

# Management Science Laboratory



ATHENS UNIVERSITY  
OF ECONOMICS  
AND BUSINESS

# 10 years Activities Report

July 2010



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**ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS**



Management Science Laboratory



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## MESSAGE FROM THE DIRECTOR OF THE MANAGEMENT SCIENCE LABORATORY

**Professor Gregory P. Prastacos**  
*Rector of the Athens University of Economics and Business*

The Management Science Laboratory (MSL) of the Athens University of Economics and Business (AUEB) was established in the end of 2000 by the Senate of the University. Its mission is to conduct top-quality research in the wider area of Management Science, to disseminate the results of this research internationally, to support the educational activities of AUEB in the area of Management Science, and to conduct consulting and outreach activities in this scientific area. The core team of MSL consists of about 40 researchers (faculty, post doctoral researchers, visiting researchers and PhD students), working on basic or applied research projects funded by the European Commission, national funding agencies, as well as other public or private organizations. The laboratory is equipped with state-of-the-art computer software and networks, decision technology, ERP tools and systems and risk management systems.

MSL is part of AUEB's Department of Management Science and Technology (DMST) and consists of four Research Units that cover key scientific fields of Management Science:

- **The Innovation and Knowledge Management Unit (InnKnow)** with research activities in the areas of Innovation Management, R&D, Knowledge and Competency Management, Entrepreneurship and New Business Development, Strategic Performance Management, and Organizational Change and Development (Head: Associate Professor Klas Eric Söderquist).
- **The Operations Management and ERP Systems Unit (OpeR)** with research focus on operational problems faced by supply chains in today's global business environment, using Operations Research methods, together with IT tools and systems (Head: Professor George Ioannou).
- **The Financial Engineering Research Unit (FRC)** conducting research in Financial Engineering and Risk Management leaning on highly specialized knowledge in finance, advanced mathematics, statistics and econometrics (Head: Professor Apostolos Refenes).
- **The Operations Research and Decision Systems Unit (ORDeS)**, with research activities in the areas of algorithm design and development for solving complex decision problems focusing on applications in transportation logistics, city logistics and public transportation, terminal and warehouse management, recycling operations and waste management, emergency response and humanitarian logistics (Head: Associate Professor Christos Tarantilis).

Each unit has its own research staff and develops independent research activities, while collaborating with the other units in order to develop new methodologies, models and tools, thus enabling integrated approaches and know-how to complex projects. Through this collaboration, research is conducted in an effective and innovative way to the advantage of both the projects being performed and the researchers involved.

The model of operation of MSL has been proven very successful. In its 10 years of operation MSL has achieved a number of important accomplishments. In particular the members of MSL have:

- Participated in and/or led over 65 research projects for major international or national organizations in the public and private sector,
- Produced more than 300 research papers, the majority of which have already been published in international journals or presented in conferences,
- Supported effectively about 15 PhD Doctoral candidates, who have produced high quality work and have consequently received offers for academic positions at leading Greek or international Universities,
- Developed innovative methodologies, models and tools that have been published internationally and have been successfully used for the solution of complex problems in organizations,
- Organized two international conferences and many research or educational seminars and workshops,
- Supported actively the educational mission of AUEB/DMST by offering an important number of undergraduate and graduate courses and by supervising over 80 Field Study Projects at the MBA level,
- Disseminated its research activities through the publication of an international research newsletter, which is already in its 12th issue.

In addition, MSL has been accredited with the ISO 9001:2000 accreditation, and thus possesses a state-of-the-art quality management system supporting the design and development of research and consulting projects.

MSL has also been very successful in attracting funds from both public organizations and private enterprises. Concerning the public sector, MSL has managed to win a large number of research grants and research fellowships from the European Union (DG Research, DG Enterprises, DG INFSO), the Hellenic Ministry of Education (programs Irakleitos, Pythagoras I and II), the Hellenic Ministry of Development (Pened program), the Hellenic General Secretariat of Research and Technology (GSRT), and many other important organizations. Concerning the private sector, MSL has attracted a large number of research/consulting projects from major companies in banking, transport, oil, telecommunications, metallurgical, shipping, real estate, consulting, finance, local municipalities, and others. Overall, MSL has been able to maintain a very good balance between private and public funding.

Besides the above achievements, and following AUEB's academic tradition of excellence, MSL has managed to bring and tie together an excellent research team, composed of AUEB faculty, visiting and post-doctoral researchers, doctoral students and international fellows, who collaborate closely and effectively to conduct world class research in the broad area of Management Science.

I would like to thank the Heads of our research units and all our researchers for their commitment, collaboration and valuable contributions, as well as our funding organizations and supporting companies for their continuous support. I believe the results, as demonstrated in this booklet, justify their trust in our work, and we look forward to the continuation of our collaboration.



*Professor Gregory P. Prastacos  
Director of MSL and Rector of AUEB  
July 2010*





1.

## **Research Areas and Projects**

## 1.1. INTRODUCTION

MSL is composed of four research units, each one conducting research in a number of related areas. The specific research areas where each research unit of MSL is conducting research are shown below:

### **The Innovation and Knowledge Management Unit (InnKnow)**

- Innovation and R&D Management
- New Product and Service Development
- Knowledge and Competency Management
- Entrepreneurship and New Business Development
- Strategic Performance Measurement – Balanced Scorecard
- Organizational Change and Development

### **The Operations Management and ERP Systems Unit (OpeR)**

- Operations Management
- Enterprise Resource Planning Systems (ERP)
- Business Process Management
- Services and Production Management

### **The Financial Engineering Research Unit (FRC)**

- Risk Management and Performance Analysis
- Structuring and Pricing Derivatives Securities
- Asset and Liability Management
- Real Estate Finance and Securitization
- Financial Analytics and Econometric Modeling
- Energy, Climate and Environmental Finance
- Corporate Governance

### **The Operations Research & Decision Systems Unit (ORDeS)**

- Transport and Fleet Management
- Business Process Optimization
- Decision Support Systems
- Algorithms and Mathematical Modeling

The work conducted in each research unit includes a number of activities, such as:

- Basic research, usually at the Doctoral level,
- Applied research, usually funded by the European Commission, national funding organizations, or other organizations,
- Consulting and outreach activities, usually funded by public or private organizations,
- Training activities, usually funded by public or private organizations.

In the following pages we present indicative projects that have been undertaken in each specific research area.

## 1.2. InnKnow: THE INNOVATION & KNOWLEDGE MANAGEMENT UNIT

The research team of InnKnow, headed by Associate Professor Klas Eric Söderquist, pursues applied and basic research in a number of scientific areas, which include:

- Innovation Management and R&D Management
- New Product and Service Development
- Knowledge and Competency Management
- Entrepreneurship and New Business Development
- Strategic Performance Measurement – Balanced Scorecard
- Organizational Change and Development

An indicative list of the projects undertaken by the InnKnow unit follows.



### A. RESEARCH ON INNOVATION AND R&D MANAGEMENT

#### • ASIF: Evaluation of Large R&D and Technology Programs

The objective of this Pan-European project in collaboration with the University of Manchester, the Fraunhofer Institute, the Hungarian Academy of Sciences and other partners was to conduct a theoretical and applied evaluation of the results of large Research and Technology Development projects in companies and in the economy. The project was financed by the European Commission (DG Research) and the results are to be published in a book edited by a major international publisher.

#### • FORESIGHT: Evaluating the Impact of Innovation on Technological Development

Within the Pan-European Program FORESIGHT, MSL undertook the task to study the importance and the effects of innovation, under alternative scenarios of socio-economic progress, within a large number of sectors in Greece, including: Manufacturing, Transport, Information Technology, Biotechnology, Materials, Environment, Health, Tourism, Agriculture, Governance, and Energy. Focus groups of sector experts were conducted and analysis of alternative scenarios was done for the project's purpose. Based on the project's results recommendations for developing innovation systems on a national and on a regional level were made. Within the project's context, a conference at AUEB was organized. Moreover, a number of reports and white papers were produced. The project was financed by the Hellenic General Secretariat of Research and Technology (GSRT).

#### • Strategic Innovation Management: Learning Processes in Innovation Teams

Considering that the formation of project teams is a critical factor of success in the current business context, this doctoral research project aimed at studying and analyzing learning processes in teams working on innovation projects. The objective was to identify and study the relationships between factors that influence knowledge flows and learning processes, and related these to innovation performance. A survey instrument was designed and Structural Equation Modeling (SEM) applied to the data analysis. The research has been successfully completed, presented and awarded in international conferences, and publications are under review in leading scientific journals in the field.

#### • INNOVATION IMPACT: Analyzing & Evaluating the Impact on Innovation of Publicly-Funded Research Programs

This project evaluated the impact of the European Framework Programs FP5 and FP6 on innovation and competitiveness. Analyzing these issues both at the project, firm and market levels, MSL was one of the lead partners collaborating with a large number of other European partners including BETA of the University of Strasbourg, Joanneum Research, Austria, ZEW, Germany and TUDelft, Netherlands. The project included the

What is the role of innovation in the development of the Greek economy as a whole and of its various sectors? These questions were studied analytically in a research project undertaken by MSL.

Why is public spending on R&D often poorly related to the launch of innovations in the marketplace? This was the central question that the European Commission had formulated as rational for conducting the Innovation Impact Study where MSL played a leading role.

development of a survey instrument administered to over 50.000 organizations having participated in the FP5 and 6 programs, and over 70 case studies conducted over Europe. A comprehensive analysis of the impact on innovation and comparisons with other countries (e.g., USA, Japan, Australia) leading to policy recommendations for future R&D program development are the central outcomes. The project was funded by the European Commission, DG Enterprise.

- **IST Evaluation and Monitoring**

This Panel of Experts project aimed at exploring future perspectives of an evaluation strategy for IST Research and Technology Development within Europe, and put forward a proposal for a coherent, systematic evaluation framework in which the required milestone evaluations, core methodologies, and content specifications are clearly identified. The Panel formulated early guidelines for the Ex-Post Evaluation of FP7 in 2015, and has also presented its thoughts about the future Annual Monitoring exercises of the Framework Programs. In the panel of 12, MSL contributed three experts. The project was funded by the European Commission, DG INFSO.

- **BS-RESPOT: Research Potential in the Black Sea Countries**

In collaboration with the International Center of Black Sea Studies, Joanneum Research (Austria), and other international organizations, this project, funded by the European Commission (INCO-E), studied the current innovation infrastructure in 12 countries of the Balkan and Black Sea region, members of the Black Sea Economic Cooperation (BSEC). Based on field trips and expert interviews, new methods for evaluating R&D outputs for enhance innovation performance, as well as new forms of collaboration between the countries and with the EU were proposed.

- **Innovation and Co-Evolution in the Greek IT Services Sector**

Data from the Sectoral Innovation Scoreboard of the European Union have indicated Greece as one of the most innovative regions in the IT Services sector. The objective of this ongoing doctoral research is to study the factors that have led to this significant for the Greek economy situation by adopting a longitudinal research methodology from a co-evolutionary perspective. The project is leaning on the innovation systems and cluster literatures to develop insights into how this sector has emerged and how it can be sustained.

## **B. RESEARCH ON KNOWLEDGE AND COMPETENCY MANAGEMENT**

- **Implementation of a Competency Management System in the Banking Sector**

Current theory and practice of HR Development strongly emphasized competencies as a basis for the whole spectrum of HR management activities. This project consisted of the development of an integrated methodology and its subsequent implementation of a full-blown competency management system in a leading Greek bank. A complete competency framework was developed, accompanied by process analysis and procedure development for a dynamic and integrated HRM system. Selection, evaluation, training and development processes were designed. Issues of strategic alignment and knowledge flows were also integrated. The project was financed by the Commercial Bank of Greece.

- **MEDFORIST: Euro-Mediterranean Network for Sharing IST Learning Resources**

This project consisted in the development of technological infrastructure in order to support the cooperation between Mediterranean countries in the area of higher education. It involved the design of educational material, and e-learning infrastructure. The project was run in collaboration with the University of Sheffield, the Helsinki University of Technology, the Grenoble Ecole de Management, as well as 11 Mediterranean institutions from 10 countries. The project was funded by the European Commission, EUMEDIS Program.

- **Development and Management of Knowledge Sharing Networks KSN**

This project investigated the role, interactions and importance of technological, organizational and social factors on the effectiveness and efficiency of intra-organizational knowledge sharing networks. A methodology for the implementation of KSN in organizations was also developed. The project was funded by the Commercial Bank and the Pened Program of the GSRT.

- **Development of Innovative HR Practices in the Shipping Industry (OpeR/InnKnow)**

Taking into consideration the importance of the shipping industry in Greece and focusing on the problems created by the disparate nature of the industry with ships operating far from their base, this project aimed at developing a competency management system tailored to the specificities of shipping and provide proposals for the strategic use of this system for enhanced knowledge sharing. In parallel, an e-learning based system for sharing of knowledge and know-how was developed. The project was conducted in collaboration with a number of well-known companies in the shipping and the insurance sectors (Avin Oil, ACE, Lloyds) and was funded by the GSRT.

## **C. RESEARCH ON ENTREPRENEURSHIP AND NEW BUSINESS DEVELOPMENT**

- **Economic Impact Study of the Athens International Airport “Eleftherios Venizelos”**

This project, conducted for the Athens International Airport “Eleftherios Venizelos” comprised the analysis and study of the airport as engine of economic and social development, by creating job opportunities and financial growth that span beyond the local and regional confines of the airport’s site. Following international best practices, the methodology used is based on an econometric Input-Output model that measured three separate effects: Direct, Indirect and Induced impact. The project was funded by the Athens International Airport.

- **Developing Strategy and Business Plan for the National Institute for Geological and Metallurgical Studies (IGME)**

This project develops a Strategy and a Business Plan for IGME, the National Institute for Geological and Metallurgical Studies. The project includes analysis of the internal and external environment, SWOT analysis, assessment of the integral and external markets, and development of a business plan. Strategy and action plans are developed for the current period of financial crisis.

- **Business Plans and Feasibility Studies**

Within the entrepreneurship area, a large number of applied Field Study Projects have been conducted with students of the MBA International Program of AUEB under the supervision of MSL/InnKnow faculty and researchers. Projects include business plans for launching products and services in new markets, and feasibility studies for developing and implementing new business lines, products, services or processes. Indicative projects have been conducted for companies like Hewlett Packard, Citibank, National Bank of Greece, Unilever, Philips, Sara Lee Coffee and Tea, Enel, Grant Thornton, Reckitt Benckiser, Procter & Gamble, and many more.

## **D. RESEARCH ON STRATEGIC PERFORMANCE MANAGEMENT AND BALANCED SCORECARD**

- **Identification and Analysis of Key Value Drivers in the Banking Sector**

Analyzing the value chain in the banking sector, the objective of this doctoral research project was to understand how the financial results of banks are influenced by various

What are the determinants of efficient knowledge sharing and how do these factors interact in knowledge intensive business contexts?

A doctoral research project studied these issues through a survey of Greek and multinational companies and use of SEM.

strategic and operational factors. Relying on both quantitative and qualitative data from the branch offices of two major Greek banks, the project empirically examined the different cause and effect relationships and the inherent time lags that exist between the main value drivers (lead and lag indicators) of banking institutions. The results provided great value for improved decision-making in financial service organizations. Completed in 2007, results have been published in leading scientific journals.

- **Strategic Performance Management in IT Departments**

The objective of this project was to create a performance evaluation system based on the Balanced Scorecard theory and methodology for evaluating the performance of IT departments. The project was financed by the Cyprus Research Promotion Foundation in collaboration with the Bank of Cyprus.

- **Evaluation of R&D and NPD Performance**

Measuring the performance of R&D and NPD at the firm level has gained increased interest. Numerous different methods have been developed in order to evaluate outputs, inputs, and the processes involved. The objective of this research was to develop a structured framework for the development of a holistic performance evaluation model of R&D and New Product Development in the manufacturing industry, and to analyze the impact of measurement systems on decision-making and ultimately innovation performance. It was conducted in collaboration with the Grenoble Ecole de Management.

