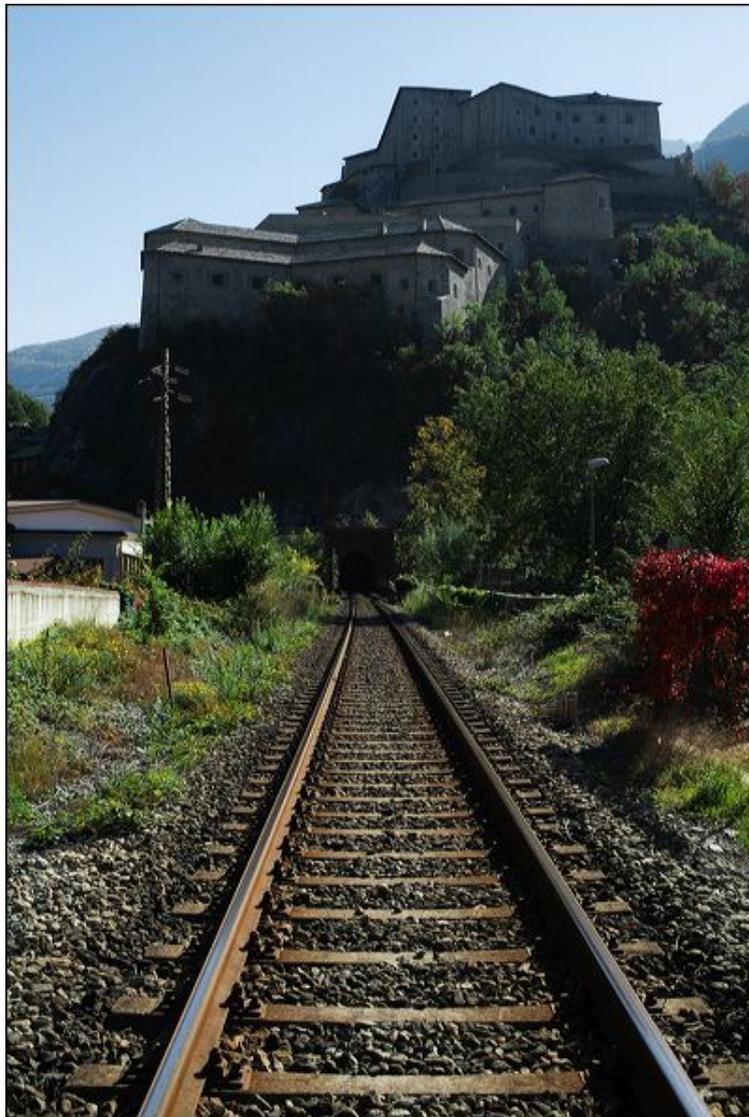


EURO Summer Institute on Health

11-20 June 2014

Forte di Bard – Italy



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WELCOME TO EURO SUMMER INSTITUTE XXXI

The OR Societies of Italy and the UK are pleased to announce a EURO Summer Institute (ESI) on the theme “*Operational Research applied to Health in a Modern World*”. **ESI XXXI** will take place at the astonishing Fortress of Bard, Italy, from June 11 to June 20, 2014.

Theme

OR modelling for healthcare has developed with the complexities of the modern world. Health Care Systems (HCS) are often awash with data but managers are unable to benefit while concerned only with trouble-shooting. Furthermore, HCS should reflect a patient centered and societal perspective focusing on outcomes rather than only on output. ESI XXXI will bring together those issues proposing new modelling and solution techniques to aid decision makers in the fields of health and disease management, patient flow and all aspects of optimal use of scarce resources.

Background

EURO is the "Association of European Operational Research Societies" and is a regional grouping within IFORS, the "International Federation of Operational Research Societies". EURO Summer and Winter Institutes (ESWI) provide an excellent forum for PhD students and early career researchers to discuss their research at length with experts in the field, as well as forming links with other early stage researchers that will endure throughout their careers.

Partnership with CREATE

ESI XXXI and the CREATE HOIM Program from Canada have kindly agreed to allocate up to three seats at this event for CREATE HOIM students. CREATE students will follow the same selection procedure of EURO students. The CREATE program will provide funding for up to 3 students selected by the ESI XXXI scientific committee.

