenticate themselves before entering the environment. The administrators can manage the roles, permissions and passwords of the users.

Course authorization: It may be managed by the administrators or delegated to the Lasallian schools staff

Multilingual: At the Go-Live the platform will start with Spanish, English, French, Catalan but the system is ready to configure any other language, even Arabian, Chinese, Japanese…

Usage and statistics reports: Virtágora offers a set of standard reports provided by default.

Registration integration: Parallel project with an additional fee. Must be custom-developed based on more detailed specifications.

Server administration

System availability: The level of minimum availability guaranteed is a 98%, although the real measured level in the 2009 has been a 99,7%.

Bandwidth: The bandwidth is assured for the normal training needs of all the students

Storage: The storage is assured for the normal training needs of all the students

Fail over capacity: 3-layer infrastructure, high scalability, all the tiers and components are redundant.

Backup and archive: Their systems has a advanced backup system

Security alarm and alert: Their top providers of hosting and Systems Management (COLT and ATLAS) has the highest monitoring levels of hardware, software and data.

Course delivery tool

Content Sharing/Reuse. Central Repository: Central repository of questionnaires, documents and materials

Hardware/Software

Database requirements: Virtágora works properly with ORACLE, but this is transparent for La Salle because the platform is operative in an ASP model

Client browsers compatibility: Virtágora assures compatibility with Internet Explorer 6,7 and Mozilla Firefox 3 and higher.

Mobile compatibility: Content available on-line and off-line. Use of content adapted to the mobile format, simple and without long connection times. Environment and tools adapted to the mobile format.

OS: Server OS is transparent for La Salle, because the platform is in ASP operative model. In the user side, the OS don't define the compatibility, is the navigator the key question.

Required Services/Licensing

Worldwide coverage: Today GEC has clients in Spain, France, United Kingdom, Italy, Portugal, Mexico, Morocco, Colombia, Brazil and Argentina.

Customer service customer support: Additionally to the regular meetings scheduled across the project implantation phase, any other communication channel may be used (email, telephone, extra meetings…).

Training: Inside the proposal is included a user support and initial training sessions.

Cost/license: see Table 12 for the pricing.

Open Source: Although most of the software are property and developed entirely by GEC (the system's core), some modules (forums, blogs, webmail) are Open Source. The object of this is take benefit of technology existing and widely used and awarded in Internet.

References

Market presence: GEC has created more than 70 new virtual environments in the framework of its Virtágora solution, which support over 200,000 users spread across more than 10 countries.

Item	Cost	Observations
Consultancy	€10,000	Conceptual definition of the environment
Implementation of platform	€25,000	Includes environment creation, set-up, graphic design and initial user registration(3) (4) (5)
Custom development and adaptation	€35,000 – 55,000	The specific cost of the custom development will be determined in line with the result of the consultancy,
Pilot environment for 50 users	€13,000	This fee includes the price of registration of 50 users in GEC's shared environment, setting up the environment by default for La Salle, and subsequently migrating the training data to La Salle's final environment.
TOTAL (1)(2)	€83,000 – 103,000	

Table 12. Pricing of GEC proposal.

Customer references (same industry): In his creation, GEC was a spin-off of the Catalonia Open University. They owned to it until the last year. This ensures the highest level of knowledge of the industry.

Others

Vendor viability: GEC turnover is approximately is 10MM € in 2008, profitable and sustainable. Public audited information regarding GEC can be accessible in *Registro Mercantil de Barcelona* and can be also delivered to La Salle in case of being mandatory.

Invoicing and payment terms: Project implementation condition fees are 40% at the beginning of the project, the rest can be payable according milestones. ASP fees are monthly reported according to active users. These terms can be adjusted to customer needs.

Project management and Implementation Risks: See chapter 7 of the proposal for a detailed management view of the project. At the project Kick-off, GEC will show a matrix with the firsts risks detected and the preventive actions proposed. Additionally, the GEC project manager will use the "7 keys to project management" methodology. Periodically, he will share a monitoring report, based in this methodology, with the "La Salle" Project Manager. This methodology ensures that all the risks will be detected and prevented early. Also, the project committee should be informed of any decision taken into the project.

Contractual Period: The contract is annual based. It can be renewable annually automatically.

6.2 CV&A Consulting

Quality of response

Time delivery: CV&A Consulting has project management and operating processes that minimize project delays.

Pricing format and breakdown: Pricing was provided granularly for the different services quoted.

Staff management

Experience of the vendor proposed project team: CV&A Consulting has 6 years experience in all kind of Knowledge Systems (eLearning technology and instructional design and Knowledge Management Projects).

General approach: CV&A suggests starting small, and thus has quoted and recommended a shared hosting environment for the LaSalle Open University. They will manage the scalability of the system as well as the platform maintenance and evolution.

Account management

Strategic: CV&A is a partner to its clients. CV&A will help launch LaSalle Open University with technical and instructional expertise regarding the educational systems.

Day-to-day/Customer service: Technical support is available during Office hours. LaSalle can contact account or project manager if it wishes to escalate an issue.

Quality (ISO)

They do not have any ISO at this moment.

Communication Tools

Discussion forum, discussion management, blogs and **wikis** are available in the platform.

Video conferencing: Adobe Connect, DimDim, Elluminate and many others.

File exchange, internal email, SMS notification, online journal and notes, progress review/qualification, competences management, real time chat and **whiteboard** are available in the platform.

Mail notification/Alert: Forum messages and private messages are sent if desired. Other notification systems can be programmed.

Productivity Tool

Bookmarks: Moodle has a bookmarks block.

Calendar: Moodle has a calendar block.

Searching within course: With the integration of Lucene.

Orientation/Help Tutorials: Contextual help is integrated in Moodle. There is a very comprehensive Wiki and community user guides.

Student Involvement Tools

Group work: included in Moodle.

Project management configuration: not included.

Community networking: Moodle has some community and networking features. For a greater feature set, the ePortfolio system Mahara can be used.

Student portfolio: The ePortfolio system Mahara and some portfolio blocks can be used.

LMS Administration

Authentication: Authentication plug-in system allows seamless integration with any conceivable system.

Course authorization: Enrolment plug-in system allows for different course authorization setups.

Multilingual: Moodle is translated to over 70 languages. Courses and content can be multilingual. Users choose their language.

Usage and statistics reports: Comprehensive student and class tracking system and reports.

Registration integration: Enrolment plug-in system allows for integration with Registration systems and processes.

Server administration

System availability: 99% SLA.

Bandwidth: 100GB monthly quoted. Can be expanded immediately. Bandwidth is burstable (as much as needed can be used at any given moment). Rackspace, CV&A Hosting Partner, is connected by redundant tier 1 internet connectivity and has not gone offline in the last few years.

Storage: A small amount of storage was initially quoted. Expansion is immediate. CV&A will not disable any part of the system due to quotas.

Fail over capacity: The suggested dedicated server has two hard disks and two processors.

Backup and archive: Backup is performed every night. Copies are kept for 14 days. Unlimited Restores can be requested against support hours.

Security alarm and alert: Rackspace and CV&A have service availability checks and custom intrusion detection scripts, made especially for Moodle Systems.

Course delivery tool

Content Sharing/Reuse. Central Repository: Every course has a files area. Moodle 2.0 has a new File API that will simplify connecting to multiple content repositories.

Required Services/Licensing

Worldwide coverage and **training** are included.

Customer service customer support: During office hours, technical support can solve both problems and usage doubts.

Open Source: Moodle is GPL v2 and has a vibrant community.

References

Market presence: CV&A has offices in Madrid and Barcelona. CV&A can reach internationally with the support of the rest of Moodle Partners.

Customer references (same industry): LaSalle, UOC, UB, UPF, Deusto Business School, ESADE, Blancafort, IFO, EHU-UPV. Projects range from Moodle consulting to faculty training,software development, technical support, graphical theme design, end to end Moodle implementation, etc.

Others

Vendor viability: CV&A is a team of 19 professionals, founded in 2003, is growing at 50% a year and it is profitable.

Cost/license: see Table 13.

Item	Price
Hosting + monthly backup	350
Maintenance with version upgrade	175
Client Support by telephone and email (2h/month)	132
TOTAL monthly	657

Table 13. CV&A pricing for the proposed solution.

Project management: A project manager that has already worked with LaSalle will be appointed, Elena Fuenmayor or Juan Leyva depending on the scope of the project.

Contractual Period: Quote has been designed for 4 years. La Salle can exit the contract with 90 days prior written notice.

6.3 Blackboard

Quality of response

Pricing format and breakdown: The economical offer is presented in a way that La Salle can decide to opt for different functionalities.

