

C103 Operations and Technology Management

Course Overview:

INTRODUCTION

Operations management is a central field in virtually every modern business organization, in the manufacturing as well as in the service sector. Clearly, the acquisition of excellence in the design and management of processes a prerequisite for obtaining cost efficiency. Furthermore, the increasing level of competitiveness in today's markets, the raising environmental concerns and the emergence of phenomena such as outsourcing and offshoring make operational excellence very difficult to achieve and imitate. This competence becomes therefore a source of competitive advantage and long-term driver of profitability.

The concepts covered in the course are relevant to organizations that operate in a wide range of sectors. Understanding the mechanisms that enable firms to achieve operational excellence is a fundamental need for organizations that strive to improve their internal operations both in the manufacturing and in the service sector. It is also a key competence for consulting companies that are called to analyse and streamline the processes of their clients. Finally, understanding operations is also important for many financial firms that often need to assess the value of a business based on the quality of its operations. Accordingly, operations management is a fundamental discipline both for students who envisage a career in industry, as well as for those who have interests in the consulting or in the financial sectors.

The course has the following objectives: i) to provide a general introduction to the field and to show how it is central to most managerial situations; ii) to develop an awareness of the principal operational issues that arise in all businesses and to provide students with a set of instruments that will enable them to successfully address these issues and - ultimately, iii) to demonstrate how excellence in designing and managing operations is a primary driver of business success. Accordingly, the course will provide the basic terminology, concepts and tools for describing, analysing and improving business processes. It will also provide fundamental knowledge on operations strategy and process analysis and generate insights on how data and managerial opinions can be effectively used for analysing and solving complex business cases.

As a holistic approach is a necessary condition to successfully manage operations, throughout the course you will have the opportunity to observe the problems on hand from many different perspectives corresponding to different roles in a business organization. Accordingly, in different sessions you will be encouraged to wear different hats: from that of a COO who deals with the complexity of the whole system to that of a CIO who needs to select the most appropriate technology to support operations, to that of project manager who needs to meet specific project deadlines and target budgets.

Needless to say, 10 sessions are too limited a time to cover in an exhaustive and comprehensive fashion all the topics we plan to address. You are therefore asked to consider this course for what it truly is: a general introduction to the field of operations management; an opening of windows that identifies sources of knowledge that you will eventually exploit to acquire further and more specific competences throughout your future career.

Learning Objectives:

The course has several pedagogical objectives.

The first objective is to understand the importance of processes in modern organizations. A process is a set of functions or activities that contribute to delivering products and services in order to meet the customer's needs. A process is where the input-to-output transformation occurs in either manufacturing or service environments. Therefore, a process is what adds value.

A second learning objective is to understand how and when operational excellence can contribute to the achievement of competitive advantage. At the end of the course you should be able to understand how organizations, through the transformation of inputs into outputs, create superior value to customers and build competitive advantage.

A third learning objective is the acquisition of a set of key instruments you can use as a manager to control and improve operations. Besides illustrating the underlying principles of these tools, we will challenge your managerial skills and ask you to apply them in real settings.

At the end of each session (especially the sessions that illustrate the use of a quantitative technique) you should be able to:

- master the basic methodological instruments presented;
- understand the main domain of application for the technique learned, identify its strengths and be aware of its limitations and possible caveats;
- analyse in a critical fashion the application of the technique in different business settings (manufacturing, services etc...).

The course is subdivided into four broad thematic areas:

- analyzing and improving processes: (sessions 1-3)
- leveraging technology to promote operational excellence (sessions 4-6)
- managing supply chains (session 7-9)
- service operations (session 10)

In order to highlight the challenges associated with real operations and to help you apply to a practical case the concepts learned in class, the course includes a practical exercise (the Littlefield simulation) in which you will be asked to team up with your colleagues and run a virtual factory for two weeks, possibly outperforming the other teams. Each team must be composed of four members from the same stream. In order to be able to participate in the game you MUST form a team before the beginning of week 3.

For all teams involved the simulation will most likely start in week 3 (Tuesday April 22 at 19:00) and it will end in week 5 after 2 weeks of operations. These dates may be subject to changes and will be confirmed in due course by the instructor. More precise details on the game and a final schedule for its administration will be communicated in class as the course proceeds.

Finally in the “European field trip” we will visit the operations of a company outside the UK. You will have the opportunity to observe how the concepts and frameworks discussed in class are applied in real operational settings. Further details about the field trip will be provided by the MBA office.

Readings

The package contains both required and optional readings. You are not required to complete optional readings before coming to class. However, you are advised to review this material after each session to improve your understanding of the topics addressed and to develop additional insights. Whenever necessary, additional material will be posted on-line as the course proceeds.

Textbook

The main reference textbook for this course is:

- Chase Aquilano Jacobs: Operations Management for Competitive Advantage. 11th edition. Mc Graw Hill. (ISBN: 0071115536)

For a more detailed analysis of some topics you can also consult the following textbook (on reserve in the library):

- Hopp and Spearman: Factory Physics. 2nd edition. Irwin / McGraw-Hill (focused mainly on manufacturing operations);

Summary of Cases

<i>Session Number</i>	<i>Case Name</i>	<i>Date of Issue</i>	<i>Country Setting</i>	<i>Industry</i>	<i>Nationality of Firm</i>
1	Benihana	2004	U.S.	Food	U.S.
2	Toyota	1992	U.S. / Int'l	Automotive	Japan, Int'l
3	DAV	1996	Germany	Insurance	Germany
4	Esterline Technologies	2006	US	Aerospace	US, Int'l
5	M&S and Zara	2002	Int'l	Apparel	U.K., Spain
6	Team New Zealand	1997	NZ / Int'l	Shipbuilding	New Zealand
8	Tork Corporation	2005	International	Consumer Durables	USA
9	The Co-operative group – Fairtrade chocolate	2004	International	Food	UK