

Welcome to the September 4, 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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Supply Chain Progress in Southeast Asia?

Ng Buck-Seng and Tan Mang-Teck

Manufacturing Insights recently reviewed the key findings drawn from the 2005 Annual Supply Chain Benchmark Study for Southeast Asia (SEA) executive summary report November 2005. The reference document presents high-level results of the sixth annual benchmark study conducted by iCognitive Pte Ltd on behalf of the Supply Chain Council (SCC) Southeast Asia Chapter. iCognitive is a Singapore-based supply chain consulting company providing expert counsel and hands-on assistance to clients' supply chain management initiatives. It champions SCC's supply chain operations reference (SCOR) model and its applications to help firms (in SEA and increasingly in the Greater China region) improve their supply chain operations. The company also links the SCC with industries operating in the region and provides SCOR benchmarking services. The SCC is a global, not-for-profit association with close to 1,000 corporate members worldwide and established chapters in North America, Europe, Greater China, Japan, Australia/New Zealand, SEA, Brazil and Southern Africa. The council is dedicated to improving the supply chain efficiency of its practitioner members.

The Benchmark Study

Key objectives of the benchmark study include demonstrating the supply chain performance of SEA companies based on SCOR metrics, as well as providing participating companies with insights into where they stand against their regional competitors, together with the improvement gap to becoming "best-in-class" in their industry.

Both operational and financial metrics were used to do the comparison. The majority of operational metrics utilized were based on SCOR version 7.0, but metrics such as 'delivery performance', 'days of sales outstanding' (DSO), and 'days of payables outstanding' (DPO) were from version 6.1. This approach caters to companies that have difficulty collecting data and deriving their operational metrics based on the new SCOR version 7.0. Financial performances of participating companies were assessed using five metrics that include: operating income, operating expenses, net profit (after tax), sales growth and asset turns.

The results from this study of 2005 are based on the calendar year of 2004. A total of 263 companies from Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam participated in the study. They represent nine industry groups including apparel, footwear and luxury goods; chemicals; consumer products; electronics; food, beverages and tobacco; industrial; logistics; oil and gas; and retail.

Overall Supply Chain Performance

The report presented overall supply chain performance by region and industry groupings. A total of 10 supply chain metrics were covered in the study and while the full results were made available to participating companies, only sample metrics were provided in the executive summary report. Figure 1

illustrates overall supply chain management (SCM) performance in the region based on the sample metrics of cost of goods sold (COGS), DSO, DPO, and cash-to-cash cycle times. The results include 'best-in-class' (BIC) and 'median' performances. BIC performance is defined as the average performance of the top 20% of companies, while median performance represents the average performance of the 40th to 60th percentile of companies.

The study yielded the following broad key findings in addition to specific observations at the level of individual metrics and various industry groups:

- **Substantial difference between BIC and median supply chain performance exists.** This clearly confirms that BIC supply chain performers in all industry groups are reaping big financial and operating advantages over their competition. Putting in perspective these performance gaps, it is important to note that there are still many companies whose performance is worse than the median. Many such companies have negative net assets, and less than satisfactory inventory days of supply and COGS.
- **Gaps in performance between companies are larger within a certain industry group than across industry groups.** This attests to the greater relevance and importance of superior supply chain performance for companies within an industry group in the context of industry-specific dynamics. Comparing detailed performances across industry groups is more difficult and less meaningful because of many factors including widely varying product supply chain characteristics, as well as customer demands and expectations among different industry groups. For example, supply chain characteristics differ between perishables and non-perishables; or between commodity and non-commodity (innovative) products – making detail comparisons strenuous and less useful.

Manufacturing Insights feels that the greater gap in performance within a specific industry group comes primarily from forces that include greater differences in performance management and the accompanying ability to drive complexity reduction among the companies. The better performance of BIC companies within an industry group is due at least in part to a greater competency of combining systems to measure performance and processes to take corrective actions.

- **Few companies have all-round supply chain performance in SEA.** Three supply chain metrics: inventory days of supply, cash-to-cash cycle time, and COGS were used as key indicators of companies who run their supply chain well. The benchmark data yielded only four companies (out of 263) that are BIC in all three metrics, 21 companies that are BIC in two out of the three metrics, with most companies BIC in only one of the three SCOR metrics. The disparate ownership of the various supply chain metrics within most of these organizations is a possible contributing factor for the lack of all-round performance. For example, DSO can be managed by the sales function; inventory days of supply by the production function, and DPO by the finance/purchasing function.

Manufacturing Insights believes that the result could also be due partially to the fact that many SEA manufacturing companies have razor thin product margins to begin with. Electronics manufacturing service (EMS) providers, original design manufacturers (ODM) and component manufacturers in SEA typically operate with razor thin profit margin that could limit their financial resources in supply chain improvement investment.

- **Lack of strong and clear trend indicating improvement or degradation in supply chain performance over the last five years.** Analyses of data for the last five years shows relatively stable performance across the SCOR metrics used, and none of the metrics shows any consistent increase or decline in performance in both the BIC and median categories. Potential root causes for this include: wrong and/or unbalanced performance measurements, lack of comprehensive/deeper understanding of SCM, and the fact that many companies still consider managing their supply chain processes well a lower priority as they struggle to cope with production volume.

