Connecting the Dots Between Education and Innovation

By Ken Cottrill

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It takes more than original thinking to be innovative. The skills and knowledge gained from professional education programs are also important pieces of the puzzle. How do these programs help supply chain professionals to be innovators?

Just ask Bindiya Vakil. Ten years ago Vakil graduated from the MIT Center for Transportation & Logistics' (MIT CTL) Master of Engineering in Logistics program (now called the MIT Supply Chain Management Program). Since then she has won acclaim as a top supply chain executive and the CEO and founder of Resilinc, a leading supply chain intelligence and resiliency analytics provider. Reslinc's supplier network connects major companies to their global suppliers and enables them to harness this supply chain intelligence for resiliency and agility.

While her master's degree is part of the broad tapestry of experience, knowledge, and skills that has enabled Vakil to become an industry thought leader, there are specific elements of the program that have been especially influential.

Eureka Moments

A decade ago there were fewer supply chain master's programs than there are today. Indeed, it was more common to study the discipline at this level under the auspices of a general MBA program.

"At the time I felt that doing a supply chain master's degree would set me apart," Vakil says. "Also, I already had a master's in finance and did not want to spend two years in another program."

Already an experienced practitioner in high-tech supply chain management at companies including Flextronics, Cisco, and Broadcom, the intense, nine-month program at MIT CTL gave her the opportunity to gain deeper domain expertise. The program was a rich learning experience on a number of levels, but Vakil recalls several "aha" moments that helped to shape her subsequent career.

The forecast is mostly wrong. Her very first class was on demand forecasting, and it proved transformational.

"I had worked on the supply management side before coming to MIT, and we were always trying to catch up. We blamed the demand forecasters for getting it wrong. My first assignment was a demand forecasting problem and I was determined to finally get it right," she says.

Consulting with her classmates only served to make the fog denser because they were struggling to solve the problem too. Moreover, these were fellow practitioners from different backgrounds. The average age of the students was around 30, and they had worked in a wide range of industries in various capacities, including demand-side and supply-side roles and logistics management. "When we got back to class to turn in our assignments after an extremely stressful weekend of disagreeing on methodologies and answers, our professor laughed as he accepted our assignment," she recalls. "He discussed our various approaches and methodologies, and then finally said: 'Almost all of you are wrong.'"

The "aha" for Vakil, was that while forecasting is important, it is impossible to predict the real world. Sweating over the right number is not the answer, because in reality Murphy's Law often applies and the forecast is mostly wrong. When decisions are needed quickly, and the rules of the game are changing constantly, resiliency, adaptability, and flexibility are incredibly important. She learned to embrace the chaos and use it to her advantage.

Models come to life when you see the big picture. Gaining a deeper understanding of data models while she was a grad student was foundational for Vakil, given her chosen career path working with supply chain information flows.

"I learned that you are never going to model every aspect of a supply chain because you reach a point where there are diminishing returns, so you have to take a step back and capture the

most important variables and relationships," she says.

The key is understanding the many elements that feed into a model, and how these shape the model's output. This ability to grasp how disparate data sources interconnect and can be optimized has proven particularly valuable in her work to create the models that underpin Resilinc's services. Appreciating the information touch points between customers and suppliers is critically important in the design of automated data collection and analysis systems. Resilinc uses disparate data that originates in an unstructured format on the internet as well as in social media channels, news outlets, and blog articles. It connects this mass of data with semi-structured and structured sources such as customer ERP systems and supplier inputs.

Ultimately, Resilinc delivers advanced levels of intelligence about inherent supply chain vulnerabilities and exposures in a way that is easily understood and quickly actionable. A thorough grasp of managing data, information, analytics, and interconnections is foundational to successfully translating many-to-many relationships into usable intelligence.

Another key problem that Resilinc solved based on these principles also happens to be a fundamental challenge for supply chain practitioners everywhere. Supply chain management is really about information flows; however, these flows are neither standardized nor optimized. Handling requests from multiple customers for information in different formats creates a huge amount of work for suppliers. The insights Vakil gained into data connectivity helped in the development of a single, standardized data entry platform for the Resilinc network. The solution leverages LinkedIn-like information sharing concepts and is delivered on a secure, multi-tenant cloud platform. It provides suppliers with a secure, cost-effective, and simple way to share information with customers. Moreover, suppliers complete all the required responses once and approve customers' access. The system automatically tailors the intelligence for each customer.

Understanding the relationship between supply chain data and technology also helps Vakil to keep pace with new market developments. Resilinc was formed in 2005, when some social media sites such as Twitter either did not exist or were still relatively early in their development. She is able to leverage the latest trends in cloud, mobile, and social media to solve big supply chain problems.

Focus on what matters to practitioners. Vakil has worked in supply chain risk management ever since leaving MIT. In one of her projects, she was modeling the probable impact of a major flood in a certain geographic area. In order to get the probability right, she worked with experts in insurance and actuarial companies. Vakil learned that the critical takeaway in this kind of work is not the probability of specific locations being hit by floods. The key finding is the relative importance of one location, supplier, or part in the extended supply chain, which entity should be given top priority, and how this answer can be reached speedily.

"I took this lesson to heart," she says. "When we started Resilinc, we really focused on what the practitioner's day-in-the-life looked like, and what they needed. Our solution really gets the supply chain practitioner, who is time and bandwidth strapped, to be able to answer this one question quickly and effectively."

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The Wider View

In addition to these important insights, Vakil learned a number of broader lessons during her time studying for a supply chain master's degree that have helped her to be innovative.

The diversity of experience and the years of practical experience within her cohort is one of the most valuable benefits. "My classmates really took me to where they had been during our class discussions. We always took a step back and applied our learning to what we had all seen playing out in the real world," she says.

Vakil adds that while she was always analytically oriented, her experience at MIT took her to the next level in terms of analytical thinking. "The class discussions put everything into perspective," she says. "I learned to think optimally, manage within a range, and to always be flexible and pragmatic."

This experience is reflected in the advice she offers to prospective supply chain students. "Choose programs that have a good balance between the theoretical and the pragmatic," Vakil says. They should also offer a rich learning environment, and an important element of such an environment is a wide mix of student ages and career backgrounds.

Working in this environment also helps to prepare young professionals to manage innovation. Even though she has earned a reputation as an entrepreneur who has created a successful company, Vakil credits her team for all this success. She believes that effective leaders are self-aware; they know what they know and what they don't know.

"People are an important asset in any company, but they are the single most important asset in a young, fast growing company like ours. Find people whose skills complement yours, tap into their passion, and channel their expertise—and then watch the magic happen," she says.