Professor Donald Ratliff talks about enterprise SOA

SAP Happily Goes Back to School

When SAP's travel and transportation team wanted insight into the use of enterprise service-oriented architecture in supply chain and logistics, they turned to Professor Donald Ratliff, executive director of the Supply Chain & Logistics Institute at Georgia Institute of Technology. Here, he discusses this collaboration.

Circle of Experts (from left to right):
C. John Langley Jr., Ph.D., Professor of Supply Chain Management, Georgia Institute of Technology; Dr. Carsten Linz, Vice President IBU Travel & Transportation Services; H. Donald Ratliff, Ph.D., Executive Director - Supply Chain & Logistics Institute, Regents and UPS Professor of Logistics, Georgia Tech; Till Dengel, Director Industry Solution Management Logistics Service Providers, SAP AG

SAP INFO: *Why did SAP come knocking on your door?*
DONALD RATLIFF: I think they wanted a fresh look and a different perspective on enterprise SOA. Previously, it wasn't really clear how academics could contribute in an innovative way with the enterprise resource planning (ERP) world. But the new SOA architecture gives academics a chance to play, and we're excited about that. We were contacted by SAP and asked if we wanted to participate in trying to develop a framework for how one actually uses enterprise SOA in the supply chain and logistics world.

Our relationship with SAP is fairly new, but since Georgia Institute of Technology (Georgia Tech) is the biggest supply chain and logistics academic education and research facility in the world, it seemed like a good fit. We cover just about everything in supply chain and logistics, and our backgrounds are in industrial and systems engineering. But the process and technology side is our forte, and that lines right up with enterprise SOA.

SAP INFO: *How has the enterprise SOA concept been received in the supply and logistics arena?*
RATLIFF: I think the enterprise SOA concept is well understood by developers. They know how to build services using it, and they understand how to make the bits and pieces work together. The business world – particularly for supply chain and logistics – does not understand it that well. On the highest level, they like the notion that you can plug and play, but the idea that you should take all your business processes and model them into the enterprise SOA framework to use various services is a new concept for them. It is not the way our industry has historically worked, particularly with regard to software. So, the "how do you build the services" side we've got down. The "how do you take advantage of those services" side is still not that well figured out.

SAP INFO: *So is technology driving business, or is business driving technology?*
RATLIFF: Business has driven the technology concept. Business has not liked these huge pieces of software that couldn't be changed very much. And since your business processes are directly linked to your software, you are then locked into your software. So it was intermingling – they really fed off one another. I think the business world said, "We want something different than that," and the software world reacted. They came back and said, "We'll make something that won't matter so much who built the software or what language it's in, because you'll be able to pull all these services together and support your business processes, whatever they are."

SAP INFO: *What makes building new solutions difficult in supply chain and logistics?*
RATLIFF: I think supply chain and logistics is the most difficult of all the domains. It has a huge amount of diversity, and you've got lots of different people who play a part in it. You've got the third-party logistics (3PL) people, you've got the people who own the product, the people who receive the product, carriers, ports, governments; there's a whole lot of pieces that change. In the United States particularly, you have different and evolving levels of security that you know are not going to be the same. So, there is a lot of complexity.

There is also a need for specialization. Suppose I own trucks and I'm delivering soft drinks, and somebody else has trucks and is delivering new cars. Soft drinks are delivered to stores on side-loader trucks, and new cars are delivered to car dealerships on carhaulers, so the technology for how to build load routes and schedules for soft drinks is very different from that needed to deliver new cars. In supply chain and logistics, there is a need for specialization, but if you have a huge amount of specialization, then you have a huge amount of services, which defeats the purpose of enterprise SOA and reusability. With the introduction of enterprise SOA, SAP has created a tremendous opportunity to do things much better by making specialization easier.

SAP INFO: *What is the timeframe for absorption of enterprise SOA practices?*
RATLIFF: It will be just like all new software concepts. There will be some people, like SAP, who will do a good job with it early on, and I suspect if we have this conversation in five years, there will still be people trying to figure out what to do with it. That's what we are going to do working with SAP: We are going in thinking, "what can we do to develop a framework for this technology?" We are also going to be working with 3PLs, and to the degree that we can, put more structure on the business process modeling side of things. This will make it much easier for people to take advantage of this new enterprise SOA architecture.

SAP INFO: *How do you see the industry value network improving the SAP product and your work at the university?*
RATLIFF: SAP has first-class technology and is obviously a market leader. But even though SAP covers everything in the supply chain and logistics world with its solution, there is always a smaller organization that does nothing but this one little piece, and they are going to do a better job with that piece because that's all they do.

Smaller niche players can build on top of the SAP solution and augment or modify it using enterprise SOA, and in the end, clients are going to have a solution that exactly fits their specific needs.

Bringing in academia adds another layer of expertise to the end product. The use of technology in academia and access to SAP solutions will in turn give us new insights into the hands-on operations of supply chains and logistics and motivate further innovation. We have to get it in our hands to get in our heads, and once we have both sides of that coin covered, everyone benefits. The biggest role academia can play is helping people better understand the tremendous potential that enterprise SOA has in the supply chain and logistics world.

Donald Ratliff talked to Ian Alexander, freelance journalist, Palmetto, Florida ■