General quality: Avanzo can count with a skilled team of professionals involved in e-learning market for more than 10-15 years. Basic team will be empowered with more professionals if deadlines require more workforces to be assigned to the project. Avanzo counts with a Software Factory (part of the company) located in Chile, with up to 25 people involved.

Communication Tools

Discussion forum: The Blackboard solution offers a discussion tool that allows instructors and learners to create, view, manage, and read discussion board topics and threads. The discussion tool can be archived and threads can be sorted in several different ways. Hyperlinks, graphics and graphic files, video files, multi-media files and document files can all be attached to a discussion thread. Discussion board threads can be sorted by topic, author and date. Each discussion thread allows searching capabilities and Blackboard's discussion threads are easily managed with the tool options.

Discussion management: All discussions can be managed and moderated by instructors or other members designated to do that. Moderation setting can be easily set via Admin panel and Instructor interface.

Blogs: Within course, blogs allows instructors to update course information and interact with students.

Wikis: Not available, but consider that Course Wiki is part of Blackboard short-term roadmap. Furthermore, consider that there are available wiki Building Blocks (add-ons).

Video conferencing: Blackboard comes with no video conferencing functionality. However, Blackboard can be integrated directly with Elluminate Video Conferencing system.

File exchange: Within course, blogs allows instructors to publish documents related to course contents.

Internal email: Students can send email from any communication area enabled by the instructor for email exchange. Instructors can send email from the email interface of the Instructor Control Panel and from the email interface in the Blackboard Grade Center. System administrators can send email from the email interface in the System Administration panel. Blackboard course websites provide instructors with the capability of creating email distribution groups. Preset distribution groups exist for all users, instructors, teaching assistants, selected users, selected groups, and groups. Instructors may define custom email distribution lists within courses using Groups features. Preset distribution lists for the system include all users and instructors. System Administrators can also email users through course and organization distribution lists, thereby easily emailing all members of a certain course or all members of an organization. Many System Administrators utilize the organization architecture to manage custom email distribution lists on the system, such as a distribution list for all teachers in a particular academic institution, all administrators in a cluster, or all teachers and administrators for a particular academic discipline.

Mail notification/Alert: included in Blackboard.

SMS notification: Not included, but using the "building block" freely provided by Edutxt, it is possible to have this functionality available. However, it is necessary to buy from Edutext the Sms packs (http://www.edutxt.co.uk). Avanzo can manage the integration of the Edutxt unctionality and also manage the purchase of Sms packs for La Salle.

Online Journal and notes: included.

Progress review/qualification: The Blackboard Grade Center provides a grade history that tracks changes to grades within the Grade Center. Columns can be added to the Grade Center for such activities as class participation or live discussions. Each new assessment, assignment, discussion forum or other item added for grading will be automatically added to the Grade Center. Instructors may add private grading notes directly in the Grade Center interface. Instructors can create printable reports for their courses and students.

Competences management: Not included but consider that rubrics feature is part of Blackboard roadmap; also, this can be developed through a build block approach.

Real time chat: In Blackboard Learn for Course Delivery, the virtual classroom provides a dynamic environment for interaction among all course participants, small groups, or on a one-to-one basis. The new virtual classroom provides free-form chat, chat lectures, question and answer chats, archives, white boarding, class tours, and group Web browsing. The virtual classroom enables instructors to lead effective online discussions using the online whiteboard and advanced group-management tools. The Blackboard synchronous "Chat/Whiteboard" tool has two modes: Lightweight Chat (chat only), and Virtual Classroom (chat + whiteboard + question and answer + group browser + course map). The lightweight, text-based chat allows participants to communicate using a text-based chat region with the ability to compose single and multi-line messages. A user list shows a list of users in the same session. The Virtual Classroom includes all of the functionality of the Lightweight Chat.

White board: see above.

Productivity Tool

Bookmarks: Bookmarks feature is available at the content system level and at course level, La Salle can create an area where you put links to the different part of a course.

Calendar: The Blackboard environment is a primary destination for thousands of students and instructors. Through numerous calendaring and communications utilities, administrators may develop aggregated, personalized, or delegated communications for each of the following functions: System calendar, System announcements, System-wide email. Through the system calendar, administrators can post information about specific events, the academic institution calendar (including dates of breaks, beginning and ending of the semester, dates for finals, etc.), and other institutional or external community events. These calendar postings can be developed for the entire campus including all users or designated for specific users or groups through user roles.

Searching within course: Search available within metadata, according to industry standards.

Orientation/Help Tutorials: All clients have access to the client support site, Behind the Blackboard. Documentation is posted to this site and is user specific for students, teachers, and administrators. The documentation includes User Manuals, Installation Manuals, Release Notes, and Integration Guides for System Administrators. User Manuals may be accessed in PDF format and as online help; Installation Manuals, Integration Manuals, and Release notes are in a PDF format. Documentation is maintained by posting the latest versions to the support site. The link at the top of each Blackboard page can be configured to take users to Behind the Blackboard to access FAQ's, Knowledge Base information, and links to pertinent training materials. Blackboard also provides quick tutorials within the application, which are flash-based demos of how to accomplish many common tasks.

Student Involvement Tools

Group work: Within Courses, an unlimited number of Groups may be created that represent project teams, related lab assignments, or study groups. Within the Group, there is a configurable set of tools available. These tools include: blogs and journals, discussion boards, file exchange, synchronous collaboration spaces, group (send) email and tasks.

Project management configuration: The Tasks Tool allows teachers to establish a list of tasks or assignments, prioritize these tasks, includes a due date for the task to be completed, modify tasks within the list, and remove tasks. The Add Tasks feature of this tool is fully integrated with the WYSIWYG Editor and allows teachers to control the look and feel of the task information.

Community networking: Blackboard comes with community functionalities that allows to create learning communities that can leverage students interest and attention.

Student portfolio: Faculty ePortfolios are used to document academic and professional growth and as tools in the recruitment, tenure, and promotion process. The Blackboard platform provides tools to assemble, present, and share their ePortfolios easily. With linked interfaces for customizing the style of an ePortfolio, users can specify colors, fonts, background images, and overall content layout beyond the classic frame-based presentation. ePortfolio owners can collect independent entities called Personal Artifacts that make up the content presented in the ePortfolio. Within the ePortfolio, Artifacts are organized using Portfolio Pages. Artifacts can be added from external sources with the Browse functionality or created as part of the ePortfolio authoring process with the Add Artifact functionality. Once created, Artifacts can be re-used in other ePortfolios making the content reusable and establishing the Portfolio as a platform for collecting and presenting important content.

LMS Administration

Authentication: Because providing context is especially important in virtual interactions, the Blackboard Learn platform empowers institutions to provide users with an understanding of the unique role they play within the larger community by providing flexible roles to match each client's policies and procedures that govern access to information. There are five Course User Roles: Instructor, Teaching Assistant, Course Builder, Grader, and Student. The System Administrator can re-name these roles to more closely match course roles at the institution such renaming the Instructor role to Teacher.

Course authorization: Enrollment can be directly managed through Admin panel, or integrated with an external application provided by La Salle in order to integrate ecommerce functionality with actual enrollment to the selected courses.

Multilingual: Blackboard Learn supports 14 languages out-of-the-box (including English and Spanish). A combination of resources, including the Language Pack Editor, the Language Pack Export functionality, image and help manual templates, and a new chapter in the Administrator Manual about editing Language Packs provides fully flexible language support for the Blackboard Learn platform.

Usage and statistics reports: Advanced usage reports.

Registration integration: Data integration involves the transfer of user, course, enrollment, and staff data between an institution's information systems and Blackboard Learn. The IMS consortium defines the information model used by the Blackboard Learn platform. Data integration may be achieved through the Snapshot Tool, which allows users to schedule one-time or periodic (hourly, daily, weekly) data integration from existing SIS

systems that automate user data and allow total control for the institution's users, courses, categories, course templates, and organizations. In addition, data integration may be achieved through real-time, event-driven information transactions. The snapshot tool offers administrators a command line interface to add, update and remove enterprise data in the Blackboard system using information contained in delimited text and XML files.

Server administration

System availability: Blackboard Managed Hosting offers a standard minimum contractual guarantee of 99.7% uptime; however, Blackboard can negotiate a higher level SLA for clients who are seeking the highest possible levels of uptime SLA's. Additionally, Blackboard Managed Hosting is obligated by contract to give service credits for missing the contractual monthly SLA's. Blackboard Managed Hosting has been delivering its services at a 99.9% uptime level. Blackboard Managed Hosting service greatly reduces the time required to implement the Blackboard software, because when institutions select Blackboard Managed Hosting, they gain access to their application in less than seven business days from contract signature. This is a fraction of the time needed to hire and train any additional IT staff to support the new software, not to mention the time and costs associated with purchasing and configuring new hardware.

