GSCLG

October 2010

GLOBAL SUPPLY CHAIN REVIEW

Published by the Global Supply Chain Leaders Group
www.gscreview.com

2010 SPECIAL AWARD EDITION:
JOHN FIGUEROA EXECUTIVE OF THE DECADE

PLUS:
"YES" TO COST SAVINGS AND “MORE" COMPLIANCE

SPECIAL:
REDUCING STORE STOCKOUTS BY LEVERAGING LARGE DATA SETS

John Figueroa,
McKesson Corporation
President, U.S. Pharmaceutical

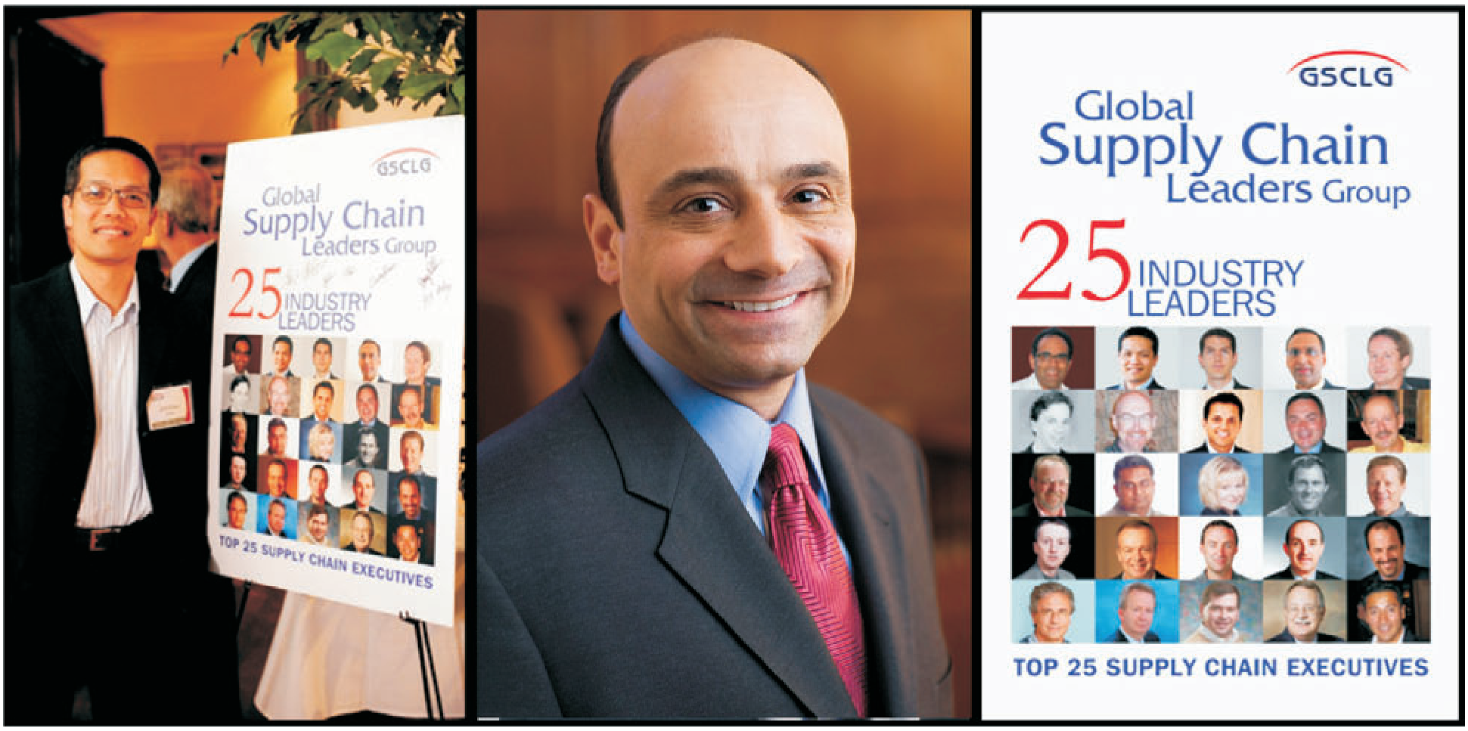
GLOBAL SUPPLY CHAIN LEADERS GROUP 2010 AWARDS DINNER

