

This is an interview that I did in 2000 when I began at MIT.
Most remains true to this day.

A Conversation with Ed Schuster

New Director of the Affiliates Program in Logistics

In July, Ed Schuster joined MIT as Director of the Center's Affiliates Program in Logistics. A logistics and operations specialist with over fifteen years experience in consumer packaged goods, he holds a master of public administration from Gannon University in Erie PA and a bachelor of science in food technology from Ohio State.

He began his career as a Sanitation and Cook Room Supervisor for Oscar Mayer in Sandusky, Ohio, then in 1982 joined Welch's in Concord, Massachusetts – makers of Welch's Grape Juice and a number of other grape products – as an inventory analyst. In 1999, after five years in charge of logistics planning in their logistics department, he was promoted to corporate manager of operations planning in the supply chain department .

During his time at Welch's, Schuster led a team that contributed \$8M to the bottom line by reducing inventory; helped save another \$2M through streamlining the supply chain; worked with researchers at Penn State to develop the Juice Logistics Model and the Harvest Planning Model; and established the 'continuous replenishment planning program' with Wal-Mart. In addition to any number of other achievements at Welch's, he also established the kosher program for all Welch's products.

A member of half a dozen professional societies – including the Council of Logistics Management and the Institute for Operations Research and Management Science - Schuster has an extensive publishing history and has served in editorial functions for the Production and Inventory Management Journal and the Journal of Operations Management, among others. He also has extensive experience in public speaking and teaching.

Shortly after his arrival here, we sat down for a get-acquainted chat:

Your professional evolution strikes me as impressive. Especially since you've also published so much, given so many speeches, taken part in so many professional activities, and even done some college teaching. I'm guessing none of this just happened, right? So let's start by talking about ambition. Why do you think you're so ambitious?

Well, I always was very interested in exploring new areas, and that kind of fuels my ambition. If I see something interesting, I usually hold onto it until I get something I can show myself – a computer model or a paper, something like that. But ambition itself? I'm not sure where it comes from. I'm from the Midwest. Avon Lake, Ohio. My people all were farm people; I grew up in the

house that my great grandfather built. I guess I come from a hardworking family, and that's where the ambition comes from.

So it's a family ethic.

Right.

But it's more curiosity than ambition that's led you.

Yes. I like knowledge, I like to find out about things. I'm pretty much driven in that direction.

Let's talk about some of the things you learned at Welch's. How big is Welch's, for starters?

About \$650 million. A moderate size. But it's probably in the top 100 of all US food companies. Pretty big for an agricultural co-op.

It's a co-op? But Welch's doesn't just raise and sell grapes, it also processes them. Right?

Right. Welch's is a bit unique because there are two entities - the co-op and the manufacturing company. The manufacturing company was established by a dentist from New Jersey.

A dentist? What did he care about grapes?

Well, he was a very strict Methodist. And in the Methodist religion, drinking is not encouraged. So he wanted to develop an alcohol-free 'wine' that could be used for communion services. And he discovered that when you pasteurize grape juice, it doesn't ferment, doesn't turn into wine. I think his first batch was about forty gallons...

He did this in his basement?

Yes. He was an experimenter, you know?

And how many plants does Welch's have today?

The processing of the grapes and the bottling of the juice is basically done in the three growing areas - in upstate New York, west of Buffalo; in Michigan, west of Kalamazoo; and in the Yakima Valley in Washington.

Then how come the corporate headquarters are in Concord, Massachusetts?

Everybody asks about that. Originally they settled the company in Westfield, New York, because the Concord grape was grown there, but they didn't feel they were close enough to the advertising and marketing centers of New

York City and Boston. And since the Concord grape was developed in Concord Massachusetts – there's a monument on Route 2A, the spot I guess where Ephraim Bull actually developed the grape - it made a certain amount of sense to move there. Also, we had a president who was from this area, and he wanted to come back here.

So how did you happen to hook up with the faculty at Penn State?

I was president of the Erie APICS chapter – the American Production and Inventory Control Society – and I met a few faculty members there who asked me if I'd like to teach on a part-time basis. So I taught business logistics, operations management and quantitative business analysis there, and met more of the faculty. We had very good working relationships. Still do.

You developed the Juice Logistics Model with them, right?

Right.

What's that about?

Well, being a cooperative, every year Welch's harvests between 250,000 and 300,000 tons of grapes. The grapes get brought into the processing plants, the plants press the grapes into juice, and then they store the pasteurized juice in large refrigerated tanks. Welch's has over 50 million gallons of storage capacity. What the Juice Logistics Model does is try to match the supply in a particular region to the demand – because, of course, the supply can fluctuate, as can the demand. So the Juice Logistics Model puts all these variables into a computer and renders a recommendation as to what recipes should be used at each plant and what transfers should be made from plant to plant.

You also developed the Harvest Planning Model with Penn State, didn't you?

