Welcome to the September 18, 2006 issue of Theory and Practice. We publish every two weeks, examining recent events and offering opinions on key trends in manufacturing, wholesale, and retail processes. Please feel free to forward this newsletter to colleagues or others who might find it relevant.

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Global Supply Chain Maturity – Another Report of Progress

Bob Ferrari

CSC and Supply Chain Management Review (SCMR) have completed the 2006 Supply Chain Survey. This is the fourth annual survey conducted by CSC/SCMR to ascertain how companies are assessing their overall maturity of supply chain initiatives, and what impact these initiatives are having on the overall business. Manufacturing Insights has often cited this survey as an additional benchmark reference for manufacturers, and we had the opportunity last week to be briefed by Chuck Poirer, CSC's national supply chain practice partner, on the overall results of the latest 2006 survey.

This year's survey included 22 industries, the bulk of which were manufacturing driven. The international scope of the survey has broadened, with Europe representing 20.3% of overall respondents, and Asia/Pacific representing 8.3%.

The key highlights and conclusions important for manufacturers are:

➢ Supply chain efforts have matured to the point where there are no national distinctions, only industry-specific variability. Aerospace and Defense, Healthcare Supplies, discrete Manufacturing are in the lead, but the gap has narrowed.

➢ 50% of the responding firms placed their companies or business units at a Level 3 rating (on a one to five level scale), which indicates great progress has been achieved from the previous surveys

➢ Improvement was indicated across the board, with the most progress reported in sourcing and logistics, followed by supplier management, and sales and operations planning processes

➢ All four of the surveys continue to reflect that SCM efforts deliver the greatest results when SCM is included in an overall business strategy, although most firms continue to cite a lack of a strong linkage

➢ Most firms' report 1%-10% cost savings, with a range that extends up to 20%, but 17% of the respondents indicated they either did not know, or were not sure of the impact on costs.

➢ Revenue increases attributed to supply chain initiatives were also reported to be in the 1% to 10% area

➢ The link to technology remains strong, but overall user expectations have outpaced actual improvements. Technology as an enabler is still a thorn in the side of many practitioners, which reinforces the continued belief that getting the process right must precede the application of advanced technology. Interesting enough, Enterprise Resource Planning (ERP), now perceived to be a much broader supply chain support application, and Warehouse Management Systems (WMS) were the most favored improvement tool.

From this analyst's perspective, there were also some new and interesting perspectives brought out in this year's survey. One was a noted slippage in self-rating among the high tech industry respondents,

which was a big surprise, since this industry has always prided itself in advanced supply chain capabilities. Apparently the industry's continued efforts in globally extending product design, manufacturing, quality, and customer service capabilities are having a cumulative impact.

Most firms continue to optimize supply chain efforts locally, vs. globally, and in spite of all the bluster, few companies seem to be collaborating closely with key customers, which indicates little progress since last year. Also apparent from the survey is that cost reduction remains the overriding objective for manufacturers, while agility is sacrificed.

Another surprise was that distrust among supply chain functions and IT groups still exists, with only 34% of respondents providing high ratings in working relationships among supply chain and IT leadership. Clearly, these two groups need to come together in joint planning and common goals.

The survey also brings out some interesting geographic perspectives. Asian and European companies were much more optimistic about the impact of supply chain initiatives on increased revenues this past year, while North American companies were not. 83% of respondents from Asia noted that supply chain initiatives had a 1% to 20% impact on increased revenues vs. 58% of North American respondents.

Regarding the overall impact of supply chain initiatives on cost, 74% of respondents from both Asia and North America indicated 1% up to 20% cost savings, but North American companies were more inclined to cite 6% to 10% cost savings, while Asian respondents were more concentrated in the 1% to 5% range. Manufacturing Insights feels that these findings reflect the increasing trend of North American based OEMs transferring more value-chain activities to their global ecosystem suppliers, perhaps having these suppliers absorb more of the costs as well.

