Data-driven Operations-Marketing Integration

Lecturer: Chunyang Tong

Hours: 3 hours/week; 9 weeks

Semester: Fall

Prerequisites: basic knowledge of calculus, probability & statistics desirable

1. Course Descriptions and Requirements

Students are expected to learn Process as the key in managing a business. Our objective in this course is to introduce you concepts and techniques related to the design, control of a variety of business processes and how these processes cater for the need of marketing. Some of the topics covered include: process design and reengineering, flow diagrams, capacity analysis, workforce scheduling, valuation of real assets, service dynamic pricing, supply chain management and customers services, in modern enterprises. The courses will emphasize data-driven approaches in digitalized business settings; some techniques of data analysis will be covered if needed.

The course relies on a combination of case discussions, lectures, videos, readings, assignments. Active class participation is especially important and will be credited.

Suggested Reference Book:

Operations Management and Supply Chain Management, by F. Robert Jacob and Richard Chase, 13th

Marketing Management, by Philip T. Kotler and Kevin Lane Keller, 14th Edition

Revenue Management and Pricing Analytics, by Guillermo Gallego and Huseyin Topaloglu, Spring, 2019

Grading Policy:

Class participation and in-class performance (20%); Three project writing-up (50%); Final Presentation (30%)

2. Course Arrangement and Readings (all materials will be distributed in class)

Class 1 : Introduction of Operations Management and Marketing

Questions to be addressed:

1) What is a process process; its measures: demand flow/Capacity/ Utilization/Bottleneck
2) How the Spreadsheet-based LP can help do process analysis: workforce scheduling/ manufacturing planning/ Bottleneck Identification
3) How Operational Innovation presents a competitiveness edge?

Reading: Michael Hammer, HBR, April 2004, "Deep Change: How Operational Innovation Can Transform Your Company"

Class 2: Review of Basic data analytics in Operations and Marketing

TBA

Class 3 : Strategic Decisions on Operations and Marketing: MTS/MTO

Questions to be addressed:

1) What are MTS and MTO, its advantage and disadvantage
2) Dell's competitiveness;
3) Can we make things better---an innovative business model: Lenovo

Reading: 1) Joan Magretta, HBR, "The Power of Virtual Integration: An Interview with Dell Computer's Michael Dell"

2) Chunyang Tong, et al, HBR (China) "Lenovo's Dual Model",

Class 4 : Capacity Planning and Investment based on Marketing factors

Questions to be addressed:

1) What are major complexity in terms of capacity planning;
2) How Shouldice Hospital use their operations strategy to support their business strategy?
3) Wriston's puzzles and woes about capacity investment.

Reading:

1) James Heskett, HBR, "Shouldice Hospital Limited";
2) "Wriston Manufacturing Corporation"

Class 5 : Some data-driven analysis on Inventory Management

Some "math"---EOQ model/Newsvendor Model

Questions to be addressed:

1) What drives existence of Inventory: economy of scale/ Variability/Lead time/Strategic consideration
2) Bullwhip effect

Reading: Hau Lee et al, "Information Distortion in a Supply Chain: The Bullwhip Effect", MS (an academic paper, let's try☺)

Class 6: Managing Operational and Market Risk

Questions to be addressed:

Hedging Operational Risks: Quick Response/ Order Postponement/ Delayed Differentiation/ Risk Polling

Readings:

1) P. Ghemawat and J. Nueno, HBR, "Zara: Fast Fashion";
2) Marshall Fisher, et al" Making Supply meet demand in an uncertain world"

Class 7: Catering for Markets: Dynamic Pricing and Revenue Management

Questions to be addressed:

1) How RM is made: pricing and/or capacity rationing
2) How these two measures get interacted

Class 8: Service Operations and Innovation

Questions to be addressed:

1) How service process differs from manufacturing process
2) What are at stake in service operations
3) Congestion-related Service Metrics (brief Queueing Model: MM1, MMN)
4) How local service innovation impact the overall service delivery: service quality

Readings:

1) Frances X. Frei, "Breaking the trade-off between efficiency and service"
2) Frances X. Frei, "The four things a service business must get right".
3) My research paper

Class 9: Service Marketing and its integration with Operations

Question to be addressed:

1) Service marketing vs product marketing
2) Why service marketing needs closer coordination from operations?
3) How data-driven marketing activities interact with operational policy?

Class 10: Outside Speaker session: Inviting the director of data center from Meituan (美团) platform company

Class 11: OM-MKT and other business functions

Questions to be addressed:

1) How finance, strategy, HR, Business Organization coordinate with OM-MKT
2) Data-driven decision making in digitalized enterprises
3) How to use the data to its best: modern data analytics

Class 12: Review and Broadening Horizon

Question to be addressed:

1) What we have learnt from this class?---an organic review
2) From Supply Chain perspective….
3) Group-based Project Presentations (group size to be determined depending on class size)