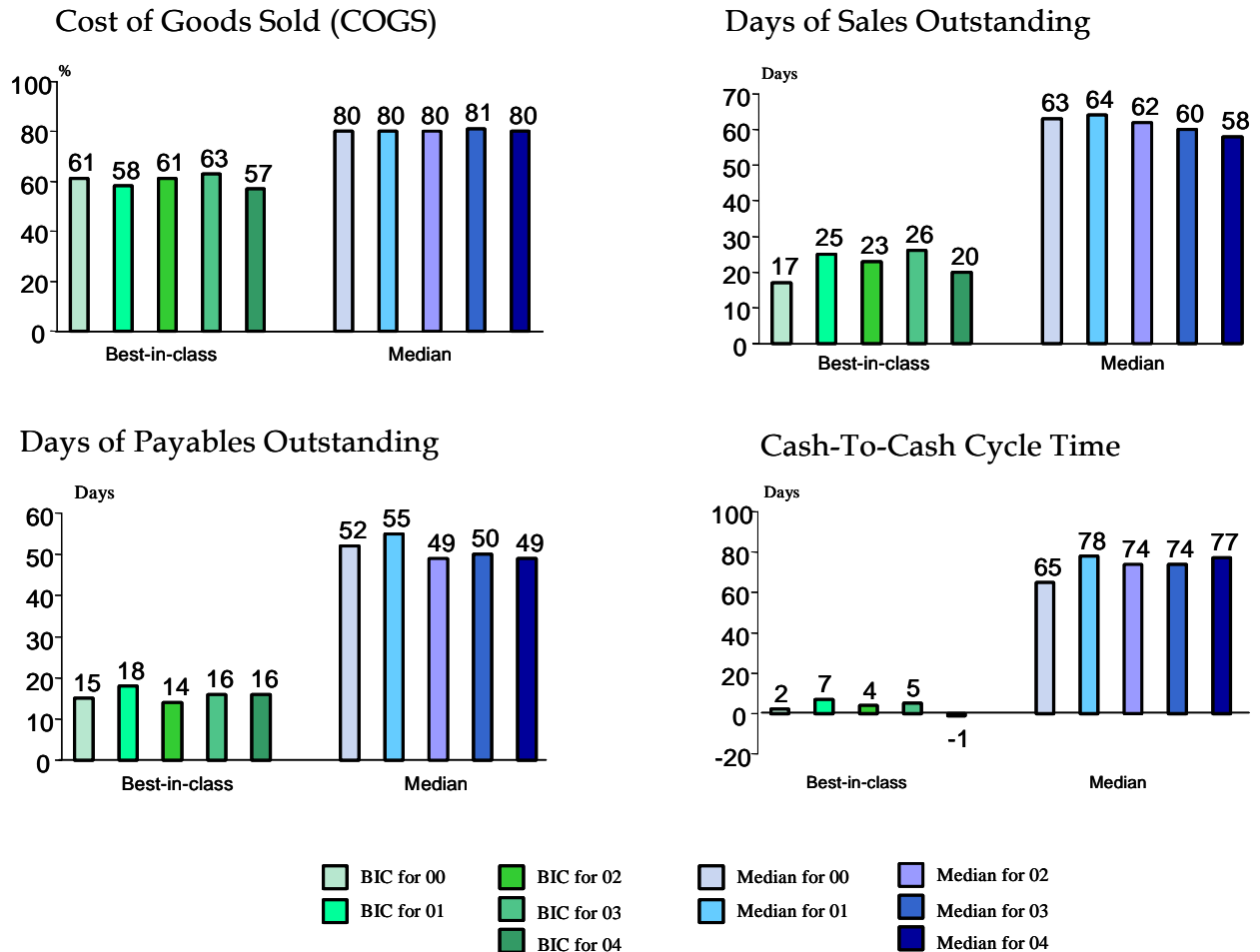
Manufacturing Insights is of the opinion that the lack of an integrated SCM improvement framework is a cause for this result. Without guidance by a consistent and integrated framework, the ad hoc supply chain improvement effort of SEA companies makes it difficult to produce a strong and clear trend.

The last two points are of particular interest, as they point to the fact that good and sustainable SCM is still in its early days in SEA. Few companies master their supply chain well enough to be BIC on more than two SCOR metrics and there is no clear trend of supply chain performance growth in all the metrics used.

In the absence of data on the identity of companies involved in the benchmarking exercise, it may be presumptuous but nevertheless worth hypothesizing that SEA companies are less mature than their counterparts in the U.S.A and Europe, when it comes to SCM processes and practices. Manufacturing Insights believes that there is a lot of scope for SCM maturity studies involving Asian (including SEA) companies, as well as opportunity for iCognitive to incorporate maturity assessment in their future benchmarking exercises. The relationship between supply chain practice maturity and supply chain performance has been substantiated in studies elsewhere – with the stage of maturity correlated to performance, profitability, and sales growth.

