Pricing and Revenue Optimization
Area: Business Analytics
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Objectives
“Pricing and Revenue Optimization” focuses on how firms should make pricing and product availability decisions in order to maximize profitability. Through a combination of theory lectures, case studies, class presentations and guest speakers, the course aims to develop a “working knowledge” of Dynamic Pricing and Revenue Management, i.e., to provide students the necessary background, quantitative models, fundamental insights, and data analysis skills that will allow them to identify and exploit opportunities for profit maximization in a variety of business contexts.

Description
“Pricing and Revenue Optimization” is a third-term course in the MSc in Management and the MSc in Finance and Banking degrees, at the Barcelona School of Management. It serves as a core course for students specializing in Business Analytics, and as an elective course for students specializing in Finance and Banking, Marketing, and Entrepreneurship.

Contents

Module 1: Pricing for Revenue Optimization
1. Traditional approaches to pricing (Chapter 2 of [P05])
2. Pricing for revenue optimization (Chapter 3 of [P05])
3. Pricing under constrained supply (Chapter 5 of [P05])

Module 2: Dynamic Pricing
1. Customized pricing (Chapter 11 of [P05])
2. Estimating the price/bid-response function (Chapter 11 of [P05])
3. Price differentiation (Chapter 4 of [P05])
4. Markdown and promotions management (Chapter 10 of [P05])
5. Peak-load pricing (Chapter 5 of [P05])
6. Demand forecasting

Module 3: Revenue Management
1. Single-leg revenue management (Chapter 7 of [P05])
2. Network revenue management (Chapter 8 of [P05])
3. Overbooking (Chapter 9 of [P05])
4. Revenue Management game

Module 4: Guest Lectures

Methodology
The course comprises of twenty 90-minute lectures, and follows closely the book of Robert Phillips “Pricing and Revenue Optimization,” Stanford University Press, 2005 [P05]. Students are expected to get a copy of the book within the first few weeks of the term.
There are no weekly problem sets, exams or final project.

Three assignments will be handed out throughout the term. These assignments are case studies in which students have to combine methods and insights acquired in class with data analysis on Excel. Students can work out the assignments in teams of at most 3, and each team has to submit a 25-minute PowerPoint presentation and an Excel file that summarize the approach followed and the results obtained.

**Evaluation criteria**
Each of the three assignments accounts for 1/3 of the course grade. Students are required to attend 80% of classes. Failing to do so without justified reason can have consequences in the final grade.

As with all courses taught at the UPF Barcelona School of Management, students who fail the course during regular evaluation will be allowed ONE re-take of the examination/evaluation. If the course is again failed after the re-take, students may have to register again for the course the following year.

Plagiarism is to use of another’s work and to present it as one’s own without attributing the sources in the correct way. All essays, reports or projects handed in by a student must be original work completed by the student. By enrolling at a Barcelona School of Management Master of Science and signing the “Honour Code,” students acknowledge that they understand the Barcelona School of Management’s policy on plagiarism and certify that all course assignments will be their own work, except where indicated by correct referencing. Failing to do so may result in automatic expulsion from the program.

**Bio of Professor**
Mihalis G. Markakis is an Assistant Professor in the Department of Economics and Business, at Pompeu Fabra University. He obtained his PhD from the Laboratory for Information and Decision Systems, at the Massachusetts Institute of Technology. His research interests are in modeling, analysis, and optimization of stochastic systems and their applications to Operations Research and Management Science. He is also affiliated with the Barcelona School of Management and the Barcelona GSE, where he regularly teaches graduate courses on the wider field of Operations.