Format of ESWI

Around 25 early stage researchers will be invited to attend the ESWI. They will be very early career academics (PhD students and/or those who have less than two years research experience post PhD). Those invited will meet for about ten days and present the material of an unpublished piece of work, discussing it with others and with a handful of specially invited senior experts in the field. Social activities will complement formal proceedings. Papers will be prepared for consideration for an upcoming issue of an OR publication.

Disregarding the senior experts, no one can participate in an ESWI more than once in his or her lifetime. Participation in an ESWI should be regarded as a considerable honour. In other words, the main objective of an ESWI is to give a limited number of carefully selected representatives of the next generation a unique opportunity for establishing a personal network and for addressing an international audience and thus to create new research groups around the topic chosen. EURO provides a substantial contribution towards all the ESWI expenses “on location” (room and board, social programme, etc.); sponsorship is being sought for the remainder of these expenses. The travel costs, however, must be covered by the participant's national OR society or, if not possible, by the participants themselves.

Special Issues

Two special issues will appear after ESI XXXI. The first one on **Operations Research for Health Care** while the second on **Health Systems**. The deadline is set to the 31st October 2014.

Important Dates

- 31st July 2013: deadline for expressions of interest.
- 1st February 2014: deadline for submission of applications.
- 1st March 2014: selection of Candidates by Scientific Committee and communication to the National OR Societies.
- 11th–20th June 2014: ESI XXXI.
- 31st October 2014: submission of final versions of papers for publication in the special issue.

WI-FI

WI-FI connections will be provided during ESI XXXI.

To obtain a WI-FI connection in the conference room and within the Forte di Bard, the participants should:

- connect to the WI-FI “FortediBard”
- open a web page, the system will directly forward to a registration page
- after the registration, the password will be sent to your personal mobile via sms.

To obtain a WI-FI connection within the Hotel Stendhal, you should ask the WPA password to the reception.

ORGANISING COMMITTEE AND SCIENTIFIC COMMITTEE**Organising Committee**

Dr Roberto Aringhieri, Università degli Studi di Torino, Italy (EURO contact person)

Dr Vincent Knight, Cardiff University, UK

Dr Honora Smith, University of Southampton, UK

Scientific Committee

Dr Roberto Aringhieri, Università degli Studi di Torino, Italy

Prof Sally Brailsford, University of Southampton, UK

Prof Mike Carter, University of Toronto, Canada

Dr Erwin Hans, University of Twente, the Netherlands

Prof Paul Harper, Cardiff University, UK

Dr Vincent Knight, Cardiff University, UK

Prof Dr Stefan Nickel, Karlsruhe Institute of Technology, Germany

Prof Yasar Ozcan, Virginia Commonwealth University, USA

Prof Marion Rauner, University of Vienna; Austria

Prof Giovanni Righini, Università degli Studi di Milano, Italy

Dr Honora Smith, University of Southampton, UK

Prof Martin Utley, CORU, University College London, UK

Prof Jan Vissers, Erasmus University Rotterdam, the Netherlands

VENUE

ESI XXXI will take place at the astonishing Fortress of Bard, Italy.

Conference room

Scientific sessions will be held at “*Sala degli Archi Candidi*” within the Forte di Bard in the Carlo Alberto Opera, at the very top of the rock. The “*Sala degli Archi Candidi*” can seat a maximum of 100 people and 6 speakers. Further, it can be arranged as a sort of mixed round table and standard audience using tables available in the room.

Lunches will be served at “*La Polveriera*”, the old gunpowder magazine. The restaurant has a wide-ranging menu including the traditional cuisine of Valle d'Aosta.

Accommodations

Accommodations will be provided at Hotel Stendhal located at the base of the fortress in the Borgo di Bard. An elegant three stars hotel in the centre of the village of Bard. It has 18 bedrooms (accommodating a maximum of 46 people) and a charming restaurant, Henri Beyle. It provides rooms for all participants including breakfasts and dinners.