Bandwidth: No limitations. No delay times expected even on peak points and massive user access. Blackboard servers have already been tested for large populations of students of up to 2 million students for a single academic project.

Storage: Space limit is 20 Go, but Blackboard never caps on it.

Fail over capacity: The Blackboard Managed Hosting infrastructure team has designed and implemented a network architecture that provides redundancy at every level in order to eliminate any single points of failure. This includes multiple connections to various Internet Service Providers to ensure that a path is always available between clients, their servers, and a High Availability design with "A" and "B" side networks for immediate failover in the event of equipment failure. Blackboard Managed Hosting also has invested in enterprise-class networking equipment with advanced support contracts that include four-hour replacement of failed hardware. In addition, Blackboard Managed Hosting leverages the facilities of world class, state-of-the-art datacenters around the world to offer reliable access to the application. Each datacenter includes four levels of power backups for 100% power availability, climate control for an optimal network environment, early detection smoke detectors that periodically check the air for dangerous particles, and state-of-the-art fire suppression. With these levels of redundancy built into the datacenter design, Blackboard Managed Hosting is able to provide a reliable environment for client servers and ensure maximum uptime for the Blackboard applications.

Backup and archive: One of their top priorities is monitoring the behavior of all servers on a continuous basis for availability and performance. Their Blackboard Managed Hosting Operations team has personnel on four continents who work multiple shifts around the clock, providing the clients with 24x7 monitoring.

Security alarm and alert: Data security is increasingly a priority for many academic institutions and institutions as they tighten their security policies and enforce standards. Blackboard Managed HostingSM has always managed Blackboard's infrastructure responsibly, making secure computing the top priority. In addition, optional configurations such as SSL and VPN are available to increase the reach of their security services and lessen the likelihood that a security incident will affect the client organization. All remote administration is via secure encrypted sessions (including SSH2 protocol), and all ports on hosted servers that are unnecessary for the Blackboard product or for remote administration are closed. In addition, the server logs all connection attempts, and all Managed Hosting client servers have randomly generated passwords for system administration accounts with no two servers using the same password.

Course delivery tool

Content Sharing/Reuse. Central Repository: The Course Copy feature allows teachers to copy course materials into a new or existing course and to create a complete copy of the course. Through this feature, teachers can share a course or course materials they have developed with colleagues.

Hardware/Software

Client browser's compatibility: Blackboard is accessible with any Web browser. Furthermore, Blackboard is committed to ensuring that their e-Education platform is usable and accessible. Blackboard measures and evaluates accessibility levels using two sets of standards: Section 508 of the Rehabilitation Act issued from the United States federal government and the Web Accessibility Initiative (WAI) issued by the World Wide Web Consortium (W3C).

Mobile compatibility: Blackboard comes with an iPhone application for accessing the platform in mobility conditions. Furthermore, Blackboard has just released the new product Bb Mobile that in the future will open mobile access to any existing device.

OS: Any OS, provided that students accesses Blackboard via Web Browser.

Required Services/Licensing

Worldwide coverage: Blackboard Learn counts with hosted management designed for international coverage. Furthermore, support services provided by Blackboard are available on 24 hours basis.

Customer service customer support: Avanzo utilizes a tiered team approach with technical specialists at each level to ensure fast resolution to your issues. The tiered approach is designed to resolve the majority of issues at the lowest tier while providing successive levels of increasing technical knowhow for resolution of more complex problems. If Avanzo for some reason is unable to resolve your issue on their own, they will escalate it to a Blackboard Level I Client Support Engineer. If this does not work, the issue will be escalated to Blackboard Level II Client Support Engineer. Level II "Centers of Excellence" are staffed with experts specializing in the functional areas that generate the largest volume of support incidents. This allows to provide faster diagnosis of high/critical severity issues and

decrease overall resolution time by assigning escalated cases to the right expert with the right expertise. Avanzo relies on Blackboard Client Support four categories for support requests. Requests for support are handled in the order of severity code.

Training: The creation of a robust eLearning infrastructure requires the timely and effective education of System Administrators, teaching faculty, instructional technologists, course developers, support staff, and student users. Avanzo can provide all of the training programs needed for a successful implementation of the Blackboard Learn platform. Avanzo proposes both on-line training and presence learning, depending on La Salle requirements.

Cost/license: see Table 14.

Full Academic Suite: Course Delivery + Community + Content System

		Year 1	Year 2	Year 3	Year 4
	N. of Students	500	1500	3000	5000
License (**)					
1 - 2,000 FTE		$34,000	$82,100		
2,001 – 4,000 FTE				$106,000	
4,001 – 8,000 FTE					$129,900
Discount		*0%*	*40%*	*30%*	*25%*
Total		**$34,000**	**$49,260**	**$74,200**	**$97,425**
Managed hosting (#, &)	Course Delivery Hosting (total: 20 Gb)	*$10,300*	*$25,200*	*$37,200*	*$42,600*
	Course delivery set up costs	*$10,000*			
	Discount Course delivery set up costs	*$(10,000)*			
	Content System Hosting (total: 50 Gb)	*$18,300*	*$19,215*	*$20,176*	*$21,185*
	Content System set up costs	*$15,000*			
	Discount Content System set up costs	*$(15,000)*			
Total		**$28,600**	**$44,415**	**$57,376**	**$63,785**
Total discounted setup costs		*$(25,000)*			
Additional Discount to Tier 3 (representing already 23% net discount from list price)		*15%*	*15%*	*15%*	*15%*
Total		**$24,310**	**$37,753**	**$48,769**	**$54,217**
Total		**$58,310**	**$87,013**	**$122,969**	**$151,642**

* Additional Pilot Discount for Licenses for 1st Year
** All License prices already include "Tier 2" 17% discount.
# Installation and configuration 100% discounted. Free of charge.
& Managed Hosting include 2nd Level 24/7 support as indicated in technical offer.

Table 14. Pricing options by Blackboard.

Optional Extra:

- Plagiarism Prevention Tools: SafeAssign™ is a plagiarism prevention service provided with the Blackboard license that allows you to protect the originality of work and ensure a fair assessment for all of your students. SafeAssign prevents plagiarism by detecting unoriginal content in student papers within your existing teaching and learning environment. SafeAssign can also deter plagiarism by creating opportunities to educate students on proper attribution and citations while properly leveraging the wealth of information at their disposal. It is available as part of the Blackboard enterprise platform at no additional cost. The instructor can create a SafeAssignment in any content area of a course by using the dropdown shown in the following picture. Students can browse their local computer or Content Collection and add files directly to the assignment page. SafeAssign checks papers and assignments submitted via Blackboard against an industry-leading collection of databases, including the Internet with billions of source documents and material.

- Blackboard Learn includes updates comprised of application packs. Application packs will include new features, functions, and capabilities as well as including patches and fixes when needed as well as system stability and scalability improvements. Client can download the Application Packs without additional charge. Approximately once a year, application packs are bundled into new releases which will incorporate the Application Packs released in the previous version as well as new features, tools and capabilities. All customers are notified about Application Pack and Releases, their availability dates, and the new features, functions and capabilities through an email. Customers may also be contacted directly by their account manager regarding the Application Packs and Annual Releases to discuss how these upgrades can assist the customers in reaching their e-Education goals.
- Hundreds of available Building Blocks (lots are free to use) extend Blackboard functionalities. Full list available at: http://www.blackboard.com/Support/Extensions.aspx#tab2dvBBlock

Open Source: Blackboard is not an open source product, but Blackboard Learn counts with an open architecture, based on open API that can be used by any developer to create new functionalities or integrate the platform with other platforms. Hundreds of already developed functionalities, called "Building Blocks" are available for download on Blackboard website. This is, adopting the best features of open source philosophy and adjusting them to high standard of quality about support and development. Blackboard Building Blocks enables institutions to accomplish their strategic goals through an open, flexible, and supported technology for building new functionality on top of the Blackboard platform or integrating external tools and systems with the Blackboard Learn platform. Using Building Blocks, institutions can customize their Blackboard implementation to meet institution-specific needs for teaching, learning, and community building. Through a comprehensive developers program, a freely available Software Developers Kit (SDK), and published integration specifications and developer guides, Building Blocks is designed to readily facilitate integration with various systems and software products to enhance the daily education experience of administrators, students, and faculty.

References

Market presence: Avanzo is present with 5 offices in Spain, plus offices in Portugal, Chile, Brazil, Mexico and Argentina. The vast majority of its customers are based in Spain and Portugal, with growing business in LATAM. Blackboard counts with a worldwide coverage, consider that this LMS is installed and currently used by all major international universities, amongst them: University of Maryland, Florida State, Cornell University, Georgetown, Boston College, Pearson Education, Dallas Community College, etc. It counts with more than 5.200 customers worldwide and more than 20 million students served.