In the coming months, Manufacturing Insights will be broadening its supply chain research into more global and regional based perspectives to uncover more of the underlying factors that are still inhibiting supply chain maturity.

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The Challenge of Change Management

Jay Holman

During a panel discussion that was part of the recent StartIT Manufacturing Day in Chicago, Manufacturing Insights had the opportunity to ask 4 leaders from 4 different manufacturing industries what surprised them most about the IT implementations they had recently completed. The panel members were unanimous: the greatest surprises were those related to the people issues they encountered along the way, not the technology issues. Most leaders in manufacturing organizations realize that any major change in an organization is going to meet with resistance and encounter challenges related to employee buy-in and acceptance. However, many leaders still do not appreciate just how strong that resistance can be and how much time and effort is required to overcome those challenges if they are not dealt with effectively and proactively right from the start of a large IT project.

While people issues were common across the manufacturers, the details of the issues and the advice for dealing with them varied. In general, the advice fell into three categories:

Involve the users of the new system in the design phase of the project. Often the employees who will actually be using the new software are not included in the project until the critical decisions around an implementation have already been made. Any feedback provided by users comes too late to make changes, so users feel ignored and become disengaged from the process. Not only will including users

early in the design phase improve acceptance of the new system, it will most likely lead to a better solution in the end.

Make sure experienced IT training professionals provide all necessary training. Training is a critical step in the implementation process, and without effective training users will not be able to take full advantage of a new IT system. If users are forced to use a system that they do not understand or appreciate, they are more likely to resist changing from an approach that they are familiar with and that seems to work just as well. The task of training usually falls on the shoulders of a company's IT department, which may or may not have a professional training staff. Training is a difficult task that requires a special set of skills, and if those skills do not already exist in the IT department, outside help should be brought in.

Make sure there is visible, high level support for large IT projects. In addition to making it more likely that a project is appropriately funded and supported, high level support for large IT projects can also help smooth over the people issues that these projects encounter. If users know that they will not be able to simply avoid using a system until the local leadership gives up trying to make them use it, they will be more likely to accept it and move on.

Large IT projects are never easy, and surprises in the form of unexpected challenges are bound to occur. However, when so many manufacturers are experiencing these people challenges they should no longer come as a surprise: instead, project leaders should be aware of the issues and should take steps to prevent them from impacting the project's budget or timeline. The advice from our panel should provide a good starting point for those manufacturers who are planning large IT projects and who want to have one less surprise along the way.

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The Securitized Supply Chain

Bob Parker

I have always believed that implementations of service oriented architectures would follow a distinct progressive path. First, the transactional baselines would establish a system of record and the code behind the applications (e.g. ERP) would transition their proprietary application program interfaces (APIs) to more open mechanisms such as web services. This step would allow for the assemblage of specific closed loop control applications that would form the system of decision for the company. As the company built competency in generating these compositions, they would be able to assemble technology enabled partnerships with external constituents – creating a system of venture.

I was thinking about this scenario when we received a client inquiry about financing options specific to supply chain activities. The client wanted to know if we were aware of anything going on beyond standard asset based practices such as factoring of receivables. I wasn't aware of anything, but I started to think about the ad hoc joint ventures supply chain partners could form based on a common management system fashioned from assembled pieces of web services.

Once in place, there would be a limitless number of opportunities to partner, but would be constrained by the participants' access to capital and general appetite for risk. However, what if there was a supply chain finance market where investors could purchase debt instruments in specific ventures where future cash flows from the venture secured repayment? A group of companies would put together a prospectus on the venture and regularly report back to the investors on progress against the business plan.