Forte di Bard

Almost intact from the moment of its construction, the Fortress of Bard represents one of the best examples of early 1800 military strongholds. The Fortress of Bard is formed of 3 main defence stations positioned at different levels upon a high imposing rock spur, the lowest at 400m above ground and the highest at 467m. The Ferdinando Opera is the defence structure at the bottom, the Vittorio Opera in the middle, and the Carlo Alberto Opera at the top. There are a total of 283 rooms in the entire fortress.

Thanks to the restoration of this magnificent fortress and the various territories connected to it, the entire fortress compound together with the village of Bard has now become the leading cultural centre of the Western Alps, offering innovative exhibition spaces and services dedicated to the spread of culture combined with high quality accommodation and hospitality facilities.

Borgo di Bard

There is a harmonious bond between the birth of this medieval village and the defence system erected along the immense rocky spur at the top of which there once stood a castle. It is highly likely that the village was originally enclosed by a defence wall and accessed by two gateways, one in the east and the other in the west.

PROGRAM: WEDNESDAY, JUNE 11TH

- | | | |
|-------------------|----------------------|--|
| Session 1: | 16:00 – 19:00 | Welcome party (Hotel Stendhal) |
| Session 2: | 19:00 – 19:30 | Opening session (Main Hall of the
Municipality of Bard) |
| Dinner: | 20:00 – | Restaurant "Henri Beyle" (Hotel Stendhal) |



PROGRAM: THURSDAY, JUNE 12TH

Session 1: 08:30 – 10:30 Tutorial

Chair Honora Smith

- Prof Dr Stefan Nickel: *Healthcare Logistics*

Coffee Break: 10:30 – 11:00

Session 2: 11:00 – 13:00 Expert: Prof Dr Stefan Nickel

Chair Vincent Knight

- Pieter van den Berg: *Ambulance Location Modeling with Stochastic Response Times.*
- Omar El-Rifai: *ED Staff Allocation during Seasonal Epidemics.*

Lunch: 13:00 – 14:00 Restaurant "La Polveriera" (Forte di Bard)

Session 3: 14:00 – 15:00 Expert: Prof Dr Stefan Nickel

Chair Honora Smith

- Anna Graber: *Multicriteria Optimization Modeling for Primary Care Facility Network Design – The Regulator's Perspective.*

Coffee Break: 15:00 – 15:30

Session 4: 15:30 – 17:30 Parallel Discussion Panels

Session 5: 17:45 – 19:00 Forte di Bard Guided tour

Dinner: 20:00 – Restaurant "Henri Beyle" (Hotel Stendhal)

PROGRAM: FRIDAY, JUNE 13TH**Session 1: 08:30 – 10:30 Tutorial****Chair Vincent Knight**

- Prof Dr *Marion Rauner: Health Technology Assessment – Main concepts & Software TreeAge - I*

Coffee Break: 10:30 – 11:00**Session 2: 11:00 – 13:00 Tutorial****Chair Honora Smith**

- Prof Dr *Marion Rauner: Health Technology Assessment – Main concepts & Software TreeAge - II*

Lunch: 13:00 – 14:00 Restaurant "La Polveriera" (Forte di Bard)**Session 3: 16:00 – 19:00 Sport tournament: basketball and/or football****Dinner: 20:00 – Restaurant "Henri Beyle" (Hotel Stendhal)**

PROGRAM: SATURDAY, JUNE 14TH

Session 1: 08:30 – 10:30 Expert: Prof Dr Marion Rauner

Chair Vincent Knight

- Nardo Borgman: *Appointment scheduling at a radiology department with unscheduled arrivals and reprioritization.*
- Mário Amorim Lopes: *Data mining the European Health for All database.*

Coffee Break: 10:30 – 11:00

Session 2: 11:00 – 13:00 Expert: Prof Dr Marion Rauner

Chair Honora Smith

- Aleida Braaksma: *Online appointment scheduling with different urgencies and appointment lengths.*
- Zehra Onen: *Optimal Screening Policies for Alzheimer's Disease.*

**Lunch: 13:00 – 14:30 Restaurant "La Posa di Bertolin"
(Borgo di Bard)**

Session 3: 15:00 – 17:00 Parallel Discussion Panels

**Session 4: 17:30 – 19:00 Tasting of local products (wines and foods)
(Hotel Stendhal)**

Dinner: 20:00 – Restaurant "Henri Beyle" (Hotel Stendhal)

PROGRAM: SUNDAY, JUNE 15TH

Session 1: 08:00 – 19:00 Social Tour

The **Gran Paradiso National Park** is a protected area established by the State in



order to conserve the nationally and internationally important ecosystems of the valleys around the Gran Paradiso massif, for present and future generations.

