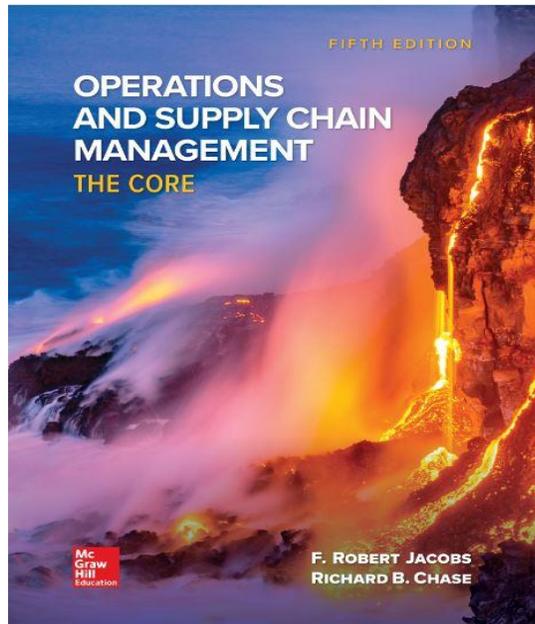
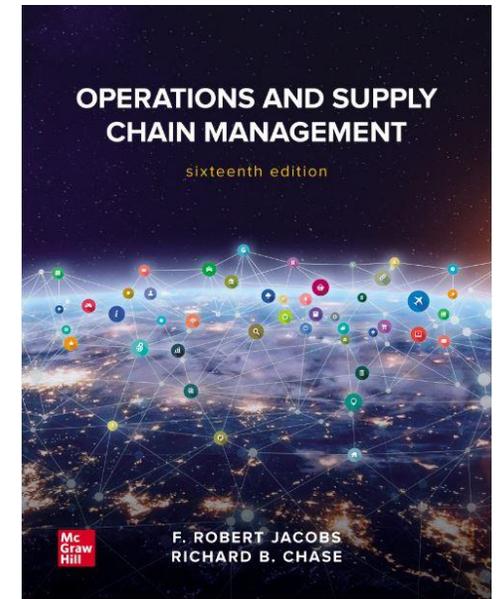


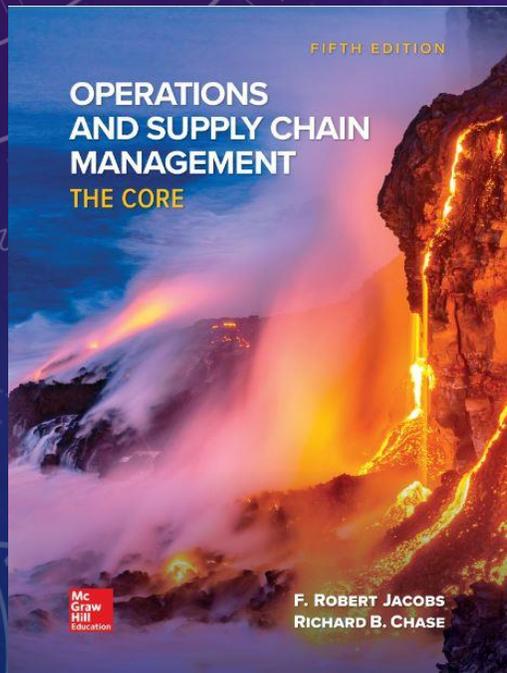
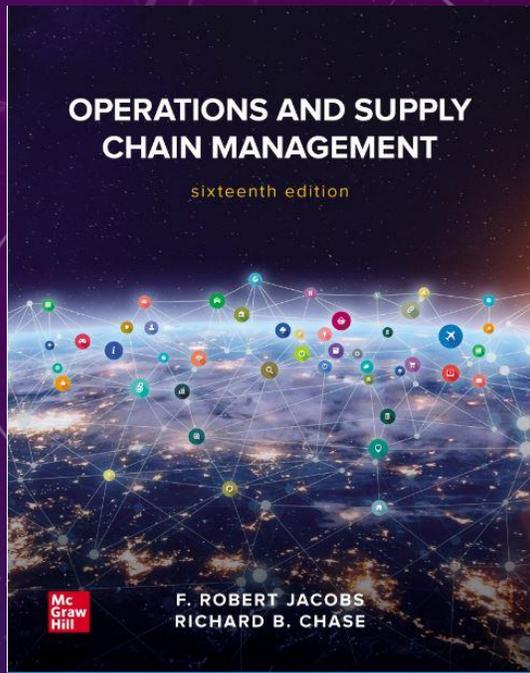
COVID-19 Trends in Supply Chain and Applying Them in the Classroom

Welcome!



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COVID-19 TRENDS IN SUPPLY CHAIN AND APPLYING THEM IN THE CLASSROOM

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AREAS TO DISCUSS...



Impact the remote teaching experience is having on higher education institutions globally



Recent impact on Operations and Supply Chain Management during the pandemic



Impact technology is having on higher education courses

REMOTE TEACHING...

It appears this will become the new norm.



The pandemic has caused a quick acceleration in what was already a movement.



The shift from print to digital will continue at a quicker rate.

