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John Ferguson
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Benjamin Gordon
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Rebecca Jasper
President, Jasper Solutions

Robert Martichenko
Vice President, Transfreight LLC

Tom Nightingale
Vice President, Schneider National

The Brightest and Best Ideas in Education
An Overview of How Universities Are Leading the Way in Logistics and Business
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To find out how we can put our ingenuity to work for you, visit www.cpls.ca/save.
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45 THE INSTITUTE NOTEBOOK E is for Excellence—Leadership in Logistics Series
This is the second article in LQ’s leadership in logistics series. It offers a unique perspective on leadership with its focus on MIT’s Sloan School of Management’s board game, a supply chain simulation entitled, The Beer Game, to explore the essential elements required for leadership.
Ryder provides a portfolio of leading-edge logistics and transportation solutions globally. Our proven operational expertise and processes have provided solutions that add value to clients in a wide variety of industries.

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- Management Administration:
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The Changing Landscape in Education

I read Mr. Dale Ross’s article on the Changing Landscape in Education and Professional Development (vol. 9, Issue 3/4) and I was disappointed to see that he demonstrates little awareness of the P.Log. Certification Program. To position the P.Log. as a functional silo is, at best, a misunderstanding.

The P.Log. is the first and only professional designation that deals with logistics as an end-to-end strategy, emphasizing integrated processes within organizations supporting the design, development and growth of global supply chains. The P.Log., both through the Standard Program of six modules and most especially through the Executive Program, takes a strategic approach to certification. We build leaders in the field, and not just tacticians.

I’m equally surprised that Mr. Ross seems to be unaware of the distinction between education and professional certification. Education is about processing information. It enables the end users to learn to integrate ideas, concepts and theories into their thinking patterns, so they can apply these ideas in the workplace. Professional certification is about competence: the ability to implement and apply the skills to decide and act based on the integration of theory [what one knows] and praxis or experience [what one does].

The Logistics Institute is not a training or educational organization; it is a certifying organization. The “certification program” is not a training or education program; it is an environment in which and through which one’s competence is tested, and skills are simultaneously honed. The P.Log. is not an educational credential, but a professional credential that indicates in a public manner that one has earned a level of competence represented by the designation. Ask any engineer why he or she values the P.Eng. designation over the BSc in Engineering; fundamentally, it allows them to be engineers, and that is significantly different from studying engineering.

Mr. Ross is comparing apples [education] and oranges [professional certification], and obviously prefers apples. However, that does not relegate oranges to second best in the fruit bowl.

Victor S. Deyglio
President
The Logistics Institute, Toronto, Ontario

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**PLA N A**
- Research HS code and marking regulations. Forward info to vendor.
- Fax P.O. to vendor.
- Find a forwarder and make arrangements for air freight.
- Fill out Customs invoice and these other forms (if I remember how!)
- Find carrier to haul from airport to warehouse.
- Fax all this paperwork to everybody.
- Call Customs broker again – are we set up for pre-release?
- Call forwarder again – is shipment on schedule? Wish I could just check on-line...
- Let warehouse know it's coming. Make sure they call as soon as truck gets in!
- Fax all these orders to warehouse.
- Call warehouse – did the orders go out yet? Are we going to meet the deadline?
- Try to get some sleep tonight.
- Figure out what to do with returns...um, maybe there won't be any.

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The Brightest and Best Ideas for Leading the Way in Logistics and Business

ADVANCES in academic and executive education programs to meet the needs of new economy managers is critical to business disciplines and practices driven by today’s converging forces of technology, organizational change and globalization.

Inexperienced students and executives that are highly accomplished and knowledgeable learners, alike, know the importance of world-class programs. This edition features an Education Forum that offers the perspectives of leaders in the educational landscape of logistics and supply chain management.

Notions about education have undergone a sea of change during the past few decades. In the 1980s, graduates from a business school with a major in logistics, typically may have benefited from training that focused on modes of transportation and some of the functions of supply chain management. Today, logisticians and supply chain professionals must relate to many other disciplines in their practices and to develop innovative businesses, as clearly evidenced this edition of LQ.

It’s also important to be mindful of the fact that the profession of management has been in development for only the span of a single life, and its progress is not guaranteed. Vigilance on the part of our educators and business leaders in logistics as well as other disciplines is essential. LQ’s Education Forum is also a tribute to leaders in education and those in the field whose work is laying the foundations not only for today, but for the future.

LQ’s Education Forum, comprised of seven Ph.D.s from the United States and Canada, shows us how universities are leading the way and changing to reflect the relentlessness of new requirements in business, worldwide. What can logisticians expect from logistics training and executive development? What kind of accelerated payoff does education offer individuals and companies? In this special issue, we seek to demystify educational innovation and look at the policies and techniques that create leaders in the field.

The accumulation of managerial knowledge in the field is also vital for professional development. Two senior-level practitioners, Jim Davidson and David Faoro, offer us insightful and personal accounts of the value of education, while emphasizing the discipline to perform and create the right corporate milieu are essential to the development of logisticians with world-class business acumen.

Another important theme in this issue focuses on trends in transportation. You will find many stimulating ideas in these pages on this theme. In "Small 3PLs Make it Big," Benjamin Gordon describes how consolidation is transforming the transportation and logistics marketplace. It’s a compelling overview that executives should take stock of when they are planning for the future. In "Defining and Highlighting the Steps to Collaborative Transportation Management," Professor Terry Esper traces the pathway to collaboration and the value in investing in business relationships, instead of adversarial approaches that can kill even the most promising of these programs.

In the article entitled "The Impact of Exchange Rates on Supply Chain Management," you will find perspectives from both sides of the U.S.-Canadian border. This jointly bylined article, by vice presidents Tom Nightingale and John Ferguson, examines how currency fluctuations may reduce trade in some cases, drive the flow of goods to alternative modes of transportation and prompt some carriers to use currency hedges - a practice reserved for few companies, as shown by the plight of even major airlines, such as Air Canada, as they’ve been unable to engage this important practice.

Companies interested in enhancing inventiveness and ingenuity to reduce their costs and bolster their bottomlines will want to read Lean Six Sigma Logistics, written by Robert Martichenko. In this study, Robert shows us how lean manufacturing concepts are deeply embedded in the Toyota Production System, and provides us with a snapshot of the resultant and impressive benefits.

A moving account of the struggles of a printing company’s search for survival is depicted in Rebecca Jasper’s column, Inside Track. Rebecca provides us with knowledgeable solutions to the travails of this hypothetical business situation, with sage advice from her own perspective as well as that of two senior-level consultants, Peter Berglund and Allan Ayers. Their thoughtful response to this case study will undoubtedly provide guidance to others with smart ideas about outsourcing and organizational management.

Heather Cartwright’s column, The Institute Notebook, offers us an intriguing perspective on leadership with its focus on MIT’s Sloan School of Management’s board game, a supply chain simulation entitled, The Beer Game, to explore the essential elements required for leadership in logistics.

Whether you are managing everyday business, envisioning new strategic directions for your business, or facing unusual challenges, these leaders show us in these pages some of the best models for success.

I would like to take this opportunity to express my special thanks to LQ’s Executive Editor’s Dave Closs (Michigan State) and Victor Deyglio (Toronto-based Logistics Institute) for their contributions to LQ’s Education Forum. We are also thankful for Ryerson University’s Professor Donald Tham, for his contribution in shaping the framework for this important forum.

Thanks to the commitment of these extraordinary leaders in our field to LQ’s extraordinary readers, you will find ideas for growth and development in business from some of the brightest and the best in our exciting field.

Fred Moody, Editor and Co-Publisher
HEATHER CARTWRIGHT, PMP, P.Log., assists organizations with business strategy planning and implementation support focused on operations and project management. Ms. Cartwright is the CEO of Logixsource Consulting Ltd. She has also held senior-level positions with Ernst & Young, CGI Group and Frigidaire Canada.

DAVID J. CLOSS, Executive Editor: Dr. Closs is the John H. McConnell Chaired Professor of the Eli Broad College of Business, Depart. of Marketing and Supply Chain Management, Michigan State University. He has consulted with more than 100 of the world’s Fortune 500 corporations regarding logistics strategies and systems. He is an active member of CLM.

JIM DAVIDSON, President, iWheels Dedicated Logistics, began his career in logistics at The Ford Motor Company in 1963 working in all aspects of logistics for 17 years. Mr. Davidson joined TNT in 1983 and held various management roles including roles in operations, staff, administration and general management for a number of different divisions. He also served as the TNT board member representing North America at their European-based board meetings. He has served on the executive of the Canadian General Motors Supplier Council as well as Executive Vice President of the ATA Council of Logistics located in Alexandria, Va.

TERRY ESPER, Assistant Professor recently received his doctorate from the Sam M. Walton College of Business at the University of Arkansas. His teaching specialties include supply chain management, strategic transportation management, and purchasing/supply management. Dr. Esper holds a bachelor’s degree in mathematics from Philander Smith College and an MBA from the University of Arkansas. In addition, he has garnered professional experience as a senior traffic administrator and logistics solutions strategic planner for Hallmark Cards and Hallmark.com.

DAVID FAORO is the Director of Business Process Improvement for Unisource Canada, Inc. His 20-years tenure in logistics and supply chain functions has included positions in the wholesale and distribution, office products, industrial services, food processing and chemical sectors. Mr. Faoro has a Bachelor of Commerce degree in Logistics from the University of British Columbia and an M.B.A. from the Ivey School of Business. He is a member of Supply Chain & Logistics Canada and the Council of Logistics Management (CLM).

JOHN FERGUSON, Vice President, Sales & Marketing, joined Fort Erie-based PBB in 1987. Mr. Ferguson holds a degree in business and economics and is a Certified Canadian Customs Specialist and is a graduate of the Waterloo, ON-based Wilfrid Laurier University’s Supply Chain Management Executive Program.

BENJAMIN GORDON is Managing Director of BG Strategic Advisors, Boston-based consulting firm providing supply chain companies with CEO-level advisory services in the areas of strategy, technology and finance. Benjamin is responsible for leading key client engagements and setting the direction of the firm.

Prior to BG Strategic Advisors, Benjamin founded 3Plex, the Internet solution enabling third-party logistics companies to automate their business. Mr. Gordon received a Masters in Business Administration from Harvard Business School and a Bachelor of Arts degree from Yale College.

MICHAEL HAUGHTON is an Associate Professor in the School of Business and Economics, Wilfrid Laurier University. He received a B.Sc. in economics and accounting from the UWI, an M.S. in management science and a Ph.D. in business logistics from Pennsylvania State University. He currently teaches courses in the areas of Supply Chain Management, Management Information Systems, and Electronic Commerce.

REBECCA S. JASPER, CPIM, MBA, is currently President of JASPERsolutions LLC, a supply chain consultancy firm. She has 13 years of management, consulting and supply chain experience working in the steel, ferrous products, aluminum, health, chemical, oil & gas, e-commerce, linen supply, entertainment, fast food and utilities industries. She has consulted in the USA as well as in Japan, France and in the Congo. Rebecca Jasper is fluent in Japanese and French. She has a BBA in International Business from St. Mary’s College and a second major in Japanese from the University of Notre Dame. She received her MBA in Supply Chain Management at the University of Tennessee, Knoxville.

SHAILENDRA JHA, is an Associate Professor, Operations and Decision Sciences, School of Business and Economics, Wilfrid Laurier University. He holds an M.A. in Economics from the University of Delhi, and a Ph.D. in Management Sciences from the University of Iowa. Dr. Jha is involved in the design and delivery of educational programs for The Laurier Institute.
ROBERT MARTICHENKO is the Vice President of Logistics Operations for Transfreight LLC, headquartered in Erlanger, Kentucky. In his corporate development role, Mr. Martichenko is responsible for Business Development, Contract Operations and Product Development. Mr. Martichenko, a student of Logistics, Lean and Six Sigma, has published articles in several industry journals and contributed the chapter on “Lean Six Sigma Logistcics” in Michael George’s book “Lean Six Sigma.” Mr. Martichenko holds a Bachelor Degree in Mathematics from the University of Windsor and an M.B.A. in Finance from Baker College. Transfreight is a comprehensive Contract Logistics company who specializes in Lean Six Sigma Logistics techniques.

TOM NIGHTINGALE is the Vice President, Corporate Marketing at Schneider National, Inc. Mr. Nightingale leads the enterprise-wide, global branding and marketing of North America’s leading provider of premium truckload, intermodal, and logistics solutions. Mr. Nightingale and his team manage strategy process, market research, marketing communications, employment marketing, internal communications, and event marketing. He holds and MBA from Syracuse University with a concentration in Organization and Management and a B.S. in International Marketing/Management from Siena College.