The aim is therefore to manage and protect the protected area,

maintain the biodiversity of this territory and its landscape, scientific research, environmental education, development and promotion of sustainable tourism.

Fénis Castle (Italian: Castello di Fénis, French: Château de Fénis) is an Italian medieval castle located in the town of Fénis. It is one of the most famous castles in Aosta Valley, and for its architecture and its many towers and battlemented walls has



become one of the major tourist attractions of the region.

The castle is located in the town of Fénis in the Aosta Valley region, at about 13 km from the city of Aosta.

The keep has a pentagonal layout, with towers at the corners. It is

surrounded by a double boundary wall with battlements and by a series of watchtowers linked by a walkway.

Dinner: 20:00 – Restaurant "Henri Beyle" (Hotel Stendhal)

PROGRAM: MONDAY, JUNE 16TH

Session 1: 08:30 – 10:30 Experts: Prof G. Righini and Prof P. Harper
Chair Vincent Knight

- Ines Raschendorfer: *Hierarchical Edge Colorings and Rehabilitation Therapy Planning in Germany.* (GR)
- Houra Mahmoudzadeh: *A constraint generation solution approach to robust optimization models in radiation therapy treatment planning.* (GR)

Coffee Break: 10:30 – 11:00

Session 2: 11:00 – 13:00 Tutorial
Chair Honora Smith

- Prof Vito Fragnelli: *Game Theoretical Scenarios in Health Management*

Lunch: 13:00 – 14:00 Restaurant "La Polveriera" (Forte di Bard)

Session 3: 14:00 – 16:00 Experts: G. Righini and Prof P. Harper
Chair Vincent Knight

- Melanie Reuter: *Ambulance Location under Stochastic Demand: A Sampling Approach.* (GR) (PH)
- Paolo Landa: *Robust solution for Stochastic operating rooms with patient sequencing: a bi-objective approach.* (GR) (PH)

Coffee Break: 16:00 – 16:30

Session 4: 16:30 – 18:30 Parallel Discussion Panels

Dinner: 20:00 – Restaurant "Henri Beyle" (Hotel Stendhal)

PROGRAM: TUESDAY, JUNE 17TH

**Session 1: 08:30 – 10:30 Experts: Prof G. Righini and Prof P. Harper
Chair Honora Smith**

- Jacqueline Wirnitzer: *Patient-based nurse rostering in Home Health Care.* (GR) (PH)
- Sheetal Silal: *Sensitivity to model structure: A comparison of compartment models in epidemiology.* (PH)

Coffee Break: 10:30 – 11:00

**Session 2: 11:00 – 13:00 Tutorial
Chair Vincent Knight**

- Prof Paul Harper: *Queueing Systems in Healthcare*

Lunch: 13:00 – 14:00 Restaurant "La Polveriera" (Forte di Bard)

**Session 3: 14:00 – 16:00 Parallel Discussion Panels and activities
related to Paul Harper's tutorial**

Session 4: 16:30 – 19:00 OR in Healthcare Treasure Hunt

Dinner: 20:00 – Restaurant "Henri Beyle" (Hotel Stendhal)

PROGRAM: WEDNESDAY, JUNE 18TH

Session 1: 08:30 – 10:30 Expert: Prof Sally Brailsford

Chair Honora Smith

- Jennifer Morgan: *Mixing in practice: reflections on using DES ad SD to explore a radiotherapy treatment planning process.*
- Paolo Tubertini: *Forecast and fund allocation of medical specialty positions: Emilia-Romagna Region case study.*

Coffee Break: 10:30 – 11:00

Session 2: 11:00 – 13:00 Tutorial

Chair Vincent Knight

Prof Sally Brailsford: *System Dynamics 101*

Lunch: 13:00 – 14:00 Restaurant "La Polveriera" (Forte di Bard)

