

Green supply chains help fuel success

By **DAN HEATH**

Staff Writer

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MORE INFO

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More and more companies are striving to provide more environmentally friendly supply-chain management practices.

Dr. Colin Read, a professor of finance and economics at Plattsburgh State University, and Dr. Santosh Mahapatra, an associate professor of operations and information systems at Clarkson University, presented "What Does it Mean to be Green? Sustainability as the New Driver of the Supply Chain" during the recent Global Supply Chain Management conference at Plattsburgh State University.

Read said that if you ask someone to define sustainability, the responses are as diverse as the people you ask.

The social response would involve living with a balance that does not degrade or deplete the earth's resources, while the business response would involve practices that are robust and resilient to resource, regulatory, retail and corporate uncertainties.

Sustainability has become increasingly important as companies try to appeal to young people who find those values important, Read said. In previous generations, most corporations only focused on profits, he said.

"Consumers now demand these other values."

Europe and even Canada is ahead of the United States when it comes to environmentally friendly practices, Read said. But, sustainability is being built into some company's key performance indicators.

Just-in-time inventory delivery is one example. It allows a company to minimize its warehouse space through the use of computers and tracking systems to ensure inventory arrives right when it is needed.

"Wal-Mart is very good at this," Read said.

Strategic logistics outlets, such as SAP and SmartOps, can also help a company run a leaner operation.

Read said all levels of supply-chain management are now being scrutinized.

"Many of the leading companies now incorporate supply-chain sustainability into their core vision and mission," he said. "Sustainability must be in place from the top down. When you fail any one element, it can taint the whole company."

Mahapatra said a green supply chain can be accomplished through adaptability, alignment and agility. Adaptability allows the company to evolve over time for continuous improvement.

Getting all the stakeholders aligned fosters collaboration, while agility allows for rapid response to manage and recover from problems that arise.

The key to meeting those objectives is design, both of the product and the process, Mahapatra said. He cited Apple CEO Steve Jobs as saying good design fosters collaboration, communicates strategy, sets expectations, improves efficiency, and most importantly inspires and motivates like nothing else.

"That is how that company has come up with so many innovations," he said.

One of the guiding principles of environmental design is cradle-to-cradle design. A product should be designed so it can be reduced to its basic components, which can be reused or recycled, he said.

Cradle-to-cradle design includes resource reduction, the ability to upgrade, easily disassemble, reuse, recycle or dispose of the product and design for long life.

It has to be done in a very cost-effective manner, or the company's chief financial officer is likely to say it doesn't make financial sense.

Mahapatra said three founding blocks for environmental design are total quality environmental management, a focus on lean capabilities and the use of metrics.

Total quality environmental management allows a company to overcome trade-offs and orient its stakeholders. It helps the company do things right the first time rather than having to overcome mistakes.

"Companies that have this way of thinking are more likely to succeed," Mahapatra said.

Lean principles call for the elimination of variation, reduction of lot size and simplification of the product and processes. Modular design and supplier collaboration also help a company become lean.

Anything that doesn't add value to a product or process creates waste, he said.

Metrics can help a company see where it is or isn't meeting its green goals. They can include numbers on the percentage of recyclable materials, hazardous by-products and the product's life-cycle cost.

Companies can use an environmental balanced score card to measure their progress. It combines financial numbers, consumer satisfaction and image, internal business processes such as waste reduction, ethical sourcing and recycling, and learning and growth processes, such as awards and certifications.

"Not too many companies do this depth of analysis," Mahapatra said.

It requires cooperation among suppliers, manufacturers and customers. One difficulty, he said, is getting customers to help close the loop by returning products for reuse or recycling.

Robert Transport is one of the companies responding to the challenges of being environmentally friendly. Jean-Robert Lessard, vice president of marketing and public relations, discussed how those two companies are working to be more environmentally responsible during a presentation called "Greening the Freight and Transportation Corridors in North America."

Robert Transport is a family owned company that has 2,200 employees, including 1,100 drivers and a fleet of 1,100 trucks and 3,000 trailers. It has eight terminals, 15 distribution centers and four maintenance centers.

He said the company decided to go green three years ago to add value to the logistics services the company provides all over North America.

"Many of our customers ask for our environmental audit report," Lessard said.

The company has taken a number of steps to update its fleet to improve its environmental performance. That has helped it win contracts from some of those customers, he said.

Aerodynamic fairings have been installed on its tractors and trailers. That costs \$1,600 per trailer and \$1,100 per tractor, but improves fuel economy by 3 percent and 2 percent, respectively.

Smog-free engines cost \$8,000 each. They increase fuel consumption by 5 percent but produce no particle pollution or noxious emissions.

The company is making the move to wide-base single tires rather than tandem tires. They cost \$5,900 but produce a 3-percent increase in fuel economy, Lessard said.

On-board computers that cost \$2,500 each help increase fuel economy by an additional 5 percent, he said.

The company uses 12 million gallons of fuel a year, so the savings are substantial, Lessard said.

"With all these savings, we can cover our expense."

He said the company was the first in Canada to be certified by the U.S. Environmental Agency as a SmartWay Transport Partner.

E-mail Dan Heath at: dheath@pressrepublican.com

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Photos



Dr. Santosh Mahapatra, an associate professor of operations and information systems at Clarkson University, said cradle to cradle design results in products that can be reduced to their basic components, which can then be reused or recycled. P-R Photo



Dr. Colin Read, a professor in the Plattsburgh State University School of Business and Economics, said more and more companies are seeking to make their supply chains sustainable largely in response to consumer demand for those practices. P-R Photo