## **E. RESEARCH ON ORGANIZATIONAL CHANGE AND DEVELOPMENT**

- **InQB: Change Management in Greek Enterprises**

This research project comprised the design and implementation of a large-scale research on how Greek and European companies manage change in the modern, fast moving, international business environment. The project was conducted in collaboration with INSEAD and involved an in-depth analysis of 15 Greek and international firms. The results have been published in international journals, and a series of case studies on Greek companies was developed.

- **The TEMA Observatory of Technology and Management**

The TEchnology and MAnagement Observatory within MSL aims at conducting repetitive surveys of the use of IT / IS and its impact on management practice, organization, innovation, knowledge management, and other important changes. A dedicated survey instrument has been designed and questionnaires administered to over 1,000 Greek enterprises with a highly satisfactory response rate. Results have been published in international scientific journals. The observatory is supported by ICAP and the GSRT.

- **Change Management in the Public Sector**

The objective of this doctoral research was to create a framework for change management in the public sector based on the New Public Management theory. The theoretical research issue consisted of the conceptual refinement and empirical testing of a multi-lens theory of change in organizations. The applied research issue consisted of identifying the context-specific determinants of successful implementation of change objectives in the public sector. More specifically, the research focuses on the development of Citizen Service Centers as a change process and their impact on the public sector management. The research was completed in 2007 and has been published in international journals.

Longitudinal research investigates the development of the Greek business landscape in terms of technology adoption and evolution of management logics and practices. This provides a unique perspective on the nature and level of business practices, and the competitiveness of Greek firms.

### 1.3. OpeR: THE OPERATIONS MANAGEMENT & ERP SYSTEMS UNIT

The research team of OpeR, headed by Professor George Ioannou, pursues applied and basic research in a number of scientific areas, which include:

- Supply Chain Management
- Enterprise Resource Planning Systems (ERPs)
- Business Process Management

An indicative list of the projects undertaken by the OpeR Unit follows.



#### A. RESEARCH ON SUPPLY CHAIN MANAGEMENT

##### • Supply Chain Optimization

Supply chains today have become an important component of large enterprises, and a key research issue in Logistics. The main goals of the research are cost reduction, collaboration and cooperation improvement, risk management in every stage, flexibility enhancement, etc. The MSL/OpeR research team has developed an important longitudinal research activity in these fields. Funded mainly by the Pythagoras and Irakleitos programs of the Hellenic Ministry of Education, an important number of projects and doctoral dissertations have been undertaken, and a similarly large number of internationally innovative research results have been disseminated and published in leading journals.

##### • DADES: Reversed Supply Chains with Application in Waste Management through Web-Based Support

The objective of this project is to develop algorithms and a web-based platform for the surveillance of used oils in designated locations, their collection by dedicated trucks, intermediate storage and final transportation to the distillery for treatment and recycling. The core of the research is related to production planning, with optimized reversed flows and excellence in reversed supply chain management. The project was conducted in collaboration with Cyclon Oil and Konkat, and was funded by the Hellenic General Secretariat of Research and Technology (GSRT).

##### • POSEIDON: Innovative Web-based Operations Management System for Maritime Services

The objective of the project was the design and pilot implementation of a novel integrated operations management system for the optimization of productivity of a shipping enterprise and the development of new more effective and efficient value added renting services, using ICT, web based technologies and Geographic Information Systems (GIS). The proposed information-communication system will use information from several relational databases and will unify geographic, temporally and cost estimating elements with user interfaces of multiple levels. The project was funded by GSRT.

##### • Vehicle Routing

The Vehicle Routing problem is one of the most fundamental problems in supply chain management and logistics. The research on Vehicle Routing problems includes both development of algorithms and their integration with GIS and GPS technologies for effective Decision Support Systems. Within the MSL/OpeR Unit, efficient and effective approaches to many routing problems have been developed, including Capacitated Vehicle Routing Problem, the Vehicle Routing Problem with Time Windows, the Heterogeneous Vehicle Routing Problem, the Pickup and Delivery Vehicle Routing Problem and others. Evaluated by international authorities in the field, the algorithms developed are positioned among the best internationally. The project was funded by the GSRT.

Supply Chain Management is a core research area of MSL. Through six completed PhD dissertations and a large number of projects, a variety of issues have been examined covering inventory management, network structure, financial issues, risk management, and other.



## B. RESEARCH ON ENTERPRISE RESOURCE PLANNING (ERP) SYSTEMS

### • **Electronic Networking in a Distributed Business Environment**

The project's objective was to design a modern web e-business system which will effectively support all the internal transactions of a retail company and its stores. The system integrates the existing information of all points-of-sales, central offices and warehouses, advancing in this way optimum processes for order taking and servicing and for stock replenishment in stores. Moreover, it also introduces advanced Internet technologies to key business processes in order to automate through Java the most time-consuming and important internal functions, and also support many local small businesses. Simultaneously, it investigates the feasibility of a highly demanding electronic shop which will accept the internet customers, will receive their orders and will automatically forward them to the local outlets, controlling effectively the integration processes of the transaction and delivery of products. Funded by the leading appliances retailer EXPERT HELLAS SA. and GSRT.

### • **Advanced Methodological Approaches for Effective Large-Scale ERP Implementations**

This project, related to the timely and efficient implementation of ERP systems, focused on the design and development of advanced technologies and system integration algorithms in the redesign of business processes relying on optimization and process aggregation & streamlining methods. The innovativeness of the project relates to the integration of models and algorithms, a systems approach and integrated technological implementation. The project was funded by the leading metallurgical company Maillis SA.

### • **Integrated Internet-Based System for Communication and Enterprise Resource Management in the Maritime Sector**

The goal of the project was the design of an all-business-processes-encompassing information system that would comprise capabilities for planning and integration of business processes, data flow diagrams and bottleneck identification for the core processes, technological design of the interconnections between vessels, ports, local offices and headquarters. The project was funded by the leading oil trading company Avin Oil and by GSRT.

### • **Application Development for MBS-Navision**

Within the framework of a successful academic collaboration, OpeR has developed a strategic Partnership with Microsoft Hellas for the use, improvement, training and implementation of MBS-Navision. OpeR staff (essentially the PhD students) have been trained and certified in the use of the system and can provide Greek enterprises with the essential know-how in the implementation and use of MBS-Navision, as well as assist in the development of specific algorithms for further improvement of various functionalities. In parallel training material and case studies have been developed. The project has been funded by Microsoft.

## C. RESEARCH ON BUSINESS PROCESS MANAGEMENT

### • **Optimization of Banking Operations in the New Economy**

Two major projects were undertaken in this area. One project determined the effectiveness of banking operations using advanced statistical models on field data from large banking institutions, both from the internal (operational) perspective, and the external (customer perception) perspective. Data samples from large banking institutions were used in the research. Furthermore, the optimal allocation of services within branches as well as the

The theoretical work conducted by MSL/OpeR, in combination with the multiple practical implementations achieved, has resulted in a wealth of knowledge concerning ERP algorithms, implementation methodologies, and software development.

geographical distribution of the branches, for maximizing profits and minimizing costs was examined. Another project examined the fidelity of customers of a bank branch and correlated it with the operational procedures and the bank's strategy. Both projects were sponsored by the Ministry of Education under the program Irakleitos.

- **Management of Outsourcing Processes**

The services outsourcing sector presents important development in many regions of the world, such as India and China. The reason is the relatively lower labor costs combined with rapid development of know-how. The research focuses on identifying those critical factors that influence and shape the decision-making process concerning outsourcing, as well as on studying the processes of attributing outsourcing.

- **Quality Management System for the Food Industry**

The scope of the project was to deliver an integrated Quality Management System customized for a food enterprise. The system incorporated not only elements from classical quality standards such as ISO, but also specialized quality processes of HACCP. The integration of the system with the actual functional processes was achieved using specialized Database applications and Document Management Systems. The project was funded by the leading food company NIREAS SA.

- **Development of Business Plan and Operational Procedures for the Greek Research and Technology Network**

GRNET SA was established by the General Secretariat for Research and Technology (GSRT) to manage the Greek Research and Technology Network. The project aimed to create a Strategic Business Plan and design new processes that meet the demands of the stakeholders. The project enabled GRNET to restructure itself, adopt a flexible organizational and executive shape, recreate the technological and systemic forces, define new strategic objectives and scopes, and thus, serve the academic and research community based on best operational procedures, and new business ideas that promote technological development. The project was funded by GRNET.

- **EUMOptfin: Optimization Management of Financial Institutions**

This project developed mathematical models and systems to optimize the management of financial institutions. Within the project a series of international seminars were conducted. The project was conducted in collaboration with University of Vienna, Erasmus University and the University of Bergamo.

- **Electronic Service Center for the Hellenic Data Protection Agency**

The project's main objective was the managerial and technical support for the implementation of an Electronic Service Center. The project focused on the analysis of current business processes using process mapping tools, the identification of the most critical processes concerning services rendered to the public, and their reengineering prior to the new system adoption. The project was sponsored by the Information Society SA.

- **Governance System for the Public Transport Organisation of Athens**

This project aims to develop the governance and legal system between the Public Transport Organization of Athens and the three companies providing the transport service (bus, metro and rail) in the greater Athens area, so as to conform to the legal directives of the European Union. Detailed analysis of pricing systems, contractual details, and support in the negotiations phase are included in the scope of the project.

What should be the appropriate organizational structure, governance system, pricing policy and legal framework between the Public Transport Organization of Athens (OASA) and the three companies delivering transport services? This is examined in a major project undertaken by MSL on behalf of OASA.



## 1.4. FRC: THE FINANCIAL ENGINEERING RESEARCH UNIT

The Financial Engineering Research Unit, headed by Professor Apostolos Refenes, conducts research in the following areas:

- Risk Management & Performance Attribution
- Structuring & Pricing Derivatives Securities
- Asset & Liability Management, Securitization & Real Estate Finance
- Financial Analytics & Econometric Modeling
- Energy, Climate & Environmental Finance
- Corporate Governance

An indicative list of the projects undertaken by MSL/FRC over the last 10 years follows.

### A. RESEARCH ON RISK MANAGEMENT & PERFORMANCE ATTRIBUTION

#### • Performance Attribution for Multi-Currency Fixed Income Portfolios

The objective of this research project was to provide the analytics, methodologies and procedures required for planning, developing and implementing a framework for reliable performance attribution measurement for multi-currency fixed income portfolios. The project comprised selection of performance metrics, evaluation of performance attribution methodologies, selection or construction of the appropriate benchmark portfolio, tracking error metrics and finally, planning and implementing performance attribution procedures. All these activities were developed according to the guidelines provided by the European Central Bank. The project was funded and executed in collaboration with the Bank of Greece.

#### • Conditional Correlation & Risk Management

Estimating and forecasting up to date correlations between financial variables is one of the core issues in risk management, asset allocation, security pricing and hedging strategies. The most commonly used methods include the “naive” assumption of constant correlation or simple methods such as rolling historical correlations and exponentially weighted moving averages. Practice has shown that correlations vary over time and more complex methods should be used for their modeling. This project developed dynamic measures for estimating and forecasting conditional and implied correlation, and, evaluated their forecasting performance in various financial contexts using advanced statistical methods. The project was part of a successfully completed doctoral dissertation and has been published in scientific journals.

#### • Assessment and Risk Management of Contract Functionality and Lease Financing

This project involves the research of problems in assessing leasing contracts, with an emphasis on the analysis of residual values. Specifically, innovative methodologies of estimating the discount rate of cash-flow from leasing residual values are examined, as well as the prospects of pricing residual values according to Hedonic Pricing and non-parametric methods. The approaches are investigated within the framework of Modigliani-Miller theory, the contract theory, and the theory of evaluation of Real Options. Also, the project aims to investigate problems of assessment, measurement and risk management of leasing contracts’ residual value portfolios. Specifically, methods of historical simulation (bootstrapping) were applied for the estimation of risk of residual value portfolios, and the effect of altered variability and cross-correlation in portfolio risk.

### B. RESEARCH ON STRUCTURING & PRICING DERIVATIVES SECURITIES

#### • Volatility Derivatives

In recent years there has been a growing interest on developing ways and products to

price and hedge securities volatility. This research aimed at reviewing and systematizing this somewhat scattered literature. Volatility options were dealt with under two broad categories: those written on tradable assets (e.g., option on a straddle) and those written on non-tradable assets (e.g., option on a volatility index). Various existing pricing models were studied with respect to computational issues and the various underlying volatility processes. A new option pricing model was implemented where volatility is assumed to follow an autonomous diffusion process. Moreover, the development of a new volatility option on a tradable asset was proposed. Finally, the case of constructing a volatility index for the Greek stock market was explored based on the implied volatilities of the FTSE-20 index. The project was sponsored by the Athens Derivatives Exchange Market (ADEX).

How can you price and hedge securities volatility? A project undertaken by MSL/FRC and funded by ADEX, studied this problem and developed a new option pricing model.

#### • **Planning, Assessment and Management of Structured Financing Products & Price Protection of Agricultural Production Commodities**

The ability to insure the price of commodities is particularly significant and provides the possibility of financing of capital of movement with lower interest-rate of issuing. Potentially, it allows the adoption of alternative methods of estimating the ratio factor of capitalized adequacy (e.g., VAR, RAROC), in relation to the structure of the financing of the price-insurance program. The aim of the research was to investigate the analytical tools, methodologies and processes that are required for the planning, growth and enforcement of a framework of provision of innovative financing programs. These programs concern, in the first phase, vital commodities of agricultural production (cotton, maize, olive oil) and the planning aims at minimizing capital cost, through optimum compensation of relative risks. The project was financed by the Agricultural Bank of Greece.

### **C. ASSET & LIABILITY MANAGEMENT, SECURITIZATION & REAL ESTATE FINANCE**

#### • **Corporate Real Estate Management and Finance**

An important aspect of the financial management of modern organizations is the management of corporate real estate. A fundamental issue is the application of tax on real estate under international models and accounting processes, and the effective use of IT systems. This allows the application of a modern portfolio management theory to real estate finance and the readjustment of relevant tools so as to adapt to specific data and real estate markets. Simultaneously, discovering the hidden value of real estate requires a series of innovations related to assessment of real estate management companies, of complex financing products, of securitization of convertible securities, of lease financing hire, etc. The project has developed indirect price indexes for real estate in Greece, a model for assessing financial elements of the Greek real estate market and an analytical framework. The project was funded by the leading Real Estate management company OTE Estate SA.

#### • **Leasing Receivables**

This consultancy project involved the analysis and securitization of leasing receivables under various vehicles. Leasing contracts have two receivables: amortization (i.e., the monthly payments) and residual value, the second being a non-standard investment asset. The capability of leasing companies to grow depends critically on their ability to obtain cheap finance. In this case efficient and cheap financing involves asset backed securitization. This project was financed by a leading European leasing company.

#### • **Real Estate Finance**

The project aims at the development of a model of long- and short-term sources of assets available for real estate companies. The project comprised a description and comparative

evaluation of the most important alternative practices, methods, tools and forms of concretization of investments of real estates (as an example, self-financing, BOTs, co-exploitation, leasing, outsourcing, sale-lease-back, SPVs, reciprocal capital, concession undertaking exploitation, etc). Critical parameters (such as embedded options, duration of investment, clauses) and the variants of each alternative solution were studied, as well as the application and the repercussions of these solutions via an analysis of a case with real data. The project was sponsored by the leading Real Estate management company OTE Estate SA.

- **Treasury Reserves Management**

In this project, FRC provided OPAP Treasury with research and consulting services aiming at maximizing the returns from actively managing part of OPAP's reserves. More specifically the project required designing and developing a Strategic and Tactical Asset Allocation model per category of deposits, (e.g., REPOS, Interest-bearing Bills of State, etc.), and per duration deposits, the precise determination of Indicator of Report so as for the investment objective and the expected output to be predetermined, the training of model for the Regular Distribution of Available and the continuous follow-up of market of money for the choice of most optimal duration of deposits when the short-term changes in the conditions of market deviate from the long-term expectations. It was also concerned with: market research on optimal interbank rates across durations and deposit categories, the benefit of proposals for the best placement of the capital of OPAP SA. and the most optimal distribution in individual durations, the continuous follow-up of divergences of output from the indicator of report and the benefit of proposals on corrective action. The project was financed by the national betting company OPAP SA.