FIGURE 1

Overall SCM Performance in the Region



Source: iCognitive Annual Supply Chain Benchmark Study, 2005

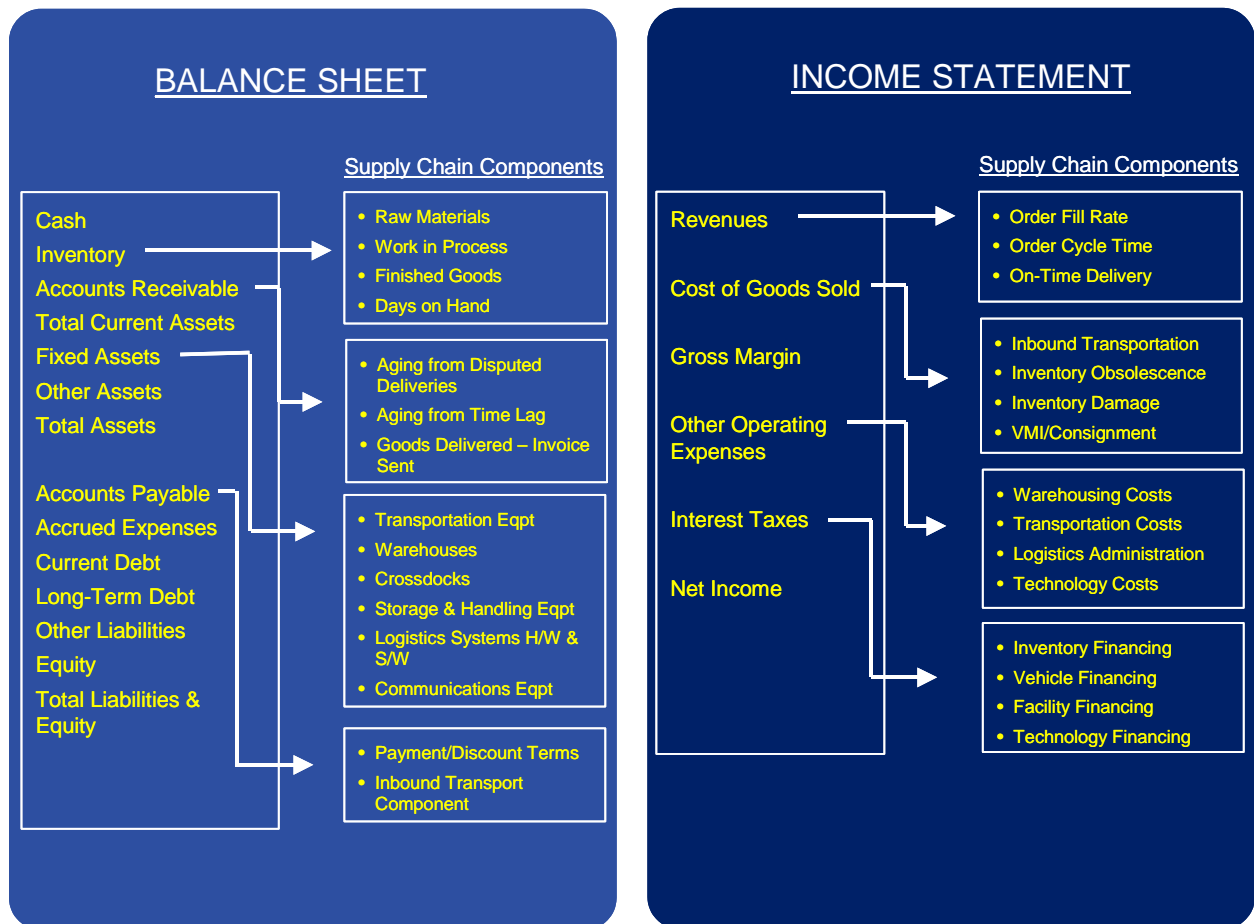
Link Between Supply Chain and Financial Performances

In order to understand the link between SCM performance and financial performance, the benchmarking study also identified companies that were both BIC in any of the three SCOR metrics (mentioned in third bullet point of the previous section) and in any of the five financial metrics. After surveying financial performance for two years, the result so far did not provide very conclusive evidence on the close link between supply chain performance and financial performance. In this respect, the 21 companies that are BIC in two of the three SCOR metrics showed some link. The four companies that are BIC in three SCOR metrics showed a link, with three of them BIC in one or more of the financial metrics as well. The weak link between superior SCM and financial performance in this instance may result in some critics claiming too much causal ambiguity involved in attributing the good financial performance of a firm to a well managed supply chain. They may also argue that overall financial performance of an enterprise is influenced by many other factors such as the economy, energy costs, exchange rates, geopolitical issues, natural disasters, and terrorism, among other factors. Many of these are beyond the control of the company but have significant impact to its financial health.

Despite the weak correlation between superior SCM performance and financial performance from the study, Manufacturing Insights is of the opinion that managing the supply chain of a company well does have direct impacts on its financials. Figure 2 illustrates the different supply chain components that have direct impacts on different line items of a company's balance sheet and income statements. As a result, there is significant basis and opportunity for firms to ascertain and quantify the impact of various supply chain activities/initiatives on their companies' financials. SCOR, together with its associated metrics, will form an excellent framework for such impact studies. Studying the impact of both positive and negative supply chain (such as operational disruptions) events on the financial performance of a company should constitute additional approaches for linking supply chain and financial performances.

FIGURE 2

Supply Chain Management Impact on A Firm's Financials



Source: Manufacturing Insights, 2006

Sustaining Supply Chain Performance

The overall conclusion of the 2005 Annual Supply Chain Benchmark Study for Southeast Asia (SEA) executive summary report is that very few companies in SEA can claim mastery over their supply chains and fewer still have managed to translate any SCM competency into superior financial performance. Anecdotal evidence from companies operating in the region points to the generally more reactive nature of supply chain management – with ad hoc programs to address the most pressing supply chain

problems. Even in cases where companies plan their supply chain initiatives better, many such initiatives are considered as "once off", receiving little continuous attention once objectives/targets are achieved. For many companies, business is as usual with a new "technology shell" – instead of focusing first on streamlining/improving their supply chain processes, they mainly allocate their investments on IT applications. Many of them do not realize that without good processes, and their IT applications configured to support inferior processes, they will see limited improvement in their supply chain operations.

