TUCK SCHOOL OF BUSINESS AT DARTMOUTH
Glassmeyer/McNamee Center for Digital Strategies

Global Supply Chain Management: Shifting Strategies

A Roundtable Overview

Roundtable on Digital Strategies

Global Supply Chain Management: Shifting Strategies

Thought Leadership Roundtable on Digital Strategies

An executive roundtable series of the
Center for Digital Strategies at the Tuck School of Business

The U.S. and European Chapters convened to discuss challenges and new strategies in global supply chain management, given the financial and economic volatility being felt around the world. This Roundtable on Digital Strategies was hosted by Bechtel Corporation. CIOs were joined by counterparts responsible for sourcing and supply chain management. Executives and academics from ABB, Bechtel, BT, Eaton, Hilti, Holcim, IBM, Nestlé, Georgetown University and the Tuck School of Business at Dartmouth participated.

Key Insights Discussed in this Overview:

The Thought Leadership Roundtable on Digital Strategies (www.tuck.dartmouth.edu/roundtable) publication series is edited by Hans Brechbühl, Executive Director of the Center for Digital Strategies.

What a Downturn Teaches

The financial turmoil and economic turbulence of the last two years have made the job of managing global supply chains more challenging than at any time in recent memory. Leaders responsible for sourcing and for management information systems for Global 1000 firms currently face a daunting array of interconnected issues.

Dan Carroll, VP Supply Chain Management (Aerospace Group) for Eaton Corporation, summed it up this way: "Being in supply chain right now, we seem to have every issue coming at us at once. We have supplier insolvency, supply disruptions, port closings, volatile commodity prices, quality issues. We want headcount for product innovation and development to continue driving growth, even though we have to take support cost down."

"My second e-mail this morning was about a supplier that literally caught on fire. They'll be out of business for a year. I sit here and think, "I can only die once." How many different risks can you handle at once?"

The Roundtable focused on specific strategies for managing and mitigating risk, building supplier relationships based on transparency and trust, and applying information technology and incentives effectively across the global supply chain—within and beyond the borders of the firm.

Wanted: Flexibility

"We're very focused on the question of adaptation of capacity," said Urs Bleisch, Head of Corporate IT for Holcim. "Capacity naturally doesn't change quickly—and it can be costly to change, in both directions. It is costly to build up, and costly to shut down."

"That's why we're putting a lot of effort in things like the cloud," said CIO for BT Group Al-Noor Ramji. "Because at any point we can tear the cloud down faster as well, so it's not just costs going up, but also down."

Driving home the point of the group's interdependence, Ramji continued, "We do this because we're not sure, now, whether you guys are going to give us more or less business. So investing in common platforms, actually, is a very good thing. It makes us more agile and responsive."

A Declaration of Interdependence

These players in the worldwide trading system have become increasingly interconnected, on every dimension that matters. Information, capital, currencies, resources and risks cross borders and change hands among markets and partners that rely on each other more directly than ever for their own stability and success. Those gathered at the Roundtable reflected that interdependence. Many of them, in fact, directly contribute to each other's supply chains. And all of them are under pressure to perform.

David Hammerle, Principal Vice President, Corporate Manager of Procurement and Contracts for Bechtel Corporation, described the overall environment this way: "What we're feeling will affect all of you, because our customers are coming to us and demanding that we reduce our rates, our costs, unit prices, everything. I think that's going to haunt everybody in this room for the next three or four years."

This sense of interconnection was reinforced by Ricardo Ernst, Co-Director of the Global Logistics Research Program at Georgetown University, who said, "Nobody debates any longer whether globalization is good or bad. That's realistic—in the sense that globalization is like the rain. It's going to happen. So instead of debating it, you find an umbrella and go right out into it."

"So," he continued, "how do you take advantage of this globalization? Well, you begin by realizing that globalization does not subsidize inefficiencies. But it also means that we're seeing a real shift, a moving away from 'my company against your company,' to 'my supply chain against your supply chain.' It's an ecosystem."

"The moment that my suppliers are part of my supply chain," Ernst said, "I have to change my way of thinking about them. Not simply screwing every single penny out, but making sure that we are working coherently together."