## **D. RESEARCH ON FINANCIAL ANALYTICS & ECONOMETRIC MODELING**

- **Econometric Modeling of the Greek Labor Market**

The aim of this research project was the development of an econometric model for the identification of the needs and trends of the Greek labor market. Modeling the employment supply and demand as well as the identification and correct interpretation of inequalities was carried out per prefecture and reflected all economic and financial activities. Furthermore, trend forecasts for future employment supply and demand needs over the next few years for different possible scenarios with varying parameters were carried out. The project was sponsored by the Ministry of Labor's Observatory on Employment PAEP SA.

## **E. RESEARCH ON CORPORATE GOVERNANCE**

- **Annual Corporate Governance Survey in Greece**

In 2005 an extensive empirical survey was undertaken for the first time in Greece by the MSL/FRC Research Unit in collaboration with the international audit firm Grant Thornton, the Capital Market Commission and the Federation of Institutional Investors. The survey aimed at assessing the corporate governance practices employed by the Greek listed companies. It communicated the importance of good corporate governance practices by offering empirical evidence on the level of compliance of Greek listed companies. The ambitious task of this joint project was to convince Greek companies that it was in their own highest interest to make "Excellent Corporate Governance" their competitive advantage. In particular, the survey showed whether Greek companies apply good governance practices, both in form and spirit, which are the areas of relative weakness, and, which are the reasons for non-compliance. The survey also delved into the crucial issues for the evolution of the Corporate Governance system in Greece. The research was reconducted in 2006 and was supported by Grant Thornton.

## F. RESEARCH ON ENERGY, CLIMATE & ENVIRONMENTAL FINANCE

### • Derivatives and Environment Risk Management

This research project involves research on new mathematical and econometrical methods and models necessary for environment risk management. The project used an innovative methodological approach with discontinuous meditative evolutions on the timely problematic of environment financial engineering. It is financed by the programs Pythagoras and Irakleitos of the Ministry of Education.

### • Energy Finance

This research project concerns major organizations and corporations that are involved directly or indirectly in the production, management, distribution and consumption of energy (electricity, natural gas, fossil fuel, etc). It covers a broad range of topics, such as development and pricing of securities in the spot and derivative energy market, risk management and hedging, productivity analysis, consumption curve forecasting, compliance issues, market organization, Real Option and Value-at-Risk applications in energy markets.

### • Climate and Environment. Risk Management and Negotiation Markets

The project concerns research on models, technologies, algorithms and best practices related to transaction systems for environment and climate derivative products. It aims to develop optimal algorithms systems of transactions specialized for products of environment and climate. The proposed algorithms are examined empirically in two pilot systems of transactions developed for derivatives of pollutants and derivatives of temperature. Both of these applications present great scientific and practical interest. The technological and research aspects of the project are central to the scientific community but also to institutions such as the EU, Environmental organizations (e.g., Greenpeace, WWF) and International Treaties (e.g., Kyoto). The main project deliverable was a pilot system for on-line pollution negotiations where the proposed algorithms were tested. The project was financed by the Pythagoras program of the Greek Ministry of Education.

### • Evaluation of Bids for the Exploitation / Privatization of a Major Lignite Ore

The energy hub of North Greece is one of the most important ones in the country. The government of Greece has decided to privatize one of the largest lignite ores in the region, through an international public tender process. A member of MSL is part of the experts' evaluation team for this process. Development of the specifications and evaluation criteria, analysis of the submitted tenders, and negotiations are included in the scope of the project.

Energy and Environmental Finance gain increasing importance due to current geopolitical and climate changes. MSL/FRC develops new methodologies and risk management models for these continuously developing areas.



## 1.5. ORDeS: THE OPERATIONAL RESEARCH & DECISION SYSTEMS UNIT

The Operations Research & Decision Systems (ORDeS) Unit was formed in 2009 by Associate Professor Christos D. Tarantilis (Head of the Unit) providing basic and applied research in the field of algorithm design and development for solving complex problems arising in decision systems with varying dimensions and time horizons. The focus is on computational intelligence approaches, exact algorithms, and hybrid optimization methodologies tailored to a range of practical applications from the fields of:

- Network Design
- Vehicle Routing & Crew Management
- Terminal and Warehouse Management
- City Logistics & Public Transportation
- Recycling Operations & Waste Management
- Energy Planning & Modeling
- Health Care Logistics
- Emergency Response & Humanitarian Logistics

A list of the recent MSL/ORDeS research projects follows.

A major issue is how to expand and populate the network of containers for recyclable waste to maximize the service quality of residential populations.

### A. RESEARCH ON NETWORK DESIGN

#### • Development of Mathematical Models and Algorithms for the Garbage Containers Network Design Problem for the City of Athens

The main focus of this research project, sponsored by the Municipality of Athens, is on the development of rigorous mathematical models and algorithms to address the garbage containers network design problem. The residential population and all other waste producers of the city of Athens are serviced through a large scale municipal-wide network of garbage containers-bins. These waste collection establishments consist of two different types of containers for common solid waste and recyclable waste, respectively. Due to the fact that the generation rate of recyclable waste has been increased rapidly, the major issue arising is how to expand and populate the network of blue containers for recyclable waste with simultaneous replacement of common containers, in an effort to address future needs and to maximize the service quality of the residential population.

### B. RESEARCH ON VEHICLE ROUTING & CREW MANAGEMENT

#### • Development of Mathematical Models and Algorithms for Routing and Scheduling Waste Collection Vehicles for the City of Athens

This project, sponsored by the Municipality of Athens, focuses on the development of mathematical models and algorithms to address the routing and scheduling problem of waste collection vehicles. The goal is first to find the optimum clustering of street segments and assignment of different vehicle types to each sector and second to design minimum cost vehicle routes, i.e., to find the service sequence of garbage containers, such that the utilization of available resources is maximized with the least possible operational cost.

#### • Planning and Scheduling of Public Transit Operations for ILPAP SA.

This project, sponsored by ILPAP SA., involves the tactical planning and scheduling of public transit operations of a major operator that serves the greater area of Athens and Piraeus. The case study company manages a fleet of specialized environmental friendly electric trolleys, while the associated customer service network consists of 23 lines with more than 600 local stations. On the basis of a major re-engineering and expansion

of the service network with new depots and vehicle service stations, the goals of the projects are fourfold: a. Define new service frequencies for each line with respect to particular service levels, peak hours and demand profiles, b. Determine the optimum assignment and clustering of different trolley types to multiple depots considering the depot capacities and vehicle's service needs, c. Re-design and construct new timetables for each line with respect to a number of operational constraints and driver legislations, d. Determine the optimum vehicle scheduling and line assignment to each depot, such that the sum deadheading trips for all vehicles throughout the service network is minimized. The basic research activities of this project mainly include the development of rigorous mathematical models, coupled with the design and implementation of sophisticated optimization methods.

**A combined arc-routing sectoring problem raises major theoretical and computational research challenges.**

## **C. RESEARCH ON HEALTH LOGISTICS**

### **• Management of Regional and Hospital Blood Resources**

Human blood is a valuable perishable resource. Its management, either at the hospital or the regional level, is very complex. Members of MSL have been involved in a number of studies, in Greece, Europe and the USA, on the efficient management of blood resources. Models have been developed for the efficient management of blood at the Hospital or the Regional level, technologies have been developed for the efficient identification and tracking of blood resources, and systems have been implemented at Hospitals and regions with impressive results. The work has received the Edelman award by INFORMS, and has been cited by *Science*, in its centennial issue, as one of the most successful works of Operations Research implemented. A number of studies have also been conducted for the efficient management and redesign of the blood management systems in various countries, including Greece, Spain, Netherlands and USA.



## 1.6. FIELD STUDY PROJECTS

MSL plays a very active role in supporting the Field Study Projects (FSPs) of the graduate students attending the MBA International Program. Every year, a number of such studies are carried out for companies in Greece and abroad, who pay a relatively small cost for receiving the FSP services. An indicative list of recent FSPs supported by MSL follows:

Field Study Projects provide an important vehicle for the implementation of theory in practice. Undertaken by teams of MBA International students, under the supervision of MSL staff, FSPs assist companies in implementing modern solutions to solve problems.

<b>Feasibility Studies &amp; Business Plans</b>	
Alpha Bank	Feasibility study for developing a call center for the Bank
Citibank	Feasibility study for new banking services in Greece
Natural Gas Public Company (DEPA)	Feasibility study for expansion of natural gas transportation system
Fiat Leasing	Feasibility study of financial leasing for vehicles in Greece
Onassis Cardiac Surgery Center	Feasibility and viability study for the proposed extension of the Onassis Cardiac Surgery Center
ENEL Green Power Hellas S.A.	Business Plan for the Development of New Products / Services
<b>Knowledge Management</b>	
Deloitte & Touche Consulting	Knowledge Management Implementation to support Greek Firms
Emporiki Bank	Management and dissemination of seminar knowledge among bank employees
Vodafone	Feasibility study for Knowledge Management support in engineering & technical services
<b>Human Resources Management &amp; Management of Organizational Change</b>	
Antenna TV	Change readiness audit in the IT Department
CANA Pharmaceuticals	Development of a Human Resource Department in CANA S.A.
Intracom Electronics Company	Career paths: Best practices from Greek and International Experiences
LOGIS-DIS Software Company	Measurement of organizational climate and change readiness
Onassis Cardiac Surgery Center	Development of a new HRM system for the non-medical personnel
<b>Strategic Performance Measurement - Balanced Scorecard</b>	
Deloitte & Touche Consulting	Developing a Balanced Scorecard solution for the Banking sector
Pireaus Bank	Evaluation and improvement of retail branches using the EFQM framework
Siemens	Developing a Balanced Scorecard for the software development unit
Toyota	A quality information system for Service Indicators from sales network
<b>Entrepreneurship, Market Analysis &amp; New Business Development</b>	
EFG Eurobank Ergasias	Study for introducing mutual and pension funds in Romania
National Bank of Greece	Analysis for cross-border banking products & services: Greece & Albania
Sara Lee Food Company	Market research for development in the Balkans region

Unilever - Elais Food Company	Brand Extension through new distribution channels for Elais Food Company
Ernst & Young Finance	Analysis of Lotteries & Betting market in Greece and South East Europe
Hewlett Packard	Analysis of the IT Service Provider sector
Commercial Capital Venture	Market analysis for introducing convenience foods in Ukraine
Kathimerini Newspaper	Market analysis of new segments and proposal for marketing approach
Plasio Computers	Retail channel efficiency analysis and marketing strategy propositions
Porto Karras Wine Company	Market Research and Marketing Plan for the Porto Karras Wines
<b>Operations Improvement &amp; ERP Systems</b>	
Bancpost Romania	Business Process Analysis and Improvement
Delta Dairy Company	Optimization of Maintenance Using Constraint Management
Grecotel Hotels	Mapping & analysis of business processes for ERP system implementation
M.J.Maillis Group	E-business and ERP implementation study in the metallurgical industry
Nireas Fish Company	Developing a total quality system for Nireas Fish Company
Societe Generale – Geniki Bank	Business process analysis and reengineering for improved productivity and service level in alternative channel operations
Viorex-Bic	Process improvement for the implementation of an ERP system
Procter & Gamble	Process Analysis of the Client Development Sector
<b>Logistics &amp; Supply Chain Management</b>	
Brainstorming Consulting	Developing a pricing model for water supply providers
Deloitte & Touche Consulting	Supply Chain Management opportunities in the Greek market
Group Nobel Vivechrom Paints Company	Feasibility Study for the Outsourcing of Transportation Services
Naf-Naf / NCS Hellas Retail Clothing	Mapping and analysis of business processes for performance improvement
National Telecommunications Company (OTE)	Distribution systems analysis and optimization for Yellow Pages services
INTRAMET S.A. Constructions	Analysis and improvement of procurement procedures
<b>Costing &amp; Profitability</b>	
Emporiki Bank	Profitability study of ATM networks
ELVAL S.A. Hellenic Aluminium Industry	Study of the viability to continue operating the old roller – Scenario (case) Analysis
GlaxoSmithKline Pharmaceuticals	Analysis and improvement of customer delivery performance
National Bank of Greece	Development of a performance measurement tool to assess efficiency
<b>Risk Management &amp; Performance Analysis</b>	
ATE Leasing	Developing a credit risk system for ATE Leasing
Bear Sterns	Arbitrage modelling and trading conditional risk factor sensitivities

EDEKT OTE S.A. Asset Management Consulting	Risk Management for fund of funds portfolios
Piraeus Bank	Credit Stress testing for risk management
<b>Structuring &amp; Pricing Derivatives Securities</b>	
Athens Derivatives Exchange (ADEX)	Introducing Warrants at the Athens Derivatives Exchange
Agricultural Bank	Development, Evaluation & Management of a Structured Product for Cotton using Commodity Derivatives
Citibank	Warrants feasibility study
<b>Asset &amp; Liability Management, Securitization</b>	
Technical Olympic S.A. (MOCHLOS)	Evaluating investments in construction industry
Commercial Capital Group	Real estate and mortgages market in Bulgaria
OTE Estate S.A.	Portfolio of the Corporate Real Estate of OTE: Management, Classification and Information Systems Management (MIS)
OTE Estate S.A.	Evaluation Strategy for Real Estate investments
<b>Financial Analytics &amp; Econometric Modeling</b>	
Athens Stock Exchange	Feasibility Study for Compliance Monitoring Systems
HSBC Bank	Modeling mispricing and identifying lead - lag relationship in the Greek futures market
ROTA Ltd Aluminium Wheels	Study of the function of the finance department and valuation of ROTA Ltd
Grant Thornton	Process Analysis for the search of Strategic Investors
Grant Thornton	Pilot Project for the reorganization of the Media
<b>Energy, Climate &amp; Environmental Finance</b>	
EVGA Dairy Company	Weather related risk management
Planet Ernst & Young Management Consulting	Analysis of green financial products
KTE - Center of Technical Research	Weather derivatives: Analysis and model development for securitization of physical risks
<b>Strategy</b>	
Alpha Bank	Proposal for strategic Management in Customer Relationships
Alpha Bank	Strategic Planning for Banking Services at local level
Bosch Siemens Home Appliances	Exploiting the potential of Corporate Social Responsibility
EFG Eurobank Ergasias	Analysis of the Banking sector in Romania, Bulgaria and Serbia
F.G. Europe Holding Company	A study into the process of mergers by absorption
Grant Thornton	Analysis of the Corporate Governance practices of Greek listed firms
Trofo Supermarkets	Developing the e-commerce strategy for Trofo
Philips Medical Systems	Strategic plan for new commercial infrastructure

The feedback received by the companies that have been receiving FSP services has been very positive. For a review of comments, or for the terms of collaborating for an FSP, please refer to the websites of MSL ([www.msl.aueb.gr](http://www.msl.aueb.gr)) or the MBA International program ([www.imba.aueb.gr](http://www.imba.aueb.gr)).

## 1.7. METHODOLOGIES AND TOOLS

- **Methodology for Competency-Based Management – COMPETE ©**

Methodology for the development of a competencies framework that is custom-made for the organization, and integrates the organization's strategy, with industry trends and best practices. Groups of competencies, individual competencies, and competency profiles are developed. This methodology has been used in projects at Emporiki Bank and Avin Oil. It has also been adopted by HR experts internationally.

- **Methodology for Implementing a Balanced Scorecard ©**

A complete methodology for the design and implementation of a Balanced Scorecard in an organization. It expands on the standard methodology by developing special phases and activity groups in the process of implementation, which cover the whole life cycle of the project. This methodology has been published internationally, and has been successfully implemented in projects at Emporiki Bank, Bank of Cyprus, etc.

- **Methodology for Analyzing the Readiness for Change**

A methodology for the study of the readiness for change, using specialized tools to evaluate the individual characteristics of employees, the readiness at a department's level, and the readiness at an organization's level. This methodology has been used in projects at ANTENNA TV, etc.

- **Methodology for Mapping Innovation Systems**

Methodology for mapping technological systems of innovation, research & development and diagnosis of needs, using specialized tools for evaluating the characteristics of organizations / institutions, of relationships and networking at national, regional - local or even at branch level, of innovativeness in organizational level and project teams. The methodology has already been used in the mapping of innovation systems in Greece, Turkey, Romania, Georgia, etc.

