

## April Newsletter

President Simon announced that Lehigh University is moving to remote learning through the remainder of the semester. In accordance with this directive, the University has made the decision to limit large-scale public gatherings, including conferences, for the duration of the semester.

Following these guidelines, the Center for Supply Chain Research at Lehigh University is postponing our Spring Symposium from April 16-17 to our Fall Forum November 12 - 13. While this news is very disappointing, it is out of concern for the health and safety of our participants that we take this unprecedented step.

We are in the process of confirming the availability of all our speakers for the Fall Forum. We will also be creating a new registration system once we have confirmed all the speakers.

With regards to those who have paid for registration for the Spring Symposium, we will be providing an option to automatically register for the Fall Forum or a full refund. Please give us some time to set up this process.

You may click [HERE](#) to review Lehigh University's website for the Coronavirus. Thank you for your patronage, and most importantly your support.

We wish you well during these difficult times.

If you would like to take a greater role in the conference and become a supporter, please contact Zach G. Zacharia ([zgz208@lehigh.edu](mailto:zgz208@lehigh.edu)) or Eric Cosnoski ([eac296@lehigh.edu](mailto:eac296@lehigh.edu)) for sponsorship opportunities.



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### Supply Chain Resilience | Webinar with Professor Zacharia & DiCentral

Last week I had an opportunity to participate in a webinar sponsored by DiCentral that looked at the "Effect of COVID-19 on Supply chains. The link for the webinar can be found here.

Link

<https://www.youtube.com/watch?v=aoMkstrprzc&feature=youtu.be>

It was important to point out that companies can plan for supply chain disruptions but COVID-19 is particularly unique when considering other Black Swan events such as 911 which affected demand or the earthquake and Tsunami in 2011 in Japan that affected supply. COVID-19 is unique in that it affected both demand and supply and it was truly global. Companies plan for supply disruptions by having redundant suppliers typically in different locations around the world. However in the case of COVID-19 having suppliers in China and in Italy would not have helped. Companies can also plan for changes in demand disruptions by having multiple customers again in different locations around the world.

It was also important to note that shortages in grocery supply chain for essential items is more a function of hoarding and the bull whip effect than any real supply chain problem.

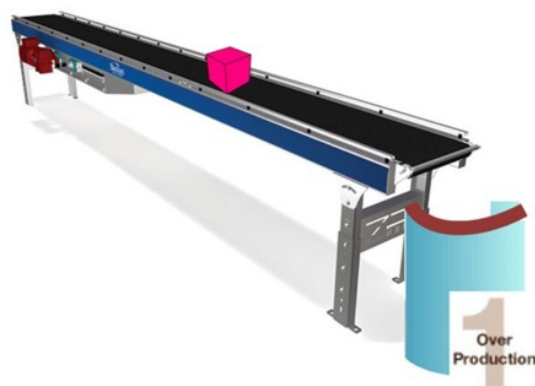
Companies need to adopt a short term and a long term strategy. In the short term companies need to be transparent to their suppliers, to share information and look for ways to work collaboratively with their suppliers. Also realize this kind of disruption can best be handled by a war room approach where senior managers come together virtually to brainstorm on the best options to deal with the crisis. In the long term, companies should try and go to their immediate supplier or Tier 1 supplier and ask them about how viable they are, will they be able to handle both an increase in demand or a drop in demand – typically supply chains should be able to deal with a 10% drop or increase in demand. Ask your Tier 1 supplier to check with their suppliers or what we would call your Tier 2 suppliers from the perspective of the focal firm. Try and get some visibility into the Tier 2 supplier inventory. Do they have enough inventory – can they produce more? What issues are they facing? Are they financially capable of surviving a downturn in the economy? Do their suppliers or Tier 3 suppliers have enough inventory to manage?