As more and more SEA companies establish their own or plug into global value networks, many will come under extreme pressure to competently manage high-performance supply chains. They can ill-afford reactive and experimental supply chain management practices/approaches. Manufacturing Insights believes that superior supply chain performance comes from an integrated framework where supply chain strategic goals are aligned and linked to day-to-day supply chain operational processes and metrics. Key ingredients of this framework include:

- Use of lean and consistent processes as the base - these are defined and understood across different stakeholders of the supply chain
- Open and adept collaboration to bring about maximum synergies at all levels of the supply chain - from internal stakeholders to external business partners and customers
- Improvement of supply chain decision-making via intelligent decision models – this involves setting complete control loops that connect strategic, tactical and operational decisions

The rigor of continuous improvement (CI) tools such as Lean Sigma and its convergence with process models/metrics such as SCOR will bring about process consistency and confidence to the supply chain. This needs to be complemented with supply chain agility that comes from improving and speeding up decision-making. Over and above these ingredients for high performing supply chains based on agility and effectiveness, companies need to adopt a dynamic CI mindset for SCM. It is only with such a mental model that companies can achieve sustainable supply chain performance.

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A New Paradigm for Strategic Sourcing

Bob Ferrari

In my previous research report on the need for more intelligent, as well as more timely decision making capability for global supply chains, I highlighted the important need for manufacturers to look for ways to connect strategic, tactical, and operational control loops. Implementing smarter supply decisions requires that companies invest in value-loop applications that balance the economic factors of cost, service levels, proper asset placement, and synchronization of overall supply chain processes. Establishing an overall global supply chain business strategy, mitigating potential risks to that strategy, and creating a closed-loop information flow across tactical and day-to-day execution events is the prescriptive framework for insuring a more intelligent as well as responsive supply chain.

One area where these concepts are really impacting manufacturers is the strategic sourcing of supply and the overall supply risk management process. A highly competitive environment in many industries has caused many manufacturers to absorb commodity or component cost increases, trying to avoid as much as possible, passing price increases on to key customers. Instead, manufacturers have tried to either increase productivity or drive innovation in business processes to wring-out additional costs.

But the challenge is getting more difficult. Copper prices are up 192% in two years, and climbing due to unforeseen interruption in supply. Nickel is up 103%. In the aerospace and defense industry, titanium is one of the most critical commodities for building airplane materials, and Airbus and Boeing are jockeying to insure longer-term price stabilization and sourcing of supply. We all feel the residual impacts of high-energy prices in all aspects of business and transportation costs today.

The sum total of these business forces has been a dramatic increase in the outsourcing of more manufacturing and design of products to lower-cost regions across the globe, where cultural, language, time, and business practice differences add new challenges and added risks for procurement and supply planning organizations. This dramatic shift to strategically managing and controlling the risk of supply is a new skill few manufacturers are currently equipped to deal with. Manufacturing-related procurement organizations, that were previously grounded in tactical procurement processes are in a forced transition that demands mitigation of risk in supply, as well as the need for control-loops to insure more early-warning to pending interruptions in supply.

Manufacturing Insights believes that manufacturers need to be in a perpetual state of strategic sourcing of the direct materials required in the manufacturing of products. The concept of a value-loop strategic sourcing process, that mitigates overall supply risk, insures resiliency, and connects tactical and operational information control-loops should be on the business process agenda for manufacturers, as well as retailers.

To that end, we are in the process of conducting research interviews to determine what the key business process, organizational, and technology support issues that are hindering manufacturers from implementing more robust supply risk management practices. What process capabilities make-up this new capability, as well as what are the best technologies for enabling such strategic supply risk capabilities? If you are a chief procurement officer or senior procurement manager within a manufacturing company who can provide insights on these topics for other manufacturers, please contact me to participate in a 45-minute interview on this topic. I can be reached by email at bferrari@manufacturing-insights.com.

All participants will receive a complimentary copy of the final report, and any sensitivities to corporate identity will certainly be accommodated.

Quick Poll

Click on the link to answer the question.

[How would you characterize the current overall strategic sourcing or supply risk management process at your company?](#)

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Lean Meets OPT: Choosing the Right
Tool for the Job.

Bob Parker

In the late 1980's I was involved in a project to overhaul my company's approach to analyzing program profitability. We were mostly serving the defense industry so I wanted to be able to re-think how we applied costs to products and still comply with the earned value management standards that the

Department of Defense (DoD) encouraged. As part of my research I signed up for a conference with the exciting title *Cost Accounting for the 90's*.

The opening keynote was given by Robert Fox who had just co-authored a book with a retired Israeli military officer, Eli Goldratt, entitled *The Goal*. The book, written as a parable, laid out the principles of using a bottleneck to dictate the scheduling of a factory. I was completely fascinated by the concept, called the Optimized Production Technique (OPT), and quickly changed the course of my project to focus on applying it to our company's various divisions.

After completing training, I brought the process to one of our foundries for implementation. There was an inspection operation that was an obvious constrained resource and, by applying the drum-buffer-rope principles, we were able to cut lead times from twelve to four weeks which changed the marketplace and resulted in substantial revenue and profit growth for the division. Encouraged by this success, I moved on to another division, this time a precision machine shop.