Honoring John Figueroa of McKesson as the Supply Chain Executive of the Decade

Keynote Speaker:
Cindy Reese, Senior V.P. Worldwide Operations at Oracle Corporation

October 19, 2010 in Redwood City, California 5PM - 9PM

If you attended the GSCLG's 2009 annual dinner, then you already know what a truly unique and valuable networking opportunity that was for a senior Supply Chain executive like yourself. Our next event promises to be bigger and better so mark your calendars.



This award dinner is reserved for senior Supply Chain executives of non-service provider corporations only. This is a truly unique networking opportunity for senior executives at their level or higher. The GSCLG will make seats available to only five **Platinum** sponsors and five **Gold** sponsors.

Contact: andrea.kostelas@gsclg.com for sponsorship information.

Event sponsors:

ALOM · E2OPEN · GLOBAL4PL Supply Chain Services · PCHorizon™ · POWER FREIGHT SYSTEMS

Message from the President of GSCLG

As fast as product moves through modern supply chains, the Global Supply Chain Leaders Group (GSCLG) celebrates another year of publication. In the past 12+ months, we have been delighted to give our readers interviews with distinguished individuals in the world of Supply Chain. This month's edition is no exception.

As President of the GSCLG, I am extremely pleased to present this year's awards edition of the *Global Supply Chain Review*. John Figueroa, President of McKesson U.S. Pharmaceutical, has been selected as GSCLG's Supply Chain Executive of the Decade.

John oversees McKesson U.S. Pharmaceutical's business units' operations and distribution of pharmaceuticals and other healthcare related products to customers in four primary segments: national and regional retail pharmacy chains, hospital providers, retail independent pharmacies, and mail pharmacy. John's extensive experience continues to further strengthen McKesson's operational excellence and leading market share position.

McKesson's U.S. Pharmaceutical business generates more than $86 billion in annual revenue. As Senior Vice President, Customer Operations for the Southwest Region, John headed up the region's sales and operations management for its five pharmaceutical distribution centers. Prior to his current role, John Figueroa was responsible for McKesson's relationships with retail chains (food, drug, and mass merchandisers) and mail service customers, the largest and fastest growing segments for McKesson Pharmaceutical, representing more than $43 billion in annual revenue.

In our eyes, what makes John the Executive of the Decade is the fact that McKesson has, based upon the nominations received for this award, the best overall team in Supply Chain. This speaks to their efficiency, capacity, professionalism, passion, and purpose. McKesson sees amazing results, as direct result of John's leadership. His drive creates success which in turn promotes McKesson's culture of excellence and its pursuit not just of profits, but also the wellbeing and safety of all of us.

When we asked you, our readers, which individuals deserve your recognition, you spoke and gave us John Figueroa.

We are delighted to present John Figueroa as the Supply Chain Executive of the Decade, and look forward to honoring many more like him in the *Global Supply Chain Review*.

We are also pleased to present two compelling articles this month "'Yes' to Cost Savings and 'More' Compliance - Absolutely" by Jeff Chiu and "Reducing Store Stockouts By Leveraging Large Data Sets" by Ray Whitley, two of the best professionals in their respective areas of expertise.

Sergio Retamal

Publisher, *GSC Review*
www.gscreview.com
President, GSCLG
www.gsclg.com

Interview with John Figueroa, President McKesson U.S. Pharmaceutical

John Figueroa is President of McKesson U.S. Pharmaceutical. John oversees the business unit's operations and distribution of pharmaceuticals and other healthcare related products to customers in four primary segments: national and regional retail pharmacy chains, hospital providers, retail independent pharmacies and mail pharmacy. John's extensive experience continues to further strengthen McKesson's operational excellence and leading market share position. The U.S. Pharmaceutical business generates more than $86 billion in annual revenue.