Session 3: 14:00 – 16:00 Expert: Prof Sally Brailsford

Chair Honora Smith

- Panagiotis Manolitzas: *MED-UTA: Integrating Simulation and Aggregation-Disaggregation Approach of MCDA in an Emergency Department.*
- Papiya Bhattacharjee: *Simulation Modelling and Analysis of Appointment System Performance for Multiple Classes of Patients in a Hospital: A Case Study.*

Coffee Break: 16:00 – 16:30

Session 4: 16:30 – 18:30 Parallel Discussion Panels

Dinner: 20:00 – Restaurant "Henri Beyle" (Hotel Stendhal)

PROGRAM: THURSDAY, JUNE 19TH

Session 1: 08:30 – 10:30 Expert: Prof Sally Brailsford

Chair Vincent Knight

- Julie Vile: *Managing time-varying and prioritised requests when forecasting demand and setting staffing requirements for Emergency Medical Services.*
- Maartje van de Vrugt: *Assigning treatment rooms at the Emergency Department: Queueing in a random environment.*

Coffee Break: 10:30 – 11:00

Session 2: 11:00 – 13:00 Parallel Discussion Panels

Lunch: 13:00 – 14:00 Restaurant "La Polveriera" (Forte di Bard)

Session 3: 14:00 – 17:00 Visit to Fondazione Adriano Olivetti in Ivrea

Dinner: 21:00 – Social Dinner at Restaurant "Henri Beyle" (Hotel Stendhal) and midnight drink

PROGRAM: FRIDAY, JUNE 20TH

Session 1: 9:00 – 10:00

**Closing session (Main Hall of the
Municipality of Bard)**



TUTORIALS

The scientific program of ESI XXXI provides to the participants a list of 5 tutorials by

1. Prof Dr Stefan Nickel, Karlsruhe Institute of Technology, Germany
2. Prof Marion Rauner, University of Vienna; Austria
3. Prof Vito Fragnelli, Università del Piemonte Orientale, Italy
4. Prof Paul Harper, Cardiff University, UK
5. Prof Sally Brailsford, University of Southampton, UK

**Please note that the tutorials 2 and 5 require to download a software on your laptop.
Tutorial 4 requires to look at the materials prepared for ESI.**

Healthcare Logistics

Stefan Nickel, KIT, Karlsruhe, Germany

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Healthcare logistics addresses the efficient planning, realization and control of patient-, material- and information-flow within the healthcare sector. Therefore, the use of OR methods plays a crucial role in healthcare logistics. However, the unique feature in this field of application is to not only put emphasis upon the economic efficiency but also to take into account the quality of care and patient satisfaction. Accordingly, the medical competence is never interfered in.

Especially in hospitals, scheduling problems and inhouse logistics are of great importance. With the help of medical and technical devices patients are examined, treated and cured if possible. Hospital logistics are all technical and organizational measures that are needed to transfer patients from an initial state (“ill”) into a final state (in the best case “healthy”) while also regarding the corresponding goods and information. Usually, hospital processes have grown historically (“We have always done it this way.”). Consequently, processes have not been analyzed critically until reforms of the health system have put increasing pressure on hospitals. Nowadays, hospitals are looking for possibilities to improve their processes. Therefore, the success of logistics concepts in hospitals lies in resource conservation for non-value-adding activities (not directly relevant for the healing process, e.g., administrative work) and high resource utilization for value-adding activities (e.g., surgery) while the

personnel shall not be over-utilized (i.e., no overtime). Moreover, the interaction of good logistics concepts with modern OR models allow a patient centered treatment, by respecting the needs of a patient and allowing a smoother process.

Clinical pathways should determine an optimal sequence and schedule for the patient's treatment with the objective of minimizing delays and resource utilization while maximizing the quality of care. To reach this goal, logistics aspects on different hierarchical levels as hospital layout planning (strategic), appointment planning (tactical) and patient transportation (operational) have to be integrated into the clinical pathway. In a more holistic view, clinical pathways could be extended by including processes that take place before and after a hospital stay, e.g. ambulance planning and follow-up care.