However, this facility didn't have an obvious bottleneck and, in fact, had plenty of capacity to support the market. With the market as the constraint, the OPT approach only delivered modest improvements and plant management was seriously suspect of any program that dictated that expensive machine tools go idle on purpose. The original facility continued to have success, but a company wide roll out lost momentum.

About the same time, James Womack and company at MIT were digging into the success of the Toyota Production System and, in 1990, published the now popular book *The Machine That Changed the World: The Story of Lean Production*. Like OPT, lean principles eschewed keeping factories running large lot sizes for scale efficiencies in favor of calibrating operations to market demand for scope efficiencies. Unlike OPT, lean sought to balance capacity and calibrate it to demand (instead of elevating a bottleneck) which made it more appropriate when market demand was the constraint. As it turns out, most plant scenarios involve having more capacity than needed for the market and lean became more popular. Had I been better informed on the Toyota Production System, I could have used it at the machine shop and taken a "right tool for the job" approach to other divisions across the company.

This bit of nostalgia came back to me recently as we were discussing approaches to lean and material replenishment with the key players involved in a sustainment program for a military platform. The military branch and the key suppliers (e.g. airframe, engine, avionics) had done a good job in value stream mapping the processes and setting up kanban based replenishment. Their concern was around the next tier of suppliers who typically had 26 week plus leadtimes for specialized integrated circuits, engine blades, and castings. Just setting kanban sizes with automated replenishment would not work.

Queuing theory tells us that, when a plant approaches seventy percent utilization, order backlog increases geometrically which manifests itself in long lead times. So these second tier suppliers cannot calibrate their factory to demand and balance their resources in a lean fashion because they have at least one constrained resource that can't keep up. Instead, they have to dust off copies of *The Goal* and begin to apply OPT.

The military and its primary suppliers must educate these second tier vendors on the principles of OPT. Instead of setting a kanban signal to do inventory buffered replenishment, they must reserve (and compensate) capacity on the constrained resource and release replenishment signals to consume capacity. The people on the call understood the concepts, but also asked us about how the approach could be made consistent through the application of software applications.

Early supply chain software pioneers like i2 embraced the constraint based model to do factory scheduling and many of the vendors that followed did the same. Lean automation vendors have stayed true to lean principles and, because this is a sustainment program, spare parts planning applications can

assist in forecasting need. The final conclusion was that the parties would have to build a planning hub that could incorporate the various analysis methods and enable the execution and monitoring of the closed loop processes. We will be watching their progress as it could be a leading example of managing complex multi-tier supply networks.

Do you have some thoughts on how these complex arrangements might be better managed through technology? Send me your comments at info@manufacturing-insights.com.

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Aerospace Wars – Rom Le Bourget and Farnborough to Bangalore and Mumbai

Joe Barkai

As aircraft makers Boeing and Airbus continue to compete for a larger market share, the real battlefield moves from the air shows in Le Bourget and Farnborough to the design centers in India. Last month, the rival companies made a number of significant announcements that shed light on the role India will play in their long-term market strategy.

Airbus' parent company EADS announced plans to invest as much as 2 billion euros in India over the next 15 years in manufacturing and in research and development facilities. The investment will include a technology center and an Airbus engineering unit, employing as many as 2,000 workers. The engineering unit will focus on engineering analysis and design and will develop business relationships with Indian aeronautic suppliers.

EADS, which is currently represented in India only by its commercial Airbus, division, is also discussing a cooperation between its Eurocopter subsidiary and India's Hindustan Aeronautics Ltd (HAL) to develop a new military helicopter.

Having done an estimated \$18 billion in India in two years, Boeing is also investing in developing the Indian market and bolstering long-term relationship with the Indian government.

Boeing recently signed an agreement with the Indian state of Maharashtra to set up maintenance, repair and overhaul (MRO) facility with a \$100 million investment, and, as part of a large deal with Air India, will also set up a pilot training center and install four aircraft simulators.

India is one of the world's fastest growing markets for commercial jets, a market that will continue to grow and expand to neighboring regions in South East Asia, and the leading aircraft makers are preparing to tap these fast-expanding markets. In 2005, 10 percent of Boeing's total business came from India, and the company is very optimistic, forecasting 856 new orders worth \$72 billion over the next 20 years, from government owned and private carriers that compete in the growing local and regional markets.

The next wave of economic growth in commercial aviation will be in freight, and both Airbus and Boeing bank on the next wave of orders for cargo planes from freight carriers, and the MRO and parts revenues they bring with them.

Commercial and defense aerospace manufacturers also take advantage of low-cost aeronautical and software engineering skills available in India, and government development programs and incentives to invest in the local outsourcing and aerospace industries. Under a buyback agreement, Boeing will purchase goods and services worth \$1.7 billion from India, including aircrafts parts, machine parts, and IT and engineering services.

Other aerospace companies have commitments to the region. Rolls Royce has a design center in Bangalore, and Pratt & Whitney's Global Material Solutions division is setting up part distribution and MRO centers in India and other parts of South East Asia.

This is good news for the somewhat nascent but rapidly evolving Indian aeronautical engineering services outsourcing industry. The engineering services provided by the large Indian outsourcing companies such as Infosys, TCS and Wipro, as well as by the likes of the smaller and industry focused QuEST, have been typically limited to design support, test and analysis services. By and large, these companies did not take a leading role in the design of advanced complex parts or in managing a development project. Manufacturing Insights expects that as the large aerospace manufacturers establish stronger relationships with Indian engineering services and design companies, they will gradually delegate more responsibility to local companies. However, we expect this to be mostly in basic structural design and mechanical and hydraulic systems, and not in advanced technologies and system design that the manufacturers would want to protect.