John began his career with McKesson in August 1997 as Vice President of Sales for California for McKesson Health Systems. He has held positions of progressive responsibility for McKesson Health Systems to include Group Purchasing Organization national accounts. As Senior Vice President, Customer Operations for the Southwest Region, John headed up the region's sales and operations management for its five pharmaceutical distribution centers. Prior to his current role, John Figueroa was responsible for McKesson's relationships with retail chains (food, drug and mass merchandisers) and mail service customers, the largest and fastest growing segments for McKesson Pharmaceutical representing more than $43 billion in annual revenue. John continues to be responsible for the Pharmaceutical Packaging business located in Memphis, TN and Charlotte, NC as well as Corporate National Accounts and Federal Government sales. In addition, John is a board member on the McKesson Shared Services Council, the HDMA Government Public Policy Council, GS1 US Board of Governors, Boys Hope Girls Hope Board of Directors and sits on the Pepperdine University Business School Board of Visitors Executive Committee.

Prior to joining McKesson, Figueroa was Director of Sales and National Accounts at Baxter Healthcare for seven years. John also served as a Captain in the United States Army. He holds an M.B.A. from Pepperdine University and has been honored as a Distinguished Alumnus. He received a B.A. in English Literature and a B.A. in Political Science from UCLA.

How would you characterize McKesson's supply chain?

McKesson ensures the safe, efficient and cost-effective delivery of medicines to our customers and their patients. We're able to do this because we fundamentally reinvented our distribution through technology and process improvements to make it the most efficient and cost-effective system in the world. We have a Six Sigma program that challenges us to constantly work on new ways to improve our processes and systems, and have been practicing the Six Sigma principles for 12 years. We will continue to do so in our effort to create efficiency for ourselves and our customers.

McKesson strives to deliver innovative solutions that make the nation's pharmaceutical supply chain, already the best in the world, stronger and more secure. As a result, customers benefit from the industry's leading 99.998% accuracy rate, freeing pharmacy staff to provide more and better patient care.

As North America's largest pharmaceutical distributor, could you describe how McKesson's pharmaceutical supply chain works?

McKesson's pharmaceutical supply chain starts when we purchase our prescription drugs from the manufacturer and ends when the medications arrive safely onto pharmacy shelves.

Sound buying practices coupled with advanced technology are the most critical component in our effort to ensure a secure, accurate and efficient supply chain.

How important is supply chain management to McKesson's overall business strategy?

For more than 177 years, we have been at the forefront of pharmaceutical distribution by anticipating customer needs, investing in the resources to meet those needs, and delivering consistently and reliably. As a result, our supply chain is unmatched in the industry and has become the backbone of our company. In fact, for the most recent fiscal year (FY10), McKesson Distribution Solutions generated 97% of total McKesson revenues. We will continue to focus on innovation in an effort to empower pharmacists to deliver the highest quality patient care.

What are McKesson's primary Supply Chain Management focus areas?

As a pharmaceutical distributor, our primary focus is on medication safety. For McKesson, we founded our distribution on supply chain integrity because it's the first line of safety for customers and their patients. Few people consider distribution's role in medication safety but at McKesson, we understand how critical it is to a patient's well-being.

McKesson has the ability to track medications from the manufacturer to the patient's bedside - what we call a closed-loop system.

How is McKesson addressing the market's increasing focus on 'green' supply chains and reducing the company's carbon footprint?

It's our responsibility as the leader in the industry to serve as a responsible corporate citizen. Just as we take great care in the safety and security of our supply chain, we are careful and thoughtful in minimizing our impact on the planet.

Our newest pharmaceutical distribution center in the Chicago area is the first LEED-certified distribution center and only one of four buildings that is LEED-certified in Illinois. Among its environmentally friendly features are its use of recycled building materials, low-flow water fixtures, natural landscaping, motion-controlled lighting and parking for fuel-efficient vehicles.

Earlier this year, Walmart recognized McKesson with The Health and Wellness Supplier of the Year award, which was a result of our success delivering operational efficiencies, sustainability improvements and cost savings.

What is the key Supply Chain Management priority for McKesson in the coming two to three years?