In this talk, we give an overview on how OR methods can be used in order to support process optimization in healthcare organizations. We focus on healthcare logistics applications arising in different healthcare sectors and dealing with different time scales. Examples include:

- Hospital layout planning
- Appointment planning
- Patient transportation
- Ambulance location
- Home health care.

Both, OR models and numerical results (mainly from real-world projects and case studies) will be presented.

Health Technology Assessment – Main concepts & Software TreeAge

Lecturer

Associate Professor Dr. Marion Sabine Rauner

University of Vienna, Austria

<http://www.univie.ac.at/itm/staff/rauner.htm>

First session:

First, a short introduction o health care technology management is given. The different health care technologies are explained and their relevance for policy makers and practitioners is illustrated. Next, we contrast two main health technology assessment (HTA) methodologies: 1) cost-effectiveness analysis (CEA) and 2) cost benefit analysis (CBA).

Second session:

The CEA is illustrated on a screening prevention program by using the software TreeAge. We will also perform comprehensive sensitivity analysis on that example together with the students. We invite all students to bring their own laptops and to install the trial version that we will provide to them.

PRE-ESI INSTRUCTIONS

In advance of the tutorial, delegates are asked to download the TreeAge Software on their laptops (PLEASE DO NOT INSTALL YET)! We have to install it together so that every delegate has exactly the same version and that all examples will run.

Please just download the following file on your laptop:

http://www.univie.ac.at/itm/ESI_HTA_SOFTWARE/full-TreeAgeProSetup.exe

Game Theoretical Scenarios in Health Management

Prof Vito Fragnelli, Università del Piemonte Orientale, Italy

<http://people.unipmn.it/fragnelli/>

The aim of the tutorial is to present to the participants three situations, namely Kidney Exchange, Ambulance Location and Genes Analysis, in which game theoretical tools may improve the results, allowing also investigating some aspects that may remain hidden with other approaches.

Before presenting the three situations, there will be a short introduction to the basic elements of Game Theory, especially those used in the models that are summarized in the following.

The donor of a kidney may be also a living person, and to prevent from illegal kidney market, the donor has to be a strict relative of the candidate recipient; when two pairs donor-recipient are both incompatible, it is possible to exchange the donors if the cross-pairs are compatible, increasing the number of cases solved. A suitable mechanism may further improve the solution.

The ambulance location problem is on the one hand extremely important in order to improve the quality of the rescue interventions, but on the other hand is highly complex from a computational point of view. Exploiting the interactions among the candidate locations it is possible to obtain a good proxy of the solution or to define a good approximate problem, faster to solve.

The abnormal expression of a gene may be used as a marker of several diseases. The relevance of a gene as a marker for a given disease may be evaluated via a suitable game. Also some interactions among genes may be analysed with the instruments of cooperative game theory.

Queueing Systems in Healthcare

Paul Harper, Cardiff University

www.profpaularharper.com

Healthcare systems globally are typically characterized by variability, uncertainty, patient heterogeneity, and a need to make efficient and effective use of scarce resources. Stochastic models are well suited to representing such systems and help healthcare planners avoid the pitfalls of using average values in the presence of variability. Stochastic techniques such as Markov chain models, queueing theory, Markov decision processes and discrete event simulation are useful for capturing patients over time making transitions through a series of states. For example states can represent parts of a health service system or clinical stages in the natural history of a disease. Service systems typically include the need for patients to queue or join a network of queues, and we can build a range of models, ranging in sophistication, to represent stochastic queueing systems. Furthermore, patient classification tools can be highly useful to help create homogenous patient groupings and feed into the developed stochastic models.

In advance of the tutorial, delegates are asked to look at resources (4 short videos at least) that have been produced especially for the ESI and are available at: www.profpaularharper.com/esi. This will then facilitate a flipped classroom approach to the session itself, whereby we can then spend the time together in more active engagement including a group paper-writing exercise and discussing the visibility and promotion of your own research. I hope we can have some fun!