Customer references (same industry): Avanzo has configured, installed and maintained LMS platforms for nearly 300 different companies and public administration institutions.

Others

Vendor viability: Avanzo is a strong player in Spanish, Portuguese and Latin American e-learning markets, with hundreds of customers and serving up to 2 million learners. It is a stable company based in Madrid, growing year after year. The last 3 years have meant a dramatic growth both financially and in HR for Avanzo, that now can counts with around 100 people, amongst wi th skilled solutions engineers, technical service people, programmers and visual designers. About 2009, estimates are: Incomes: 6.100.000 €; Results (before taxes): 1.512.000 €. This information confirms Avanzo's growth in 2009, even in a difficult year for the economy in Spain. About Blackboard, it has been in business, providing eLearning solutions for 12 years. Blackboard Learn has over ten years of experience in the higher education market. As of December 31, 2008, Blackboard had 1,087 employees, including approximately 252 in sales; 90 in marketing and business development; 200 in support, managed hosting and production; 235 in research and development; 135 in professional services; and 175 in general administration. More information available at the Blackboard Investor Center.

Invoicing and payment terms: To be defined with customer

Project management: Avanzo partners with the clients to design develop and implement customized, integrated Blackboard solutions. Their experienced consultants provide project management and technical integration services to ensure the success of each Blackboard implementation. Their expertise in integrating Blackboard with a variety of administrative, security, authentication and Student Information Systems is available throughout the implementation lifecycle and to the extent required by each client. The partnership between Avanzo and the clients ensures the success of each unique project. Their consultants work closely with the clients each step of the way, from the initial scope of work to the final implementation. Furthermore, Blackboard insist that the clients assign a Client Project Manager to manage the financial and operational aspects of the onsite project and to serve as the single point of contact for all Blackboard project issues and questions. This Client Project Manager should have the authority to make decisions concerning the integration and will provide leadership to the client team members.

Implementation Risks: No risks involved in implementing Blackboard, provided that all the technical architecture will be hosted by Blackboard Inc.

Contractual Period: 1 year (12 months) or 2-3 years with discounts, as reported on economical offer.

6.4 Moodle Rooms

Staff management

Experience of the vendor proposed project team: MoodleRooms' project team follows a proven implementation process which is adapted based on the customers' unique needs. Each member of the project team has participated in hundreds of implementation scenarios ranging in size and scope. Team members are selected based on areas of proficiency and roles can include:

- Sales Lead
- Implementation Lead
- Policy Lead
- LMP Administrator
- Information Technology Specialist
- Communication Lead
- Support Lead

General approach: The roles in MoodleRooms' project team are structured around their detailed needs-based process. Each role is carefully considered and is aligned with specific tasks and responsibilities in their process. The MoodleRooms implementation lead will coordinate with appropriate LaSalle Open University staff to ensure all needs are met during the process within the agreed-upon time frame.

Account management

Strategic: MoodleRooms' Account Executive, Laura Fischer, will consult with LaSalle Open University Staff members to determine your unique needs and help build a solution that is the perfect fit for your institution. The goal is to create a learning management solution that evolves around you and drives toward reaching your goals. Laura will be your single point of contact in determining the solution details and can serve as a resource for all questions and input during the process.

Day-to-day/Customer service: MoodleRooms provides help desk support online, through email or by phone. Clients can use support tickets to address user and administrator "how-to" questions.

Support Portal: Two designated administrators can submit questions through the convenient support portal, which provides password protected access to:

- Security bulletins
- E-mail support form for 24/7 ticket submission
- Self-serve resources for immediate resolution of common issues

Technical Operations Support: Server and code-related issues are escalated to their Technical Operations support team. Customers with these issues do not have to submit a help desk ticket and will be contacted immediately to begin resolution. If LaSalle Open University experiences code errors or severe maintenance or server related performance issues, it can bypass the help desk and directly e-mail their technical operations support team at support@moodlerooms.com. These cases do not require a support ticket. Severe cases have an immediate response time during business hours and a thirty-minute response time after hours. Less critical cases have an average response time of one business day.

Support Statistics

- 3 seconds average acknowledgement time
- 2.27 hours average response time
- 5.96 hours average resolution time
- 1:10 typical staff-to-user ratio

Quality (ISO)

ISO 9000/2000, other: MoodleRooms does not currently hold ISO certification.

ISO 14000: MoodleRooms does not currently hold ISO certification.

Communication Tools

Discussion forum: Discussion forums can contribute significantly to successful communication and community building in an online learning environment. joule has four different types of forums to promote collaboration within your courses.

- Standard Forums
- Student-Centered Forums
- Social Forums
- News Forums

Instructors have the option to apply ratings or grades to forums which can be tracked in the Gradebook.

Discussion management: Administrators and instructors have the ability to assign roles and permissions to limit discussion within courses by specific user. Instructors can monitor live discussions to ensure students remain on topic and direct the flow of conversation as needed. In addition, discussions can be saved, reviewed, graded and rated.

Blogs: LaSalle Open University will have access to blogs through joule. Blogs can be configured based on specifications and settings and are great tools for ongoing reflection.

Wikis: joule gives instructors and students access to a wikis where everyone can collaborate and share with each other.

Video conferencing: MoodleRooms partners with several video conferencing tools including DimDim, Elluminate, Wimba and Webex. MoodleRooms plugs-in the tools at no cost. Some of the tools require a license fee be paid directly to the provider. Tools like DimDim offer a free version that exists in a module directly in Moodle. No cost is associated with the free version of DimDim.

File exchange: File exchange within joule is made simple for instructors and students. Whether creating and uploading course content or submitting assignments, joule accepts nearly every major file format including: FLV, MP4, M4V, M4A, 3GP, MOV, MP3, SWF, MPG, AVI, WMA, RAM, RPM, RM, high-definition CODEC, H.264, and AAC audio (Advanced Audio Compression), which is similar to MP3 but gives better quality at very low bit-rates.

Internal email: MoodleRooms' solution provides an internal e-mail solution within joule. The quickmail block adds a link to a tool that has a checkbox list of all students in the course, and a mail composition text area. Instructors can select students and email directly to those students. Selecting subsets of students allows instructors to send messages relating to the specific needs of those students.

Mail notification/Alert: joule has an enhancement over standard Moodle that allows instructors to send notifications to a variety of recipients such as students, teachers, faculty, administrators, advisors, coaches and parents. Instructors can set any number of recipient types and provide notifications and alerts that are specific to their needs. In addition, instructors can save time by creating notification templates for standard communications. These templates can be stored in the system and pulled as necessary to be sent to a single contact or a group of contacts.

SMS notification: joule can provide notifications via e-mail to phones with a Web browser and internet connection that are synched to an e-mail system. While SMS notifications are not currently available, MoodleRooms would be willing to review a project involving a solution for this requirement.

Online Journal and notes: Online journal and notes are available in two forms with joule. Students and instructors have access to individual E-Portfolios where they can reflect on lessons, save assignments and share accomplishments. In addition, blogs are available for journaling in a specific course.

Progress review/qualification: Instructors have the ability to grade and track student performance within joule's communication tools in terms of knowledge and competencies.

Competences management: joule allows instructors to monitor student performance based on specific outcomes and objectives. Instructors can attach outcomes and objectives to assignments and activities and run reports to view student competency levels. A dashboard view makes accessing reports simple and time efficient.

Real time chat: Students and instructors have access to real time chat within their courses. Instructors and administrators have the ability to manage access to real time chat and block troublesome users if needed.

White board: joule users have access to white board functionalities through DimDim. Dimdim lets anyone deliver synchronized live presentations, white boards and web pages and share their voice and video over the Internet. No download is required to use the DimDimmodule.

Productivity Tool

Bookmarks: Bookmarks are a standard feature in joule and are available for use by students, instructors and administrators.

Calendar: Calendars are included in the joule solution and provide instructors and students options to view information specific to single courses and groups of courses.

Searching within course: Students and instructors can search their classes for specific content using keywords. Instructors can add blocks to their courses for different types of searches. In addition, if instructors index their course content, students cans search through all content for the class.

Orientation/Help Tutorials: Students, instructors and administrators have access to inprogram tutorials and help. These resources show step-by-step instructions to complete

processes and tasks in relevant areas of the page. Administrators have access to their in-house support team for "how to" questions and can contact their team via e-mail or telephone.