Our industry continues to grow more complex each year with the rising demands of the marketplace. To meet these demands, we're enhancing our systems and technology for greater throughput capability, as well as real-time information for planning, controlling and optimizing our supply chain.

An example of our work is the creation of the Chicagoland distribution center which was designed to increase our network capacity and deploy the latest in distribution technology so that McKesson can continue to lead the industry in supply chain accuracy and efficiency.

What is the key Supply Chain Management priority for McKesson in the coming five to ten years?

Our vision is to advance our supply chain by shifting business mindsets. By leveraging sophisticated analytics, integrated systems and a comprehensive suite of planning tools, McKesson will be even more proactive when addressing market and operational trends, make better decisions based on real-time supply chain intelligence, and standardize best practices.

What are the biggest INTERNAL challenges for McKesson to achieve supply chain excellence?

When you achieve 99.998% accuracy in the supply chain, it can be a challenge to innovate and improve. But we see room for improvement. McKesson drives that commitment at all levels. I challenge each of our employees to think differently and to explore new approaches to increase efficiency and cost-savings. We can never accept the mindset that it's just business as usual and will have a continued focus on cost containment.

What are the biggest EXTERNAL challenges for McKesson to achieve supply chain excellence?

Managing inventory, specifically drug shortages, can be frustrating for our customers. As the vital link between manufacturers and our customers, it's important that we improve and excel in our communications with our customers to ensure that we meet their needs. By leveraging our ability to generate real-time data, we will be able to share valuable information with payors and manufacturers, thus improving our supply chain even more.

What innovative or advanced strategies/technologies does McKesson use to protect the supply chain?

McKesson is committed to innovative solutions that will make the nation's pharmaceutical supply chain, already the best in the world, stronger and more secure. When it comes to safety, it's unlikely that any single effort will prevent counterfeit pharmaceuticals from entering the nation's supply chain. McKesson believes that a combination of sound buying practices, more stringent licensing standards, stronger criminal penalties, and the rapid adoption of ePedigrees by all members of the supply chain will significantly enhance the integrity of the pharmaceutical distribution network.

What trends are you watching in healthcare, and how might they affect your role in the drug supply chain?

In light of health care reform, there has never been a more critical time in the industry for all parties involved in healthcare to expand their role in healthcare delivery. The three key pillars of healthcare reform are access to health, improving the quality of care and reducing costs. We are working with the government, healthcare providers, pharmacies, consumers and other key stakeholders to remove unnecessary costs from the healthcare system as we ensure the timely delivery of safe, cost-effective products.

What pharma-side technologies or services are you implementing or experimenting with?

Our distribution performance and quality levels are unparalleled in the industry, and benefit our customers in the form of better and timelier service, fewer or mostly non-existent errors, and lower costs.

A key area of opportunity for the industry is the rapid adoption of 2D barcode on unit level packaging, and RFID on cases and pallets. These technologies combined with the use of ePedigrees by all members of the supply chain will significantly enhance the integrity of the pharmaceutical distribution network. As we've done for the past several years, we will play a leadership role in the development and implementation of advanced track-and-trace standards.

I currently serve as Board Vice Chairman for GS1US™, a not-for-profit organization that administers and develops worldwide standards and solutions for identification numbers, data carriers, electronic commerce, and global data synchronization.

What special skills are required for distribution in pharmaceuticals?

Innovation and the willingness to adopt innovative approaches are crucial for distribution in pharmaceuticals, especially when your role is to ensure the safety, effectiveness and accessibility of the nation's healthcare system. As the healthcare industry evolves, we must also evolve so that we can help to ensure a healthcare system that works for all of us.

In addition, it's important to be able to respond swiftly and effectively to highly variable demands. For example, in 2009, McKesson partnered with the Centers for Disease Control and Prevention (CDC) to help prevent the spread of the H1N1 flu virus. From October 2009 through March 2010, McKesson distributed millions of doses of vaccines to over 140,000 providers across the nation.

What similarities do you see in the distribution of pharmaceuticals and other commodities?