ROBERT NOVACK is an Associate Professor of SCM in the Department Supply Chain and Information Systems, Penn State. He received his B.S. in Business Logistics in 1977 from Penn State, an M.B.A. with an emphasis in Business Logistics in 1979 from Penn State and a Ph.D. in Business Logistics in 1987 from the University of Tennessee. From 1979 to 1981, Dr. Novack worked in Operations and Planning for the Yellow Freight Corporation in Overland Park, KS. Dr. Novack has published numerous articles in the Journal of Business Logistics (CLM) and the Transportation Journal, among others. Dr. Novack is a member of AST&L, CLM and WERC.

PERUVEMBA RAVI is an Assistant Professor, Operations and Decision Sciences, School of Business and Economics, Wilfrid Laurier University. He holds a B.Tech from the Indian Institute of Technology, an MBA from the Indian Institute of Management, an M.S. from the University of Rochester, and an M.S.B.A. and Ph.D. from Washington University in St. Louis.

DR. THEODORE STANK is the John H. Dove distinguished Professor of Logistics at the University of Tennessee. Dr. Stank’s research interests focus on the strategic implications associated with integrated logistics and supply chain management concepts, specifically related to integration, information exchange, and operational responsiveness. He has worked for Abbott Laboratories, served as an officer in the United States Navy, and performed consulting and executive education services for numerous firms.

ALAN SAIPE has been involved with Supply Chain & Logistics Management for most of his working career, as a management consultant, an educator and as a line manager. He consults with selected clients as the Principal of Saipe & Associates. Dr. Saipe is the Program Director of the Center for Supply Chain & Logistics Management, Schulich School of Business, York University, which provides executive development courses. He is also the President of Supply Chain Surveys, Inc., a firm that specializes in corporate benchmarking surveys. Dr. Saipe obtained his B.A.Sc. in Engineering Science, and his M.A.Sc. and Ph.D. in Industrial Engineering at the University of Toronto.

DONALD THAM, Ph.D., P.Eng, is a Professor and Industrial Internship Program Coordinator at Ryerson University, Toronto, for the Schools of Aerospace, Industrial and Mechanical Engineering. He has a B.Tech., M.A.Sc., and Ph.D. degrees from Ryerson, University of Waterloo, and the University of Toronto in the areas of industrial engineering, management science and information systems respectively. Dr. Tham serves as the Director of Education, Council of Logistics Management (CLM), Roundtable, Toronto. He is also a co-founder of Nulogy Corporation.
New Members of LQ’s 2004 Publishing Team
& Industry Announcements

NLQ’s New Advisory Board Members

JOHN FIRMINO, Director Solutions & Execution Standards, Ryder Canada. John has more than 25 years of experience in information technology and demand/supply chain management. His broad experience includes implementation of solutions in environments demanding sophisticated inventory management processes, forecasting and replenishment systems and complex distribution network strategies.

John joined Ryder in 1999 as head of the Canadian technology team. In 2000 he was given responsibility for the Customer Solutions organizations in Canada, Mexico and South America. His senior management experience includes key positions in general merchandising, pulp and paper, grocery, window coverings, and office supplies industry sectors.

DAN GOODWILL, Vice President of Marketing, LQ Magazine, and President of Dan Goodwill & Associates. As the Vice President of Marketing, Dan will be responsible for building the circulation and advertising support of LQ.

Dan brings to the publication more than twenty years of executive experience in the transportation and logistics industry.

Mr. Goodwill will maintain his current role as the president of a consulting company that specializes in helping transportation companies increase their sales performance and sales productivity. He also works with shippers to help them increase the performance and cost effectiveness of the transportation component of their supply chains.

During his tenure in the field Mr. Goodwill has fulfilled senior-level positions as the president of Clarke Logistics, president of Yellow Freight, Canada, vice president of QuickX, and Cabano-Kingsway.

Industry Announcements

HEINER MURMANN, President and CEO of Schenker, Inc. Heiner Murmann was appointed as President and CEO of Schenker’s US subsidiary Schenker, Inc. in November last year. Mr. Murmann has been with the Stinnes Group since 1990 and joined former Schenker International’s Head Office in Frankfurt in 1991 as project manager. From that position he moved to Schenker of Canada as its General Manager for the warehousing and distribution division. In 1996 he joined Schenker of Canada’s senior management team first as Vice President Corporate Development and subsequently as Executive Vice President and COO.

With annual sales of 6.5 billion euros, 36,000 employees and about 1,100 offices around the world, the Stinnes subsidiary of Schenker is one of the world’s leading providers of integrated logistics services. Stinnes is a Deutsche Bahn AG company.

MICHAEL GERAGHTY, Vice President, Business Development, Schenker of Canada. Mr. Geraghty is a member of the Senior Management team of Schenker of Canada. He joined Schenker in 2003 as Vice President of Business Development. His team focuses on developing and delivering Complex Integrated Logistics Solutions to Fortune 1000 customers across all industry sectors. Mr. Geraghty’s background includes both Information Technology and Business Development and he has 26 years experience in providing business solutions that deliver strong positive contributions to product quality, customer service, cost effectiveness and increased profitability.

Mr. Geraghty has leadership experience across several industry sectors including tier one automotive manufacturing, packaged goods manufacturing, health care, and financial services. He has an Hon. B.Sc and an M.B.A.

FRED GREEN, Executive Vice-President, Operations and Marketing, CPR. Rob Ritchie, President and Chief Executive Officer, recently announced that Fred Green has been appointed Executive Vice-President, Operations and Marketing for CPR.

Mr. Green reports to Mr. Ritchie.

Mr. Green has 25 years of experience with CPR and was most recently Senior Vice-President, Marketing and Sales. He has also held senior management positions in the operations area across the company’s network.

In making the announcement Mr. Ritchie said: “Fred Green has clearly shown his capacity for innovation and leadership in developing high performance teams under his direction. His appointment demonstrates the depth of proven experience that CPR has in its management team.”

Canadian Pacific Railway, recognized internationally for its scheduled railway operations, is a transcontinental carrier operating in Canada and the United States. Its 14,000-mile rail network serves the principal centers of Canada, from Montreal to Vancouver, and the U.S. Northeast and Midwest regions. CPR feeds directly into America’s heartland from the East and West coasts. Alliances with other carriers extend its market reach throughout the United States and into Mexico.
Small 3PLs Make it Big

The logistics market’s high growth and fragmentation evidences it is in the early stages of a massive wave of consolidation that will transform the industry. As logisticians and senior-level executives plan for the future it’s more important than ever before that they’re mindful of this fast-changing landscape. Here’s an insightful overview of what lies ahead.

By Benjamin Gordon

THE LOGISTICS MARKET is experiencing a new pattern: the collapse of the middle.

At one end of the spectrum, large logistics companies are getting larger. In the past three years, we have seen a wave of acquisitions: UTi acquired Standard Logistics. Kuehne & Nagel bought USCO. UPS purchased both Fritz and Mailboxes Etc. Not to be outdone, Deutsche Post bought AEI, Danzas and Airborne.

It would seem that small companies would have little hope of competing against such multi-billion-dollar behemoths. In fact, at the other end of the spectrum, a surprising trend has appeared. While many small companies have struggled, a few have emerged as big winners. This column is about the success stories of those smaller logistics companies, and the implications for others in the industry.

The Case for Consolidation

The logistics market is undergoing a sea change. We are in the early stages of a massive wave of consolidation that will transform the industry. This powerful change is rooted in the market’s high growth and fragmentation.

As Table 1 shows, the logistics market comprises several categories: value-added warehousing, air/ocean freight forwarding, asset-light transportation management, and asset-based dedicated contract carriage. Each segment has grown at 15-25 percent annually over the past decade, and is likely to continue to do so. Furthermore, each segment is highly fragmented. In all cases, the market share available for small companies (defined as those which are not top-50 in their segments) is above 30 percent, and in the case of warehousing is over 75 percent.

As growth inevitably slows, the largest logistics companies are pursuing acquisitions. This is for three reasons. First, Fortune 1000 customers are increasingly seeking to reduce the number of logistics suppliers they use. Second, new technologies make it possible to manage companies’ logistics needs more cost-effectively, as the Menlo-Vector and Nortel examples show. Third, outside capital is serving as a force multiplier, accelerating the growth rate of new ideas.

The Mid-Market Opportunity

The bad news for small and mid-sized logistics companies is that larger companies are deploying their deep pockets to boost their market shares. The good news is that many of the most compelling growth opportunities lie in the mid-market.

As adoption levels approach saturation for the largest companies in the industry, the mid-market is emerging as a source of major growth potential. Table 2 shows that companies in the Fortune 100 are already fully-penetrated, with over 70 percent using outsourced logistics services. In contrast, companies in Fortune 401-500 are just over 20 percent penetrated. As a consequence, the Fortune 100 are only likely to see outsourced logistics spending growth of 8 percent, whereas outsourced logistics expenditures for companies in Fortune 401-500 are like-
ly to grow at 20 percent annually.
Consequently, the stage is set for 2004 as a year of growth for niche-oriented, mid-market-focused logistics firms.

**Small 3PL Success Stories**
Within this market, how can mid-sized logistics companies respond?
Based on our research, I would suggest that several companies are poised to take the stage, by virtue of their focus on high-growth mid-market segments. In particular, logistics firms which have achieved leadership within protected niche markets are likely to be especially successful. Three types of niches look particularly attractive: vertical solutions, cross-border services, and post office logistics.

**Vertical Solutions**
One example of a winning mid-market strategy revolves around vertical solutions. On the surface, this may appear counter-intuitive, since many companies focus on different vertical markets. However, the true giants of value creation in the logistics sector have developed pure-play, highly-differentiated offerings that are tailored uniquely to customer segments.

For instance, USCO Logistics was slightly better than break-even in profitability in 1996. When new CEO Bob Auray came on board the following year, he molded the business around the high-tech and telecom sectors, developing tailored technologies and business services for clients such as Sun and Nortel. Within four years, USCO shot up to close to $40 million in cash flow or EBITDA, before selling to Kuehne & Nagel for approximately ten times EBITDA. Similarly, CTI commanded a premium valuation of 14 times EBITDA when it sold to TPG, in large part because of its niche leadership within the automotive sector. As these examples demonstrate, vertical solutions can provide tremendous value to shareholders.

Today, PACAM is an example of a company focused on vertical solutions for the liquor industry. As the #1 logistics provider to this niche, PACAM has developed a set of customized services including Foreign Trade Zone designation, co-packing, value-added warehousing, and transportation for the liquor distribution market. Although a small company, PACAM has leveraged these capabilities to achieve over 20 percent annual growth for the past decade, competing successfully in head-to-head battles against multi-billion-dollar logistics companies.

**Cross-Border Services**
Another category poised for growth is cross-border services. Over the past decade, US exports to Canada have grown at 10 percent annually. Last year, over 10 million trucks crossed the US-Canada border, as the U.S. imported $211 billion from Canada and exported $161 billion. Similarly, truck crossings on the U.S.-Mexico border grew from 2.8 million in 1995 to 4.4 million in 2002, as both exports to and imports from Mexico more than doubled over the same time period. As U.S. companies continue to expand trade with NAFTA neighbors, and as security regulations increase, cross-border services will provide expanding opportunities for innovative logistics companies.

Air Road Logistics is an example of a specialist logistics firm, focused on US-Mexico logistics services for automotive, consumer electronics, retail and industrial companies. Air Road was recently acquired by Reliant Equity Investors, in partnership with former Walmart logistics executive Steve Robinson. They were excited about Air Road’s niche leadership and saw an opportunity to expand the company’s services into new geographies (NAFTA-wide, including Canada) and services (including dedicated, brokerage, and inventory management (VMI)). This asset based company really gets supply chain and is uniquely qualified to deliver outsourced services in support of NAFTA driven logistics operations.

Unicity Integrated Logistics is an example of another type of cross-border specialist, serving as a Canadian platform for US-based Fortune 500 companies. Unicity provides Fortune 500 companies with a Canadian supply chain and logistics platform, either for (a) outsourcing their manufacturing operations to Canada, or (b) distributing their products into the Canadian marketplace. The company has grown at over 20 percent annually and should continue to be a leader in this category.

**Post Office Logistics**
The United States Postal Service is the nation’s largest transportation entity. It delivers to a mind-boggling 130 million addresses per day. The USPS designed a WorkShare Initiative in the mid-1990s to better manage the high volume densities received from direct mailers. It sought partners who would shoulder the responsibility of handling linehaul transportation of mail freight, thereby enabling the USPS to focus on its core competency of "final mile delivery." This outsourcing shift created an enormous market opportunity for creative transportation companies who took the time to understand the magnitude of the post office logistics operations.

SmartMail Services responded with an innovative business model that has grown rapidly since its inception in 1996. Maximizing the strength and efficiencies of the USPS, SmartMail offers delivery services for catalogs, flat-size mail pieces, and parcel packages. The company built 16 processing centers nationwide and designed each facility to quickly and efficiently process mail pieces in a highly secure environment. Delivery options include expedited air and budget ground. Service features such as on-line tracking and reporting, address verification, ZIP code correction and selective routing offer mailers greater control over their deliveries. According to CEO Jim Martell, “The broad range of services we offer high volume mailers and shippers give them delivery options they didn’t have ten years ago. The density we achieve in our processing centers allows mailers to shave millions off of their shipping costs without compromising delivery times.” Since its founding in 1996, SmartMail has grown to over 1,200 customers and $200 million in revenues, and is likely to continue to expand.