- **Methodology for Implementing ERP Systems**

A methodology which uses the Theory of Constraints for the design and implementation of large ERP systems. Emphasis is given on the special and unique needs of corporate procedures, which are not supported directly by standard ERP operations and require computer code development. It is valuable for the eradication of bottlenecks and the on-time & on-budget implementation of projects.

- **Information System for Routing and Distribution – MapRoute ©**

A complete Geographical Information System with integrated distribution algorithms for complex corporate environments. According to international tests, it is much more effective than the standard routing models (vehicle routing with time windows). These results have been published in international journals. This system has been used in food companies' distribution management and in used lubricants collection companies.

One of the basic goals of the research conducted at MSL is to develop innovative methodologies and software tools that deal with complex management problems and are directly implementable in real company project. A number of such methodologies have been developed and published in international journals.

## 1.8. ISO 9001 CERTIFICATION



At the end of 2007, the Management Science Laboratory received the quality certification ISO 9001. Adopting a quality management system was an important strategic decision for the Department of Management Science and Technology in the context of the need to pioneer the academic developments of Greece. The design and implementation of the quality management system ISO 9001 in MSL was driven by multiple needs, including the labs strategic orientation, processes, size and structure.

The certification process followed three phases. At first, the laboratory staff was informed about the requirements of the ISO 9001 standard and trained for the implementation and compliance. In the second phase, meetings with the Research Units were held with the objective of developing procedures that reflect the functioning of the lab and the requirements of the standard. The third phase focused on developing the quality manual based on the needs of all the Units of MSL and proposals of the external quality advisor. The quality manual is an important tool supporting the research and development activities of all members of MSL. Finally, all the supporting procedures required by the standard and the document management procedures were integrated.

The implementation of the quality management system conducted to the ISO 9001:2000 certification of MSL by TUV HELLAS SA. The laboratory thus possesses a state-of-the-art quality management system supporting the design and implementation of research and development projects. The implementation and certification process was funded by the General Secretariat for Research and Technology under the program AKMON.

The Laboratory was re-accredited recently.

2.

## **Research Results and Output**

**MSL has reached significant achievements in terms of quality and number of publications and presentations in scientific journals and conferences, one of the major objectives and performance criteria for any research center. In addition, books, monographs, working papers, a research magazine and a portal complement the lab's output.**

## 2.1. INTRODUCTION

One of the main concerns of a research centre and one of the most important criteria for its recognition is the number and the quality of its research publications. MSL members are very active in publishing their research results in scientific magazines, in books and edited volumes, as well as presenting them in conferences.

During the period 2000-2009, MSL staff has published about 150 papers in refereed academic journals, including:

*Annals of Operations Research, Applied Financial Economics, Applied Economics Letters, Computers and Operations Research, Computing & Informatics, European Journal of Operational Research, European Management Journal, European Journal of Finance, European Financial Management Journal, Expert Systems with Applications, Journal of Banking and Finance, Journal of Knowledge Management, Journal of the Operational Research Society, Journal of Heuristics, Journal of Managerial Psychology, Journal of Risk Finance, Journal of Futures Markets, INFORMS Journal on Computing, IIE Transactions, IEEE Transactions Intelligent Transportation Systems, IEEE Transactions on Evolutionary Computation, IEEE Intelligent Systems, Information & Management, International Journal of Production Research, International Journal of Production Economics, International Journal of Theoretical and Applied Finance, International Transactions in Operational Research, International Journal of Entrepreneurship & Innovation Management, International Journal of Testing, International Journal of Business Performance Management, International Journal of Systems Science, International Journal of Information Technology and Management, International Journal of Knowledge and Learning, International Journal of Applied System Studies, Long Range Planning, Les Cahiers du Management Technologique, Managerial Finance, Omega - The International Journal of Management Science, Operational Research - An International Journal, Public Administration, Public Organization Review: A Global Journal, R&D Management, RAIRO - Recherche Opérationnelle, Strategic Management Journal, Transportation Research Part C, etc.*

In addition, many papers have been presented in international conferences. During the period 2000-2009, approximately 300 papers of MSL staff have been presented in leading conferences such as:

*Academy of Management Conferences, Strategic Management Society (SMS) Annual International Conference, EUROMA International Conferences in Operations and Global Competitiveness, IEEE Engineering Management Conferences, American Society for Public Administration (ASPA) Conference, Eastern Academy of Management Conference, European Academy of Management Conferences (EURAM), EURO/INFORMS Joint International Conference, European Conference on Knowledge Management, International Conference on Production Research, 5th World Congress on Intellectual Capital, INFORMS Conference, Hellenic Operations Research Conferences, 9th International Conference on Marketing and Development, European OR Society (EURO) 20th Conference, European Regional Science Association (ERSA) Conference, European Group of Organizational Studies (EGOS) Conference, International Bond & Debt Markets Integration Conference, EUMOptiFin 3 Workshop on The drivers of Performance of Large Financial Institutions,*

*Multicriteria Decision Analysis Workshops, 5th International Conference on Money, Investment and Risk, EU Workshop Series on Mathematical Optimization Models for Financial Institutions, 16th Triennial Conference of the International Federation of Operational Research Societies, 3rd European Conference on Organisational Knowledge, Learning and Capabilities, International Conferences on the Design and Analysis of Manufacturing Systems, International Conference on Applied Business Research, 11th International Conference on Industrial Engineering and Engineering Management, Networking and Electronic Commerce Research Conference, International Conference on Entrepreneurship, Competitiveness and Growth in South-East Europe, Conference Human Resource Management in a Knowledge Economy, OR45 Operational Research Society Annual Conference at Keele, European Financial Management Annual Meeting, etc.*

MSL researchers have also been publishing books or articles in edited volumes. During the period 2000-2009, MSL researchers have published more than 40 books or book articles, with international publishers such as Kluwer, McGraw Hill, Oxford University Press, Cambridge University Press, Tsinghua University Press, Springer Verlag, Taylor and Francis, Palgrave, Sage, and many more.



## 2.2. PUBLICATIONS IN SCIENTIFIC JOURNALS

A list of select publications of MSL researchers in refereed international scientific journals follows:

### 2000

1. Ioannou, G. and Sullivan, W.G. (2000), "Use of Activity-Based Costing and Economic Value Analysis for the Justification of Capital Investments in Automated Material Handling Systems", *International Journal of Production Research*, 37(9): 2109-2134.
2. Athanassopoulos, A.D., Papagiannakis, L., Reclitis, P. and Spanos, Y. (2000), "Firm Capabilities, Market Environment and Innovativeness: Evidence from Greek Manufacturing Firms", *Les Cahiers du Management Technologique*, 10(1): 9-26.
3. Herrmann, J.W., Ioannou, G., Minis, I., and Proth, J.M. (2000), "Minimization of Acquisition and Operational Costs in Horizontal Material Handling System Design", *IIE Transactions*, 31(7): 679-693.
4. Markellos, R.N., Mills, T.C. (2000), "Asset Pricing Dynamics", MSL Working Paper 14/00, *European Journal of Finance*, 9, 2003.
5. Refenes, A-P.N., Gonzalez, F. and Burgess, A.N. (2000), "A Principled Approach to Time Series Analysis with Neural Networks: An Application to Volatility Forecasting", MSL Working Paper 13/00, forthcoming in *Handbook of Neural Computation*, Oxford University Press.
6. Nellore, R. and Söderquist, K.E. (2000), "Strategic Outsourcing through Specifications", *Omega - The International Journal of Management Science*, 28(5): 525-540. This paper was ranked 12th in top Omega downloads 2000-2004.
7. Nellore, R. and Söderquist, K.E. (2000), "Portfolio Approaches to Procurement: Analysing the Missing Link to Specifications", *Long Range Planning*, 33(2): 245-267.
8. Söderquist, K.E. and Nellore, R. (2000), "Information Systems in Fast Cycle Development: Identifying User Needs in Integrated Automotive Component Development", *R&D Management*, 30(3): 199-211.
9. Voudouri, E., Lioukas, S., Makridakis, S. and Spanos, Y. (2000), "Greek Hidden Champions: Lessons from Small, Little-known Firms in Greece", *European Management Journal*, 18(6): 663-674.

### 2001

10. Ioannou, G., Prastacos, G.P. and Skintzi, G. (2001), "Inventory Positioning in Single Product Supply Chains", *Les Cahiers du Management Technologique*, 11(2): 33-40.
11. Ioannou, G., Kritikos, M. and Prastacos, G. (2001), "A Greedy Look Ahead Heuristic for the Vehicle Routing Problem with Time Window Constraints", *Journal of the Operational Research Society*, 52: 523-537.
12. Spanos, Y. and Lioukas, S. (2001), "An Examination into the Casual Logic of Rent Generation: Contrasting Porter's Competitive Strategy Framework and the Resource-Based Perspective", *Strategic Management Journal*, 22(10): 907-934.
13. Skiadopoulos, G. (2001), "Volatility Smile Consistent Option Models: A Survey",

*International Journal of Theoretical and Applied Finance*, 4(3): 403-437.

14. Skiadopoulos, G., and Hodges, S. (2001), "Simulating the Evolution of the Implied Distribution", *European Financial Management Journal*, 7(4): 497-521.

15. Nellore, R., Chanaron, J.J. and Söderquist, K.E. (2001), "Lean Supply and Price based Global Sourcing - The Interconnection", *European Journal of Purchasing and Supply Management*, 7(2): 101-110.

16. Söderquist, K.E., Chanaron, J.J. and Birchall, D. (2001), "Automotive Components Suppliers Facing the Learning Challenge", *International Journal for Automotive Technology and Management*, 1: 252-268.

17. Spanos, Y., Prastacos, G.P. and Papadakis, V. (2001), "Greek Firms and EMU: Contrasting SMEs and Large-Sized Enterprises", *European Management Journal*, 19(6): 638-648.

18. Markellos, R.N., Mills, T.C. (2001), "Unit Roots in the CAPM?", *Applied Economics Letters*, 8: 499-502.

19. Mills, T.C., Siriopoulos, C., Markellos, R.N., Harizanis, D. (2001), "Seasonality in the Athens Stock Exchange", *Applied Financial Economics*, 10: 137-142.

20. Zapranis, A.D., Utans, J., Refenes, A-P.N. (2001), "Sampling Variability Estimation Schemes for Neural Models", MSL Working Paper 12/01, forthcoming in *Neural Networks*.

## 2002

21. Prastacos, G.P., Söderquist, E., Spanos, Y., and Van Wassenhove, L. (2002), "An Integrated Framework for Managing Change in the New Competitive Landscape", *European Management Journal*, 20(1): 55-71. This paper came out 4th in readership among the EMJ papers for the year 2002.

22. Ioannou, G., Karakerezis, A. and Mavri, M. (2002), "Branch Network and Modular Service Optimization for Community Banking", *International Transactions in Operational Research*, 9(5): 531-547.

23. Ioannou, G., Kritikos, M. and Prastacos, G.P. (2002), "MAPROUTE: A GIS-based Decision Support System for Vehicle Routing with Time Windows", *Journal of the Operational Research Society*, 53: 842-854.

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Academic conferences enable researchers to meet, present and discuss their ideas, as well as to build networks for engaging in joint research endeavours. The ambition of MSL is to submit our work to the leading international conferences in our areas of focus, as well as to play an active role in the local events and research communities in Europe and Greece.

## 2.3. PRESENTATIONS IN SCIENTIFIC CONFERENCES

MSL researchers participate in many international conferences, where they present their research output. An indicative list of international conferences, where MSL researchers have participated, follows:

### 2000

1. Spanos, Y., Prastacos, G.P. and Poulymenakou, A., "The Impact of Information and Communication Technologies on Firm Structure: Evidence from an Economy in Transition", *IEEE Conference on Engineering Management*, Singapore, November 2000.
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3. Markellos, R.N., "Bootstrap Derivative Asset Pricing", *European Financial Management Annual Meeting*, Athens, June 2000.
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15. Söderquist, K.E. and Prastacos, G.P., "Knowledge Management in New Product Development: An Exploratory Study", *3rd European Conference on Organizational Knowledge, Learning and Capabilities*, Athens, April 2002.
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141. Papalexandris, A., “How Do Customer Factors Drive Performance? Examining the Customer-Financial Performance Relation”, *Academy of Management Conference*, Anaheim, 8-13 August 2008.

142. Repoussis, P.P., Tarantilis, C.D. and Ioannou, G., “Solving Heterogeneous Vehicle Routing and Scheduling Problems via Adaptive Memory Programming”, *Proceedings of the 10th International Conference on Application of Advanced Technology in Transportation (AATT) 2008*, Athens, Greece, 27-31 May 2008.

143. Repoussis, P.P., Tarantilis, C.D. and Ioannou, G., “Solving Heterogeneous Vehicle Routing and Scheduling Problems via Adaptive Memory Programming”, *Proceedings of the 10th International Conference on Application of Advanced Technology in Transportation (AATT) 2008*, Athens, Greece, 27-31 May 2008.

144. Vakola, M. and Nikolaou, I., “Selecting Change Leaders”, *12th International Conference in Organization Studies*, New Delhi, India.

145. Vakola, M., “Macro, Meso and Micro Readiness to Organizational Change”, *Institute of Work Psychology International Conference*, Sheffield, UK.

## 2009

146. Repoussis, P.P. and Tarantilis, C.D., “Routing a Heterogeneous Fleet of Vehicles for the Delivery of Multiple Products”, *4th International Workshop on Freight Transportation and Logistics – Odysseus 2009*, Cesme, Izmir, Turkey, 26-29 May 2009.

147. Repoussis, P.P., Tarantilis, C.D. and Ioannou, G., “An Arc-Guided Evolutionary Algorithm for the Vehicle Routing Problem with Time Windows”, *21st National*

*Operational Research Conference*, Athens, Greece, 27-28 May 2009.

148. Göksidan, H.T. and Katsikis, I., "Public Policies and R&D Performance: The Role of Public R&D in the STI Systems of Turkey and Greece", *49th Congress of the European Regional Science Association "Territorial Cohesion of Europe and Integrative Planning"*, Lodz, Poland, 25-29 August 2009.

149. Göksidan, H.T., Katsikis, I. and Serdar, T., "Governmental Intervention in R&D Formation: An Analysis of Government R&D Expenditures from OECD Countries", *Technology and Economic Development - 3rd International Conference on Innovation, Technology and Knowledge Economics*, Ankara, Turkey, 24-26 June 2009.

150. Katsikis, I. and Göksidan, H.T., "The Dynamics of a Regional Cluster Policy: The Role and the Effects of Public Policy", *49th Congress of the European Regional Science Association "Territorial Cohesion of Europe and Integrative Planning"*, Lodz, Poland, 25-29 August 2009.

151. Katsikis, I. and Söderquist, K.E., "Sectoral Dynamics in the Computer Services Industry", *6th Conference on Management Science, Technology and the New Economic Environment*, Athens, Greece, 8th May 2009. (in Greek)

152. Katsikis, I., "Market Demand and New Industry Formation: Eco-Products and Entrepreneurship in the 'Natural Cosmetics Sector' in Greece", *DIME Workshop on 'Environmental Innovation, Industrial Dynamics and Entrepreneurship'*, Utrecht University, Utrecht, The Netherlands, 10-12 May 2009.

153. Katsikis, I., Söderquist, K.E., "The Role of Skills in the Development of a Sector: The Evolution of Education and of Computer Services Sector in Greece", *Technology, Skills and Geography DIME Workshop*, SPRU, University of Sussex, UK, 11-12 September 2009.

154. Kyrgidou, L. and Katsikis, I., "From Strategy to Entrepreneurship, Firm Behavior and Growth", *29th Strategic Management Annual International Conference "Strategies in an Uncertain World"*, Washington DC, USA, 11-14 October 2009.

155. Nikolaou, I., "Psychological Contract Development and Employee Attitudes" Invited Symposium, Chair of Invited Symposium, *14th European Congress of Work and Organizational Psychology*, Santiago de Compostela, Spain.

156. Tomprou, M. and Nikolaou, I., "Psychological Contract Creation: A Diary Study in Newcomers' first Days at Work", *14th European Congress of Work and Organizational Psychology*, Santiago de Compostela, Spain.

