The best is still to come

Plans for SCM Center for Excellence pick up speed

From the Director
Professor Douglas Morrice

It is with great pleasure that I introduce you to the inaugural edition of our newsletter. Four years ago when representatives from Applied Materials, Dell, and Motorola (now Freescale) came to us with a request to start this Consortium, our activities in Supply Chain Management (SCM) were rather minimal.

Since that time we have grown to 13 sponsoring companies spanning at least four industries. Several of our faculty members have established international reputations in this field. We have conducted seven Roundtables with topics ranging from “outsourcing” to “return on supply chain information technology projects.” The combined total attendance for these meeting is over 350 people from dozens of organizations, both private and public sector.

Our faculty and students have also worked with Consortium companies on several practicum projects. In addition to delivering valuable results, these projects provide great practical experience for our students and enable them to demonstrate their talents to the sponsoring companies.

I am particularly proud of what we have been able to accomplish with our academic programs. As a result of the Consortium efforts, we developed specializations in supply chain management in both our MBA and Ph.D. programs and in our undergraduate Engineering Route to Business major.

In addition, we have developed an SCM undergraduate program from scratch which became a track in the Management major in September of 2004. Under the current plan, the SCM undergraduate degree will become a stand-alone major (rather than a track in the Management major) effective September 2006 in the Department of Information, Risk and Operations Management. Achieving the status of stand-alone major represents a major milestone. It will help in...continued on page 5

Breathing life into supply chain management

The anatomy of supply chain planning

Take a deep breath. Hold it. Now, breathe out slowly.

Every part of your body worked in synchronicity to make that happen, but you probably didn’t notice. When healthy, our bodies are perfect examples of processes that work. Think of your supply chain as a finely-tuned human body and consider what anatomy can teach us about designing successful business processes, especially in supply chain planning.

Implementing supply chain management systems involves careful and thorough project management. You cannot tackle the challenge arbitrarily. The success of your supply chain system is dependant upon following a specific sequence in the building process - a step-by-step roadmap. Each piece of anatomy has a specific function and relies on another component’s flawless execution.

Step 1: Establish enterprise resource planning (ERP), human resource planning, financial and inventory tracking systems, material requirements planning, sales order management and distribution logistics, product line planning (PLM) and supplier relationship...continued on page 6

Guest Column

Robert Benny
Freescale Director of Systems and Process Integration for Service and Logistics

“Our mission is to bring together executives from leading corporations with Texas faculty and students to identify, document, research, develop and disseminate best practices in Supply Chain Management.”
Rising fuel costs focus of Fall 2005 Supply Chain Management roundtable

Thanks to everyone who participated, our 7th biannual Roundtable was another success. In keeping with the topic of “The Impact of Rising Energy Costs on Supply Chains” we had presentations that gave a variety of perspectives on how the challenge of rising fuel costs is being met. A few common themes arose from these presentations and ensuing discussions:

1. With more off-shore sourcing, a greater proportion of the costs are tied up in the moving goods through a global supply chain network. This makes companies potentially more susceptible to increasing energy prices.

2. To cope with rising energy prices, companies take a total supply chain approach by squeezing cost out of other parts of the supply chain in order to offset energy price increases.

3. Supply chain improvements over the past five to ten years have provided companies with a better overall awareness of how to respond more quickly to the economic pressures associated with rising energy costs. Ongoing continuous process improvements help to offset fuel cost increases.

4. The changes made to supply chains as a result of higher energy prices have been more evolutionary than revolutionary in nature.

5. Fuel costs are not the only factor contributing to the difficulties companies are facing with transportation. Driver shortages are also a big problem.

While item 1 indicates that companies are facing more risk from increasing energy prices, items 2 and 3 indicate that companies are now in a better position to mitigate that risk because of better supply chain management. Item 4 indicates that as a result of the mindset of continuous process improvement in supply chain organizations, most companies have been able to adapt and cope with some fairly significant economic pressures.

This Roundtable also included a first for us – a presentation given remotely by Anu Goel, Director of Global Parts and Supply Logistics for Ford Motor Company. Anu gave an excellent example of how improvements in distribution logistics can be used not only to offset the...
UT professor receives research fellowship for study of “assemble-to-order” systems

During the Fall 2005 Roundtable, Dr. Stephen M. Gilbert was the recipient of a research fellowship awarded by the UT Supply Chain Management Consortium for his study, “Coordination of Stocking Decisions in an Assemble-to-Order Environment,” researched and written in conjunction with Drs. Xiaohong Zhang and Jihong Ou of the Department of Decision Sciences in the NUS Business School of the National University of Singapore.

Professor Gilbert is an Associate Professor at the College of Business Administration at UT Austin, where he teaches courses in operations management and supply chain management and serves as the coordinator of the operations management group. Prior to joining the UT, he taught at the Weatherhead School of Management at Case Western Reserve University. He holds a B.S. in Industrial Engineering from the University of Michigan, an M.S. in Industrial Engineering from Stanford, and a Ph.D. in Management from the Sloan School of Management at M.I.T.