Ultimately, the smartest small companies are pursuing one of two paths: (1) scale up through niche market leadership, invest in technology, and execute a differentiated strategy; or (2) sell to one of the many motivated buyers that currently exist in the logistics marketplace. Companies can succeed in either scenario. The key is to make a clear decision as to which path to pursue.

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IT'S ALL A MATTER OF LOGISTICS.

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Defining and Highlighting the Steps to Collaborative Transportation Management

When companies are searching for ways to cut costs and increase efficiencies associated with supply chain operations Collaborative Transportation Management (CTM) offers great promise. Here’s a look at how CTM can provide you with a winning business strategy.

By Terry L. Esper, Ph.D.

The competitive marketplace is placing more pressure on companies to be increasingly responsible and effective in meeting their customers’ needs. Market changes such as electronic commerce, economic uncertainties and increased globalization as well as heightened competition are prompting many companies to explore new ways of operating. Consequently, many companies have turned to collaborating with supply chain exchange partners as a way of facing the challenges of operating in today’s rapidly changing marketplace. Over the last decade, supply chain relationships have moved from adversarial exchanges toward more collaborative ventures. Thus, instead of relationships based on opportunism and competition, many supply chain exchanges now put a greater emphasis on trust, interdependence and win-win solutions when focusing on operational issues.

Collaboration in the supply chain has traditionally involved the buyerseller dyad as the primary collaborating parties. However, with so many other entities involved in supply chain execution, such as financial institutions, 3PLs and transportation service providers, there are many additional opportunities to extend collaborative arrangements to other areas of the supply chain. For example, Collaborative Planning, Forecasting, and Replenishment (CPFR) is a collaboration initiative that has become increasingly adopted and has received major support for the benefits it delivers. CPFR involves collaboration on operational planning through automated sales and demand planning activities and order placement. The primary outcome of CPFR is an order forecast that provides the buyerseller dyad with information that can be used for more effective planning, inventory management and facility utilization. However, given that there are other organizations involved in actually executing on the order forecasts developed via CPFR, there is still more room for collaborative execution in the supply chain. One initiative that is a major area of collaboration opportunity is Collaborative Transportation Management (CTM).

What is CTM?

Collaborative Transportation Management is a holistic process focused on managing distribution operations – mode/carrier selection, load tendering, tracking, scheduling, and payment – in a manner that ensures shared risk and benefits for all parties involved. The primary goal of CTM is to drive inefficien-

cies out of the transport planning and execution process by improving the operating performance of the shippers, carriers, receivers and 3PLs participating in the CTM exchange. Hence, companies engage in CTM by sharing key information (i.e. forecasts, capacity plans), exchanging ideas on how to improve the planning and execution of transportation processes, and even co-investing in assets that provide all parties involved with operational benefits.

Collaborating on the transport process has been considered the next logical step to CPFR, as CTM can definitely be an extension of the CPFR process. In this case, CTM involves converting the order forecast that is developed via CPFR into shipment forecasts and ensuring effective and efficient fulfillment of those orders. However, CTM can also be a stand-alone process, whereby the order forecast that initiates the CTM process originates from one of the parties involved in CTM independently. So, while CPFR and CTM are often considered complementary, and even integrated, processes, CTM alone promises added value to participating companies.

Collaboratively managing transportation is of particular interest to many companies when we consider the nature of today’s transportation environment. Since deregulation, increased competition among transportation carriers has required that companies optimize efficiencies in order to remain in business. Moreover, driver turnover rates
in the carrier industry – many times caused by driver frustration with carrier inefficiencies – have consistently been in the area of 100 percent. To further complicate the current landscape of the transportation industry, revised hours-of-service regulations that went into effect in the United States in January of 2004 will impact carrier operations and driver on-duty time in a way that puts even more emphasis and criticality on transportation operational efficiencies. Carriers, shippers and receivers are all impacted. As inefficiencies in carrier operations increase, so do transportation costs and service issues for shippers and receivers. Hence, when considering the current issues facing carriers, and the importance of transportation to the buyer-seller dyad interface, the promises of CTM are well worth exploring.

**The Benefits of CTM**

The collaborative nature of CTM means that all entities involved in the exchange (i.e. shippers, receivers, and carriers) should realize benefits of engaging in CTM initiatives. Recent research and pilot studies on the benefits of CTM have shown that there are a number of major benefit categories that participants can expect. These benefits include:

**Reduced transportation costs** – Shippers and receivers have realized freight cost reductions in excess of 20 percent and administrative cost reductions of 20 percent through CTM initiatives.

**Improved service levels** – CTM initiatives has resulted in on-time service improvements of 35 percent and lead time reductions of more than 75 percent for participating shippers and receivers. Furthermore, inventory reductions of roughly 50 percent have also been realized.

**Increased revenue and end-customer satisfaction** – Sales improvements of approximately 23 percent have been gained through the improved customer service that results from CTM initiatives.

**Increased visibility** – Shippers, receivers, and carriers alike have indicated that CTM initiatives have resulted in an enhanced ability to identify the location of freight in the supply chain, giving them the ability to manage their supply chain more effectively. This benefit is particularly due to the interorganizational systems that are utilized to integrate firm involved in CTM.

While benefits of CTM have begun to be documented, the CTM process is still in its infancy. One of the major reasons why CTM hasn’t been widely adopted, notwithstanding the fact that it’s a relatively new supply chain initiative, is because many firms haven’t been able to identify the key areas of CTM opportunity or the practical steps to engaging in more collaborative exchanges with supply chain partners. The following discussion will highlight some of these issues.

**Implementing CTM**

There are four primary areas that represent key opportunities for CTM implementation. These key areas can serve as a starting point for firms interested in engaging in CTM initiatives, as they embody the core of CTM pilots that have been implemented by several companies to date. These key areas include:

1) **Capacity Procurement** – the interaction between the shipper and carrier to arrange transportation capacity. Under CTM this area involves collaboratively developing load tendering plans, so the carrier can anticipate and plan for demand more effectively, and the shipper can potentially realize a carrier base reduction and enhanced opportunities for load consolidation.

2) **Inbound Management** – the recipient of freight proactively controlling and managing the transportation of inbound goods. A CTM approach to inbound management involves the receiver working together with carriers and shippers to determine inbound consolidation and management transfer opportunities that result in decreased costs and lead time for the recipient, a reduction in administrative expenses for the shipper, and increased

**3) Integrated Movements** – aggregated volumes for multiple firm locations or across multiple firms. From a CTM perspective, this initiative entails searching for opportunities to consolidate or aggregate volumes across locations and/or companies that results in enhanced operational efficiencies for shippers, receivers and carriers alike. Such an approach can lead to such benefits as reduced transportation costs and improved service for shippers and receivers. Carriers can improve asset utilization and operational expenses.

4) **Transportation Marketplaces** – on-line venues for transportation service procurement that use real-time matching of supply and demand to ensure cost and operational efficiencies for shippers, receivers and carriers. Using marketplaces is considered a CTM opportunity because of the cost and service benefits that all parties in the shipper-receiver-carrier triad can realize. Furthermore, the Internet-based platform of marketplaces results in process automation, which can also lead to administrative cost benefits for all entities involved.

When considering these and potentially other areas of opportunity for CTM, it is important to note that implementing CTM is not an easy task. Collaboration is not simply cooperating with other organizations. All parties must benefit for true collaboration to exist. Hence, CTM involves not only searching for opportunities to streamline processes and cut costs out of a company’s operations, it entails working together toward common objectives and sharing profits/benefits. It is easier said than done – but the potential savings make the effort one that many are gearing up to make.

The CTM sub-committee of VICS (Voluntary Interindustry Commerce Standards) has devised a five-step approach for getting started with CTM.

**Step 1:** Select CTM Partners – This is a very critical step in the CTM implementation process. It is important that CTM partners have a willingness and ability to pursue the potential benefits of the
CTM initiative for all parties engaged. Moreover, the willingness to share critical strategic information is also important, as the risk of sharing such sensitive information should be outweighed by the potential efficiencies and cost savings of CTM. Many firms have found that selecting 3PLs during this step has also been beneficial, as they can serve as a facilitator of communication and execution amongst the parties involved in the CTM initiative.

**Step 2:** Engage CTM Partners – This step involves the brainstorming of potential benefits and opportunities of a CTM initiative with the partners selected in Step 1. Moreover, a course of action is established during this step, which involves segmenting responsibilities and identifying key personnel in each company that will serve as key contacts in managing the CTM initiative.

**Step 3:** Benchmark the Performance of the CTM Initiative – During this stage, the CTM partners establish agreed upon key metrics of performance for each participant. Such performance metrics should be aligned with the potential benefits outlined in Step 2, such that the CTM partners can establish whether or not the intended benefits are being realized. Not all parties will consider the same set of key metrics; however, it is important that all parties are aware of how each CTM partner is measuring the performance of the initiative.

**Step 4:** Pilot Test – This stage involves the testing of the CTM initiative. It is important that procedures are clearly defined, responsibilities are clearly delegated and the pilot duration and timeframe is clearly established from the beginning.

**Step 5:** Determining Next Steps – The CTM partners should jointly assess the success/failure of the pilot initiative. This involves each party determining their satisfaction with the project relative to expected benefits and by using the key metrics defined in Step 3. Upon assessing the initiative, all parties should discuss the next steps of CTM and whether further continuing with the collaboration is beneficial to all parties engaged.

As more firms are looking for new ways to improve operational efficiencies and streamline processes, CTM is likely to become a key strategy for many companies. Realizing the importance of the transport function to the viability of business organizations, transportation is poised as a key area of opportunity to capitalize on. Collaborating with transportation service providers, and all entities involved with this interface, is the next logical step to streamlining transportation processes. Although CTM is becoming more widely utilized, moving to a more collaborative approach to managing transportation is not an easy undertaking. While traditional collaborative initiatives have primarily involved the buyer-seller dyad, CTM requires at least three collaborating parties. And, when 3PLs and marketplaces are involved, the number of parties engaged in CTM can be in excess of four firms. This factor in itself highlights the difficulty of implementing CTM. However, the reports to date are quite promising, as many firms have documented very substantial benefits derived from adopting CTM. Clearly, the time and effort to engage in CTM makes it a very worthwhile practice.

**References:**

The Impact of Exchange Rates on Supply Chain Management

While discussions rage about transborder issues regarding security, prescription drug traffic and government trade policies, a far more insidious force is shaping the flow of trade between the United States and Canada - the tango between the U.S. and the Canadian dollar and the changing exchange rate. Here’s a glimpse into how this tango will likely impact your budgets and future business.

By Tom Nightingale and John Ferguson

WITH MORE THAN one third of Canada’s GDP linked to trade with the United States, these two countries are inextricably tied in a symbiotic relationship. Over the past 12 months, the Canadian dollar has increased in value over the U.S. dollar at a tremendous rate. Many experts agree that this trend will continue. A recent story in the Toronto-based The Globe and Mail, forecasted that “The Canadian Dollar will continue its lofty ascent, reaching 90 cents (U.S.) in the next couple of years…” These forecasts are supported by leading economists such as Jayson Myers, senior vice president & chief economist of Canadian Manufacturers & Exporters (CME), an organization that provides advocacy to the Canadian government at all levels to contribute to the competitiveness of Canadian exports. (CME has pegged the dollar closer to the 80-cent level.)

Carriers Respond

Wherever the Canadian dollar or "loonie" levels off, it’s already clear that the shift has left many carriers scrambling to adjust their rates to ensure they remain economically viable. In a recent earnings report, a major U.S.-based truckload carrier reported its earnings per share were depressed by 41 percent due to the effects of the surge in the Canadian dollar exchange rate.

How does a carrier become so affected by a spike in the exchange rate? Very few carriers use currency hedges. Sophisticated financial tools such as these are generally reserved for the largest companies such as the parcel carriers. Truckload and Less Than Truckload carriers are the most impacted by fluctuations in the exchange rate.

In most cases, the cost of shipments are largely Canadian-dollar denominated, but they are often paid in U.S. dollars. As much as two-thirds of the costs for a transborder carrier are Canadian-dollar denominated, depending on their driver domicile, freight mix and their discipline around fueling. While the costs incurred and paid in Canada have risen, the U.S. dollar is unable to compensate providers of fuel, drivers and healthcare at comparable rates, leaving carriers hard-pressed to cover their cost of operations.

