EUROPEAN COMMISSION

Directorate-General for Education and Culture

Project 144742-TEMPUS-2008-DE-JPHES
"Educational Centers' Network on Modern Technologies of Local Governing"

Tempus programme
Joint European project

Proceedings of the 2nd Workshop of the training programme for developers of educational courses Valladolid, Spain, 26 January – 05 February, 2010

CONTENTS

Introduction

ECESIS – project aimed at the increase of level of knowledge of the local administration staff in the sphere of information management.

Project ECESIS - "Educational Centers' Network on Modern Technologies of Local Governing" was prepared in 2008 by the initiative group which included several universities from Germany, Poland and Ukraine. At the end of this year it was selected for European Commission financing as a result of expert evaluation.

The main objective of the project is to implement European methods of information management in practice of local government institutions in partner countries (Ukraine, Russia and Armenia); organization of constantly operating centers of retraining, curriculums to information management and foreign (European) languages for administrative staff.

The project is coordinated by Professor Troitzsch of Koblenz-Landau University (Germany), who works actively in the sphere of organization of international cooperation in frames of TEMPUS project. Unlike previous projects, whose number of participants included 3-5 members, this project is considered to be multinational (8 countries and 2 countries presented by experts), involving 19 partners.

PROJECT PARTNERS:

I. EU UNIVERSITIES:

1. Koblenz-Landau University (KLU), Germany - contractor;

2. Universidad de Valladolid (UV), Spain;

3. Maria Sklodowska University (Ljublin, Poland);

4. Technical University of Kosice (TUKE), Slovakia;

II. CIS UNIVERSITIES:

5. Moskow State Regional University (MSU), Russia;

6. Tambov State University (TSU), Russia;

7. Sumy State University (SSU), Ukraine;

8. Lviv National University (LNU), Ukraine;

9. Dnipropetrovsk National University (DNU), Ukraine;

10. Comrat State University – CSU (Moldova);

11. Yerevan State University (YSUA), Yerevan Academy of Fine Arts (YSAFA), Armenia;

III. MINISTRIES OF EDUCATION OF CIS UNIVERSITIES

12. Ministry of Education of Moscow Region (Russia);

13. Ukrainian Ministry of Education and Science;

14. Armenian Ministry of Education and Science, Presidential Administration of Armenia;

III. LOCAL GOVERNING AUTHORITIES OF CIS COUNTRIES

15. Tambov State Regional Administration (TSA), Russia;

16. Sumy State Regional Administration (SSRA), Ukraine;

17. Lviv State Regional Administration (LSA), Ukraine;

18. Dnipropetrovsk Regional Administration (DRA), Ukraine;

Besides, activity in frames of this project involves associated partners who represent local administrations missing from the point of view of geographical position:

19. Regional Administration of Dmytrov district of Moscow region (Russia);

20. Executive Committee of Autonomous Territorial Unit of Găgăuzia (Moldova);

21. Municipality of Yerevan (Armenia).

Associated partners can't get the direct support from the project, but they plan to participate actively in the very implementation of its results.

I. Valladolid – one of the cities participating in the Project

Aerial view of Valladolid

Valladolid is a historic city and municipality in north-central Spain, laid upon the Pisuerga River and within three wine-making regions: Ribera del Duero, Rueda (DO) and Cigales. It is a regional center of the Valladolid province and of the autonomous community of Castile and Leon.

According to census in 2004, the overall population of the city of Valladolid was 321,713 persons, and the population of the entire urban area was near 400,000.

History

Being a small village, Valladolid was captured from the Moors in the tenth century. Later, in the eleventh century, it was improved by count Pedro Ansúrez. In 1469 Queen Isabella of Castile and King Ferdinand of Aragon celebrate theirs wedding in the city. Till the fifteenth century it was the residence of the kings of Castile and the capital of the Kingdom of Spain till 1561, when Philip II, born here, set Madrid to be the capital. Christopher Columbus died in Valladolid in 1506 in a house which became a Museum dedicated to him. It was made the capital of the Kingdom again between 1601 and 1606 by Philip III. It happened in the period when Cervantes published his first edition of Don Quixote in 1605.

'Battle of knights in the main square of Valladolid'.

Nonetheless the city still has few architectural manifestations of its former glory: the unfinished cathedral, the church of Santa Maria la Antigua, the Plaza Mayor (Main Square) (that was used as a template for that of Madrid and of future main squares in the Castilian-speaking world), the National Sculpture Museum (located next to the church of Saint Paul), which includes Spain's greatest collections of polychrome wood sculptures, and the Faculty of Law of the University of Valladolid, whose façade is one of few remaining works of Narciso Tomei, that very artist who did the transparente in the Toledo Cathedral. The Science Museum is situated next to the Pisuerga River. The only remaining house of Miguel de Cervantes is also in Valladolid. Though it was never finished, the Cathedral of Valladolid was designed by Juan de Herrera, an architect of El Escorial. Valladolid is an economic center of the autonomous community, having an important automobile industry (IVECO, FASA-Renault, Michelin). There is an airport at nearby Villanubla, with connections to London-Stansted, Paris, Brussels-Charleroi, Milan, Lisbon, Barcelona and Vigo.

Main sights

A great part of the capital of Castile-León preserves its antiqueness - aristocratic houses and religious buildings. Among them is the unfinished Cathedral that was ordered by King Philip II and designed by the architect Juan de Herrera in the 16th century. Because of their deaths the church was left unfinished and was not opened until 1668. Years later, in 1730, Master Churriguera finished all works on the

main front. The inner part of the cathedral, the great chapel houses, and the magnificent reredos were made by Juan de Juni in 1562. This complex relates to the Diocesan Museum, which holds carvings attributed to Gregorio Fernández and Juni himself, as well as a silver monstrance by Juan de Arce.

The large Gothic church of Saint Benedict (San Benito) was built between 1500 and 1515, with an unusual tower. The Saint Michael Church (San Miguel), built at the end of the 16th century by the Jesuits, hosts excellent reredos by Gregorio Fernández. The façade of the San Pablo Church is famous by its Gothic statues and decoration. The Savour (El Salvador) Church has a façade built around 1550 and a picturesque brick tower dating from the 17th century. The church of Saint Jamea (Santiago) has reredos depicting the *Adoration of the Magi* (1537) created by Berruguete. The Gotic church of Saint Mary the Ancient (Santa María de La Antigua) has an unusual pyramid-shaped Romanesque tower from the 12th century. The Monastery of Santa María la Real de las Huelgas was originally built in 1600. The Monasterio de Santa Ana has various paintings by Francisco de Goya. San Juan de Letrán Church has an outstanding Baroque façade built in 1737. Beside this last church is the Monasterio de los Padres Filipinos, designed by the famous architect Ventura Rodríguez in 1760.

The heart of the old city is the 16th-century Plaza Mayor, presided over by a statue of Count Ansúrez. On its one side stands the City Hall, built at the beginning of the century and crowned by the clock

tower. There is the Palace of Los Pimentel in the nearby streets. The building is the seat of the Provincial Council today and is one of the most important, because King Philip II was born in it on the 21st May, 1527. The Royal Palace, the 16th-century Palace of the Marquises of Valverde and that of the banker Fabio Nelli, built in 1576, should also be pointed out. The Museum of Valladolid occupies this complex, exhibiting a collection of furniture, sculptures, paintings and ceramic pieces.

Plaza Mayor and city hall, Valladolid

The University, whose Baroque façade is decorated with various academic symbols, and the Santa Cruz College are one of the first examples of the Spanish Renaissance and are a great evidence of the cultural importance of Valladolid.

There still remained a few houses where great historical characters once lived. For instants, the Casa de Cervantes was the residence of the author of Don Quijote and his family between 1603 and 1606. In this very house the writer polished his masterpiece. Visiting the

house-museum, you get closer to the way of life of a noble family in the 17th century. You can also visit the Christopher Columbus House-Museum, where the narrator spent his last years. Nowadays the palace exhibits various pieces and documents related to the discovery of America.

Valladolid still preserves the house, where José Zorrilla was born. The house is opened for visitors and exhibits various personal possessions, furniture and documents that belonged to the Romantic writer. Valladolid offers a wide range of leisure and cultural opportunities: cinemas, theatres and museums.

National Sculpture Museum

The National Sculpture Museum in San Gregorio College is a splendid Flemish Gothic style building - one of the most outstanding buildings in the provincial capital. It represents the exhibition of polychrome carvings made by such artists as Alonso Berruguete or Gregorio Fernández. The Museum of Contemporary Spanish Art, located in the Herreriano Courtyard, is one of the cloisters of the former Monastery of San Benito and preserves more than 800

paintings and sculptures of the 20th century. The Christopher Columbus Museum reminds us of Christopher Columbus, the Italian navigator who died in Valladolid.

The University of Valladolid is a university in the city of Valladolid in the Valladolid province of the autonomous region of Castile-Leon, in Spain.

Originally it is closely related to the General Studio of Palencia. The University of Valladolid, as most medieval universities, appeared as a result of urban population growth. Remarkable is the fact that the University of Valladolid was a well organized unity from the very beginning. In 1293 the King Sancho IV founded the General Studio of Alcalá on the bases of the model studio that had been established in Valladolid few years earlier.

At first in the Studio of Valladolid the basic disciplines were taught. They are Grammar, Arithmetic, Latin and Holy Scriptures. During

the reign of Alphonso XI, Pope Clement VI granted it the *licentia ubique docendi* in 1347. After the schism, Pope Martin V (1417) granted the right to teach Theology, thus giving the university the highest academic status and finally completing the range of disciplines that were already being taught in Valladolid: Law, Canons, Medicine and the Arts. The University was declared one of the Major Universities of the Kingdom in the 16th century, together with those of Salamanca and Alcalá. The Faculty of Law, bolstered by the Chancery, was of a great significance, as well as the Faculty of Medicine. In 1589, Philip II granted Valladolid the Privilege of the *Conservatoría*, which was the recognition of its institutional plenitude as well as complete and open jurisdiction, together with the explicit recognition of the autonomy of the University.

At the beginning of the 19th century the number of students in the University of Valladolid increases to such extent that the University gets regional and then national influence. Thus it overcomes the economic and social inertness of the 17th and 18th centuries. The University is constantly progressing in the first half of the 20th, when new centers for Law and Medicine, the Arts Faculty (in 1917) and the Science Faculty (in 1945) appear in there.

The restructuring of the university district (the creation of the Bilbao (1968) and Santander (1972) districts) heralded the beginning of a new era in the development of the University of Valladolid. During the 1994-1995 academic year the university campus of Burgos became the new University of Burgos. It was the third that gained

independence from the former widely extended District of the University of Valladolid.

Thanks to the efforts and tenacity of several generations of professors and governing bodies, the heritage of the University of Valladolid was gradually enriched by the incorporation of new campuses (Soria and Segovia) and the creation of new faculties and schools. It breathed a new life into the teaching and research of this age-old university institution, and made it one of the most prominent centers of higher education in Spain, with a wealth of subjects and at the forefront in many fields of research.

Today 25 centers on the campuses of Valladolid, Palencia, Segovia and Soria teach near 30.000 students, give seventy one three-year diplomas and full graduate degrees, as well as numerous postgraduate courses. The dedication of almost 2.700 lecturers and researchers as well as 950 administrative and service staff ensures that the University of Valladolid is able to carry out its work and meet the demands of society in terms of teaching and research quality. The highest level of The University of Valladolid is a model for a large number of eminent Spanish and Latin-American universities, which emulated the style and manner of this institution.

II. Work meeting of the representatives of participating Universities in Valladolid. 2nd Workshop of the training programme for developers of educational courses

II.1 Meeting programme

Tuesday, 26th: Reception at the University of Valladolid. Agenda review. Short lecture about ICT applications in government.

Wednesday 27th: Representative Office of the Spanish Central Government in the Autonomous Region of Castile and Leon. Description of the coordination activities by Civil Protection Agency (responsible for coordination

in emergencies at local-regional-national-international levels).

Thursday, 28th: General Foundation of University of Valladolid. Activities and projects in ICT technologies and e-government. Reception at the Santa Cruz Palace by the President of the University of Valladolid and the International Relationships Vice-rector. Looking for opportunities for further cooperation of University of Valladolid with partner universities.

Friday, 29th: Visit to ADEuropa Foundation.

Monday, 1st:

9.30 – 11.30: Introduction to the courses. Presentations. Social Systems Engineering Centre.

12.00 – 14.00: Entrepreneurship: Financial issues.

15.30 – 17.30: Lecture by Dr.Adam Chmielewski, Centre for Distance Learning of Maria Curie-Sklodowska University, Poland.

Tuesday, 2nd:

9.30 – 11.30: Project Management. Javier Pajares (University of Valladolid, Spain).

12.00 – 14.00: Entrepreneurship: Organization. Natalia Martin Cruz (University of Valladolid, Spain).

15.30 – 17.30: Multiagent systems Applications: Impact of Tag Recognition in Economic Decisions. D.Poza (University of Valladolid, Spain).

Wednesday, 3rd:

09.30 – 11.30: Entrepreneurship: Marketing (I).

12.00 – 14.00: Marketing and innovation: New product development and launch. Javier Pajares (INSISOC, University of Valladolid, Spain).

15.30 – 17.30: A new methodology to manage multi-project environments. MDP/CC. Pablo Sanchez (University of Valladolid, Spain)

Thrusday, 4th:

09.30 – 11.30: Water resource management and GIS. Jose Manuel Galan.

12.00 – 14.00: Corporate social responsibility in European firms. Félix J. López Iturriaga. (Department of Financial Economics).

15.30 – 17.30: Agent Based Modeling and Simulations . Juan Pavón Mestras. (Universidad Complutense Madrid).

Friday, 5th:

09.30 – 11.30: Attractive presentations. Guillermo Montero (University of Sevilia).

12.00 – 14.00: Software for consultancy services.

II.2 List of participants

1. Chernyshenko Sergey Viktorovich – Professor of Koblenz-Landau University;
2. Javier Pajares – INSISOC, University of Valladolid, Spain
3. Adolfo López Paredes – INSISOC, University of Valladolid, Spain
4. Jan Genci – Assistant professor of Technical University of Kosice, Slovakia;
5. Wodecki Andrzej – Director of the Centre for Distance Learning of Maria Curie-Sklodowska University, Poland;
6. Chmielewski Adam - Centre for Distance Learning of Maria Curie-Sklodowska University, Poland;
7. Ustimenko Vasilij – Professor of Maria Curie-Sklodowska University, Poland;
8. Traytak Sergej Dmitrievich – Vice-rector of Moscow State Regional Administration, Russian Federation;
9. Ryabichenko Sergei Anatolievich – Lecturer of Moscow State Regional Administration, Russian Federation;
10. Aram Isabekian – Rector of Yerevan Academy of Fine Arts, Armenia;
11. Gevorgyan Svetlana – Vice-rector of Yerevan Academy of Fine Arts, Armenia;
12. Ruben Topchyan – representative of Armenian Ministry of Education and Science, Director of National Center for Professional Education Quality Assurance, Armenia;

13. Susanna Karakhanyan – Yerevan State Academy of Fine Arts, Head of Development and Enhancement Division of National Center for Professional Education Quality Assurance, Armenia;
14. Lyubchak Vladimir Aleksandrovich – Vice-rector of Sumy State University, Ukraine;
15. Kyrychenko Konstantin Ivanovich - Head of the International Affairs Department, Sumy State University, Ukraine;
16. Kupenko Elena Vladimirovna – Dean of the Faculty of Upgrading and Pedagogical Innovation of Sumy State University, Ukraine;
17. Piven Andriy Grigoriievich – Head of the Center of Computer Technologies, Sumy State University, Ukraine;
18. Fedotova Liudmila Vladimirovna – Vice-rector of Comrat State University, Moldova;
19. Garizan Oleg Fjodorovich – Deputy of Parliament, Moldova;
20. Savula Yarema Grigorjevich – Dean of the Faculty of Applied Mathematics and Information Science of Lviv National University, Ukraine;
21. Kucharskyy Vitaliy Mykhailovich – Associate Professor of Lviv National University, Ukraine;
22. Dyjak Ivan Ivanovych – Associate Professor of Lviv National University, Ukraine;
23. Demura Anton Lvovich – Deputy Head of Higher Education Administration of Dnepropetrovsk Regional State Administration, Ukraine;

24. Demchik Aleksandr Igorevich – Department of research, higher and professional education of Dnepropetrovsk Regional State Administration, Ukraine;
25. Nabokov Anatoliy Vladimirovich - Dnepropetrovsk Regional State Administration, Ukraine;
26. Lyashenko Igor Nikolaevich – professor of Kyiv Shevchenko University – independent expert.

III. Training sources

Welcome Presentation of University of Valladolid

University of Valladolid. Social Systems Engineering Centre

Presentacion

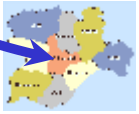
Departamento de Organización de Empresas y Comercialización e Investigación de Mercados

ECESIS in Valladolid

Valladolid, Jan-Feb 2010

Location

- 41 mill inh.
- 17 Regions.
  - Education, Industry, Health.
- Central Government:
  - Coordination, Foreing Office, Army, etc.



CASTILE AND LEON

- 2.5 mill inh.
- 6 Universities.
  - Valladolid (2), Salamanca. Burgos, León, Segovia
- Automobile, food, wine.

Valladolid, Jan-Feb 2010

The City of Valladolid

- 318.461 inh. (2008).
- 407.148 inh (Metropolitan area)
- Main city in Castilla y León.
- Main activities.
  - ✓ Regional administration
  - ✓ Automobile cluster
    - Michelin
    - Renault.
    - Antolín Irausa
  - ✓ Wine:
    - Rivera del Duero.
    - Rueda.
  - ✓ University.
  - ✓ Others: foods, wood, etc.
  - ✓ Services.

Valladolid, Jan-Feb 2010

The City of Valladolid. Historical Buildings

Valladolid, Jan-Feb 2010

The City of Valladolid. Modern Buildings



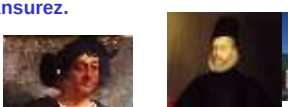


Valladolid, Jan-Feb 2010

History

- **The name Valladolid:**
  - Vallisoletano (*valle soleado*, sunny valley).
  - *Vallis Tolitum* (Valley of waters).


Founded in XI century by Count Pedro Ansurez.



King Philipe II was born in 1527

Capital city of Spain with Philipe III (1601-1606)

Columbus lived and died (1506)

Valladolid, Jan-Feb 2010

The University of Valladolid.

- One of the oldest universities in Europe (XIII Century).
- Main university in Castile and León.
- 2007-08 Data:
  - 24.781students
  - 2609 staff. (T&R).
- Global university:
  - Sciences.
  - Literature, languages.
  - Laws, economics.
  - Engineering.

Valladolid, Jan-Feb 2010

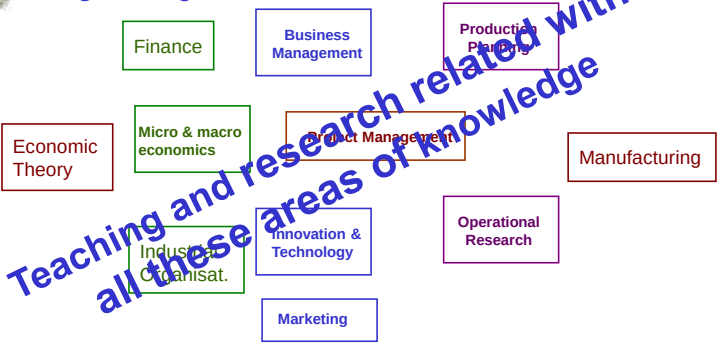
Faculty of Engineering

- Launched in 1976.
- Building: 1986.
- 1300 students.
- Main areas:
  - Mechanical Eng.
  - Automatics.
  - Electronics.
  - Ind. Organisation & Business Economics.
- "Stakeholders": Regional Government, Renault, Michelin, Grupo Antolín, Santander Bank, etc.

Valladolid, Jan-Feb 2010

The department of I.O & B.E.

- A department of I.O & B.E in a Faculty of Engineering!:



Teaching

- Undergraduate:
  - Industrial Engineering: mechanics, electronics, etc.
  - Industrial Organisation Engineering.
- Postgraduate: Phd Courses.
- Master in Project Management.
- Courses in General Management for local enterprises and public administration:
  - Human Resources Management, finance, accounting, technology management, strategy, etc.

Research.

- **Grupo InSiSoc:**
  - Grupo de Ingeniería de los Sistemas Sociales.
  - Social Systems Engineering.
- **Design, research, analysis and management of Complex Socio-economic systems:**
  - Social dimension.
  - Systems Thinking.
  - Bottom-up approach.
  - Multiagent Sytems.
  - Complexity in machine-human systems.

Valladolid, Jan-Feb 2010

INSISOC Essence

Valladolid, Jan-Feb 2010

Social Systems Engineering Centre

Financial markets:
•Volatility.
•Investment strategies

Project Management:
• Resource allocation.
• Portfolio Projt Mgmnt
• Project control and monitoring

Industry dynamics:
•Innovation and Tech.
•Tech. policy
•R&D Management.

Design of institutions and organisations:
•Markets
•Auctions
•Firm Organisation.

Natural resources management:
•Water manag.
•Kyoto Protocol
•Environmental M.

Production/manufactoring
•Scheduling.
•Optimisation.

Valladolid, Jan-Feb 2010

Project Management in InSiSoc

Master in Project Management (V edition)

cecale **CyL Association of Entrepreneurs**

Courses focused in professional certification

Chair INCOSA in Project Management

- **Workshops (CEPMaW08).**
- **Conferences and seminars**
- **Consulting**
- **e-learning**

Valladolid, Jan-Feb 2010

Project Management for improving firm success

Javier Pajares, Adolfo López Paredes. INSISOC. University of Valladolid (Spain).

Introduction.

In the global economy, firms have to compete in a complex socio-economic environment. During the last quarter of the 20th Century, technological advances and innovation have changed the way firms have to compete in the market: product life cycles have been dramatically reduced, whereas product development costs have increased. Companies must invest big quantities of money to develop new products and a short time to recover money.

Of course, in this context, firms cannot make mistakes in their research, development and innovation projects. And in order to compete in the markets, they should manage their (scarce) resources efficiently, so that all the firm objectives are fulfilled on time and budgeted costs. Therefore, firms should use efficient managerial tools, in order to manage their processes and projects.

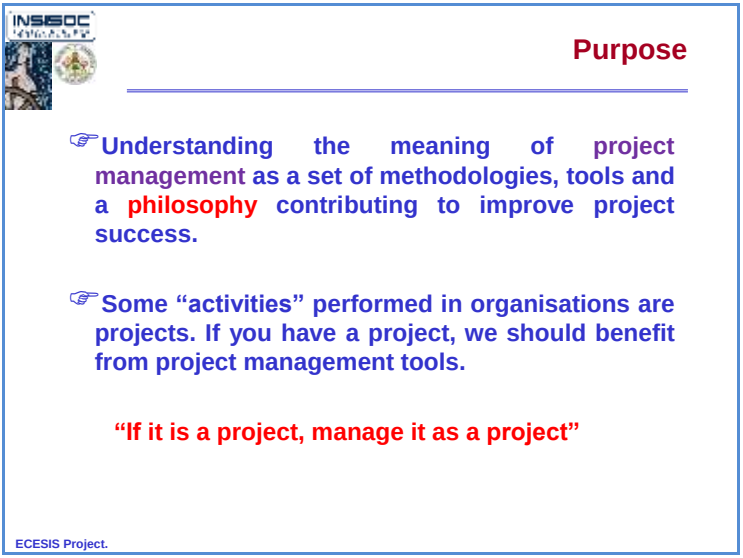
Most of the activities carried out by companies are projects, therefore, they should be managed as projects. In order to meet their strategic objectives, and to meet customers requirements, firms have to carry projects and processes. More or less, firms have succeeded implementing methodologies to manage processes, but they have not taken the same care when managing projects.

We suggest firms to discover what activities are project and what are processes, and to implement project management "bodies of knowledge" in order to manage projects efficiently. In this lecture, we explain what a project is, and what methodologies should be applied to manage projects.

Nowadays, a lot of firms are moving from a functional organizational structure to a "project based" firm, and they are implementing Project Management Offices (PMO´s) to support project managers and coordinate resources between projects.

Project Management

Javier Pajares, INSISOC, University of Valladolid



What is a project?

☞A project is a **temporary** endeavour undertaken to create a **unique** product, service or result. PMBoK(2009).

☞Temporary endeavour to get a set of **unique** objectives in a particular period of **time**, **cost** and **quality**.

- Scope
- Time
- Cost
- Customer satisfaction.
- Stakeholders satisfaction

ECESIS Project.

Projects. Examples











ECESIS Project.

Project management

- **Project management: the application of knowledge, skills, tools and techniques to project activities to meet project requirements.**

- **It involves planning, organizing, monitoring and controlling the project activities in order to accomplish the project requirements.**

ECESIS Project.

Project Management History

H. Gantt

F. Taylor

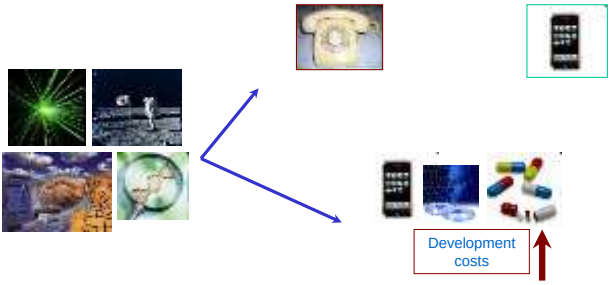
PERT
CPM
Etc.

IPMA 1967

PMI 1969

ECESIS Project.

Project Management in the XXI Century



- Organizing firms “by projects”.
- Managing multi-project environments
- Project *Portfolio Management*
- PMO, *Project Management Office*

ECESIS Project.

Do we need “professional project management”?

ECESIS Project.

Do we need "professional project management"?

• TAV Madrid-Barcelona.

• 1000 mill € over-cost
• 4 years delayed

ECESIS Project.

Do we need "professional project management"?

Project Success. (PMI data).

(Scope, quality, time, costs).

- Success: 16 %.
- Without success: 84 %
  - Mid success: 32 %
  - Disaster: 52 %

¿Why?

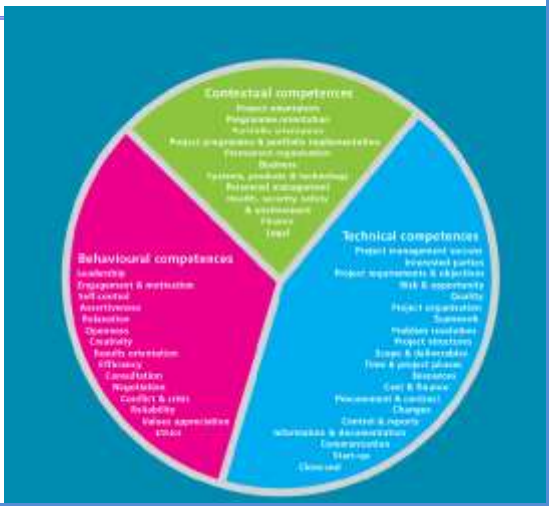
☞ Difficulty to manage project COMPLEXITY
☞ Project management methodologies are not widely used.

Project management methodologies and tools:

☞ 80 % of "*high performance*" projects are managed by (certified) senior project managers.

ECESIS Project.

PM Models. IPMA Competence model



ECESIS Project.

IPMA International Project Management Association.

	Asociación Española de Ingeniería de Proyectos (AEIPRO)
	Stowarzyszenie Project Management Polska
	Russian Project Management Associaion (SOVNET)
	Project Management Association of Slovakia (SPPR)
	Ukrainian Project Management Association (UPMA)
	Open to new members…..

ECESIS Project.

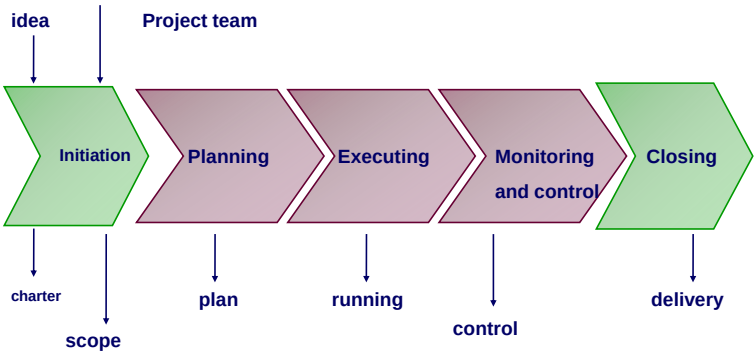
PM Models. PMI`s PMBoK

Project Management Institute

- ☞ *PMBoK: Project Management Body of Knowledge*
- ☞ 5 groups of processes
- ☞ 9 knowledge areas

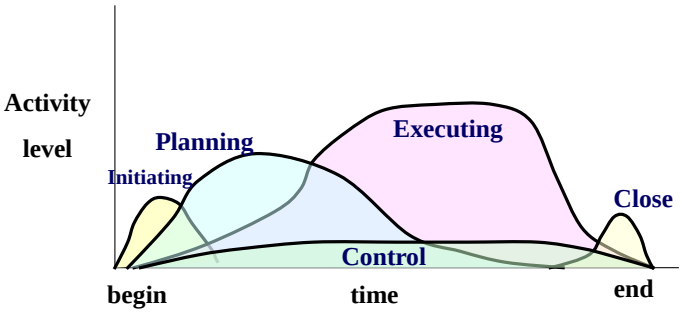
ECESIS Project.