No matter what business you're in, innovation should always be your goal. If I've learned one thing in my 20 years in the industry, it's that if you're not innovating, you're just standing still. And, no one, or no company, ever got anywhere by doing that.

How do you prepare for the upturn now that the economy is showing improvements?

McKesson runs a lean operation and is very cost-conscious, which allows us to focus on our ultimate goal of improving the quality, safety and efficiency of the healthcare system regardless of how the economy is doing.

To achieve our goals, we manage the business against four objectives:

- Keeping existing business
- Driving new business
- Maximizing our value by delivering solutions in adjacent markets
- Investing in healthcare

What are the main skills and personal attributes that have helped you reach your current position?

My motto for business and personal life is to maintain all relationships based on integrity. It's important that you treat everyone, no matter what level, with respect and integrity.

I also believe that one must possess not only a strong work ethic, but a smart work ethic in order to succeed. It's not about boiling the ocean, but boiling the water you need.

What are your thoughts regarding globalization?

McKesson is the #1 in pharmaceutical distribution in U.S. and Canada, and a leading distributor in Mexico.

A key area of focus for McKesson continues to be global sourcing. This may seem unusual at first, but if you think about it, if you're able to source drugs and medical supplies at optimal prices, this can help drive greater cost efficiencies throughout the supply chain, benefiting providers, patients, and payors alike. When healthcare is more affordable, it will become more accessible.

What would you say is the most rewarding experience you've had in your career?

In 2009, the CDC tapped McKesson to help the federal government respond quickly and effectively to the spread of the H1N1 flu virus. 127 million doses of H1N1 vaccine were distributed from October 2009 through March 2010.

Our teams worked tirelessly to build a dedicated distribution network in a matter of weeks. We set up and staffed six new distribution centers to handle vaccines and accompanying supplies. We couldn't have made this happen without the sacrifice and dedication of our employees. I was proud to be making such an important difference in helping to save lives and keep Americans healthy.

In addition to overseeing McKesson's US Pharmaceutical business, I'm a former Army Captain and work with many veterans at McKesson. Internally, we have a national veterans employee resource group that connects veterans across the company for networking, career growth, and business development opportunities. McKesson's veterans donated $7K to a Marine Corps helicopter unit for their homecoming. Externally, McKesson US Pharmaceutical has been supplying the U.S. Department of Veterans Affairs for the last six years, in addition to working closely with veteran-owned businesses. It's these types of commitment from McKesson that makes the place so great and my experiences rich.

What have you learned as the President of McKesson US Pharmaceutical that has surprised you or changed the way you do business?

I learned early on that attention to detail is very important and realized that as President, I scrutinize over details even more.

What does it take to build the kind of career you have had?

Embrace the role of a student. For me, I had to gain exposure to all areas of the business and learn to continuously ask the important questions. Throughout my career, I valued a rotational approach to career advancement versus a more traditional, vertical route. I was open to working in different business segments, making parallel moves, so that I could learn and appreciate the roles that various business functions play and the value they bring to the overall business.

Who do you rely on for advice?

My staff. You can only achieve success if you hire the right people, allow them to do their job, and rely on them for advice.

During this economic downturn, how do you keep your entire organization motivated?

As I mentioned earlier, McKesson runs a lean operation and as result, we did not reduce headcount during the recent economic downturn. At all times, we continue to invest in high performers.

How do you balance your work life with your personal life?

I balance my time between work and family.

What kind of qualities do you look for in a person who you would consider adding to your team?

Results-oriented, strong work ethic and an open mind. People who challenge decisions and question the status quo are always welcomed. It can be intimidating for someone to join our team given its unrivalled supply chain but there's always room for improvement. I'm always looking for individuals who drive at innovation and are focused on delivering results. McKesson needs people who can advance our efforts to avoid complacency or don't prematurely celebrate our success.

What is the most exciting aspect of McKesson?

What gets me personally excited is how McKesson can help advance the delivery of care. Helping providers improve the delivery of care is dependent on getting providers to embrace and adopt advanced technologies and approaches that will ultimately help them increase safety, improve operational efficiencies, and cut costs. For example, we're focused on delivering a variety of solutions that help pharmacies with everything from barcode scanning for greater patient safety, to automated medication dispensing cabinets, to unit-dose packaging.