157. Tomprou, M. and Nikolaou, I., "The Effect of Contract Makers and Facilitators on Psychological Contract Creation; The Role of Exchange Ideologies", *14th European Congress of Work and Organizational Psychology*, Santiago de Compostela, Spain.

158. Tomprou, M., Nikolaou, I. and Bourantas, D., "Psychological Contract Creation of Newcomers: A Diary Study exploring the Role of Social Influence", *Annual Meeting of the Academy of Management*, Chicago, USA.

159. Vasileiou, N. and Katsikis, I., "Restructuring an International Company: The Case of Sony Ericsson", *6th Conference on Management Science, Technology and the New Economic Environment*, Athens, Greece, 8th May 2009.

160. Xoustoulakis, M. and Kritikos, M., "Building Simulation Models in Teaching Finance Courses at Secondary Level", *26th National Conference of the Hellenic Mathematical Society*, Thessaloniki, Greece, November 2009.

## 2.4. BOOKS, BOOK ARTICLES, MONOGRAPHS

MSL researchers published a number of books, monographs and book articles. An indicative list follows:

### 2000

Books, collective volumes and monographs disseminate the research output to the academic community, students and managers.

1. Prastacos, G.P., *Management Science: Decision Making in the Information Society*, Stamoulis Press, 598 pages, 2000, 2nd edition 2003.
2. Porfiris, N., Iliadis, I., and Skiadopoulou, G., *The Use of Rights to FTSE/ASE-20 and Examples*, Athens Derivatives Exchange, 55 pages, 2000.
3. Porfiris, N., Iliadis, I., and Skiadopoulou, G., *Future Options in the FTSE/ASE-20 Index: Introduction, Analysis and Examples*, Athens Derivatives Exchange, 58 pages, 2000.
4. Skiadopoulou, G., Hodges, S. and Clewlow, L., "The Dynamics of Implied Volatility Surfaces", in Doukidis, G., Zanakis, S. and Zopounidis, K. (eds), *Decision Making: Recent Developments and Worldwide Applications* (Applied Optimization, Volume 45), pp. 197-211, Kluwer Academic Publishers, 2000.

### 2001

5. Baird, K., Barfield, W., Shewchuk, J.P., and Ioannou, G., "Applications of Wearable Computers and Augmented Reality to Manufacturing", in W. Barfield and T. Caudell (eds), *Fundamentals of Wearable Computers and Augmented Reality*, Lawrence Erlbaum Associates, 2001.
6. Söderquist, K.E., *Innovation Management: An Introductory Overview*, amended version of "BPI Best Practices in Industrial Innovation Management", Booklet written for the European Union, DG III, in collaboration with the TIME Centre of the Grenoble Ecole de Management, 2001.
7. Nellore, R. Söderquist, K.E., Siddall, G. and Motwani, J., "Specifications, Do We Really Understand What They Mean?", in Cortada, J.W. et Woods, J.A. (eds), *The Quality Yearbook*, McGraw-Hill, pp. 451-462, 2001.

### 2002

8. Skiadopoulou, G., "The Simulation of the Implied Distribution and Other Smile Consistent Stochastic Volatility Models: An Overview", in Pardalos, P., Tsitsiringos, V. (eds), *Financial Engineering, E-Commerce and Supply Chain* (Applied Optimization, Volume 70), Chapter 12, pp. 189-212, Kluwer Academic Publishers, 2002.
9. Prastacos, G.P. et al., *Annual Monitoring Report on the RTD Activities Conducted under the EC and Euratom Research Frameworks*, European Commission Publication, 2002, ISBN: 92-828-6263-1.
10. Prastacos, G.P., *Management Science in Action: Applications in the Modern Enterprise*, Stamoulis Press, 2002, 606 pages, 2nd edition, 2005.
11. Vakola, M., and Nikolaou, I. "Organizational Readiness for Organizational Change: The Role of Strategy, Culture and Human Resource Management", in F. Analoui (ed.), *The Changing Patterns of Human Resource Management*, pp. 270-283, Aldershot: Ashgate Publishing, 2002.

## 2003

12. Prastacos, G.P., Spanos, I., and Kostopoulos, K., *Innovation: Defining Factors and Reflections on the Future of Greek Economy*, Monograph, Management Science Laboratory and General Secretariat of Research & Technology, www.gsrt.gr, 2003.
13. Kostopoulos, K., Spanos, Y. and Prastacos, G.P., "Innovation and the Firm: Determinants and Performance Implications", in L. Georgiou, J. Rigby and H. Cameron (eds), *Evaluating the Impact of Technology and Research: The theory and practice of Socio-economic Assessment*, Elgar Publishing, forthcoming 2003.

## 2004

14. Tarantilis, C.D., Kiranoudis, C.T., Ioannou, G., *Systems of Distribution and Services in the Greek Enterprises - Methods, Systems and Cases of Application*, Sideris Publishing, 2004.
15. Refenes, A-P.N. (ed.), *Quantitative Methods in Finance*, Typothito Publishing, Georgios Dardanos, Athens, 2004.
16. Refenes, A-P.N., Gonzalez, F. and Burgess, A.N., "A Principled Approach to Time Series Analysis with Neural Networks: An Application to Volatility Forecasting", in Fiesler E., and Beale R. (eds), *Handbook of Neural Computation*, Oxford University Press, 33-42, 2002.
17. Markellos, R.N. "A Methodology for Nonlinear Cointegration using Lyapunov Stability Theory and Neural Networks", in K. Kirtsou (ed.), *Progress in Financial Markets Research*, New York, Nova Science Publishers, New York, 2004.

## 2006

18. Ioannou, G., *Enterprise Resource Planning Systems*, Stamoulis Publishing, Athens, 2006.
19. Nikolaou, I., *Managing Human Capital. Greek Case Studies*, Sideris Publishing, 2006.
20. Tarantilis, C.D. and Dimitratos, P. (eds) *Proceedings of the 3rd Student Conference on Management Science and Technology: Entrepreneurship and Technology. The Key to Success*, Athens, Klidarithmos Publications, 2006.
21. Katsikis, I. and Christofidis, S., "Post-Fordism and Post-Modernity: Personalization and Semiotics in the Case of Mass Communication", in Kaitartzi-Whitlock S. and Baltzis A., *Innovations and Challenges for the European Media*, University Studio Press Publications, Greece (in Greek), 2006.
22. Nikolaou, I., Vakola, M. and Robertson, I.T., "360 Degree Feedback and Leadership Development", in R. Burke and C. L. Cooper (eds), *Inspiring Leaders*, London, Taylor & Francis, 2006.

## 2007

23. Mills, T.C. and Markellos, R., *The Econometric Modelling of Financial Time Series*, Cambridge University Press, 3rd edition, 2007.
24. Zeimpekis, V.S., Tarantilis, C.D., Giaglis, G.M, and Minis, I. (eds), *Dynamic Fleet Management - Concepts, Systems, Algorithms and Case Studies*, Book Series: Operations Research/Computer Science Interfaces Series, Volume 38, Springer-Verlag, 2007.



25. Tarantilis, C.D. and Dimitratos, P. (eds), *Proceedings of the 4th Student Conference on Management Science and Technology*, Athens, Klidarithmos Publications, 2007.

26. Tarantilis, C.D., "Routing Vehicles, Algorithms", in Shekhar, S. and Xiong, H. (eds), *Encyclopedia of Geographical Information Science*, Springer-Verlag, 2007.

## 2008

27. Argyropoulou, M., Sharma, M.K., Lazarides, T., Koufopoulos, D. and Ioannou, G., "Measuring Supply Chain Performance in SMEs", in Gunasekaran, A. and Sandhu, M. (eds), *Handbook of Business and Information Management Systems*, Advances in Information Resources Management book series, IGI Global, ISBN: 1537-3367, 2008.

28. Argyropoulou, M., Ioannou, G., Koufopoulos, D. and Motwani, J., "The 'Six Imperatives' Framework for the Evaluation of an ERP Project", in Kumar, S., Bendoly, E., Esteves, L. (eds), *Frontiers of Research, in Enterprise Systems: A Handbook*, Sage Publications, 2008.

29. Nikolaou, I., "No Strings Attached Keeping the People Balance in Organizations", in Neumaier, O., Schweiger, G. and Sedmak, C. (eds), *Perspectives on Work. Impulses from Salzburg, Munster etc.* LIT Verlag, 2008.

30. Zobolas, G., Tarantilis, C.D., Ioannou, G., "Exact, Heuristic and Metaheuristic Algorithms for Solving Shop Scheduling Problems, Metaheuristics for Scheduling", in Fatos Xhafa, Ajith Abraham (eds), *Industrial and Manufacturing Applications*, Springer Verlag, vol. 128, pp. 1-48, 2008.

31. Repoussis, P.P. and Kiranoudis, C.T., "Mixed Integer Non-Linear Programming (MINLP) - Applications to Food Dehydration and Deep Chilling", in Erdoğdu F. (ed), *Optimization in Food Engineering*, Chap. 17, Taylor & Francis, pp. 329-354, 2008.

32. Ioannou, G., *Enterprise Resource Systems and Applications with MBS-Navision*, Stamoulis Publishing, 2008.

33. Ioannou, G., *Production and Operations Management*, Stamoulis Publishing, 2008.

## 2009

34. Repoussis, P.P., Tarantilis, C.D. and Ioannou, G., "An Evolutionary Algorithm for the Open Vehicle Routing Problem with Time Windows", in Pereira F. and Tavares J. (eds), *Bioinspired Algorithms for the Vehicle Routing Problem*, Studies in Computational Intelligence 161, Springer-Verlag, pp. 55-75, 2009.

35. Dotsis, G., Markellos, R.N., Mills, T.C., "Estimation of Continuous-Time Stochastic Volatility Models", in T.C. Mills and K. Patterson (eds), *Handbook of Econometrics*, Vol. II, Palgrave, 2009.

36. Fisher R., Polt W., Vonortas, N. (eds), with contributions from: Bach, L., Dekker, R., Dinges, M., Aners Gjoen, Babis Ipektsidis, Kleinknecht, A., Matt, M., Remotti, L., Söderquist, K.E., Spanos, Y., Streicher, G., *The Impact of Publicly Funded Research on Innovation - An Analysis of European Framework Programmes for Research and Development*, Pro Inno Europe, 2009.

37. Katsikis, I. and Kyrgidou, L., "Green Approaches to Entrepreneurship: Theoretical Foundations and Empirical Examination", in Asha Joshi (ed.), *Ecopreneurs: Green*

*Business Activists*, Icfai University Press, ISBN: 978-81-314-2353-0, 2009.

38. Kostopoulos, K., "Team Processes, Actions and Behaviors", in Wankel C. (ed.), *Management through Collaboration: Teaming up in a Networked World*, Routledge – Taylor & Francis Group, forthcoming.

39. Kostopoulos, K., and Söderquist, K.E., "Factors Affecting the Performance of NPD Teams: Some European Evidence", in Assimakopoulos, D.G., Carayannis, E.G., Dossani, R. (eds), *Knowledge Perspectives of NPD: A Comparative Approach*, Springer - Book Series in Innovation Technology & Knowledge Management, forthcoming.

40. Mills, T.C. and Markellos, R.N., Nonlinear Times Series in Financial Economics, in Bruce Mizrahi (ed.), *Encyclopedia of Complexity and Systems Science*, Berlin: Springer-Verlag, 2009.

41. Prastacos, G., Vonortas, N., Kostopoulos, K., Stroblos, N., *Analysis & Measurement of the Economic Impact of the Athens International Airport - Eleutherios Venizelos*, AUEB-AIA, 2009.

42. Prastacos, G., *Managerial Decision Making: Theory & Practice*, Tsinghua University Press, ISBN: 978-7-302-20679-8, 2009.

## 2.5. WORKING PAPERS AND CASE STUDIES

The Management Science Laboratory - MSL publishes research papers in the form of working papers, which are then released in limited numbers for the exchange of knowledge, comments, etc. From year 2000 and up to December 2009, there have been published above 300 research papers, most of which have already been presented in international scientific magazines or international congresses. Below, is an indicative list of our working papers for the last two years. A complete list of all research papers of all years is available in the MSL web site ([www.msl.aueb.gr/wp.htm](http://www.msl.aueb.gr/wp.htm)).

**MSL publishes research papers in the form of working papers, which are then released in limited numbers for the exchange of knowledge, comments, and scientific debate. A working paper is often the first step towards a conference communication and/or a journal publication.**

### 2008

1. Markellos, R.N., Kritikos, M., Costa, A. (2008). Measuring the Efficiency of the London Underground Transport Operators: An Application of DEA and Neural Networks. MSL Working Paper Series, 03/08, AUEB.
2. Kritikos, M., Prastacos, G.P. and Ioannou, G. (2008). A Non Parametric Method for the Heterogeneous Vehicle Routing with Time Windows. MSL Working Paper Series, 04/08, AUEB.
3. Nikolaou, I., Vakola, M. and Bourantas, D. (2008). Who Speaks up at Work? Dispositional Influences on Employees' Voice Behavior. MSL Working Paper Series, 05/08, AUEB.
4. Repoussis, P.P., Tarantilis, C.D. and Ioannou, G. (2008). Waste Management and Recycling from an Operational Perspective: The Case of Used Lubricants Collection and Regeneration in Greece. MSL Working Paper Series, 06/08, AUEB.
5. Symeonidis, L., Daskalakis, G., Markellos, R.N. (2008). Does the Weather Affect Stock Market Volatility? MSL Working Paper Series, 07/08, AUEB.
6. Makropoulou, V., Dotsis, G., Markellos, R.N. (2008). Environmental Policy Implications of Extreme Variations in Pollutant Stock Levels and Socioeconomic Costs. MSL Working Paper Series, 08/08, AUEB.
7. Makropoulou, V., Markellos, R.N. (2008). The Competitive Margin of Bookmakers under Information Uncertainty. MSL Working Paper Series, 09/08, AUEB.

### 2009

8. Daskalakis, G., Markellos, R.N. (2009). The Cost of Banking Prohibition on Emission Allowances in the EU ETS. MSL Working Paper Series, 01/09, AUEB.
9. Fotaki, M., Markellos, R.N., Mania, M. (2009). Human Resources Turnover as an Asset Acquisition, Accumulation and Divesture Process. MSL Working Paper Series, 02/09, AUEB.
10. Katsikis, I. and Söderquist, K.E. (2009). The Attica Cluster: A Longitudinal Life Cycle Analysis. MSL Working Paper Series, 03/09, AUEB.
11. Katsikis, I. and Söderquist, K.E. (2009). Theoretical Perspectives on Evolution and Co-evolution Studies. MSL Working Paper Series, 04/09, AUEB.
12. Katsikis, I. and Vamvakousi, E. (2009). The Interplay of Organizational Forms in the Development of Environmental Discourse. MSL Working Paper Series, 05/09, AUEB.
13. Katsikis, I. (2009). The Role of Ownership in Downsizing Decision Making. MSL Working Paper Series, 06/09, AUEB.

14. Kourtis, A., Dotsis, G., Markellos, R.N. (2009). Parameter Uncertainty in Portfolio Selection: Shrinking the Inverse Covariance Matrix. MSL Working Paper Series, 07/09, AUEB.
15. Kritikos, M., Prastacos, G. and Ioannou, G. (2009). A Non Parametric Method for the Heterogeneous Vehicle Routing with Time Windows. MSL Working Paper Series, 08/09, AUEB.
16. Petrakis, P.E. and Katsikis, I.N. (2009). Entrepreneurial Activities and Business Development: Evidence for the Medium and Large Firms in Greece. MSL Working Paper Series, 10/09, AUEB.