Having visibility several tiers into the supply chain associated with your critical items is always valuable. The biggest point is always going to be about improving end-to-end visibility and the key to visibility is to develop collaborative relationships. If you're collaborating with your suppliers, you're going to be able to respond to supply chain crises in an agile, responsive, and quick way. You don't want to wait for this crisis to happen and not have the capability of being able to change accordingly.

Collaborating with your suppliers is important any time but particularly important when there supply chain disruptions. It is also important to realize collaboration is different than coordination where the focus is on more sharing of information. Collaboration really only occurs when you start to see the success of your suppliers is as important as your own success. Clearly collaboration is going to take investment in terms of time and resources and it is important to select only those suppliers who you want to invest for the long term and you do not want to collaborate with everyone. Remember you will also have to share information to make the collaboration work.

Be willing to share changes in demand and supply. Build resiliency in the supply chain so that your suppliers can handle a 10% increase or decrease in demand. Ensure you diversify your supply base and not limit it to one geographical location. This is also a great time to start identifying alternative sources of supply to have a more resilient supply chain. Note even though I focused on suppliers, this is also applicable to customers who you supply to. Again collaborate downstream and realize you and your suppliers and customers are all in it together.

Our economy will rebound and the various methods that are now in place to prevent COVID-19 transmission will be removed and companies that have resilient supply chains that share information and work collaboratively will likely succeed to a greater degree than those firms who are not as collaborative with their supply chain partners.



## Inventory is Rarely Your Friend and Waste is Always Your Enemy

Phillip Coles, Professor of Practice, Supply Chain Management

Prior to the advent of Just in Time (JIT) and modern supply chains there was greater inventory variation and shortages were more common. Today, because of well managed supply chains that include the use of JIT inventory systems that deliver frequent, lower quantities from suppliers and balance flow, most take for granted desired items will be available when needed. The onset of the coronavirus created not only increased demand

for critical items such as face masks and ventilators, but also self-inflicted scarcities of select food items and toilet tissue due to panic buying. Some have suggested JIT is somehow to blame, even suggesting that [less efficient supply chains](#) would be beneficial, but they are decrying one of the most important mechanisms to ensure products are available during emergencies.

There are three main types of inventory: raw material, Work in Process (WIP) and finished goods. While it is important to have stockpiles of critical raw materials and supplies in case of emergencies - this is the purpose of the strategic oil reserve and why the Federal Government recommends keeping [emergency](#) supplies in case of natural disasters – neither raw material nor finished product inventories are a panacea. Some items do not keep well. For example, you can stockpile canned goods, but not fresh produce. Influenza vaccines have limited [shelf life](#); shots unused this season are wasted.

Spoilage also applies to things not thought to go bad. N95 masks, made from paper are easily damaged and under the best conditions they have a maximum five year [shelf life](#). High tech machines like ventilators become obsolete. Stocks must be constantly updated due to spoilage and obsolescence.

During production, JIT uses safety stocks, useful WIP, carefully calculated for each production stage to compensate for process variation, but WIP increases throughput time, and reduces product availability. Reducing excessive WIP reduces throughput time because the reduced inventory staged at each process can travel through a shorter “line.” In bad times, not only is more cash available because it is not tied up in inventory, if an unanticipated item is needed, it can be produced more quickly. Production responsiveness is preferable to stockpiles that can decay, expire, be stolen, damaged or simply misplaced.

As part of risk management, there are always general items, such as N95 masks that must be stockpiled for emergencies because they cannot initially be produced in high enough volume in a crisis. Nevertheless, JIT is critical in creating responsive supply chains that can quickly produce critical supplies.

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## Join our Community!

**WE NEED YOUR HELP!** The center is trying to find out what topics and issues you care about and get to know you on a personal level. By connecting with us on LinkedIn and Facebook, you can find out the latest projects we are working on, get involved with the center, and let us know the topics that keep you up at night. We just rolled out a new site so check it out over the next month and send us a friend request. We look forward to improving our relationship!



## Thank You for supporting Our Students!



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