McKesson has a unique opportunity to drive new innovations that will make healthcare work better. Ten years ago, McKesson's total revenues were $42B and today they reached $109B. I can't wait to see what we can accomplish in the next decade.

Where are the opportunities for healthcare innovation?

One area of innovation that McKesson focuses on directly affects consumer behavior, specifically influencing healthy decisions made by individuals. For example, through technology, we're making it possible for pharmacists to offer a variety of medication adherence services that deliver benefits for the patient, the pharmacist and for payors and manufacturers.

Through Health Mart, McKesson's franchise of independently-owned pharmacies, when a pharmacist spends 5-10 minutes with a patient to ensure their patients understand how to take their medication for the best possible outcome, they can now get reimbursed by payors or manufacturers. This is a win-win-win-win situation for patients, pharmacists, payors and manufacturers.

"Yes" to Cost Savings and "More" Compliance - Absolutely.

By Jeff Chiu, Vice-President, Global4PL Supply Chain Services

An emphatic "Yes!" should be the reply when an importer is asked if it is committed to reducing costs and increase compliance. Likewise, an emphatic "Yes!" should be the reply when an importer is asked if it practices reasonable care in its Customs transactions.

Numerous entities comprise the importer's supply chain, from manufacturers, vendors, and exporters, to freight forwarders, carriers and express couriers; at destination there reside their counterparts, along with customs brokers, distributors, and delivery companies.

Most companies negotiate and manage all their contracts, purchase orders, freight rates, shipping terms, with almost all of the parties involved in the supply chain, but few look into the customs clearance area beyond negotiating the entry fee.

Large freight forwarders have brokerage departments that contribute to their abilities in offering door-to-door service. Compliance suffers at the cost of savings, when brokerage departments are given a fraction of the freight revenue that is “packaged” with transportation charges, and when the brokerage teams are expected to process as many entries in the shortest amount of time possible. This is not to say that brokerage departments of the large freight forwarders don't do a good job; there are certainly very talented people who provide excellent customer service. However, customer service does not always include Customs compliance during the data entry buried within the day-to-day task of clearing shipments.

The timely filing of an import entry aims to eliminate delays in the supply chain. The information gathered by the Customs broker is vital to the calculation of duties and fees. Companies that rely too much on their broker lose the control of the process and compliance suffers.

There is a solution to the proverbial “having your cake and eating it too.”

Title 19 of the Code of Federal Regulations, specifically 19 CFR § 111.2(a)(2), US Customs & Border Protection (“CBP”) provides the scenarios in which a Customs Broker's license is not required to transact Customs business. One instance is: “An importer or exporter transacting Customs business solely on his own account and in no sense on behalf of another is not required to be licensed, nor are his authorized regular employees or officers who act only for him in the transaction of such business.”

A freight forwarder or a traditional Customs brokerage is required to have a license in order to file Customs entries on behalf of an importer. An importer is not required to have such a license if it were to clear its own imports. A traditional brokerage model requires that at least one officer possess a Customs Broker's license. An importer is not required to have such an individual in an officer's position.

An importer with 1,000 entries per year who pays on average $100 per entry (entry fee plus accessorial fees) will pay $100,000 in brokerage fees to a freight forwarder or a traditional brokerage. An importer can easily increase headcount by two full-time employees for this amount. Most importers will stop with its analysis at this point because it appears to be a wash.

In terms of numbers, the two employees represent “flat fee” pricing, where if the number of entries increases slightly, the employee headcount and expense do not. The other benefit that most importers do not fully appreciate is the improvement in import compliance. An importer's staff works on one account; the employee at a traditional brokerage works on numerous accounts. An importer's employees are bound to exercise greater care in their work as opposed to the data center environment of a freight forwarder or a traditional brokerage.