As a result of the change in exchange rates, carriers are beginning to accept freight differently. Carriers are in the midst of one of the periods of greatest demand versus supply in years. Due to the excess demand versus the supply of capacity in the marketplace, carriers are turning to the most profitable loads they can generate. One of North America’s largest logistics companies reported having increased difficulty in finding carriers willing to honor
existing rates and noted it was nearly impossible to locate carriers to move transborder freight denominated in U.S. dollars. Most carriers already have in place, or are beginning to implement, exchange rate surcharges. While many carriers and shippers have grown accustomed to fuel surcharges, it appears transportation professionals will now need to incorporate the additional complexity of exchange rates into the surcharge matrix. In addition, carriers are often returning to shippers to renegotiate, recalibrate, or convert contracts into alternate currencies. Several carriers are reporting the discontinuance of business with customers who were unwilling to share the burden.

**Shippers Respond**

As an industry begins to respond to these trends, there are a number of protections that carriers and shippers will now need to incorporate the additional complexity of exchange rates into the surcharge matrix. In addition, carriers are often returning to shippers to renegotiate, recalibrate, or convert contracts into alternate currencies. Several carriers are reporting the discontinuance of business with customers who were unwilling to share the burden.

Shippers have started to convert their pricing into Canadian dollars to simplify the carrier selection process and minimize the variability in transportation pricing that is largely inelastic to their customers.

However, changes such as these will inevitably drive the flow of goods to alternative modes. Modes that are less sensitive to driver and fuel costs become the natural alternative as Canadian manufacturers strive to remain competitive. Intermodal traffic will undoubtedly become more widely considered as a viable option to keep transportation costs down.

For Canadian manufacturers, the impact of the dollar on southbound supply chain costs is merely symptomatic of a much larger problem, namely, the threat of losing U.S. market share. Due to a reluctance to raise prices quoted to U.S. customers, export-profit margins have generally been bearing the brunt of currency appreciation, in what the CME likens to a "23 percent price cut." Consequently, overall manufacturing shipments have remained reasonably stable, although below their peak in 2000. To some extent, the rebounding U.S. economy helps mitigate potential manufacturing losses. But in the long term – assuming the loonie remains strong – restructuring to achieve higher levels of productivity is essential to restore profitability.

As landed costs grow, restructuring often requires a new look at sourcing. And in this context the lure of China continues to grow. With the Yuan (Renminbi) pegged to the U.S. dollar, China is the only major economy not struggling with currency appreciation, making it even more competitive for Canadian and other foreign buyers. Another byproduct of the weak greenback is that Canadian companies sourcing in China are actually getting a break on logistics costs, since air and ocean freight rates are typically denominated in U.S. dollars. Combine these factors with the country’s existing low-cost advantages and it’s easy to understand why China is today’s sourcing buzzword.

But China aside, should the exchange rate stabilize at its current higher level, shippers may also reevaluate their North American distribution and sourcing patterns. It may make more financial sense to maintain inventory in Seattle rather than Vancouver, or in Buffalo rather than Toronto. In this event, the high Canadian dollar only compounds the existing pressures caused by security issues at the border. While security concerns arguably make it safer and quicker to service American customers from U.S.-based warehouses, now the exchange rate makes it more cost effective too.

**Conclusion**

As with many of the challenges that face logistics today, the professionals that populate the industry will rise to the occasion and determine the most effective ways for shippers and carriers to work through these issues. And like many other industry challenges, this is not a short-term issue. In an increasingly interdependent and global marketplace logistics professionals who have not considered exchange rates as a critical component of their jobs now face a new era and will need to step up their game to learn new skills.
Developing a SUPPLY CHAIN EDUCATIONAL PLAN

THE LQ EDUCATION FORUM

How are our educational institutions and companies meeting the requirements of logistics and supply chain management practitioners in the fast changing realm of global trade?

This series of articles by leaders in the field of education answer this question with a focus on four key dimensions of logistics and supply chain management education in North America. This includes perspectives regarding: 1.) traditional and undergraduate programs, 2.) non-traditional graduate programs, 4.) executive education programs, 5.) Commentaries from industry leaders.

LQ’s Education Forum begins with an introduction by Professor David Closs Michigan State University, and Executive Editor of LQ, followed by this series of insightful articles:

• Reflecting the Changing Face of Business Through Non-Traditional Degree Programs, by Professor David Closs

• Re-Casting Education in Business Logistics: An Overview of Traditional Degree Programs, by Professor Robert Novack

• Key Issues in the Design and Delivery of Supply Chain Management Programs, by Professors Peruvemba Ravi, Shelly Jha and Michael Haughton

• An Academic’s View of Executive Education Programs, by Professor Ted Stank

• A Practitioner’s View of Supply Chain Education, by Dr. Alan Saipe

• The Confessions of A Logistics Man, by Jim Davidson

• What Needs to Change to Create Tomorrow’s Leadership in Logistics, by David Faoro
While Logistics and Supply Chain Management have not been traditional majors or concentrations within most business school programs, there is increasing interest in both for degree and non-degree programs. Historically, many logistics and supply chain executives developed from one of the logistics functions such as transportation or obtained a college degree in another functional area and then learned the specifics on-the-job. However, increasing enterprise awareness regarding the role that effective supply chain management can have on firm competitiveness are driving the need for more in-depth knowledge regarding technologies employed in logistics and supply chain management. The result is an increasing demand for more formal logistics and supply chain management education.

The demand and motivation for logistics and supply chain education evolves throughout the career of executives. Figure 1 illustrates how the relative focus of education shifts as managers move through their career. The dimensions of that evolution shift in focus from credentials, capability, and competency.

Early in their careers, individuals desire an educational experience that can establish their credibility. Since individuals at this stage have no established reputation on their own, they need a traditional undergraduate or graduate degree from a respected institution to provide credentials that will enhance credibility. The traditional undergraduate or graduate degree can also enhance capability and competency through classroom exercises and internships. However, the major contribution is a credential, as traditional students don’t spend enough time in an operating environment to develop substantial capability and competency (See Figure 2).

Many individuals, however, don’t graduate with a degree in logistics or supply chain management but desire to obtain a graduate degree without having to interrupt a full time position. While many schools offer a Weekend or Executive Master of Business Administration (M.B.A.) for such individuals, they generally don’t offer any specialization or concentration particularly in logistics or supply chain management. While these individuals have established some credibility through their previous degrees and work experience, they desire to enhance their specific capabilities in logistics and supply chain management. As Figure 3 illustrates, some schools are beginning to offer specialized logistics or supply chain management graduate degrees with limited residency requirements. In addition to the credentials provided in the form of a graduate degree, such programs substantially increase an individual’s capabilities through focused and in-depth education using intensive discussions, case studies, and technology applications. Such limited residency programs allow students with no previous background to obtain credentials and develop some capability in logistics and supply chain management. For those with previous logistics or supply chain management education, the limited residency masters program enhances the individual’s capabilities.

Later in an individual’s career, the focus of a successful manager must evolve from a strong focus on credentials and capabilities to a broader focus on competency. While the educational foundation is built on the traditional and non-traditional degree programs, the later focus of a senior logistics or supply chain manager must be on competencies related to integrative and change management. The manager must develop some knowledge regarding the operations of other supply chain management and enterprise functions, understanding regarding the dynamics and interactions, and competency to orchestrate and motivate the changes necessary to achieve superior performance. As Figure 4 suggests, such competency can be developed through Executive Education experiences. The combination of functional background sessions, performance measurement discussions, problem solving applications, and networking available through Executive Education provides the senior manager with the framework and methods to initiate, monitor, and guide change.

With this framework, the remaining sections of this Education Forum offer perspectives regarding the practices, trends, and rationale for each of the dimensions of supply chain education, beginning with traditional degree programs followed by non-traditional degree and executive education programs.
Reflecting the Changing Face of Business Through Non-Traditional Degree Programs

Today’s non-traditional degree programs, which include in-depth graduate courses, are close to traditional executive programs in format; they enable busy executives to more quickly capture many of the all-important benefits essential to their professional development. They also enable executives to acquire a first-hand understanding of integrated supply chain management and state-of-the-art management techniques.
While there are an increasing number of traditional degree offerings in supply chain management, there are also an increasing number of students desiring to obtain an advanced degree without giving up a full-time position. This is evidenced by the substantial decline in regular M.B.A. Admissions applications. Executive and Weekend M.B.A. Programs have evolved and expanded to meet this specific need. However, the Executive and Weekend M.B.A. programs generally provide a general management orientation without a specific focus on a functional area. As a result, such general management programs may not be appropriate for individuals that desire substantial depth in a specific functional area.

These non-traditional programs provide a number of advantages to both the participants and the institutions that offer them.

To address this need, a number of institutions, including Georgia Tech, Michigan State, and Penn State have initiated limited-residency Masters Programs focusing on logistics and supply chain management. These programs offer in-depth graduate courses in a format similar to Executive Programs where students spend one to two weeks on campus to complete up to six-credit hours of class work. Unlike Executive Education however, these limited-residency programs result in a graduate degree. While the precise format varies, most of the limited in-residency programs require students to spend two-weeks on campus twice or three times per year for an 18-24 month program. There may also be some online and project requirements to complete the 30-36 semester-credit-hour programs.

These non-traditional degree programs are designed to provide working professionals with a combination of an integrated supply chain management perspective along with a specific focus on critical logistics functions. The typical program is roughly balanced between supply chain management principles, logistics operations, supply chain technology and international and support courses (data analysis, change management, communication and field study applications). While the courses are similar to other graduate courses in regard to case studies, presentations, projects and examinations, the class discussions are much more intense and often resemble board room rather than class discussions. The result is that participants are able to develop both a solid foundation regarding supply chain and logistics principles and strategies and the ability to develop and defend their positions in situations with their peers that are themselves successful managers.

These non-traditional programs provide a number of advantages to both the participants and the institutions that offer them. For the program participants, there are five major benefits. First, they develop or update their knowledge base regarding supply chain and logistics principles and strategies. This is a good starting point for individuals who have limited or out-of-date supply chain management or logistics degrees. Second, through projects and class discussions, the students are exposed to supply chain and logistics practices in other industries. This can help to expand and synthesize their knowledge base and provides ideas for application in their firm. Third, they are exposed to state-of-the art management techniques, tools, and applications. This includes statistical and research methods, information technology applications, and decision support tools. Fourth, they create a network of faculty and peers with expertise that can assist in solving problems throughout their career. While similar relationships can be developed in traditional degree and executive education settings, the relationships developed through non-traditional programs can be particularly productive because of the understanding and trust developed through intensive discussions both inside and outside the classroom. Finally, they are provided with a degree that provides with credentials demonstrating their capability and competency. The increased capability and competency can enhance the individual’s position from the perspective of colleagues and customers.

While there are substantial benefits for the participants, the institutions obtain benefits as well. First, having faculty effectively teach and interact with working professionals in a specific functional area requires faculty to maintain expertise at a state-of-the art level resulting in better and more relevant teaching for other degree programs. Extended classroom interaction with working professionals also exposes the faculty to current practices and examples that further enhances teaching in other programs. Second, using the faculty relationships developed through the non-traditional programs, participants become potential employers for traditional students. Third, the participants and their projects provide material for faculty to develop timely and relevant case studies. Fourth, since the non-traditional programs often include many aspects of the traditional programs, the non-traditional students represent a very knowledgeable Program Advisory Board that can critically assess the institution’s academic and support offerings. Finally, the tuition obtained from these non-traditional programs enhances the excellence level of both traditional and non-traditional programs in an environment where funding to higher education has been reduced substantially.

The demand and motivation for logistics and supply chain education evolves throughout the career of executives.
Re-Casting Education in Business Logistics: An Overview of Traditional Degree Programs

As industry practices change, so do the curriculums of many of these degree-granting institutions. In fact, Penn State totally reconfigured its M.B.A. program three years ago and revamped its undergraduate program last year to ensure its traditional degree programs mirror today’s fast-changing practices in industry.
Traditional degree programs in Business Logistics have been in existence in the United States since the early 1960’s. Traditional programs are defined as those granting degrees in Business Logistics at either the undergraduate or graduate levels. The pioneer schools in this area have been Michigan State University, Penn State University, The Ohio State University, and the University of Tennessee. However, today many more schools are offering degrees in Business Logistics and Supply Chain Management (from this point the term Business Logistics will also include the concept of Supply Chain Management). Some of these are housed in Colleges of Business while others are found in Colleges of Engineering. This growth in degree granting institutions in Business Logistics has been fueled by the increasing importance placed on this discipline in the business world.

Although all of these programs vary in their approach to preparing students to be Business Logistics professionals, most of them have several practices in common. This discussion will focus on the programs at Michigan State, Penn State, and Tennessee. All three grant undergraduate degrees in Business Logistics and all three have emphases or concentrations in Business Logistics or Supply Chain Management in their M.B.A. programs.

Traditional undergraduate programs focus their curriculum on developing credentials for their students. Most of these students enter a four-year degree program with no operating experience in Business Logistics. Although some students enter as returning adults, the numbers are relatively small. This same focus applies to graduate programs (M.B.A. programs will be the focus here). At Penn State, work experience is one of the requirements for entrance to our M.B.A. program. However, many of our entering graduate students have experience in areas other than Business Logistics. So, again, the focus of the curriculum is to develop credentials for these students.