Much of the day's discussion would return to this theme and its practical application in information systems, governance, incentive design and process management.

Weathering the Storm

On the overall business climate, the consensus view of the CIOs and supply chain executives assembled was that any easy pronouncements of economic recovery would be premature. "We don't see a big, quick bounce of a recovery," said Haider Rashid, Group CIO for Asea Brown Boveri Ltd (ABB). "We really don't see the green shoots. This is not going to be the V-shaped thing of economists' dreams. This is a case where the world has reset itself, and when growth starts again, it starts from a lower base."

Revenues and orders year over year were described by those present to be down anywhere from 20 to 50 percent—with significant variations by line of business and by region, around the world. As one executive summed up the forecast, "Overall we see a three to four year flattening of the market." Most were forecasting four to five percent revenue growth for the coming year.

Several felt their companies were doing the right thing by continuing to invest in product development and innovation, as a means of gaining share on competitors in tough times.

"One of the things that has softened the amount of the deceleration that we could've experienced," said Mike McGowan, Executive VP and GM at Hilti, "is the amount of innovation that we bring. In the last two years, we've brought 75 new products to the market, which, in many cases, are entirely new revenue streams for us. Next year we'll have 36."

This strategy was endorsed by Dan Carroll of Eaton Aerospace, who said "We've got significant product development activities going on right now. The real challenge is how we continue to drive technology development. If you just cut your support costs, you end up eating your own seed corn. You can't grow."

Cutting Costs: Starting Outward

But across the room, to make up for revenue short-falls, the executives were all managing significant belt-tightening—and anticipated that much of the savings would be coming from their global supply chains. "That's where we see the biggest potential for savings," said ABB's Rashid.

The group as a whole seemed to be departing from prior campaigns for efficiency during earlier down cycles. Rashid noted, "All the previous cost cuttings that I've been involved in, companies tended to be very inward-looking. You look to cut your own staff, rationalize your own plans. My impression is that this time, all of us are looking to generate a majority of our savings via supply chain savings, and looking to achieve this with our partners." He continued, "That's probably because our supply chains have gotten so integrated with each other. You can't really do it all yourself."

Some felt the downturn had forced a level of spending discipline that was helpful—and even anticipated. BT's Ramji said, "We're kind of ahead of the curve, by necessity. I don't think we would've done this work in as focused a way as we have, so we've done a lot of good things on the cost side. As usual, as you guys know, it's good for the CIO when there are big cost controls, actually. We tend not to think so, initially. But then the business climate compels things we've been planning to do for a long time, except it telescopes them in time."

Cost vs. Quality

As they work to cut costs throughout their sourcing and supply chains in a difficult economic climate, many of the supply chain execs struggled out loud with a heightened intensity of quality and reliability trade-offs.

Hammerle of Bechtel said, "My supply chain is extremely complex, and it's spread out all over the place. So from a market standpoint we've seen a lot of quality issues. You might buy a product with a few thousand subcomponents on it. Those subcomponents may not have been manufactured by the prime supplier, whose sub-assembler did fine for 20 years—but now that business is so fractured, they may be going globally for that subcomponent. Which increases supply chain risk. So the new supply chain has really become a challenge to manage from a quality standpoint."

A Cut Too Much?

Norbert Hagenhoff, VP Supply Management North Americas for ABB, sounded a note of caution in this environment of cost pressure and fewer orders. "One of the biggest risks I see is that we're talking about volume reductions of 10, 15 percent for most of the major companies sitting around the table here. If we're not careful, some of our suppliers will have volume reductions significantly higher than 20 or 30 percent—I'm talking to some that face volume reductions of 50 to 60 percent."

"If they cut their workforce to keep up with the volume reductions," Hagenhoff mused, "we could put ourselves at risk in terms of the suppliers we work with. So, we have to be very careful that we're selective, in terms of how far we push the supplier for the reduction efforts."

This point was reinforced by Hammerle: "The financial stress these companies are under—it can appear anywhere in that supply chain."

And probably unannounced. As the Tuck School's M. Eric Johnson put it, "The suppliers aren't giving much warning when they drop dead."

