LEHIGH CENTER FOR SUPPLY CHAIN RESEARCH NEWSLETTER

October 2017

DIRECTOR'S WELCOME

Welcome to our October issue of the Lehigh Center for Supply Chain Research (CSCR) newsletter. Our focus this month is getting ready for our Fall Forum that will take place next month at Lehigh University campus on November 9 and November 10. More information about the fall forum and to register can be found at: http://cbe.lehigh.edu/cscr/events/fall-forum/ .

We have two interviews that our marketing assistant Belinda Bell has conducted with keynote speakers who are presenting at the Fall Forum. The first interview is with Gregory L. Schlegel, CPIM, CSP, Jonah Founder Vice President and Principal, Shertrack LLC who will be presenting on *Predictive Analytics/BIG DATA: How Manufacturers Are Leveraging PA/BIG DATA to Improve Supply Chain Performance and Mitigate Risk?*

The second interview is with our own Lehigh University Faculty member, David Zhang, who is an Assistant Professor of Management who will be presenting on *Information Technology as a Production Input– A Substitute or a Complement?*

We have a special $100 off our Fall Forum registration for all Lehigh University Alumni. Remember the deadline for Registration is November 2. Plans are already underway to prepare for our Spring Symposium, April 12 and April 13, 2018.

If you have any special topics and or speakers you would like us to invite, please let us know. I look forward to your feedback and suggestions.

Zach Zacharia, P.h.D.

Associate Professor of Supply Chain Management, Director, Lehigh Center for Supply Chain Research 610.758.4433

AFFILIATED FACULTY MEMBER SPOTLIGHT: GREGORY SCHLEGEL AND DAVID ZHANG

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Greg is presently VP/Principal for Shertrack LLC. He has been a supply chain executive for over 30 years with several Fortune 100 companies and spent seven years as an IBM supply chain Executive Consultant. Greg speaks over 20 times per year and has authored over 100 articles in major supply chain magazines and journals. He has presented papers on and has managed consulting engagements in supply chain management, Risk Management, Lean/Six Sigma and Theory of Constraints throughout the US and around the globe. He is well published, a frequent speaker at conferences, seminars, webinars and dinner meetings.

GREGORY SCHLEGEL: EXECUTIVE IN RESIDENCE, SUPPLY CHAIN RISK MANAGEMENT AT LEHIGH UNIVERSITY

Lehigh CSCR representative Belinda Bell sat down with Gregory Schlegel to ask a couple questions about his experiences in the supply chain industry and his involvement in the Center for Supply Chain Research.

What is your background in the industry?

I have a dual major in operations from Penn State. I have been a supply chain executive for about 30 years with several Fortune 100 manufacturers across multiple industries. Specifically, I spent years with IBM as a SC Exec Consultant solving complex SC problems around the world for IBM clients. Education wise, I have taught operations and supply chain at several universities including Scranton, St John's, ASU, and Rutgers. Currently I am teaching Enterprise Risk Management at Villanova in their EMBA and am an Executive-in-Residence here at Lehigh.
Dr. Bob Trent and I co-authored a book on *SCRM: An Emerging Discipline*, in 2014. We know several universities are using the book to teach SCRM at the undergraduate and Graduate level and it is doing quite well on Amazon right now. I also facilitate about 25 workshops a year, around the globe on topics of Supply Chain Risk Management, Predictive Analytics and Big Data.

What has comprised your experience at Lehigh University?

In my time at Lehigh I have developed a first-of- a-kind SCRM MBA class and also teach one-day SCRM class in our Executive Education Forum. One of my more consuming projects would be The Supply Chain Risk Management Consortium that I founded back in 2014, which now consists of twenty companies, including Lehigh University. I have found that Lehigh students bring unique skills, methods and solutions that really support our book's end-to- end vision of Supply Chain Risk Management.

Can you explain a little about your research and interests in Supply Chain?