## 2.6. RESEARCH MAGAZINE

A Research Newsletter entitled InnKnow FORUM is published in English language once a year (Autumn), and the person in charge is Assoc. Professor Klas Eric Söderquist. The current, as well as all previous issues of InnKnow FORUM are available on the MSL web site ([www.msl.aueb.gr](http://www.msl.aueb.gr)). Each issue is dedicated to a theme with multiple MSL research results on that theme, or includes a lead article and research results on diverse themes. Until today, 12 issues have already been published with the following titles:

**Since the spring of 2002, MSL's Innovation and Knowledge Management Unit (InnKnow) publishes a bi-annual research magazine, InnKnow FORUM, with the aim of presenting the results of InnKnow's research activities in a more applied form, to the Greek and international management community, academics and managers.**

- Issue 1 (2002): Change Management
- Issue 2 (2002): Strategic Performance Measurement
- Issue 3 (2003): Innovative Management & Entrepreneurship
- Issue 4 (2003): Knowledge Management
- Issue 5 (2004): Competency Management
- Issue 6 (2004): New Products and Service Development
- Issue 7 (2005): Innovation Hot Spots
- Issue 8 (2005): Family Business Succession
- Issue 9 (2006): Strategic Entrepreneurship
- Issue 10 (2007): Change Management
- Issue 11 (2008): Architecture of an Information Revolution
- Issue 12 (2009): Customer Involvement in Innovation and Marketing

InnKnow FORUM is dispatched electronically to a recipients' list that includes academics, managers, researchers, collaborators from other Universities in Greece and internationally, as well as students and graduates.

3.

**Educational and  
Training Activities**

### 3.1. EDUCATIONAL ACTIVITY

The academic staff of the Laboratory supports actively the educational activities of the Athens University of Economics and Business, by teaching a number of undergraduate and graduate courses of the Department of Management Science and Technology. Members of the Laboratory also participate actively in the Department's PhD Program, which is managed by Assoc. Prof R. Markellos, a member of MSL/FRC.

Below, an indicative list of courses, offered by faculty members of MSL during the academic year 2008-2009 at the undergraduate and graduate level, is given.

#### Indicative undergraduate courses offered at the Department of Management Science and Technology

Course Code	Course Title	Instructors	Type	Semester
8001	Mathematics I	Ch. Tarantilis, Emm. Kritikos	C	1
8002	Introduction to Management	I. Spanos	C	1
8017	Managerial Decision Making	G. Prastacos	C	3
8018	Financial Management	R. Markellos	C	3
8024	Quantitative Finance	A. Refenes, Sp. Xanthopoulos	C	4
8032	Management Science in Practice I	Ch. Tarantilis	C	5
8043	Total Quality Management	K. E. Söderquist	E	6
8054	Production & Operation Management	G. Ioannou	E	6
8065	Management Science in Practice II	Ch. Tarantilis	E	6
8070	Accounting Analysis	R. Markellos, G. Siougle	E	6
8045	Enterprise Resource Planning Systems	G. Ioannou	E	7
8047	Managing the Extended Enterprise	K. E. Söderquist, A. Poulimenakou	E	7
8061	Transformation and Innovation	I. Spanos, G. Kakouros	E	7

C = Core Course, E = Elective Course

**Indicative courses offered at the graduate program  
MBA International**

Course Code	Course Title	Instructors	Type	Period
111	Organizational Behavior & HRM	N. Papalexandri, I. Nikolaou	C	1
151	Data, Models & Decisions	G. Prastacos	C	2
181	Business Strategy	I. Spanos	C	3
300	Entrepreneurial Journey	K. E. Söderquist, T. Schwarz	C	3
622	Strategic Inventory Control	G. Ioannou	C	4
420	Corporate Finance	R. Markellos	C	4
422	The Econometrics of Financial Markets	A. Refenes	C	3
427	Trading and Arbitrage for the Dealing Room	A. Refenes	C	4
171	Operations Management	G. Ioannou	C	3
525	ERP Systems	G. Ioannou	C	5
334	Innovation and Creativity	K. E. Söderquist	C	3
335	Strategic Business Partnerships	N. Vonortas	C	5
340	Managing a Family Owned Business	G. Vozikis	C	5
217	Management of Change	M. Vakola	C	4
255	Strategic Decision Making	G. Prastacos, G. Skintzi	C	3
276	Quality Management	K. E. Söderquist	C	4
273	Knowledge Management	A. Dale	E	5
429	Advanced Derivative Securities	G. Skiadopoulos	E	5
436	Project Finance	R. Markellos	E	5
349	Doing Business in Balkans & Black Sea Region	Ch. Vlachoutsikos	E	4



## 3.2. DOCTORAL SUPPORT

One of the objectives of MSL is to support high quality research at the doctoral level. The PhD students of the laboratory are an integral part of the laboratory and constitute the backbone of the research. Furthermore, a number of postdoctoral researchers also conduct research within the MSL. The doctoral students - members of MSL who have already graduated from the Doctoral program, as well as the current doctoral candidates of MSL are shown below.

The PhD students of MSL have already been elected in professional positions in Greek and international Universities of abroad, such as Manchester Business School, the University of Essex, AUEB, University of the Aegean, University of Piraeus, and many more.

### A. PhD GRADUATES

**Vasiliki Skintzi**, “Dynamic Correlation Models”, Thesis Supervisor: Prof. Apostolos Refenes, 2004. Dr. Skintzi is currently a Lecturer at the University of Peloponnese.

**Georgia Skintzi**, “Analysis and Design of Supply Chain Networks: An Inventory Approach”, Thesis Supervisor: Prof. Gregory Prastacos, 2005. Dr. Skintzi is currently a Researcher at the National Economic Research Institute, KEPE.

**Mavri Maria**, “Mathematical Models in the Banking Sector in the Context of the New Economy”, Thesis Supervisor: Assoc. Prof. George Ioannou, 2005. Dr. Mavri is currently a Lecturer at the University of the Aegean.

**Dimitrios Psychoyios**, “Hedging Volatility Risk”, Thesis Supervisor: Prof. Apostolos Refenes, 2006. Dr. Psychoyios was elected Lecturer in Manchester Business School in England, where he served up to 2008. From 2008 he is a Lecturer at the University of Piraeus.

**Georgios Dotsis**, “Jumps and Estimation Risk in Finance and Decision Making”, Thesis Supervisor: Prof. Apostolos Refenes, 2006. Dr. Dotsis is currently a Lecturer at the University of Essex, UK.

**Konstantinos Kostopoulos**, “Strategic Innovation Management: Group Learning and the Role of Group Context in Determining the Performance of Innovative Project Teams - A Theoretical and Empirical Study”, Thesis Supervisors: Prof. Gregory Prastacos and Assist. Prof. Y. Spanos, 2007. Dr. Kostopoulos is an Adjunct Lecturer (PD 407) at the Athens University of Economics and Business and the University of the Aegean.

**Dimitrios Brachos**, “Knowledge Sharing within Organizational Units: The Role of Knowledge Sharing Context and Processes in the Unit Performance - An Empirical Study”, Thesis Supervisor: Assoc. Prof. Eric Söderquist, 2007.

**Sophia Philippidou**, “Organizational Change in the Greek Public Sector in the Context of the Information Economy”, Thesis Supervisor: Assoc. Prof. Eric Söderquist, 2007.

**Alexandros Papalexandris**, “Determining the Drivers of Performance: Examining the Cause and Effect Relations of the Balanced Scorecard in the Banking Sector”, Thesis Supervisor: Prof. Gregory Prastacos, 2007. Dr. Papalexandris is currently a Lecturer (elect) at the Athens University of Economics and Business.

**Vasiliki Makropoulou**, “Advances in the Methodology and Application of Real Options in Finance”, Thesis Supervisor: Assist. Prof. Raphael Markellos, 2007. Dr. Makropoulou's first placement was as an Assistant Professor at the University of Ultricht, the Netherlands.

**Panagiotis Repousis**, “Optimization Methods for Complex Vehicle Routing and Scheduling Problems”, Thesis Supervisors: Prof. George Ioannou and Assoc. Prof. Ch. Tarantilis, 2008. Dr. Repousis is currently a Lecturer (elect) at the Athens University of Economics and Business.

**George Daskalakis**, “Option Pricing & Risk Management in Emission and Electricity Markets”, Thesis Supervisor: Assist. Prof. Raphael Markellos, 2008”. Dr. Daskalakis is currently a

Lecturer in Finance at the Norwich Business School, University of East Anglia, UK.

**Eleftheria Kostika**, “Modelling the Stochastic Behaviour of the Financial Markets Considering Higher Moments and Cointegration”, Thesis Supervisor: Prof. Apostolos Refenes, 2008. Dr. Kostika works in the Risk Management Department in Bank of Greece as a Risk Analyst.

**George Zombolas**, “Optimization Methods for Complex, Production, Planning and Scheduling Problems”, Thesis Supervisor: Prof. George Ioannou, 2009.

## B. PhD STUDIES IN PROGRESS

The following table includes a list with PhD studies in progress of PhD candidates of the laboratory.

PhD Candidates	PhD Thesis Theme	Supervisor
<b>Research Unit InnKnow</b>		
I. Katsikis	Innovation Dynamics and Co-evolution Processes	K.E. Söderquist
K. Fameli	Change Management	K.E. Söderquist
V. Mantas	Open Innovation	K.E. Söderquist
K. Syrigou	Change Management	K.E. Söderquist
<b>Research Unit OpeR</b>		
Ch. Vafiadis	Operations Management	G. Ioannou
D. Paraskevopoulos	Operations Research - Scheduling	G. Ioannou
M. Pateraki	Production Management - Outsourcing	G. P. Prastacos
P. Kyriazis	Operations Management	G. Ioannou
<b>Research Unit FRC</b>		
N. Vlastakis	Financial Econometrics	R. Markellos
E. Korkou	Computational Finance	A. Refenes
A. Kourtis	Financial Econometrics	R. Markellos
D. Louzis	Financial Econometrics	A. Refenes
Ch. Markopoulou	Financial Risk Management	A. Refenes
M. Fotaki	The Economics of Corporate Governance	S. Lioukas
<b>Research Unit ORDeS</b>		
A. Anagnostopoulou	Operations Research – Reverse Logistics	Ch. Tarantilis
K. Theodoropoulos	Operations Research – Stochastic Vehicle Routing	Ch. Tarantilis
F. Stavropoulou	Operations Research – Multi-Period Vehicle Routing	Ch. Tarantilis

### 3.3. ORGANIZATION OF CONFERENCES, WORKSHOPS AND SEMINARS

#### A. CONFERENCES & WORKSHOPS

- **“Knowledge Management: Unlocking the True Potential of your Organisation”**

In June 2000, MSL organized an international conference on the subject of Knowledge Management. The conference was divided into four parts: Introduction to Knowledge Management, Intra-Organizational and Inter-Organizational Knowledge Creation Processes, Strategies for the Use of Knowledge and Knowledge Management Systems, and Tools, Methods and Information Systems for Managing Knowledge. Speakers at the conference included: A. Dale (Unilever), D.W. Birchall (Henley Management College), D. Snowden (IBM Institute for Knowledge), J. Sage (PricewaterhouseCoopers), M. Olesen (Novartis Pharmaceutical), and others. The conference was attended by more than 120 people.

- **“Innovation for Growth in the Greek Economy”**

In the spring of 2003, MSL organized an international conference on Innovation, with emphasis on its role in the Greek Economy. The conference, organized within the framework of the FORESIGHT project, included four parts: Development of a National Environment for Innovation and Entrepreneurship, Creation of Regional Structures and Branch Networks for the Support of Innovation and Entrepreneurship, Innovation and Entrepreneurship in Businesses and Organizations: Developing and Seeking Opportunities, and Successful Business Models. Speakers at the conference included: Dr. C. Wessner (U.S. National Academy of Sciences), Professor N. Vonortas (George Washington University), Professor Ch. Pitelis, (University of Cambridge), several Professors from AUEB, the National Technical University of Athens, the National and Kapodistrian University of Athens, the Aristotle University of Thessaloniki, and others. Speakers also included representatives from the Hellenic General Secretariat of Research and Technology, and the Hellenic Federation of Enterprises. The conference was attended by over 150 people. The presentations are available on MSL's website.

- **“Innovation Impact”**

In October 2007 in Berlin, a conference on Innovation Policy in Europe was co-organised by MSL in the frame of the PRO INNO Europe initiative of the European Commission. It was addressed to political leaders, policy makers and innovation program managers, as well as to business leaders and entrepreneurs. The main results of the Innovation Impact project were presented by the pan-European research team, focusing on the evaluation of public innovation support programs and policy issues. More information is available on: <http://conference.imp-lore.org/>.

- **“Sustaining and Developing Business in Southeast Europe”**

In collaboration with the leading and worldwide known Wharton School, University of Pennsylvania, the MSL organised an international seminar in June 2009 on the subject “Sustaining and Developing Business in Southeast Europe”. Addressing in leaders of enterprises, top executives and entrepreneurs, the seminar offered a wide picture of strategies, tactics and activities that the enterprises should adopt in the contemporary conditions and in the particular markets. Keynote Speaker was Professor Eric Clemons of the Wharton School, while from Athens University of Economics and Business presentations were held by prominent Professors and Visiting Scholars including Professors G.P. Prastacos, S. Lioukas, G. Avlonitis, C. Vlachoutsikos and X. Voudourogliou.

MSL has been active in organizing conferences, workshops and research seminars. Indicative topics of conferences include Knowledge Management, Innovation, and Corporate Social Responsibility.

Numerous case studies were also presented from the enterprises including the National Bank of Greece, Plaisio Computers, ATLAS Romania, Intralot, EFG Eurolife Insurance, Finansbank Turkey, Elgeka, DruckFarben, Romtelecom, Printec and Farmathen, as well as studies from the consulting firms McKinsey & Company and Ernst & Young. The seminar's academic coordinators were Professors G.P. Prastacos and K.E. Söderquist. Additional information on the seminar is available at [www.sustaininggrowth.gr](http://www.sustaininggrowth.gr).

## **B. EXECUTIVE SEMINARS**

MSL staff has been active in developing executive seminars. These seminars are typically 1-3 days long, and address specific issues for company executives.

The executive seminars offered by MSL are the following:

### **a. Management and Technology Series**

- “ERP Systems”, Seminar Leader: Prof. George Ioannou
- “Knowledge Management: Unlocking the true potential of your Organization”, Seminar Leader: Dr. Adrian Dale
- “Managerial Decision Making / Strategic Decision Making”, Seminar Leader: Prof. Gregory Prastacos
- “Balanced Scorecard: Developing a Strategy for the 21st Century”, Seminar Leaders: Prof. Gregory Prastacos & Dr. Alex Papalexandris
- “Total Quality Management and the Lean Enterprise”, Seminar Leader: Assoc. Prof. Klas Eric Söderquist

### **b. Entrepreneurship Series**

- “Managing Creativity and Innovation”, Seminar Leader: Assoc. Prof. Klas Eric Söderquist
- “Mastering Entrepreneurship: From Creativity and Innovation to Business Strategy”, Seminar Leader: Prof. Tom Schwartz
- “Doing Business in the Balkan and Black Sea Regions”, Seminar Leader: Dr. Charalambos Vlahoutsikos
- “Managing the Family Business”, Seminar Leader: Prof. George Vozikis
- “Strategic Business Partnerships”, Seminar Leader: Prof. Nikos Vonortas

### **c. Financial Series**

- “Mastering Quantitative Methods for Investments Management and Risk”, Seminar Leader: Prof. Apostolos Refenes
- “Mastering Electricity Markets and Derivatives”, Seminar Leader: Assoc. Prof. Raphael Markellos

**MSL organizes seminars for business executives. All seminars are offered in English by internationally reputed instructors, either AUEB faculty, or visiting staff.**

### 3.4. THE LABORATORY'S WEBSITE

MSL's web page can be found in the following address: [www.msl.aueb.gr](http://www.msl.aueb.gr). Here the visitor can find out about the activities of the lab, and its four research units. Furthermore, the web site includes the projects which have been completed, or are being carried out, lists of papers, publications and communications, the field study projects, etc.

MSL's home page provides a guide to the research units of the lab, news related to recent developments, as well as the "story of the month" presenting briefly ongoing work or the opinions of a visiting research fellow. Additionally, it provides links to the staff, the annual activities report and all the issues of InnKnow FORUM.

The pages of the four research units have the same structure and guide the visitor through their activities.