Student Involvement Tools

Group work: Instructors can create groups of students to collaborate on a specific project. The instructor can participate in all class groups and provide resources and guidance as needed. In addition, joule includes an e-portfolio solution where students and instructors have their own online portfolio to collaborate, share and store information and project materials.

Project management configuration: Students and instructors at LaSalle Open University can create and participate in collaborative projects. Instructors have the ability to create groups within their courses, participate in the group as a resource and edit and delete the group as necessary. During the group project, the instructor has the ability to make edits to the group on the fly including enrolling additional students or un-enrolling students. Students are free to contribute work and collaborate with the group but are unable to edit any work created by other group members.

Community networking: The site administrator has access to creating a community course for all students within the system. In this course, joule allows students to create groups for special interests, study sessions and clubs. Wikis can be used as a collaborative space for students to host these community networking functions. In addition, students can communicate via system-wide chat in this specific class.

Student portfolio: joule's e-portfolio solution allows students to create a record of their accomplishments and reflections that they can keep with them throughout life. The e-portfolio solution is available within joule and as an independent resource that can serve as a resume or professional development tool. Students can personalize their e-portfolios to reflect their individual accomplishments.

LMS Administration

Authentication: joule has 16 possible methods for authenticating against external sources, including LDAP, IMAP, Shibboleth, POP3, and RADIUS. joule's authentication process depends on which method is chosen, but in general, student and teacher accounts in an external system are created within joule with a username and no password. When a user logs into Moodle, his or her login credentials (username and password) are redirected to the external authentication system via a secure connection. The external authentication system validates the user's credentials and then returns to joule whether or not the user has authorization to access joule. Authorization to access joule is controlled by the external system – authorization to access a course, block or module is maintained within joule. Enrollment systems manage authorization to access courses within joule. MoodleRooms' policy is to use only secure protocols for all external communication, i.e., SLDAP for remote authentication. They use 1024 bit RSA2 encryption across all systems requiring authentication.

Course authorization: Students will only have access to the courses in which they are enrolled. Course authorization is performed in order to ensure pre-requisites are completed and students are permitted to join the course. Only those courses in which students are enrolled will be available for view by the students.

Multilingual: MoodleRooms' solution is available in 78 different languages including English, Spanish, French, German and Portuguese.

Usage and statistics reports: Usage statistics and reports can be quickly located and analyzed with joule's dashboard feature. Instructors and administrators have access to reports and statistics represented in chart forms for easy understanding of data. Several varieties of reports are available and can be custom-made to meet specific needs.

Registration integration: MoodleRooms developed the Conduit tools as a part of joule to integrate registration and automate administrative tasks. Conduit provides a communication bridge between vital campus systems to enable data synching.

Server administration

System availability: MoodleRooms provides a 99.9% average uptime over the course of a year. The majority of maintenance can be completed without disruption. Customers are alerted of all scheduled maintenance at least 30 days prior to ensure adequate time to prepare for the necessary downtime.

Bandwidth: Your joule solution is designed around the unique needs of your institution. MoodleRooms ensures appropriate bandwidth levels are available for the types of courses and content utilized by LaSalle Open University.

Storage: MoodleRooms guarantees storage space to their clients. LaSalle and MoodleRooms will work to determine the appropriate storage specifications for your site.

Fail over capacity: joule sites are hosted on their fail-over-safe, load balanced and redundant server architecture. Their system horizontally scales to successfully handle as many concurrent users as LaSalle Open University needs. They keep additional hardware on hot standby so that they can immediately increase their computing capacity without disruption. MoodleRooms implements both technical and human strategies to secure its important online hosting data.

- Biometric scanning for engineers at data center
- Redundant Cisco firewalls
- 1024 bit RSA2 encryption
- Stateless Web servers with closed ports (means hacker cannot use SFTP, SSH or other Web services to infiltrate Web servers or internal network)
- Virus scanning
- 16 possible methods for authentication
- MD5 hash password encryption and storage
- Roles-based access

Backup and archive: MoodleRooms has never experienced a system crash or a subsequent data loss, but they perform regular backups as a proactive measure against such a disaster.

They back up every client's database each day of the week. They retain a copy for the current week, a copy for each week of the current month, and a copy for two prior months. Backups are available for restoration upon request and are stored at a facility. MoodleRooms' system is never taken down for backup. It is designed to handle all backup and archival operations on separate systems to avoid affecting user experience.

Security alarm and alert: MoodleRooms' system architecture is designed to detect any failures and immediately begin backing up the most current client data. MoodleRooms' IT team monitors the server system 24/7 and begins work to secure all customer data as soon as any failure is detected. Customers are notified of any failure or system downtime and are provided with an explanation for the issue as well as the resolution.

Course delivery tool

Content Sharing/Reuse. Central Repository: With joule, LaSalle Open University can store, locate, tag and share learning objects across multiple courses and digital repositories. MoodleRooms' partnership with EQUELLA allows universities to provide a truly collaborative and connected elearning environment. EQUELLA gives the customers the ability to share, create and distribute content across a connected network, defining new curricula by sharing resources and connecting to existing repositories.

Hardware/Software

Database requirements: MoodleRooms manages a MySQL database for all customer information. LaSalle Open University is not required to have a database for joule. MoodleRooms runs MySQL 5 enterprise with a Platinum support contract from MySQL. Each database is a trusted build from MySQL optimized for Solaris 10 (Linux is the alternate recommended operating system) and is deployed into zones for independent management and failover.

Client browsers compatibility: Moodle is fully functional in Internet Explorer for Windows, almost fully functional in Safari for Mac OS X (the HTML editor is not fully compatible but is expected to be replaced early next year in Moodle 2.0), and fully functional in Firefox for both platforms.

Mobile compatibility: joule is compatible with mobile devices that are internet accessible and have a Web browser.

OS: joule's core, Moodle, is primarily developed in Linux using Apache, MySQL and PHP (also sometimes known as the LAMP platform). It is also regularly tested with Windows XP/2000/2003 (WAMP), Solaris 10 (Sparc and x64), Mac OS X and Netware 6 operating systems. Support for PostgreSQL, Oracle and Microsoft SQL Server is also available.

Required Services/Licensing

Worldwide coverage: MoodleRooms is the largest Moodle partner in the world and can provide full coverage of their solutions worldwide.

Customer service customer support: MoodleRooms' in-house support team is accessible by phone and e-mail to troubleshoot customer issues and answer "how to" questions.

Technical operations issues involving code errors or system issues are immediately escalated for resolution.

Training: LaSalle Open University will have access to MoodleRooms' training for administrators and instructors through their online synchronous and asynchronous courses. Administrators have access to their MoodleRooms Site Administration Course. Site Administration is a 14-15 day course that involves activities for administrators to complete on their own schedule. Their training coordinators are available to provide guidance when needed and give useful feedback. Typically participants can expect to spend 30-60 minutes completing activities per day. Courses are conducted within Moodle to provide additional opportunity to familiarize administrators with the system. Instructors have access to the Introduction to Moodle course. This course provides an excellent general understanding of Moodle features that faculty and staff can build upon. Individual courses begin on the 15th of each month. Group courses are available for as many as 20 participants and begin upon request. Their training coordinators are available to provide guidance when needed and give useful feedback. Typically participants can expect to spend 30-60 minutes completing activities per day. Courses are conducted within Moodle to provide additional opportunity to familiarize instructors with the system.

Cost/license:

Open Source: Open-source Moodle is the core of the joule solution. By blending learning objectives with teaching, collaboration, communication and assessment tools, professors around the world are using Moodle to extend learning beyond traditional barriers. Moodle is an open-source Web-based learning management application that enables professors to create and facilitate engaging online courses.

References

Market presence: MoodleRooms is the largest Moodle partner in the world with approximately 700 clients. As the largest Moodle partner, they have access to security updates, patches and bug fixes immediately. If the customers experience code-related issues, they are pushed to the front of the line for resolution with Moodle.org's top developers.

Others

Vendor viability: MoodleRooms is capable of providing a unique and detailed solution for LaSalle Open University. Laura Fischer, your single point of contact, will consult with your project team members to determine key features and functionality in building your solution. MoodleRooms has extensive experience providing quality open-source solutions to the client base of approximately 700 customers.

Invoicing and payment terms: LaSalle Open University and MoodleRooms can determine appropriate invoicing and payment terms upon contract award.

Project management: Their project management team will include the following roles:

- Sales Lead
- Implementation Lead

- Policy Lead
- LMP Administrator
- Information Technology Specialist
- Communication Lead
- Support Lead

Cost/license: see Table 15 and Table 16.