Labor Arbitrage

CIOs and management see some surprising trends in shifting labor costs, as they hustle to generate the highest value and quality, while cutting spending.

Eric Johnson, pointing out recent economic data on fully-loaded labor costs in China and Mexico, said "They're forecasting this amazing trend, if it comes to pass, which will affect supply chains across America: Labor in China will become twice as expensive as that of Mexico, [adjusted for currency], by 2012 or 2013."

The arbitrage effect was felt widely, particularly with increases in labor costs in India—in some categories approaching those of the West now. Executives cited a range of strategies, including re-cutting skill sets, retaining people longer, reducing selectively, and retraining.

Bill McCorey, VP, Global IT Infrastructure Center of Excellence at IBM, said "We now have 100,000 employees in India. We do see even greater growth in the coming year. If you look at the IBM population overall now, roughly 25 percent is in India. It's a constant challenge to get the mix right."

Outsourcing, Culture, and Defending the Core

And even as the labor price proposition shifts, issues of strategic focus, productivity and quality followed immediately behind. Stated Ramji, "We never outsource 100 percent of anything. You may think you're outsourcing a non-core function, like coding, for example. Most of us certainly outsource coding, right? But, you forget that your chief architect today used to be a coder. If you don't do any coding anymore, you won't get any chief architects in a couple of years."

Hilti CIO Martin Petry agreed, "The challenge here is balancing the short-term opportunities that we all need to harvest, but also thinking about the second or third step. We'll need an IT architect ten years from now. If we kill the supply internally, we've lost that core strength. It's not a simple act, because you need to have pillars of expertise so that the rest of the team, and the business as a whole, can grow."

With labor costs representing a significant if not majority percentage of the firms' costs, the executives were keenly focused on optimizing the talent mix—along with maintaining the cultural stability and confidence necessary for competitive momentum.

As Petry expressed it, “Our people are highly committed. They’re trusting Hilti on the fact that we very selectively outsource only in areas that we really consider absolute commodities, like PC setup and PC support functions. That is what we outsource. The core and competitive elements of IT, we definitely keep in-house.”

Eaton’s Carroll said, “The lesson learned during these difficult times is that you have to lower your break-even. So we’re seeing some in-sourcing as a very short-term tactical response to the fact that we’ve got idle plants. But I think long term, we haven’t lost sight of the fact that the direction is outsourcing, not in-sourcing. It’s motivated by the fact that we have to become much more variable on our cost. If it’s not core to the business, it should be out of the business.”

Ramji of BT weighed both core strategy and costs, saying, “It’s not, per se, that outsourcing is a good or bad thing; it all depends on cost. In the States we’ve seen American labor is now cheaper than some Indian and Chinese labor, depending on which cities you’re in—which is a strange thing to see.”

“But there are places,” he continued, “where you can get good software coders in America for $30,000 or $40,000 a year. And if you start adding up your costs of travel to India, and the cost of management, and the fact that the engineer in India may well disappear next year… well, great, go to Dallas and get a guy at $50,000 a year. I think in-house isn’t a bad thing. It’s not a breach of strategic intent if someone outside is cheaper—but doing things outside also has its costs, which I think we’re not really adding up properly.”

Human Capital and the Quality Equation

Many of the leaders were focused on the value and quality delivered by their mix of internal and outsourced talent. Said Bechtel’s Hammerle, “We’ve had a lot of problems with not being able to control the subcontractors, because the skill level of their craft and their foreman and the management skill of their superintendents wasn’t always the best during the boom.

BT’s Ramji underscored the cost/quality question this way: “Eventually, the incentives don’t align. In IT projects, as the CIOs here well know, more doesn’t mean better. Just because you employ 1,000 programmers at ten bucks an hour doesn’t mean you get the output you want. We keep fighting, from a procurement standpoint, for cheaper and cheaper people. Which doesn’t mean you get anything done. We have 20 times the output from some people over others.”

The focus, the group felt, needed to emphasize alignment on outcomes, rather than simply rates and hours—a challenge with traditional procurement practice. But an outcomes focus can only be achieved, it was noted, through very close management of subcontracted and outsourced labor—which itself drives up costs in pursuit of potentially better value.

