

# University - Entrepreneur joint programs: a success case between Decision Support Systems Laboratory (LabSAD) and DATASUL

Aline França de Abreu, PhD<sup>(\*)</sup>  
João Ernesto Escosteguy Castro, M. Eng.<sup>(\*\*)</sup>  
Nelson Casarotto Filho, Dr.<sup>(\*\*)</sup>  
Bernardete Trindade, doctorate student  
Ruth Roque Rossi, doctorate student  
Fábio Câmara Araújo de Carvalho, master student  
Carlos Eduardo S. de Souza, undergraduate student  
Silvana M. Z. Bomfá, undergraduate student  
Leonardo Orth, undergraduate student  
Artur Santa Catarina, undergraduate student

**Abstract** — The coordinators of Decision Support Systems Laboratory (LabSAD) have decided since January 1998 to develop a partnership between DATASUL – a softwarehouse enterprise – and UFSC – Federal University of Santa Catarina. The mission of this partnership is to apply the production engineering concepts in DATASUL production process. This paper will describe the partnership experience, its results and future goal.

**Index Terms** — university-industry joint programs, decision support systems, enterprise resource planning systems.

## I. INTRODUCTION

In January 1998, the professors João Ernesto Escosteguy **Castro (coordinator of LabSAD)** and Nelson **Casarotto Filho** started a joint program project with DATASUL. The purpose of the project was to promote university-enterprise integration.

LabSAD [1] was created in 1985 to develop Economic Engineering Software's. Nowadays, LabSAD works involve researches and projects of Economic Engineering, Industrial Planning and Decision Support Systems using Information Technology.

The DATASUL [2] – an enterprise management softwarehouse – has mission to apply Production Engineering knowledge in its product development to get low prices, better quality and efficient products. DATASUL - LabSAD partnership pretends to improve the knowledge of the production engineering students and DATASUL managers.

Today, the DATASUL team – LabSAD's students who work in the joint program – is led by professor Castro and Casarotto and have undergraduate production engineering students. Also, graduate students of the PPGEPI – Industrial Engineering Post-Graduate Program – work in the DATASUL team.

The undergraduate production engineering students have classes about production management (Kanban, just-in-time, flexible systems), product engineering (new products, value analyses, ergonomic), quality management and productivity (total quality, project quality, functional analyse, performance analyse), small and medium enterprise management, economic engineering (industrial project analyse, strategic planning, technological innovation) and others that allow them to be industrial managers.

## II. PROJECT OBJECTIVES

The general objectives are:

- To give to undergraduate and graduate students the opportunity of knowing the practice of a high technology enterprise – DATASUL;
- To take part in the development of EMS 2.0 – a new DATASUL's product;
- To help students in their future apprentices.

<sup>(\*)</sup> IGTI – Information Technology Management Institute - UFSC/CTC/EPS - Caixa Postal 476 – Campus Universitário – Trindade - CEP-88040-900 - Florianópolis/SC – aline@eps.ufsc.br

<sup>(\*\*)</sup> LabSAD – Decision Support Systems Laboratory – UFSC/CTC/EPS - Caixa Postal 476 – Campus Universitário – Trindade - CEP-88040-900 - Florianópolis/SC – castro@eps.ufsc.br

<sup>(\*\*)</sup> LabSAD – Decision Support Systems Laboratory – UFSC/CTC/EPS - Caixa Postal 476 – Campus Universitário – Trindade - CEP-88040-900 - Florianópolis/SC – casarott@eps.ufsc.br

The specify objectives are:

- To introduce EMS 2.0 in LabSAD;
- To review its reference handbooks;
- To introduce a virtual enterprise for studying EMS 2.0;
- To verify ergonomic software aspects;
- To create a class using EMS 2.0 using a computer net to teach the students a practical use of a Information Management System;
- To create and improve a home page about this project [3];
- To develop a apprenticeship politic;
- To create a seminar cycles about the topics of these projects.

### III. PROJECT REASON

In the beginning of this century, Taylor has started the production engineering practice in industrial cases. Nowadays, fast technological evolutions and competitions put productions engineering in a more important place. For that reason, production engineering concepts need to be well known and used by enterprises that want to survive and universities that will prepare better students.

DATASUL has a good example of the production engineering concepts' practice: EMS 2.0. Through this partnership the LabSAD members and DATASUL managers can improve their knowledge about production management.