System Dynamics 101

Prof Sally Brailsford, University of Southampton, UK

<http://www.southampton.ac.uk/management/about/staff/scb.page>

System Dynamics (SD) is a simulation modelling technique which dates from the 1960's but which has only relatively recently become part of the mainstream Operational Research "toolkit". It is still not as widely taught, or as well known, as other simulation approaches such as Monte Carlo or discrete-event simulation. However SD is particularly appealing as it combines both qualitative and quantitative approaches, and is suitable for complex dynamic problems where there is feedback and nonlinearity between different parts of the system.

The qualitative side of SD involves a visual mapping approach known as influence (or causal loop) diagramming. Influence diagrams can be a useful tool in their own right, in terms of gaining insight into system behaviour and for understanding the perspectives of different stakeholders. The quantitative side involves modelling a system as a network of stocks or compartments, connected by pipes, through which material flows at different rates. A domestic heating system is a good analogy. The mathematics underpinning quantitative SD is essentially the discretization of a set of ordinary differential equations, but a detailed understanding of mathematics is not necessary in order to be able to apply SD successfully.

In this session we shall assume no prior knowledge of SD, and will provide an introduction to the basics, illustrated by many examples from a range of application areas. At the end of the session, you will have an appreciation of why SD is so useful, the sorts of problems it is suitable for, and why I believe SD should be more widely taught than it currently is. You will learn how to develop both qualitative and quantitative models and you will have the opportunity to build a model yourself in the commercial software Vensim.

Please note: shortly before the ESI, if possible you should download and install the free trial version of the Vensim software (<http://vensim.com/free-download/>). If you do not have your own laptop you can share, but it would be better to have your own copy if possible. Vensim works on both Macs and PCs.

ADRIANO OLIVETTI FOUNDATION

Adriano Olivetti was born in Ivrea on 11 April 1901.

His engineer father, Camillo, an eclectic and original thinker, founded "Italy's first typewriter factory" in Ivrea in 1908. During his formative years, Adriano developed a keen interest in social and political debate. After graduating in Engineering at the Politecnico di Torino, in 1924 Adriano began an apprenticeship as a factory worker in the family business. The following year, he toured the USA, visiting dozens of factories. On his return, he drew up a wide-ranging programme of innovative projects to modernise operations at Olivetti.

He subsequently launched work on a project for the **first portable typewriter**, which was launched in 1932 as the MP1. The new organisation led to a significant improvement in productivity and sales. The same year, he set up an Advertising Department in Olivetti, which immediately began working with major artists and designers; the following year, he formed the Organisation Office. At the end of 1932, Adriano Olivetti was appointed General Manager; in 1938 he became company Chairman, taking over from his father Camillo. He continued his analyses and experiments in working methods, and published essays dealing with technology, economics and industrial sociology.

Adriano Olivetti's polyhedric personality led him to broaden his activities from industry and business to a wider sphere including urban planning, architecture, culture, and social and political reform. In Ivrea, he launched projects for the construction of new production facilities, offices, employee housing, canteens, nurseries, developing a complex system of social services. In 1937, for example, he commissioned the construction of a residential housing estate for company employees, designed by architects Figini and Pollini. **For Adriano Olivetti, territorial organisation and architecture had an enormous importance at the social and economic levels.** In 1938 he joined the "Istituto Nazionale di Urbanistica" and in 1948 became a member of the institute's Steering Council. In 1949 he personally financed the revival of the review "Urbanistica". As head of the Institute supported by a team of young architects (including Ludovico Quaroni), from 1950 Adriano was able to develop his views on the political primacy of Urban Planning.

Reflecting the great importance Adriano Olivetti placed on the company's relationship with the territory, in 1937 he took part in the preparatory work for a planning scheme for the Aosta Valley, and in 1951 he worked with the Ivrea city authorities on the launch of a new urban plan. In 1956 Olivetti was made an honorary member of the American Institute of Planners

and deputy chairman of the International Federation for Housing and Town Planning; in 1959 he was appointed chairman of Italy's "Istituto UNRRA-Casas", an institute for post-war reconstruction.