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Redefining the Roles of High Level Managers and Executives

Jay Holman

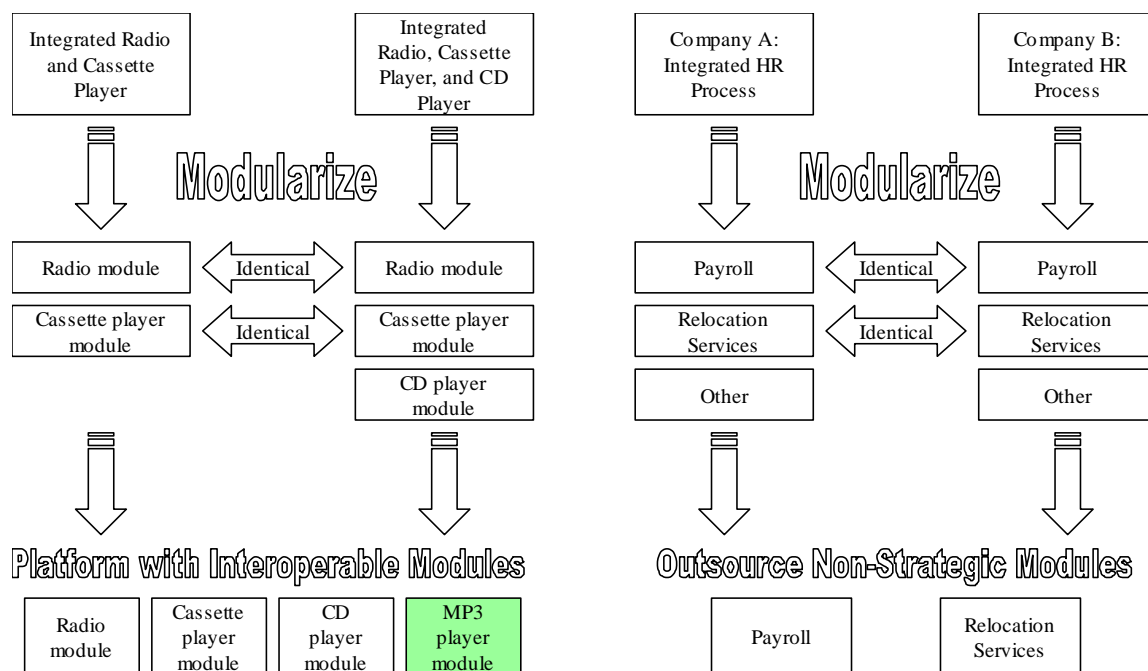
Some of the most impressive operational improvements achieved by manufacturers over the years have come through the introduction of modularity and interoperability to products and manufacturing processes. A close look at recent trends towards increased outsourcing and the move toward service-oriented architecture (SOA) reveals some of the same principles at work. Understanding and exploiting these principles can increase and accelerate the benefits of transitioning to a service-oriented architecture, including the redefinition of the roles of senior managers and executives so that more of their time is spent on issues of strategic importance to the organization and less is spent on tasks that could be completed more cost effectively by employees lower in the organization.

A great example of the use of modularity and interoperability to drive operational improvements can be found in the reuse initiatives undertaken by many manufacturers. The diagram on the left below shows how a consumer electronics manufacturer might redesign its music player to reuse cassette player and CD player modules across a common product platform. Such reuse initiatives lead to significant benefits for manufacturers, including reduced time to market for new products, reduced product development costs, reduced inventory costs, and increased responsiveness to changes in demand. One of the advantages of this approach is that new product functionality, in the form of an MP3 player in this case, can be added without redesigning the whole product. In addition, if the company has outsourced the manufacture of the existing modules, but wants to keep the manufacture of the MP3 player in-house due to intellectual property concerns, this can be accomplished easily as long as the MP3 player is interoperable with the other modules.

The diagram on the right below shows how the principles of modularity and interoperability apply to business processes. By isolating, or modularizing, a few HR processes such as payroll and relocation services that are non-strategic and common across many businesses, companies are able to outsource those processes to reduce costs and increase their focus on their core business. As long as the outsourced processes are interoperable with other processes that are kept in-house, the outsourcing company will be able to function just as well as they could if all processes were still in-house.

FIGURE 1

Modularity in Product and Process Design



Source: Manufacturing Insights

The Impact of SOA on Business Roles

Business processes have become so dependent on the software that supports them that in many cases the ability to modularize a given process can be constrained by the software tools used to support that process. In software that uses Service Oriented Architecture (SOA) the functionality of the software itself is modularized into discrete "services", and open standards on the use and creation of these services assure the interoperability of services even if they originated in different applications. One of the great advantages of SOA is that the flexibility provided by modularity and interoperability allows the software to support a company's existing business roles, so that the software is adjusting to support business roles rather than forcing the business roles to fit the software.