### IV. METHODOLOGY

In meetings with DATASUL product manager and Department of Knowledge Management staff, the activities of DATASUL team are decided. After that, in Florianópolis, the activities are shared and started, using MS Project to manage them.

Weekly, there are meetings to discuss the problems, mistakes and doubts that are sent to DATASUL – in Joinville.

The EMS 2.0 is up-to-date by Internet and DATASUL team's messages are sent to DATASUL board by e-mail to not get the work interrupted.

The DATASUL team works simulating a real enterprise. For that, use the knowledge of the classes and the DATASUL software. All of this work is sent to DATASUL in e-mail notes with all suggestions and doubts.

The biggest advantage of this methodology – for DATASUL – is the economies of time in testing its products with LabSAD virtual enterprise.

### V. ACTIVITIES DONE

The most important activities that have been done are the follows:

- Studies about Production Control and Planning and Industrial Costs;

- Manufacture Resource Planning Training, by BÜKER Consult of Brazil;
- The joint program home page creation ([www.lsad.eps.ufsc.br/datasul](http://www.lsad.eps.ufsc.br/datasul));
- DATASUL's training about EMS 2.0 – Engineering Master Plan, Entrepreneur Resource Planning, Quality Control, Production and Costs Modules;
- Validation of Engineering and Production reference hand book;
- Ergonomics tests;
- Virtual enterprise's activities simulations.

### VI. FUTURES ACTIVITIES

The DATASUL team intends to:

- Keep reviewing the reference handbooks;
- Keep testing software ergonomics aspects;
- Keep development the virtual enterprise;
- Keep up-to-date the home page;
- Keep defining a apprenticeship politics;
- Create seminar cycles about systems management in UFSC – case studies, client enterprises, implantation methodologies, PCP through EMS 2.0, new technologies, entrepreneur management systems;
- Develop thesis and dissertations about knowledge management and distance training models;
- Create the DATASUL class to allow the students of Costs, Industrial Planning, Engineering Economy, PCP and Industrial Management apply their theoretical knowledge.

### VII. THE MAIN ACTIVITIES DESCRIPTION

Nowadays, there are three main activities for DATASUL and DATASUL team: the review of EMS 2.0 reference engineering handbook, the virtual enterprise implantation and the thesis and dissertation development.

#### A. *The review of EMS 2.0's engineering reference hand book*

This review is a part of a serial of reviews that must be done. All module hand books of EMS 2.0 will be analyzed to verify if it is clear and objective for future clients.

Through the reference handbook and the EMS 2.0 use, the DATASUL team is verifying the followed aspects: draw and use conformity looking for technical and graphical problems and concordance and content of the explanation.

The suggestions are discussed in a meeting with the DATASUL's knowledge management board. Most of the suggestions are usually accepted and included in the next reference handbooks.

#### B. *The virtual enterprise implantation – ENGEPAD*

The DATASUL team decided to create a virtual mouse pad industry to use in the tests – ENGEPAD. This kind of industry was chosen because its simple productive process

and data base structure. Also, it could hold in simulating different situations to test the EMS 2.0.

The virtual enterprise was built through information got from a real mouse pad industry – in Blumenau – that had been visited.

Information like MP, productive process and employees structures to build the data base.

ENGEPAD has a simple structure that can evolve to test more complex situations.

### *C. Thesis and Dissertations Development*

Since October 1998 the DATASUL team with the Department Industrial Engineering has been working together in development of doctorate thesis and master dissertation about knowledge management and distance enterprise training models.

## VIII. FINAL CONSIDERATIONS

This project has started to make some ergonomic software tests and define some business rules. Now is becoming a knowledge and entrepreneur management core. The LabSAD has working in this project, besides the first three students, two students of PET (Special Training Program), two undergraduate students of Scientific Initial Program of CNPq and two graduate students that will get master and doctor degree.

In general, partnership between university and enterprise resume in some kinds of equipment grant. This project is different since it is a experience of sharing knowledge between graduate and undergraduate students, teachers and enterprise managers. It's possible to see the improvement of the quality of all parts involved in the project – LabSAD and DATASUL.

## REFERENCES

- [1] Decision Support Systems Laboratory, IN.: <http://www.lsad.eps.ufsc.br/>
- [2] Datasul Web Pages, IN.: <http://www.datasul.com.br/>
- [3] Datasul's Project Home-Page, IN.: <http://www.lsad.eps.ufsc.br/datasul/>