Year	Description	Annual Platform Cost
1	**joule Platform** *Includes 500 Users*	**$8,500**
2	**joule Platform** *Includes 2,000 Users*	**$18,000**
3	**joule Platform** *Includes 5,000 Users*	**$31,250**
4	**joule Platform** *Includes 10,000 Users*	**$62,500**

Table 15. Pricing of MoodleRooms solution for the first four years.

First Year Implementation and Transition Services	Cost
• 30 Hours of setup and configuration • Configuration of Conduit	$4,500
First Year Training for three	**Cost**
• Moodle 100: $150 *Introduction to Moodle* • Moodle 101: $300 *Course Creation* • Moodle 102: $600 *Course Facilitation* • Moodle 200: $400 *Site Administration*	$4,250
Total Cost for Year One	
• **Platform and Services**	**$17, 250**

Table 16. First year additional costs of MoodleRoom solution.

Implementation Risks: MoodleRooms has created a tested implementation process to ensure they meet the unique needs and goals of the clients.

Contractual Period: MoodleRooms agrees to provide a contract term of 3 years for LaSalle Open University.

LESSONS LEARNED, CONCLUSIONS AND FUTURE WORK

After receiveing all the proposals from the different vendors it was time to review and compare the different solutions according to the previous defined matrix and the best interests of La Salle Open University.

The strengths and weaknesses of each bidder were highlighted during several internal meetings with the hearing committee. In this first part of the Conclusions, strengths and weaknesses of each bidder are detailed:

GEC S.A.

Strengths

- Located in Barcelona.

Weaknesses

- It required custom modifications for competences management and grup work tools.
- It has the worst rating in quality/price among the other competitors.

CV&A

Strengths

- They have a good team of technicians that really know about the Moodle core and how it can be modified to acomplish all that La Salle University needs for its methodological innovative courses.
- Located in Barcelona.

Weaknesses

- There were delays in the deadlines, which can mean they are not interested in the project or that they cannot give La Salle University the amount of time that it would require.
- The documentation was poor in some aspects which leds to the hearing committee to ask a lot of questions during the presentations.

Avanzo (Blackboard reseller)

Strengths

- They offer an integrated solution of Blackboard plus open source blocks that offer what La Salle Open University needs for its courses.
- They were really committed and interested in the project during the RFI.
- Located in Madrid.

Weaknesses

- It was the most expensive solution.

MoodleRooms

Strengths

- Biggest Moodle reseller in the world.
- Integrated solution: joule (Moodle plus third party plug-ins and applications).
- Ability of the La Salle Open University team to develop Moodle plugins that can provide competitive advantages to the University.
- Best rating in quality/price.

Weaknesses

- Big company with many clients. The hearing committee thought that it might be difficult to create a close relationship between La Salle Open University and MoodleRooms.
- Located in the United States.

After the first round of presentations GEC S.A. was discarded because they offered similar features to other bidders at a much higher cost. CV&A was also discarded because the hearing committee got the feeling that they were not interested in the project and they were overwhelmed by it.

Avanzo and MoodleRooms were the two bidders that La Salle Open University offered the oportunity to participate in a secound round of biddings. Finally the hearing committee due to offering similar features to MoodleRooms at a much higher cost discarded Avanzo; and MoodleRooms became the company chosen to implement the Learning Management System of La Salle Open University.

Reviewing all the process of the acquisition of a Learning Management system, in this project a complete Request for Information (RFI) process has been presented and explained in detail. In order to succeed during the RFI the correct steps have been taking: defining the learning methodology, writing the requirements of the platform according to this methodology, research for Learning Management Systems (LMS) companies and finally opening the RFI to the public in order to get vendors interested in bidding.

The project has been managed all by myself dedicating a total amount of more than 270 hours taking into account the research, preparation of the documents, organization of the meetings, the meetings itself and the reviewing of the results. Some help was received in the requirements phase and during the RFI.

In the requirements phase I worked together with Marc Segarra and Lluís Vicent in order to get the learning requirements of the ideal Learning Platform for La Salle Open University.

In the RFI I received help and advice from Amal Le Collen. Amal help me writing the RFI documents (included in the Appendixes of this document) and answering the questions that the vendors have asked to La Salle Open University.

At the end, MoodleRooms was the option that the hearing committee thought as more suitable for La Salle Open University for its features: Moodle is a powerful platform that La Salle knows by heart and with Joule the features of the system get increased by a lot of necessary and useful applications for the LMS desired by La Salle Open University.

This is the first real management project that I have been running, so despite of the successfulness of it, it could has also been improved in many ways. For that reason I would like to state here some of the lessons learned of this project:

- **The more LMS to analyze, the better.** We started the RFI with more than 10 solutions to review but quickly this number drop down to 4. We continued with the RFI because we knew that we had the best LMS in that small number (thanks to the previous review of all them). But in an ordinary RFI it would have been better to have more than 4 solutions to review in the first stage.
- **ALL members of the hearing committee should attend ALL meetings.** In some of the meetings of the first round, not all the members of the committee where able to attend them. These made the members of the committee to ask for repeated information to the vendors in the second round of interviews. That's the reason I encourage that all the members attend all meetings, and if a meeting has to be rescheduled because of that it is better than do the meeting.
- **The members of the hearing committee have more important things to do.** Choosing the LMS of a new University it is an important thing to take into account on a normal day at work, but the members of the hearing committee are not 100% dedicated to it, so you have to make them the things easy. By that I mean that you have to provide them with reviews of the solution, make summaries of the most important things said,… because they are not going to look at the hundreds of pages that a RFI response has.
- **Meetings should be short.** Presenting proposal in a RFI can take a long time if the LMS has a lot of features but after two hours of presentation all the members in the room will get bored. Meetings should be around two hours time and always tell all the participants the starting and ending time of them. If there are topics that haven't been discussed, plan another meeting another day.
- **Scorecards must be filled JUST after the meeting.** After every meeting, all the members of the hearing committee should fill the scorecard about the vendor that has presented the proposal. If not, they are going to forget about important things that the vendor solution has. Moreover, they can just ask about something that it is not clear to other members of the hearing committee, despite the scorecard must be filled by themselves.
- **Ask for information between meetings.** To see the interest of the vendor in your project, a good option is to ask for information after the meeting and see how long they take to answer. If they answer fast, they are interested in your project so you have to take them into account when making the decision.

Finally, the next step in the process is the implantation of the Learning Platform. At the time of writing this report this step has not started yet. In order to use Joule, the MoodleRooms platform, as the virtual campus of La Salle Open University and its SCC courses it is necessary also to make some modifications into the code of it. These modifications are the ones that are going to be done next and they consist in the design of a theme for Moodle and the design a new course format for the platform.

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7 APPENDIX I: REQUEST FOR INFORMATION DOCUMENT

LaSalle
openUniversity

Request For Information (RFI)

Integrated Open Learning Platform

December 1, 2009

Table of Contents

1 Introduction

La Salle Open University is a university: open, flexible, that breaks with the rigid access restrictions to university qualifications. It is online, where the student attends the courses when and where he wishes. It is technological, providing the latest developments of the information technology to the service of learning. It is methodologically innovative, with learning methods that are original and adequate to the objectives of the studies. It is international, with a university community located in five continents. It is Lasallian, with an education that has neither social nor economic discrimination.

La Salle Open University, due to its legal situation in Europe, will offer degrees within the European framework of the Process of Bologna.

The vocation of La Salle Open University is absolutely global, it expects to share its degrees with other universities; offers semi-onsite models of distributed presence (in different places of the planet) and offers students the possibility to obtain double degrees.

La Salle Open University will use the most effective teaching techniques.

The headquarters of La Salle Open University is a global network, a network that joins all the members of its community, independently of where they are. Therefore, the technology that facilitates the creation of this network constitutes the foundation of the university.

The technology of La Salle Open University facilitates its pedagogic method and must provide multimedia and multidirectional communication between the different users of the network.

The Open University has to think about considerations of these kinds: educational, technological, market and the creation of a brand. Such university has to be conceived as a common space where the subjects to be taught are available from any place in the world.

The practical totality of universities offers their students and teachers a variety of services starting with the use of the Internet, which has allowed the spreading and

the acceptance of the culture of use of technology within university communities. Today this culture represents strategic challenges of special relevance for IALU (International Association of Lasallian Universities); from connectivity to portability, from owner programs to free programs, from virtual platforms to flexible environments. The use of TIC (Technologies of Information and Communication) opens a perspective that not only benefits education but that allows a deeper transformation of the university organization itself.

Lasallian universities become a reference due to their potential at a world level. La Salle is present in 82 countries with 1037 schools, 80000 male and female teachers, and 73 university centers.

To achieve this Goal the Open University La Salle is striving to use the most advanced technology to ensure a stable and integrated platform to support an increasing number of users 10000 over 4 years from the 5 continents.