Nestlé Group CIO Olivier Gouin said, “We do a lot more out-tasking. This is a subtle but very important variation of outsourcing. We maintain the management of the outsourced team. We can have the hands available and executing from essentially anywhere, but it’s our leadership that is held accountable for their day-to-day management and performance.” He continued, “Most of what we do today amounts to out-tasking, not outsourcing. Because only then can you control what matters, what really delivers results—which is your output."

The Green Elephant in the Room: Cost or Risk?

"Of course, the wild card in the whole cost picture is carbon," said the Tuck School's Eric Johnson. "What about the big risk that's sitting a few miles down the road here, called government—which seems to be in a position to make moves that may not be carefully thought out. How are we planning to mitigate some of those risks that could just come out of nowhere?"

He continued, "At Stanford, it seems that every other graduate student is working on energy-related or green research, whether they're in physics or business or chemistry. Certainly, green and cost-effectiveness go hand-in-hand in many cases. But it's not always clear to me that we're doing the right thing for the right reasons. Is cost-effectiveness reason enough to go green?"

Hilti's McGowan responded, "There are two major factors in this greening effect. The first is that being a good corporate citizen is a key driver for many organizations—at Hilti, we are convinced that environmental responsibility is an integral part of achieving sustainable profitable growth in the long run. The second addresses the financial impact of legislation potentially coming down the line which will force many companies to reduce their carbon footprint and be more operationally sound."

Urs Bleisch of Holcim said, "You lower input cost—in this case, energy cost—and you encourage consumption. This is what drives people, even individually. If you want to see any change on carbon, government will have to change the price—having us internalize the external costs. As long as pollution is for free, it will not change."

Bill Blausey, Senior VP and CIO for Eaton Corporation said, "I don't think the customer decisions have fundamentally changed. Whatever the solution, it has to be cost effective and reliable."

Eaton's Dan Carroll said, "The reason why we're so focused on this is because it's important to our customers. You can see it in all of our businesses. Our automotive group is being asked to help contribute to fuel economy of the OEMs. In Aerospace, we have composite tubes to lighten the planes. We've got variable fuel pumps because we're trying to help on fuel economy. It is a key design parameter for all of our customers. We're trying to position ourselves as a power management company. So it would be hypocritical for us not to have sustainability. That's the strength of value to the customers," he continued. "Ultimately, the cost is less. We win both ways, for both reasons."

Seeking Certainty: Sourcing as Relationship

Given the significant difficulty in forecasting orders, and dramatic volatility in inputs of every kind, many of the executives were looking for ways to reframe their relationships with suppliers.

As Tony Borg, VP Corporate Operations Supply Chain at Nestle put it, "the way that we work with our suppliers has changed by necessity. The risk is there from a financial liquidity perspective. So we continuously review our strategies on how we need to deal with our upstream partners. Our focus is to make sure that we secure the important materials for the business, the money earners for us, and that sometimes is a challenge."

In such a difficult climate, the group was keenly focused on developing models for mutual success within their global supply chains. Olivier Gouin described Nestlé's approach: "We have 100,000 farmers delivering milk," he said. "We have to put in place processes to make sure the quality is there. We're working hard with farmers to help them develop their processes and integrate as part of our end-to-end."

"You cannot see them as simply suppliers," he continued. "Because from the quality point of view, from a sustainability point of view, we have to merge a lot of different KPIs and work with them to make sure we deliver the value."

Rashid of ABB concurred. "This is the most significant dimension of globalization. You have to move from a traditional buyer-seller relationship, and into more strategic cooperation—more of a true partnership."

Expanding on that idea, Eaton's Carroll cited an example that bodes well for Southeast Asia. "India, in the Aerospace industry, is very new. These suppliers are very anxious to grow their business. So they're more willing to operate under real partnership conditions than the traditional suppliers in the U.S., which have never had to do it before. We've actually helped these suppliers get into the game in Aerospace—underwriting their product recall and liability insurance, because they couldn't get it themselves. It's a two-way street."