An importer with 1,000 entries per year who uses a web-based Customs entry software package will pay on average $20 to $25 for each entry, or a total of $20,000 to $25,000 per year. If an importer has staff available or can shift some staff responsibilities around, this represents a savings of $75,000 to $80,000 per year. Similar to the first example, the importer will also benefit from improvement in import compliance.

In both examples, it is important to note that the knowledge of an importer's business, its import supply chain, and its Customs transactions are retained with the importer's employees. This is in contrast to the approach used by freight forwarders and Customs brokerages where staff can be rotated or worse, not replaced when they depart. The importer has to “train” a new associate with each new rotation. Again, this is not to say that there are not valuable people at the freight forwarders and the traditional brokerages, but that it is difficult to retain the knowledge. Written standard operating procedures only go so far.

About the Author:

Jeff Chiu is Vice President at Global4PL, a supply chain management consulting company that assists clients to reduce costs and achieve their full operational potential. Mr. Chiu, a licensed US Customs Broker, is the corporate license holder for Global4PL. He possesses over 14 years of experience in import operations and compliance, with emphasis on internal Customs audits, commodity classification, tariff engineering, trade programs, and training.

The numbers are easy to show and justify the in-housing of filing Customs entries; the savings are tangible. The rule of thumb for self-filing should be 500 entries for those who pay duties and 1000 for those who do not pay duties on their entries.

The next question is: “What does it take to implement this initiative?” An importer may want to engage in self-filing, but does it have the staff, time, and most importantly, the commitment?

An importer with personnel experienced in imports and with excellent internal controls would have the shortest implementation period. It would involve training the appropriate personnel to use the entry filing software and on the workings of the particular port in which the importer is located.

Although an importer without such experienced staff may be required to seek out such human resources, it does not mean self-filing is out of reach. It may designate a person to oversee Customs transactions for the entire company, but outsource the daily operations to a third party supply chain management firm. This solution provides a faster ramp-up time on implementation and instant expertise and assistance on Customs related issues.

The import compliance may appear to be an intangible benefit at first, but it will manifest itself in a decrease in the number of examinations at the border, thus decreasing delays and the associated costs of getting the goods to market. CBP would recognize and appreciate that the importer is exercising greater reasonable care (as defined in the Customs Modernization Act) and in its transactions. The importer may at one point, consider membership in the Importer Self-Assessment (“ISA”) program where in exchange for the application of the strictest internal controls as they relate to Customs transactions, CBP would remove the importer from the general audit pool, amongst other benefits.

After an importer has crunched the numbers and identified the personnel for the self-filing, it has to surmise whether it has the commitment to take on such an initiative. Certainly, an importer understands the need for strong internal controls, computer hardware, software, record keeping requirements, and training. Underlying all of these needs is the commitment.

It is an initial commitment voiced and upheld by top management and its mission for the company to comply with all import regulations. It is a commitment to monitor all electronic transmissions and messages from the Automated Broker Interface (ABI) and payments via the automated clearing house (ACH) on a daily basis. It is a commitment to actually execute what has been written down as policy. It is a commitment to train and cross-train staff so that the compliance standard does not wane.

"Yes" to Cost Savings and "More" Compliance - Absolutely.

Continued

Some argue that a self-filer looks and acts much like a traditional broker, aside from the obvious differences (non-requirement of a license holder and the inability to transact Customs business for other parties) and it is not worth the effort to internalize the filing of Customs entries. On the surface, it has the added burden of import compliance, but CBP has already placed that burden on the importer with the Customs Modernization Act. Taking on self-filing is merely an extension of the operations - sourcing, purchasing, freight negotiations, distribution – of an importer, and will allow for greater control over a critical link of the supply chain.

Join Top 25 Global Supply Chain Leaders Group on LinkedIn

25 Global Supply Chain Leaders Group

Come and meet Directors, Vice Presidents, Chief Operating Officers, and other icons of the supply chain industry from Austria, Canada, Chile, China, Finland, France, Germany, Hong Kong, India, Italy, Mexico, Netherlands, Norway, Romania, Singapore, Spain, Sweden, Switzerland, United Arab Emirates, United Kingdom, and the United States.