2 Special Instructions To Bidders

2.1 Objectives

This document is a Request for Information (RFI) for the supply of an Integrated Open Learning Platform for La Salle Open University.

The solutions will have the following broad capabilities:

- Teaching and learning platform
- Collaboration and Communication function
- Publishing
- Content management
- Hosting capabilities
- Maintenance and support
- Customer relationship management
- Reporting
- Student grading management

As a result of this RFI, La Salle Open University will either make a purchase decision or qualify responders for a subsequent RFP (Request For Proposal).

2.2 Response Format

Responses must be sent electronically and hard copies can also be delivered to the undersigned. Each electronic copy should be in a format compatible with Microsoft Word 2007 and Excel version 2007.

2.3 Time Table

December 1, 2009: RFI posted.

December 8, 2009: Vendor questions will be accepted by email until 6:00 pm (CET).

December 10, 2009: All Vendor questions will be answered via email and shared with all bidders.

December 14 to 17, 2009: Vendor presentation of the proposal.

January 12, 2010: Purchase or not purchase decision.

2.4 The La Salle University Contact

For any questions regarding this document, the ONLY contact will be Mr. Xavier Gumara at xgumara@salle.url.edu.

2.5 Process

1. Intention to Bid

Suppliers intending to respond to this RFI must send to xgumara@salle.url.edu the name and email address for the supplier's primary contact.

2. Supplier Invitation

La Salle welcomes responses from any interested supplier.

3. Clarifications/Questions

All requests for clarification and/or questions regarding the RFI must be directed to xgumara@salle.url.edu.

Responses to requests for clarification or questions will be distributed to all suppliers through the supplier's primary contact via email and shared with all suppliers in a timely fashion.

4. Response Submission

Your response to the RFI must be delivered in the on-site or online presentation of the proposal and email it to xgumara@salle.url.edu and alecollen@salle.url.edu.

The hearing committee of the presentation will be composed by the Project Manager of the process, the director of the University and representatives of professors, course managers, technical administration and platform experts.

Responses and presentations must be submitted in English.

6. Response Evaluation

Please refer to Appendix A for the scorecard that will be used in evaluating the responses and selecting a supplier or qualifying suppliers to proceed to the next step.

3 General Conditions and Bidder Instructions

3.1 Response Submission

Responses received after the closing time and date will be returned unopened to the sender. Responses submitted by facsimile will not be accepted.

3.2 Acceptance of Submissions

La Salle University is under no obligation to accept any or all submissions. La Salle University has the unqualified right to accept or reject any submission and to waive irregularities included in the submission documentation, as may be in the best interest of La Salle University, without giving reason for such actions. La Salle University also reserves the right to waive minor variations to specifications. La Salle University will not be responsible for any costs incurred by the suppliers in preparing or submitting their responses.

La Salle University reserves the right to open responses privately, but in joint custody and to reject any or all responses received. Any response need not necessarily be accepted.

3.3 Contact with La Salle University Representatives

Except as otherwise authorized in this document, no other University parties may be contacted with respect to this request for information. Contact with other individuals may void the supplier's response to this request.

3.4 Supplier Responsabilities

1. Response Format

Responses must be prepared in accordance with the conditions outlined in this and any associated documents. Failure to comply may result in the disqualification of the response.

Suppliers are invited to use Appendix B for pricing.

La Salle University assumes no responsibility or liability for the adequacy, accuracy or completeness of any information provided by this RFI.

Suppliers may not use La Salle University's name or markings for any external marketing purposes without express written permission from La Salle University.

An authorized company representative should sign all responses by completing Appendix C.

2. Confidentiality

The suppliers shall treat as confidential and safeguard all knowledge or information acquired by it or its officers, employees, agents or sub-consultants during the course of this exercise.

3. Supplier Background

Supplier submissions should include information on their qualifications and financial standing such that La Salle University can adequately evaluate their ability to provide the solution.

Suppliers will provide their latest quarterly and annual reports.

Suppliers will provide a list of at least three customer references with the same solutions comparable to those being proposed for La Salle University.

4. Expenses Associated with Response

La Salle University is not responsible for any expenses incurred by a supplier in preparing and submitting a response to this RFI.

5. Contract

La Salle University may decide to award a contract to the supplier whose proposal offers the best value to La Salle University. However, La Salle University is not under any obligation to award a contract and reserves the right to terminate the Request for Information process at any time and to withdraw from discussions with any or all of the suppliers who have responded.

The complete proposal document and any attachments shall become part of any contract entered into between the successful supplier(s) and La Salle University.

The terms of this proposal shall be governed and construed in accordance with the laws of Spain.

The successful supplier(s) shall indemnify La Salle University for all damages suffered by it as a result of the negligent actions or wrongful acts of the successful supplier, its employees, servants and/or agents. The successful supplier shall indemnify and hold harmless La Salle University, its Council, students, employees, servants and/or agents from all claims, demands, losses, costs, damages, actions, suits or proceedings initiated by third parties arising from the negligence of the supplier, its employees, servants and/or agents.

6. Sub-contracting

The successful supplier shall not assign or sub-contract for the provision of any services hereby tendered on without the written consent of La Salle University.

7. Research and Partnership Opportunities

La Salle University is interested in participating with the selected supplier in any initiatives that are mutually beneficial and can give La Salle University strategic or economic advantages in the areas of administration, research or teaching. Initiatives that would benefit the student and graduate populations would also be valued. Bidders should provide any evidence of previous "partnering" arrangements where they have collaborated on mutually beneficial initiatives with clients providing them with strategic or economic value beyond the narrow scope of the supply arrangement.

APPENDIX A: Scorecard

Evaluation matrix				
Name Provider				
		Weighting	**Rating**	**Score**
Quality of response				
	Timely delivery	3		0
	Pricing format& Breakdown	3		0
	General quality	3		0
Staff management				
	Experience of the vendor proposed project team	3		0
	General approach	3		0
Account management				
	Strategic	4		0
	day-to-day/Customer Service	5		0
Quality (ISO)				
	ISO 9000/2000, other	2		0
	ISO 14000	2		0
Communication Tool				
	Discussion Forum	5		0
	Discussion Management	5		0
	Blogs	3		0
	Wikis	4		0
	Video conferencing	5		0
	File exchange	5		0
	Internal Email	4		0
	Mail notification/Alert	4		0
	SMS notification	3		0
	Online Journal and notes	3		0
	Progress review/qualification	5		0
	Competences management	4		0
	Real time Chat	4		0
	White Board	5		0
Productivity Tool				
	Bookmarks	3		0
	Calendar	5		0
	Searching within course	4		0
	Orientation/Help Tutorials	4		0
Student Involvement Tools				
	Group Work	5		0
	Project management configuration	5		0
	Community networking	4		0
	Student Portfolio	5		0

LMS Administration				
	Authentication	5		0
	Course Authorization	5		0
	Multi-lingual	5		0
	Usage & statistics reports	4		0
	Registration Integration	5		0
Servers administration				
	System Availability	5		0
	Bandwidth	5		0
	Storage	5		0
	Fail over capability	5		0
	Backup and archive	5		0
	Security Alarm and Alert	5		0
Course Delivery tool				
	Content Sharing/Reuse. Central Repository	5		0
Hardware/Software				
	Database requirements	3		0
	Client browsers compatibility	5		0
	Mobile compatibility	4		0
	OS	3		0
Required Services/Licensing				
	Worldwide Coverage	5		0
	Customer service customer support	5		0
	Training	4		0
	Cost/license	5		0
	Optional Extra	4		0
	Open Source	3		0
References				
	Market presence	5		0
	Customer references(same industry)	5		0
Others				
	Vendor Viability	5		0
	Invoicing & Payment Terms	5		0
	Project management	4		0
	Implementation Risks	5		0
	Contractual Period	4		0
Total				**0**
rating:				
1	not described			
2	in place, but needs specification			
3	normal			
4	good, gives something extra			
5	100% in-line with RFP request			

APPENDIX B: Pricing Tables for Proposed Solution

If La Salle University decides to purchase as a result of the RFI, the initial commitment to purchase would include the following items:

- Itemized pricing rather than a total for the solution
- Training costs for recommended courses
- Detailed support costs
- Detailed upgrade costs
- Details of volume discounts
- Details of any associated shipping costs
- Details of implementation cost

APPENDIX C: Acknowledgement

NAME AND CONTACT INFORMATION OF AUTHORIZED REPRESENTATIVE(S):

NAME: _____ (print)
POSITION: _____ (print)
TELEPHONE NO: _____
FACSIMILE NO: _____
E-MAIL ADDRESS: _____
I/We _____ the undersigned HEREBY

DECLARE AND ACKNOWLEDGE:

THAT I / WE have examined the documentation and information contained in RFI and accompanying documents;

THAT I / WE declare that no person, firm, corporation or other organization other than disclosed herein has any interest in this Proposal or any contract which may result;

THAT this Proposal is made by the undersigned without collusion or fraud with any other entity;

THAT all statements in this Proposal are true and accurate in all respects;

THAT the undersigned are duly authorized to execute this Proposal on behalf of:

Name of Prospective Supplier:
Authorized Signature:
Name:
Position:
Contact Telephone:
Dated at the _____ This ___ Day of ___ , 2009

8 APPENDIX II: QUESTIONS & ANSWERS DOCUMENT

LaSalle openUniversity

Request For Information (RFI)

Integrated Open Learning Platform

Questions & Answers

December 10, 2009

Table of Contents

1 Introduction

In this document La Salle Open University provides the answers to the questions submitted by the bidders to the Request For Information (RFI) started last December 1.

