



Lehigh Center for Supply Chain Research

LEHIGH CENTER FOR SUPPLY CHAIN RESEARCH NEWSLETTER

September 2017



DIRECTOR'S MESSAGE

Welcome to the third issue of the Lehigh Center for Supply Chain Research (CSCR) newsletter. As noted before we would like to use our newsletter to highlight important upcoming activities in our center and to interview members of our CSCR board, faculty and students.

We just had our very first Lehigh CSCR Supply Chain Career Fair Wednesday, September 13 from 4:30 pm to 6:30 pm. There were 53 students and 9 companies participating – pictures from the career fair are found in this newsletter.

As a reminder our next big event is our Fall Forum that will take place at Lehigh University campus on November 9th and November 10. More information about the fall forum can be found at <http://cbe.lehigh.edu/cscr/events/fall-forum/>

One of the keynote speakers who are presenting at the Fall Forum is also highlighted in this newsletter, Yorke Rhodes, Global Business Strategist, Blockchain & Identity, Microsoft and Adjunct Professor at NYU His topic at the Fall Forum will be *Trust and Transparency in Enterprise Supply Chains is No Longer a Question*

In this issue our Marketing Assistant Belinda Bell has an interview with Professor Larry Snyder who is a faculty member in the Department of Industrial Engineering, in the College of Engineering at Lehigh University and a former Director of the CVCR.

There will be a limited number of tickets available for the CSCR tailgate the day after the Fall Forum those who will be attending the fall forum.

We are always looking for presentation topics for our fall forum and spring symposium. If you have any topics and or speakers you would like us to invite, please let us know. I look forward to your feedback and suggestions.

Zach Zacharia, Ph.D.

Associate Professor of Supply Chain Management
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AFFILIATED FACULTY MEMBER SPOTLIGHT: LARRY SNYDER

SEPTEMBER ISSUE



LARRY SNYDER: FACULTY MEMBER IN THE DEPARTMENT OF INDUSTRIAL ENGINEERING AT LEHIGH UNIVERSITY AND A FORMER CO- DIRECTOR OF THE CVCR

Lehigh CSCR Marketing Assistant Belinda Bell sat down with Professor Snyder to ask him a couple of questions about his experiences in the supply chain industry and his involvement in the Center for Value Chain Research.

What is your professional background?

I have been at Lehigh since 2003, and I am a professor in the industrial engineering department. I also research mathematical models analyzing and optimizing supply chain and energy systems. I've taught courses in those areas, researched those areas, and have

also written a textbook on supply chain optimization.

So what exactly is supply chain optimization?

Business school folks and engineering folks tend to use supply chains differently. Business school folks are often interested in the way that firm interact with each other, and engineering folks are usually more interested in quantitative models for describing or optimizing supply chains. So, for example, I work on models for making decisions about inventory management, such as where a company should locate inventory, how much inventory they should have, and how to make quantitative decisions about the demand and supply of inventory. I also do work on network design, such as where a company should locate warehouses, manufacturing sites, and retailers in order to keep things moving efficiently through the supply chain and be close proximity to customers.

What did you contribute to the former CVCR (Center for Value Chain Research) and or CSCR?

I do not currently have a role in CSCR, but I had a role in CVCR, the precursor to CSCR. I was the co-director of the center from roughly 2005-2011. When it was called CVCR, it was a joint center between the business college and engineering college, and there was a co-director from both schools. So when I was involved, I was the co-director from engineering. Eventually, the center lost steam, and then Professor Zacharia took over it and rebranded it. Now it is more really a CBE focused center rather than a joint center.



NOVEMBER 9-10, 2017
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How does industrial engineering relate to supply chain?

Industrial engineering is good at solving problems that involve big complicated systems, and supply chains are definitely big, complicated systems. We're interested in anything that can be quantified and modeled in a system like supply chains. From what consumers are doing, or what suppliers are doing, what inventory is in, where it is, and how long it's taking and so on.

Do you find a lot of students being interested in both fields?

Yes, definitely. We have a lot of students that take courses in both because the concepts overlap. It's also a very common major for Integrated Business and Engineering (IBE) students because in a lot of ways industrial engineering is the closest engineering field to business and so many pick industrial engineering and supply chain.

How can students benefit from having a knowledge of both supply chain and industrial engineering?

In our industrial engineering department, we teach students a lot about key fundamentals and methodologies, basically mathematical models and algorithms and things like that. We don't also do as good a job at showing students how those things can get applied. There are some classes that do that, but students don't get a lot of hands on experience with real companies and how they manage their supply chains. And I believe that's an important skill for students to have, especially since a lot of the jobs they get don't only require one or the other. It's really best if students have some experience in both the mathematical aspect of things and the real world aspect.

Is there anything else you would like to add?

No, just that I'm glad to see CSCR back on its feet and doing great things.

LEHIGH CSCR IS NOW ON FACEBOOK!

Like our page and keep up to date on the recent news, developments and events for everything CSCR at:

<https://www.facebook.com/LehighCSCR/>



Blockchain: A Conversation with Yorke Rhodes, Global Business Strategist, Microsoft



Shashank Rao from Auburn University conducted an interview with Yorke Rhodes, a Global Business Strategist from Microsoft. There is a special topic forum (STF) in JBL associated with Blockchain that will have a submission deadline of September 1, 2018. This very new research topic area of Blockchain is relevant for all logistics researchers and practitioners to consider.

This interview was copied from the August 2017 issue of the Journal of Business Logistics (JBL).