Let's look at a hypothetical example in consumer packaged goods. Let's say Turtle Wax wants to run a special father's day promotion. They partner with Sonoco products to design and produce special packaging, Hallmark creates a specialized father's day card to include in the bundle (To Dad – I promise to wash and wax your car), and Wal Mart is given exclusive retail rights with UPS providing direct to store logistics. First, this would be very complex to execute today and will be eased by the emergence of service based information systems. More importantly, many of these ventures are killed on the drawing board because the participants don't want to commit resources given the uncertainty of success. However, if they could solicit investors to underwrite the tooling, artwork, point of purchase displays, inventory, etc., they might be willing to assemble a common management system and execute. The investors would be paid back, with interest, as sales began to roll in from Wal Mart stores and the residual profits from the venture would be shared by the participants.

The concept extends well to other industry segments as well. An airline, airframe designer, and engine manufacturer might create a venture to serve a set of city pairs that couldn't otherwise make the cut. It is easy to begin to spitball several ideas, from automobiles to medical equipment to chemicals. These would be riskier grade investments for the public and would have to carry higher yields than normal corporate bonds.

Efficient electronic trading markets and plenty of liquidity seem to make it reasonable from a financing perspective. What will really enable this activity will be the evolution of flexible IT architectures that will allow participating companies to contribute processes and information to the virtual joint venture that would allow it to have a common management system without a physically separate organization. Innovation will flourish with these abilities.

But is it reasonable to believe that this could happen? If so, how long will it take? Are there any examples that might provide some early indicators of companies doing some of this? Let me know your thoughts by e-mailing me at info@manufacturing-insights.com.

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Sony PS3 – An Update

Bob Ferrari

Back in May, Manufacturing Insights authored an article in this newsletter (*Sony PlayStation3- The Importance of Supply Chain Capability*), which provided a perspective on the delayed launch of the much anticipated Sony PlayStation3 gaming device. In that article, we pointed to Sony's design choices, opting for the relatively new and more expensive Blu-ray DVD technology, which may result in a more expensive and difficult-to-manufacture product. We further pointed out that with this decision, along with previous delays, Sony had no choice but to address supply chain readiness, capability, and business intelligence as the most critical success criteria for supporting a successful launch of the PS3 in time to take advantage of the 2006 holiday buying season.

Last week, Sony announced that problems in volume-manufacturing of blue laser diodes would cause an additional delay to shipments, and will force the company to half the previous number of consoles, from the previous planned 4 million, to now 2 million units. Thus only half as many consoles will be available for both Japan and U.S. markets, and shipments to Europe will be delayed until March 2007. Sony claims that manufacturing yields are as high as 80%, but Sony's chief scientist, Shuji Nakamura, who invented the blue laser, was quoted. "To put it simply, it is difficult to make. We are struggling but we are doing our best".

As a result of the announcement, Sony's shares took a hit last week, and the financial community is now questioning whether the pent-up appeal for the game platform has declined, and what overall impact this reduction of shipments will ultimately have on Sony's future profits.

Supply chain capability readiness does indeed have an impact on business and bottom line results. Continue to stay tuned.

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Noteworthy

➢ Ninetowns Digital World Trade Holdings, a provider of internet based export declaration processing, announced that it has entered into a definitive agreement to acquire a 16.25% equity interest in Global Market for US$5 million. Global Market provides marketing services to Chinese manufacturers and sourcing services to volume multi-national buyers.

➢ Yokogawa Electric and OSIsoft announced they have entered into a partnership to serve industrial automation markets throughout much of Asia. The partnership gives Yokogawa full use of the operational decision making and enterprise management applications from OSIsoft, and expands OSIsoft access in the fastest growing automation markets in the world.

➢ Symbol Technologies announced that Nowaco, a distributor of frozen, chilled and fresh food products in the Czech market, has implemented an enterprise mobility application for its frozen product business. The application will help Nowaco meet the EU laws demanding traceability of food products and will be based on the MC9000 series of mobile terminals.

➢ SCA Technologies, a provider of software products and services in predictive cost modeling and optimization, announced that its SCAplanner application has been licensed by Lone Star Steel Company. This application supports costing, budgeting, operations and financial analysis for business decisions.