PMBoK: Process groups



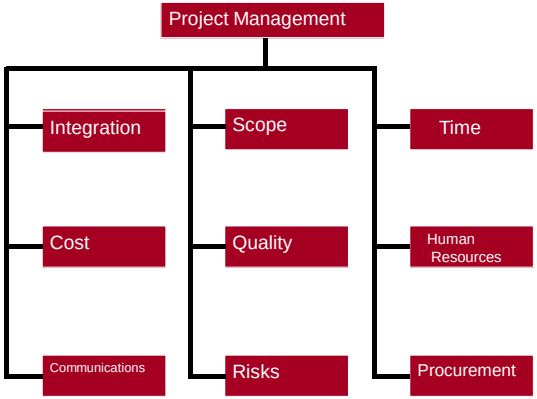
ECESIS Project.

PMBoK: Process groups



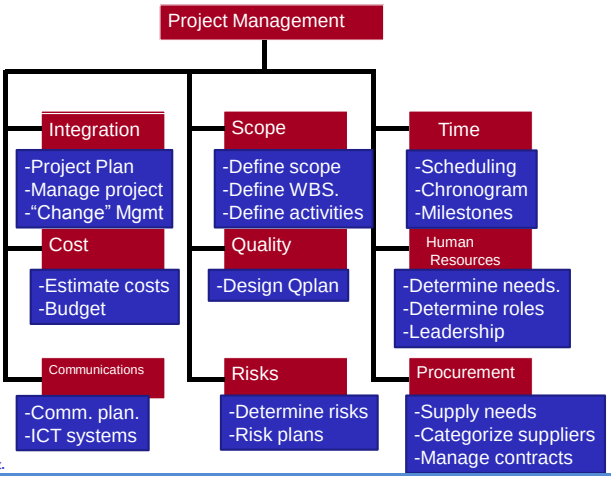
ECESIS Project.

PMBoK: Knowledge areas



ECESIS Project.

PMBoK: Knowledge areas



ECESIS Project.

Project scope

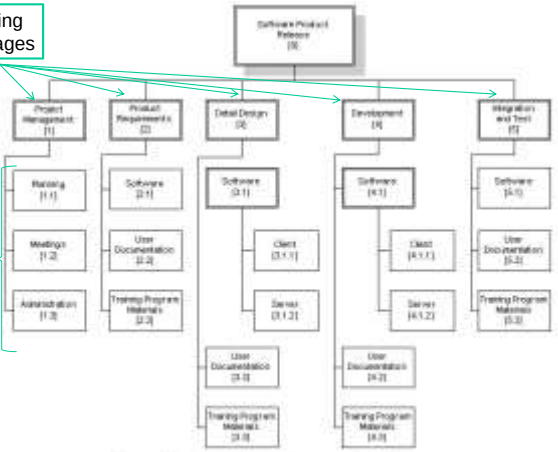
- **Define project objectives and purpose.**
- **Define scope:**
  - Define deliverables.
  - What is included and what is not included?
  - Define all the work to be done to finish the project.
- **WBS (Work Breakdown Structure):**
  - Graphical representation and decomposition of all the work to be done to finish the project.

ECESIS Project.

WBS. Work Breakdown Structure

Working packages

Groups of activities



Sample Work Breakdown Structure organized by phase

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Time management

- Define activities
- Scheduling: Gantt, PERT, Critical Chain, etc.

- Milestone calendar

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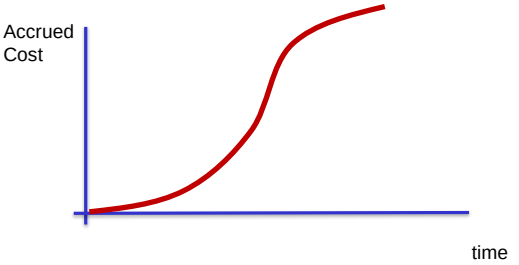
Cost Management

- Estimate costs
- Create Budget.
  - From the WBS: Estimate the cost of activities.
  - Cost “baseline”



ECESIS Project.

Risk management

- What are the main risks of our project?.
- What will be the consequences?
- Risk plans.

ECESIS Project.

Exercise. Project Plan

- Organize a TEMPUS "one week meeting" in Valladolid, [4-10] October 2010.

- Define objectives, scope and deliverables.
- Define WBS.
- Define schedule (chronogram, milestones).
- Estimate costs and budget.
- Risk analysis

ECESIS Project.

ABACO PROJECT
Computational methodologies for managing multi-project environments

http://www.insisoc.org/abaco-gema/

ECESIS Project.

Impact of Tag Recognition in Economic Decisions

David J. Poza, University of Valladolid

Objectives

- Replication of the **Classes Model**
  - Robert Axtell, Joshua M. Epstein, H. Peyton Young: The emergence of economic classes in an agent-based bargaining model (2004)
- Model analysis
  - Decision rule
  - Payoff matrix

Index

PART I

1. Replication of the Classes Model
   - 1.1. The model
   - 1.2 The model with one agent type
   - 1.3 The model with two agent types
2. Model extensions
   - 2.1. Changing the decision rule
   - 2.2. Changing the payoff matrix
3. Results

The Model

- Model overview:
  - Two agents demand some portion of a 'pie'
  - The portion of the pie they get ***depends on their opponent's demand***:
    - If the sum of the two demands is less or equal than 100% of the pie, each player gets what he demanded
    - Otherwise, both get nothing
  - Decisions based on their experience about previous matches

The Model

- Bargaining process flow chart:
  1. Create a population of *n* agents with an *m*-size memory (at first, *m* random values)
  2. For each iteration:
     2.1. Put the agents into pairs (at random)
     2.2. For each pair of agents:
     - They choose randomly with *probability ε*
     - They use the information stored in their memory to demand the portion that maximizes their benefit with *probability 1-ε*

     2.3. They store the decision taken by their opponent in their memories
     2.4. Go to step 2.2. until all the agents have played
  3. Go to step 2 and start a new iteration

The Model

- What portion to choose?

  30% (low) 50% (medium) 70% (high)
- Payoff matrix:

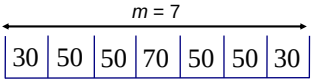
player 1's demand \ player 2's demand	**30**	**50**	**70**
30	30,30	30,50	**30,70**
50	50,30	**50,50**	0,0
70	**70,30**	0,0	0,0

The Model

- Decision rule:

Demand the option that maximizes the expected benefit

Check memory



$P(L)=\frac{2}{7}$ $P(M)=\frac{4}{7}$ $P(H)=\frac{1}{7}$

The Model

- Decision rule:

Demand the option that maximizes the expected benefit

Check memory → Compute the mean benefit → Maximize benefit

Benefit I get if I demand low (30)

$B(30)= 30 \cdot P(30) + 30 \cdot P(50) + 30 \cdot P(70) = 30$

Benefit I get if I demand medium (50) **Demand medium**

$B(50)= 50 \cdot P(30) + 50 \cdot P(50) + \mathbf{0} \cdot P(70) = 42.9$

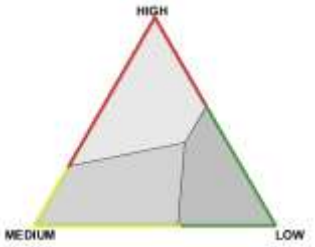
Benefit I get if I demand high (70)

$B(70)= 70 \cdot P(30) + \mathbf{0} \cdot P(50) + \mathbf{0} \cdot P(70) = 20$

$P(30)=\frac{2}{7}$ $P(50)=\frac{4}{7}$ $P(70)=\frac{1}{7}$

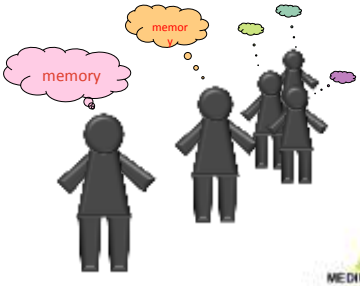
The Model

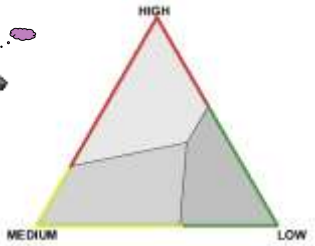
- The simplex:
  - Representation of the agents according to their memory status



The model with one agent type

- The agents are indistinguishable from one another (no tags)





The model with one agent type

- Two points of attraction:

Equitable equilibrium

all the agents have at least (1-ε)·m instances of M in their memories

Fractious state

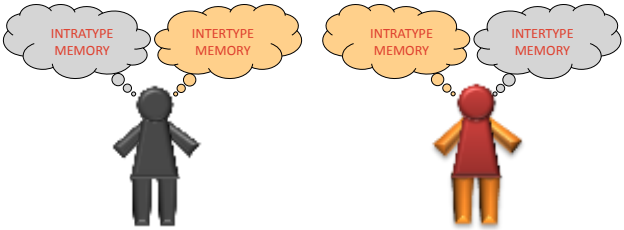
all the agents have at most ε·m instances of M in their memories

The model with two agent types

- Each agent has a distinguishable tag (colour)
- They are able to identify their opponent's tag
- There are two types of matches
  - INTRATYPE MATCHES: Among players with the same tag
  - INTERTYPE MATCHES: Among players with different tag

The model with two agent types

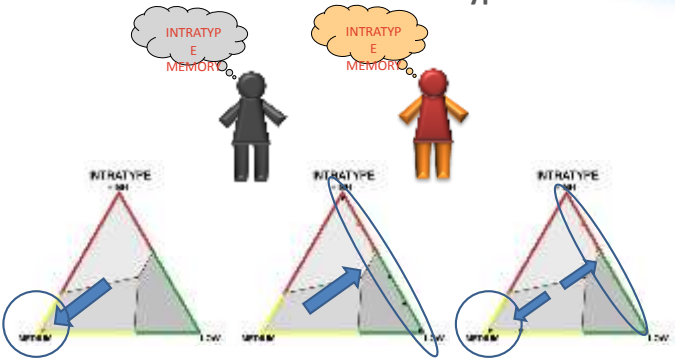
– The agents have two memory sets
  - One for intratype matches
  - Another for intertype matches



– Two memory sets → two simplexes

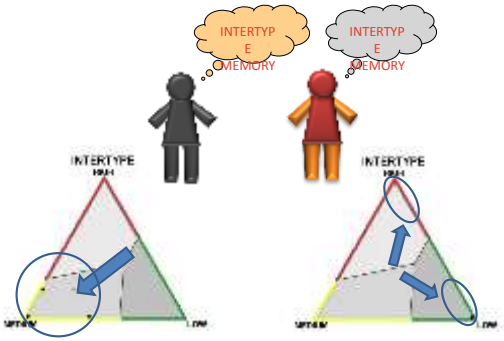
The model with two agent types

– Three results in the case of **intratype** matches:



The model with two agent types

– Two results in the case of **intertype** matches:



Model extensions

- Fast & frugal decision rule:

  Demand the best reply againts the opponent's most frequent demand

Check memory → Choose the best reply

probability that my opponent demands low
probability that my opponent demands medium
probability that my opponent demands high

$m = 7$

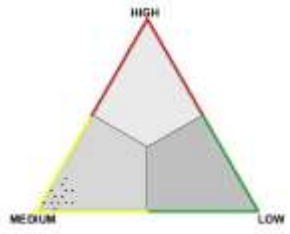
player 2's demand

player 1's demand	30	50	70
30	30,30	30,50	**30,70**
50	50,30	**50,50**	0,0
70	**70,30**	0,0	0,0

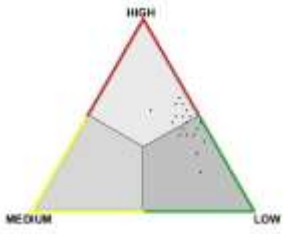
Model extensions

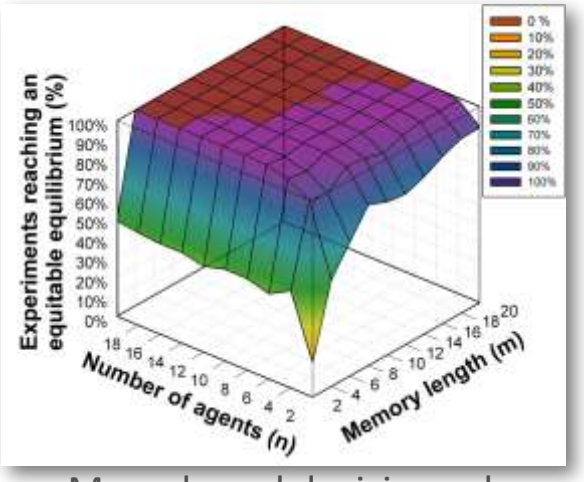
- Two points of attraction:

Equitable equilibrium

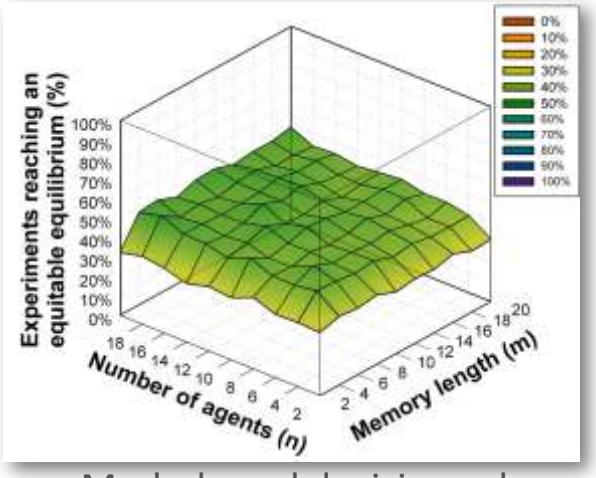


Fractious state





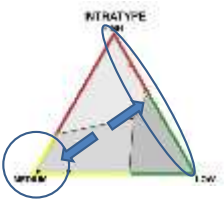
Mean-based decision rule

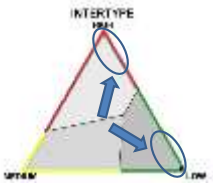


Mode-based decision rule

Model extensions

- Two agent types:
  - When we introduced the *fast & frugal* decision rule, segregation appeared much more frequently
    - In intratype matches
    - In intertype matches





The model with one agent type

- Introduction of new payoff matrices:

	H	M	L
H	0,0	0	**95,5**
M	0,0	**50,50**	50,5
L	**5,95**	5,50	5,5

	H	M	L
H	0,0	0	**80,20**
M	0,0	**50,50**	50,20
L	**20,80**	20,50	20,20

	H	M	L
H	0,0	0	**65,35**
M	0,0	50,50	**50,35**
L	35,65	**35,50**	35,35

	H	M	L
H	0,0	0	**90,10**
M	0,0	**50,50**	50,10
L	**10,90**	10,50	10,10

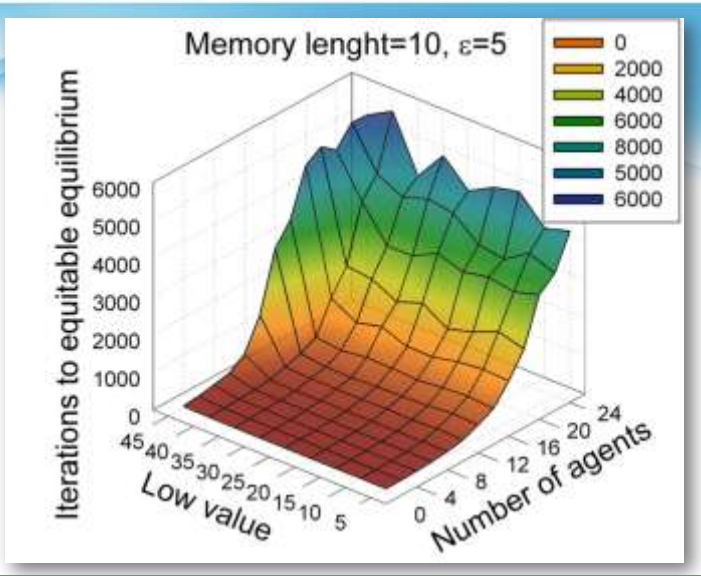
	H	M	L
H	0,0	0	**75,25**
M	0,0	**50,50**	50,25
L	**25,75**	25,50	25,25

	H	M	L
H	0,0	0	**60,40**
M	0,0	**50,50**	50,40
L	**40,60**	40,50	40,40

	H	M	L
H	0,0	0	**85,15**
M	0,0	**50,50**	50,15
L	**15,85**	15,50	15,15

	H	M	L
H	0,0	0	**70,30**
M	0,0	**50,50**	50,30
L	**30,70**	30,50	30,30

	H	M	L
H	0,0	0	**55,45**
M	0,0	**50,50**	50,45
L	**45,55**	45,50	45,45



Conclusions

- **Replication of the Classes Model**
  - Build the program & simulations
  - Same results (1-agent type and tag model)
- **Model extensions**
  - New decision rule
    - Same points of attraction
    - Points of attraction visited with different rates
    - Segregation occurs more frequently
  - New payoff matrix
    - Each matrix has a different convergence time

Conclusions

Applets available at:

- **Model with one agent type:**

http://www.insisoc.org/bargaining_model_no_tags.html

- **Model with two agents types:**

http://www.insisoc.org/bargaining_model_tag_model.html

Index

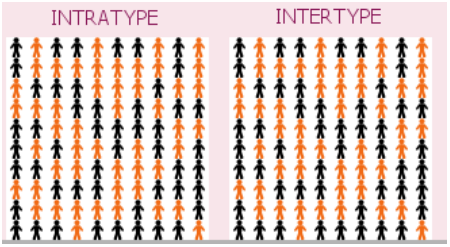
PART II

1. Agents distributed on a regular spatial structure
   - 1.1. Random distribution of the tags
   - 1.2. Tags distributed in four squares
   - 1.3. Tags distributed in two stripes
2. Results

3. Time to play with the application!

Regular Spatial Structures

- 1st scenario: Random distribution of the tags



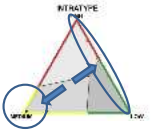
Regular Spatial Structures

- 1st scenario: Random distribution of the tags

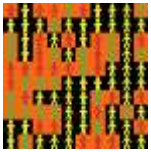
- intratype games -

equitable equilibrium

fractious state



segregation



Regular Spatial Structures

- 1st scenario: Random distribution of the tags

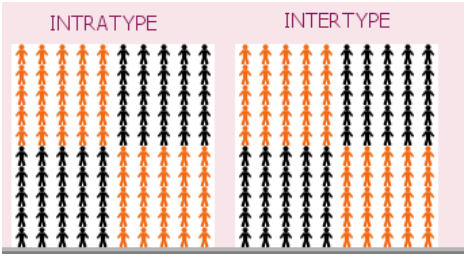
- intertype games -

equitable equilibrium

segregation

Regular Spatial Structures

- 2nd scenario: Tags distributed in four squares



Regular Spatial Structures

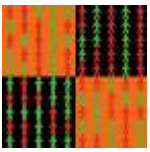
- 2nd scenario: Tags distributed in four squares

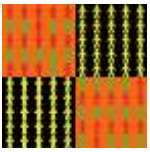
- intratype games -


equitable equilibrium


fractious state


segregation





Regular Spatial Structures

- 2nd scenario: Tags distributed in four squares

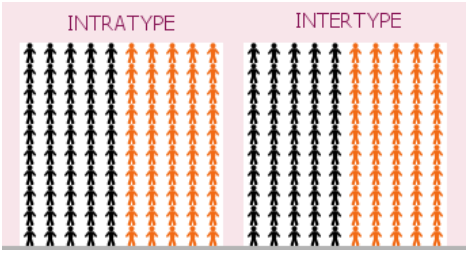
- intertype games -

equitable equilibrium

segregation

Regular Spatial Structures

- 3rd scenario: Tags distributed in two stripes



Regular Spatial Structures

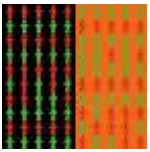
- 3rd scenario: Tags distributed in two stripes

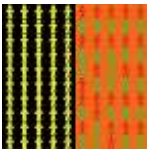
- intratype games -

equitable equilibrium

fractious state

segregation





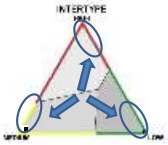
Regular Spatial Structures

- 3rd scenario: Tags distributed in two stripes

- intertype games -

equitable equilibrium

segregation



segregation

Conclusions

- **New cases of segregation**
  - Different decisions depending on the border within agents with the same tag

  - New points of attraction:
    - Borders medium-medium

Conclusions

Applet available at:

http://sites.google.com/site/classesgrid/

A new methodology to manage multi-project environments

Pablo Sánchez, University of Valladolid

Why PPM is necesary ?

- Solve the most common problems of an organization
  - Too many active projects
  - Projects without value for the organization
  - Projects not linked to strategy objetives
  - Unbalanced portfolios

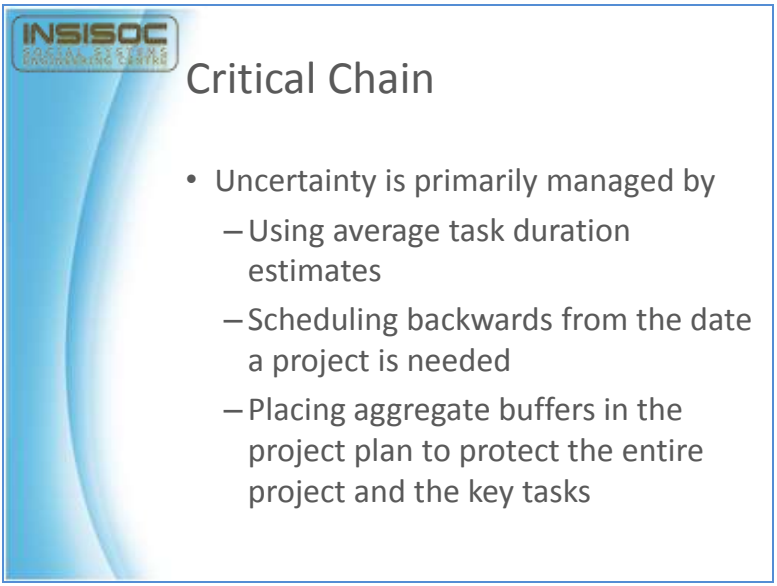
MDP/CC
-
A new methodology in PPM

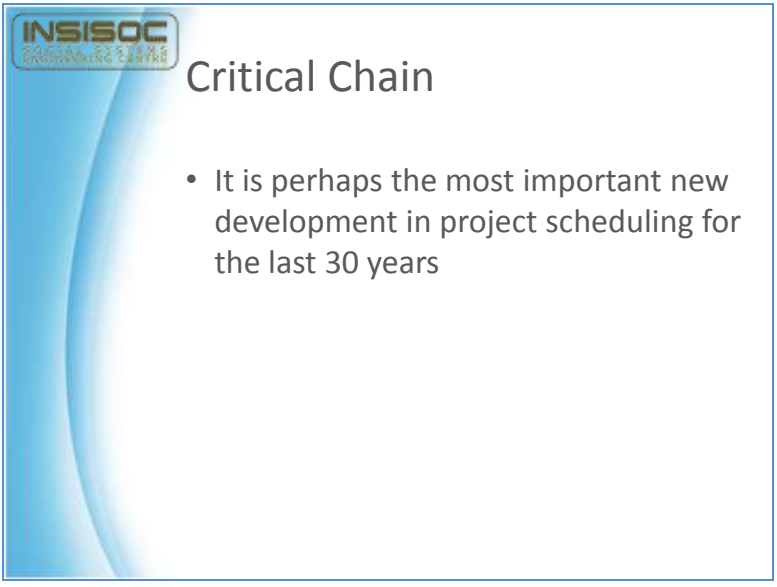
MDP/CC

- Most Decisive Portfolio / Critical Chain
  - Is a new methodology that integrates the selection and scheduling of projects
  - Is orientated to achieve the organization´s objetives
  - Is based on Critical Chain

Critical Chain

- Is an outgrowth of the Theory of Constraints (TOC) developed by Eliyahu Goldratt to scheduling and managing manufacturing.
- Focuses on bottlenecks


INSISOC
Critical Chain
• Uncertainty is primarily managed by
– Using average task duration estimates
– Scheduling backwards from the date a project is needed
– Placing aggregate buffers in the project plan to protect the entire project and the key tasks


INSISOC
Critical Chain
• It is perhaps the most important new development in project scheduling for the last 30 years

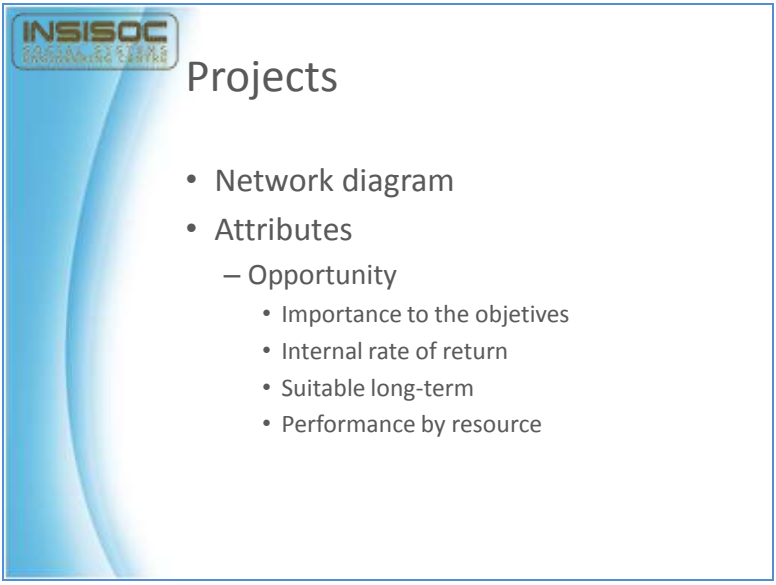
Simplifications

- MDP/CC is a static method, not dynamic
- There are only two sorts of resources (Critical and General)
- Two resources of the same sort are interchangeable

Preliminary studies

- Analyze in detail the Organization
- Analyze in detail each project
  - Network diagram
  - Task duration
  - Quantify each attribute (provided by MDP/CC)


INSISOC
Organization
• Resources
• Objetives
• Preferences
• Limitations
• Requeriments (MAX-Min)


INSISOC
Projects
• Network diagram
• Attributes
– Opportunity
• Importance to the objetives
• Internal rate of return
• Suitable long-term
• Performance by resource


INSISOC
Projects
• Attributes
– Risk
• feasibility
• market
• financial
• technical


INSISOC
Projects
• Attributes
– NVA
– Research
– First year NVA
– Start date
– End date

Project Selection

- Two methods
  - Ordination method
    - each project gets a punctuation according to their attributes and the project group they are being compared with
  - Scoring method
    - Each project gets a punctuation as if it were an examination

Project Selection

- The output of these methods is a punctuation, not project selection
- No project is selected until there is a valid scheduling

Scheduling

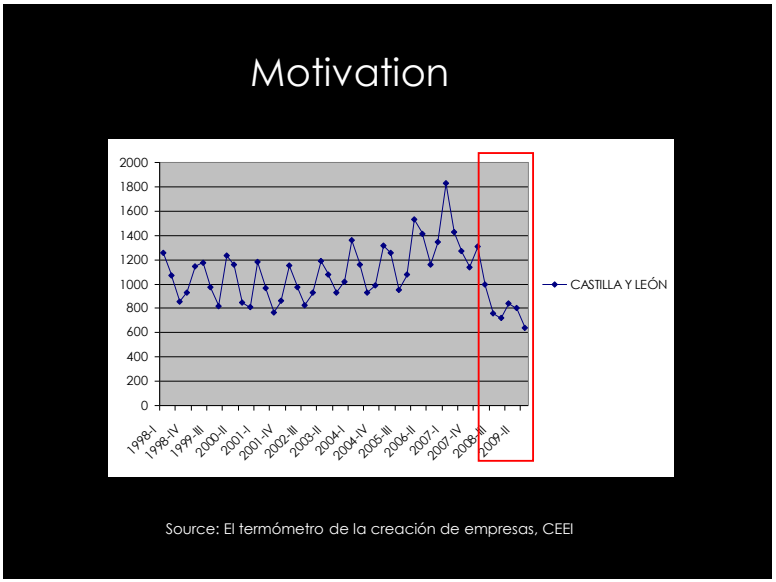
- **Teamwork** (each project must do its best for itself and for the organization)
- Recursive process
- Based on CC
- Optimal Portfolio that can be done

Scheduling

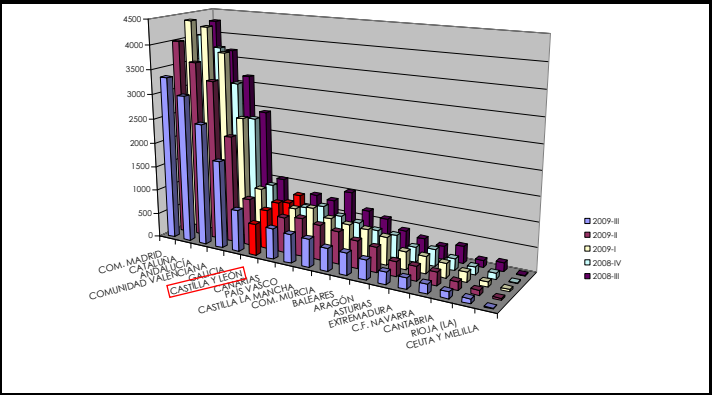
- Implement critical chain to each project
  - protect critical activities (bottleneck resources)
- Stagger the projects (activities)
- Insert control-buffers

The Entrepreneurs

Natalia Martín Cruz, University of Valladolid



Motivation

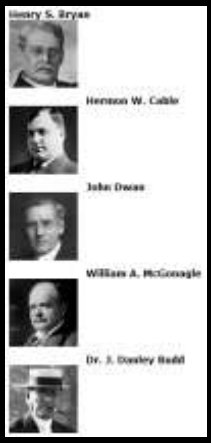


Source: El termómetro de la creación de empresas, CEEI

Two types:

- Corporate entrepreneurs
- Individual entrepreneurs

Corporate entrepreneurs

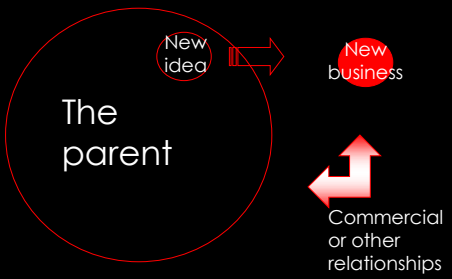


Corporate entrepreneurs

- Why firms develop new ventures?
- Which are the more 'entrepreneurial'?