Our definition of SCRM/PA/Big Data from our book is the continuous identification, assessment, mitigation and management of all types of risks throughout the enterprise. SCRM is critical to maintaining a Resilient SC that can compete and continually recover from any type of enterprise risk. That's a tall order! Predictive Analytics is the use of Deterministic and Probabilistic Tools to improve SC performance and identify, assess, mitigate and manage risk. Big Data is an enabler for these two outcomes. Sensors that are now embedded into manufactured products and beginning to talk to each other and to SC managers throughout the SC. This amount of data is about 2.5 Quintillion Bytes of data, per day…that's equivalent to all the data in ALL the US libraries! Companies need to accelerate their SC performance due to global pressures, and these topics are what is going to be able to help them succeed.

What are you most interested in for the future of supply chain?
We, at the Risk Consortium, feel these new approaches and tools will go a long way to further improve supply chain performance and risk mitigation. This is proven by the more and more Use Cases coming out from exemplar companies who are running pilot projects in PA/BIG DATA and SCRM.

What is your involvement in CSCR?
I've been associated with center since I started teaching at Lehigh, around 2011. I believe that it's a terrific forum to bring students, faculty and business professionals together to build synergy and drive value for all. As an academic consultant practitioner, I will be speaking on topics at the Fall Forum on Nov. 10th including risk, big data, and predictive analytics use cases.
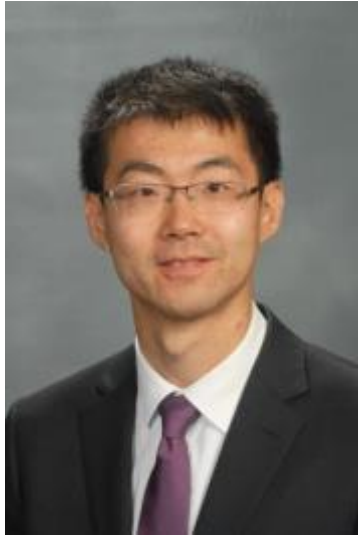
David Zhang, Department of Management at Lehigh University

What is your academic and professional background?
I did my Bachelor's degree in Computer Science and my Masters in Economics. Then I completed my Ph.D. in Information systems. I worked at the Construction Bank of China for a couple years and then moved to the United States. Here I taught courses at the University of Scranton and have now been working at Lehigh for three years.

What is your current position at Lehigh University?
I am the Assistant Professor of the management department and I teach courses in Business Information systems on both undergraduate and graduate levels.

What is your involvement in CSCR?
I'll be holding one of the sessions for this upcoming Fall Forum on November 10th. The topic is about Technology Substitution. I also plan to talk about the latest findings from management and economics and what people are doing in this area. My session will be interactive for the participants to discuss how management and economics can affect their day to day jobs

What is your research and why do you find it interesting?
I'm always interested in the stream of research that ties labor and technology and how that impacts the younger generation and their career pairs. I have a research stream of technology substitution. The question is does technology replace jobs, or does it create jobs, and what is faster? What is the net effect of using technology instead of labor? In my research we look at this problem from a macro perspective. We study the effect of technologies on labor demand and question whether it becomes a substitute or a complement to the labor force. What's interesting about the study is that we've found that technology is substituting jobs for people with high school degrees but college graduates are more safe. The only group that is benefiting is the group that has earned a higher degree of education. The situation I don't want to see is machines replacing jobs faster at the rate than they are creating jobs.

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https://www.facebook.com/Lehigh CSCR/

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How does technology relate to supply chain?
It definitely plays an important role. Technology affects everything in the modern world, and especially supply chain, because it constantly allows for new developments in the industry. Although my research doesn't have a direct relation to Supply Chain yet, I'm looking into collaborating with Professor Zacharia on some research projects in the future.