#### The "Story of the Month"

The "Story of the Month" was initiated in September 2004. It constitutes an additional way of disseminating our research results, and/or voicing opinions on a number of managerial issues. Indicative articles published during the period 2008-2009 include:

#### 2008

- Dec 08 - Jan 09, Addressing the Financial Crisis: A Corporate Governance Perspective by Maria Fotaki, Doctoral Candidate
- Nov 08, The Architecture of an Information Revolution by Adrian Dale, Visiting Professor of Knowledge Management
- Oct 08, Decision-Making Methods for Public Organizations: A Complex Adaptive System Approach by Ms Maria Viou, Doctoral Candidate
- Sep 08, Optimal Portfolio Allocation with Higher Moments by Dr. Eleftheria Kostika, Research Fellow
- June 08, Production Scheduling & ERP Systems: Towards Seamless Integration by George Zobolas, Doctoral Candidate
- May 08, An Integrated European Electricity Market? by Dr. Spyros Xanthopoulos-Sisinis, Research Fellow
- Apr 08, Teaming Up for Innovation by Dr. Konstantinos Kostopoulos, Research Fellow
- Mar 08, A Web based Application for Ship Routing and Scheduling: A Greek Case Study by Dimitrios Paraskevopoulos, Doctoral Candidate
- Feb 08, Realized Volatility and Risk Management by Dimitrios Louzis, Doctoral Candidate
- Dec 07 - Jan 08, Teleological Approaches to Entrepreneurship by Lida Kyrgidou and Ioannis Katsikis, Doctoral Candidates

#### 2009

- Dec-Jan 10, Exploration into the Relationship between Managers' Sensemaking and CSR Outcomes by Sharon M. Jackson, Visiting Research Fellow
- Nov 09, The Effects of Corporate Ownership on Downsizing Decision Making by Ioannis N. Katsikis, Doctoral Candidate
- Oct 09, Do Investors Require a Volatility Risk Premium? by Chryssa Markopoulou, Doctoral Candidate
- Sep 09, Solution Approaches for the Resource Constrained Project Scheduling

- Problem by Dimitris Paraskevopoulos, Doctoral Candidate
- July-Aug 09, Leading New Product Development Teams by Dr. Konstantinos Kostopoulos, Research Fellow
- June 09, Change in Health Care Organizations by Katerina Fameli, Doctoral Candidate
- May 09, Non-Parametric Derivative Pricing Models by Efstathia Korkou, Doctoral Candidate
- Apr 09, The Garbage Containers Network Design Problem for the City of Athens by Christos D. Tarantilis, Associate Professor
- Mar 09, The “Fuzzy Back-End” of Collaborative R&D Projects by Klas Eric Söderquist Associate Professor
- Feb 09, On the Formation of a Sector: The Case of Computer Services by Ioannis N. Katsikis, Doctoral Researcher
- Dec - Jan 09, Addressing the Financial Crisis: A Corporate Governance Perspective by Maria Fotaki, Doctoral Candidate

### **“MANAGEMENT SCIENCE ONLINE” PORTAL**

Within the MSL site, a portal has been developed and maintained, entitled “Management Science Online”, which aims to support the academic and research community of Management Science. The portal’s address is [www.msl.aueb.gr/management\\_science](http://www.msl.aueb.gr/management_science). This portal includes five main sections, as follows:

- General Material (Associations, Newspapers, Journals, Online courses, etc)
- Models & Techniques (all areas of Operational Research)
- Applications (Resource Distribution, Data Envelopment Analysis, Supply Chain Management, ERP, Output Management, Knowledge Management, Innovation Management, Change Management, etc)
- Specialised applications and support program software

The portal includes also many examples and problems for the students to practice, as well as links to other important and relevant sites.

### 3.5. COMMUNITY CONTRIBUTION AND RECOGNITION

- Professor Gregory Prastacos has joined the Editorial Board of the *International Journal of Information Technology and Management* (2002 - ), the *European Journal of International Management* (2006 - ), and the *Operational Research: An International Journal* (2007 - ).
- Professor Apostolos Refenes was appointed member of the Hellenic Competition Commission (2004 - 2008). He was also appointed member of the Scientific Committee of the Hellenic Bank Association, on Regulation Policy and Compliance (2006), as well as Chairman of the Hellenic Accounting and Auditing Standards Oversight Board (2009 - ).
- Professor George Ioannou is a member of the Editorial Board of *Production Planning and Control* journal. He has received the Microsoft award for Excellence in Teaching.
- Associate Professor Klas Eric Söderquist has joined the Editorial Boards of *International Journal of Knowledge and Learning*, *International Journal of Strategic Change*, and *Revue Management Technologique*. He is also the editor of *InnKnow FORUM*. Professor Söderquist was till recently the Editor-in-Chief of the international journal *Cahiers du Management Technologique*.
- Associate Professor Raphael Markellos has recently been appointed Associate Editor of *South European Review of Business Finance and Accounting* (from 2004).
- Associate Professor Christos D. Tarantilis has served on the Board of Directors of the Information Society S.A. (2004-2009), the state-owned firm offering project management expertise to the Greek public sector in the fields of IT projects and of re-engineering public administration processes.
- Associate Professor Christos D. Tarantilis is a member of the Editorial Boards of the *International Journal of Multicriteria Decision Making* as well as the *Operational Research. An International Journal*. He was Guest Editor to the *Computers & Operations Research* special issue on entitled “Real-time Supply Chain Management”. Also, he was Guest Editor in the special issue of the *IEEE Intelligent Systems* journal (with Professors D. Spinellis and M. Gendreau) entitled “Advanced Heuristics in Transportation and Logistics”.
- Assistant Professor Yiannis Spanos has become a member of the Editorial Board of *Organization Studies* since January 2005.
- Assistant Professor Yiannis Nikolaou has become a member of the Editorial Board of the *Journal of Managerial Psychology*, *Journal of Personnel Psychology*, and *Leadership and Organizational Development Journal*.
- Professor Gregory Prastacos went to Romania and Georgia, as Head of Missions from the EU, to meet with heads of Research Institutes, Universities, government officials, and private sector representatives, in order to assess the R&D potential of these countries, and make policy recommendations for research development.
- Associate Professor Raphael Markellos was a member of the research committee of the international scientific congress “Exchange Rate and Risk Econometrics” under the auspice of the Applied Econometric Association in Athens, October 19-20, 2006.
- Professor Apostolos Refenes and Associate Professor Raphael Markellos organized a Session on Computational Finance and Economics during the 16th International Conference on Artificial Neural Networks, which took place in Athens in 2006.

- Professor George Ioannou is a member of the Research Committee of the Technical Chamber of Greece (2002 - today).
- Professor Gregory Prastacos was elected Member of the Board of Directors (BoD) of the Hellenic Management Association (EEDE). Associate Professor Chris Tarantilis was elected Special Secretary of the Hellenic OR Society (HELORS). Dr. Kostas Kostopoulos, Dr. Sofia Phillipidou and Dr. Panayiotis Repoussis were also elected Members of the BoD of HELORS.
- Doctoral candidate Ioannis N. Katsikis is a member of DIMETIC European PhD School which is supported by the European Excellence Network DIME and has provided doctoral education for the past 11 years. Within this framework, research workshops have been co-organised by top research centres in the field such as UNU-MERIT, Maastricht, The Netherlands and BETA, Strasbourg, France.
- The MBA International program, headed by the Director of the MSL, Professor Gregory P. Prastacos, and the MSL/OPeR Head, Professor George Ioannou, appears in international listings of the best programs world-wide. Specifically, in the rankings conducted by ReportED magazine of the 100 best MBA programs in the world, AUEB's MBA International program was ranked 10th in Europe and 30th internationally. Other international rankings also place the program in top places.
- The article of Professors George Ioannou and Gregory Prastacos, in collaboration with Dr. Alexandros Papalexandris, with the title, "Implementing the Balanced Scorecard in Greece: a Software Firm's Experience" is one of the 25 most downloaded articles, according to top25.sciencedirect.com, in reference to the magazine *Long Range Planning*.
- The paper by Assistant Professors Maria Vakola and Yiannis Nikolaou that was published in *Employee Relations*, was ranked 5th among the Top 10 Most Accessed Articles list of the Emerald database.
- Associate Professor Klas Eric Söderquist was invited by the Grenoble Ecole de Management, France, where he gave a number of seminars on Operations Management, Quality Management and Research Methodology. He has also been appointed a reviewer for the Academy of Management annual meetings.
- The Institute of Operations Research and Management Science, INFORMS, in a recent conference which took place in Baltimore, USA, granted honorary medals to Professors Gregory Prastacos and Kostas Zografos for their outstanding achievements in Management Science.
- The paper of Dr. Dimitris Brachos and Dr. Konstantinos Kostopoulos, in co-operation with K. E. Söderquist and G. P. Prastacos, entitled "Knowledge Effectiveness, Social Context and Innovation", published in the *Journal of Knowledge Management*, was honoured by the Emerald publishing house with "Highly Commended Paper" award. This was awarded by the magazine's editorial committee to three papers as part of the "Literati Network Awards for Excellence 2008". The paper was written during the preparation of the doctoral thesis of D. Brachos (under the supervision of Associate Professor K. E. Söderquist) and of K. Kostopoulos (under the supervision of Professor G. P. Prastacos).
- Dr. Konstantinos Kostopoulos undertook the Session Chair: Cross-Cultural Cognitive Research Academy of Management Annual Meeting, 2008, Anaheim, California, USA. He was also a member of the research committee of the conference of the Greek Company of Systemic Studies (EESM): 3rd National Conference 2007 in Piraeus and the 4th National Conference 2008 in Ioannina.



- The department's doctoral candidate, Ioannis Katsikis, was elected member and scholar of GLOBELICS (Global Network for Economics of Learning, Innovation, and Competence Building Systems).
- Associate Professor Chris Tarantilis was voted to undertake organisation of the international Odysseus 2012. Odysseus is a specialised congress on the subjects of Operational Research in Transport and Logistics and is a traditional meeting point every three years for researchers worldwide in this specific field (eg. Georgia Institute of Technology, Massachusetts Institute of Technology, Université de Montréal, HEC-Montréal, CRT, McGill University). He also organised and led the session in the 20th European OR Society Conference entitled "Computational Methods in Transportation and Logistics".
- Professor George Ioannou was the professor responsible for the program of "Executive Training in Public Enterprises and Organisations", within the framework of the operational Program "Employment and Professional Training".
- Professor George Ioannou was keynote speaker at the SAS congress which took place in May 2009. The subject of the congress was "Profitability Focused Performance Management" and the title of his speech was "Exploiting the internal treasures of an enterprise". Many CEOs, CFOs and decision makers from Greek and multinational enterprises and organisations took part in the congress.
- Professor George Ioannou was a member of the International Scientific Committee of the International Conference on Applied Operational Research (ICAOR) which took place at the Åbo Akademi University, Finland in 2010.
- Professor Spyros Lioukas and Associate Professor Klas Eric Söderquist were invited to participate in the academic advisory committee for the CRI awards - Corporate Responsibility Index - organised internationally by the non-profit organisation Business in the Community (in Greece and with the cooperation of the Institute of Corporate Social Responsibility). Professor Gregory P. Prastacos was a member of the evaluation committee for Eurocharity's CEO-CSR awards for two years.
- Associate Professor Klas Eric Söderquist undertook the role of Quality Control Expert on the project SERMANTEQ - Strategic Development of the Education and Electronic Learning sectors (European Committee, TEMPUS program). Apart from AUEB, the following institutes took part in the project: Grenoble Ecole de Management, Applied Science University Jordan, PSUT Jordan, AHU Jordan, ENSIAS Morocco, LCU Lebanon, HEC Management School Belgium, and Birzeit University Palestine.
- Associate Professor Klas Eric Söderquist undertook Track Chair (Track "Information Systems, Local Knowledge and Innovation") at the MCIS conference organised by AUEB's Department of Management Science and Technology and the London School of Economics, 25-27 September 2009.
- Assistant Professor Yiannis Nikolaou was invited by the Scientific Committee of the 14th European Congress of Work and Organizational Psychology, Santiago de Compostela, Spain (13-16 May 2009), to organise the invited symposium.
- Two recent projects of members of MSL were approved within the framework of the support program of basic research of AUEB/RC PEVE 2009: Innovation Dynamics and Co-evolutionary Processes in the Computer Services Sector: A Longitudinal Analysis (under the academic responsibility of Associate Professor Klas Eric Söderquist), and Exploring the Recent Turbulence in the Financial Sector from a Psychological Contract Perspective (under the academic responsibility of Assistant Professor Yiannis Nikolaou).

- The article by Kostopoulos, K., Bozionelos, N., and Prastacos, G. (2009), “Team learning activities and team effectiveness: The role of psychological safety and task conflict” presented at the Meeting of the Academy of Management, 7-11 August, Chicago, USA, was selected as one of the leading articles of the Annual Congress of Academy of Management, the most authoritative organization worldwide on management studies. The choice was based on a competition of two rounds, from which only the top (in terms of methodology and contribution to knowledge) of around 1,500 articles were accepted and presented at the Congress in August 2009. The congress was attended by around 8,000 academics.
- The department’s doctoral candidate, Ioannis Katsikis, was invited to present his work on the subject: “Market Demand and New Industry Formation: Eco-Products and Entrepreneurship in the “Natural Cosmetics Sector in Greece” as invited speaker at the congress entitled: “Environmental Innovation, Industrial Dynamics and Entrepreneurship”, organised by the University of Utrecht which took place on 10-12 May 2009 in Utrecht of the Netherlands. He was also invited to present his work on the subject: “The Role of Skills in the Development of a Sector: The Evolution of Education and of Computer Services Sector in Greece”, as invited speaker at the congress entitled: “*Technology, Skills and Geography DIME Workshop on Environmental Innovation, Industrial Dynamics and Entrepreneurship*” organised by the Science and Policy Research Unit - SPRU of the University of Sussex which took place on 11-12 September 2009 in the UK.
- Since 2006 MSL has been organizing an international certificate 2-month summer program on Entrepreneurship. The name of the program is Special Entrepreneurship Program (SEP) and aims to introduce the participants to the business environment of Greece and Europe. During the program participants understand the economic environment of Greece and Europe, learn about markets and industries of interest, meet entrepreneurs, visit companies interested in doing business abroad, and finally get immersed in the culture of Greece and Europe. They also visit important cultural and archaeological sites, and participate in activities of the well recognized MBA International program. The response of the participants has been very positive.
- MSL has also been participating in the organization of the summer school entitled Youth Entrepreneurship Summer program (YES). The summer program addressed to students finishing Upper Secondary School (Lykeio), aims to provide them, through lectures, business games, team work and research, the knowledge and the skills for an introduction to entrepreneurial activity. The response of the participants has been very positive.



4.

**Research Staff**

## 4.1. THE STEERING COMMITTEE

### Gregory P. Prastacos

Gregory P. Prastacos, the Director of MSL, is Professor of Management Science at the Department of Management Science and Technology of the Athens University of Economics and Business (AUEB), as well as Rector of the University. He holds a B.Sc. and a M.Sc. in Computer Science, and a Ph.D. in Operations Research, all from Columbia University. A former faculty member of the Wharton School at the University of Pennsylvania, he has previously taught at the Graduate School of Business of Columbia University, the University of Paris – Dauphine, the University of Bern, and he has held visiting appointments in a number of Universities and Research Institutes around the world.

Professor Prastacos' research, professional and teaching interests are in the areas of Management Science and Information Technology, and their use for Business Transformation in the Information Society. He has published 9 books and more than 80 papers in academic journals and edited volumes. His papers have appeared in journals such as *Management Science*, *Operations Research*, *Information & Management*, *European Management Journal*, *Journal of Knowledge Management*, *Annals of Operations Research*, etc.

Professor Prastacos has extensive consulting experience, having assisted numerous private companies and government organizations to develop systems, improve management practices, and develop strategies for the information economy. For his work on perishable inventory management he has been awarded the Edelman Award by the Institute of Management Sciences (TIMS, currently INFORMS). For his work on financial modeling, he has been awarded the 1st prize of the Hellenic OR Society. He is or has been on a number of Editorial Boards, as well as on the Board of Directors of companies and organizations. He is an elected Fellow of the Washington Academy of Sciences, an ex-member of the Scientific Council of the Greek National Economic Research Institute and the Hellenic Management Association, an evaluator and auditor to the European Commission. Professor Prastacos is the recipient of a number of teaching excellence awards by AUEB.