Spin-off definition:

- There is not a common definition of spin-offs (corporate spin-off, intra spin-off)
- Our definition: a firm that is partially owned by the parent but independently managed



Number of spin-off in Spain

Year	1992	1993	1994	1995	1996	1997
No. of observations	1,997	1,869	1,876	1,702	1,716	1,920
Corporate Spin-offs	5	30	26	19	15	16

	1998	1999	2000	2001	2002	Total
No. of observations	1,776	1,754	1,870	1,724	1,708	19,912
Corporate Spin-offs	18	11	12	11	3	**166**

Why some firms create spin-offs?

Structure of resources and capabilities of the parent firms that make them create value through corporate spin-offs:

- To exploit the social networks
- To use the knowledge created in the innovative firm
- To limit the extent of diversity in the firm

H1. Parent firms which construct social networks are more prone to develop corporate spin-off strategies.

H2. Parent firms with higher investments in knowledge resources are more prone to develop corporate spin-off strategies.

H3. Parent firms with higher levels of diversification, in order to increase corporate focus, are more prone to develop corporate spin-off strategies.

GROUP	0.882	***
	(0.306)	
RDEXP	34.478	**
	(17.026)	
RDWORK	8.052	
	(26.004)	
GRAD	21.888	**
	(10.247)	
SIZE	2.661	**
	(1.205)	
LEV	0.138	*
	(0.075)	
HERF	0.143	**
	(0.064)	

Percent correctly predicted	72.28	
No. obs.	317	
Likelihood ratio	14.42	***
Hausman test	31.84	***

Individual entrepreneurs




Individual entrepreneurs

- Why individuals start a business?
- Which individuals are entrepreneurs?

Which entrepreneurs succeed?

What that means being an successful entrepreneur?

17

Success :

Achieve a benchmark in profits

Achieve a benchmark in sales

Reduce the risk of the project

Satisfaction with the project

Achieve a benchmark in employees

Achieve objectives

Satisfy the stakeholders

Achieve social recognition

Being innovative

Guarantee the survival of the project

…

Which entrepreneurs succeed?

Two answers:

- Depends on psychological features, (leadership, responsibility, proactivity), demographic features (training, experience)

Benefits
Sales
Risk

- Depends on emotions

Satisfaction with the project

19

Initial sample: 1.448 entrepreneurs from Estado do Ceará (Brazil) participating in the program 'Empretec' (SEBRAE) from 1997 to 2004

Final sample: 539 entrepreneurs from Fortaleza and other 32 cities of Estado do Ceará

2 research:

Initial sample : 30.000 entrepreneurs from the data base CECALE (Castilla and León, Spain) in 2006

Final sample : 335 entrepreneurs from each of the seven regions in Castilla and León (Spain)

20

First research (Brazilian entrepreneurs)

Objective of the research:

To reveal the traits of the entrepreneur which push him towards the achievement of a mix of growth and profitability objectives

Behavioral theory

(Cyert and March, 1963; Simon, 1979)

Individual's utility function depends on his rewards and contributions

Entrepreneur viewed as shareholder and manager → will balance profitability with growth

Risk will decide the balance

The objectives of the entrepreneur

A) High growth/ High profitability	B) High growth/ Low profitability
C) Low growth/ High profitability	D) Low growth/ Low profitability

Mix of desired objectives in the early stages of the venture

The profile entrepreneur. Theoretical contributions

Who is an entrepreneur?
Who is a successful entrepreneur?

- Psychological theories (McClelland, 1961; Cross and Travaglione, 2003; Baron and Markman, 2000; Hisrich and Shepherd, 2005; among others)
- Upper-echelon theory (Lazear, 2003; Carpenter, 2002; among others)
  - Education
  - Experience

Sample and information

Initial Sample

1.448 entrepreneurs in the State of Ceará (Brazil) who participate in the Empretec Program (SEBRAE) from 1997 to 2004

Final Sample

539 entrepreneurs from the city of Fortaleza and from more than 32 cities in the State of Ceará

Period of information collection (questionnaire by personal interviews)

April to July 2005

Variables (I)

Variables for the objective *Likert 5 intervals*

- Growth (sales)
- Profitability (ROA)
- Risk (Leverage)

Variables for the entrepreneurial project

- Origin (spin-off, family project, individual)
- Legal status (corporation, single manager, association)

Variables (II)

Variables for the entrepreneur (psychological) *Likert 1-5*

Leadership
Risk aversion
Negotiation skills
Self-control
Ethics
Creativity
Intuition
Autonomy
Pro-activity
Self-evaluation
Outgoing spirit

Factor analysis (1) → KMO: 0.9
eigenvalue value: 6.705
variance explained: 29.15%

Variables (II)

Variables for the entrepreneur (non psychological) *Likert 1 - 5*

- Experience (professional, managerial, previous entrepreneurial)
- Education (formal, other education)

Factor analysis (2) → KMO: 0.534
eigenvalue value: 1.87
variance explained: 20.61%

eigenvalue value: 1.44
variance explained: 26.79%

Results

- ✓ Characteristics of the entrepreneurial project and entrepreneur objectives (ANOVA)
- ✓ Traits of the entrepreneur and his objectives (ANOVA)
- ✓ Taxonomy of entrepreneurs (Cluster K-means)

Characteristics of the entrepreneurial project (Origin) and entrepreneur objectives

Variable	n° obs.	1 spin-off	2 family	3 individual	Test t	Value p
GROWTH	404	3,095	2,768	2,781	0,605	0,547
PROFIT	405	2,857	2,768	3,073	3,758	0,024
RISK	404	1,952	2,274	2,087	1,363	0,257

Individual's projects are the ones with a higher value of profitability

Characteristics of the entrepreneurial project (Legal status) and entrepreneur objectives

Variable	n° obs.	1 corporat.	2 Manager	3 association	Test t	Value p
GROWTH	250	2,767	2,685	2,643	0,137	0,872
PROFIT	250	2,902	2,918	2,857	0,023	0,977
RISK	250	2,209	2,055	1,714	1,717	0,182

The legal status does not explain the different level of achievement for growth, nor profitability nor risk

Traits of the entrepreneur and growth

		0-10%	11-20%	21-30%	31-40%	more than 40%		
Variable	n° obs.	1	2	3	4	5	Test t	Valor p
PSYC	408	0,014	0,015	0,007	0,050	0,435	2,583	0,037
EXP	409	0,008	-0,095	-0,164	0,005	0,106	0,897	0,466
TRAIN	409	0,167	-0,131	-0,072	-0,209	0,013	1,415	0,228

The leaders, with good negotiation skills, self-control, high level of ethics, creativity, intuition, autonomy, pro-activity, self-evaluation and outgoing spirit entrepreneurs are those with the highest growth's objectives

Traits of the entrepreneur and profitability

		negative	0-10%	11-20%	21-40%	more than 40%		
Variable	n° obs.	1	2	3	4	5	Test t	Valor p
PSYC	409	0,167	-0,053	0,057	0,148	0,431	1,511	0,198
EXP	410	-0,103	-0,121	-0,108	0,114	0,030	0,971	0,423
TRAIN	410	0,344	-0,037	-0,057	-0,112	-0,208	1,188	0,316

There are not significant differences among the traits of entrepreneurs and their profitability's objectives

A taxonomy of entrepreneurs

A. High growth and high profitability Value GROWTH = 4 Value PROFIT = 4 Value PSYC = 0,269 Value EXP = 1,41 Value TRAIN = - 0,15 n° entrepreneurs: 99	B. High growth and low profitability Value GROWTH= 4 Value PROFIT = 3 Value PSYC = 0,018 Value EXP = - 0,020 Value TRAIN = - 0,026 n° entrepreneurs: 131
C. Low growth and high profitability Value GROWTH= 2 Value PROFIT = 3 Value PSYC = 0,012 Value EXP = - 0,027 Value TRAIN = - 0,121 n° entrepreneurs: 84	D. Low growth and low profitability Value GROWTH= 1 Value PROFIT = 2 Value PSYC = 0,016 Value EXP = - 0,073 Value TRAIN = 0,093 n° entrepreneurs: 95

Conclusions (I)

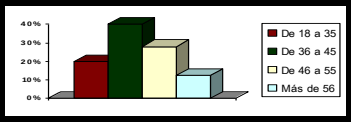
Those entrepreneurs who are leaders, with good negotiation skills, self-control, high level of ethics, creativity, intuition, autonomy, pro-activity, self-evaluation and outgoing spirit are those who look for high objectives of growth and profitability, simultaneously.

Conclusions (II)

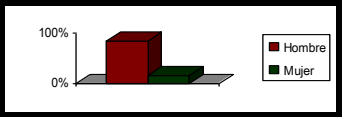
Those entrepreneurs with more experience look for high objectives of growth and profitability, simultaneously.

Those entrepreneurs with lower levels of education look for high objectives of growth and profitability, simultaneously.

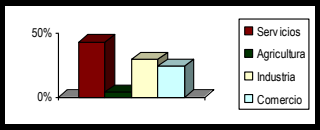
Features of entrepreneurs (Castilla and León)



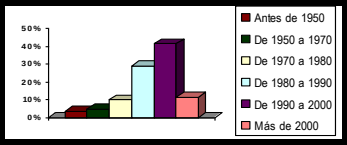
age



gender

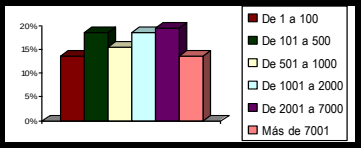


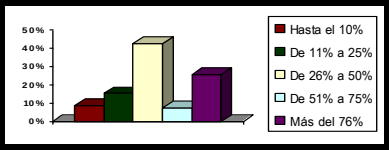
indutry



Year of foundation

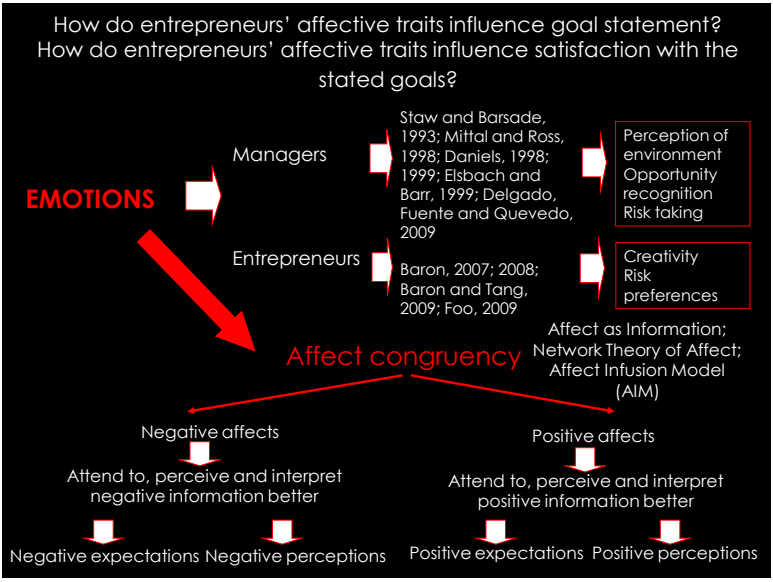
Sales





% of capital (entrepreneur)


Entrepreneurs' emotions
Entrepreneurs' objectives
Entrepreneurs' satisfaction (success)
Which emotions relate to success?


How do entrepreneurs' affective traits influence goal statement?
How do entrepreneurs' affective traits influence satisfaction with the stated goals?
EMOTIONS
Managers
Staw and Barsade, 1993; Mittal and Ross, 1998; Daniels, 1998; 1999; Elsbach and Barr, 1999; Delgado, Fuente and Quevedo, 2009
Perception of environment
Opportunity recognition
Risk taking
Entrepreneurs
Baron, 2007; 2008; Baron and Tang, 2009; Foo, 2009
Creativity
Risk preferences
Affect congruency
Affect as Information; Network Theory of Affect; Affect Infusion Model (AIM)
Negative affects
Attend to, perceive and interpret negative information better
Negative expectations
Negative perceptions
Positive affects
Attend to, perceive and interpret positive information better
Positive expectations
Positive perceptions

Characteristics of Castilla and León entrepreneurs

Age		Sex		Business sector	
Under 36	25%	Men	84%	Services	43%
Between 36 and 43	25%	Women	16%	Agriculture	4%
Between 44 and 49	25%			Industry	29%
Over 49	25%			Commerce	24%
Year of creation		**Percentage of capital**		**Sales figures**	
Before 1950	3.7%	Up to 24%	16.0%	From 1 to 100	13.6%
From 1950 to 1970	4.6%	From 25% to 49%	26.4%	From 101 to 500	18.7%
From 1971 to 1980	9.9%	From 50% to 74%	28.9%	From 501 to 1000	15.5%
From 1981 to 1990	29.0%	Over 75%	27.7%	From 1001 to 2000	18.7%
From 1991 to 2000	41.3%			From 2001 to 7000	19.7%
After 2000	11.4%			Over 7001	13.6%

SAMPLE: Survey of 335 entrepreneurs (April-July 2007) -database of 30.000 entrepreneurs of CECALE (Castile and Leon Confederation of Business Organizations)-

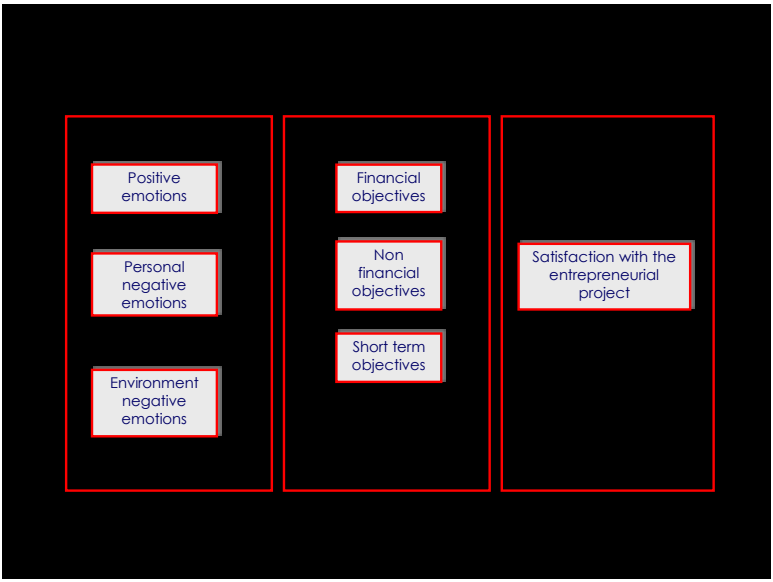
PANAS scale (Emotions)

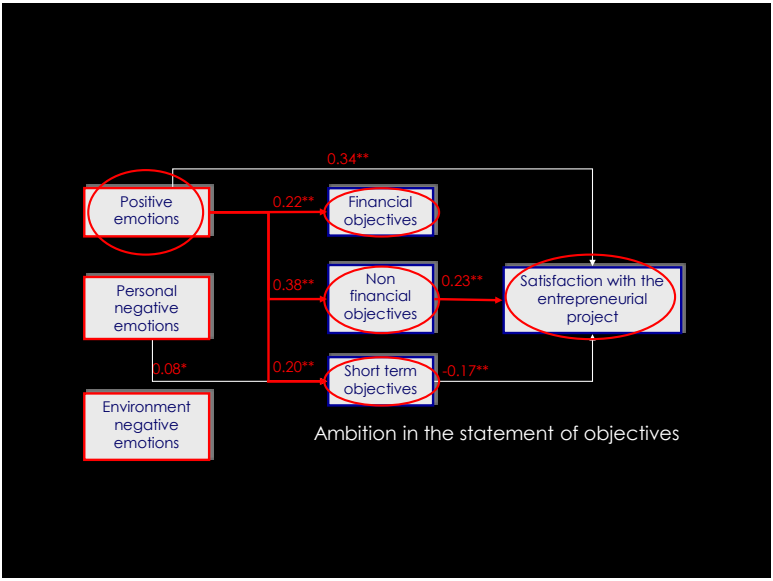
Positive affective traits		Personal negative affective traits		Environmental negative affective traits	
Interested	0.515				
Excited	0.702				
Strong	0.748	Guilty	0.510		
Enthusiastic	0.757	Scared	0.576	Distressed	0.591
Proud	0.580	Ashamed	0.638	Upset	0.724
Alert	0.608	Nervous	0.576	Hostile	0.723
Inspired	0.679	Jittery	0.681	Irritable	0.783
Determined	0.747	Afraid	0.755		
Attentive	0.679				
Active	0.772				
% variance explained	23.6%		20.7%		6.1%

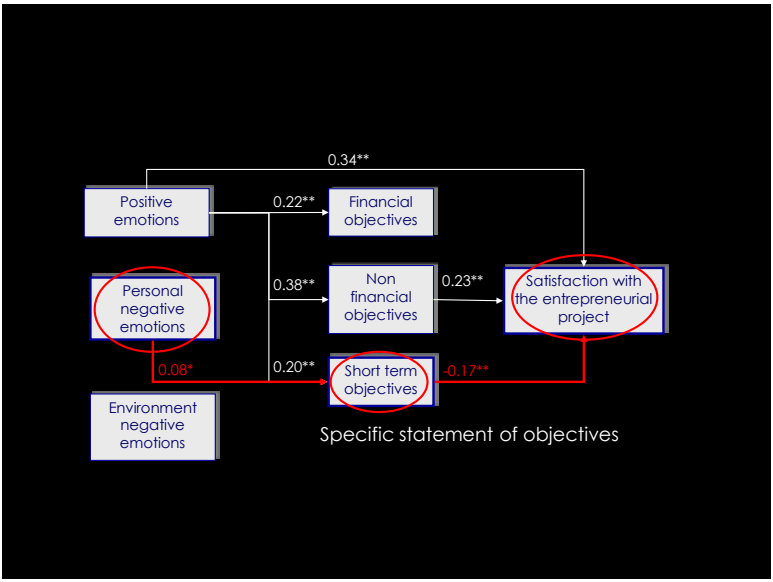
Kaiser-Meyer-Olkin index: 0.867
Barlett's test of sphericity: 2217.4 (DF 19, $p<0.00$)

Goals scale					
Short-term goals		Financial-like goals		Non-financial-like goals	
Survival Liquidity Risk reduction	0.696 0.787 0.645	Sales growth Return growth	0.744 0.826	Value creation Stakeholder satisfaction	0.898 0.536
% variance explained	33.6%		15.9%		12.9%
Kaiser-Meyer-Olkin index: 0.722 Barlett's test of sphericity: 250.0 (DF 21, p<0.00)					

Satisfaction with goals' achievement	
Satisf. with sales Satisf. with costs Satisf. with profitability Satisf. with efficiency	0.757 0.840 0.776 0.718
% variance explained	59.9%
Kaiser-Meyer-Olkin index: 0.760 Barlett's test of sphericity: 323.8 (DF 6, p<0.0)	


Positive emotions
Personal negative emotions
Environment negative emotions
Financial objectives
Non financial objectives
Short term objectives
Satisfaction with the entrepreneurial project


0.34**
Positive emotions
0.22**
Financial objectives
Personal negative emotions
0.38**
Non financial objectives
0.23**
Satisfaction with the entrepreneurial project
0.08*
0.20**
Short term objectives
-0.17**
Environment negative emotions
Ambition in the statement of objectives



Conclusions

Positive affects enhance positive expectations and perceptions that lead to taking broad and ambitious goals and to a higher satisfaction with the stated goals.

Negative affects favour negative expectations and perceptions that lead to taking less ambitious goals.

Implications

Affective traits influence entrepreneurs' strategic choices in real decision situations.

Understanding possible influences of positive and negative affects may permit entrepreneurs and potential entrepreneurs to control their behaviour.

Future research

Impact of entrepreneurs' affects on:

- Decision to start a business.
- Venture survival.

Training for entrepreneurs

- Is it possible to increase the entrepreneurial spirit with some kind of training?
- Is it possible to affect success with training?

Entrepreneurial training

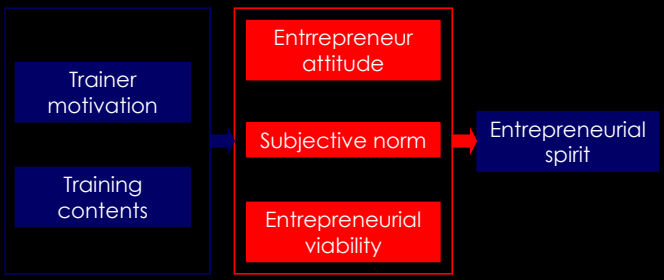
2 research questions → 2 analysis:

Is it possible to promote the entrepreneurial spirit in young people? **A**

Entrepreneurial training is related to succesful entrepreneurs? **B**

18

Is it possible to promote the entrepreneurial spirit in young people? A



18

- ✓ Planning of entrepreneurial training → course: "Vitamina E, Educar para Emprender en Castilla y León" (CEEI Castilla and León)
- ✓ Sample: 48 students (teenagers) of 2 high schools in Valladolid (2 groups of control) year 2006/2007

centros europeos de empresas e innovación de Castilla y León

The course (contents):

1. "El espíritu emprendedor: Concepto de emprendedor" (promote the features of social skills, leadership, proactiviness, self-control, etc.)
2. "El proyecto Emprendedor" (project development)

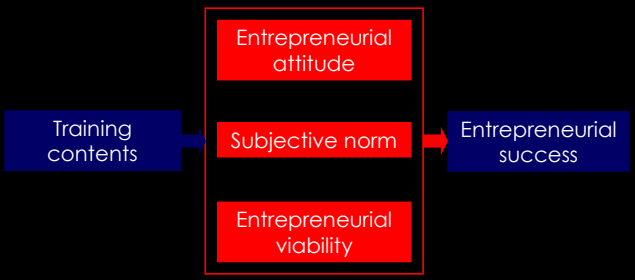
The course (professors):

1. Material is common to all professors (teachers)
2. Teachers have all freedom to develop the course

Conclusions…

1. Students following the course improved their skills for teamwork and improved self-control (two features related to entrepreneurial spirit)
2. Students from different high schools developed different features (maybe related to the motivation of the teacher)
3. The course is more efficient for students who does not have families with their own businesses

Entrepreneurial training is related to succesful entrepreneurs?



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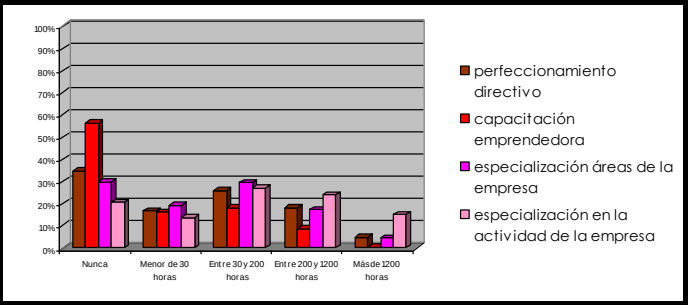
SAMPLE: Survey of 335 entrepreneurs (April-July 2007) -database of 30.000 entrepreneurs of CECALE (Castile and Leon Confederation of Business Organizations)-

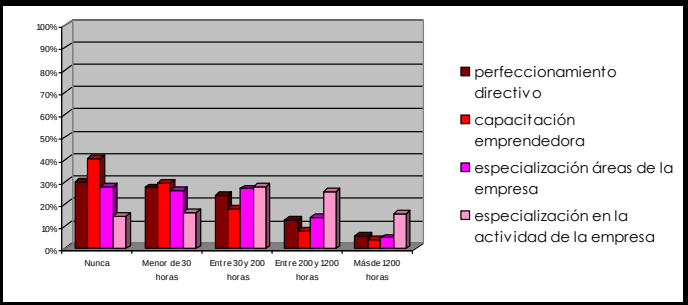
We evaluate training at three levels:

1. Training received by entrepreneurs in academies
2. Self-training by entrepreneurs
3. Consulting received by entrepreneurs for their specific projects

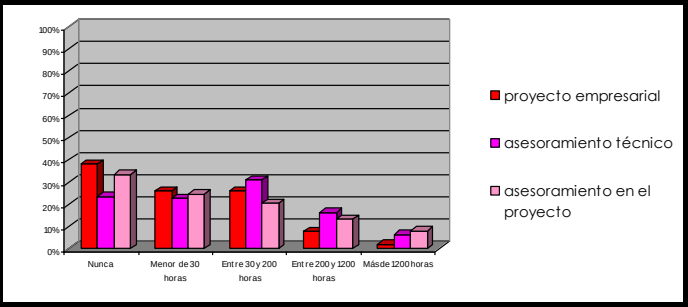
Training received by entrepreneurs in academies



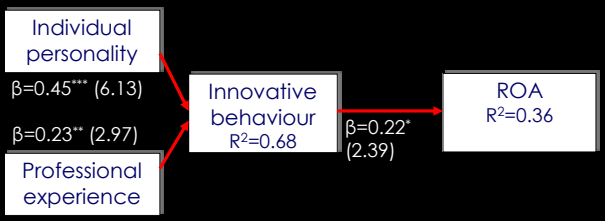
Self-training by entrepreneurs



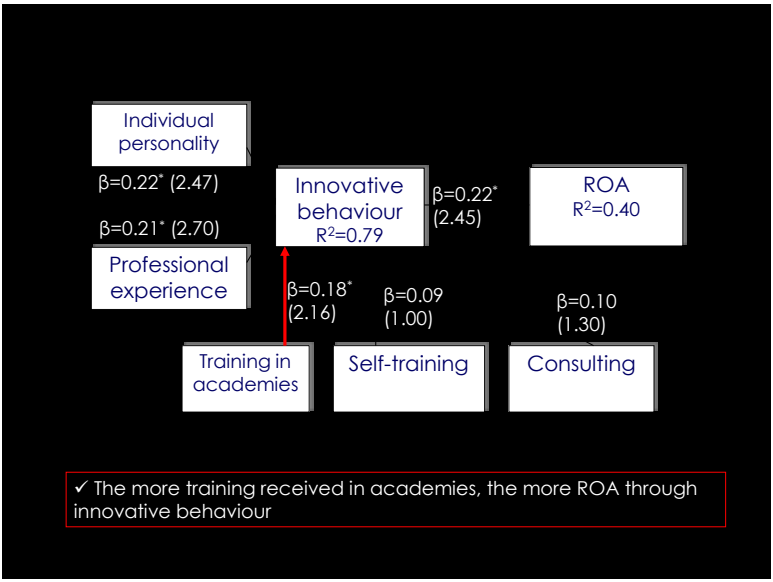
Consulting received by entrepreneurs for their specific projects



Results



- ✓ A larger entrepreneurial personality and larger professional experience have a positive influence on innovative behaviour
- ✓ The innovative behavior is related to increases of ROA



Conclusions

- Training of entrepreneurs: middle-low
- Training received in academies has an impact on entrepreneurial success through the innovative behavior

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- AÑO 2010, *coming soon*

Corporate social responsibility in European firms

Félix J. López Iturriaga, Department of Financial Economics, University of Valladolid

Corporate social responsibility in European firms

1. **Some introductory cases: Johnson & Johnson, Exxon Mobil.**
2. **Basic concepts in CSR**
3. **CSR and corporate governance**
4. **CSR and corporate culture**
5. **Social rating agencies**
6. **An empirical study of CSR in European firms**

University of Valladolid
February 1st, 2010

1. Some introductory cases: Exxon Mobil

What happened?

In 1989, the Exxon Valdez oil tanker, entered the Prince William Sound, on its way towards California. In spite of the fact that the weather and sea conditions were favorable and the Bligh Reef clearly marked on the maps, the ship ran aground and began spilling oil. Within a very short period of time, significant quantities of its 1,260,000 barrels had entered the environment.

At the moment of the collision the third mate, who was not certified to take the tanker into those waters, was at the helm. The probably cause was established that the Captain and many of the crew had been drinking alcohol in considerable quantities.

University of Valladolid
February 1st, 2010

1. Some introductory cases: Exxon Mobil

What did the company do?

The action to contain the spill was slow to get going. The company completely refused to communicate openly and effectively. Shortly after the accident had taken place, and the world's media began extensive coverage, a company spokesman pointed to the existence of procedures to cover the eventuality - procedures which the TV shots showed were demonstrably failing. When asked if the Exxon Chairman would be interviewed on TV, the response was that he had no time for that kind of thing.