The structure of both the undergraduate and graduate curriculums at the three institutions named above are very similar in their approach to developing these credentials. All students are first exposed to an introduction to Business Logistics course. Following that, they are exposed to more focused courses in topics such as manufacturing, transportation, or procurement. The final required course is a “capstone” course that attempts to bring together all of the basic concepts of business logistics from a process perspective. Usually, these capstone courses use simulations to help the students understand the systems nature, or trade-offs, inherent in Business Logistics. Accompanying these courses are courses in information systems with applications to Business Logistics and Supply Chain Management. This type of curriculum allows the student to see the important interaction among the three flows found in Business Logistics – information, product and cash.

With a sound basis for establishing credentials, academic institutions have several methods for students to interact with industry, helping them to begin developing capabilities. First, students are strongly encouraged to obtain internships with companies that have Business Logistics departments or with third party logistics companies. These internships can last from three months to one year. Many students will have had more than one internship with more than one company during their academic career. Although this will not allow them to graduate in four years (at the undergraduate level), they are much better prepared to enter industry upon graduation. At Penn State, we make every effort to secure an internship for our M.B.A. students between their first and second year in the program. These internships, for both undergraduate and graduate students, make their learning experiences much more meaningful when they return to campus.

Second, the M.B.A. students at Penn State are required to participate in an “immersion” program. This entails groups of students traveling abroad for up to a week to visit different companies to investigate their business practices. Each group is escorted by a graduate faculty member who acts as a “tour guide” to help identify best practices in these organizations. At the undergraduate level, many programs offer study abroad opportunities for one semester where the student is exposed to general business and Business Logistics courses at a non-U.S. academic institution.

Finally, students are exposed to industry practitioners in the classroom. In many academic institutions, practitioners are used as guest lecturers on specific topics because of the expertise they bring to a given topic. This allows the practitioners to exhibit how theory does or does not work in industry and gives the students opportunities to interact by asking questions. At Penn State, we have a Visiting Lecturer Series where we invite high-ranking executives from different areas of industry to give their views on Business Logistics practices.

The primary focus of traditional degree programs is to provide the student with an in-depth understanding of Business Logistics practices and how they relate to practices in industry. As industry practices change, so do the curriculums of many of these degree-granting institutions. Penn State totally reconfigured its M.B.A. program three years ago and totally revamped its undergraduate program last year. Both are structured around the SCOR Model, focusing on Plan, Source, Make, Deliver, and Return. Michigan State and Tennessee have also changed their programs to better reflect the credentials needed by students to be successful in industry. The basic premise for doing this is that, although we have many types of customers as academic institutions, industry buys our product, which is our students. This makes industry a priority customer. If the product of an institution is not acceptable, firms will go elsewhere to hire new employees. So, programs focus on making sure that the credentials they bestow on a student reflect the requirements of the market and the customer. These credentials are the key for students to be able to enter the job market so they can progress to develop capability (through non-traditional graduate programs) and competencies (through executive education). The concepts of “capabilities” and “competencies” are the topics covered subsequently in this education forum.
Key Issues in the Design and Delivery of Supply Chain Management Programs

Some traditional business education programs may be exacerbating supply chain inefficiencies by producing a stream of managers who have a compartmentalized view of business. So what’s the best road to integration in a world where business managers value integration among product, information and financial flows?

Prior to the start of the twentieth century, the study of business was not regarded as a separate and distinct academic discipline. Discussions of business tended to focus on either ethical issues or on trade and economic issues. Over the course of the twentieth century, business came to be regarded as a distinct area of study with sufficient depth and rigor to justify education at the undergraduate, master's and doctoral levels. An M.B.A. degree became arguably the most sought-after degree on the planet. With a few exceptions, the curriculum at most business schools was organized around the study of key functional areas – operations, human resources, organizational behavior, finance, marketing, information systems, and accounting. Business school graduates often embarked upon their corporate careers within these functional areas, with their interdisciplinary training and their academic pedigree placing them on a fast track to senior management. Other business school graduates chose to take up more specialized positions as analysts and consultants in large accounting and consulting firms.

While the imparting of segregated skills in various functional areas has proven to be a viable model for the training of managers in old-style businesses, this model is unsuitable for providing training and education in Supply Chain Management (SCM). By definition, SCM links several organizations within a supply chain and various functional areas within an organization. One could argue that the traditional mode of business education has exacerbated supply chain inefficiencies by producing a stream of managers who tend to have a narrow, compartmentalized view of business.

Ideally, a SCM curriculum must consist of two distinct components. The first component is a set of courses in the theory and principles of accounting, human resources, operations, and other key functional areas. The second component is a set of courses in integrative SCM theory. This approach to the teaching of supply chain management is applied successfully, at both the undergraduate and graduate levels, at Wilfrid Laurier University in Canada.

This approach enables students to realize that integrative SCM theory, mostly of recent origin, may be used to improve customer service, reduce system wide cost, and improve asset utilization. Also, as a young, growing area of study, it remains novel and exciting, and will help deepen students’ interest in SCM. However, students must be helped to recognize that integrative SCM theory is a work in progress, and not a completed product. As such, many important problems that occur in real supply chains have yet to be studied. This is both a gap and an opportunity, and bright students will recognize that some instruction in – albeit incomplete – integrative SCM theory is better than none.

One possible alternative to the Laurier approach is to have universities focus solely on the first component, with the teaching of the second (integrative SCM theory) reserved for graduate studies.
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sibly economics – departments might need to jointly design programs. University teaching of SCM is usually conducted either in a business school or in an Industrial Engineering department. Either a business school or an Industrial Engineering department can deliver a comprehensive SCM program, if (a) there is a critical mass of SCM-trained faculty in the department, and (b) students in the program can take complementary courses in finance, information systems, and other functional areas that support integrative SCM education and practice.

Many business schools can satisfy both these conditions. However, most industrial engineering departments cannot meet the second condition, without having their students take courses externally from business schools and economics departments. Effective integration of such external courses into the SCM program is difficult, unless the courses are developed specifically for that program. If the number of such courses is large, then the industrial engineering and business – and possibly economics – departments might need to jointly design and offer the program.

In the design and delivery of SCM programs, it is important to be aware of an important difference between graduate programs in SCM and those in other disciplines. A graduate student in Mathematics typically has an undergraduate degree in Mathematics. Similarly, a graduate student in Sociology typically has an undergraduate degree in Sociology. In contrast, Master’s and Ph.D. students in SCM often have diverse undergraduate degrees in areas such as the humanities, the sciences, business, and engineering.

Given their varied undergraduate backgrounds, graduate students in SCM should be taught a set of foundation courses in SCM fundamentals (inventory, transportation, facilities, information systems), as well as courses in integrative SCM models. The absence of undergraduate course work in SCM will not be a hurdle in tackling graduate SCM courses, if the Master’s and Ph.D. students are taught necessary skills in statistics, optimization, and research methods as needed.

In fact, the variety of undergraduate degrees held by graduate SCM students in a business school is an asset, not a liability as SCM is an interdisciplinary area of study. Advanced studies and research in business, including SCM, are usually driven by the existence of real-world problems. In this respect, too, graduate studies in SCM differ from graduate studies in other disciplines such as mathematics and philosophy. Therefore, for the graduate student of SCM, a certain level of maturity and exposure to real-world issues are helpful in identifying useful topics for research.

SCM graduate programs at different universities currently use slightly different curricula. All programs, however, appear to cover the building blocks of SCM education and practice: inventory management, design of the network of production and distribution facilities, transportation management, and the collection, use, and sharing of important logistics information. New, active areas of research include dynamic pricing to coordinate supply and demand, and design of contracts to achieve globally optimal profits by sharing risks and rewards among supply chain partners. Emerging research methods include, among other things, application of game theory to supply contracts, and stochastic optimization of facilities, transportation, and inventory.

SCM employers must occasionally make a choice between the hiring of a Master’s graduate and a Ph.D. graduate in SCM. Because of more advanced coursework in both SCM topics and research methods, Ph.D. graduates typically have a more in-depth understanding of SCM than Master’s graduates, and a greater capability for original research. Further, an SCM Ph.D. involves a thorough and rigorous analysis of one or more specific SCM-related problems. SCM Ph.D. graduates are thus better equipped to analyze and solve a wide variety of complex SCM-related problems faced by organizations. These graduates are best suited for applied research positions, requiring them to model complex SCM problems, either as part of SCM consulting firms or of SCM planning staff in large organizations. For line management positions with decision-making and implementation responsibilities, either a Master’s or a Ph.D. graduate may be the best choice.

Conclusion

This article has examined some key issues faced in delivering undergraduate and graduate SCM education. Given the complex and dynamic nature of SCM, the solutions suggested in this article will, no doubt, need to be revisited as the field develops and LQ, whose authors and readers include both SCM practitioners and SCM educators, is an ideal forum for continuing to explore improvements to SCM curricula and programs.
An Academic’s View of Executive Education Programs

Often there is a strong impetus for the curriculum at today’s universities to remain functionally focused, even as industry looks for individuals with a broad supply chain perspective. But executive programs represent offer a solution – a bridge for managers with experience in diverse functional areas to add to their knowledge of how functions work together within their companies.

Recent attempts to define supply chain management (SCM) have intensified debate regarding the relationship between SCM and established areas of practice and education in business administration, engineering, and decision sciences. For example, the Council of Logistics Management (CLM) pursued a process-oriented approach, defining SCM as the planning and management of all activities involved in sourcing and procurement, conversion, and logistics management activities, including coordination and collaboration with suppliers, intermediaries, third-party service providers, and customers to facilitate integration of supply and demand management within and across companies. Alternatively, SCM has been portrayed as a strategic phenomenon involving the systematic coordination of traditional business functions within a particular company and across businesses within the supply chain for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole. Both definitions emphasize that SCM spans all functional areas within an organization and links all trading partners across organizational boundaries to reconfigure business processes in a systematic way that seeks to optimize end-customer value by perfectly meeting customer needs and expectations with minimal waste. SCM, therefore, emerges as something larger than an extension of any one established area of practice or study.

Inherent in a strategic view of SCM is an acceptance that traditional functional areas are merely components of a broader firm orientation. Functional areas are viewed as competencies that
may be developed to a greater or lesser extent depending upon their fit with an individual firm's overarching orientation toward SCM. They are not strategies unto themselves, but rather support higher-level strategic orientation such as customer, competitor, product, or supply chain. The view supports increasing requirements that industry abandon the vertical, functional organizational structure characteristic of traditional operations in favor of a more horizontal, cross-functional structure that emphasizes management of horizontal flows of products, information, and financial assets. Such horizontally oriented organizations require individuals who can effectively comprehend and manage integrated operations both within enterprises and between supply chain partners.

The challenge, therefore, is being able to educate supply chain professionals across all SCM disciplines. Multidisciplinary courses that integrate fundamental product and process technologies (such as TQM, concurrent engineering, and synchronous manufacturing) with the business aspects of finance, accounting, and operations are a need identified by both practitioners and educators. Integrative program curricula, however, are difficult to develop. Faculty that design curriculum, for example, struggle to find enough time to permit investigation into integrated topics with sufficient detail. In addition, faculty members often are uncomfortable about teaching in areas beyond their expertise. In addition, until recently, classroom materials have not been particularly well integrated across functional areas. The result is a strong impetus for curriculum to remain functionally focused, even as industry is looking for individuals with a broad supply chain perspective.

Graduate and executive programs provide an interesting application for integrative supply chain education. Students enrolling in these programs come from diverse undergraduate and practical backgrounds, yet fundamental knowledge in core business areas is required to become effective supply chain managers. The issue, however, has proven less problematic for executive education students than for students in undergraduate and graduate programs. Executive education focuses developing capabilities and competencies for mid-to upperlevel executives who are expected to have a sound understanding of concepts and strategies but do not need to be as familiar with operational decision analysis tools as entry level managers. The task of upperlevel managers is to define the strategy and tactics to address business problems that are then solved by personnel more current in functional operations techniques. Therefore, executive programs represent a significant way for managers with experience in the diverse functional areas to add to their knowledge of how the functions work together within the company and across the supply chain.

Another dimension that benefits executive students in supply chain management education, despite disparate backgrounds, is the increasing commonality of the topics within each traditional business discipline. Each discipline associated with SCM is pushing the boundaries of its domain into areas traditionally considered the domain of another discipline. Logistics management, for example, now consid-
A Practitioner’s View of Supply Chain Executive Education

As many Canadian supply chain and logistics managers lack formal training in their discipline, non-degree courses offer a viable solution. Unlike degree courses, these non-degree courses put more emphasis on building upon specific practices and industry experience.
Lectured in my first non-degree course in 1978. It was a three-day course called Physical Distribution Management put on by The Faculty of Administrative Studies at York University. Since that time I have lectured in more than 200 short non-degree courses sponsored by eight different institutions, including four universities. Speaking from that perspective, I believe that non-degree courses play a meaningful role in educating Supply Chain and Logistics Management (SCLM) leaders and managers. However, I also believe that this kind of education could make a much larger contribution to the Canadian SCLM community if we were able to overcome a number of limitations.