REMOTE TEACHING...

OSCM lends itself to the online experience

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graph TD; A[OSCM lends itself to the online experience] --> B[Much of the material involves the learning of concepts, and techniques – examples and repetition are used]; B --> C[Case studies – using discussion forums works well and can be moderated];
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Much of the material involves the learning of concepts, and techniques – examples and repetition are used

Case studies – using discussion forums works well and can be moderated

REMOTE TEACHING – THE RUBRIC THAT I EXPECT

- Zoom type lecture – one session per week
- Weekly online problem sets to be completed to show competency (auto graded, multiple-tries allowed) (Connect)
- Weekly online tutorial (recitation) session – discuss problems, etc. (LearnSmart)
- Bi-weekly (one for each module) exercise and moderated discussion forum, completed for grade
- Exams - options:
 - Online proctored exams (two-three per semester long course)
 - Multiple graded exercises (bi-weekly)

REMOTE TEACHING – THE RUBRIC THAT I EXPECT

Course duration, semester duration

- Will probably be an accelerated movement to $\frac{1}{2}$ semester courses in undergraduate programs (like the current graduate courses) – competency-focused learning
- Expect changes in the timing of semesters
 - Fall – Start earlier, end at Thanksgiving
 - Spring – No Spring Semester break

IMPACT ON OPERATIONS AND SUPPLY CHAIN MANAGEMENT

- Sudden shifts in demand
 - For example – restaurants suddenly closed
 - Commercial suppliers demand dies
 - Retail (grocery store) demand skyrockets)
 - Example: Meat/poultry supply chain



- One would think the change would be easy to accommodate
- This proved to be a nightmare --- WHY?

THE “REAL” FOOD SUPPLY CHAIN IS HIGHLY OPTIMIZED BY CHANNEL...

- Commercial – restaurants, food service vendors, etc.



- Retail – grocery stores, food markets, retail stores (Walmart, Target, etc.)



- Highly specialized by channel. Focus on cost minimization for the channel → Adapting to the change took some time

OTHER EXTREME CHANGE IN DEMAND EXAMPLES...

- Oil distribution – China shut down → Oil diverted to US → US shut down → No place to put the excess oil!
- N95 masks and infectious disease protective equipment – Dramatic sudden increase in demand → Hoarding created massive stockouts → Quick ramp-up in production → Material suppliers not available for manufacturers → Consumers move to alternate sources
- Anticipated shortage of ventilators – Sudden increase in demand → Government allocates supply → Government forces production (GM)
- Toilet paper, etc.

OTHER EXTREME CHANGE IN DEMAND EXAMPLES...

Service Sector

- Many service sector examples: Healthcare – ICU beds → Shutdown non-life-threatening procedures → Shift capacity to COVID-19 care
- Restaurants...
- Airlines – the low-cost carriers are the winners (Ryan Air, Southwest)
 - Shorter point-to-point routing
 - Focus on single plane (737 or Airbus 320)
 - Efficient, smaller capacity, few services

OTHER THAN
“SUPPLY CHAIN”
DEMAND SHIFT, A
SECOND MAJOR
“OPERATIONS”
ISSUE IS
DECREASED
CAPACITY

- Changes to the production process
 - Social distancing – workers cannot work so close together
 - Fewer workers – absentee and sick workers
- What did companies do?
 - Produce fewer products – only the most popular ones
 - Try to meet most of the demand
 - More efficient
 - Only high-end (profitable) products readily available
 - Examples: Harley-Davidson, McDonalds
 - Restaurants: Reduced seating capacity
 - Reservations for specific 90-minute slots

BIGGER PICTURE “SHIFTS” THAT THE PANDEMIC HAS ACCELERATED

- A new asset light economy
 - Value is increasingly derived from digital platforms, software and other intangible assets rather than physical assets and traditional relationships
- Examples
 - CarMax vs online retailer Carvana Co – a car dealership without car lots
 - Uber – a taxi company without taxis
 - Vrbo – a hospitality company without hotels
- Virtual companies – value based on idea, brands, data and human capital... not assets
 - These are examples of new business models (other examples Disney+, Tesla, Amazon)
 - Further, the pandemic has taught companies how to operate without offices and engage customer virtually instead of in person

SHIFT IN TOPIC EMPHASIS IN OPERATIONS AND SUPPLY CHAIN MANAGEMENT COURSES



Risk management

Demand shifts need to be considered – in the past had mainly considered supply disruptions

Channel inflexibility – emphasis on efficiency has a major impact on flexibility

Information system transparency/specialization



Workplace layout/design

Design for health/safety of workers

New work rules related to infectious diseases

Safety of customers

Work at home paradigms



New business models

Platform businesses

Virtual businesses

Another new topic:
Supply Chain Finance

WILL THE NEW
DIGITAL TEACHING
TECHNOLOGIES
IMPROVE OR
DEGRADE
COLLEGE
EDUCATION?

- Without a doubt it will improve college education.
- A much richer learning experience.
- Much more consistency across professors.
- More accountability, both for students and professors.

...and the acceleration caused by the pandemic will make the transition much quicker.

Competency focus in programs/courses...