Meanwhile the operation on the ground was too slow. During the first two days, when calm weather would have allowed it, little was done to contain the spillage. Then the bad weather struck, making further containment almost impossible.

After more than a week, the company was still giving no ground on the request for better communication. The media clamour became so hostile that eventually the Director of Exxon Shipping flew to Valdez to hold a press conference. Small pieces of good news claimed by the company were immediately contradicted by the eyewitness accounts of the present journalists and fishermen.

University of Valladolid
February 1st, 2010

1. Some introductory cases: Exxon Mobil

What did the company do? (II)

The Mayor of Valdez commented that the community felt betrayed by Exxon's inadequate response to the crisis. Eventually, the Exxon Chairman accepted to go onto television. He was interviewed live, and asked about the latest plans for the clean-up. It turned out he had neglected to read these, and cited the fact that it was not the job of the chairman to read such reports. He placed the blame for the crisis at the feet of the world's media.

1. Some introductory cases: Exxon Mobil

Cost and benefit

The consequences for Exxon of the twofold disaster -the spill and its environmental consequences, alongside its unsuccessful communications- were enormous. The spill costed around $7bn, including the clean up costs. $5bn of this was made up of the largest punitive fines ever handed out to a company for corporate irresponsibility.

The damage to the company's reputation was even more important, and more difficult to quantify. However, Exxon lost market share and slipped from being the largest oil company in the world to the third largest. The "Exxon Valdez" entered the language as a shortcut for corporate arrogance and damage.

1. Some introductory cases: Exxon Mobil

Conclusion

The features that made Exxon's handling of the crisis a failure included the following:

- The company failed to show that they had **effective systems in place to deal** with the crisis - and in particular their ability to move quickly once the problem had occurred was not in evidence
- They showed little **leadership** after the event in showing their commitment to ensuring such problems would never happen again
- They quite simply gave no evidence that **they cared** about what had happened. They appeared indifferent to the environmental destruction.

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1. Some introductory cases: Johnson & Johnson

What happened?

In 1982, Johnson & Johnson's Tylenol medication commanded 35% of the US over-the-counter analgesic market - representing something like 15 % of the company's profits.

Unfortunately, at that point one individual mixed the drug with cyanide. Seven people died as a result, and a widespread panic ensued about how widespread the contamination might be.

By the end of the episode, everyone knew that Tylenol was associated with the scare. The company's market value fell by $1bn as a result.

What did the company do?

When the same situation happened in 1986, the company had learned its lessons well. It acted quickly -ordering that Tylenol should be recalled from every outlet- not just those in the state where it had been tampered with. Not only that, but the company decided the product would not be re-established on the shelves until something had been done to provide better product protection.

As a result, Johnson & Johnson developed the tamperproof packaging that would make it much more difficult for a similar incident to occur in the future.

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1. Some introductory cases: Johnson & Johnson

Cost and benefit

The cost was high. In addition to the impact on the company's share price when the crisis first hit, the lost production and destroyed goods as a result of the recall were considerable.

However, the company won praise for its quick and appropriate action. Within five months of the disaster, the company had recovered 70% of its market share for the drug and this fact went on to improve over time showed that the company had succeeded in preserving the long term value of the brand. Companies such as Perrier, who had been criticized for slower handling of a crisis, found their reputation damaged for as long as five years after an incident.

In fact, there is some evidence that it was rewarded by consumers who were so reassured by the steps taken that they switched from other painkillers to Tylenol.

1. Some introductory cases: Johnson & Johnson

Conclusion

The features that made Johnson & Johnson handling of the crisis a success included the following:

- They acted **quickly, with complete openness** about what had happened, and immediately sought to remove any source of danger based on the worst case scenario -not waiting for evidence to see whether the contamination might be more widespread
- Having acted quickly, they then sought to ensure that measures were taken which would prevent as far as possible a **recurrence** of the problem
- They showed themselves to be prepared to bear the short term cost in the name of consumer safety. That more than anything else established a basis for **trust** with their customers

2. Basic concepts in CSR

Corporate social responsibility

A concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with stakeholders on a voluntary basis (E.U. White Paper)

The management of an organization's total impact upon both its immediate stakeholders and upon the society within which it operates. It is not simply about whatever funds and expertise companies choose to invest in communities to help resolve social problems, it is about the integrity with which a company governs itself, fulfils its mission, lives by its values, engages with its stakeholders, measures its impacts and reports on its activities.

(U.K. Government Department for CSR)

A set of initiatives by companies voluntarily integrating social and environmental concerns in their business operations and in their interaction with their stakeholders.

(International Organization of Employers)

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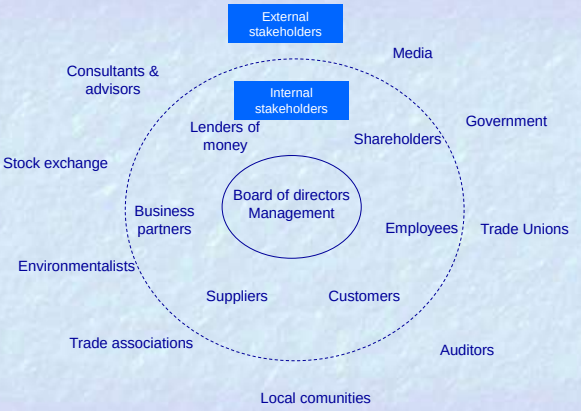
2. Basic concepts in CSR



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2. Basic concepts in CSR

Ocurrence of stakeholders in reports and letters of directors (ocurrences per 1000 words)

		Sweden			Canada			Holland	
	1981	1991	2001	1981	1991	2001	1981	1991	2001
Stakeholder	1.8	0	1.4	0	0.7	1.8	0	0	1.5
Shareholder	11.8	14.3	22.1	6.3	10.4	21.8	2	4	7.8
Employee	36.4	29.5	38.6	0	0.7	0.6	35.9	40	34.9
Customer	10.9	27.6	75.7	8.6	20.7	21.2	9.2	19.8	24.4
Distributor	0.9	0	7.1	5.7	7.4	13.5	0	0.9	2.1
Competitors	5.5	1.9	7.1	1.7	4.4	2.9	1	0.5	1.3
Government	13.6	5.7	0	1.1	3	1.2	13.7	7	2.3
Unions	4.5	0	0	2.3	2.2	0	19.8	10.7	7.3
Charities, NGOs	0	0	0	0	2.2	1.8	0	0	0
TOTAL	**85.4**	**79**	**152**	**25.7**	**51.7**	**64.8**	**81.6**	**82.9**	**81.6**

Source: den Hond, de Bakker and Neergaard (2007)

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2. Basic concepts in CSR

Two models of CSR-Corporate governance

Source: Brealey, Myers and Marcus (2004)

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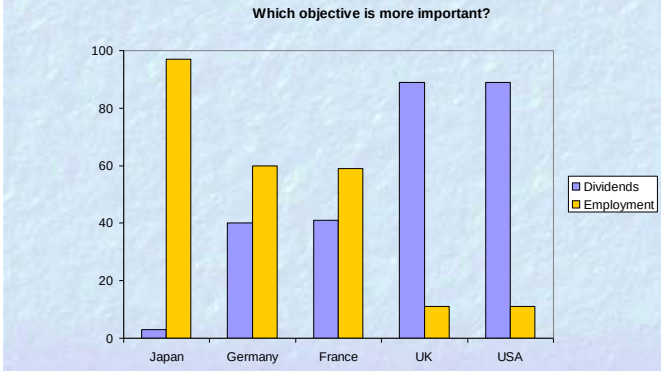
2. Basic concepts in CSR

Two models of CSR-Corporate governance



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2. Basic concepts in CSR

Two models of CSR-Corporate governance

	Shareholder model	Stakeholder model
Representative constituency	Shareholders	State, banks, firms, employees, investors…
Firm objective	Shareholder value creation	More diversified objectives
Corporate regulation	External (financial markets)	Internal
Financial markets	More developed	Less developed
Shareholding	Disperse	Concentrated in control blocks
Protection of minority shareholders	Important	Limited
Conditions of efficiency	High standards of financial disclosure No take-over barriers	Clear definition of stakeholders' roles Ability to act

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2. Basic concepts in CSR

Fujio Cho, Toyota Chairman, 2008 Annual report.

"Toyota aims to achieve sustained, long-term growth by providing high-quality vehicles to people everywhere, and by contributing to the realization of a bountiful and nurturing society."

In 2008 Toyota again posted solid business results. On behalf of Toyota's management team, I would like to sincerely thank our shareholders, customers, suppliers, communities, and other stakeholders who support our growth.

As global concern for the environment increases, even more is expected and demanded of automobile manufacturers, including Toyota. In order to address the critical issue of environmental preservation, Toyota continues to develop hybrid and other alternative energy technologies.

Consistent with our commitment to enriching society, Toyota will increase its pace of vehicle development to better provide high-quality cars to people everywhere. We will also work to encourage economic development in countries around the world through the expansion of our regional operations.

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2. Basic concepts in CSR

To be a truly global company with understanding and value for other cultures, we have stepped up our human resources development efforts around the world. This endeavor will help us to instill the spirit and values of our long-standing *monozukuri* philosophy of "making things means making people." By doing so, I believe we can contribute to the creation of an international society that preserves the global environment as it fosters economic growth.

Last year, Toyota celebrated its 70th anniversary. Throughout our long history, we have applied cutting-edge technologies and superior craftsmanship to making vehicles that customers love worldwide. We will continue to move forward to achieve sustained, long-term growth while increasing our corporate value.

I look forward to the continued support and understanding of all of our shareholders and investors.

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2. Basic concepts in CSR

Neville Isdell, Coca Cola Chairman and Chief Executive Officer, 2006 Annual Report

DEAR FELLOW SHAREOWNER (Capital letters in original):

2006 was a very good year for The Coca-Cola Company. We achieved our 52nd consecutive year of unit case volume growth. Volume reached a record high of 21.4 billion unit cases. Net operating revenues grew 4 percent to $24.1 billion, and operating income grew 4 percent to $6.3 billion. Our total return to shareowners was 23 percent, outperforming the Dow Jones Industrial Average and the S&P 500. By virtually every measure, we met or exceeded our objectives—a strong ending for the year with great momentum for entering 2007.

The secret formula to our success in 2006? There is no one answer. Our inspiration comes from many sources—our bottling partners, retail customers and consumers, as well as our critics. And the men and women of The Coca-Cola Company have a passion for what they do that ignites this inspiration every day, everywhere we do business. We remain fresh, relevant and original by knowing what to change without changing what we know. We are asking more questions, listening more closely and collaborating more effectively with our bottling partners, suppliers and retail customers to give consumers what they want.

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2. Basic concepts in CSR

Accountability goes beyond the Company's finances. In today's world, earning trust requires more than just attention to sales reports and balance sheets. Conducting business responsibly is just as important as conducting it profitably. We are making sure this reality is ingrained in our Company's culture and plans for future growth.

In 2006, for the first time in our history, every function and every operating group implemented business plans with specific, quantifiable corporate responsibility objectives alongside unit case volume, profitability and other business goals. Our most prestigious and coveted divisional award—the Woodruff Cup—was won by our Iberian Division (Portugal and Spain) based on outstanding performance in 2006 across the five Ps of our *Manifesto for Growth:* people, portfolio, partners, planet and profit.

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2. Basic concepts in CSR

Retaining our competitive edge requires an intense, unrelenting focus on what our Company is all about—beverages. More than 1.4 billion servings of our products are enjoyed every day—nearly a million servings every minute. For 120 years, beverages have been our business, and we remain focused on being the strongest nonalcoholic beverage company in the world. With four of the world's top five nonalcoholic sparkling brands, our leadership position is clear. And it has given us the expertise to lead in several other beverage categories: Worldwide, we are No. 1 in sales of juice and juice drinks; No. 1 in sales of ready-to-drink coffees and teas; No. 2 in sales of sports drinks; and No. 3 in sales of water.

The geographic diversity of our Company gives us balance. As a general rule, when some markets are down, other markets are up. We are able to grow our unit case volume in spite of challenging markets. What did this mean in 2006? A year of flat unit case volume growth in North America and declining unit case volume in the Philippines was balanced by double-digit unit case volume growth in other markets, including 10 percent in Argentina, 15 percent in China, 26 percent in Russia and 10 percent in Turkey. We will continue to focus on these and other strong markets, such as Brazil, Mexico and Spain, while we implement customized plans for stabilization and growth in underperforming markets.

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2. Basic concepts in CSR

Our opportunities for growth are significant. Even in developed markets, only 62 percent of beverages consumed are nonalcoholic ready-to-drink. And in developing and emerging markets—places like China and India with fast-growing populations and ever-increasing spending power—just 40 percent of all beverages consumed are nonalcoholic ready-to-drink. We are capturing these tremendous opportunities by focusing on providing ready-to-drink beverages that honor local cultures, preferences and tastes.

I am proud of what we achieved in 2006. We are not satisfied, however. There will always be room to grow and improve. We have much work to do, but I believe our business is well positioned to grow sustainably and profitably.

I am grateful to our shareowners who have shown faith in us as we have worked to turn our business around. I thank our Board of Directors for their continued wise counsel and guidance. Our local bottling and business partners have worked tirelessly to continue bringing the optimism and promise of Coca-Cola to all of the communities we are privileged to serve. Our associates everywhere continue to be dedicated stewards of the most valuable brand in the world. And our consumers? They inspire us every day.

Thank you for your continued support.

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3. CSR and corporate governance

What is corporate governance?

The mechanisms by which investors assure a return on their investment. Journal of Finance

The ways in which a firm safeguards the interest of its financiers (investors, lenders, and creditors). Business Dictionary

A field in economics, which studies the many issues arising from the separation of ownership and control. Business PME

The set of processes, customs, policies, laws and institutions affecting the way a corporation is directed, administered or controlled. Corporate governance also includes the relationships among the many players involved (the stakeholders) and the goals for which the corporation is governed Wikipedia

The system by which business corporations are directed and controlled. It specifies the distribution of rights and responsibilities among different participants in the corporation, such as the board, managers, shareholders and other stakeholders, and spells out the rules and procedures for making decisions on corporate affairs. By doing this, it also provides the structure through which the company objectives are set, and the means of attaining those objectives and monitoring performance

UTS Center for Corporate Governance

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3. CSR and corporate governance

Separation of ownership and control

- Agency theory: principal and agent
  - Differences in information and interests
- Why the separation between ownership and control in modern corporations?
- Managerial preferences:
  - Compensation
  - Expansion/control
  - Risk avoidance
  - Overdiversification
- Mechanisms of corporate control:
  - Corporate debt
  - Ownership structure
  - Dividends
  - Board of directors
  - Codes of good governance
  - Market for corporate control: take-overs
  - Compensation schemes

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3. CSR and corporate governance

International principles for corporate governance cover

- The rights of shareholders, who should be timely and properly informed about the company, who should be able to participate in decisions concerning fundamental corporate changes, and who should share in the profits of the company.
- Equitable treatment of shareholders, especially minority and foreign shareholders, with full disclosure of material information and prohibit abusive self dealing and insider trading.
- The role of stakeholders should be recognized as established by law and active co-operation between corporations and stakeholders in creating wealth, jobs and financially sound enterprises.
- Timely and accurate disclosure and transparency on all matters material to company performance, ownership and its stakeholders.
- The responsibilities of the board in the management, the supervision of the management and the accountability to the company and shareholders.

Conclusion: a good corporate governance is one of the aspects (perhaps the main one) of corporate social responsibility

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4. CSR and corporate culture

Companies motives for adopting socially responsible decisions (%)

	Primary objective	Secondary objective	Not important
Improved corporate image	61.6	30.1	8.3
Differentiation of producs from competitors	54.2	30.6	15.2
Improvements in production	36.1	48.6	15.3
Part of firm strategy	47.9	36.2	15.9
Expectation of future demand	62.2	20.7	17.1
Demand from customers	65.8	15.1	19.1
Requierement for becoming a supplier for public institutions	50	26.4	23.6
Prevention of public regulation	30	24.3	45.7
Demand from suppliers	5.8	15.9	78.3

Source: den Hond, de Bakker and Neergaard (2007)

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4. CSR and corporate culture

Direct costs and organizational barriers for CSR

Direct costs	Organizational barriers
Initial review	Organizational rigidity
Documentation and administration	Resistance to change
Investment	Lack of resources
Time spent	Low management commitment
Training and educacion of employees	Conflicting interests among stakeholders
Internal audit	Uncertainty regarding the benefits
Fees to third-party verification	Difficulties in monitoring and verifying
Certification	Power structures in the supply chain

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4. CSR and corporate culture

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4. CSR and corporate culture

Benefits from implementing CSR

Internal benefits	External benefits
Savings from reducing the costs of supplies (electricity, water, etc.)	Maintaining and enhancing a good reputation
Re-use and recycling energy and materials	Improvement of image
Development of new products or services	Access to markets that demand CSR
Safer workplace conditions	Reduction of social and environmental risks
Improve staff morale	More responsible supply chain management
Development of managerial and organizational skills	Improved community relations
Higher quality of products	Increased competitiveness
Increased environmental awareness	Better contact with public authorities
Improved staff recruitment and retention	Legitimacy in society
Systematization and documentation of competencies and processes	Compliance with social and environmental regulation
	Goodwill from stakeholders
	Increased brand value

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4. CSR and corporate culture

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4. CSR and corporate culture

Benefits achieved from environmentally labelled products in Danish firms

	To a high degree	To some degree	Not at all
Improved image	29.6	66.2	4.2
Environmental improvements	27.5	46.4	26.1
Easier to participate in tenders	28.8	33.3	37.9
Decrease in resource consumption	14.3	45.7	40
Better relations to supplier	12.9	42.9	44.2
Increased sales to new customers	8.5	36.6	54.9
Increased sales to present customers	5.6	32.4	62
Increased profit	1.4	19.4	79.2

Source: den Hond, de Bakker and Neergaard (2007)

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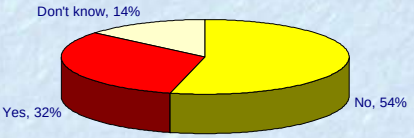
4. CSR and corporate culture

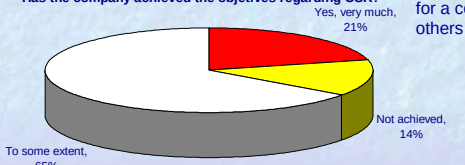
Do earnings from CSR actions exceed the costs?



Conclusion: CSR as another element in the business strategy

CSR actions are one of a range of options for a company to differentiate itself from others in the eyes of the stakeholders

Has the company achieved the objetives regarding CSR?



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4. CSR and corporate culture

Concrete CSR measures: What can a firm do?

- "Classical" domain: corporate giving (money, products)
  - Being seen by stakeholders as socially responsible.
  - Less and less important
- Nowadays: focusing on areas which fit the corporate values, issues related to the firm's core products and markets

Case analysis: Unilever Companies' Management Development Scheme

- "Our corporate purpose states that to succeed requires "the highest standards of corporate behaviour towards everyone we work with, the communities we touch, and the environment on which we have an impact. This is our road to sustainable, profitable growth, creating long-term value for our shareholders, our people, and our business partners.
- Aim: promoting staff from within, rather than recruiting externally for management positions

4. CSR and corporate culture

Five big reasons to join us:

- Unilever is one of the world's greatest consumer goods companies and plays an active role addressing global environmental and social issues
- Our brands include some of the biggest and best-known in the world- they're a familiar part of daily life right around the globe.
- As a graduate, you'll get your teeth into a real job from day one
- You'll receive all the training and support needed to launch a management career - ideally in just two years
- And you'll work with bright, stimulating often brilliant people who haven't had to sacrifice their individuality to have a highly successful career.

The results:

- Did the training help you significantly in understanding what corporate responsibility is and why it is important to Unilever? 93%
- Has the training helped you in some way to identify potential corporate responsibility issues in your job? 100%
- Did the training help you in some way to bear corporate responsibility issues in your job? 62%
- Has the training reassured your view of Unilever as socially responsible? 86%

5. Social rating agencies

- Agencies that collect and process information about firms' CSR: "measuring the unmeasured"
- Investor-solicited rating and company-solicited rating.
- Vigeo and Dow Jones Sustainability Indexes
- Process:
  1. Questionnaire submitted to CEOs and heads of investors relations
  2. Analysis of information disclosed by companies:
     - Sustainability reports
     - Environmental reports
     - Health and safety reports
     - Social reports
     - Annual financial reports
     - Other sources of company information: brochures and website
  3. Media and stakeholder reports: analysts review media, press releases, articles, and stakeholder commentary written about a company over the past year.
  4. Personal contact with companies

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5. Social rating agencies

Dimension	Criteria	Weighting (%)
Economic	Codes of Conduct Compliance	6
	Corruption & Bribery	6
	Corporate governance	6
	Risk & Crisis Management	6
	Industry specific criteria	Variable
Environment	Environmental Reporting	3
	Industry specific criteria	Variable
Social	Corporate citizenship	3
	Philanthropy	3
	Labor Practice Indicators	5
	Human Capital Development	5.5
	Social Reporting	3
	Talent Attraction & Retention	5.5
	Industry specific criteria	Variable

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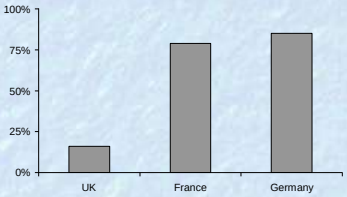
6. An empirical study of CSR in European firms

Firms with reference shareholders (%)



Possible conflict of interest between large dominant shareholders and minority shareholders?

Main questions of the research:

- Is there any relation between the power of the largest shareholder and CSR?
- Is there any relation between the identity of the largest shareholder and CSR?

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6. An empirical study of CSR in European firms

Is there any relation between the power of the largest shareholder and CSR?

- Proportion of ownership held by the largest shareholder
- Contest to the control of the largest shareholder

Is there any relation between the identity of the largest shareholder and CSR?

- Families
- Institutional investors

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6. An empirical study of CSR in European firms

Table 1: Composition of the sample by countries

Country	# Firms	# Observations	Percentage in the sample
Great Britain	508	1,369	56.47%
Germany	127	241	9.93%
France	223	572	23.57%
Italy	75	158	6.51%
Spain	35	85	3.50%
Total	**1,248**	**2,426**	**100%**

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6. An empirical study of CSR in European firms

Table 2: Indexes composition

Country	Dow Jones STOXX Sustainability		Ethibel Excellence Index	
	# observations	Proportion	# observat.	Proportion
Great Britain	68	55.28%	93	59.23%
Germany	15	12.19%	15	9.55%
France	16	13.00%	34	21.65%
Italy	9	7.31%	6	3.82%
Spain	15	12.19%	9	5.73%
Total	**123**	**100%**	**157**	**100%**

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6. An empirical study of CSR in European firms

Variable	Definition
OWN1	Proportion of ownership of the largest shareholder
OWN25	Proportion of ownership of the second to fifth largest shareholders
CONTEST	Measure of contest to the power of the largest shareholder (OWN25/OWN1)
DUMFAM	Dummy variable when the largest shareholder is a family
INSTIT	Fraction of shares owned by institutional investors,
MB	Market-to-book equity
LEV	Financial leverage (debt to equity)
DISP	Measure of financial risk
LOGAST	Log of total assets (firm size)

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6. An empirical study of CSR in European firms

	Mean			Median	Std. dev.	Max.	Min.
	No DJSI	**DJSI**	**p-value**				
OWN1	0.28	0.20	0.00	0.17	0.25	0.97	0.01
OWN25	0.25	0.20	0.00	0.23	0.20	0.97	0.00
CONTEST	25.82	84.21	0.00	1.23	189.29	1249	0.00
DUMFAM	0.20	0.13	0.04	0	0.39	1	0
INSTIT	0.16	0.09	0.00	0.07	0.21	0.97	0.00
MB	1.49	2.31	0.00	1.25	1.23	7.01	0.00
LEV	0.82	0.95	0.00	0.90	0.25	1.48	0.00
DISP	0.03	0.03	0.44	0.026	0.03	1.21	0.01
LOGAST	1.09	1.20	0.00	1.094	0.06	1.28	0.88

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6. An empirical study of CSR in European firms

Results of the logit estimation

	MB>1		MB<1	
OWN1	-7.01		-6.94	*
CONTEST	10.67	*	0.13	
DUMFAM	-0.409		1.91	**
INSTI	-7.24	**	-2.28	
LEV	-7.03	***	0.19	
LOGAST	69.80	***	55.89	***
RISK	-7.16		-2.15	
% correctly classified	93.18		97.40	
Likelihood-ratio	18.31	***	78.53	***

6. An empirical study of CSR in European firms

Contest/challenge to largest shareholder

Power of largest shareholder

	MB>1		MB<1	
OWN1	-7.01		**-6.94**	*
CONTEST	**10.67**	*	0.13	
DUMFAM	-0.409		**1.91**	**
INSTI	**-7.24**	**	-2.28	
LEV	-7.03	***	0.19	
LOGAST	69.80	***	55.89	***
RISK	-7.16		-2.15	
% correctly classified	93.18		97.40	
Likelihood-ratio	18.31	***	78.53	***

Families

Institutional investors

Corporate social responsibility in European firms

Brealey, R.A.; Myers, S.C. and Marcus, A.J. (2004): *Fundamentals of Corporate Finance*. MacGraw-Hill. New York.

Den Hond, F.; de Bakker, F.G.A. and Neergaard, P. (2007): *Managing corporate social responsibility in action. Talking, doing and measuring*. Ashgate. Hampshire.

Hopkins, M. (2007): *Corporate social responsibility and international development. Is business the solution?* Earthscan. London.

Kakabadse, A. and Morsing, M. (2006): *Corporate social responsibility. Reconciling aspiration with application*. Palgrave MacMillan. Hampshire.

Keinert, C. (2008): *Corporate social responsibility as an international strategy*. Physica-Verlag. Heilderberg

University of Valladolid
February 1st, 2010

Marketing and innovation: new product development and launch

Javier Rodríguez Pinto, *University of Valladolid*

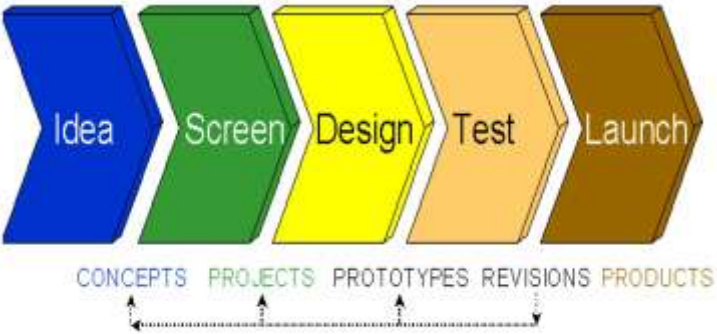
What is a new product?

- What is new?
- How new?
- New to whom?

Types of new products

- New-to-the-world products
- New product lines
- Additions to existing product lines
- Revisions or improvements to existing products
- Repositionings
- Cost reductions

NPD process



Where NP ideas come from?

- R&D department
- Universities and research centers
- Operations department
- Competitors
- Intermediaries/resellers
- Suppliers
- Salesforce
- Customers/users
- …

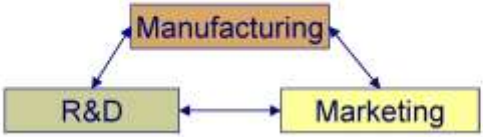
Models of innovation

Technology push model

Market pull model

Models of innovation (cont'ed)

Simultaneous coupling model



Models of innovation (cont'ed)

Interactive model of innovation

Critical success (or failure) factors at the project level

- Striving for unique superior products
- Strong market orientation
- Predevelopment work
- Project and product definition
- Planning and resourcing the launch
- Quality of execution of key tasks
- Speed (but not at the expense of quality)

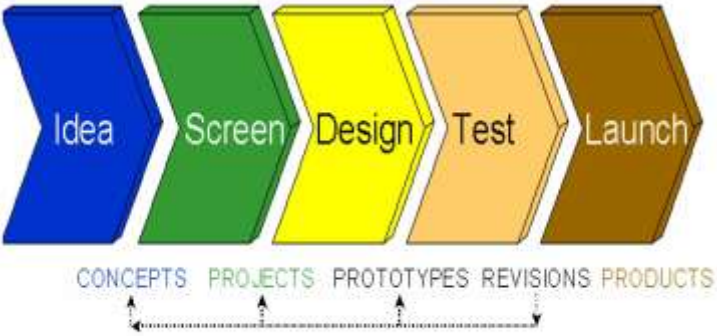
Critical success (or failure) factors – People and environment

- Adequate project team organization
- Adequate climate and culture
- Top management support

Critical success (or failure) factors – Strategy

- Innovation and technology strategy for the business
- Leveraging core competencies
- Targeting attractive markets
- Project selection – portfolio management
- Resources

NPD process



NP launch strategy

Strategic launch decisions	What?	Product	Positioning
	When?	Price	Entry order
Tactical launch decisions	Where?	Place	Entry scale Market scope Entry rhythm Resonance
	How?	Promotion	

First-mover advantages

- Scale economies and learning effects
- Technological leadership
- Pre-emption of key resources
- Buyer switching costs

First-mover advantages (cont'ed)

- Selection of most attractive market segments and positions
- Customer loyalty, uncertainty about performance of followers' products
- Definition of standards, reference for the product category, influence over preferences
- Customer awareness, more information, consideration sets
- Pioneer's allure
- Retailers' favorable attitude towards pioneering brands

Some examples of successful pioneers

Gillette

amazon.com

Follower advantages

- Savings in R&D expenses
- Savings in marketing expenses
- Experienced human resources
- Reduced technological uncertainty
- Reduced market uncertainty
- Opportunities to further innovate
- Learn from pioneers' mistakes, first-mover inertia
- First-movers may lack resources

Some examples of successful followers

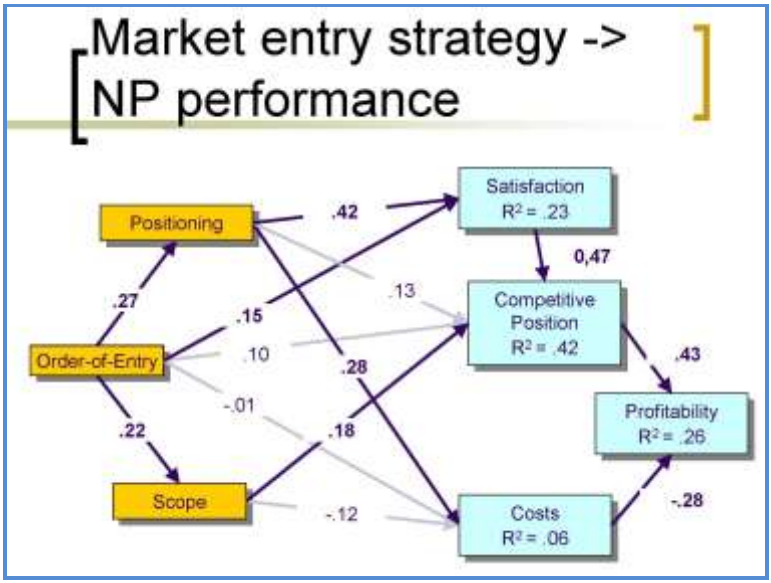
So, the sooner the better?