Yorke Rhodes will be speaking at the fall forum. This interview first appeared in the August 2017 issue of JBL News. JBL News had an opportunity to speak with Mr. Yorke Rhodes III, Global Business Strategist at Microsoft, and one of the founding members of their Blockchain business vertical. Here is an edited excerpt from that interview:

Can you tell me a bit about yourself and your experience with Blockchain?

I have been a passionate technologist my entire career. I started at Microsoft the first time in 1992. The 8 years that I spent there were all about setting up e-mail architectures for large enterprises. I left Microsoft in 2000 to move to a new technology area: mobile and wireless which I believed was the next Internet opportunity. I spent 7-8 years in the mobile and wireless space working mostly for startups and a few enterprises. I was building product for our bankers and doing mobile wireless due diligence at Goldman Sachs. My next assignment was with IBM, which is where I started working with RFID technology. In the summer of 2015, shortly after I moved back to Microsoft, I discovered Blockchain as a technology (although I had already been discussing Bitcoin in my e-commerce class that I teach at NYU). I became convinced that this was the next technology wave. Since then, I have been managing partners that work in the Blockchain space and was one of two people to evangelize and kickoff the Blockchain business for Microsoft. We now have an engineering team, an identity team, a research team, a partner team focused on managing our Blockchain partners, and an account team servicing the Blockchain demand that is coming from new customers from around the world.

What is Blockchain?

Blockchain is a technology that is comprised of other well-known technologies. But it is their unique combination that has created new capabilities. I like to say that the things that make up Blockchain are well understood, such as consensus algorithms, cryptography, distributed systems and peer to peer networking, all of which have been around for 20 years. The difference here is that someone actually found a way to put all those things together in a really interesting way that adds new value. From a business perspective, Blockchain is a tool in a manager's toolbox that allows the manager to create multi-party workflows across company boundaries with trust and veracity of the data.

What makes Blockchain so unique and interesting?

One of the things that makes Blockchain so unique and interesting is that it can help you do things which companies could not do earlier. Given that large software companies like Microsoft, hardware companies like Mojix, and standards creators such as GS1 are all working together on this technology, we now have the real possibility of end to end supply chain visibility.

What other potential does Blockchain have for functions that are usually outside the mainstream view of supply chain?

We spoke about visibility. By increasing visibility into the business, a company is, for example, reducing risk. This may mean that the company can save what they spend on insurance. So really you are then getting into

the intersection of Supply Chain and Finance. There are many other such value propositions that you can think of, for a technology like this.

What infrastructure does a company need in order to support Blockchain?

One of the very interesting aspects of Blockchain as a technology is its decentralized, distributed processing nature. You have many companies developing open source software solutions, that make up the blockchain ledger stacks. Here at Microsoft, we have embraced the open nature of the ledger solutions and we have created tooling around them. The tooling is designed to allow our customers to rapidly deploy secure infrastructure in known patterns to support the Blockchain networks. Upon this infrastructure, companies will run their business processes for cross company workflows. There are also companies that sit atop the infrastructure, run in our Azure Cloud and provide higher level or application level value to end customers. If you look at a full end-to-end solution the actual Blockchain-related software itself is probably only 20% of that package and it depends how deep a company wants to go into it. What you will see is that most companies will end up tapping into their legacy systems such as their ERP system quite a lot. They will be tapping into other databases such as SQL Server or Oracle. They will be tapping into their IOT systems, RFID systems for reading data from sensors throughout the supply chain. So there are a lot of different components that come together to create a holistic Blockchain solution for a company. But Blockchain is the end piece that ties many things together.

From a practitioner perspective, what kind of research into Blockchain would you and industry partners like you find most valuable / interesting?

We are seeing a lot of interest with regard to investigating Blockchain applications in product traceability, real time inventory, etc. Another area that we are seeing a lot of questions being asked is with respect to Blockchain's ability to help with the issue of counterfeiting, which is a huge supply chain problem. Proving something is counterfeit is hard to start with, and then it gets even harder when the counterfeit is embedded in a composite item. Another area that industry is looking to investigate is how logistics companies (e.g., shipping companies) are going to participate in this end to end supply chain visibility endeavor through Blockchain. In addition, detailed exploration of Blockchain use cases in general across various industry sectors (e.g., discrete manufacturing, farming, shipping, retail, food), are of substantial interest. Further, the technology is only going to be as effective as the extent to which network members participate in it. So investigations of what incentives value chain partners need to participate, how to create these incentives and how to communicate them, would be of great value.



Supply Chain Career Fair- September 13th, 2017



Lehigh CSCR had its first annual specialized Supply Chain Career Fair on September 13th from 4:30-6:30 in the Rauch Business Center. There were over 50 students that participated including Sophomores, Juniors, Seniors, and MBA and MS in Industrial Engineering students. The companies that participated were DiCentral, Just Born, Crayola, Port of Philadelphia, NFI, East Penn Manufacturing, Lutron and Pratt and Whitney.

A speed dating concept was used where students spent 15 minutes at a time with each company executive. This gave all students and companies individual facetime with each other and allowed students to gain an understanding of what corporations are looking for when hiring. Only having supply chain students allowed companies to be presented with exactly the types of job candidates they needed. Many students were offered interviews the following day for internships and full time positions.

The next Supply Chain Career Fair is planned for Wednesday, February 14, 2018. Contact Dr. Zacharia (zacharia@lehigh.edu) for more information.



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