Trust and Incentives

The executives considered at length the value of reliable relationships in supply chain. Ernst of the Georgetown School of Business noted, "One dimension that can never be underestimated in all this is trust. Without trust, there is no legal document that can capture every contingency. So the challenge is, do you trust your partners? Which invokes a cultural component, since not every region in the world operates the same way."

Hammerle of Bechtel noted that "counterfeiting has become a problem in the past and we have had to put programs in place to monitor that."

Tony Borg of Nestlé noted that "Initially, we felt we had to be cost driven. But immediately we realized we needed to develop the suppliers more intelligently. You would have of course heard of the melamine crisis in China. Some of our competitors were caught through some indiscriminate suppliers' negligence or fraud. These suppliers added melamine to their milk. Melamine mimics protein and as these competitors were paying on protein readings, these suppliers benefited financially from the scam."

"Traces of melamine are almost impossible to eliminate. In Europe and North America there are strict rules on such levels that manufacturers must adhere to. We at Nestlé have our own standards that in every instance are equal to or more stringent than local legislation. Our operations worldwide must adhere to all of these standards and are regularly audited.

To us at Nestlé food safety is never compromised. We have very high internal thresholds which are applied (as a minimum) across all our operations around the world. Wherever local laws require a higher standard, then this standard is applied."

"Obviously the suppliers involved in the above incident were maximizing their return indiscriminately. It is therefore critical to protect our consumers through proper incentives and proper controls. Along with getting the incentives right, we've put people onsite to do supplier audits, and check that these suppliers are meeting the conditions that we expect from anywhere else. The problem with cost-cutting," Borg stated, "is that these subcontractors of subcontractors generate uncertainty about sourcing. We cannot take risks with that. So we're intensely focused on the proper testing and auditing that we continue to do. To us, the quality is non-negotiable."

Trust but Verify

Eaton's Dan Carroll reinforced the importance of transparency, monitoring and sound incentives. "We put a lot of process around financial assessments," he said, "to monitor our suppliers for risk from any number of directions. If you find a supplier is in trouble, you have to act fast to mitigate the risk."

"So the question," he continued, "is how to engage with that supplier so that you get the right information. We put process around this to get a dashboard in front of us. I've got 100 suppliers right now that I think are suspect. We engage with the senior managers to get access to their data, the ratios that let you say, 'Yeah, it looks like these guys have enough cash flow to get them through.' We have a whole procedure around it. Effectively, they go on our radar screen. We tell them they're on no new business until we resolve this—which makes it important to them."

Bechtel CIO Geir Ramleth said, "We say that globalization is here to stay. And we expect a certain level of quality in product, service and relationship. But we don't always really understand the differences between the cultures. So we had to change our whole quality cycle, where we actually had to go all the way to the ore, and had to follow the material all the way through until it actually ended up where we needed it. That was culturally very different for us."

"Dealing with such things," he said, "will be much, much more challenging going forward than it has been in the past."

IT, Metrics and Comp: Alignment

The executives discussed approaches to a range of metrics and incentives designed to reinforce transparency, quality and trust. Dr. Ernst of Georgetown Business School asked, "Should we not put more effort into explicitly measuring what is the percentage of perfect orders, and what are the components all along that lead to that outcome?"

CIO Ramji from BT responded, "Let's say there are 24 steps. Everyone would claim 95 percent. You [multiply] 0.95 to the power of however many steps, and you quickly end up with much worse than 60 percent, actually. So the end customer is not happy."

"After three years of struggle," he said, "we managed to create a board-level metric. The difficulty, both internally and with your supply chain, is getting people to agree to a common standard. We did get it agreed, but then the consequences of who let down whom starts the ball rolling. This is a very tough thing to implement, because who wins and who loses tends to be all of us or none of us. This is a long-term, not-an-easy-to-do thing."

Hilti's McGowan suggested a focus on metrics in an under-reported area that would support stronger supplier relationships and build trust. "When we've talked today about flexibility, we've talked about sourcing and we've talked about suppliers. I also think we should all begin to measure supplier satisfaction."