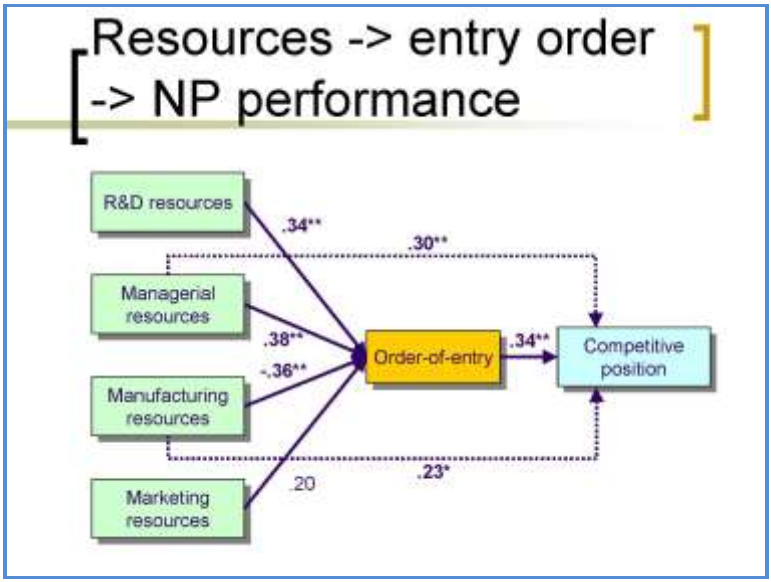
- It depends…

  How prevalent are first-mover advantages and disadvantages in my industry?

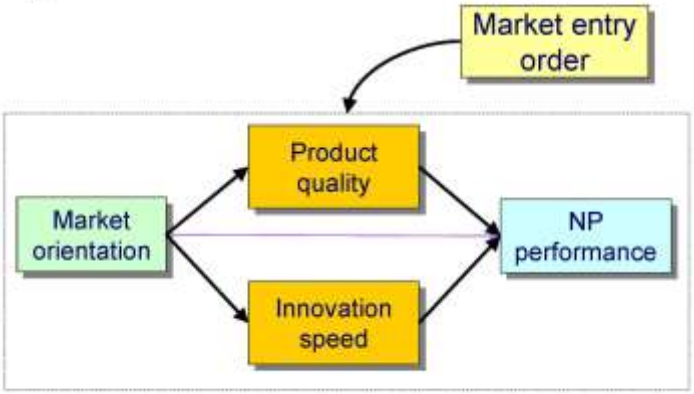
  Do I have the adequate resources?

  How should I use these resources? Other launch decisions are as or even more important than entry order.


Market entry strategy -> NP performance
Positioning
Order-of-Entry
Scope
Satisfaction
R² = .23
Competitive Position
R² = .42
Profitability
R² = .26
Costs
R² = .06
.42
.27
.15
.10
.28
.13
-.01
.22
.18
-.12
0,47
.43
-.28


Resources -> entry order -> NP performance
R&D resources
Managerial resources
Manufacturing resources
Marketing resources
Order-of-entry
Competitive position
.34**
.30**
.38**
-.36**
.34**
.20
.23*

Market orientation -> NP performance

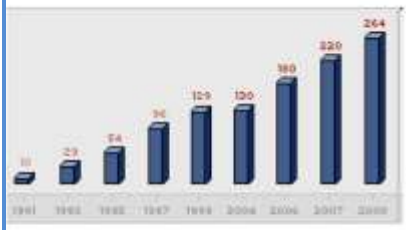


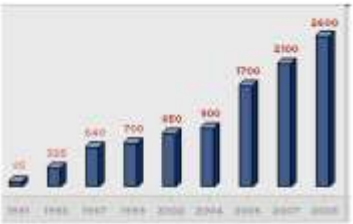
Do you agree with the following statements?

- Marketing people make the decisions that constitute a marketing plan.
- The marketer's task is to persuade the end-user to use our new product.
- The pioneer wins control of a new market.

A mini-case study: Grupo Siro and the launch of a new snack

GRUPO SIRO





A mini-case study: Grupo Siro and the launch of a new snack

GRUPO SIRO

- Products:

A mini-case study: Grupo Siro and the launch of a new snack

GRUPO SIRO

- Snack division:

RIO

A mini-case study: Grupo Siro and the launch of a new snack

- Who is Grupo Siro's major competitor in the snack market?

Lay's

A mini-case study: Grupo Siro and the launch of a new snack

Do you like snacks?

Do you eat snacks?

How often?

Why don't you consume snacks or why you don't eat snacks more often?

- **A new product opportunity.**

A mini-case study: Grupo Siro and the launch of a new snack

- **A new product opportunity:**

A mini-case study: Grupo Siro and the launch of a new snack

- **A vegetable snack**

A mini-case study: Grupo Siro and the launch of a new snack

A mini-case study: Grupo Siro and the launch of a new snack

- **Launched in 2003**

A mini-case study: Grupo Siro and the launch of a new snack

- **Withdrawn in 2005**

WHY???????

A mini-case study: Grupo Siro and the launch of a new snack

- **Withdrawn in 2005**

Product?
Price?
Place?
Promotion?

A mini-case study: Grupo Siro and the launch of a new snack

- **Was Veg's a complete failure?**
- **What would you do?**

Integrated evaluation of water domestic consumption in metropolitan areas: modelling and simulation with artificial societies

Dr. José M. Galán, University of Burgos

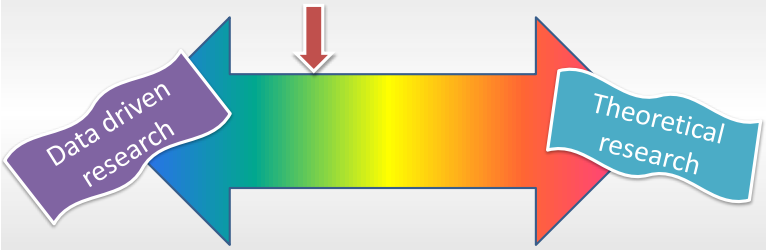
Who I am?

- **Jose M. Galan**
- Education:
  B.Eng. Ind. University of Valladolid, 2002
  PhD. Ind&Civ.Eng. University of Burgos, 2007
- Assistant Professor - University of Burgos
- Member of the InSiSoc Group
- My Home Page:
  www.josema.galan.name

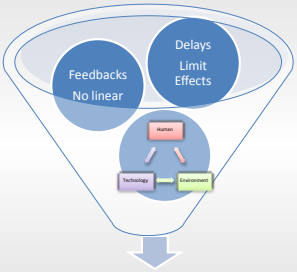
Goals for the talk

- Explore a real case of application of ABM-GIS integration applied to water domestic management
- Show the possibilities of ABM as integration tool in modeling
- Not boring too much

Where is this work?



Effect of some natural resource management policies



Complex Systems

Pahl-Wostl, C. (2007). *Environmental Modelling and Software* **22**(5): 561-569.
Sterman, J. (2000). *Business dynamics: systems thinking and modeling for a complex world*. Boston, MA: Irwin/McGraw-Hill

Domestic water management as a complex system

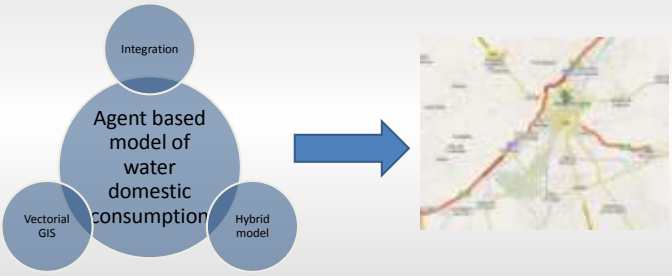
Water demand policies

Forecasting with theory

Supply side policies

The aim of water managers was to identify available supply sources in the region in order to match supply with the expected demand

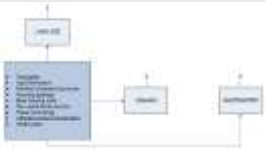
What have we done?

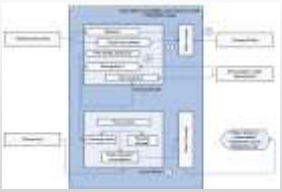


Outline of the talk

- Precedents to this work
- Background
  - Water demand forecasting
  - Agent based modeling
- Case of study
  - Integrated consumption model
  - Data
  - Results and discussion
- Conclusions
- Extensions

FIRMABAR





López-Paredes, A., Saurí, D. & Galán, J. M. (2005). *Simulation* **81**(3): 189-199.

Water demand forecasting methodologies

Per capita approaches	• Coarse grain forecasting
End use models	• Level of desaggregation very high. Very expensive method • Static models
Extrapolation methods	• Just consider the time as explicative variable • Bad results when there are structural changes in the system
Causal and structural methods	• Difficulty to deal with multiblock tariffs. Problem of simultaneity • Linear structure
Other methodologies	• Short term forecasting (neural networks) • Non-formal methods (Delphi and other expert methods)

Agent based modeling. Intuitive concept

Target system

Agent based model

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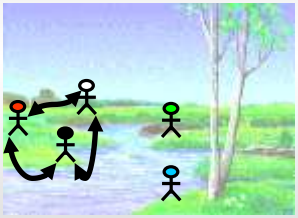

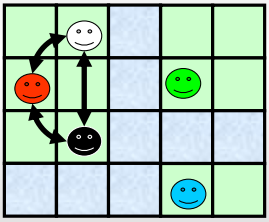

Agent based modeling. Intuitive concept

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Agent based model

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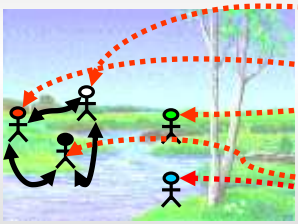

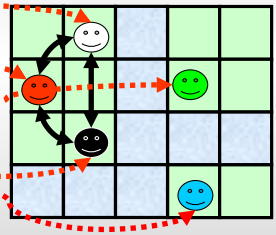

Entities ⟷ Agents

Agent based modeling. Intuitive concept

Target system

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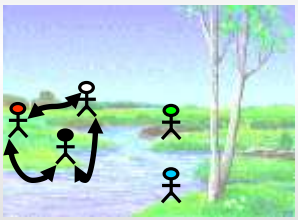

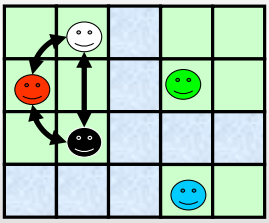

Agent based modeling. Intuitive concept

Target system

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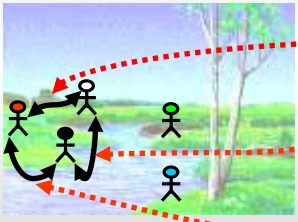

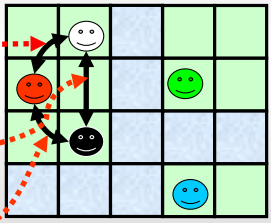

Interaction between entities

Interaction between agents

Formalization

- In every instant *t* an individual *i,* can be described by a state variable $x_{i,t}$ k
- Let be the evolution of its state variable specified by the following equation:

$$x_{i,t+1} = f_i(x_{i,t}, x_{-i,t}; \alpha_i) \quad (1)$$

$$Y_t = s(x_{1,t}, \ldots\ldots, x_{n,t}) \quad (2)$$

Leombruni, R. & Richiardi, M. (2005). *Physica A* **355**: 103-109.

Advantages and disadvantages

Precedents to this work
Background
• Water demand forecasting
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Advantages	Disadvantages
• It allows us to include heterogeneity and individualism • Explicit space and local interactions • Bottom-up analysis, autonomy and emergent phenomena • Bounded racionality • Integrated and interdisciplinary science • Participatory processes in modeling and validation	• You don't know how robust is a solution with just a simulation • It is difficult to explore the parameter space

Precedents to this work

Background

- Water demand forecasting
- Agent based modeling

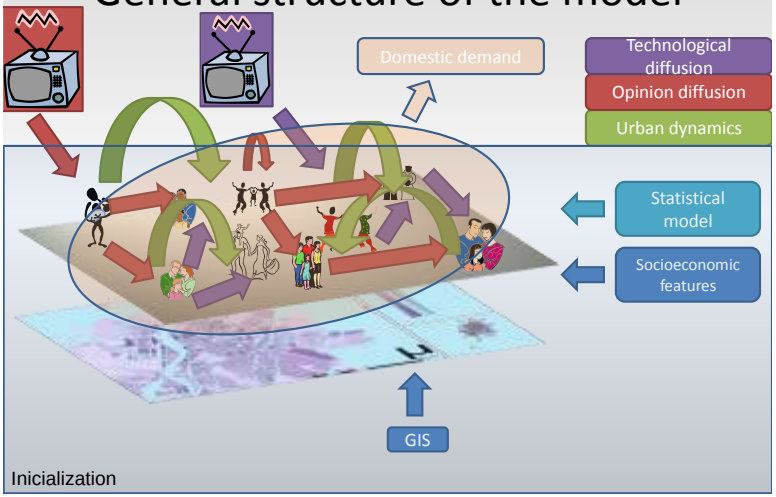
Case of study

- **Integrated consumption model**
- Tratamiento de los datos
- Results and discussion

Conclusions

Extensions

General structure of the model



Urban model choice. Benenson's metamodel

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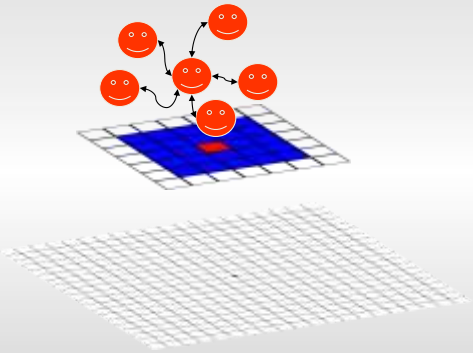

Benenson, I. (1998). *Computing, Environment and Urban Systems* **22**(1): 25-42.

Benenson's metamodel

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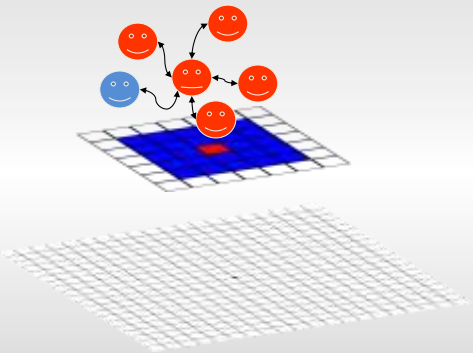

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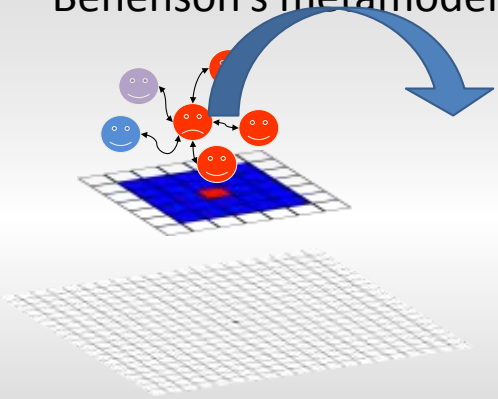
Benenson's metamodel

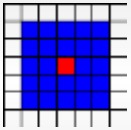


Benenson, I. (1998). *Computing, Environment and Urban Systems* **22**(1): 25-42.

Moving decision

- Benenson's original model
- MxM cells

$U(H_{ij})$



$$H_{ij},\ i,j\ \in[1,M]$$

$$V_{ij}^{t+1}=S_A^t+(N(U(H_{ij}))-1)\cdot(<V_{ij}^t>_U)/N(U(H_{ij}))$$

where $<V_{ij}^t>_U\equiv\sum_{(i'j')\in\overline{U}_{ij}}V_{i'j'}^t/(N(U(H_{ij})-1)$ **and** $\overline{U}_{ij}=U(H_{ij})-\{H_{ij}\}$

$$V_{ij}^{t+1}=d\cdot V_{ij}^t$$

Moving decision

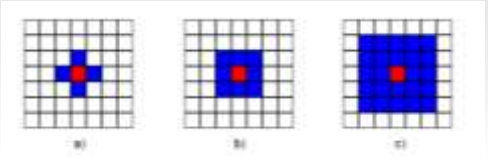
$$S_A^{t+1} = (R_A \cdot S_A^t \cdot (1 - S_A^t) - m \cdot V_H^t) / < V^t >_{city}$$

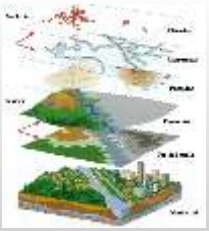
$$< V^t >_{city} \equiv \frac{1}{M^2} \sum_{ij=1}^{m} V_{ij}^t$$

$$P_{ij}^t = (\sum_{B \in \overline{U}_{ij}^o} S_b^t + \sum_{(i'j') \in \overline{U}_{ij} - \overline{U}_{ij}^o} V_{i'j'}^t) / (N(U(H_{ij}) - 1))$$

$$SD_A^t = \left| S_A^t - P^t \right|$$

Adaptation of models defined over regular CA





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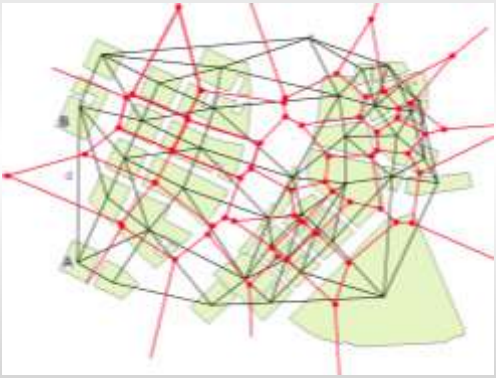
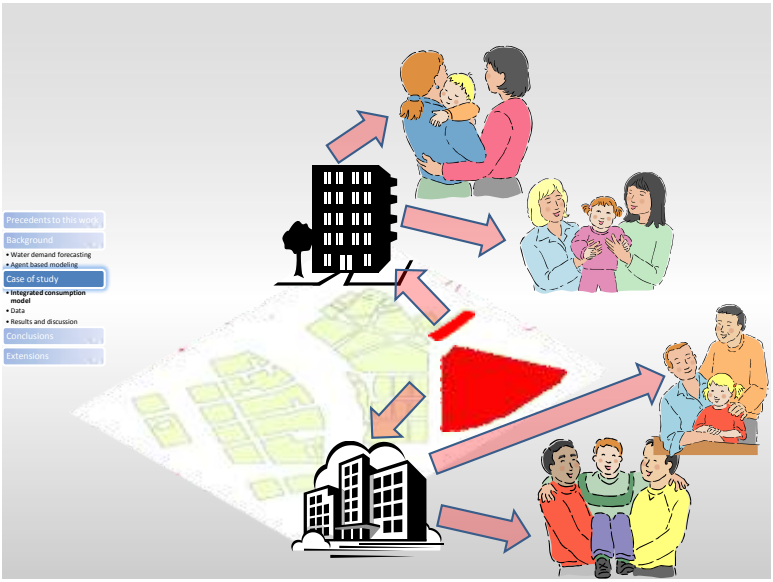
Voronoi diagram and Delaunay triangulation(I)

Let $S = \{p_1, \ldots, p_n\}$ be a set of n points (*sites*) in the plane.

$$V(p_i) \equiv \left\{ q \in \square^2 : d\left(p_i, q\right) \leq d\left(p_j, q\right), i \neq j \right\}$$

Voronoi diagram and Delaunay triangulation (II)

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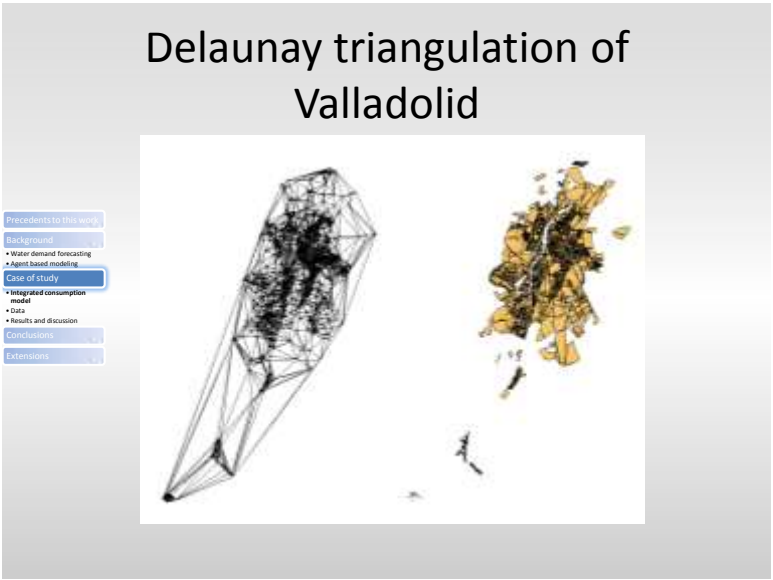
Delaunay triangulation of Valladolid
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Dissonance Factors (I)

- Nacionality
- Cultural level

$$D_{Nacionality} = \begin{array}{c|cc} & \text{Spanish} & \text{Foraigner} \\ & 1 & 0 \\ \hline 1 & Zero & Intermediate \\ 0 & Low & Zero \end{array}$$

$$D_{Studies} = \begin{array}{c|ccc} & \text{High} & \text{Medium} & \text{Low} \\ & 2 & 1 & 0 \\ \hline 2 & Zero & Low & Intermediate \\ 1 & VeryLow & Zero & Low \\ 0 & Low & VeryLow & Zero \end{array}$$

$$D_f(A_i, U(H)) = \sum_j D_f(A_i, U(H)_j) \cdot F_j$$

$$D_f(A_i, U(H)) = \sum_j D_f(A_i, U(H)_j) \cdot F_j$$

Dissonance Factors(II)

Agent's wealth-Household's value

$$D_{Wealth/Value} = \begin{array}{c|ccccc} & 4 & 3 & 2 & 1 & 0 \\ \hline 4 & Zero & VeryLow & Low & Intermediate & High \\ 3 & VeryLow & Zero & VeryLow & Low & Intermediate \\ 2 & Low & VeryLow & Zero & VeryLow & Low \\ 1 & Intermediate & Low & VeryLow & Zero & VeryLow \\ 0 & High & Intermediate & Low & VeryLow & Zero \end{array}$$

Double linear interpolation algorithm

$$D_{Wealth/Value}(w_i, v_j) = D_{w_i^+ v_j^-} \cdot (w_i^+ - w_i) \cdot (v_j^+ - v_j)$$
$$+ D_{w_i^+ v_j^+} \cdot (w_i^+ - w_i) \cdot (v_j - v_j^-) + D_{w_i^- v_j^+} \cdot (w_i - w_i^-) \cdot (v_j^+ - v_j)$$
$$+ D_{w_i^- v_j^-} \cdot (w_i - w_i^-) \cdot (v_j - v_j^-)$$

Residential selection algorithm

Each agent A in M selects randomly several households from the set of houses currently containing vacant dwellings (set HA).
Then he calculates the attractiveness of each house.

in the overall dissonance.

Each agent A decides to change of residence with probability P(D). If it is that the case, it is included in a set, M, of potential “internal” migrants.
Immigrating agents are also appended to M

t M

igration

$)(1-D)$

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• Water demand forecasting
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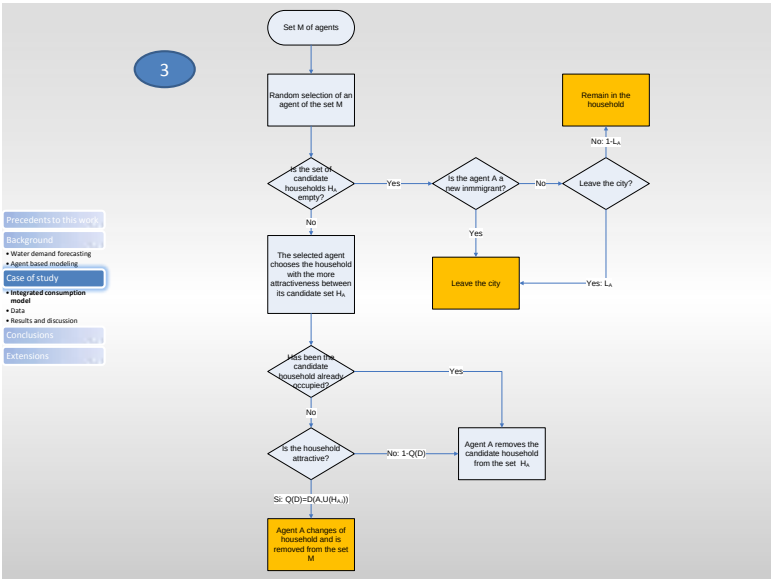

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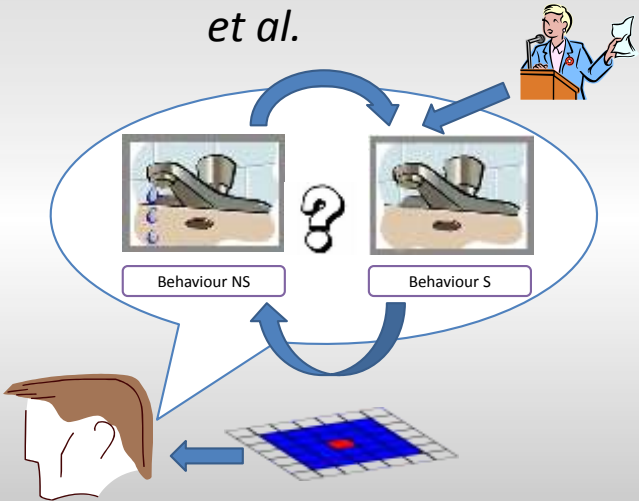
The models of Young and Edwards *et al.*



The models of Young and Edwards *et al.*

$$\upsilon_A(S \to S) = a \cdot V(A,S) + e_S$$

$$\upsilon_A(S \to NS) = b \cdot V(A,NS)$$

$$\upsilon_A(NS \to S) = a' \cdot V(A,S) + e_S$$

$$\upsilon_A(NS \to NS) = b' \cdot V(A,NS)$$

$$e_S = c_E \cdot f(InfWater)$$

$$P(A \text{ chooses } S/S) = \frac{e^{\beta \cdot \upsilon_A(S \to S)}}{e^{\beta \cdot \upsilon_A(S \to S)} + e^{\beta \cdot \upsilon_A(S \to NS)}}$$

$$P(A \text{ chooses } NS/S) = \frac{e^{\beta \cdot \upsilon_A(S \to NS)}}{e^{\beta \cdot \upsilon_A(S \to S)} + e^{\beta \cdot \upsilon_A(S \to NS)}}$$

$$P(A \text{ chooses } S/NS) = \frac{e^{\beta \cdot \upsilon_A(NS \to S)}}{e^{\beta \cdot \upsilon_A(NS \to S)} + e^{\beta \cdot \upsilon_A(NS \to NS)}}$$

$$P(A \text{ chooses } NS/NS) = \frac{e^{\beta \cdot \upsilon_A(NS \to NS)}}{e^{\beta \cdot \upsilon_A(NS \to S)} + e^{\beta \cdot \upsilon_A(NS \to NS)}}$$

Adaptation of the model

$$\upsilon_A = \sum_{e_i} \psi^{e_i} \cdot \xi_i, \qquad e_i \geq 0$$

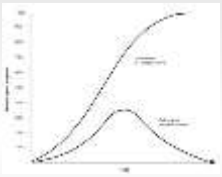
$$\upsilon_A(S \to S) = \psi^{e_1} \cdot a \cdot V(A,S) + \psi^{e_2} \cdot e_S + \psi^{e_3} \cdot c$$

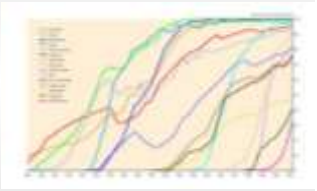
$$\upsilon_A(S \to NS) = \psi^{e_1} \cdot b \cdot V(A,NS)$$

$$\upsilon_A(NS \to S) = \psi^{e_1} \cdot a' \cdot V(A,S) + \psi^{e_2} e_S$$

$$\upsilon_A(NS \to NS) = \psi^{e_1} \cdot b' \cdot V(A,NS) + \psi^{e_3} \cdot c$$

Classic model of innovation diffusion





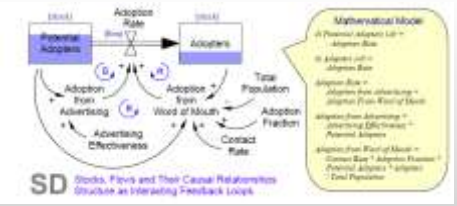
Rogers, E. M. (1962). *Diffusion of Innovation*. New York, NY: Free Press.

