Chapter 1 – Teaching Plan

Introduction to Operations Management

**Specific Learning objectives**

LO1-1: Identify the drivers of customer utility

LO1-2: Explain inefficiencies and determine if a firm is on the efficient frontier

LO1-3: Explain the three system inhibitors

LO1-4: Explain what work in operations management looks like

LO1-5: Articulate the key operational decisions a firm needs to make to match supply with demand

**What Students Learn in this Chapter**

This chapter is the beginning of the book, and most likely the corresponding session is the first session in the student’s first exposure to operations management. The goal of the session is for students to gain some appreciation of the type of operational decisions that a business has to make and to provide them some idea of what it will take to make these decisions well.

To achieve this goal, we like to start with a perspective the student is familiar with. In most undergraduate settings, students will have little or no work experience. So, rather than starting with the perspective of the business, we find it more engaging to start with the perspective of the consumer. Faculty and students alike, all of us have been in the role of the customer in consumer-facing industries, such as restaurants, travel, healthcare, entertainment, or education. We suggest to use the example of restaurants. Even if students have work experience, a common experience/example is helpful for discussion and all of us have been in some form of restaurant.

The book chapter takes the example of “where do you want to go for lunch today?” to establish the different dimensions driving customer utility. Once we understand what consumers value, we can start talking about the dimensions of operational performance. Students will see that there are multiple dimensions of operational performance. Some operations focus on responsiveness, some on quality, some on efficiency, etc. Unlike the case of finance, where we all agree that more profits are better than less profits, students will appreciate that there exist trade-offs among the operational dimensions of performance. Subway is operationally not better or worse than a five star restaurant. It simply has a different strategy.

The presence of trade-off then sets up the efficient frontier framework. Some firms are better at multiple things, others are worse. Typically, students have services that they like a lot (e.g. Starbucks or Chipotle) and often times, those are services that are also financially successful. This allows for a discussion of what makes these services successful, which allows the faculty to introduce concepts such as waste, variability, and inflexibility.

**Relationship to other Chapters**

This chapter is related to:

Since this is the first chapter, it obviously does not build on other chapters.

This chapter is the foundation for:

The idea of the efficient frontier and the three system inhibitors is coming up throughout the book/the course. Introducing them on the first day of class is helpful, though not required.

**Proposed Time Line**

Any time line will depend on the context of teaching, including the class size, the choice of exercise or case, the level of prior knowledge of the students, and the teaching style of the faculty. We have used the following time line for various audiences. This includes academic settings (business students), but also professional development settings with participants that learnt this material not to prepare for a test but to advance their careers.

0:00 Opening exercise (Mortgage exercise)

0:20 Dimensions of performance

0:30 The efficient frontier/Pareto dominance

0:40 The three system inhibitors

1:00 Course overview and course logistics

**Preparation before class**

Set up exercise if you plan to use one.

If mortgage exercise is used, send out an email to students ahead of time, announcing that (a) on time arrival is critical for the exercise (b) they should not touch any paper on the tables.

If you plan to discuss the restaurant example, it might be helpful to do a quick Google news search on the big restaurant chains to have some current updates/examples.

**Detailed Session Plan**

*Opening Exercise*

The opening exercise is optional. The first 10 minutes can be critical in shaping the attitude of the students towards the course. So, playing a game can help break the ice. Alternatively, the discussion of “Where will you go/did you go for lunch today?” also breaks the ice. You can share personal experiences at places on/around campus and likely share many experiences/frustrations with the students.

Run the mortgage exercise for 10 to 15 minutes (all teams should have at least 3 mortgages completed, either rejected or approved).

Go around the room and ask the underwriters to report how many mortgages they processed (approved or rejected). Joke about the low performing teams if you feel comfortable.

Ask students “If this were your bank, what dimensions of performance would you track?” Answers should include:

* Some measures of efficiency: number of loans processed, costs per loan
* Responsiveness: how long the customer has to wait for the loan
* Accuracy: percentage of loans processed correctly

Display the correct decisions; ask underwriters to audit their work; then fill out slide #Mortgage1 displaying the performance of each team on the dimensions of efficiency and accuracy.

Announce that the goal of this course is to improve businesses by helping them to improve on multiple dimensions of performance. It is not about trading off efficiency vs quality, but about building better processes. Say something like “In the next sessions, you will learn how to analyze and improve business processes.”

*Dimensions of performance: Where will you have lunch today?*

Students understand the operations of a restaurant from a customer perspective. Ask them about where they go for lunch and what they like about the places. Don’t be too quick in showing the slide #utility; collecting comments from the students until you have the dimensions together is probably the more engaging teaching style.

Then, ask students about the goal of running a restaurant. Divide student responses up into:

* Financial goals: profits, returns, value, getting rich, growth, etc.
* Operational goals: happy customers, good food, fast response times, etc.

Keep on asking, potentially with some leading questions, until you have the dimensions of:

* Efficiency
* Quality (good food, fresh)
* Responsiveness
* Variety/choice (menu items, opportunity to customize)

Point out that these dimensions are “universal,” i.e., we can also use these dimensions to run a bank, a hospital, or a tutoring service.

*The efficient frontier/Pareto dominance*

Pick two dimensions of performance. This could either be quality and cost (price) or responsiveness and cost (price). Alternatively, aggregate all dimensions other than price in a utility/willingness to pay score. Then, draw a two dimensional graph:

* X-axis: price to the student
* Y-axis: quality of food/willingness to pay

Go through a number of the lunch places that came up during the discussion and ask students to place them in this space (you will not get agreement, and sometimes just have to make an executive decision). This should help establish the concept of the efficient frontier. Ask students “in which restaurant would you invest your money?” or “who do you think does the best job running the restaurant?”

Draw the frontier and point to the restaurants that are off the frontier and show “inefficiency” as the gap between the restaurant and its frontier.

Time permitting, the concept of the efficient frontier can be further illustrated with the slides from the airline industry (#airline1 and #airline2).

*The three system inhibitors*

Now that students have seen what inefficiency looks like in abstract terms, they should see what these inefficiencies look/feel like in practice. Common reasons for restaurants to be off the frontier are:

* Poor menu choices (a form of waste)
* Long wait times (often driven by the inflexibility to adjust capacity to demand)
* Poor experience (waste in the case when everybody has them, otherwise a form of variability)
* Etc.

As before, it might be helpful to collect ideas from students before then showing the slides #waste, #variability, and #inflexibility.

*Course overview and course logistics*

We find it better to end the first day of class with a discussion of course logistics as opposed to starting the class with this topic. Either way, at some point, make sure to address items such as:

* Grading scheme
* Attendance policy/seating chart
* Exam: format/timing/policies
* Text book
* Preview of content/syllabus
* Access to media such as course website, eBooks, Connect, etc.

**Potential cases/Exercises/Props**

Faculty who like using HBS cases/have the budget to do so might want to consider the HBS classic “Benim Hama,” which describes the operation of a restaurant. We found that students have enough personal experiences to draw from that an assigned reading is not necessary.

There are many exercises/games one can play. We like the mortgage exercise, as it allows students to experience the concept of an efficient frontier.

**Teaching suggestions for the case**

This chapter does not have a case.