The role of non-degree education

We have little quantitative information about the people who operate Canada’s supply chains. In a 1997 study, the Toronto-based Logistics Institute estimated that nearly 600,000 people work in logistics. Of those, 38 percent had managerial or supervisory job classifications. The study was based on 1991 census data, and appeared to use rather wide and inclusive definitions of logistics jobs. We have even less information about the educational backgrounds of our supply chain managers. How many went to school in Canada? How many have taken any management courses? We don’t have answers to those questions.

Nonetheless, we can make rough estimates. I asked several SCLM individuals to provide an estimate regarding the percentage of Canadian SCLM executives that have had any formal education in supply chain and logistics management? The overwhelming opinion was that the percentage is low – almost certainly less than 25 percent, and probably even less than 10 percent. The respondents believe that the percentage is low because: (1) Today’s leading SCLM executives had their formal training several decades ago when there were even fewer SCLM college and university courses than there are today. (2) Not many of today’s SCLM leaders actually planned a career in SCLM – instead they happened into the field, did well, liked it and moved up through the ranks.

Although this is gradually changing, most supply chain and logistics managers have not had formal training in their discipline. That is why non-degree courses play an important role in SCLM education. Unlike degree courses, non-degree courses put more emphasis on building upon specific practices and industry experience. Unlike conferences and trade shows, non-degree courses do not advocate specific products – but instead can provide a more objective forum.

In a recent column in the Supply Chain Management Review, Professor Bud La Londe identified several key structural changes in the career patterns of U.S. logistics and supply chain executives. His analysis focused on the characteristics of the Council of Logistics Management (CLM) membership. When comparing the characteristics of the highest-level logistics/supply chain executives in the 1998 and 2003 groups, he found that over the five-year span:

- The number of executives at the vice presidential level increased almost fourfold;
- The number of women in the most senior logistics jobs increased from a fraction of a percent to almost 10 percent percent;
- About 20 percent of the group had “supply chain” in their title – about the same in 2003 as in 1998; and
- The number of executives with “global” in their title grew from 5 percent to 10 percent.

The changes in the nature of CLM’s membership reflect underlying changes in the SCLM function. Our body of knowledge and our courses will need to keep pace with the changing nature of the SCLM function. More important, SCLM executives must be more diverse, more inclusive, more global and as a result, having more leverage on the results of their businesses.

Another kind of change is worthy of note – the change in the nature of the educational process. There is growing evidence that the ready access to information through the Internet combined with the rapidly falling cost of accessing that information is changing the purpose of education from “imparting knowledge” to “providing experiences”. This is supported by the following quotations from teachers of another era:

The only source of knowledge is experience.
– Einstein

I hear and I forget; I see and I remember; I do and I understand.
– A.S. Neill

You cannot teach a man anything; you can only help him discover it within himself.
– Galileo

Many of us will nod in agreement with the sentiments of these quotations. Both degree and non-degree courses will tend even more to emphasize action learning, and other experience-based approaches to learning.

Making the most of the future

Several factors limit the effectiveness of non-degree education in Canada today:

- We need more good Canadian teaching materials. This implies more time and effort devoted to research and the preparation of high quality case studies.
- We need more of an industry-based approach to SCLM. The world of general merchandise retailing is different from the world of automotive manufacturing. The right way to manage a hospital supply chain is different from the right way to manage a grocery store. We need more industry-specific programs in SCLM.
- We need to strengthen the partnership between industry and the providers of SCLM education. The suppliers and the consumers of SCLM education are reliant on each other and need to work together much more closely.
- Finally, we need to overcome the unfortunate fragmentation in SCLM non-degree education. We need to find creative ways to build some scale in our non-degree education providers, so that they can have the resources to better meet the needs of the SCLM community.

Finding ways to deal with these issues will help us make non-degree SC&LM courses even more effective than they are today.
They never scored a touchdown.

During the 16 game pro-football season, it's the towering pass, the end-to-end rush and the crushing tackle that brings fans to their feet. But when the game's over, all that really counts is how many points are on the scoreboard. Again this year it wasn't the "glory players" that racked up the big points — it was the place kickers. Those guys on the special teams who know how to get the job done.

When it comes to supply chain management, we are the "Special Teams" solution ... the Wheels Group of Companies. We work with some of North America's finest businesses offering them a wide slate of supply chain solutions. We provide comprehensive dedicated logistics programs for companies in the auto industry ... and manage country-wide distribution networks for building products manufacturers. We find retail distribution solutions for greeting card companies ... and keep a constant supply of groceries on store shelves across Canada.

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The Confessions of A Logistics Man

What kind of accelerated payoff does logistics training and executive development offer companies? And how do some companies and their teams benefit from the education journey while others fail to?

By Jim Davidson

O ur industry has seen dramatic changes over the last 40 years. In fact, it could be argued that even though transportation and distribution were critical and growing elements of the emerging global economy, our field of business lacked the discipline prior to 1960 to even be called an “industry”. Today, however, you can find respected universities all across North America that offer doctoral programs in logistics. At the same time, professional institutes are making a tremendous contribution to deepening and broadening the dialogue and understanding of our industry. Aside from providing a forum for research and debate, they offer practical programs for logistics practitioners to gain entry-level training as well as professional development throughout one’s career.

As the significance of logistics and supply chain management grows and moves up within the management hierarchy, it’s important to fuel that growth with better, brighter people. Education is absolutely an essential key to continuous improvement in supply chain management. However, having said that, I believe it is equally important to manage what education can and cannot do for our industry and for the people who work in it. I must admit, that I entered this business before formal logistic education and discipline crystallized. Many of the lessons I learned under pressure on the job through trial and error, are now taught as part of a curriculum that fast tracks a student’s library of knowledge before entering the industry. However, I have gone back and personally filled in my career path with formal education and training. I had a ton of experience that taught me how to get my job done. I also found out that earning a P.Log. can teach you how to do some of those things better or get at a solution in a whole different way. No one is so smart that they can’t learn to be better.

To an employer within the supply chain industry, education has meant a big economic advantage. There is a stream of people now available that are pre-equipped with a cache of start-up knowledge. People that know the industry jargon, the basics of transportation, distribution and warehousing, the documents used in the industry and probably most important know how to gain access to the information that drives our business through the computer. Good people that can be integrated into a company’s culture quicker. But in reality, they do not come with guarantees. In fact the fundamental difference between the educational environment and the working environment is how people are evaluated. In the academic environment graduates usually must pass some kind of adjudicated test. If you don’t pass the test … you fail. In the logistics environment, I’ve learned my most valuable lessons from failures, providing the culture allowed me to fail “safely”. In other words, making a mistake wasn’t the sin … not learning from it was. That’s what gives you the courage to stretch and take reasonable risks.

Education is a platform on which to grow. The work environment is a stage on which to perform. In general terms, great companies succeed on team performance. The culture is critical. Individuals who succeed within that context are often simply average people who consistently perform above average. In fact, take the idea a step further and think about how difficult it is to pick out the great people among the good ones in a successful company. Conversely, the under performers are a little easier to spot. Education can take a bright student and help that individual pack a pretty powerful tool kit. How well that trained logistician performs is highly dependant on the culture and environment where those tools get put to the test.

I want to shift gears for a minute and look at education and training from the logistics practitioner’s point of view. The first and most obvious impact is on the resume. Formal training of any kind is usually an entry-level qualification, the ante to entering the game. During a career, education can be a significant addition to experience for anyone looking for that next step. But remember, training can teach you to skate or even to skate better. But that alone doesn’t make you a money player. It’s the guts to go in the corner or to dig a bit deeper during overtime that makes the difference. The reality of business is simple. We don’t get paid for what we know … we get
paid for what we do. Next time you hear someone lamenting about how they are not getting paid what they are worth, help them out. Help them understand what they are being paid, is exactly what they are worth.

There is also another aspect of logistics I would like to link to this discussion. Business needs the institutions to satisfy its growing need for intellectual and human resources. The institutions need the financial resources of industry. Society needs the answers this synergy can create. Traffic in urban areas, environmental issues created by the volume of highway traffic, the aging highway and rail infrastructure to name a few … have monumental impact on a world dependant on global economics. North America needs new, safer, more economical, cleaner ways to move people commodities and goods. Universities and institutes provide the forum of research and discovery. Quid pro quo.

Beyond the relationship between institutions, industry and the North American community …there is also the opportunity on a global basis. China needs to train roughly 100,000 people to manage the logistics for the 2010 Olympic games. The challenge is almost overwhelming and China is looking to the Logistics Institute to meet the challenge. After years of expanding its research, development and education capabilities, the Institute has the strength and credentials to meet the task. Here is a whole nation that that mirrors the attitude of our own students … no biases, no prejudices, no competitive predeterminations … just a hunger to learn and the enthusiasm to succeed.

It has been exciting to see the prominence of our industry spike over these last few years. It is hard to imagine how we managed before JIT, GPS or Internet portals. None of it would have happened without this three-way partnership between the industry, the institutions and the logistics professionals all looking for ways to make it all faster, better and cheaper. However, buckle-up … we are just on the threshold. New challenges push us to find new solutions. New technology will give us new tools to think outside the box. Continuous education will lead us to continuous improvements. And all of that creates a stage for great companies and great individuals to perform. But the bottom line is performance. And here is a final thought.

There is a buzzword that circulates in our industry … empowerment. Institutions can teach the skills and processes. Motivated people can embrace those skills and focus on performance. The industry can provide the tools and create an environment for people to perform. So who holds the key to “empowerment”? My thought is that no one can empower another. We can only empower ourselves. And that’s the challenge for logistics. As managers, we need to create environments where people can live and learn and perform … as average practitioners we have to display the competence and courage to consistently perform above average. That’s what creates success. And that’s what makes logistics a career and not just a job.

My dad always used the phrase, “…you live and learn.” It always seemed too simple to spend much time thinking about. It just took me 35 years in this business to figure out what he meant.
What Needs to Change to Create Tomorrow’s Leadership in Logistics?

A First-hand Perspective on Professional Development and Education

What would be the ideal supply chain management (SCM) education program, from a practitioner’s perspective? And how would this help bolster business and SCM professionals reach higher levels on the corporate ladder?

By David Faoro

Wanted: Vice President Supply Chain. Must have installed ten WMS systems, three ERP systems, and be able to redesign a warehouse in less than a day. All others need not apply.

Sound familiar? More than ever, supply chain professionals are being thrust into decision-making roles that are significantly impacting corporate strategy and results. However, our education, recruitment and management development systems are not synchronized with today’s reality. Today, supply chain management is a general management function and is no longer a technical specialty.

Supply chain management is, by its nature, an integrative function that requires a broad knowledge of business. A truly valuable supply chain professional certainly has technical expertise. However, their greatest business asset is their expertise as a generalist. But when we promote, hire or develop people, we often fall back to technical competencies and our old way of doing things. Why? Perhaps it is because it’s easy to count how many system implementations a person has been involved in, or how much money has been saved in a carrier negotiation, or to send someone on yet another course on leadership and/or team building.

I believe we need to address three major areas to allow the profession to grow, get recognition within the broader context of corporations, and to attract young people. From my perspective, these areas are educational programs, recruitment, and development.

From an educational perspective, we need reality-based programs where Supply Chain Management (SCM) is taught within the context of general management. As a student, I graduated from university in the early eighties from a business school program with a major in logistics. The program, in a way, mirrored the thinking of the time. There were functional experts in transportation modes and some thought was being given to inventory issues and, to a lesser degree, supply chain management. I dutifully took my courses in transportation economics, trucking, ocean freight and air transportation. Yet somehow I knew something was missing.

Too often, I have seen graduates who are too technically focused, or graduates who do not have any technical or functional knowledge, and yet they seem like good candidates. The ideal program would cover supply chain through a combination of classroom and case study, along with project work with real-world businesses. As well, a good dose of non-SCM course work should be provided such as economics, foreign languages, and liberal arts. From an educator’s perspective, institutions should be more receptive to using instructors from industry, even though these instructors would often lack a Ph.D. Nor would they likely be capable of contributing to annual research quotas. However, these instructors have the potential to share the lessons they’ve learned during their careers with future practitioners.

In terms of recruitment, employers and executive recruiters are too often focused on technical competencies instead of general management skills and qualities such as the ability to think independently, relationship and team building skills, and strengths in communication. Perhaps it is easy to screen potential candidates by technical competencies and whether they have “industry experience”. Without sounding like a broken record, hiring
people with sound business backgrounds, good interpersonal skills and a generalist background will always provide better long-term results than hiring technical experts, in my opinion. If a company is looking for a sales manager, is it important that candidates know how the Sales I.T. system works?

