

# **OPERATIONS MANAGEMENT**

## **Introduction**

Operations Management is about finding better ways of doing things in a company to be able to deliver value to customers while achieving sustainable profits. In fact, creating better or new ways of operating has been central to some of the greatest business success stories: think of Wal-Mart's cross-docking distribution system, Dell's build-to-order model, or Zara's ultra-responsive replenishment system.

## **Objectives**

We will explore the basic tools and concepts that will allow us to leverage operations as a major source of competitive advantage. In other words, we will try to broaden the strategic arsenal of the good executive with some additional and powerful operations weapons. In most organizations, improving upon existing operations is more crucial than ever and, fortunately, it usually is more reliable and cheaper than most other ways of generating a competitive advantage.

## **Learning Outcomes**

- Understand the fundamental concepts of any business process: throughput, time, working process and the relationship between the three.
- Analyze a business process through capacity analysis.
- Identify the bottleneck of a system and the critical path of a project
- Conduct input-output analysis for a business process with seasonality.
- Apply queuing theories to assess the performance of a business service.
- Understand the basic tradeoff in inventory management.
- Determine optimal inventory policy under uncertain demand.

## Competences

- Understand the operational rationale behind a successful business process.
- Make operations decisions to achieve the goal of process improvement.

## Content

In this course, we will cover the following topics:

- Process analysis
- Input/Output curves
- Queuing analysis
- Inventory management

## Methodology

The course requires a significant amount of individual and group preparation, because of a number of reasons. As we will need to deal with and understand vague, complex, and diverse business scenarios, we will often rely on quantitative analysis because “what can’t be measured can’t be improved”<sup>1</sup>. This is why the emphasis of the first sessions will be on getting familiar with the basic concepts of operations. These are not difficult, but they are as diverse as the nature of problems we will face: we will hence need to master the right tool for the right situation. Finally, as operations tools are designed to serve business, we will need to go beyond the numbers to value its impact on the organization and the strategic fit.

Finding a numerical answer to some of the questions often requires making some assumptions. The assignment questions will guide you on making reasonable assumptions, but it is impossible to foresee all the possibilities you can come up with. Therefore, do not feel disappointed if your numbers do not match exactly the ones used in class. I believe that the plenary sessions should be used to discuss the possible approaches to the case, the procedures to perform the needed calculations, and how to interpret the results in a managerial way. If you are able to understand these, you will also be able afterwards to review the computations using your assumptions. It would be a waste of everybody's time to discuss each student's assumptions in class.

The case method will be used throughout the course. During class sessions, I will ask one or more class members to start the session by addressing a specific question. Anyone who has prepared the case should be able to handle such assignment. After a few minutes, the discussion will be open to the rest of the class. You are expected to be an active participant and contribute to the quality of the discussion. You are not expected to have the right answer (such a thing does not even exist sometimes), but a thoughtful one.

## Evaluation

- Class participation (25%)
- Team assignments (15%)
- Midterm exam (20%)
- Final exam (40%)

(\*) The percentages are just a guideline.

## Professor's Biography



### **Prof. Wei Luo**

Assistant Professor of Production, Technology and Operations Management

Wei Luo is Assistant Professor in IESE's Department of Production, Technology and Operations Management. He holds a Ph.D. in Operations Management at Duke University's Fuqua School of Business and a B.E. in Industrial Engineering and Operations Research at Tsinghua University.

Wei's research interests include supply chain management, inventory planning and control, operations/finance interface, and sharing economy. He has won several best paper awards, including the first place in the 2012 CSAMSE Annual Conference Best Paper Competition and the second place in the 2013 POMS College of Supply Chain Management Best Student Paper Competition. His papers have appeared in top academic journals such as Operations Research and Manufacturing and Service Operations Management.

Apart from this course, Wei also teaches Operations Strategy for fulltime MBA, Global Operations (Shanghai Module) for fulltime MBA and EMBA, and Operations Management for PLD (Program for Leadership Development).