"I believe," he continued, "based upon what we talked about today, that the health of all of our businesses depends on us having enthusiastic customers, enthusiastic employees and enthusiastic suppliers who want to work with us, because I think through that partnering we build the health of our organizations, as well as the people that work for us, and the people that supply to us. I think that last one is a critical metric that we should all be measuring."

The executives felt that the ultimate purpose of incentives—and the basis for trust in supplier relationships—is clear accountability. The conversation focused on internal as well as external incentives and ownership. Borg of Nestlé said, "For example we need to focus on improving our service to our customers. We were getting all sorts of reasons from our community as to 'why it was not their fault'. So two years ago we called in all the heads of supply chain and said, "We understand your reasons, but from now on, we don't care. If the customer doesn't get what he has ordered, you are personally accountable. If people that don't report to you are causing the issue, escalate. Incidentally I did not get one escalation"

"The performance at the group level had been running, at the time, at about 95 percent including India and China on average. Within two years, we got it to almost 98 percent. France, one of our biggest markets, was rated by their customers in France 18th out of 18. Now, they're 2nd." It is just a matter of allocating clear and unambiguous ownership.

The reason to focus this effort on supply chain was clear, according to Borg. "Supply Chain is in the best position to coordinate processes across divisions, and other functions as well."

Wrong Metrics, Wrong Outcome

Where metrics are concerned, the leaders gave the practice of Service Level Agreements (SLAs) mixed reviews. Bechtel's Ramleth said, "When you get the metrics right, you have the two-way trust. But with SLAs, the penalties normally have no relationship to the true damage that is done. So, I think this SLA stuff that came into the industry has actually hurt us in getting measurements visibility and performance on the true numbers, rather than aggregates."

BT's Ramji agreed. "I think this encourages the wrong behavior—because you don't get common interest then. You know, you have to fight each other, so people will build barriers. The trouble is everyone's educated to ask for SLAs. So the only trick is to have a common SLA—raise it to a level where both sides benefit somehow."

CIO Blausey of Eaton responded, “I have to disagree with you. I think measuring and having SLAs is beneficial—as long as they’re the right ones.” He was joined by Carroll, who said “Absolutely. Because you can have SLAs that are win-win, that reduce cost on the entire chain.”

Citing a case of an SLA’s unintended consequences, because it managed against the wrong metric, ABB’s Rashid shared a story about the general manager of a factory in France that made sunglasses. “He outsourced the frames to a Japanese company, and wrote the SLAs. And one of the SLAs was failure rate 0.5 percent, amongst other things.”

“Things went very well for a year or so, and then the Japanese came to visit his factory. And he showed them around. The Japanese leaders said, ‘What do you do with the rejects that we send you?’ He said, ‘We just throw them away.’ The Japanese were shocked. ‘Then why,’ they asked him, ‘did you specify that we include a 0.5 percent failure rate?’ There was someone in Japan sitting there destroying 0.5 percent and packing them right into the boxes.”

The power of metrics and incentives sounded as applicable to global executives as to poor dairy farmers in China. BT’s Ramji observed, “Where our business interests are tied, we’ll have to find a win. But if you set a metric that doesn’t matter, or set one that people can meet by manipulation, whether melamine or whatever, they discover a way.”

The executives shared a range of specific metrics that had led their own companies to focus on the wrong outcome—under- or over-delivering, often at unnecessary expense.

Jim Miller, VP for Strategic Accounts and End-to-End Delivery at BT Americas, said “We’ve found ways that we had been exceeding the customer’s expectation, on dimensions that really don’t matter to them. We’ve worked very hard from a supply chain standpoint, for instance, to get things to their locations quickly. And then we’ll visit again three weeks later, and it’s still sitting in the unopened box on the dock.”

IT as the Foundation for Supplier Trust

Dan Carroll of Eaton came back to the question, “How do we generate trust? That’s where IT comes in. Because trust takes transparency. ‘Can I see your books?’ I’ll ask. And if you say yes, and I understand how you run your business, I can give you more business with confidence. We need to be transparent on demand.”