The Bass model

$$\frac{dN(t)}{dt} = [m - N(t)][p + \frac{q}{m} N(t)],\ t \geq 0$$

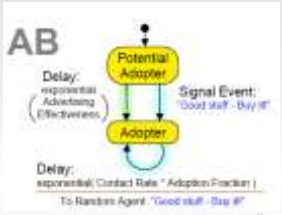
$$F(t) = \frac{1 - e^{-(p+q)t}}{1 + \frac{q}{p} e^{-(p+q)t}},\ t \geq 0$$

p is the innovation coefficient
q is the imitation coefficient



Bass, F. M. (1969). *Management Science* **15**(5): 215-227.

Adaptation of the Bass model



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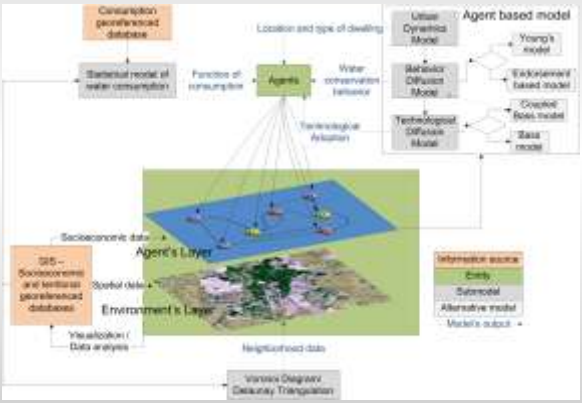

Information sources

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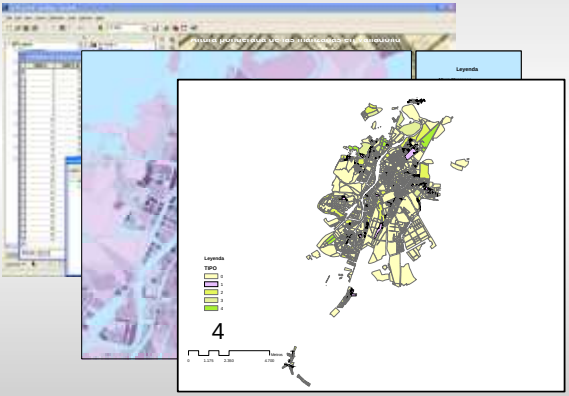
Instituto Nacional de Estadística

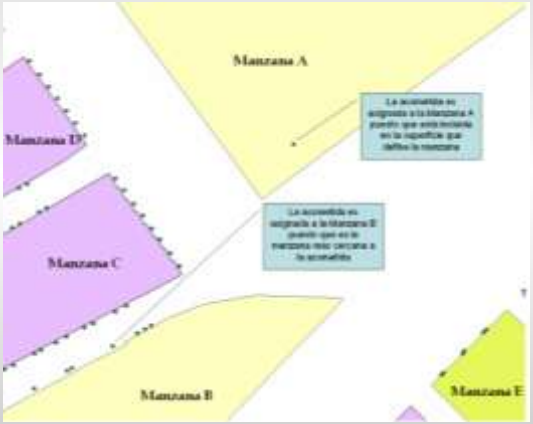
Aguas de Valladolid

Junta de Castilla y León

Household tipology of every block



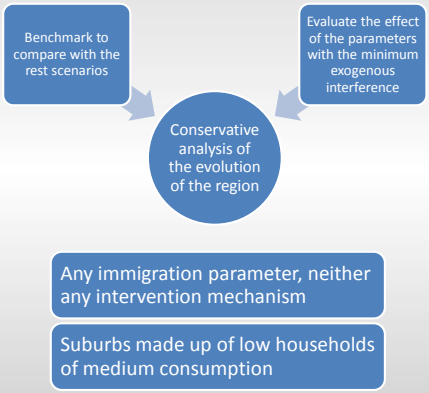
Consumption per block



Scenarios

- 12.500 families
- City of Valladolid and suburbs
- Tick three months
- 10 years
- Scenario-defined by the behaviour of the urban model

Scenario 1



Scenario 2

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Effect of 0.2% immigration every three months (in the set M)

Suburbs made up of low households of medium consumption

Parámetro	Valor
Familias por trimestre	25
probActSocial	0
probAnalf	0.15
probBachillerato	0.05
probExtranjero	1.0
Riqueza	1.3
Miembros	5

Scenario 3

Hold artificially household prices

10% of the households in the suburbs are low of high consumption

20% of the households in the suburbs are low of high consumption

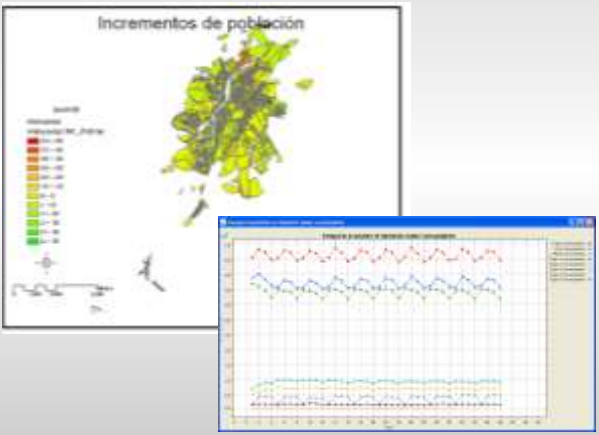
Centro - Campo Grande
San y San Martín
San Nicolás
Fuente Berrocal
Zorrilla
Gamazo
García Morato - Puente Colgante
4 de Marzo

Dynamics and consumption – Scenario 1–

Precedents to this work
Background
- Water demand forecasting
- Agent based modeling

Case of study
- Integrated consumption model
- Data
- **Results and discussion**

Conclusions
Extensions

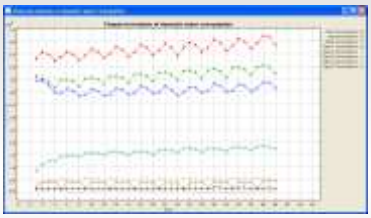


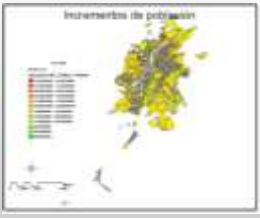
Dynamics and consumption – Scenario 2–

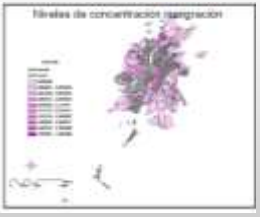
Precedents to this work
Background
- Water demand forecasting
- Agent based modeling

Case of study
- Integrated consumption model
- Data
- **Results and discussion**

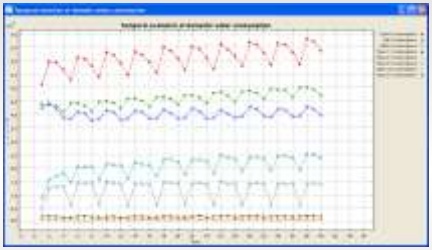
Conclusions
Extensions

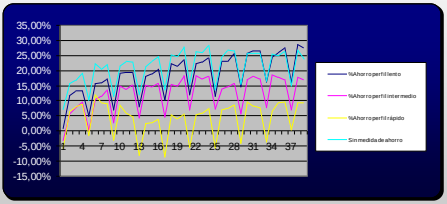






–Scenario 2– changing the tipology in the suburbs

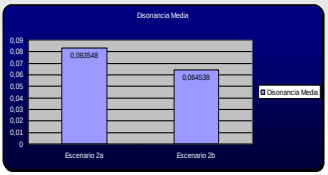


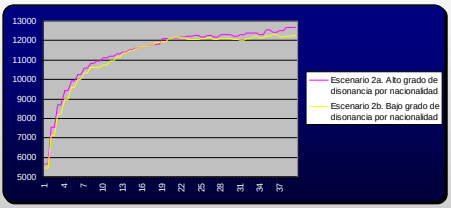


Scenario 2

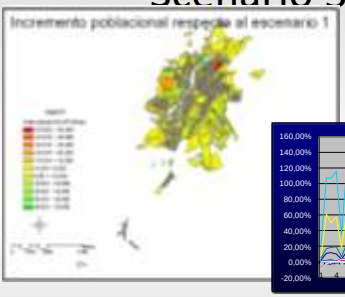
$$D_{Nacionality} = \begin{pmatrix} & 1 & 0 \\ 1 & Zero & VeryHigh \\ 0 & Intermediate & Zero \end{pmatrix}$$

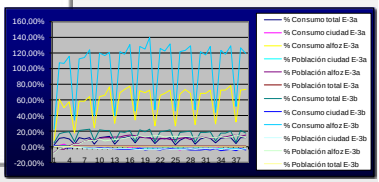
$$D_{Nacionality} = \begin{pmatrix} & 1 & 0 \\ 1 & Zero & Intermediate \\ 0 & Low & Zero \end{pmatrix}$$

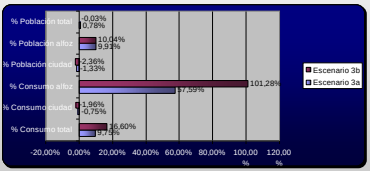




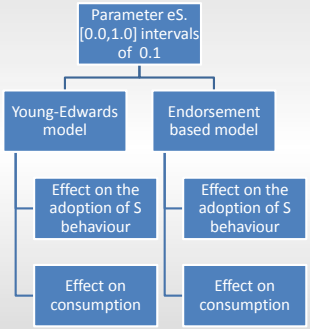
Dynamics and consumption – Scenario 3–



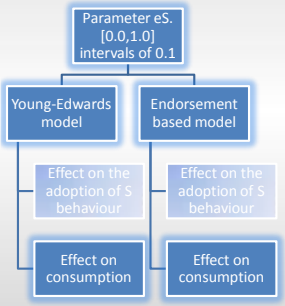


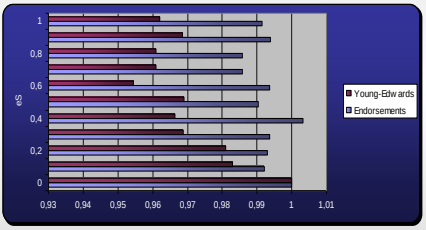


Opinion diffusion



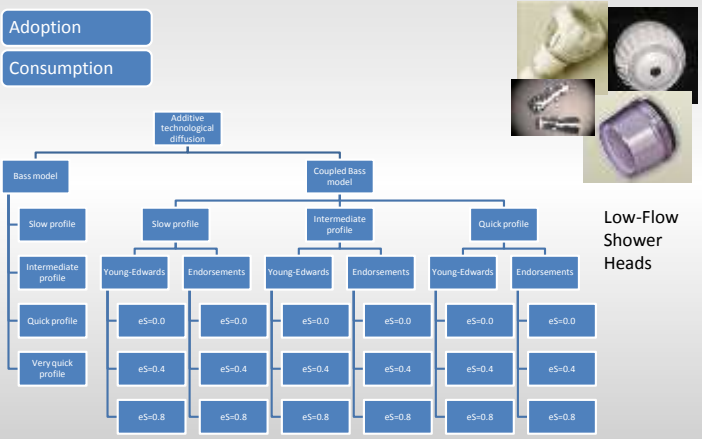
Scenario 2



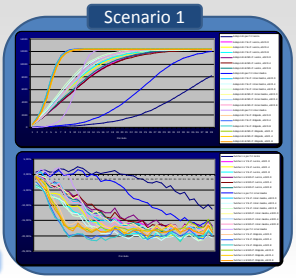


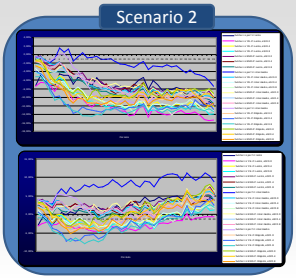
Compared to the situation eS=0

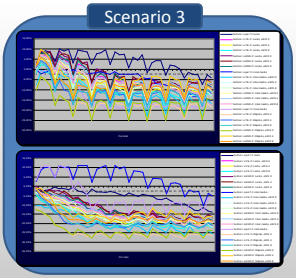
Technological diffusion



Low-Flow Shower Heads







Methodological conclusions

1. **Agent based modeling complements the traditional forecasting methodologies of water demand.**
2. **Agent based simulation offers:**
   1. **The option to abstract and understand the hypothesis of the models**
   2. **Incorporate the geographical dimension with very high level of realism**
   3. **Multidimensional integration of influential aspects, even from differential equations**
3. **Example of generalization of CA models by Voronoi tesellations**

Methodological conclusions(II)

4. **Application of ABM to real cases needs a very high computational power.**
5. **Finding good databases and integrating them are the main obstacle to the explosion of this kind of applications**
6. **It is not easy**

Conclusions in the domain(I)

7. **Urban dynamics and the change in the territorial model influence in a very relevant fashion in the consumption of domestic water.**
8. **An increase in the population does not imply necessarily a lineal increase in the water consumption.**
9. **The inerce of the real state markets affects the tipology of the city, and this in turn affects the water consumption.**

Conclusions in the domain(II)

10. **The external pressure can influence in the consumption**
11. **The time of adoption of the technological measures is not inmediate, and can have an important influence**

"*Modeling real world situations always leads to dissatisfaction, because each time a model has been improved, we become aware of a higher level of complexity in reality which our models cannot yet handle*". (Chen)

Extensions and future research

Precedents to this work

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- Water demand forecasting
- Agent based modeling

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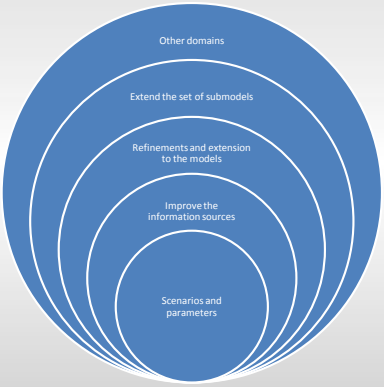


Agent Based Modelling and Simulation

Juan Pavón Mestras, University Complutense, Madrid

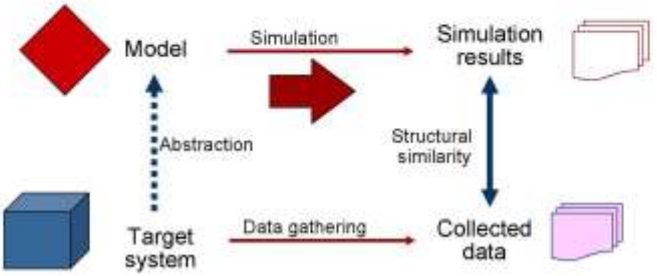
Simulation vs. Experimentation

- **Experimentation** implies the application of treatment to a target group and comparing the effect with a control group
- But usually, this is not possible
  - Too expensive
  - Too complicated
  - Ethical reasons

Will an airplane fall when changing its structure?
What is the effect of limiting the number of children in a population?
What is the best water management policy in a region?
How to form the best work team for a concrete project?

- **Simulation** allows to *experiment on a Model*
  - If the model is good enough, it will react similarly to the system under study
  - The experiment can be repeated many times, with different configurations and to analyse randomness

Modelling and Simulation



Adapted from: Nigel Gilbert and Klaus G. Troitzsch, *Simulation for the Social Scientist*, 2nd edition. Open University Press (2005)

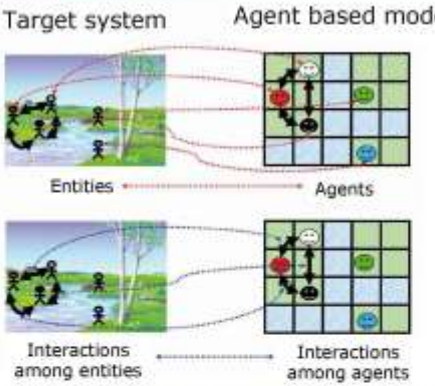
Social Simulation ...

- Social System
  - A collection of individuals
    - Autonomous evolution
    - Motivated by their own beliefs and personal goals
    - And their perception of their environment
  - All these factors evolve in time
    - Plus: Demographic evolution
  - Interact/communicate among them (directly or through environment)

... and Multi-Agent Systems

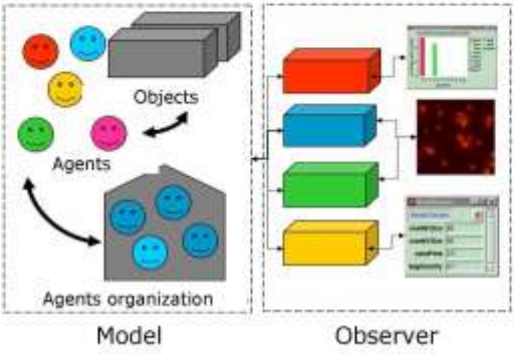
- A software paradigm
- A Multi-Agent System is
  - A collection of individuals (agents)
    - Autonomous evolution
    - Motivated by their own beliefs and personal goals
  - Aware of their environment
  - Interact among them
  - Can form organizations
  - Evolve in time
- The agent paradigm is a good abstraction for modelling social systems

Agent based modelling



From: José M. Galán, EVALUACIÓN INTEGRADORA DE POLÍTICAS DE AGUA: MODELADO Y SIMULACIÓN CON SOCIEDADES ARTIFICIALES DE AGENTES. Tesis doctoral. Burgos 2007

Our social lab



From: José M. Galán, Simulación basada en agentes de juegos evolutivos en redes de normas. Presentación UCM 2008

Agent based social simulation

- The simulation consists of the execution of agents in a simulation environment
  - Agents model specific types of behaviour
  - Agents interact
    - Directly (messages)
    - Through the environment (shared space, pheromones, etc.)
  - The result is an emergent behaviour
    - Visualization of the simulation
    - Graphics of results
    - Execution logs
- Agents have a subjective perception
  - Agents have not a global knowledge
  - It is more realistic, flexible and simple if an agent can only see its neighborhood

Movement and interaction in the environment

- Relevance of local interactions
  - Human interactions happen in a location in the space
  - Local interactions are more important than distant
- Agents are located in space, with the ability to move
  - There are rules to decide movement
- Agents can recognize other agents, whether they are similar or not
  - They can exhibit different kind of behaviour depending on the degree of similarity with other agents
  - It is possible to establish social networks, which determine relationships among groups of agents

Applications of social modelling and simulation

- Better understanding of social phenomena
  - By observing their evolution
  - Diagnosis
- Discover emergent behaviours
- Formalization and validation of social theories
  - From informal text to computational model
- Predictions
  - Determine how a society can evolve in specific aspects
- Training
  - Economic models: http://www.bized.co.uk/virtual/
- Enterteinment
  - Games

Tools for agent based simulation

- Java
  - Swarm (www.swarm.org)
    - Great influence in others (Ascape, Mason, RePast)
    - Initially in Objective-C, now Java
  - **RePast** (repast.sourceforge.net)
  - **Mason** (cs.gmu.edu/~eclab/projects/mason/)
  - SeSAm (www.simsesam.de)
- Others
  - **NetLogo** (ccl.northwestern.edu/netlogo/)
    - Evolution of StarLogo
    - Based on Logo language, easy to use
  - Strictly Declarative Modeling Language, SDML (sdml.cfpm.org)
  - Multi-Agent Simulation Suite (mass.aitia.ai)
- Agent platforms
  - JADE (http://jade.tilab.com/)
- A good list: http://www.econ.iastate.edu/tesfatsi/acecode.htm

Cellular automata

Game of Life (Conway, 1970)

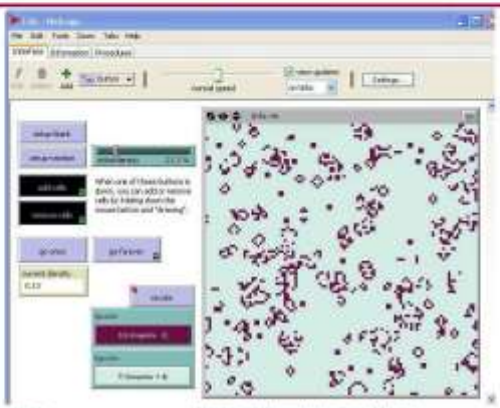
Cellular automata

- A regular grid of cells, each one with a finite (reduced) set of states
  - The grid has a finite number of dimensions
  - Each cell has a set of neighbours
  - Simulation advances in time steps
  - At each time step, a new configuration is generated by updating the state of each cell with a simple function that depends on the previous state of the cell and the state of neighbour cells
    - Usually the same rule for all cells
    - Usually the rule does not change
- Initially developed by Von Neuman (1940)
  - Universal Constructor: a self-replicanting system
  - Designed in 1940 without using a computer
    - 29 states

Game of Life

- A two-dimensional grid of square cells
  - Each cell can be in one of two states: live (1) or death (0)
  - Each cell interacts with its 8 neighbours. At each step:
    - Any live cell with fewer than two live neighbours dies (underpopulation)
    - Any live cell with more than three live neighbours dies (overcrowding)
    - Any live cell with two or three live neighbours lives on to the next generation
    - Any dead cell with exactly three live neighbours becomes a live cell
  - There is an initial pattern or configuration
- With these simple rules, a complex and self-organized behaviour emerges
  - A design and an organization can emerge without the need of a designer

Game of Life - Netlogo



Game of Life - Netlogo

```
patches-own [
  living?         ;; indicates if the cell is living
  live-neighbors  ;; counts how many neighboring cells are alive
]

to cell-birth
  set living? true
  set pcolor fgcolor
end

to cell-death
  set living? false
  set pcolor bgcolor
end

to go
  ask patches
    [ set live-neighbors count neighbors with [living?] ]
  ;; Starting a new "ask patches" here ensures that all the patches
  ;; finish executing the first ask before any of them start executing
  ;; the second ask.  This keeps all the patches in synch with each other,
  ;; so the births and deaths at each generation all happen in lockstep.
  ask patches
    [ ifelse live-neighbors = 3
        [ cell-birth ]
        [ if live-neighbors != 2
            [ cell-death ] ] ]
  tick
end
```

KISS: Keep It Simple and Stupid

Ethnocentrism (Thomas Schelling, 1971)

KISS: Keep It Simple and Stupid

- The more complex the model
  - the harder it is to build and validate
  - the closer it is to the reality
- Occam's razor (XIV century)
  - *entia non sunt multiplicanda praeter necessitatem* (entities must not be multiplied beyond necessity)
  - the principle recommends selection of the hypothesis that introduces the fewest assumptions and postulates the fewest entities while still sufficiently answering the question
- Albert Einstein: *everything should be made as simple as possible, but no simpler*
- R. Axelrod (*The Complexity of Cooperation: Agent-Based Models of Competition and Collaboration*. Princeton University Press, 1997): KISS principle for agent-based modelling

Ethnocentrism theory

- *Ethnocentrism*
  - In-group favoritism: Cooperation with members of a group and not with others out of the group
- Hammond and Axelrod (2005)
  - Empirical evidence suggests that a predisposition to favor in-groups can be easily triggered by even arbitrary group distinctions
  - Preferential cooperation within groups occurs even when it is individually costly
  - Such behaviors can become widespread under a broad range of conditions and can support very high levels of cooperation, even in one-move prisoner's dilemma games
  - When cooperation is especially costly to individuals, the authors show how ethnocentrism itself can be necessary to sustain cooperation

Ejemplo KISS: Ethnocentrism

- Axelrod and Hammond (2005)

http://ccl.northwestern.edu/netlogo/models/Ethnocentrism

- Agents compite for a limited space by means of Prisoner's Dilemma iterations
  - Ethnocentric agents treat better to agents in their group than the rest
    - Similarity is determined by some characteristic, such as colour
    - The system includes a mechanism for inheritance of behaviours

Prisoner's Dilemma

- A game theory problem
  - Police arrests two suspects. There are not enough proofs to sentence them.
  - Taking them separately, the same treat is offered to each one:

	Suspect B claims non guilty	Suspect B confesses
Suspect A claims non guilty	**6 months** both	**10 years for A** and B is free
Suspect A confesses	**10 years for B** and A is free	**6 years** both

  - Each player is incentivated to betray the other
    - Confessing always implies a considerable sentence
  - Even if it is possible to speak with the other, would you trust him?

Ethnocentrism simulation

- Agents are modelled with three attributes:
  - Colour (their group)
  - Strategy with agents of the same colour (collaborate or not)
  - Strategy with agents of a different colour (collaborate or not)

- Behaviour types:
  - An ethnocentric agent cooperates only with those of the same colour but not with the rest (CD)
  - An altruist agent cooperates with all agents (CC)
  - An egoista agent does not cooperate with any agent (DD)
  - A cosmopolitan agent cooperates with agents of other colour but not with the same (DC)

C: cooperate, D: defect

Ethnocentrism simulation

- Simulation cycle
  1. Immigration
     - New agents with random characteristics appear in random positions
       - Each new agent has an initial Potential To Reproduce (PTR) (12% by default)
  2. Interaction
     - Based on Prisioner's Dilemma
       - If the agent helps, it loses 1% of PTR : cooperation has a cost
       - If the agent gets help, it increases PTR by 3%
  3. Reproduction
     - Each agent has a random capability to reproduce:
       - There must be free neighbour space
       - The descendant inherits the attributes of the parent with a mutation rate (5% by default)
  4. Death
     - Every agent has a probability to die (10%)
       - To leave free space for new agents

Ethnocentrism simulation

- Simulated with netlogo:
  - http://ccl.northwestern.edu/netlogo/models/Ethnocentrism

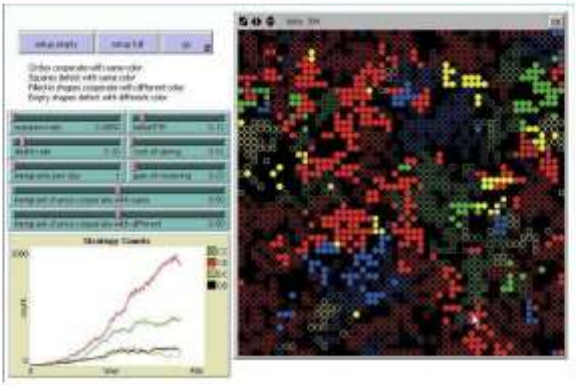
Agents appear as:

- Empty circles: CD (ethnocentric)
- Filled circles: CC (altruist)
- Empty square: DD (egoist)
- Filled square: DC (cosmopolitan)

Execution

- In group favoritism appears even if it is not implemented in the model
  - With default parameters 76% of agents have ethnocentric behaviour
  - Around 74% of interactions are of cooperation
  - Ethnocentrism is a robust phenomenon: even changing many parameters, if manifests

Ethnocentrism simulation



Ethnocentrism simulation - Netlogo

```
;; agents have a probability to reproduce and a strategy
turtles-own [ PTR cooperate-with-same? cooperate-with-different? ]

;; creates a new agent in the world
to create-turtle  ;; patch procedure
  sprout 1 [
    set color random-color
    ;; determine the strategy for interacting with someone of the
    same color
    set cooperate-with-same? (random-float 1.0 < immigrant-
    chance-cooperate-with-same)
    ;; determine the strategy for interacting with someone of a
    different color
    set cooperate-with-different? (random-float 1.0 < immigrant-
    chance-cooperate-with-different)
    ;; change the shape of the agent on the basis of the strategy
    update-shape
  ]
end

to-report random-color
  report one-of [red blue yellow green]
end
```


Agent based modelling

Examples

Agent based modelling

- Agents define individual behaviour
  - They can interact with other agents, pursue goals, react and move in an environment
- They act in a simulated environment
- Properties at macro level emerge from agents' interactions

- Example: Traffic management
  - Each agent is a vehicle
    - Agents react on the presence of other vehicles
    - Each agent has its own goal: arrive to its destination
  - The environment is the road network
  - Traffic jams emerge by interaction of agents

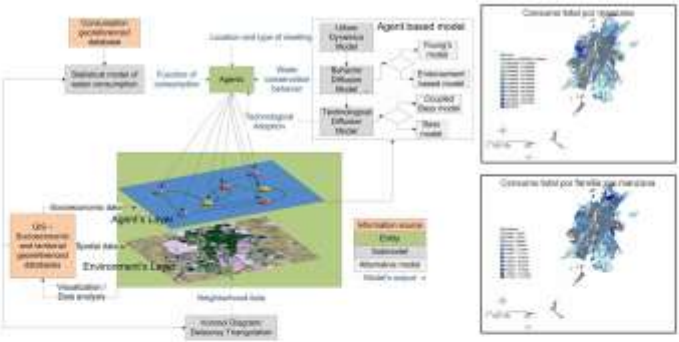
Domestic water management in Valladolid
José Manuel Galán (UBU INSISOC, 2007)

- Case study: Integrate and adapt different social sub-models
  - Urban dynamics
  - Technology dissemination
  - Opinion dissemination
  - Water consumption model

in an agent based model on a Geographical Information System(GIS)

- A system that supports the simulation for water demand policies on different scenarios
  - Customized for the city of Valladolid
    - Socioeconomic information
    - Consumption data
  - Agents model families and take decisions on
    - Localization of the household
    - Attitude on water shortage
    - Adoption of technology measures
    - Implement an econometric model of trimonthly consumption

Domestic water management in Valladolid



Domestic water management in Valladolid

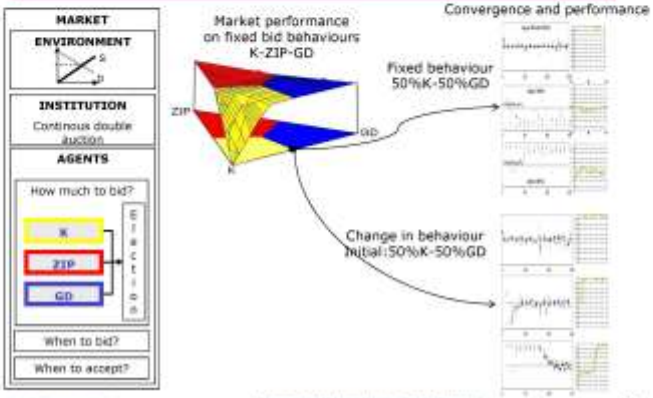
- Conclusions
  - ABM complements traditional techniques for estimation of water demand, by giving not only information on temporal evolution but also spatial
  - And integrating different kind of models
  - Urban dynamics and the change in territorial model has a great influence in domestic water consumption

- Publications:
  - *An agent-based model for domestic water management in Valladolid metropolitan area*, Water Resources Research, 45, W05401, doi:10.1029/2007WR006536. 2009.
  - *Diffusion of Domestic Water Conservation Technologies in an ABM-GIS Integrated Model*. In HAIS '08: Proceedings of the 3rd international workshop on Hybrid Artificial Intelligence Systems. Lecture Notes in Artificial Intelligence 5271, pp. 567-574. Edited by Corchado, E., Abraham, A., Pedrycz, W. Berlin Heidelberg: Springer. 2008.
  - *Evaluación integradora de políticas de agua: modelado y simulación con sociedades artificiales de agentes*. Servicio de Publicaciones de la Universidad de Burgos. 2007.