“The main thing we did in this research was to look at a theoretical make-to-order setting with two component suppliers and one assembler — a sort of simplified version of Dell,” he said. “We used mainly game theory to model the uncertainty in the system and discover how each player will respond to optimize their own profits given the other players’ behavior.”

The study asked whether it was possible to coordinate a supply chain system to optimize quantities and maximize profits for all those involved.

“We found that it is possible to coordinate the system to have optimal quantities when the assembler quotes wholesale prices to the component manufacturers,” said Professor Gilbert. “What’s interesting, though, is that we also found that all three players can make positive profits in this situation. Typically, because of double marginalization in a system like this, the incentive for a single supplier is to stock too little of a component unless the assembler quotes a wholesale price equal to the selling price, surrendering their margin. Then the supplier incentives are set up to maximize combined profits — but all those profits have to go to the supplier.

“But in this assembly system, where the assembler has the power to allocate capacity here or there, they can quote prices that give them a positive margin and still incentivize their suppliers to stock the quantities that maximize everyone’s profit. We were able to get to a ‘first-best’ solution: an identified price that is purely a linear function of the quantity of units changing hands that not only maximized combined profits, but also allocated those profits to every player in the system. From an academic perspective, that was probably the most interesting finding in our research.”

The study also evaluated the efficiency of the suppliers or the assembler holding the inventory and determining price.

“Another one of our finds was that the ‘pull’ system, where the assembler quotes the prices and the suppliers hold the inventory, tends to be more efficient than the ‘push’ system, where the suppliers quote the prices and the assembler holds the inventory,” said Professor Gilbert. “Ideally, you want the downstream guys making the price decisions and the upstream guys making the quantity decisions. When the assembler’s capacity gets tight, though, it doesn’t really matter which system is in place.”

Professor Gilbert presented the paper at an MSOM conference last summer. It is currently undergoing review.

“In this type of research you tend to look at very focused types of problems. It’s like shining a flashlight at part of your engine. You may not understand everything that’s going on, but you can understand that small part very well.”

Professor Gilbert currently serves as a senior editor for Manufacturing and Service Operations Management, and is on the editorial review boards of the Journal of Service Research and IIE Transactions.
SCM Consortium awards 2005 scholarships to three McCombs students

Two undergraduates, one MBA candidate receive awards

Brian Melinat is a graduate of the University of Colorado, Boulder with a BS in ME and a BA in Economics. He graduated Suma Cum Laude in Economics with an overall GPA of 3.78.

Brian has worked for MCI-WorldCom as a Product Planner and Six88 Solutions (a software development company) as a Business Development, Project and Account Manager. This past summer, he interned in Dell’s Demand/Supply Operations department.

Brian entered the McCombs MBA program in Fall 2004 and plans to graduate in May 2006 with a concentration in Operations Management. His overall GPA is 3.8. As part of the scholarship awards process, Brian was recognized by his professors as one of the top students in the McCombs MBA program.

Lauren Calhoun was born in College Station. She grew up in Austin and is a graduate of McNeill High School in Round Rock ISD.

At UT, Lauren been involved in the Texas Exes Student Chapter Rallies Committee. She has participated in LEAP as a freshman and as a mentor for the organization the following year. She is also involved in the Air Force ROTC program and will be commissioned as a lieutenant in May in the field of Acquisitions Management.

Lauren completed her internship last spring in Interpersonal and Persuasive Communication Studies with a PhD student by performing academic research and collecting data. She is studying Operations Engineering/Supply Chain Management in the ERB Program and has completed a minor in Mathematics. Lauren has maintained on overall GPA of 3.8.

Steve Black is in his junior year in the McCombs School of Business. Born in Tucson, Arizona, he grew up in Baton Rouge, LA and attended Episcopal High School. A “third generation” Longhorn, his grandparents, parents and most of his uncles and aunts are UT graduates.

Steve transferred after his freshman year into the McCombs School and shortly thereafter declared Supply Chain Management as his degree track. Having always felt comfortable with numbers, he was excited to discover the ERB option which afforded engineering classes as a complement to business core classes. He hopes his concentration in the Operations Engineering Block will help him acquire experience in quantifying systems and scenarios to gain even further insight into how processes and logistics come together by way of more analytical measures.

Steve was named a College Scholar each semester and has maintained an overall GPA of 3.9. He is also a member of Tech Connects (a community outreach/volunteer organization). With opportunities for internships right around the corner, he says that he is looking forward to seeing how classroom ideas are applied in the real world.
Accomplishments and opportunities offer glimpse of SCM Consortium’s future

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terms of attracting students into the major and administering the program.