I believe that many companies continue to hire technical experts to fulfill generalist roles, particularly in regard to senior positions. As SCM is a key component of business strategy today, this practice needs to change.

The starting point for this change often begins with the CEO’s perception of SCM. If he or she believes supply chain to be a back-room activity conducted by a taskmaster, or a necessary evil, they will likely hire technocrats to fulfill these requirements. However, if they want SCM to be a key part of their company’s business strategy, or if they want their vice president of Supply Chain to work with customers and suppliers to review collaborative opportunities, they’ll require a well-rounded, creative and insightful person for this role. I will emphasize, however, I am not suggesting that a technically oriented person cannot fulfill such a role or be successful. I am saying that as a statement of direction, we must move toward general management supply chain positions.

Over time, as SCM continues to evolve to reach higher levels in the corporate world, these professionals will be the key drivers of change, and they will be able to achieve the collaboration and buy-in from team members from other disciplines.

Finally, with respect to development perspective, I believe this must be experience driven and not course driven. By experience, I am referring to a combination of tackling challenging assignments, working with multiple types of people, and managing other external events.

However, many companies define development from a limited perspective, namely, by the number of courses taken by an employee. Typically, on a performance-review form, there is a section named “Development,” and the supervisor is required to indicate the courses their employee will take this year. Professional development should be more comprehensive than this.

To help increase the breadth of an employee’s experience base, activities such as new assignments, work on different projects and teams, participation in non-work related areas such as professional associations, and support in volunteer work, all can help to develop our people. Training programs or courses should only play a minor in development plans and should be used to fill technical knowledge gaps.

This type of development requires a fundamental shift in behaviour and may come at a short-term cost. Is it not easy, for example, to provide your warehouse manager with time away from work to participate on a market development team. In addition to getting some non-traditional input, this type of approach helps the warehouse manager to better understand customer requirements and gain a better insight into the overall business.

In conclusion, we need more supply chain professionals who can understand and relate to the other facets of business to build creative, customer-focused and strategic business solutions. However, until business leaders recognize the importance of having supply chain people with general management capabilities and share this point of view with their organizations, widespread change is unlikely to occur. When this change does occur, however, demand will permeate throughout the education system to call for more well-rounded graduates. Finally, an experience-based development system is needed to support both new entrants to SCM and those already in the profession.
Lean Six Sigma Logistics

The lean practitioner does not focus on individual cost factors such as transportation or warehousing, but rather focuses on the “total cost of ownership”. Here’s a look how logistics practitioners are using the tools of Six Sigma to transform their practices.

By Robert Martichenko

PICKING UP THE NEWSPAPER from in front of the hotel room door, my eyes catch another headline that I see too often. “Japanese Automakers Taking Market Share from Big Three” is the headline. Although market share shifts are always happening, the article is very misleading. It leads the average reader to think that the “Japanese,” as a culture, somehow have a secret that is allowing them to take over the automobile industry.

However, if you are in the automotive industry you are aware of two critical points. The first is that it is not the “Japanese” who are building the cars that are winning the car wars, as these cars are being built by North Americans in Canada and the United States. And, to be sure, the “Big Three” and “Japanese Transplants” are building best-selling automobiles. The second key point is that it is not the “Japanese” that are reducing manufacturing costs and increasing quality, but rather it is the “lean manufacturers”. With this in mind, the newspaper article should headline: “Lean Manufacturers Taking Automobile Market Share over Mass Producers.

The term “Lean Six Sigma Logistics” is a mouthful. However, even though it sounds like a topic that might require a 500-page textbook to do it justice, the truth is that most logisticians are using Lean Six Sigma Logistics techniques without realizing it.

As the competitive environment changes the way we do business, companies are embracing Lean and Six Sigma initiatives to support cost reductions and quality improvements. Although Lean and Six Sigma programs were initially separate initiatives in most organizations, today’s firms see that Lean and Six Sigma do not compete with each other, but rather these two disciplines complement each other and provide for the dovetailing of continuous improvement activities.

But what does this have to do with logistics? The quick answer is “everything”. Once we are grounded in Lean and Six Sigma principles, the logistician will realize that logistics, when coupled with Lean and Six Sigma form a natural union. This union leverages the strengths and weaknesses of each discipline to create a cultural and operational model that will aid the logistician to solve age old issues, while improving operations at all levels.

Where does one start when dealing with a topic as complex or outright nutty sounding as Lean Six Sigma Logistics? To ground ourselves, let’s bring in the wisdom of Rene Descartes, one of my favorite historical figures. Descartes, along with many other tal-
What is Logistics?

There are as many definitions of logistics as there are logisticsian. And this is not a bad thing! Why? Because logistics is so far reaching, so integrated into our businesses that it is hard for one definition to ever meet the challenge of summing up what we do in a few short sentences.

Although logistics does span the entire scope of any business, it is fair to say that any definition of logistics will need to involve the management of inventory. Whether inventory is in the form of hard goods (materials-people) or soft goods (information), as logisticsian, we are in the business of managing it. Put another way, if there is no inventory to move around, there is no need for logistics.

What is Lean?

Lean Manufacturing concepts are deeply rooted inside the Toyota Production System. The key principles of the Toyota Production System were summarized as Lean Manufacturing by Jim Womack in his book entitled “Lean Thinking”. Lean Manufacturing has now been abbreviated to simply being called ‘Lean”. Lean and Six Sigma joined forces in Michael George’s book, “Lean Six Sigma”, a must read for anybody wanting to learn the execution side of these two disciplines.

In its purest form, Lean is about the elimination of waste and the increase of speed and flow. Although this is an oversimplification, the ultimate objective of Lean is to eliminate waste from all processes. At the top of the list of known wastes, according to Lean theory, is the elimination of inventory. More simply, we need to eliminate any inventory that is not required to support operations and the immediate need of the customer.

Lean and the Logistician

The impact of Lean on the logisticsian is significant, as the goal of Lean is to eliminate waste (inventory), which will decrease work in process inventories. This, in turn, will decrease process and manufacturing lead times and, ultimately, increase supply chain velocity and flow.

Lean also has a vital cultural element to it that is crucial to the logisticsian. This is the concept of “Total Cost”. The Lean practitioner does not focus on individual cost factors such as transportation or warehousing, but rather focuses on “total cost of ownership”. With inventory carrying costs representing 15-40 percent of total logistics costs for many industries, making decisions based on total cost has dramatic implications for the logisticsian. Unfortunately though, many organizations never fully embrace total cost concepts, as poor decisions are continually made based on traditionally visible cost drivers like transportation, warehousing and ill-fated purchasing practices.

What is Six Sigma?

Six Sigma is a management methodology that attempts to understand and eliminate the negative effects of variation in our processes. Based on an infrastructure of trained professionals (Black Belts), Six Sigma delivers a problem solving model armed with voice of the customer utilities and statistical process control tools. The Define-Measure-Analyze-Improve-Control (DMAIC) process is a map, or step-by-step approach, to understand and improve upon organizational challenges. Six Sigma trained employees will work on projects using the DMAIC model to reduce variation in processes and to attempt to achieve “Six Sigma Quality”, a statistical reference for 3.4 defects-per-million opportunities for defects.

At the heart of Six Sigma is the principle of variation reduction. If we can understand and reduce variation in our processes, then we can implement improvement initiatives that will centre the process and ensure accuracy and reliability of the process around customer expectations. For example, if your customer expects an order to delivery-cycle time of five days, and you are averaging five days, then you may think the status quo is fine. However, your five-day average may reflect the fact that in some cases you deliver in two days and, in other cases, you deliver in eight days. It is this variation that results in non-confidence by your customers and, possibly, a resultant increase in inventory.

Six Sigma and the Logistician

The concept of variation reduction is paramount to the logisticsian. Logistics is about managing inventory and managing inventory is about managing variation. If we look at the basic types of inventory, we will plainly see why variation plays such a vital role in how we manage inventories at all levels.

For example, safety and buffer stock are inventories we use to hedge against unknowns. These unknowns really represent variation. That is, we maintain safety stocks because of variation with supplier quality, transportation reliability, manufacturing process capability and customer-demand patterns. In other words, if we can understand and control variation in our processes from supplier-to-customer, then we will be able to dramatically reduce our reliance on safety and buffer stocks.

Another way to look at this important point would be for the logisticsian to liken himself or herself to an actuary who works on developing rates for automobile insurance. The actuary will look at all the variables, age of drivers, type of vehicle driven, number of speeding tickets, sex of the driver to determine insurance rates that reflect the variability in the data. (This is why a 16-year old driver has such high insurance rates.)
Logisticians are no different than the actuary in this analogy. The logistician substitutes demographics and sports cars for supplier confidence, transportation reliability and demand fluctuation. Then the logistician determines the “insurance rate”, with the unit-of-currency being inventory. The problem here, though, is that too many logisticians are treating their companies like teenage drivers when the company performance is more like a middle-aged soccer parent driving a mini van. Another example of this is a manufacturer that has leveled demand from a supplier who is a one-hour drive from the plant. Yet the manufacturer continues to carry 12-days worth of that supplier’s parts in inventory! Why? Most likely the answer is two fold. The first reason is that the leveled flow (and therefore low variability of demand) is not understood and the second reason is more emotional. The emotional part of the equation is simply that we are addicted to inventory. Make no mistake about it; North American industry has an addiction to inventory. What is an addiction? In a sentence, an addiction is a need for something that we cannot imagine living without. Unfortunately, oftentimes this characterizes our relationship with inventory.

**What is Lean Six Sigma Logistics?**

Now that we have explored the three elements of Lean Six Sigma Logistics, we need to put them together to fully appreciate how they dovetail and complement each other.

**In summary, we have concluded that:**
1. Logistics is about managing inventory
2. Lean is about speed, flow and the elimination of waste (inventory)
3. Six Sigma is about understanding and reducing variation.

Therefore, Lean Six Sigma Logistics can be defined as: The elimination of unnecessary inventories through disciplined efforts to understand and reduce variation, while increasing speed and flow in the supply chain.

**Getting Started**

Both Lean and Six Sigma bring disciplines and tools to logistics. Using these disciplines and tools will allow an organization to uncover and deal with waste (inventory) and gross inefficiencies. Although the tools are very powerful from both Lean and Six Sigma, we do, however, need to remember that for Lean and Six Sigma to work in logistics, a fundamental mind shift must occur. This mind shift requires that we begin making decisions based on the concept of Total Logistic Costs and, second, we must have the courage to eliminate inventories that are unnecessary. This may sound simple, but reality will prove otherwise. Organizational norms and financial accounting traditions will fight against “Total Cost” and our addiction to inventory will make it extremely difficult for us to reduce inventory levels.

It will require a leap of faith and some convincing to bring people on board. However, as evidenced by the automotive sector, you can see it is the right thing to do.
A SCM Case Study

*A Survival Guide to Create Corporate Leadership, Accountability and Organization structure*

By Rebecca Jasper

THE FOLKS AT Distinct Printers have a customer service problem. It is forcing the company to look at outsourcing parts of their operations to survive. Or is there another masterstroke to transform their logistics practices?

Distinct Printers Inc. is one of five major printer and copier enterprises in North America. Their quality and service have been consistently ranked average in comparison to that of their competitors. The Distinct return and repair process is designed to be straightforward and could be characterized as simple. But today the slowness of product turnaround has prompted Distinct Printers to either improve its current processes or outsource the entire repair shop.

In this case study we hear from three consultants who provide their points of view regarding how to mitigate this customer service problem:

Rebecca S. Jasper of Jaspersolutions LLC, MBA, CPIM

Peter J. Berglund of RIQ Advisory Services, CPIM

Allan F. Ayers of Ayers Management Services, CMC, CFPIM, CIRM

It is 8:00 a.m. and Sean, the recently promoted director of Field Services, has already received 50 emails. Sean’s success has been built on results-oriented hard work and avoiding company politics. His newest challenge is to deal well with people.

Under his watch the Field Service organization is responsible for the repair and servicing of products through a network of field technicians who repair and service printers and copiers on location. There is one centralized repair shop, and an installation department that installs new products at the customer’s location.

Today, Sean is firefighting again, a common practice in his new position. Sean has been frustrated with the lack of operational information available to him and this often resulting in dedicating his entire team to fight each fire.

He has already improved the efficiency of the field service technicians and reduced the down-time for customers, partly through his creation of the 10-minute rule; if the technician cannot repair a malfunctioning printer or copier within 10 minutes, the technician is to ‘swap-out’ the old equipment, replace it with a new unit, and ship the old unit back to the centralized repair shop. So far, it seems to be a successful initiative whenever technicians cannot resolve an issue quickly. It’s also noteworthy that there are no inventory responsibilities for these technicians, although there is approximately $1.2 million of inventory recently reported during a one-time inventory inquiry. Whenever a technician does not have a spare available, the onus is on the repair shop to send a new unit within 24 hours, putting the repair shop on the hot seat. The repair shop supporting Distinct Printers for all of North America also supports repairs and servicing within Asia. It is staffed with six repairmen and two employees to ship and receive product.