➢ Epicor Software, a second tier ERP application provider, introduced new features and functionality to address specific requirements of aerospace and defense manufacturers in its latest release of Epicor Vantage. The company also announced new features to support automotive industry requirements.

➢ Cisco and SAP announced that they have entered into a joint marketing agreement for the United States and Canada that will address governance, risk and compliance (GRC) business processes and IT control issues across a company's IT infrastructure -- from the network layer all the way through the application layer. The joint effort will enhance the effectiveness of SAP applications for GRC by taking advantage of the access and identity intelligence resident across Cisco's Service Oriented Architected Network Architecture (SONA). The marketing agreement includes collaboration in sales and marketing activities as well as advanced service offerings. SAP also said it will be adding three new products to its GRC offering - SAP GRC Repository, SAP GRC Process Control and SAP GRC Risk Management.

➢ 4CS, a provider of warranty management software, announced that American Standard Warranty Company (ASWC) has licensed iWarranty software to help manage extended warranty processes and to enhance customer satisfaction. They will implement the iWarranty eClaim, Reporting and Analytics, and Service Contracts modules.

➢ DataCore Software announced that The Machine and Turbine Union (MTU) Friedrichshafen, a worldwide manufacturer of diesel motors and engines, has deployed DataCore's SANsymphony software to manage and virtualize its growing storage network. The application currently manages

over 60 terabytes of production data supporting various data bases, SAP R3 and advanced computer aided manufacturing and design applications. The software enables all the storage to be managed centrally resulting in lower overall administrative costs.

➢ DemandTec, a provider of Merchandising, Sales, and Marketing software for retailers and consumer products firms, announced that Best Buy will renew and expand its existing licensing agreement for the DemandTec Price module. The expansion includes acquiring a global license to support its international expansion.

➢ From the "they did what?" department. Industrial conglomerate Illinois Tool Works announced an agreement to acquire software vendor, Click Commerce. Click had its roots in the e-business boom, supporting channel management processes for machinery, equipment, and consumer durables manufacturers, but had become something of an application orphanage after picking up lackluster software companies like Optum, WorldChain, and Elance. ITW will not understand how to manage a software business so existing customers should cross their fingers and put a replacement strategy in motion as quickly as possible.

➢ Perception Software and Agile Software announced an agreement to provide Perception's EDAConnect product as part of the Agile 9 PLM Engineering Collaboration application. Under the agreement, Agile will sell EDAConnect to its Agile 9 customers.

➢ Swedish contract manufacturer, PartnerTech, has purchased components for financial control, manufacturing, engineering, supply chain management, strategic capacity and material planning, and business performance from IFS. The implementation of the first phase will begin at PartnerTech's plant in Atvidaberg, Sweden, and is scheduled for completion in the spring of 2007. The first phase has a total value of over $1 million. Subsequently, PartnerTech plans to implement the application at its subsidiaries in Norway, Finland, and Poland. The total value for IFS over the coming three years is estimated at around $2.7 million.

➢ Retalix, a provider of software for food retailers and distributors, announced the general availability of the Retalix InSync Master Data Management product (MDM). The company also announced that C&S Wholesale Grocery has implemented their supply chain management modules.

➢ Fluent, a wholly-owned subsidiary of ANSYS and a provider of simulation software and technologies designed to optimize product development processes, announced the release of Fluent Connection 1.1 software that supports the process of creating simulation models based on design data from CAD software applicaitons.

➢ UGS announced the Tecnomatix Production Management portfolio, a family of manufacturing shop-floor applications that provides integration of production management with a company's overall PLM process. Tecnomatix Production Management enhances the value of PLM by linking product design and production processes, enabling manufacturers to accelerate product launches, streamline regulatory compliance, facilitate lean manufacturing and implement continuous process improvement.

➢ ILOG announced that JRules, part of its business rule management system (BRMS) product line, has achieved "Powered by SAP NetWeaver" status. ILOG JRules will allow business and technology managers to better manage their policy-intensive decision services and processes through integration with the SAP NetWeaver Portal component of the SAP NetWeaver platform. ILOG has more than 700 customers worldwide.