### Apostolos Refenes

Apostolos Refenes, the Head of MSL/FRC, is Professor of Financial Engineering at the Department of Management Science and Technology of the Athens University of Economics and Business. Formerly, he was Associate Professor of Decision Science at London Business School, and has held previous appointments at University College London, the Department of Trade & Industry and the UK's Cabinet Office panel on financial services. He is a graduate of the University of North London and received a PhD from the University of Reading.

Professor Refenes' research, professional and teaching interests revolve around the areas of financial engineering, computational finance, asset pricing, asset allocation, risk management, financial regulation policy and compliance analytics. He is the author of over 100 papers, six books, has held numerous journal editorial appointments, and is the founder of the Computational Finance conference. Recipient of research awards in excess of \$15m from several public and private funds, Professor Refenes is considered an international authority on the subjects of financial engineering and computational finance. His publications appear in such journals as the *Journal of Forecasting*, *IEEE Trans on Neural Networks*, *Neural Networks*, *Neural Computing & Applications*, *Neurocomputing*,

The Steering Committee is composed of the Director of MSL and the Heads of the 4 Research Units: InnKnow, OpeR, FRC, and ORDeS. The Committee meets regularly to set strategy and review progress of research projects and PhD students.

*Risk, Defense Economics*, etc. Topical work has been reported in *Scientific American*, *The New Scientist*, *Nature*, *Risk*, *IEEE spectrum*, and the press *The Financial Times*, *The Times*, *The Independent*, *The Guardian*, *The Daily Telegraph*, and others.

### **George Ioannou**

George Ioannou, the Head of MSL/OpER, is Professor of Operations Management at the Department of Management Science and Technology of the Athens University of Economics and Business. Previously, he has been Assistant Professor at the Industrial and Systems Engineering Department of Virginia Tech (USA), and Head of the Manufacturing Systems Integration Laboratory.

His research focuses on the analysis, design and optimization of operations systems and business processes, combining advanced web-based and traditional computational technologies with operational research models and methods. He has graduated from the Mechanical Engineering Faculty at National Technical University of Athens, from the Center for Robotics and Automated Systems in Imperial College (SERC scholarship) and from the Computer Integrated Manufacturing Lab of the Institute for Systems Research, University of Maryland (NSF scholarship).

His research at Virginia Tech was sponsored by major companies (such as ALCOA, UPS, InSteel, Westinghouse, AlliantTech Systems, IBM, Siemens, Motorola), as well as by state and political bodies (e.g. National Science Foundation, Center for Innovative Technology, SCHEV). In Greece, it is funded by GSRT and many Greek companies and organizations. He teaches both at undergraduate and graduate programs of AUEB, as well as in executive seminars, and has significant experience as business consultant, both in Greece and in the USA.

He is a member of the Editorial Board of *Production Planning and Control* journal, and has been a member of the scientific committees of several academic conferences. He has received the Microsoft Award for Excellence in Teaching, as well as a number of teaching excellence awards by AUEB.

### **Klas Eric Söderquist**

Klas Eric Söderquist, Head of the MSL/InnKnow, is Associate Professor of Innovation and Knowledge Management at the Department of Management Science and Technology of AUEB. He is a graduate of the Royal Institute of Technology in Stockholm, Sweden and holds a DBA in Industrial Strategy from Brunel University. His research and teaching interests include Innovation and Knowledge Management, R&D and New Product Development Management, and Performance Management.

He has more than 50 publications in scientific journals, books and international conferences, including the *Journal of Product Innovation Management*, *Long Range Planning*, *R&D Management*, *Omega*, *European Management Journal*, and the *Journal of Small Business Management*. K. E. Söderquist is Editor of *InnKnow FORUM* published by MSL, and is on the editorial board of a number of academic journals. He has previously been the Editor-in-Chief of *Les Cahiers du Management Technologique*, published by the Grenoble Ecole de Management, where he was previously a faculty member.

Additionally, he has worked as an advisor to a number of organizations and companies including UNIDO, European Commission, Emporiki Bank, Valeo, Schneider Electric, Hewlett Packard, Dauphinoise Thomson (Group Adwest) and Raymond SARL (France), and as a consultant at the Swedish Office of Science and Technology in Paris. He has received several recognitions for teaching excellence in Greece and France.

### **Christos D. Tarantilis**

Dr. Christos D. Tarantilis, the Head of MSL/ORDeS, is an Associate Professor at the Department of Management Science & Technology of the Athens University of Economics and Business. He received his MSc in Operational Research from London School of Economics (LSE), and his PhD in Operations Research and Supply Chain Management from the National Technical University of Athens.

Dr. Tarantilis' research concentrates in the analysis and development of computing methods related to the areas of Production and Service Management, and more specifically with the Vehicles Fleet management systems, Optimal Placement of Objects, Arrangement, Production Planning and their applications in industry.

He has published more than 120 scientific papers in international academic journals, books and conference proceedings, including more than 45 journal papers in ISI-indexed journals, such as *INFORMS Journal on Computing*, *European Journal of Operational Research*, *Annals of Operations Research*, *Computers & Operations Research*, *International Journal of Production Research*, *International Journal of Production Economics*, *Information & Management* etc. Some of his work is used as instruction material in academic programs of N. America and Europe, while his algorithms for the solution of large scale problems have been internationally acclaimed.

Dr. Tarantilis is on the review and editorial board of several academic journals. He has also served as guest editor in a number of academic journals, as well as chairman and member of scientific and organizing committees in international and national scientific conferences. Furthermore, Dr. Tarantilis has been adviser on Logistics issues in the private sector and he has been acting as leader and senior researcher in a number of national and EU projects related to Supply Chain Management, Supply Chain in Food Industry (Food Logistics) and Distributions - Transports - ERP.

Dr. Tarantilis has been more than ten times the recipient of the "Best Teaching Faculty Award" and the "Best Course Award" of his undergraduate and Executive MBA courses.

## 4.2. RESEARCH STAFF OF THE LABORATORY

### Director

Professor Gregory P. Prastacos, Rector AUEB  
*BSc, MSc Computer Science, PhD Operations Research (OR), Columbia University, USA*

### Research Heads

Professor Apostolos Refenes, Head of MSL/FRC  
*BSc Mathematics, University of North London, PhD Mathematics & Computing, University of Reading, UK*

Professor George Ioannou, Head of MSL/Oper  
*MEng Electrical Engineering, National Technical University of Athens (NTUA), MSc Imperial College, PhD Industrial Engineering, University of Maryland, USA*

Associate Professor Klas Eric Söderquist, Head of MSL/InnKnow  
*BSc, MSc Industrial Engineering, Royal Institute of Technology, Sweden, DBA Business, Henley Management College – Brunel University, UK*

Associate Professor Chris Tarantilis, Head of MSL/ORDeS  
*BSc Mathematics, University of Patras, Greece, MSc Operational Research, LSE, PhD Operational Research, National Technical University of Athens (NTUA)*

### Research Fellows

Professor Dimitrios Georgoutsos, AUEB  
*BSc Economics, University of Athens, MSc Economics, London School of Economics, PhD Economics, University of Essex, UK*

Associate Professor Raphael Markellos, AUEB  
*BSc Economics, Aristotle University, Thessaloniki, PhD Finance & Econometrics, Loughborough University, UK*

Assistant Professor Ioannis Spanos, AUEB  
*BSc Business Administration, MBA, PhD Strategic Management, AUEB*

Assistant Professor Maria Vakola, AUEB  
*BSc Psychology, University of Athens, MSc Organizational Psychology, University of Manchester (UMIST), UK, PhD Management, University of Salford, UK*

Assistant Professor Ioannis Nikolaou, AUEB  
*BSc in Psychology, University of Crete, MSc in Organizational Psychology, UMIST, UK, PhD Management, UMIST, UK*

Dr. Manolis Kritikos, Lecturer-elect AUEB  
*BSc Mathematics, MSc OR, University of Athens, PhD OR, AUEB*

Dr. Alexandros Papalexandris, Lecturer-elect AUEB  
*BSc, MSc Engineering, Imperial College, MSc Decision Sciences, PhD Performance Measurement, AUEB*



Dr. Panagiotis Repoussis, Lecturer-elect AUEB  
*MEng Chemical Engineering, NTUA, Diploma Process Systems Engineering, MSc Process Systems Engineering, Imperial College, UK*

Dr. George Kakouros, Research Fellow, MSL/InnKnow, AUEB  
*MEng Mechanical Engineering, NTUA, DEA, PhD Engineering, Ecole Centrale de Lyon, France*

Dr. Kostas Kostopoulos, Research Fellow, MSL/InnKnow, AUEB  
*BSc Management Science & Marketing, MSc Decision Sciences, PhD Strategic Innovation Management, AUEB*

Dr. Dimitrios Brachos, Research Fellow, MSL/InnKnow  
*BSc Economics, University of Piraeus, MSc IT, Management & Organizational Change, Lancaster University, UK, PhD Knowledge Management, AUEB*

Dr. Sofia Philippidou, Research Fellow, MSL/InnKnow  
*BSc Economics, University of Thessaloniki, MSc OR, University of Edinburgh, UK, PhD Change Management, AUEB*

Dr. George Zobolas, Research Fellow, MSL/Oper  
*MEng in Mechanical Engineering, NTUA, MSc Operations Management, UMIST, UK, PhD Operations Management, AUEB*

Dr. Georgia Skintzi, Research Fellow, MSL/Oper  
*BSc Economics, AUEB, MSc OR, London School of Economics, PhD Supply Chain Management, AUEB*

Dr. Maria Mavri, Research Fellow, MSL/Oper, Lecturer University of the Aegean  
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### **Doctoral Candidates**

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#### **Visiting Research Fellows**

Professor David Birchall, Henley Management College, UK  
Professor Jean-Jacques Chanaron, CNRS Lyon, France  
Professor Konstantinos Nanopoulos, Université Robert-Schuman, Strasbourg, France  
Professor Nikos Vonortas, George Washington University, USA  
Professor George Vozikis, University of Tulsa, Oklahoma, USA  
Professor Luk Wan Wassenhove, INSEAD, France  
Professor Roland Heickerö, Mälardalen University, Sweden  
Dr. Adrian Dale, Creatifica Associates, UK  
Dr. Armelle Godener, Grenoble Ecole de Management, France  
Dr. Manos Hatzakis, Merrill Lynch, USA  
Dr. Rajech Nellore, Electrolux Corporation  
Dr. Kostas Siriopoulos, Assistant Professor, University of Patras  
Dr. Charalambos Vlachoutsikos, Visiting Professor AUEB

5.

**Call for Collaboration**

## 5.1. RESEARCH INSTITUTES AND UNIVERSITIES COLLABORATING WITH MSL

A basic pillar of our activities is our cooperation with distinguished organizations and research institutes. In these partnerships, MSL is interested to provide its know-how and assistance in its areas of expertise, while at the same time develop research on topics of mutual interest.

### Austria

- Joanneum Research, Forschungsgesellschaft MbH
- University of Vienna

### China

- University of International Business and Economics, Economic Cooperation and Development Research Center, Beijing

### Cyprus

- University of Cyprus, Nicosia

### Finland

- Helsinki University of Technology, Dept. of Industrial Engineering & Management

### France

- Grenoble Ecole de Management, Centre TIME, Grenoble
- INSEAD, RISE Center, Fontainebleau
- Université Louis Pasteur, BETA Bureau d'Economie Théorique et Appliquée, Strasbourg

### Germany

- Fraunhofer Institute Systems and Innovation Research
- Centre for European Economic Research GmbH (ZEW)
- VDI – The Association of German Engineers, Düsseldorf

### Greece

- International Center for Black Sea Studies
- National Technical University of Athens
- National School of Public Health, Athens

### Hungary

- Hungarian Academy of Sciences, Institute of Economics

### India

- SJV Narsee Monjee Institute of Management Studies (NMIMS), Mumbai
- Institute of Supply Chain Management, Mumbai

### Italy

- Foundation for Research on Technology Migration and Integration (FORMIT)
- University of Bergamo

### Netherlands

- Delf University of Technology (TU Delft)
- Erasmus University
- United Nations University - Maastricht Research Institute on Innovation & Technology (UNU - MERIT), Un. of Maastricht, Maastricht

**Poland**

- Warsaw School of Economics / World Economy Research Institute, Warsaw

**Turkey**

- ISIK University
- METU - Middle East Technical University, Ankara
- Turkish Academy of Sciences

**UK**

- University of Manchester, Policy Research in Engineering, Science & Technology Center (PREST)
- Loughborough University, Center for International, Financial and Economics Research (CIFER)
- University of Sheffield, Management School

**Ukraine**

- National Academy of Sciences of Ukraine, Dobrov Center

**USA**

- George Washington University, Center for International Science and Technology Policy, Washington

MSL also collaborates actively with the other research laboratories of the Department of Management Science & Technology of AUEB:

- Electronic Commerce and e-Business Laboratory (Director: Professor G. Doukidis)
- Transportation Systems and Supply Chain Management Laboratory (Director: Professor K. Zografos)
- Strategy and Entrepreneurship Laboratory (Director: Professor S. Lioukas)
- Information Systems Technology Laboratory (Director: Professor D. Spinellis)

## 5.2. COMPANIES AND ORGANIZATIONS SUPPORTING MSL

MSL actively pursues collaboration with companies and organizations in order to develop research, consultancy, and training activities. The main objective of this effort, through which we raise funding for MSL, is to gain knowledge about the real problems that companies face today and the practices that are implemented. At the same time, we have the chance to test our research results in practice and assist companies and organizations in addressing complex problems and developing their potential.

The terms of cooperation have been designed in a way as to increase the benefits from research partnerships and knowledge transfer, without however sacrificing the requirement for confidentiality and academic freedom.

Furthermore, we facilitate the transition of our doctoral students from a purely academic environment during their studies to the environment of practice.

We are grateful to the companies and organizations that have been supporting us throughout the years, and hope that this fruitful collaboration will continue. Here are some of the organizations and companies that have been supporting MSL:

- Agricultural Bank
- Athens Derivative Stock Exchange (ADEX)
- Athens International Airport “Eleftherios Venizelos”
- Athens – Piraeus Trolley Buses (ILPAP)
- Athens Stock Exchange (ASE)
- Avin Oil
- Bank of Greece
- Cyclon
- Emporiki Bank
- Expert Hellas
- Grant Thornton
- Greek Official Betting Organization (OPAP)
- Hellenic Telecommunications Organization (OTE)
- ICAP
- Intracom International
- Maillis
- Microsoft
- Municipality of Athens
- Nireas
- OTE Estate
- Public Transport Organization (OASA)

and others.

We are also grateful to the Ministries of Greece, as well as to the international organisations that have awarded us, based on merit and after strict processes, numerous valuable research grants that have enabled us to pursue our research activities.

- Ministry of Education, Lifelong Learning and Religious Affairs, Special Secretariat of Support of EPEAEK
- Ministry of Development, Special Secretariat of Research and Technology
- European Commission, DG - Enterprises, DG – Research, DG – Information Society, INCO
- Institution of Promotion of Research, Cyprus

### 5.3. PARTNERING WITH MSL

Benefits from partnering with MSL include:

- Participation in our seminars or organization of in-house seminars or workshops.
- Hosting a number of staff on the premises of MSL for training and knowledge transfer.
- Presentation of the latest developments in: Knowledge Management, Innovation and R&D Management, Strategic Performance Measurement, Management of Change, Operations Management, Operations Research, ERP Systems, Business Process Management, Risk Management, Financial Analytics and Econometrics, Structuring and Pricing of Financial Products, Energy Finance, etc.
- Provision of support and problem-solving from the faculty and other researchers of MSL.
- Access to the latest decision-making software and systems; development of customized Decision Support Systems.
- Joint projects which include theoretical development and practical implementation, using robust methodologies, up-to-date models, and software tools.
- Problem solving through the field study projects – Participation of highly specialized graduate students to address the organization's projects.
- Doctoral or post-doctoral studies on issues of interest to the organization.
- Receipt of MSL's Working Papers, Technical Reports and Newsletters.
- A complete framework of Management Science activities which cover most of the development needs of modern businesses.

**We invite all dynamic organizations to consider collaborating with MSL, in order to reap the fruits of an association with a leading research laboratory on some of the most critical management problems faced by businesses today.**







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