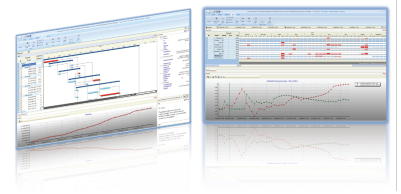


Training: Decision Making for Business

Improving your business processes to make timely and decisive actions



“When you know better, you do better.” (Maya Angelou)

Training Decision Making

The training “Decision Making for Business” is known in the academic world as Operations Research (OR). OR professionals use specialized tools and techniques to help organizations make better business decisions. It is a discipline that focuses on the **integration** of business processes with data analysis and automated decision support software systems. The trainings are based on **practical experience** as well as **academic research** published in international journals written by Mario Vanhoucke.

Topic 1

Theory of Constraints. Theory of Constraints (TOC) is a management paradigm that views any manageable system as being limited in achieving more of its goals by a very small number of constraints. A production process case study will be used to introduce the students to business process modeling using linear programming techniques.

Linear Programming. Linear Programming (LP) is a mathematical method for determining a way to achieve the best outcome such as maximum profit or minimum cost in a given mathematical model for some list of constraints. An Excel based solution methodology will be discussed and shown by various business examples.

Topic 2

Integer Programming. In order to make models more realistic and powerful, the Integer Programming (IP) technique will be discussed. Both exercises and practical applications based on real world experience will be shown, and a deeper look into the underlying optimization mechanism will be part of this session.

Topic 3

Case Study I. The students will be introduced to a case study focusing on integrating various business viewpoints to optimize decisions. After an introductory session to correctly interpret the available data and to highlight the importance to understand conflicting company points of view between e.g. accountants, marketers and production managers, students will have to solve the business problem in groups.

Topic 4

Consultancy Experiences. Depending on the background of the students (marketing, HRM, finance, airline scheduling, hospital scheduling, personnel optimization, etc.), case studies and experiences on consultancy projects will be discussed in class, focusing on an integrated approach from data collection, model building, implementation and change management.

Topic 5

Scenario Analysis I. This session extends the models of previous sessions to business environments with higher uncertainty and risk. Scenario analysis using the Decision Tree Analysis (DTA) technique will be discussed and illustrated using a case study that has to be solved in groups.

Scenario Analysis II. The results of the exercise made in groups will be discussed between the group members, followed by a general class feedback session.

Topic 6

Simulation. Since uncertainty typifies business, the decision-making process must take certain unknown factors into account. Simulation can be a helpful tool to easily replicate a real world system on a computer in search of improvements and better decisions.

Case Study II. A practical case study from the airline sector will be shown to illustrate both the ease and power of simulation.

Software support

Students can have free online access to **MS Solver** (www.solver.com) to download a free student version of Excel’s optimization engine in Windows and Mac. The optimization software will be used throughout all class exercises and case studies and is easy to use in the students’ favorite Excel environment.

Who

The training is targeting young **MBA professionals** with or without a background and experience in modeling. All topics are relevant for managers working in both the private and public sector, and apply to supply chain managers, marketeers, project managers, financial engineers, human resource managers, and many others who are responsible for business processes with critical performance, time and budget targets.

Biography

Prof Dr Mario Vanhoucke is a Professor of Business Management and Operations Research at Ghent University (Belgium), Vlerick Business School (Belgium, Russia, China) and University College London (UK). He has a PhD in Operations Management from the University of Leuven (Belgium) and a Master's Degree in Commercial Engineering from the University of Leuven (Belgium). At Ghent University, he is the program director of the Commercial Engineering program where he teaches "Project Management" and "Applied Operations Research". At Vlerick Business School, he teaches "Decision Making for Business" and "Business Statistics" to Master students including MBAs. An overview of the academic teaching assignments is given at the website www.projectmanagement.ugent.be.

His main research interest lies in the integration of project scheduling, risk management and project control using "combinatorial optimization models". He is an advisor for several PhD projects, has published more than 50 papers in international journals and is the author of three project management books published by Springer. He is a regular speaker on international conferences (EURO, INFORMS) as an invited speaker or chairman. He is also a regular reviewer of articles submitted for publication in international academic journals. Prof Dr Vanhoucke is a founding member and Director of the EVM Europe Association (www.evm-europe.eu) to organize a yearly conference on integrated project management and controls. He is also a partner at the company OR-AS (www.or-as.be) which released a third version of its project management software tool ProTrack 3.0 (www.protrack.be) and P2 Engine (www.p2engine.com). ProTrack is an advanced scheduling product which focuses on the integration of scheduling, risk, control management and online learning through a PM Knowledge Center (www.pmknowledgecenter.com). P2 Engine is a research derivative of ProTrack used in PhD studies and commercial software development consultancy projects.

The project management research undertaken by Prof Dr Vanhoucke has received multiple awards including the 2008 International Project Management Association (IPMA) Research Award for his research project "Measuring Time - A Project Performance Simulation Study" which was received at the IPMA world congress held in Rome, Italy. He also received the "Notable Contributions to Management Accounting Literature Award" awarded by the American Accounting Association at their 2010 conference in Denver, Colorado, US. IN 2013, has received the Best Teaching Award at Ghent University for the modeling course "Applied Operations Research".



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