Continuous Double Auctions
Marta Posada (UVa INSISOC, 2005)

- Case study: Analysis of performance and convergence of prices in continuous double auctions with agents using different bid strategies
  - Agents may follow several bid strategies: ZI, ZIP, GD y K
  - In an environment with a similar excedent of producers and consumers
  - Agents have some criteria to change bid strategies with the purpose of getting greater benefits
  - The simulation is used to analyse market performance and price convergence
    - For different proportions of agents ZIP, GD and K in the market
    - When agents maintain one bid strategy
    - When agents change of bid strategy by using their observation of prices in the market and their own benefits

Continuous Double Auctions



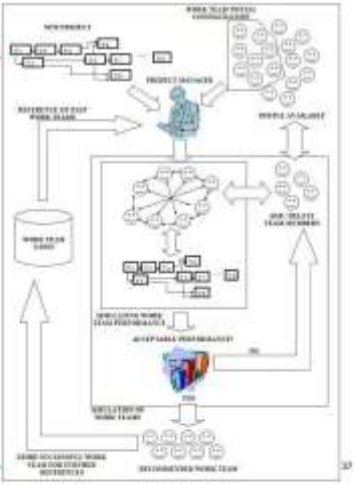
Continuous Double Auctions

- Conclusions
  - There is no need of intelligence for attaining near 100% market performance
    - But performance is considerably reduced when there are more than 50% of agents in the market that just accept bids (K agents)
  - There is a need of intelligence to get price convergence to a competitive equilibrium
    - The behaviour of the bid influences the price convergence pattern, as well as the satisfaction of regularities observed by Experimental Economy
  - Cuando en el mercado existen agentes que se limitan a aceptar pujas, estos agentes se quedan con el excedente de los agentes del otro lado del mercado y fuerzan que los precios no converjan al precio de equilibrio competitivo
  - Cuando los agentes pueden cambiar su estrategia de puja en función del comportamiento de los precios en el mercado, el problema de la falta de convergencia de los precios y la reducción de la eficiencia se corrigen
- Publications:
  - Posada, M., López-Paredes, A. (2008) How to choose the bidding strategy in Continuous Double Auctions: Imitation versus take-the-best heuristics. JASSS vol 11, nº 16
  - Posada, M., Hernández, C., López-Paredes, A. (2005) *Learning in Continuous Double Auction*. Lecture Notes in Economics and Mathematical Systems, 564, 41-52

TEAKS: Work team formation
Juan Martínez-Miranda (UCM-Grasia, 2009)

- Purpose
  - To build a simulation tool to get an estimated information about the team-members and whole team behaviour, in terms of:
    - The ideal size of a team (2 to n members)
    - Composition (specific skills of the people involved in the project).
      - Cognitive
      - Emotional
      - Social
      - Personality

TEAKS: Architecture



Scheduling in multi-project environments (UVa INSISOC, 2008)

- Caso de estudio: selección, programación y control de proyectos en un entorno multi-proyecto dinámico.
  - Se reciben propuestas de proyecto dinámicamente, cada uno de ellos con unos plazos de entrega, una valoración y un peso. Cada proyecto supone un conjunto de operaciones que deben ser ejecutadas respetando unas restricciones de precedencia.
  - Las operaciones son realizadas por recursos. Cada recurso sólo puede ejecutar operaciones de un determinado tipo. La disponibilidad de recursos es limitada.

    Se deberá considerar la flexibilidad de recursos.
    - Un recurso puede poseer diferentes habilidades, lo que le permite realizar diferentes actividades con diferentes grados de eficiencia.
    - Cada actividad puede ser realizada por diferentes recursos, cada uno de ellos con un grado de eficiencia (diferentes duraciones).
  - Se busca seleccionar y programar de forma dinámica un conjunto de proyectos (de entre los propuestos) intentando maximizar los beneficios totales.
    - De acuerdo con la aproximación multi-agente la solución debe obtenerse de forma distribuida. Cada agente elaborará y controlará sus propios planes y programas.

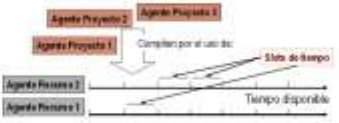
Scheduling in multi-project environments

Tres tipos de agente:

- Gestores de proyecto
- Gestores de recurso
- Coordinador

Mecanismo de subasta para la asignación de recursos a las tareas:

- Se pretende conseguir conjunto de programas locales compatibles y globalmente eficientes.
- Los proyectos compiten en un mercado por los slots de tiempo de los recursos.
- Emergen precios para los slots de tiempo de los recursos.



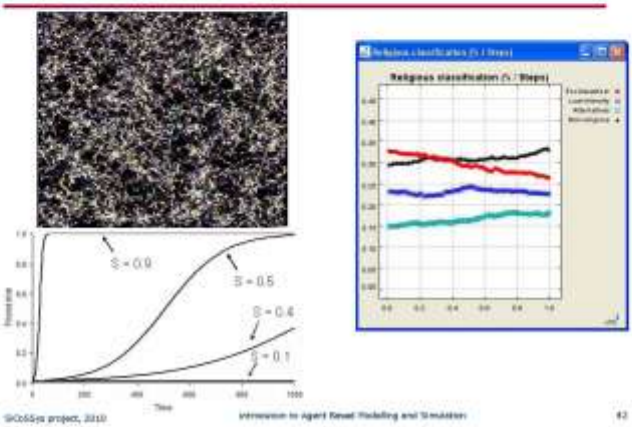
Scheduling in multi-project environments

- Conclusiones
  - El sistema asigna recursos a las tareas de los proyectos dinámicamente. Ayuda además a la toma de decisión sobre la conveniencia de rechazar algún proyecto teniendo en cuenta el valor aportado el estado del sistema.
  - Los precios aportan información sobre la criticidad que tienen los diferentes recursos para el logro de los objetivos globales. Los precios permiten valorar en tiempo real, si se debe adquirir más recursos de un tipo durante un cierto periodo de tiempo, o si se debe tratar de dotar con capacidades adicionales a ciertos recursos.
  - Esta aproximación contribuye a rellenar el hueco de literatura existente entre la gestión de cartera de proyectos – generalmente centrada en estrategia corporativa y finanzas – y el trabajo en dirección de proyectos – fundamentalmente dedicado a aspectos operacionales como la asignación de recursos y la programación –.
- Publicaciones relevantes:
  - Araúzo-Araúzo, J.A., Galán-Ordax, J.M., Pajares-Gutiérrez, J. and López-Paredes, A. (2009), Gestión eficiente de carteras de proyectos. Propuesta de un sistema inteligente de soporte a la decisión para oficinas técnicas y empresas consultoras, *DYNA Ingeniería e Industria*, 84(9), pp. 761-772
  - Araúzo, J.A., Galán, J.M., Pajares, J., López-Paredes, A. (2009) Online scheduling in multi-project environments. A multi-agent approach. In 7th International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS'09). *Advances in Intelligent and Soft Computing* 55, pp. 293-301. Edited by Demazeau, Y., Pavón, J., Corchado, J.M., Bajo, J. Berlin Heidelberg: Springer

Evolution of social values
Samer Hassan (UCM GRASIA, 2009)

- Case study: simulate the process of change in social values in the Spanish society during the period 1980-2000
  - It is designed as a strongly data-driven case study taking into account quantitative -focusing on surveys- & qualitative data sources, together with social network dynamics.
  - It supports the theories of R. Inglehart on the change of social values driven by demographic effects instead of social influence.
  - A representative sample of the Spanish population of 1980 evolve following certain social dynamics (friendship evolution, matchmaking, reproduction) and demographical equations
    - 3000 agents loaded from surveys
    - Empirically grounded equations
    - Agent life cycle & set of characteristics
    - Fuzzy relationships

Evolution of social values



Evolution of social values

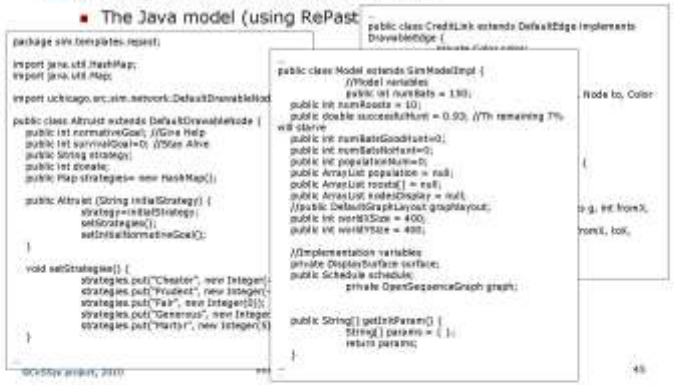
- Conclusions
  - Reveals key importance of demography in the process of social values change.
  - Serves as case study for data-driven modelling, focused on survey data. Besides, it merges several Artificial Intelligence technologies into agent-based modelling.
- References
  - *Mentat: A Data-Driven Agent-Based simulation of social values evolution*. In: Multi-Agent-Based Simulation X, Revised selected papers, Lecture Notes in Artificial Intelligence, Springer-Verlag (2009)
  - *Friends forever: Social relationships with a fuzzy Agent–Based model*. Hybrid Artificial Intelligence Systems, Selection from the Third International Workshop, HAIS 2008, 5271:523–532, 2008

Altruism model
Candy Sansores (UCM GRASIA, 2007)

- Case study: Altruism among simple and smart bats
  (G. Di Tosto, R. Conte, M. Paolucci. *Altruism Among Simple and Smart Vampires*, 1st Conf. of the European Social Simulation Association (ESSA), 2003):
  - It shows the importance of modeling agents as cognitive entities and remarks the impact of intelligence, goal-based systems on the spreading of altruism, provided these systems are highly dynamic
  - A population of bats (agents) that live in roosts, where they get back to after hunting and perform social activities like grooming and sharing food
    - Bats are modeled as agents
    - Roosts are modeled as aggregates of bats
    - In roosts, bats are allowed to share food and to groom one another
  - Each simulation cycle includes one daily and one nightly stage
    - During the daily stage, bats perform the social activities
    - In the night bats hunt

Altruism model

- An study on simulation about "altruism"
  - The Java model (using RePast

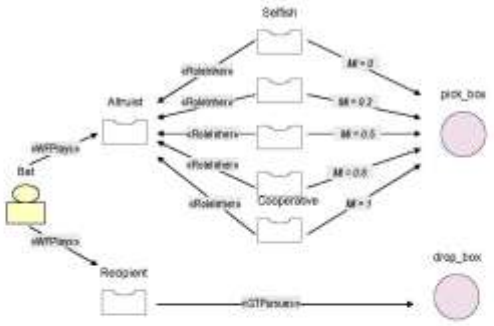


Altruism model

- An study on simulation about "altruism"
  - Using an agent oriented modelling language (INGENIAS)
  - A set of diagrams, which show different perspectives of a model of the system under study
  - These diagrams can be automatically translated to code by using model driven engineering techniques

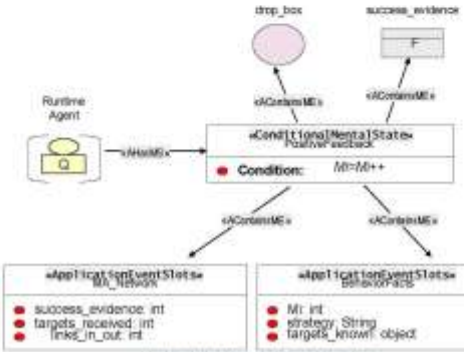
Altruism model

- Agents play roles and pursue goals



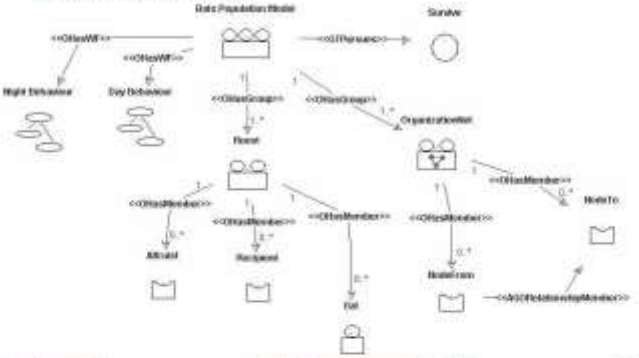
Altruism model

- Agent behaviour: conditional mental state pattern



Altruism model

- Agents' organization



Altruism model

- This work was performed to study the possibility to express the models with a visual language
  - Questions the expressiveness of agent-based modeling languages
- And the transformation of these models to different platforms
  - Repast
  - Mason
  - Model validation through replication
- Publications:
  - *Visual Modeling for Complex Agent-Based Simulation Systems.* In: J. Sichman and L. Antunes (Eds.): Multi-Agent-Based Simulation, Sixth International Workshop on Multi-Agent-Based Simulation (MABS 2005)
  - *Agent-Based Simulation Replication: a Model Driven Architecture Approach.* In: A. Gelbukh et al (Eds.): Fourth Mexican International Conference on Artificial Intelligence (MICAI-2005)

Conclusions

- Graphical modeling can be closer to end-user needs
  - Case studies using an agent modeling language
    - Support for simple to complex agents
    - **Domain specific languages** *under study*
- A flexible framework that can be adapted to different target platforms
  - Currently code generation for Repast and Mason
    - Requires add-on for adapting INGENIAS agent model
    - Control of simulation scheduler
  - Replication (see [Sansores and Pavón, MICAI 2005])
- *Need for learning and understanding from social scientists*
  - *How to model the problems of sociology or economy?*

Bibliografía

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- Referencias:
  - R. Axelrod (1997). Advancing the art of simulation in the social sciences. Complexity, 3(2):16-22
  - B. Edmonds and S. Moss (2004). From KISS to KIDS - An 'Anti-simplistic' Modelling Approach. In P. Davidsson, B. Logan, and K. Takadama, editors, MABS, Lecture Notes in Computer Science 3415, Springer Verlag, 130-144.
  - C. M. Macal y M. J. North (2005). *Tutorial on Agent-Based Modeling and Simulation.* Proc. 2005 Winter Simulation Conference, pp. 2-14
  - Ross A. Hammond and Robert Axelrod (2005). *The Evolution of Ethnocentrism*, http://www.personal.umich.edu/~axe/research/Hammond-Ax_Ethno.pdf

IV. Web-products of the Project

ECESIS Collaboration Workplace

Adam Chmielewski, Maria Curie Sklodowska University, Lublin, Poland

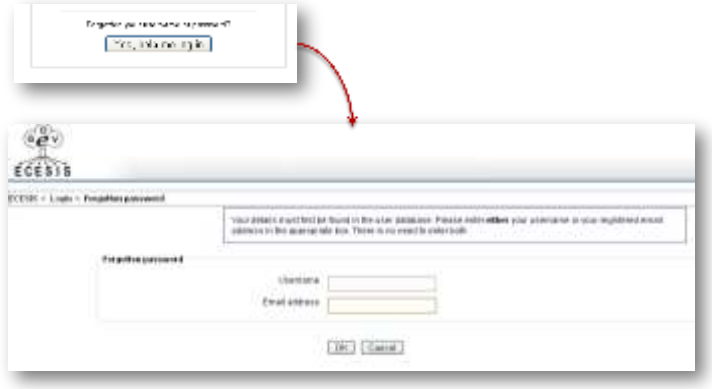
Purposes

- Dedication for ECESIS courses
- Collaboration workplace
  - Information function (e.g. news, project scope)
  - Share documents
  - Discuss
    - Forum
    - Chat
  - Schedule work
  - Exchange experience
  - Secure access

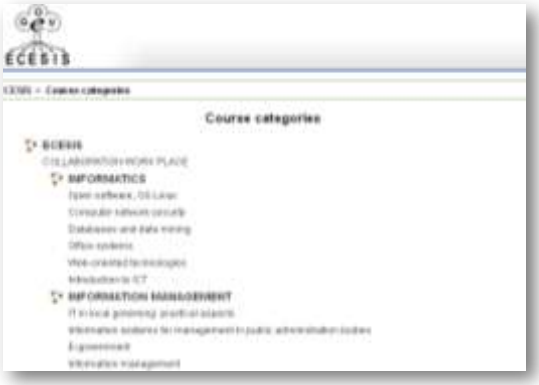
Main page – project/partners information

Access only for registered users
Local language versions

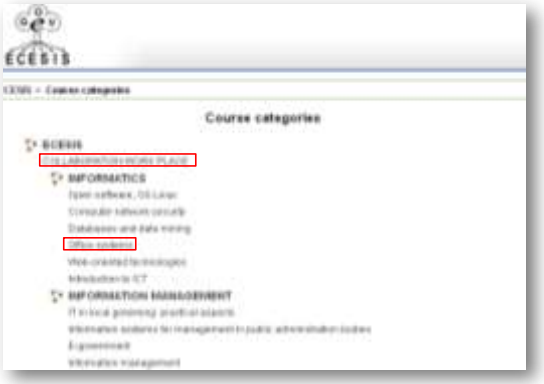
Problems with logging in?



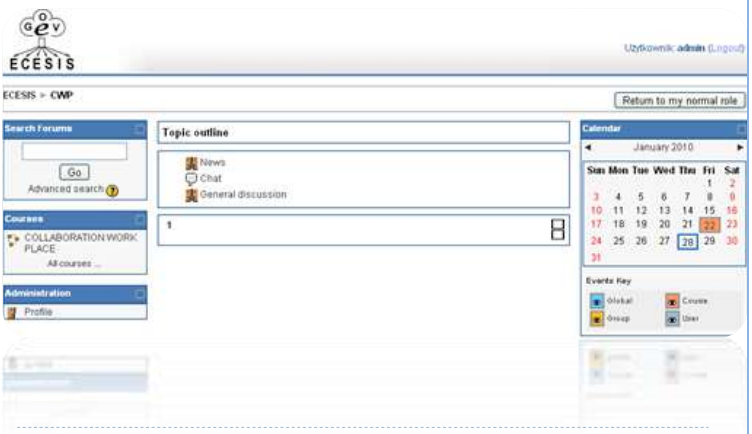
Information about all courses
Course categories



One course for all users
Separate groups for each course



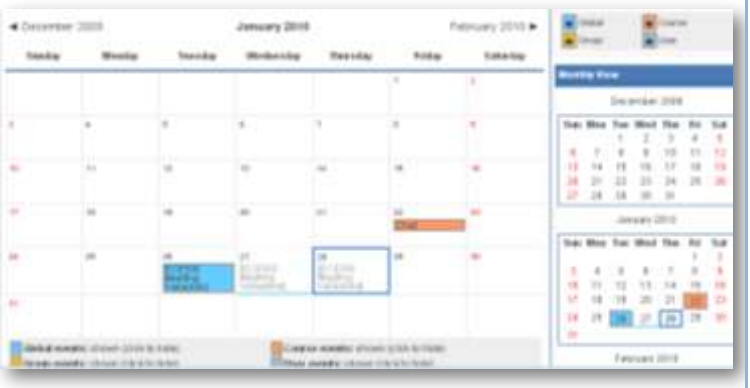
News, general discussion and schedule



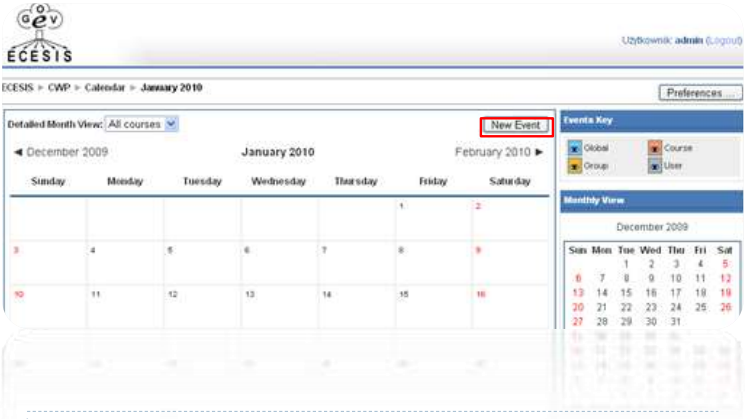
Profile

Profile

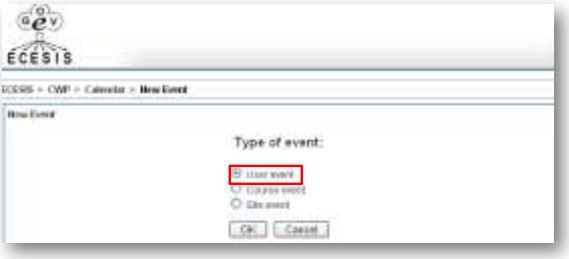
Schedule



New event

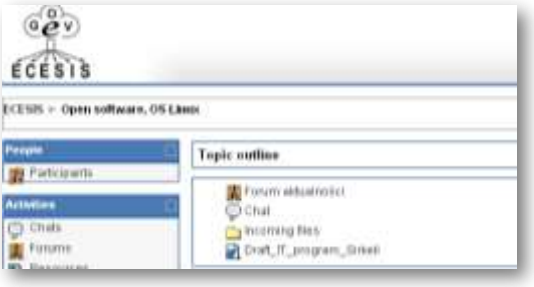


New event

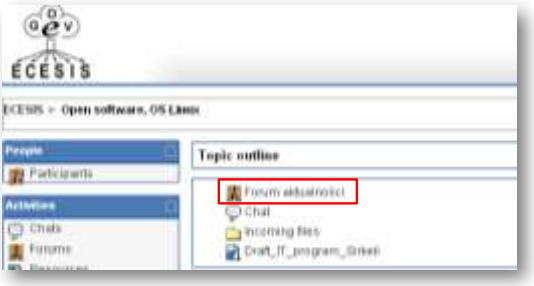


New event

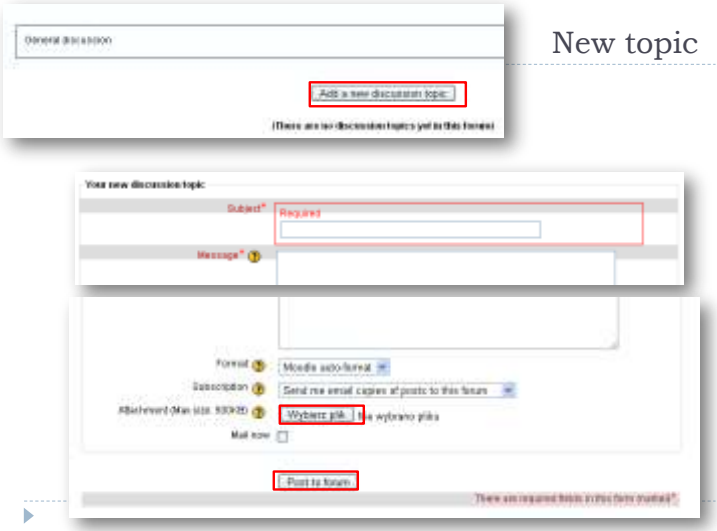
File exchange, virtual folder



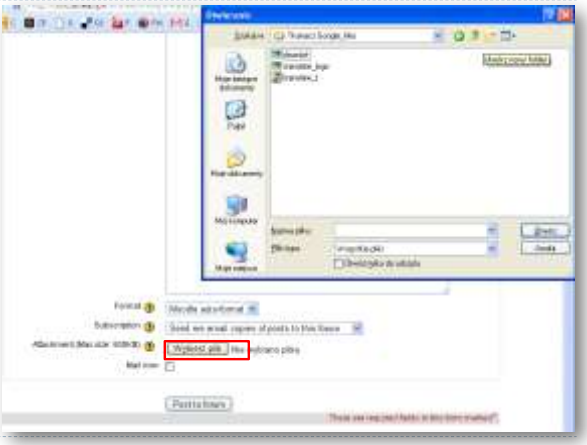
New topic



New topic



Adding file



Course material presentation

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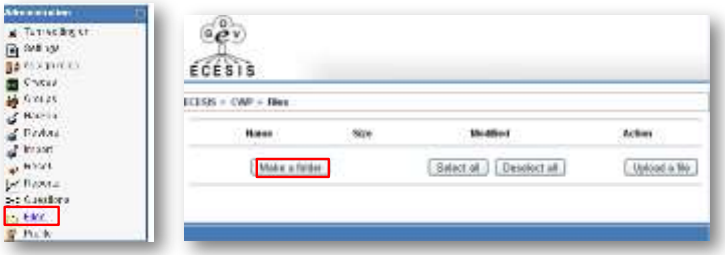

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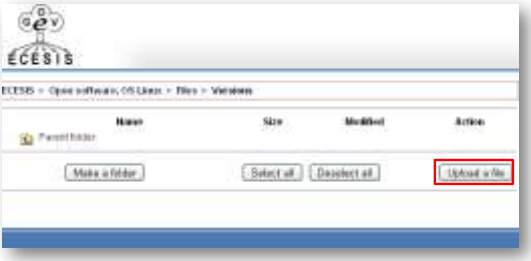


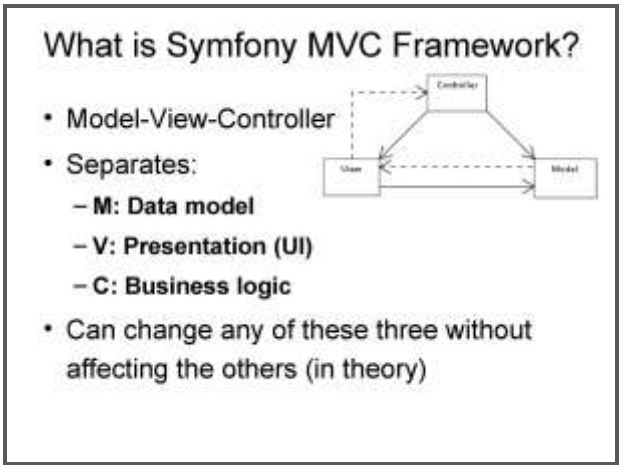
Summary

ECESIS

- Inform (e.g. news, project scope)
- Schedule and organize work
- Collaborate and share documents
  - Prepare courses
  - Before/after meetings
- Discuss (forum, chat)
- Exchange experience

Project web-site design

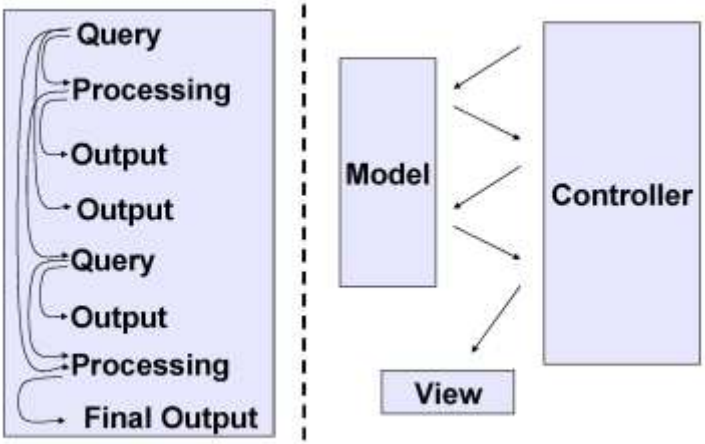
Aleksey Lashin, University of Koblenz-Landau



Why use an MVC framework?

