Introduction to Operations Management (OM)
Companies face the challenge of matching Supply with Demand everyday... just look at a typical day in my life

- Doctor appt.
- Shopping
- Grocery Store
- Lunch
- Post Office
• Out of milk (again…)
  – How many cartons of milk should the grocery store order? How frequently should they order? What are the costs of different ordering policies?

  – Do not want to order too much and have it clog the backroom/warehouse - nor order too little (and then have customers face an empty shelf – maybe go to a competitor)?

  – Now imagine that problem on the scale of what Harris Teeter does.

• **Business Analytics** tools key to decision making….provide a systematic way to make good/informed decisions in many contexts: forecasting, demand analysis, inventory, scheduling, # open cashiers, # suppliers, quality of products, etc. and many more…
Visit to the doctor
  - Certain time slots are reserved for different types of visits (duration/frequency/time of day)
  - How many times slots to reserve for visits of each type so that doctor’s time is not wasted and patients are served in a timely fashion?
    - Do not want too many sick (screaming) children waiting for hours in your waiting room with irate parents.
  - Similar problems in hotel, airline, car rental settings – how do you manage reservations versus walk-ins?
Lunch: McDonald’s or Chipotle?

• Waiting Lines
  – McDonalds, each cash register has its own line vs. Chipotle has a single line that feeds to all cashiers
    • Impact on equity?
    • Which do you think minimizes expected waiting time?

• Product and Process
  – McDonalds sells ‘standard’ product vs. Chipotle sells ‘fresh’ image where nothing is canned or pre-made
    • Impact on quality of food?
    • Impact on each restaurant’s ability to deliver good ‘fast food’?
Ann Taylor vs. Zara

- Demand for fashion items usually highly unknown and production quantities are often determined a year in advance of the selling seasons
  - AT makes ‘fashion line’ decision up to 8 months in advance vs. Zara updates production schedule on a weekly basis.
  - Impact on scheduling production of garments on machines?
  - Impact on inventory in store?

- From which suppliers to order materials (domestic vs. foreign). How to write the purchase/procurement contract
  - AT sources production abroad vs. Zara uses local (Spanish) textile manufacturers → Impact on leadtimes/responsiveness and WIP?

- Pricing Strategy (MSRP, promotions, markdowns)
  - AT has well established (and known) pricing markdowns vs. Zara rarely needs to employ markdowns
• Drop off a gift to be mailed

  – Making sure that all the mail is delivered to its recipient in the promised (or expected) time frame is a huge scheduling, logistical, and capacity planning challenge

  – Lost mail is BAD….need quality control processes in place to ensure quality execution of service.

  – Cannot begin to tackle a challenge on this scale without proper business analytics tools – simulation, statistics, and optimization.
Why Study Operations Management?

• Need tools/systematic analysis to study and answer these questions.

• Operations management is about *business analytics to support a business strategy*, i.e., designing, operating and improving the supply function for gaining competitive advantage.

• An OM major supplies you with the tools to study systems and help improve their performance
  – Ideal major for consultants.

• Required math level – pre-calculus. Similar to Finance.
Testimonial

Operations Management is really a culmination of our core curriculum since it encompasses our data models, finance, macro & micro economics, strategy, and many other components from other classes.

… after being in the work force since I was 15, I've realized that without operations we would not have successful businesses or much of an economy. It is really is about controlling your operations since that is about the only thing you can control in business.

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