Syllabus

Information Life Cycle Management

Department of Economics and Business
CENTRAL EUROPEAN UNIVERSITY

- **Instructor:** Tibor Voros
- **Credits:** 2 cr
- **Term:** Spring / Summer 2017-2018
- **Course level:** MA/MSc
- **Prerequisites:** None

Course description

Business decisions usually require a variety of information sources and these sources impact the final decision making strongly. The sources, quality and timeliness of the information are all relevant for good decision making. Information may be gathered inside the organization, or from outside sources - e.g. from website visitors. The organization, which is properly collecting information from both external and internal sources without media breaks, and leverages this information for successful decision making, is usually titled as a digital firm. This course will look at how information is obtained and used by organizations. In this context, we will not only look at the value of information, but also using internal (ERP-based) and external (Google Analytics) data for decision making and business modelling. In addition, digital transformation changes the way how processes are running: participants will have a chance to experience this first hand in a help desk simulation. The digital transformation is a key concern in many organizations and this course reviews related elements. Among other topics, decision trees, information workflow and modelling tools, data structures, well-structured business data and metadata, ILM as policy and process, data warehousing, OLAP, ETL and Google Analytics (and similar topics) will be discussed.

Learning outcomes

INTENDED LEARNING OUTCOMES	ASSESSMENT
Knowledge and Understanding 1. Understand Information Life Cycle Management and its implications 2. Understand how quality information can enhance decision making and organizational performance 3. Describe tools and techniques for business decision support 4. Identify information-related problems and opportunities and identify strategis and tactics for addressing these challenges	Final Exam
Intellectual Skills 1. Recognize critical factors in a problem 2. Develop a structure for analyzing problems 3. Carry out a cogent analysis 4. Present the analysis and insights on a problem	Final Exam and Team Work
Practical Skills 1. Design, build, test, and use meaningful spreadsheets to present and solve quantitative problems 2. Carry out sensitivity, data, regression, and optimization analysis 3. Use pivot tables to aggregate, visualize and drill down into data	Final Exam and Team Work
Transferable Skills 1. Translate descriptions of situations into formal models, and investigate those models in an organized fashion	Final Exam

2. Extract insights from models, and use those insights to communicate, persuade and motivate change	

Reading list

Recommended Readings

- Wayne L. Winston: Data Analysis and Business Modeling (MS Excel 2003 & any of the more recent editions) – a free downloadable e-book will be provided exclusively for the course
- Stephen G. Powell and Kenneth R. Baker: Management Science - The Art of Modelling with Spreadsheets (third or more recent editions)
- Kaushik, A. Web Analytics 2.0: The Art of Online Accountability and Science of Customer Centricity, Sybex 2009 ISBN-10: 0470529393 – a free downloadable e-book will be provided exclusively for the course

Assessment

Final assessment usually consists a number of elements.

- Part A) Short in-class exercise (10 pts)
- Part B) Individual exercise (option of using Google Analytics for one-month Google Merchant Store analysis OR receiving a pre-defined case study with specific questions) (50 pts)
- Part C) Team based exercise, typically either a short case or a situational exercise. Management presentation by the team for execs with recommendations over a particular business stituations. E.g. the team has to act as consultants to provide advice based on some data analysis. Background information with data is given and teams have to analyze the data and provide recommendations. (40 pts)

Course schedule and materials for each session

Lect. No	Topic	Additional material, chapters, comments
Session 1: 08.30-11.00, 22nd April 2018	**Introduction: Data & Information. The Information Lifecycle Management.** Databases, structured information, data warehouse. Information Strategy & Information Cube. Decision making and information. Internal data sources: ERP, accounting software, etc. External data sources: marketing reviews, external financial reports. Gathering data from external parties: website analytics. Please register a Google email address for Google Analytics. See Google Merchant Store Account for access to Google Analytics Demo.	Read: Overview of Data Warehousing and OLAP Read: Capgemini Interview with E Brynjolfsson & A McAfee Read: Ford & Firestone case study Watch: Hans Rosling: Let my dataset change your mind
Session 2: 08.30-11.00, 28th April 2018	**Decision Trees & Decision Making. Value of Information.**	Read: Harvard Freemark Abbey Winery Abdriged
Session 3: 08.30-11.00,	**Digital Transformation - Helpdesk Simulation Part I**	

12th May 2018	Understanding digital transformation. Simulation: Service Center. 2/3-rounds simulation with roleplay (Business Managers, Service Managers, Helpdesk, Technical Specialists). Processes and process development for information flow. Debriefing. Describing changes using rich pictures & information flow diagrams.	
Session 4: 11.30-14.00, 12th May 2018	**Digital Transformation - Helpdesk Simulation Part II** Understanding digital transformation. Simulation: Service Center. 2/3-rounds simulation with roleplay (Business Managers, Service Managers, Helpdesk, Technical Specialists). Processes and process development for information flow. Debriefing. Describing changes using rich pictures & information flow diagrams.	
Session 5: 18.00-20.30, 18th May 2018	**Analytics for Decision Making: Pivot tables, Google Analytics - Hands-on Exercises I** Overview, Q&A, Discussion. Samples of information usage: pivot tables (analyzing aggregate data), modelling, Google Analytics. More complex approaches: Structured Equation Modelling: XLSTAT example etc. Please bring computers to the class. You may download the trial version of XLSTAT for the class, though I will do a demonstration, rather than a full practice session. XLSTAT demo license (https://www.xlstat.com/en/download) You may use any email addresses to register for a 30 day license. MS Excel 2013 or later needed.	See Moodle.
Session 6: 08.30-11.00, 19th May 2018	**Analytics for Decision Making: Pivot tables, Google Analytics, using optimization (Solver) - Hands-on Exercises II** Overview, Q&A, Discussion. Samples of information usage: pivot tables (analyzing aggregate data), modelling, Google Analytics. More complex approaches: Structured Equation Modelling: XLSTAT example etc	See Moodle.
Session 7: 11.30-14.00 19th May, 2018	Overview. XLSTAT examples: financial modelling, SEM. Workshop for in-class presentations.	
Session 8: 08.30-11.00 27th May, 2018	In-class presentations.	

Brief Bio

Tibor Vörös has over 20 years experience in both academic and corporate environments. He is an enthusiastic and curious individual, who has explored areas ranging from medical approaches and robotics to corporate financial processes. Tibor's work is mostly related to information systems (e.g. knowledge management, decision making, business intelligence, business analytics) and quantitative areas. He also researched these topics and evaluated corresponding frameworks from the theoretical point of view. Tibor Vörös holds an MSc in Maths, Physics and Information Technology and he is a Harvard Executive Education graduate, also completing a PhD at the University of Hertfordshire. He worked at the Central European University Business School as Senior Lecturer for several years: he also undertook the role of MBA Director among other administrative duties. Tibor has spent considerable time on complex finance-driven business simulations and created unique storyboards to help participants experience real life problems in classroom situations. CEEMAN has selected Mr Vörös as the winner of the Innovation in Course Design category for the CEEMAN Champions' Award 2010. Current research work concentrates on the relationship of organizational culture and information technology. Tibor also took part in various industry campaigns, including the Microsoft Business Productivity Infrastructure Optimization campaign or the Cloud Business Transformation approach.