During his exile in Switzerland (1944-1945), Olivetti completed work on his book "**L'ordine politico delle comunità**" (**the political order of communities**), which was published at the end of 1945. The volume illustrates the fundamental concepts of the **Movimento Comunità**, the movement founded by Adriano Olivetti in 1947, and his proposals **to stimulate the creation of new political, social and economic ties between central and local governments**. In 1956, the Movimento Comunità ran for the local elections and Adriano Olivetti was elected mayor of Ivrea. This success led Movimento to present candidates for the national elections in 1958, but only Adriano Olivetti won a seat.

Urban planner, publisher, writer, intellectual; first and foremost, however, Adriano Olivetti was an industrialist and entrepreneur who regarded the enterprise as the key driver of economic and social growth. Under his guidance, the Olivetti company worked to achieve technological excellence, innovation and international leadership, and at the same time strengthened its focus on industrial design and improved living standards for its employees. In 1948, the Ivrea plants formed a Works Council (Consiglio di Gestione), for many years the only such body in Italy, with general consultative powers on funding for social services and welfare. In 1956, ahead of national employment contracts, the Olivetti company reduced the working week from 48 to 45 hours, on an unchanged wage basis. Employee housing estates were built, as well as new premises for the social services department, the library and the canteen. Many leading architects worked on these projects: Figini, Pollini, Zanuso, Vittoria, Gardella, Fiocchi, Cosenza, etc.

In the industrial design field, too, Adriano Olivetti called some of the country's top talents, including Marcello Nizzoli and - later - Ettore Sottsass. Between the end of the 1940s and the end of the 1950s, the company launched a number of products that would become cult objects in terms of design, technological content and functionality: these included the Lexikon 80 typewriter (1948), the Lettera 22 portable typewriter (1950), the Divisumma 24 calculator (1956). **In 1959, an international jury of designers named the Lettera 22 as the best of the one hundred top products of the previous 100 years.**

Graphics and advertising were also a prime concern and the company became a worldwide reference model for its work in the industrial design field. The **outstanding** success of the company's office products on the international marketplace did not distract Adriano Olivetti's

attention from developments in the **new field of electronics**. As early as 1952, the Olivetti company opened an electronic computer research laboratory, in New Canaan, USA. In 1955, it formed the electronic research laboratory in Pisa; in 1957, together with Telettra, Olivetti founded the Società Generale Semiconduttori (SGS) company and in 1959 launched the Elea 9003, Italy's first electronic computer, developed and manufactured at the Borgolombardo laboratory. In 1959 Adriano Olivetti signed an agreement for the acquisition of Underwood, a US organisation with almost 11,000 employees, which had been the inspiration for his father Camillo when he formed the Olivetti company in 1908.

Adriano Olivetti died suddenly on 27 February 1960, during a train journey from Milan to Lausanne. He left a business enterprise with operations on all the major international markets and 36,000 employees, of whom more than half overseas.

The **Adriano Olivetti Foundation** was established in 1962, with its main offices in Rome, by Adriano Olivetti's relatives, friends, and collaborators, with the aim of mobilizing and developing the civil, social, and political engagement that distinguished the work of this Piedmont entrepreneur. Among its statutory aim is "the promotion, encouragement, and organization of studies directed at deepening the knowledge of the conditions upon which social progress depend".

In line with this mandate, the Foundation carries out research and sponsors cultural and scientific projects following an interdisciplinary approach in four main areas, Institutions and Society; Economics and Society; Community and Society; and Art, Architecture, and City Planning.

Since its establishment, the Foundation has always seen its complex and enormously valuable cultural heritage as more than just something to be remembered, but rather as a creative instrument, useful for rigorously interpreting contemporary social challenges and the reforming passion of the Olivettian experience, oriented toward the most active and independent research of world culture. Following this philosophy and through the fields of research that characterize its activities, the Adriano Olivetti Foundation sponsors studies; encourages and coordinates projects, conventions and seminars; and organizes exhibitions along with other charitable institutions and public and private entities both in Italy and abroad.

LIST OF PARTICIPANTS**EURO delegates**

1. Omar El-Rifai, École Nationale Supérieure des Mines de Saint-Étienne, France
2. Melanie Reuter, Karlsruhe Institute of Technology, Germany
3. Ines Raschendorfer, University of Kaiserslautern, Germany
4. Jacqueline Wirnitzer, Karlsruhe Institute of Technology, Germany
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