Supply Chain Cartoon of the Month:

www.scdigest.com
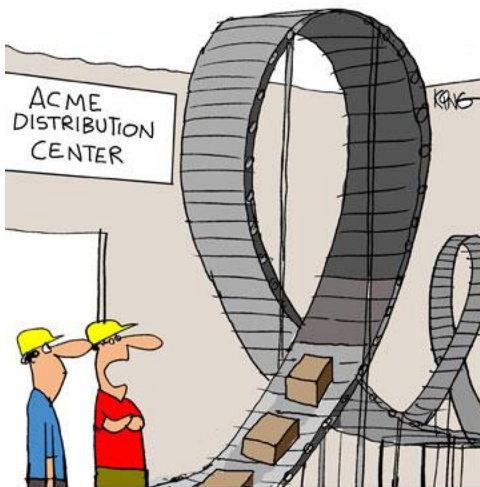
"It was someone from corporate's idea to improve our inventory turns."

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LEHIGH CSCR PRESENTS

2017 Fall Forum

NOVEMBER 9-10, 2017

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How Technology Is Destroying Jobs- MIT Technology Review by David Rotman

Nowadays we are witnessing impressive advances in computer technology- from improved industrial robotics to automated translation services. That robots, automation, and software might bring wealth to the economy and enhance the development of the society. But Brynjolfsson, a professor at the MIT Sloan School of Management, and his collaborator and coauthor Andrew McAfee have been arguing that rapid technological change has been destroying jobs faster than it is creating them.

To support their assertion, Brynjolfsson and McAfee use several evidences from the economy and the job market in the United States. Perhaps the most convincing piece of evidence is a chart shows a significant gap appears between the productivity and employment lines from 2011, which indicates technology is behind healthy growth in productivity and the weak growth in jobs. Then a chart of GDP and household incomes also reveals a paradox in economy as median income is falling even as the gross domestic keeps rising. Moreover, examples like Google's driverless car and a startup company in Silicon Valley use robots in warehouses, also suggest what automation might be able to accomplish and how digital technologies enable us to do many things with fewer people.

However, are these new technologies really responsible for a decade of lackluster job growth? Even if statistics shows that today's digital technologies are holding down job creation, historical pattern suggests that it is most likely to be a temporary, albeit painful shock. As workers adjust their skills and entrepreneurs create opportunities based on the new technologies, the number of jobs will rebound. Therefore, the question is whether today's computing technologies will be different, creating long-term involuntary unemployment. To get some insight, it is worth looking at how today's most advanced technologies are being deployed in industry. For example, robots like bright-orange Kiva robot, Rethink's Baxte, are designed to work in the warehouse, fetching object and delivering product. These robots can handle up to four times as many orders as a similar unautomated warehouse. Despite the labor-saving potential of the robots, the founders of these robots say it's hard to see these sophisticated robots will replace humans as the idea of designing the robots is to enhance workers' productivity instead of replacing them. What's more, many traditional problems in robotics- such as how to teach a machine to recognize an object and react to unexpected evets-remain largely intractable and are especially difficult to solve.

But with respect to clerical and some professional jobs, things would be different. For instance, IBM Research is pushing super-smart computing, Watson, into the realms of such professions as medicine, finance, and customer service. By using artificial- intelligence and Big Data techniques, the latest generations of Watson could help physician diagnose diseases, evaluate patients in medicine, and even serve in customer-support call center as an agent. Accordingly, to some extent, it's easy to see new technologies are replacing some human holdouts in some fields.

Therefore, the contention that automation and digital technologies are partly responsible for today's lack of jobs has obviously touched a raw nerve for many worried about their own employment. And back to Brynjolfsson and McAfee's contention, this is only one consequence of what they see as a broader trend. A more serious consequence, is technology is widening the income gap between the tech-savvy and everyone else. Therefore, Brynjolfsson himself says "technology progress does grow the economy and create wealth, but there is no economic law that says everyone will benefit". In other words, In the race against the machine, some are likely to win while many other lose

https://www.technologyreview.com/s/515926/how-technology- is-destroying- jobs/