“I’m not going to run your factory,” Carroll continued, “but when you can see the dip in demand just like I can, we can both plan for that. So this idea of transparency and trust is where IT matters most. Because it’s hard to do—and we need to connect 4,000 suppliers in a transparent way all over the world.”

Bechtel’s Hammerle wondered aloud how to implement that approach effectively. “We recently got some interesting feedback on that front, from our suppliers,” he said. “We put a survey out asking what we do well, and what we could do better. What jumped out at me was their saying, ‘You could try to work your systems to our processes.’”

"You know," he said, "when all we do is force our processes on the suppliers, if they've got 100 customers, they've got 100 different processes. We too rarely think of shaping process in ways that support them. We need to."

Ramleth responded, "How do we make that connection, so that we don't make ourselves inefficient, because a supplier has to charge me more because they need to comply with me? How do you get that balance?"

IT as Institutional Memory

Ricardo Ernst of Georgetown responded, "I think information technology will be the driver for connecting the strategy to the execution, because you need to go through all that to actually execute. Otherwise, how can you make sure that all these things are being connected?"

BT's Ramji jumped in. "This is why IT is so useful to society in the long run. Without process embedded in software, as soon as a person changes, things fall apart. Take call centers, for example. How many of you have been upset at ringing up a call center, because those guys churn so quickly? If we embed process in software, now you've got something that cannot go backward in time."

An Operating System for Supply Chain

"That gets us into the software business," Ramji continued. "Perhaps the analogy is an operating system. How does Microsoft Windows work, when everybody using it has a different objective? Is there an operating system for the supply chain, which we all can use, where the APIs can all be different? Is that what we really mean when we talk about transparent supply chains—is that the model we should be adopting? When you buy Windows, you can still buy and run programs on it that are different from mine—but we have a certain standard we are following, without even having to think about we're talking to each other."

Ramleth responded with an example. "We created an industry standard," he said, "as part of a consortium called ISO 15926, that effectively creates a global master dataset—which amounts to an operating system. It's totally dynamic so that you don't have data elements and attributes that are fixed. They can change all the time, with a fluid ability to deal with proxies—if you call it A and I call it B, we know that actually A and B are this same in this instance."

"It's a very young standard," he said. "And the same set of people created open source software for how it can interact. So that if you run SAP and I run Oracle, and we need to talk to each other, we can. I'm not forcing you to use my software as long as you can deliver through these standards. It's pretty cool stuff."

"People talk about the semantic web. Here's a real example where IT has come out of the wiring closet, and is doing something that seriously benefits the businesses."

The Next New Link in the Global Supply Chain

"I'm convinced that over time," Holcim's Bleisch said, "much more information will be exchanged like that. All of the parties will have to contribute to such complex projects. We'll have to do this over time, because it's just too inefficient as it is now."

Ramleth reinforced the point. "Say we need to buy some small pieces of steel from somebody that just uses Autodesk," he said. "Earlier we couldn't exchange the larger design. They had to redesign and send it to us. And we had to redesign it again."

"With this standard, we can actually take a subcomponent from one set of software, pass it out, and they can pick it up, work it over and drive it back. This makes an enormous difference in terms of agility, cycle times and re-work. I'm very, very bullish that all of this will take IT into something that drives business expansion, not just the cost reduction that IT has always been in the past. Here, we can actually drive the business and the revenue line, and compress time-to-market."

Bechtel's Hammerle called out another example. "We have another industry group called the Construction Industry Institute, and then there's FIATECH. It's a collaborative way to do this. What I've found is that we have some very dedicated people that want to solve these issues, but they do it on discretionary time, outside of their day job."

Ramleth answered, "What I did was say, 'No, you can't do that. You put that in your goals.' You'll find a whole lot of this intercompany and cross-industry work being done by very dedicated people," he said, "that really have a very high degree of belief in what they're doing, but they are afraid of talking about it as something they were proud of."

Over the course of the day, the Roundtable executives had exchanged a wide range of experiences and strategies for managing global supply chains, and the information systems needed to support transparency and trust.

But real progress, they agreed, didn't require large cadres of staff.

As Hammerle put it, "You're talking about a very small number of determined people. But you find those people, and they're the ones willing to change the world."

Participant List

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