➢ Mercury Interactive Corporation announced that SAP will resell Mercury LoadRunner, Mercury's load testing software, across South America, Central America, Mexico and the Caribbean.

> Questra Corporation, a provider Intelligent Device Management (IDM) applications, announced general availability of the Questra IDM Application Suite version 5.2 on the SAP NetWeaver platform. With this latest version of the Questra IDM product, manufacturers implementing device networks are able to use their existing SAP NetWeaver infrastructure for deployment.

> Oracle announced the general availability of Oracle Transportation Management 5.5. The first product release since the acquisition of G-Log, Oracle Transportation Management 5.5 seeks to enable companies to lower transportation costs, improve customer service and asset utilization, and provide flexible, global fulfillment options.

> IBM announced today the opening of a multi-million dollar, high performance software and services laboratory in Sao Paulo, Brazil.

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Manufacturing Insights Latest Research
http://www.manufacturing-insights.com/MI/research/getlist.jsp

Bob Parker, Vice President of Research
Creating an Effective SHOMI(SAP, HP, Oracle, Microsoft, IBM) Strategy

Creating a Fulfillment Execution System

Pete Abell, Program Director, RFID & Sensor Networks

Joe Barkai, Program Director, Product Life-cycle Management
Automotive Manufacturing Industry Update, 2Q06

Farming, Construction, and Industrial Machinery Manufacturing Industry Update, 2Q06

Aerospace and Defense Manufacturing Industry Update, 2Q06

Bob Ferrari, Program Director – Supply Chain Strategies
Electronic Component Manufacturing Update, 1Q06 and 2Q06

High-Tech Manufacturing Industry Update, 1Q06 and 2Q06

Supply Chain Collaboration and Analytics: The Most Challenging, Yet Rewarding Process Capability

Jay Holman, Senior Research Analyst
Automotive Manufacturing Industry Update, 2Q06

Farming, Construction, and Industrial Machinery Manufacturing Industry Update, 2Q06

Aerospace and Defense Manufacturing Industry Update, 2Q06

Electronic Component Manufacturing Update, 1Q06 and 2Q06

High-Tech Manufacturing Industry Update, 1Q06 and 2Q06

Mike Witty, Program Director, Demand Management
Intelligent Decision Models: Getting the Most out of Demand Management

Ng Buck-Seng, Associate Director, Asia/Pacific
2005 Manufacturing and Enterprise Applications Landscape in Thailand

Mang-Teck Tan, Director, Asia/Pacific
Asia/Pacific (Excluding Japan) Manufacturing IT Spending 2006-2010 Forecast

Ivano Ortis, Research Manager, Europe
Western European Consumer Product Goods, 2005–2010 IT Spending Forecast

Western European Consumer Packaged Goods Industry Pulse: April to June 2006

Western Europe Retail Pulse: April to June 2006

In the News

➢ Manufacturing Insights Europe Says IT Vendors Must Go Vertical

➢ Retailers and Suppliers Collaborate to Crack RFID Code

➢ Manufacturing Insights' Survey Reveals Intellectual Property Protection as Top Risk for Companies Operating in China

➢ Asia/Pacific (Excluding Japan) Manufacturing IT Spending Will Reach US$22 Billion in 2010 at a CAGR of 7.7%, Says Manufacturing Insights

➢ Manufacturing Insights Calls for Auto Executives to Reevaluate Warranty Repair Process

Manufacturing Insights Upcoming Analyst Speaking Engagements

➢ IDC European IT Forum, September 25-26, 2006, Paris, France

➢ The 2nd Annual Warranty & Returns Management Summit, September 25-28, 2006, Chicago, IL

➢ Supply-Chain World-South East Asia 2006, September 26-27, 2006, Singapore

➢ Supply Chain Council, SCOR/Lean/Six Sigma Convergence, October 30-31, 2006, Orlando, FL

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