Questions from different vendors regarding the same topics have not been included.

Next steps in the process will be notified to all bidders in the next 24h hours.

2 Questions & Answers

2.1 RFI Questions

- What is the response due date for the RFI?

The day of the presentation (scheduled from December 14 to 17).

- In section 2.1, can you define what is meant by the broad capabilities of publishing?

Availability to publish content openly to the world.

- Our understanding from the requirements presented in the RFI is that the proposal may take any form and cover any material to adequately describe and present the supplier's solution and pricing as long as the response proposal is compatible with Microsoft Word and Excel. Will you please confirm that this is correct?

Yes. It can also be compatible with Microsoft PowerPoint.

- It is our understanding that a hard copy response is not required to be considered in this evaluation. Will you please confirm this is correct?

Yes, this is correct: a hard copy is not required to be considered in this evaluation.

- If we did choose to send a hard copy response, to where and to whom should the response be addressed for delivery?

Mr. Xavier Gumara
La Salle University
C/ Ribagorça, s/n
08022 Barcelona (Spain)

- Is the intent of the pricing provided with the response to be considered indicative pricing or final pricing for the solution? i.e., will there be an opportunity to negotiate final pricing directly with La Salle Open University as a better understanding of the organization and its needs are discovered?

It will be considerate as indicative pricing. Yes, there will be an opportunity to negotiate final pricing if a purchase decision is made.

2.2 Scorecard

- Contractual period: which period of contract do you consider for a best performance?

The considered contractual period is three years.

- Price format: which price format do you consider for a best score: variable, flat rate, pay per use...?

Variable price format and/or pay-per-use, itemized rather than a total for the solution.

- Account management, strategic and day to day concept: we are not sure about the understanding of this point; can you give us more detail about your expectations?

It is related to the account manager relationship and the level of advise we will receive as a customer to help us implement our strategic goals. Day-to-day is again a relationship more related to operations.

- Student involvement tools, project management configuration:
  - are you talking about student learning path configuration?
  - or overall learning program configuration?
  - or about project management tool like gantt, pert, resources management...) regarding the business school resources?

In this topic we refer to:

- Ability to easily manage groups of students (creation, editing, deletion).
- Ability to enroll and unroll students from a group at any moment of the course.
- Students cannot modify nor delete the participation items of other students.

- LMS Administration, registration integration: this is about the interface between your B2C program selling portal and the LMS?

Administrators or batch process have to be able to upload a delimited text file (or other standard formats) to add students to the system.

- Required services, optional extra: is this about extra development costs or extra functionality not demanded included in the project price?

Extra functionality not demanded included in the project price.

- Implementation risks: What kind of information do you need? Options:
  - Summary of our project management methodology to manage risks?
  - Provisional risk map identification regarding this project and possible mitigation to every potential risk?

Both of them will be taken into account.

- What languages are most important for consideration in the eLearning solution?

English and Spanish in a first phase and later on the main European languages: French, German and Portuguese.

- In the Evaluation Matrix, one of the categories is listed as "Quality (ISO)." Will you please define ISO for our clarity?

International Organization for Standardization. ISO 9000 is a standard of quality management system and ISO 14000 is an environment management system.

- In the evaluation matrix, what is meant by "General Approach" in the Staff Management section?

Adequacy of the roles of the proposed project team to the process.

- In the evaluation matrix, what is meant by "Progress review/qualification" (specifically qualification) in the Communication Tools section?

Availability to grade student participation individually in the communication tools of the platform in terms of knowledge and competences.

- In the evaluation matrix, what is meant by "Searching within course" in the Productivity Tool section?

Users of the platform have to be able to search all course content including discussion threads, chat logs and virtual classroom session recordings.

- In the evaluation matrix, what community is being refered to in "Community Networking" in the Student Involvement Tools section?

We focus on two main topics:

- Availability of the students to create online clubs, interest, and study groups at the system level.
- Students from different courses can interact in system-wide chat rooms or discussion forums.

- In the evaluation matrix, what type of information is "Security alarm/alert" referring to? Is this term referring to physical security or notification system?

Security alarm refers to physical security and alert refers to notification in case of failure.

- In the evaluation matrix, what does "OS" stand for in the Hardware/Software section?

Operating System.

- What type of training (administrative, instructor) is desired? How many participants will there be?

The training desired is for administrative and instructor roles to no more than 5 people.

2.3 General Questions

- How many users will begin on the system?

50 students in a pilot course starting February 2010.

- Are you interested in integration with an SIS, ERP or other critical system?

Yes, for a latter phase.

- If so, which system are you currently using?

For the time being, there is no ERP system but will be implemented in the next phase.

- Has a budget been set for the acquisition of the eLearning system? If so, can you share that budget?

We have a forecast, however we will be working together with you to get to an actual budget.

- Is any of the budget dependent upon money to be granted to La Salle Open University from any other organization that has not yet been secured?

No.

- Does La Salle Open University have a predetermined preference for either Open Source or Commercially Developed eLearning solutions?

No.

- Does La Salle Open University have a requirement for either a commercially hosted or locally hosted eLearning solution?

Commercially hosted solution is preferred.

- Is it expected that students attending La Salle Open University will be taking their courses 100% online or will there be a classroom based component of the instruction as well?

We will offer and Experiential MBA fully online complemented with an international exchange in our Lasallian network across the globe. We will offer a Blended MBA 50% online and 50% face-to-face and a Master Program in eBusiness fully online to start.

- Will La Salle Open University be providing all of its own content or will it be interested in third party eLearning content and content services as well?

La Salle Open University will provide its own content.

- Are there any other technology solutions in place at La Salle Open University with which or along side of, that this solution must work?

Not applicable.

- Can you please indicate when La Salle Open University is intending to launch the selected solution?

February 2010.

2.4 About La Salle Open University

- Can you please help us understand if there is a connection between La Salle Open University and La Salle Universitat Ramon Llull in Barcelona? If there is a connection between the organizations, can you describe the nature of the relationship or structure of the organization?

La Salle Barcelona campus is part of the Universitat Ramon Llull, which is a federal university composed by the main private schools in Barcelona, and La Salle Open University is currently owned 100% by the foundation FUNITEC (the current legal entity for La Salle Barcelona campus).

- How long has the La Salle Open University been operating?

We are going to launch a pilot course in February 2010 and start our normal operations in September 2010.

- How many students is La Salle Open University currently serving?

Currently we have no students.

- The RFI notes that you expect to be serving 10,000 students in 4 years time. Can you provide estimated growth projections for each of the next four years to help us understand your growth expectations more fully?

First year: 500 students.

Second year: 1500 students.

Third year: 3000 students.

Four year: 5000 students.

- The RFI references 1,037 Lasallian schools worldwide. Will those organizations be involved in the operation of the LaSalle Open University? If so, how?

Yes. La Salle Open University is planning to offer a High School Online Program for all LaSallian schools worldwide.

- Is La Salle Open University an independent institution or is it operating under the ownership or holding of another organization? If it is operating under another organization, what organization is it?

La Salle Open University is operating under the foundation FUNITEC.

- Is there a web site to which you can refer us to gain a fuller understanding of La Salle Open University's mission, structure, goals, instructional methodology, back ground, etc.?

We can refer you to our website in Barcelona (www.salle.url.edu) to have an understanding of the statement and the vision, taking into account that La Salle Open University will have its own website in the near future.

- Will enrollment over the next four years be targeted at specific markets or geographies? If so, which ones?

The target market is worldwide.

- What degrees will La Salle Open University be offering?

In a first phase MBA and Master in eBusiness. In a second phase Master in e-Learning, Electronic Engineering, Computer Engineering, Multimedia Engineering, Master in Communication and Information Technologies Management and Master in Project Management.