In summary, complaints include:

- No consistent tracking of products to be repaired
- No visibility as to where repaired parts are located
- Lost items to be repaired
- No warranty tracking
- Antiquated computer system used primarily to track field technicians trouble reports and time reporting
- Many out-of-box failures of ‘repaired’ products
- Lack of expertise in all of the SKUs (stock keeping units)
- Messy and disorganized repair shop(s)
- Declining quality in service
The decision to either fix these inefficiencies or outsource the department is imminent.

This morning’s hot question is: “Where are fifty of the Z2000 spare printers?” Broken Z2000 printers are swapped-out by the field service technicians and the broken printers are sent back to the one centralized repair shop. Since the repair can take from 1- to-90 days, these spares are critical to the repair shop's capacity to keep the customer up and running.

Today, Sean walks to Bruce’s cubicle. Bruce is the repair shop manager. He has worked his way up through the ranks. He has 14 years experience in the Distinct Repair Shop. Not surprisingly, Bruce is also constantly engaged in firefighting and lacks the time to be proactive. He is not pleased about Sean’s unscheduled visit.

Bruce explains to Sean that the head of global operations wants to know the location of the original 50 spare printers that were purchased last year. Bruce responds by calling Brian, the repairman dedicated to the servicing of the Z2000. He wants to find how many Z2000s are in the shop or being repaired at the vendor. Brian leaves for the repair shop to garner this information. It will take a week for Bruce and Brian to track down 30 of these spares.

Bruce feels that an inventory management system is desperately needed. He hired an inventory specialist a few years ago to develop an inventory system that would work for just two weeks because nobody kept the data entry updated as products moved through the repair process.

Bruce is trying to save the rest of his repair shop (half were laid off six months ago). He is fully aware that there is now serious talk of outsourcing the entire department. Furthermore, the demands on his department are much greater than anyone realizes.

In summary, other variables impacting the company’s business are:

- The department is responsible to ship out and keep inventory of all new internal installations;
- The purchasing department has only handshake agreements with most of their suppliers. As no written contracts exist, it is difficult to collect on warranty claims for repairs;
- There is only one employee, Jim, entering the bar code number of products received into the repair shop. Jim cannot possibly manually input the bar code of each item that is received by the shop each day. Jim selects ‘tracks’ items only when management requests information. You can be sure that the Z2000 will be on his priority list for tracking this week. As a result, there is no information on how many products and what products are received for repair;
- Each of the six repairmen tracks his own shipments to vendor repair shops;
- Each field technician is responsible for a fixed number of products. One other technician is designated to ‘backup’ another technician. This rarely happens, since there is no training budget and no time to informally train since the pressure to repair is so great;
- Workload on the repair shop has skyrocketed since the new 10-minute rule.
- In addition, there is a significant backlog of more than 200 products of exchanged units to ship:
  - Many are on-the-shelf, but there is not enough time for the company’s only shipper, Jim, to log-in the information so that the other shipping employee, Larry, can package the completed repair and log-in the information on the FedEx terminal;
  - The rest of these products are not yet repaired.

The inventory specialist had created a Kan Ban system to keep enough spares of completed and repaired items on the shelf. Some of the repairmen follow it. Repairmen in the shop are required to inventory their own products once every two weeks. However, nothing is done with this information and there is a lack of accountability at the technician sites.

Here are the solutions our panel recommends for Distinct Printers.

Allan Ayers

From the description, the repair operation in question support printers and copiers that play an integral role in daily customer operations. In these situations, uptime is important, which explains why the “swap” program has been so well received. However, there are a number of problems that need to be addressed quickly:
Management of the operation beginning at the Director level has been unsuccessful at defining and executing a strategy and a workable process for planning and executing the inventory management, equipment exchanges and repair operations. This strategy will require understanding the service support network, the install base geography and the inventory exchange pool and service technician requirements. This will be needed as a first step in determining the pros and cons of outsourcing the service operation.

- The information tools available appear to be totally inadequate for supporting the global scope of the service and exchange processes. It is impossible to manage an advanced exchange program, without knowing the inventory flows.
- It would appear that the inventory project conducted previously failed to define and implement the most effective type of data capture. At first blush, hand held bar code readers (or, now, RFID tag readers) should have provided quick, easy-to-use data capture.
- There doesn’t appear to be any accountability for results in any part of the operation – on-time shipment, on-time return, on-time repair. There is some serious record keeping and performance reporting missing.
- It appears that the company has not only cut fat with the last layoff, but has also cut muscle in the service operation. Intuitively, the service operation, especially when it includes new unit shipping as well, is badly under staffed. Time studies for some of the key operations would provide better insight into the staffing levels needed.

Outsourcing would solve many of the operating problems that have been noted. However, there are some additional considerations for using third party providers for these services.

1. Third party providers also need to be managed. You can’t just let them “do their thing” without watching and measuring what they are doing.

2. The repair services that are currently outsourced to vendors do not appear to be performing effectively. What will change in a new outsourced environment to fix that?

3. Some part of most of the problems noted above relate to budget – additional funding can either be spent on outsourcing (which will cost considerably more than the current budget), or it can be spent on upgrading the internal operations.

4. Outsourced performance will still be directly impacted by the effectiveness of managing inventories and information.

**Rebecca Jasper**

Sean must be reactive in an environment where he lacks consistent information about operations. Outsourcing within such an organization would not resolve the primary issue, namely, the technicians’ lack of inventory control and an absence of visibility within field services.

Sean first needs to focus on the process within the repair shop. Jim’s role provides a bottleneck to these operations, as well as redundancy given Larry’s activities. Since the repairmen are organized by product there is no focus on the backlog of products of the entire operation. This repair shop is pushing items through the system, rather than focusing on the daily needs of the field technicians to keep customers’ businesses up and running. Cross training and team organization as well as a daily morning meeting is essential to getting repaired items out the door and back to the technicians.

Next, Sean needs to set goals on repairs and develop metrics on what and how items should be repaired. There needs to be a focus on quality. These metrics should be aligned with goals for field services and then further correlated with purchasing and R&D goals to enable Sean to plan and see what products are doing well, and what printers need to be improved. This would provide a start to a Sales and Operations Planning program that is required throughout Distinct Printers’ business.

Finally, Sean must designate accountability for all inventories of products, irrespective of whether the product is designated for new installation with the field technician in the repair shop, or at the vendor. Scanners would provide the necessary visibility to track the product flow through the repair process.

**Peter J. Berglund**

It’s a bad sign when the global head of operations bypasses its own management levels and communicates directly with a repair shop manager regarding a specific SKU. This shows a lack of leadership, accountability and poor organization structure. The first step might be to update their resumes.

Whether this service is outsourced or not, the first priority is to keep the customers. They can buy some time and reduce the load on the repair shop by increasing the on-site repair time from 10-to-20 minutes (before the printer is swapped). This can be changed back later when things are under control. Here are some ideas to get them on track again.

- Hold a daily 15-minute meeting with the managers of the field service sites and repair shop to prioritize each day’s work.
- Develop a plan to control inventory. Each item must have at a minimum: 1) an easy-to-read identifier (i.e., part number); 2) quantity; 3) value; and 4) location. If the repair shop takes an inventory each week, it’s hard to understand why it would take a week to track down the missing 50 printers, especially if the company has access to FedEx data.
- There is no excuse for field service sites to not maintain inventory. They will likely need to invest in additional scanners.
- Sean must ensure accountability and develop some measurements to highlight performance.

The suggested fixes are not long-term solutions. Outsourcing might seem like an easy way out, but even if they decide to outsource, they would have trouble since they are not managed well. Ultimately, if District is going to remain in business, they’ll probably need to overhaul how they are organized and perform the work and get some good information technology in place. The current structure doesn’t have clear accountabilities, communications and measurable goals.

*LQ’s fictional case studies are designed to present common business dilemmas and offer solutions from a panel of experts.*
By Heather Cartwright

Supply Chain Simulation is loosely based on a board game developed at MIT Sloan School of Management. The Simulation represents a single dimensional supply chain dealing with consumer goods, such as beer. It consists of four players or company teams: Retailer, Wholesaler, Distributor and Factory.

Participants often start this process with a more limited perspective of a supply chain, and over the four-week module are able to develop and show they have achieved a more integrated perspective of the entire supply chain. Reflections and perspectives consistently change from “Are we doing things right?” to “Are we doing the right things?” as participants are offered an opportunity to view the spectrum of supply chain logistics activities and outcomes, from an individual and team member perspective.

The following diagram provides an overview of the The Beer Game simulation design. Within each of the warehouses, the real fun occurs as participants collaborate and strategize on how to keep the customer happily guzzling beer.

Leadership in Logistics Competencies

Let’s consider some of the core competencies logisticians must be knowledgeable of to become leaders in logistics, categorized by three major business processes including: Fulfillment Management, Supply Management and Demand Management. Of course, many organizations do not perform the entire spectrum of activities internally. However, these competencies at the very least need to be understood and potentially managed. There is interdependence among these processes that impacts on performance within an organization’s four walls, even if other activities occur outside an organization.

The following section includes a comprehensive, but not exhaustive list of functional competencies required by leaders in logistics to effectively facilitate the movement of goods from source to destination across the value chain.

Transportation

• Determining transportation load planning requirements;
• Recommending and evaluating transportation options, routes and delivery times;
• Assessing transportation needs, product packaging, consolidation options;
• Evaluating transportation costs and performance;
• Preparing documentation for shipments, classifying goods;

Reflections of a Customer

As the lead facilitator and beer-guzzling customer for the Logistics Process Diagnostics Module offered through The Logistics Institute, I am consistently delighted with the progress of participants in “The Beer Game” simulation, part of the e-Learning module. The
As we logisticians move from “the backroom to the boardroom” to quote Victor Deygiio, president of The Logistics Institute, based in Toronto, the development of competencies necessary to plan and implement strategic and operational linkages across business processes and functions is essential. An integrated perspective from the customer order through supply and fulfillment is needed to contribute to strategic planning, operations management, and the execution of tactical plans that ultimately achieve overall business objectives.

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The following section includes a comprehensive, but not exhaustive list of functional competencies required by leaders in logistics to effectively facilitate the movement of goods from source to destination across the value chain.

Fulfillment Management Competencies focus on facilitating the visibility, cost effective and timely movement of goods and information across the value chain:

Transportation
- Determining transportation load planning requirements;
- Recommending and evaluating transportation options, routes and delivery times;
- Assessing transportation needs, product packaging, consolidation options;
- Evaluating transportation costs and performance;
- Preparing documentation for shipments, classifying goods;
- Coordinating documentation, expediting, tracking and tracing of products;
- Verifying delivery and receipt of goods.

Warehousing
- Storing, maintaining and reconciling inventory;
- Verifying incoming and departing shipments;
- Determining space, layout, material handling, equipment, maintenance requirements;
- Preparing documentation for shipment;
- Coordinating, expediting and tracing of shipments;
- Picking orders, sorting, consolidating, deconsolidating and transferring goods;
- Selecting packaging, marking and labeling shipments;
- Packing and unpacking, loading and unloading goods;
- Implementing quality control checks;
- Determining surplus/obsoletes/damaged/obsolete material;
- Coordinating disposition of damaged/obsolete goods.

Supply Management Competencies focus on meeting customer service targets and profitability levels through cost effective supply and production planning of inventory:

Supply Planning
- Monitoring customer service fill rate targets and performance;
- Developing inventory strategies and analysis including ABC prioritization;
- Developing optimum inventory levels, safety stock policies, inventory turn requirements, stock rotation;
- Managing product introductions, discontinuations, obsolescence;
- Managing inventory requirements at optimal costs;
- Monitoring plant production capacity, lot sizes, lead times;
- Monitoring production planning to meet customer delivery requirements;
- Monitoring production performance and initiating corrective actions;
- Approving physical inventory adjustments and cycle counts;
- Co-ordinate lot controls and rework programs.

Factory Planning
- Coordinating operating plans with master production schedules;
- Recommending and negotiating production tradeoffs with factory planners to meet customer delivery and factory efficiency requirements;
- Analyzing product yields compared to factory production schedules;
- Monitoring production plans to meet customer delivery requirements;
- Monitoring and evaluating overall factory performance.

Financial Analysis
- Analyzing profitability and margin contribution for product lines;
- Reviewing and recommending
Changing conditions in the marketplace require a new vision. The right vision for your supply chain is one that decreases inventory costs, expenses and capital expenditures while increasing customer satisfaction. This is the vision of BCG Logistics and our One America solution.

One America is an innovative approach that aligns manufacturers, third party logistics suppliers and software companies to offer a strategic and innovative solution to streamline the delivery of goods across the border, resulting in increased service levels and profit margin.

BCG Logistics will work with you to review the system-wide management of your company’s integrated supply chain, both regionally and internationally, and develop and execute a customized One America solution that is both flexible and adaptable to changes within your industry.

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