To support our burgeoning academic programs, we have developed a Consortium-sponsored scholarship program for top-talent in our MBA and BBA programs. The Consortium has provided support for our MBA students to participate in a number of MBA case challenges: the IM/OPS Case Challenge at the Red McCombs School of Business (2004 and 2005), the CMU Operations Case Challenge at The Tepper School of Business at Carnegie-Melon University (2004 and 2005), and the Krannert School of Business Case Challenge at Purdue University (2006). Recognizing the fact that great scholarship is linked with outstanding academic programs, we developed a faculty research grant program to support top scholarship in SCM (see within for more details on this year’s recipient).

So where do we go from here? In addition to the improvements in our undergraduate major discussed above, there are a number of other exciting things on the horizon. First and foremost is an initiative that has been discussed for a couple of years but is now gaining traction: the establishment of a Supply Chain Center of Excellence. Our purposes for establishing such a center are to foster joint research projects with industry and government, sponsor thought leadership colloquiums and forums, offer new executive education programs, and develop distinguished academic programs at all levels. Dr. George Gau, Dean of the Red McCombs School of Business, states in his strategic plan the willingness to establish two centers of excellence, one in SCM and the other in Corporate Governance. In November of 2005, he addressed his advisory committee and committed up to two million dollars in matching funds to build an endowment for each of these centers. I had the opportunity to make a presentation to this group about the SCM Center (if you would like to view a copy of this presentation it is posted at the Consortium web site – www.mccombs.utexas.edu/scm).

Over the next six months, we will develop a theme and vision for this center by interviewing executives from several top companies, interviewing leading academics, and conducting a benchmarking study of other major academic centers. At the end of this phase, we will develop and submit a proposal to Dean Gau that will delineate our theme, vision, activities, budget and a three-year plan to make the center a fully endowed self-supporting unit. Building a center with a multi-million dollar endowment is essential if the Red McCombs School of Business is to become an acknowledged leader in Supply Chain Management. Recognizing that this type of undertaking takes time and talent, we anticipate that the proposal to Dean Gau will contain a recommendation to hire an executive director to lead this initiative.

In November, the Steering Committee developed a framework for future Roundtable topics. Going forward, we plan to cycle through the following topics (not necessarily in the order listed): Sourcing and Supplier Management, Planning, Logistics and Distribution, Information and Supply Chain Integration. This framework should help in the longer term planning of future Roundtables, foster more variety, and provide some guidance to Consortium sponsors who wish to suggest topics. Since we have not directly dealt with the issue of Logistics and Distribution in some time, the May 9th, 2006 Roundtable will fall under this topics. In particular, we plan to discuss Supply Chain Network Design and Optimization.

In closing, it is our plan to publish two issues per year following the Roundtable meetings. I hope you enjoy digesting the first issue of the UT SCM Consortium Chronicle as much as we enjoyed putting it together!

Roundtable Wrap-up cont.

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prove customer service.

The topic for our May 9th, 2006 Roundtable, i.e., “Supply Chain Network Design and Optimization” was partially inspired by this presentation. Over the course of the rest of the Roundtable we had presentations by representatives from Dell and FedEx Kinko’s, plus a panel discussion with representatives from Chevron, Cardinal Health, and HEB.

We also heard from a group of MBA students on the progress of their project with Chevron and a discussion of how to get your company involved with this type of exciting and rewarding project. A special thank you to all who presented or sat on the panel.

We hope you and your company will be able to join us in May for our next UT SCM Consortium Roundtable!
Careful planning, project management key to healthy SCM systems

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management (SRM).

The anatomy of managing a project in supply chain systems starts with a solid backbone. The components in this step provide the information used to run a business and store data used to support vital functions including planning, scheduling, delivering and servicing orders. Building this base supports efforts to globalize work processes, manage data, provide a culture of service and simplify logistics.

Step 2: Implement an advanced planning system (APS). The APS is considered the “brains” of the system. It uses the information from the ERP, PLM and SRM systems to maximize commitment to customers, plan logistics and inventories, schedule factories, order supplies and service customers. It does this by using advanced logic (to match demand with available supply) to process information and, based on the business models being used, determine the optimal way to manage business.

Step 3: Focus on customer relationship management (CRM) and business to business (B2B) applications.

The heart of supply chain systems is the customer. CRM takes the advanced information from both the ERP and APS system and communicates with the customers from a commitment and service standpoint. This communication, commitment and relationship with the customer are the heart and soul of our business. They are what keep the customer satisfied and coming back with additional orders.

We are in business to serve our customers profitably. ERP and APS systems drive us to operational excellence in streamlining our costs, while CRM provides the best commitments and superior relationship with our customers. Remember, it’s all about the customers and shareholders - ERP, APS and CRM support them.

Clearly, there is a natural flow to project management in supply chain planning. Just as the human body demonstrates, when each component is in place and “healthy,” the entire system can run at optimal levels of performance, which is exactly what our customers and shareholders expect and deserve.

“The heart of supply chain systems is the customer . . . we are in business to serve our customers profitably.”

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