Yes. We've just had a paper accepted for publication about that model. To make a long story short: the grapes come into the plant and are pressed into juice in these huge facilities. It has to be done fast, because Concord grapes don't store very well – after about two or three days, they basically just disintegrate - so the rule at Welch's is that the grapes have to be pressed within eight hours of the time they're picked. A very tight time window. So if they have, for example, a 50,000-ton crop and they're processing 2000 tons a day, it takes 25 days to receive the crop. If they get a frost in the middle of that, they could lose as much as half the crop. If they wanted to be 100% safe, of course, they'd process the entire crop in one day. But they'd need so much equipment for that, equipment that would sit there doing nothing for the rest of the year, they need to try to find a balance. So what we did was design a model that took these variables into account and told us the optimal receiving rate to limit the losses from the frost but also to save us from

spending so much on the processing equipment that we'd drive the company under.

It was calculated guesswork before?

Absolutely. The farmers would say, we think we need about a thirty-day grape season. It was just a rule of thumb. But when we started to look at the frost data in Michigan, for instance, we found the best harvest season was 23 to 25 days long, a significant difference.

It just occurred to me, while you were talking about this harvest problem, that you're still in agriculture, right? You talked about coming from an agricultural family, growing up on a farm - and you're still in the farming business, right? Or you were, until you came here. Is that what led you into food technology?

Yes. I had a great uncle in agriculture who had a big influence in my course. He was instrumental in developing the potato industry in Idaho; some of his bulletins are still around. One he wrote was called *Specialist in Spuds*. Another was *Better Farm Life through Landscape Horticulture*.

Any good stories to tell about replenishment planning for Wal-Mart?

Wal-Mart is experimenting with category management and collaborative planning – asking the market leaders in certain consumer goods to actually plan the category for them by making recommendations as to the assortment and promotional strategy Wal-Mart should adopt for their products. It's a radical concept, but over the years there have been a lot of failures in retail chains because they're so hard to coordinate. The tastes in LA are very different from the tastes in New York City, for instance. In New York, maybe people buy 24-ounce containers but in LA they buy 64-ounce containers. If you're a central buyer, it's hard to keep track of those kinds of things. What Wal-Mart is hoping is that through category management, the suppliers will make those decisions for them by managing product assortment for them. It is a bold move.

You established the kosher program for all of Welch's products. I think that's pretty interesting, especially since you're not Jewish.

True. But the market for kosher products is not just the Jewish market. People from Arabic origins buy kosher products too, because it meets their dietary requirements. And Seventh Day Adventists also adopt those standards.

What did you have to do?

To achieve the orthodox kosher we actually had to hire a team of rabbis. Because for Orthodox Jews to consider it kosher, it has to be made by rabbinic hands. So we'd hire a team of rabbis to come in every day during

grape season. Except Saturdays, of course, the Sabbath, and Yom Kippur and Rosh Hashanah. Of course the whole process was done by machine, so there were no rabbinic hands involved, really. Basically they'd just start the machines. But other things had to take place, as well. For example, the water had to be a certain temperature in order to kosherize the pipes, and they had to supervise that. Welch's spent a lot of effort assuring their juice met all of the standards. They even had employee-training programs so that everyone understood the reasons for certain kosher procedures.

Why did you want this job at MIT?

Well I think you have a tremendous amount of potential here. The underlying structure of the economy is changing, and we're living in a networked world that is far beyond the dreams of anyone who ever studied communication, and all of that affects CTL logistics. I think this particular center is going to be in the forefront of all this change. I also think just being here in this environment – where people are working on solutions to real problems in industry – I think making those types of connections is very interesting. You learn a lot about a lot of things in this type of environment. There's lots of contact, lots of interaction.

What are your ambitions for the Affiliates Program in Logistics? Or is it too soon to know?

It's pretty soon, I think. But I'm doing a fair amount of thinking right now about what the strategy should be – not only to provide the best value to our current affiliates but also to pull new affiliates into the program so we can broaden the types of problems we address, and the interactions we have between members. I wouldn't want to say just yet how big we think the program can get, but our goal is to grow the program and we think by doing so we can provide a good service to industry.

What do you think this program offers that others like it don't?

Well having six programs a year, along with the other benefits, certainly makes the program a leader in executive education for people in the logistics field. And the faculty here have worked very hard to create an impressive body of knowledge through their ongoing research efforts. Affiliates get great value through interacting with faculty members here.

Have you attended any events yet?

A week after I started I had the chance to attend the executive course on logistics and supply chain management, and I have to say I was impressed at the caliber of the attendees. I also had a chance to visit with a number of program members there, and I found them all to be very friendly and very interested in increasing their professional knowledge about logistics and the

supply chain. Many of them had excellent ideas for future logistics programs based on their business needs.

Why do you think you're the right person to run this program?

The Affiliates Program needs someone who has significant experience in both industry and research, and my qualifications match those job requirements very closely. I have a broad background in business, I have experience in university teaching, I have model building skills and a strong publication record. I've also devoted a large amount of time to the administration of learned societies. But maybe the most important thing is that I have a strong desire to provide high levels of customer service. And I like to be involved in leading-edge activities that improve productivity in business.