- Avoid "reinventing the wheel"
- Use proven, tested code
- Automation (ORM, generators)
- "Plugin" functionality

Flow: Traditional vs. MVC



Popular PHP MVC Frameworks

- **CakePHP**
  - Documentation is somewhat lacking
  - Apparently difficult for beginners
- **Symfony**
  - Great documentation and community
  - Easy to get started
- **Zend**
  - Supported by Zend (official PHP company)
  - More of a library than complete framework

Why did we choose Symfony?

- Great documentation
- Great community
- Well-written and tested code
- Nice deployment system (PEAR / SVN)
- Extensive use of existing projects, instead of rewriting everything from scratch

Object Relational Mapper (ORM)

YAML (Used in RoR)

```
propel:
    table_name:
        field_name:        field_type
```

```
$propel = array(
    'table_name' => array(
        'field_name' => 'field_type',
    )
);
```

```
propel:

    client:
        id:
        created_at:
        name:              varchar(100)
        short_name:        varchar(20)

    project:
        id:
        created_at:
        client_id:
        name:              varchar(100)
        short_name:        varchar(20)
```

- Propel gives database independence
- Id, created_at, & foreign key fields are autogenerated

i18n and l10n

English: (LTR)

Arabic: (RTL)

Symfony Plugins

Cloud Server

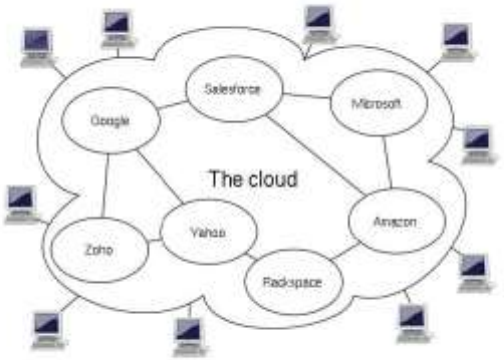
Cloud computing is Internet- ("cloud-") based development and use of computer technology ("computing"). In concept, it is a paradigm shift whereby details are abstracted from the users who no longer need knowledge of, expertise in, or control over the technology infrastructure "in the cloud" that supports them.

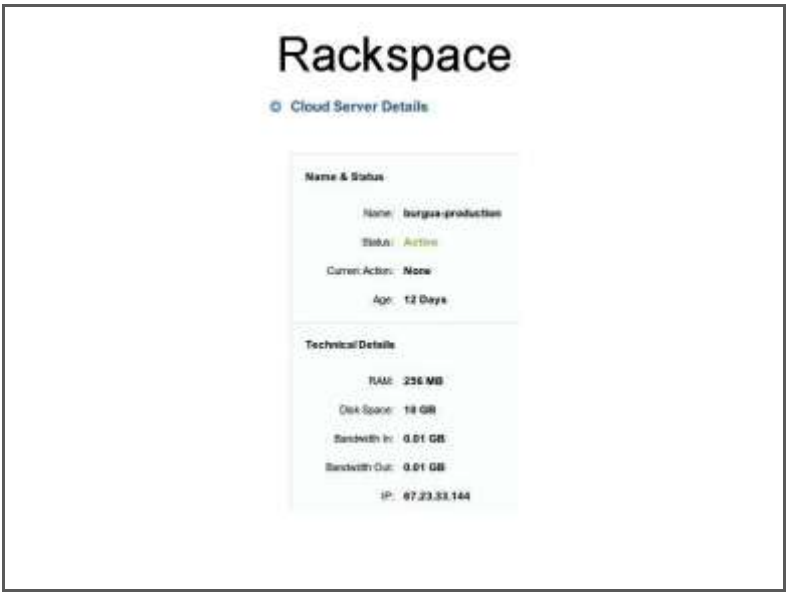
Cloud Server

In concept, it is a paradigm shift whereby details are abstracted from the users who no longer need knowledge of, expertise in, or control over the technology infrastructure "in the cloud" that supports them.

It typically involves the provision of dynamically scalable and often virtualized resources as a service over the Internet.

Public Cloud Servers




Rackspace
Cloud Server Details
Name & Status
Name: burgus-production
Status: Active
Current Action: None
Age: 12 Days
Technical Details
RAM: 256 MB
Disk Space: 10 GB
Bandwidth In: 0.01 GB
Bandwidth Out: 0.01 GB
IP: 67.23.33.144


ecesis.eu.org
Ecesis
Events
Persons
Institutions
Presentations
Forums

ecesis.eu.org

Events

Past Events

Kick-Off meeting in Koblenz in Koblenz, January 2009

Meeting of Ministry and Local Government Representatives in Sumy, May 2009

Meeting of Ministry and Local Government Representatives in Koblenz, June 2009

Meeting of University Representatives in Koblenz, July 2009

Progress Meeting in Yerevan, September 2009

Training Workshop in Lublin, November 2009

Future Events

Meeting of the Web Implementaion Group in Koblenz, December 2009

Training Meeting in Valladolid, January 2010

Training Meeting in Koblenz, July 2010

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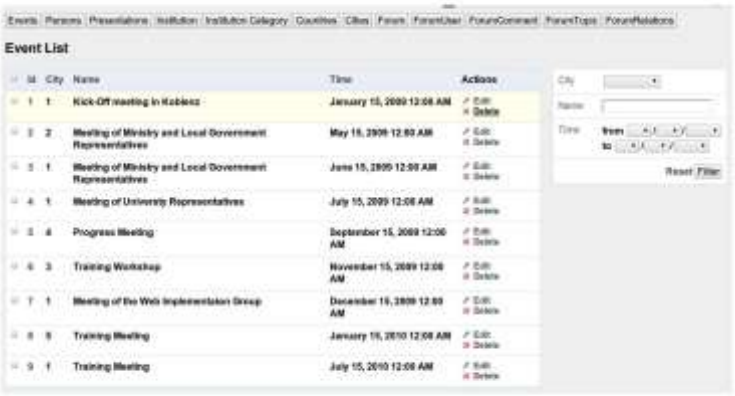


ecesis.eu.org
Edit Event
City
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Time
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ecesis.eu.org
Edit Event
The item was updated successfully.
City
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Name
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ecesis.eu.org

Future Events

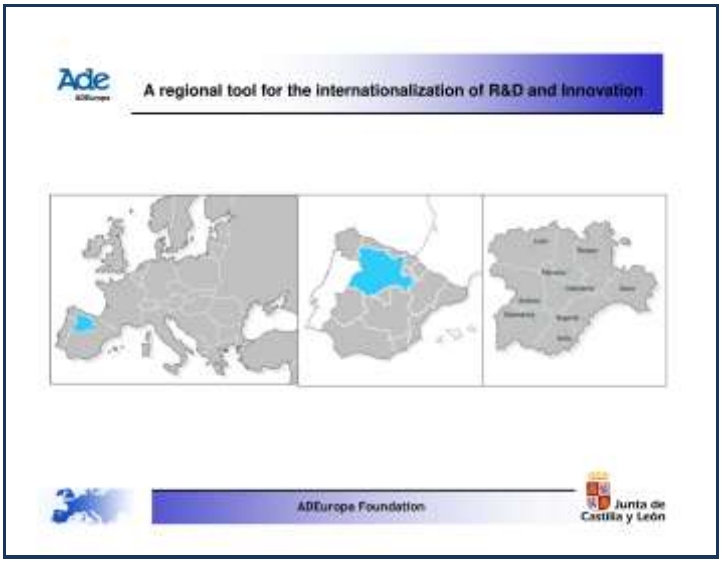
Meeting of the Web Implementaion Group in Koblenz, December 2009

Training Meeting in Valladolid, January 2010

Training Meeting in Koblenz, July 2010

Kick-Off meeting in Koblenz in Koblenz, January 2014

Supplement 1: ADEuropa: A regional tool for international R&D and Innovation



I+D+i: Evolución de Castilla y León

➔The Castilla y León investment in R&D has increased 5 times during the last 10 years.

➔Castilla y León ha pasado de ocupar el 12º puesto en I+D+i en el ranking nacional de CCAA al 5º puesto en la actualidad.

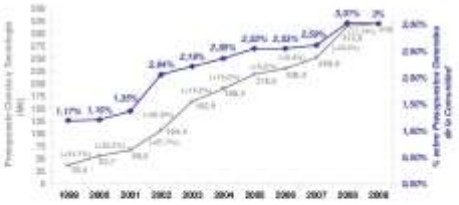
➔The private expenditure in R&D reached nearly 60,0 % from 32,8%, during last 10 years.

ADEuropa Foundation

Junta de Castilla y León

I+D+i: Evolución de Castilla y León

The Regional Government's commitment with R&D activities has been indubitable over the last years. (3 % of the region's 2008 public budget aimed to R&D activities support).



Source: General Budget of the Community of Castilla y León

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Junta de Castilla y León

I+D+i: New Approaches

- Proximity and support to entreprises R&D needs.
- Personalised R&D Monitoring System of enterprises
- R&D support teams (regional-national and international level).
- Integral Innovation training focused on human resources.
- Simplification of R&D and Innovation Programmes.
- Start up of Regional University Business Strategy.

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R &D Internationalisation

- R& D Internationalisation is a priority of regional policy.
- 2nd Business Internationalization Plan of Castilla y León (2008-2011) (with a new core based on R&D internationalisation).
- Specially focused on the participation improvement of entities from Castilla y León in european and international R&D and cooperation programmes.
- Integration of the R&D international scopes.

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European Programs

Improvement of Castilla y León position at international and european level.

Ambitious goals:

➔Multiply by 3 our results in European Programmes (7FP).

➔300 regional agents in European and International R&D projects.

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Internationalization in Castilla y León: Key issues

1. **Innovation** and **Internationalization** are 2 of the 3 cores of the Regional Economic Policy.
2. In the Innovation and the Internationalization ambit, Europe is considered as an essential issue.

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Internationalization in Castilla y León: Key issues

- 1st Business Internationalization Plan of Castilla y León (2004-2007)
- 2nd Business Internationalization Plan of Castilla y León (2008-2011)

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Regional Development Agency Structure

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Junta de Castilla y León

Main goals

ADEuropa Foundation has two main objectives:

→ To Promote the participation of the public and private agents of Castilla and León in International, European, and Spanish R&D and Innovation Programmes.

→ To Foster the Investment projects in Castilla and León and the international Cooperation of the enterprises and agents of the region.

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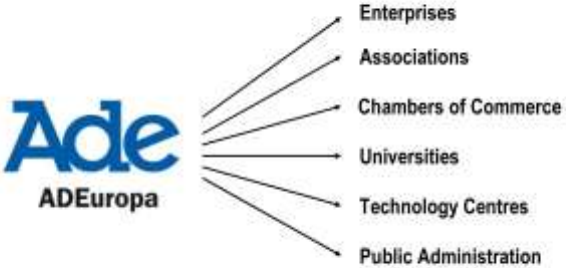
Junta de Castilla y León

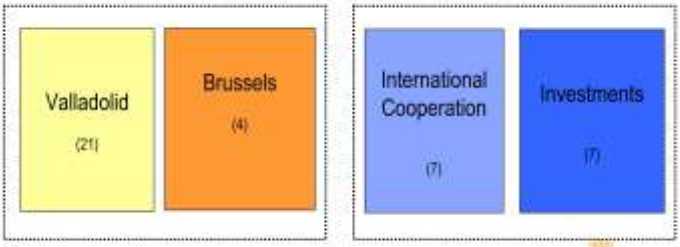


ADEuropa Foundation

Junta de Castilla y León

Our organization

ADEuropa has a team of around 44 people



ADEUROPA R&D and Innovation

The activities of ADEuropa in the R&D and Innovation Division is based on the following main issues:

→ The need to promote and increase the participation of the public and private agents of the region in Spanish, European and International Programs and Projects, specially those related to R&D and Innovation.

→ The need of an effective and specific support tool in the frame of the Spanish and European R&D and Innovation Programs and related activities.

ADEUROPA R&D and Innovation

The main lines of activity of the Foundation in R&D and Innovation are:

- **A).** PROMOTION OF THE PARTICIPATION IN EUROPEAN AND INTERNATIONAL PROGRAMMES
- **B).** PROMOTION, FOSTERING AND MONITORING OF REGIONAL AND NATIONAL PROGRAMMES
- **C).** R&D AND INNOVATION NETWORKS AND TECHNOLOGY PLATFORMS

European Programmes

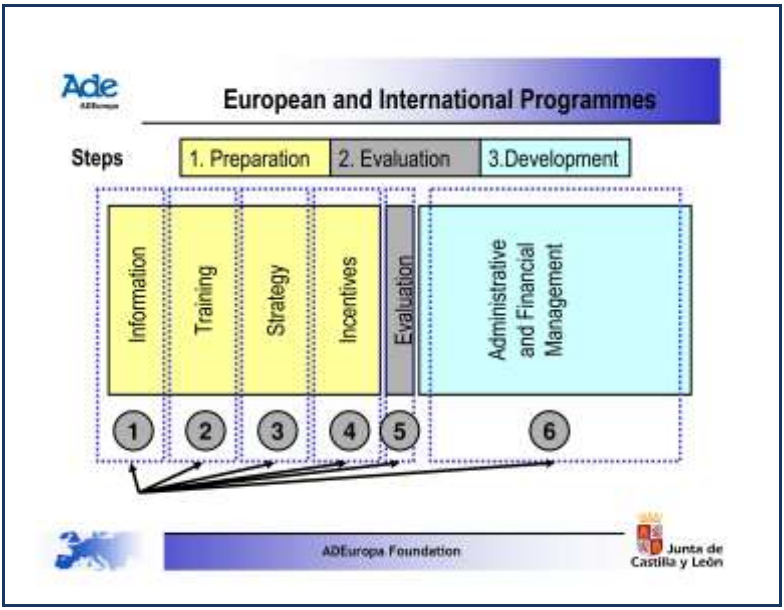
OBJECTIVES
- Multiply by 3 our results in European Programmes (7FP)
- 300 regional agents in European projects

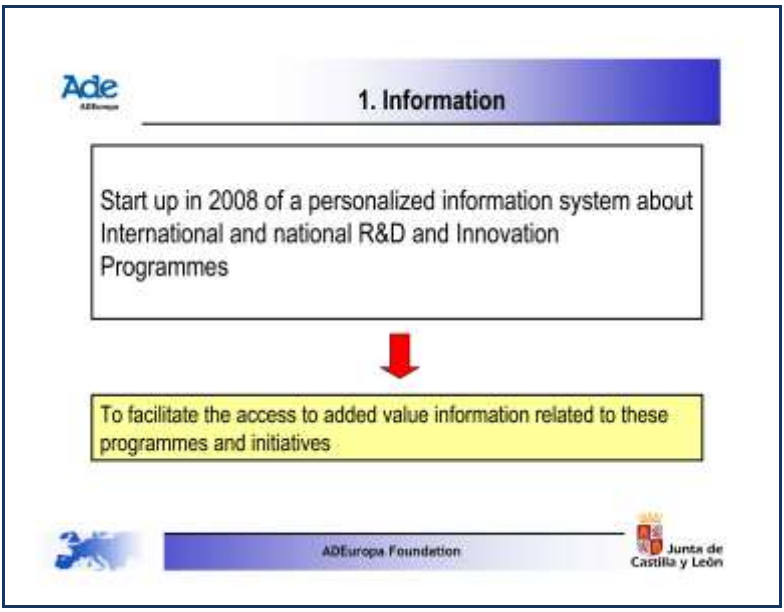
SEVENTH FRAMEWORK PROGRAMME

cip

INTERREG IVC

EUREKA


European and International Programmes
Steps
1. Preparation
2. Evaluation
3.Development
Information
Training
Strategy
Incentives
Evaluation
Administrative and Financial Management
1
2
3
4
5
6
ADEuropa Foundation
Junta de Castilla y León


1. Information
Start up in 2008 of a personalized information system about International and national R&D and Innovation Programmes
To facilitate the access to added value information related to these programmes and initiatives
ADEuropa Foundation
Junta de Castilla y León

2. Training

Start up of Seminars and workshops geared to technicians of companies, and public and private institutions

Start up of Training Programmes for R&D and Innovation project managers.

- 30 project managers per year
- Incorporation to regional enterprises

3. Strategy

Search and identification of consortia in European projects

→ Specific unit of identification and monitoring of consortia for public and private agents of our region

- 3500 proposals identified (Oct 2007- Sep2009)
- 2100 proposals considered
- 450 proposals disseminated among regional actors
- 67 proposal submited involving regional actors

3. Strategy

Lively Follow-up of R&D European Programmes

→ Attendance to every relevant events than take place in Europe (specially in Brussels)

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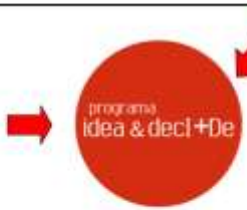
4. Incentives

Colaboration in the definition and start up of regional lines of support for the participation in European Programmes



Ade
Inversiones y Servicios

www.ade.jcyl.es

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5. Evaluation

Incorporation of regional experts as referees in 7FP and CIP

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R&D and Innovation Networks and Technology Platforms

OBJECTIVE: Integration of the European link tools in R&D and Innovation issues

➔GALACTEA-PLUS: International Technology Transfer and European Information Center

IRC network + EURO INFO CENTRE → enterprise europe network

➔PYMERA: National network for the participation of SMEs in the European Framework Programme

pymERA

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R&D and Innovation Networks and Technology Platforms

Program of business support in European and Spanish Technology Platforms

9 regional events developed
14 Technology Platforms
600 agents involved

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ADEUROPA Investments and Cooperation

Investments

Identification, promotion and management of projects of investment in Castilla and León

International Cooperation

Promotion of the participation of enterprises in European Programs of Cooperation, access to MO, International agreements

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Investments: Objectives

The main objectives of the Investments area are:

- Identification, promotion and management of projects of investment in Castilla and León, at the national level as well as in foreign countries.
- Promotion of the region as target for investments, management of the information about industrial infrastructures, placement of the projects, information about financial resources and lines of support, as well as personalized consulting during all the investment proccess.

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Investments: lines of activity

The area develops 3 main lines of activity:

- **A).** INFORMATION
- **B).** PROMOTION
- **C).** PROJECT MANAGEMENT

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International Cooperation: Objectives

The activity of the International Cooperation area is based on the following issues:

- **The promotion of the collaboration of institutions, associations and companies of Castilla and León among them and with similar organizations in other regions and countries, in the context of international cooperation.**

- **The need to have an effective platform for information, training and promotion, in order to facilitate the access to International and European Cooperation Programmes.**

International Cooperation: lines of activity

- **A).** Participation in international cooperation projects.
- **B).** Generation of business networks.
- **C).** Comercial strategy with MO.
- **D).** Approach to new European Union countries.
- **E).** Approach to emerging markets.
- **F).**. Identification of Cooperating companies.

Delegation of ADEuropa in Brussels

To reinforce the activities in European programmes and projects developed by ADEuropa, in direct contact with different organizations and departments of the European Commission.

- Promotion of the participation in European programmes of R&D and Innovation
- Active monitoring of the European programmes of R&D and Innovation
- Contact and monitoring with the European Commission
- Support actions for enterprises and institutions of Castilla and León
- Management of the Business Center of Castilla and León in Brussels

Business Center in Brussels

Space of effective support for the business and research tissue of the region in the activities of International Cooperation and R&D and Innovation in Europe.

- Conference room
- Meeting rooms
- Offices for companies
- ICT services
- Administrative and security services

Supplement 2: Visit to University of Salamanca

University of Salamanca

The University of Salamanca is the oldest university in Spain; founded in 1218 by King Alfonso IX, it was acknowledged in 1254 by Pope Alexander IV as being one of the four great Universities in the world, along with the universities of Oxford, Paris and Bologna. It has had many distinguished professors throughout its history, including Luis de León, Beatriz de Galindo, Melchor Cano, Francisco de Vitoria and Miguel de Unamuno and many well known citizens have walked along the University's corridors, like Miguel de Cervantes, Hernando Cortes and Christopher Columbus.

It was in 1254 that the King granted the University the privileges that are its Magna Carta, appointing curators, placing it under the authority of the bishop, the dean and the chancellor, exempting it from the regular authorities and assigning salaries for the professors.

The academic titles were presented in the name of the Pope and King in the cathedral until 1830. While the number of students reached 6.778 in 1584, in 1822 it had only 412 students and later this figure dropped even lower.

During the medieval and modern periods, the University was financed through royal and papal concessions. With this income (and other complementary income) five official faculties could be financed; Canon Law, Law, Theology, Medicine and Arts-Philosophy as well as complementary teaching in Humanities, Languages, Mathematics and Music. After the Law of Public Instruction in 1857 (Moyano Law), the faculties of the University were reduced to Law, Philosophy and Arts, and Theology, which was finally eliminated in 1868. The local government and Town Council of Salamanca financed, as independent faculties, Medicine and Sciences in the years 1869 – 1904, the year in which state financing was obtained under the Rectorship of Miguel de Unamuno. Later on this changed again and from then on the University was financed through registration and academic fees as well as by what was allocated in the State Budget.

Today, the university is famous in Spain and world-wide. It has about 2,100 teachers and 38,000 students. Its relationship with foreign universities, other institutions, public and private enterprises and companies is very important.

The University of Salamanca has a great tradition in training specialists and teachers who work for the university in order to keep

the teaching quality as high as possible and also to revitalize its courses. The university strives to unify the European and American cultures.

"The main objective of the university is defined by its focus on the creation of knowledge for the service of humanity". This implies, we have to emphasize scientific creativity and culture and constantly innovate.

The university has a wide range of libraries, PhD's, Masters, and specialized courses that you can combine with other cultural activities. There are also exchanges between teachers from other universities.

Postgraduate Programmes on Informatics and Automation

University of Salamanca

UNIVERSIDAD DE SALAMANCA

Facultad de Ciencias
email: mastersi@usal.es
web: http://mastersi.usal.es

Dpto. de Informática y Automática

DOCTORADO EN INFORMÁTICA Y AUTOMÁTICA

MÁSTER OFICIAL
EN SISTEMAS INTELIGENTES

VNIVERSIDAD
D SALAMANCA

PROGRAMA DE DOCTORADO

Nombre: Informática y Automática

Estructura: 2 Títulos independientes
- Master en Sistemas Inteligentes
- Doctor

VNIVERSIDAD
D SALAMANCA

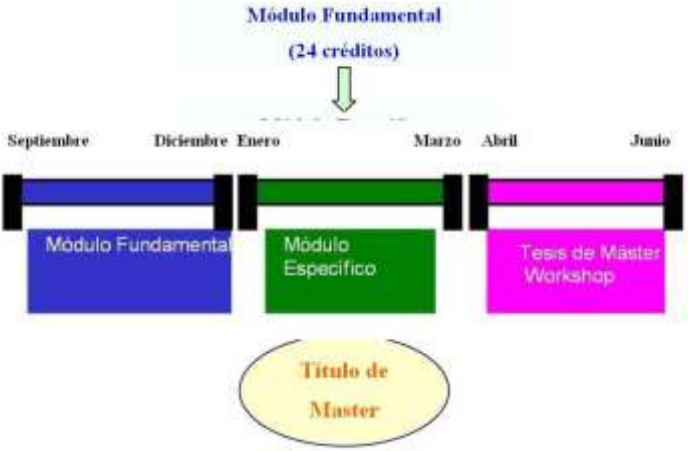
MASTER EN SISTEMAS INTELIGENTES

<http://mastersi.usal.es>

Duración: 10 meses (Septiembre-Junio)
Carga: 60 ECTS
Número de alumnos: 20
Profesorado: 20 Doctores

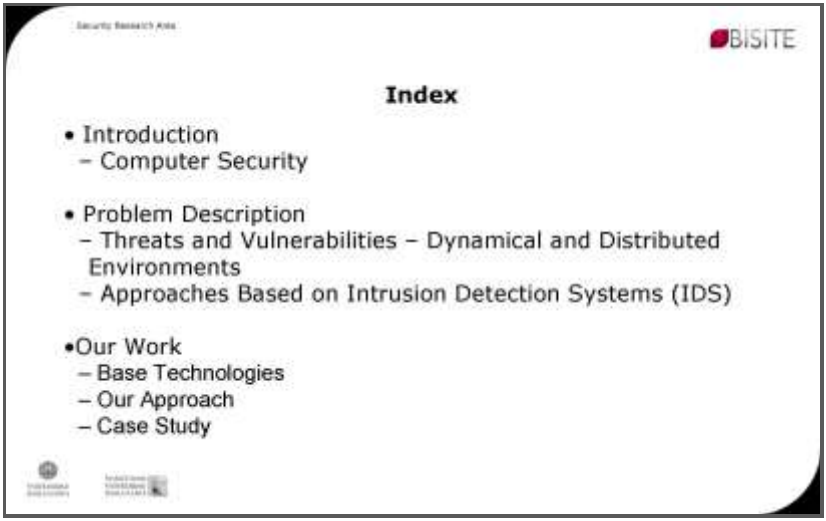
Estructura

Módulo Fundamental: 24 ECTS en 8 materias
Módulo Especifico: 21 ECTS de 33 ECTS ofertados
Tesis de Master: 15 ECTS



Security Research Area

"BISITE" Research Group, University of Salamanca



BISITE

INTRODUCTION

Computer Security

- Computers are an integral part of our economic, social, professional, governmental, and military infrastructures, but these systems are constantly under threats.
- All security problems that affect computer-based systems are studied from viewpoint of the Computer Security.
- Today, Computer Security is an increasingly important, relevant, and sophisticated field of study. The security is now a major concern for most corporations.

BISITE

PROBLEM DESCRIPTION

Threats & Vulnerabilities – Dynamical and Distributed Environments

- With increased connectivity confidentiality, integrity and availability of data becomes increasingly important. Systems are increasingly open and interconnected, which poses new challenges for security technologies.

BISITE

PROBLEM DESCRIPTION

Threats & Vulnerabilities – Dynamical and Distributed Environments

- New and known threats put at risk the availability of the information, services and resources within complex environments. For Example:
  - SQL Injection attacks:
  - WS-DoS Attacks (XML/SOAP Attacks)

BISITE

PROBLEM DESCRIPTION

Approaches Based on Intrusion Detection Systems (IDSs)

- Intrusion Detection Systems (IDSs) are considered an effective second line of defense against network-based attacks targeting computer systems. However, they have both strengths and weaknesses.
- There is a need to develop new approaches that could bridge the gap between the flexibility and the precision required by IDS and current solutions.

Security Research Area

BISITE

OUR WORK

Base Technologies – Artificial Intelligence

- Multi-Agent Technology: Facilitates taking advantage of agent capabilities, such as mobility, pro-activeness or social abilities, and the possibility of distributed problem solving.
- Case-Based Reasoning (CBR): Attempts to solve new problems by adapting solutions that have been used to solve similar problems in the past.
- Machine Learning Techniques to solve Classification and Prediction Problem: Artificial Neural Network, Decision Tree and Fuzzy Logic.

Security Research Area

BISITE

OUR WORK

Our Proposal:

- Our proposal integrates the advantages of each of these technologies to propose a novel approach. Our proposal is based on a **Multi-Agent Architecture to detect and block attacks that affect the availability of the information, services and resources within dynamical and distributed environments.**

- Features - Our architecture
  - Hierarchical Structure
  - Agents with different roles
  - Mechanism of classification (misuse and anomaly detection).

BISITE

CASE STUDY

A Case Study E-Learning Platform

- A E-learning Platform based on Web Services
  - Manages the private records of students
  - Interfaces to access the virtual courses, course materials, tools
  - Interfaces to access Final Exams.
- Features
  - Available on Internet for the students registered.
  - Access via different mobile devices.
  - The communication is via XML Message.

BISITE

CASE STUDY

What is the Security Problem?

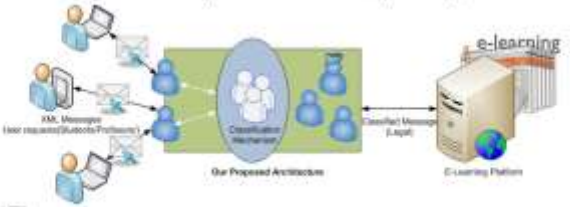
- Different mechanism of attacks are possible (DoS Attacks, SQL Injection)
- The private information of the students is put at risk.
- The available services can crash.

BISITE

CASE STUDY

What is our Solution?

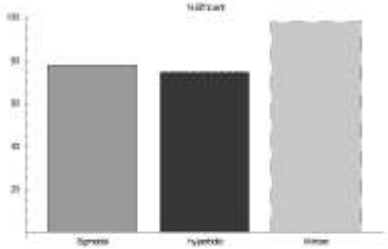
- Capture the XML messages
- Execute a Classification Mechanism
  - First Filter (Pattern Matching)
  - Second Filter (CBR-BDI Agent, Anomaly Detection)
- Determine the reliability of the user requests (XML Message).



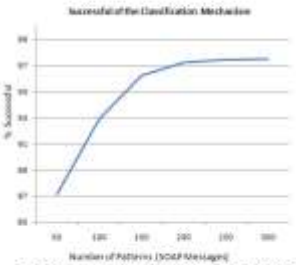
BISITE

RESULTS

Classification – Different Strategies



Classifier – CBR-BDI Agent & Mixture of Neural Networks



Classifier - CBR-BDI Agent & Decision Tree