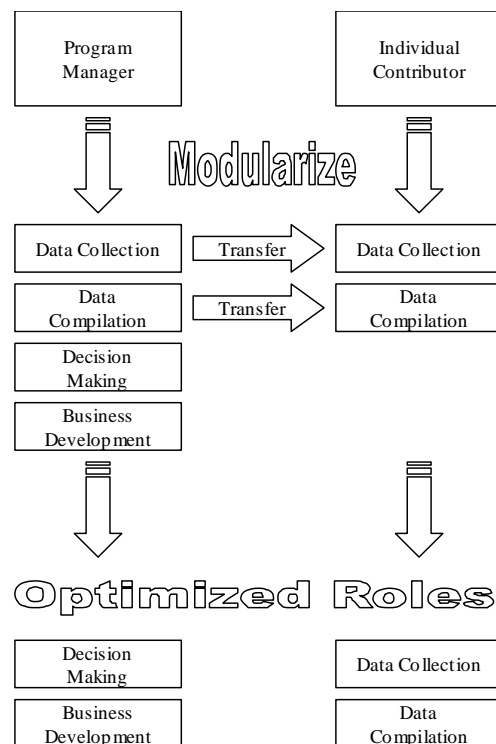
However, just because business roles *could* remain fixed as a company transitions to an SOA does not mean they *should* remain fixed. Such a transition period offers an excellent opportunity to evaluate

business roles and look for opportunities to modularize them in ways that were previously not possible due to the restrictions imposed by inflexible software. Whereas in the reuse example above the key attribute to consider when breaking products into modules was module functionality, and in the business process example the key attribute to consider was suitability for outsourcing, one key attribute for business roles is the strategic value of the activity being conducted by the employee in that role. Highly paid, high level employees should be spending all or most of their time on activities of significant strategic value, such as decision making and the identification of new growth opportunities, and not on tasks that could just as effectively be accomplished by lower level employees.

The following example shows how the role of a high level Program Manager (PM) might change based on the flexibility offered by SOA. Initially, a significant portion of a PM's time is spent collecting the data needed to make critical decisions, and compiling that data so that the data can be analyzed. While individual contributors are more than capable of these data collection and compilation steps, the information that the PM needs is so dispersed throughout the organization and among various IT tools that the task of managing the individual contributors who supply the data becomes a project in and of itself. These "data collection and compilation projects" require extra meetings, their own sets of goals and metrics, and end up creating a significant drain on the PM's time. In turn, the PM spends less time on the decision-making and business development activities that are the activities that truly require a high level of experience and expertise.

FIGURE 2

Modularity in Program Management



Source: Manufacturing Insights

By transitioning to an SOA the PM's organization would introduce the possibility of automating the data collection and compilation steps that had historically been conducted manually. However, the nature of this automation step will have a large impact on whether or not the PM is able to fully transfer these steps to individual contributors. Even with an SOA, it would be possible to put together processes that waste the PM's time by mixing process steps that require the PM's input with the basic process steps required to collect and compile the information that the PM needs to make important decisions. The key is to modularize the process steps in a way that allows the separation of tasks that require high level input from a PM from those tasks that can be completed by an individual contributor, and making sure those process modules are consistent with, or interoperable, with the PM's information needs.

If an SOA is implemented in this way, it can help redefine the role of high-level managers and executives by reducing the percentage of their time spent on tasks that do not require their full level of experience and knowledge. By providing decision makers with the information and time they need to make better decisions, organizations should achieve better results and have more leeway to pursue their core strategic goals.

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Noteworthy

- Computer Sciences Corporation (CSC) announced that OneSteel Ltd. has extended its information technology (IT) services contract with CSC. The new three-year contract, which has options for another two years, has a total value of US\$37 million if all options are exercised. OneSteel, spun out of BHP Billiton in 2001, is the largest manufacturer of steel long products and is a leading metals distribution company in Australia.
- MICROS-Fidelio UK, a wholly- owned subsidiary of MICROS Systems, has reached an agreement with Everton Football Club to implement MICROS 9700 Hospitality Management System throughout all of the hospitality facilities in the Goodison Park Stadium. The MICROS 9700 HMS product recently went live and will allow Everton to control all stock, menu items, and reporting from one centrally managed system. The club hopes the project will significantly improve customer service levels throughout the stadium.
- HyperRoll, a provider of data aggregation software for business intelligence (BI) applications, and Actuate announced a technology and marketing collaboration agreement to offer HyperRoll's data aggregation technology with Actuate's suite of business intelligence reporting tools. Under the terms of the agreement, HyperRoll will offer a version of its product that supports the Actuate Enterprise Reporting Application Platform. Together, Actuate and HyperRoll will market the HyperRoll product to Actuate customers. HyperRoll will provide those customers with improved database query performance for large-scale user communities that use Actuate for daily ad-hoc information access.
- Global 360, a provider of business process management (BPM) applications, announced a partnership with Corticon Technologies, a provider of business rules management systems. Corticon's business rules software will serve as an integrated engine with Global 360's BPM products. The combined product is intended to provide customers with model-driven environment for developing closed loop decision applications.
- BEA Systems addressed a gap in its SOA middleware line, Aqualogic, by acquiring metadata management vendor, Flashline. The Flashline product set will become the Aqualogic Enterprise Repository. BEA also announced an expanded relationship with Tata Consultancy Services.

- A software as a service (SaaS) based delivery would have been better but, Vision Chain announced a Demand Signal Repository to synchronize demand data for a consumer packaged goods company with a single retailer. The product, DSR Express, is a scaled-down version of the enterprise demand signal repository product. The new product comes as a hardware/software bundle that is less expensive and easier to implement.
- ILOG announced that BASF AG has chosen ILOG's planning and scheduling software to create real-time production planning for its Styrene Polymers plastics manufacturing operations in Europe. Using ILOG's optimization-based planning and scheduling product, BASF better aligned its plastics production with demand, while accomplishing planning tasks two to three times faster than the previous planning method.
- Savi Technology, a provider of active Radio Frequency Identification (RFID)-based supply chain products and a wholly owned subsidiary of Lockheed Martin, announced it is offering a RAND (Reasonable and Non-Discriminatory) licensing program on Savi's intellectual property for active RFID products, which are based on the ISO 18000-7 active RFID air-protocol standard. Savi launches the program with a Quick Start plan that will be available through Dec. 31, 2006. At the same time, Savi will also offer a Regular license plan which does not have a limited period of availability. Companies that execute a licensing agreement under the Quick Start plan will pay lower up-front fees as an encouragement to early participation in the licensing program.
- Irvine Sensors announced that a government customer has exercised a \$3.4 million option for the next phase of a program to develop 3-dimensional electronics technology. The Irvine Sensors program, dubbed 3D MINT, is a multi-year contract, the first phase of which was completed earlier this year with the successful demonstration of processing speeds and packaging densities that are at least an order of magnitude improved over that achievable with conventional state-of-the-art electronics. The newly awarded contract option is intended to develop hardware that is potentially transferable to both military and commercial applications.
- Total Parts Plus, a provider of obsolescence and environmental compliance management services announced the release of the RoHS Compliance Analysis Wizard within the Parts Plus Web Application. The RoHS Compliance Analysis Wizard provides an interface for determining the current RoHS compliance status and for aggregating the supporting RoHS Compliant Certificates, which can be downloaded at the component level or for an entire Bill of Material. In addition, if a part number is not RoHS compliant, the Wizard will report the compliant alternate. An Analysis Report is also available and includes items such as Compliant Status, Lead-Finish, Moisture Sensitivity Level and Peak Reflow Temperature. Any one of these items can affect manufacturability.
- UGS announced it has signed more than 30 contracts in the High Tech and Electronics (HTE) industry in the first half of 2006, with leading global companies including Ericsson, Hisense, Lam Research, LG Electronics, LS Cable and Samsung Electronics.
- Oracle announced the availability of Oracle's PeopleSoft Enterprise Performance Management 9, the latest product to be delivered from Oracle's PeopleSoft Enterprise 9 suite. PeopleSoft Enterprise Performance Management is an integrated suite of analytic applications that seeks to enable organizations to drive performance by aligning information and resources to strategic objectives.
- Callidus Software, a provider of Enterprise Incentive Management (EIM), announced that Callidus TrueInformation software version 5.1.3 has achieved "Certified for SAP NetWeaver(R)" status from SAP. Callidus manages complex incentive programs, such as sales commissions, for large enterprises.
- SAP announced global availability of the latest version of SAP xApp Resource and Portfolio Management (SAP xRPM), a composite application that helps companies align projects and services

with corporate objectives. Working across a company's existing IT environment, the application provides a consolidated view into enterprise-wide business portfolios and delivers capabilities that help organizations better prioritize allocation of resources -- including people, equipment and budgets -- in support of key business initiatives. More than 170 customers globally -- among them Thomson, a world leader in digital video technologies -- are using SAP xRPM.

- RightNow Technologies announced that Procter & Gamble (P&G) is using its on demand solutions to deliver an online consumer experience across many of its brands, including CoverGirl, Crest, Downy, Folgers, Iams, Olay, Pampers, Pantene, Thermacare and Tide. RightNow enables the company to answer consumers' questions via web self-service, email and chat. It also gives P&G full visibility into the types of questions consumers are asking -- so it can respond to any emerging trends or issues.
- JVC Company of America, a manufacturer of audio and video products, tapped retail marketing solutions agency Creative Channel Services, LLC (CCS) to develop and manage a custom online training site on its products for retailers and retail sales professionals. Launched August 1 on CCS' CyberScholar.com, the new JVC site provides in-depth product information on the JVC Everio camcorder and other products, and offers prize incentives to industry sales professionals nationwide who complete the training.
- myServiceForce.com, a mobile technology field service company, launched its on-demand software for small businesses, integrating with Windows Mobile 5.0. The hosted solution gives on-the-road service teams real-time access to sales and customer information, eliminating paper-based tracking.
- IBM and Internet Security Systems announced the two companies have entered into a definitive agreement for IBM to acquire Internet Security Systems in an all-cash transaction at a price of approximately \$1.3 billion, or \$28 per share. The acquisition is subject to Internet Security Systems shareholder and regulatory approvals and other customary closing conditions. The transaction is expected to close in the fourth quarter of 2006.
- Agricultural technology company TekVet is using IBM services to power its wireless radio frequency identification technology that monitors the health of livestock to help ensure the safety of beef and dairy products. TekVet's livestock tracking, tracing and health monitoring technology allows cattle producers and investors to remotely monitor the core body-temperature and other pertinent animal or herd data, as well as the specific location of individual cattle, real time, via the Internet. The historical and health information is collected and transported through an RFID sensor inserted in the ear of a cow. Information is then relayed to a collection of wireless receiving stations on a producer's lot. The data is transported via a private satellite network to TekVet's data center.
- HP and Cisco Systems announced a joint effort focused on helping enterprise customers take advantage of a wide array of new applications and services based on Cisco's Pervasive Indoor Wireless technology. The new applications and services include security, guest access, voice over Wi-Fi, and location-based services and allow for the creation of a variety of new applications, such as IT asset tracking, presence-based applications, dual-mode voice, and integrated intrusion detection and prevention.

* * *

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