We are a group of the most influential, accomplished, and renowned executives from some of the better known corporations worldwide. We continue to seek those individuals who have made the most significant contributions to the advancement of the supply chain industry at the same time helping their companies' bottom lines. In other words, the Top 25 Global Supply Chain Leaders LinkedIn group seeks individuals that will inspire both veterans and new hires in supply chain. These are the individuals people would like to be when they reach their professional goals.

Our group of leaders come from various industries such as: Automotive, Aviation & Aerospace, Computer and Network, Security, Computer Chips, Computer Hardware, Computer Industry, Computer Networking, Computer Security, Computer Software, Consumer Electronics, Consumer Goods, Cosmetics, Food, Furniture, IT and Services, Leisure, Travel, Medical Devices, Oil and Energy, Pharmaceuticals, Renewable & Environment, Retail, Semiconductor, and Telecommunications.

We seek supply chain leaders with vision, passion, and care for their customers and employees. If you are a leader interested in pursuing connections with your peers, please join us.

This is a Sales Free Zone networking environment.

Click Here To Join

Join Top 25 Global Supply Chain Leaders Group on LinkedIn

25 Global Supply Chain Leaders Group


We see
what others miss

Reducing Store Stockouts By Leveraging Large Data Sets

By Ray Whitley

Finding the right balance between inventory investment and customer service is arguably one of the most important objectives for any retailer. Buy too much inventory and you tie up cash (balance sheet impact) and risk bottlenecks in the supply chain. Buy too little inventory and you risk stocking out in the store and losing a potential sale (income statement impact) thereby annoying the customer. The cost of a lost sale due to a stockout varies due to individual product economics but generally the cost is high for specialty retailers due to their high initial markups, and of course, the cost of losing a customer's ongoing share of wallet is unacceptably high.

There are numerous tactics a retailer can employ within its supply chain to reduce stockouts. This paper will address some of the typical methods used by retailers. However, the focus and bulk of this paper will be on detailing innovative approaches to reducing stockouts by extracting very large amounts of data from corporate databases, reconstituting it in unusual ways, and then leveraging it.

A SHORT LIST OF TYPICAL APPROACHES

- Buy more: Many retailers confronted with the problem of stocking out in the stores will simply instruct their merchants to increase the size of their purchases. While this approach will reduce the probability of a store stockout for each affected SKU, serious side effects may occur in the form of incremental inventory processing and holding costs, an adverse balance sheet impact to cash, increased markdown activity, a risk of bottlenecks in the supply chain, etc.

- Optimize initial inventory commitments: For example, rather than committing 70% of a purchase to the stores and keeping 30% in the DC as a reserve, a retailer may adjust the ratio downward with the intent of capturing more regular priced sales and staying in stock longer generally throughout the store fleet.

- Change system parameters: Retailers using systems to support their DC to store allocation process can make adjustments to the auto-replenishment and/or allocation logic in their systems to decrease the probability of stocking out (e.g., increase display inventory, increase replenishment amounts, etc). Another approach is to address the front end (if there is one) of the replenishment and allocation processes by improving the demand forecasting model to generate more accurate forecasts.

- Reduce cycle-time: Any effort to take time out of the store-sale-to-storeshelf-replenishment process will have some positive impact on store stockouts. Typical areas to focus on would be increasing allocation and store delivery frequency (e.g., instead of twice a week allocate and deliver three times per week), streamlining DC processing and outbound transportation service, and optimizing the entire DC physical network to enable faster cycle times.

Two points I'd like to make about this list. First, this is by no means a comprehensive list of tactics to reduce stockouts in the stores. Second, every one of the listed tactics can positively impact stockouts in the stores and therefore should be considered and perhaps attempted. As a caveat, the "Buy more" tactic should be deployed judiciously for reasons mentioned earlier.

APPROACHES LEVERAGING LARGE DATA SETS

It is axiomatic to say that retailers are awash in data. Much of it generated at the tail end of the supply chain through simple point of sale (POS) transactions occurring every day in every store, and through the need to maintain inventory position for every SKU/store. Large SKU counts and large store fleets increase exponentially the size of the databases that are managed by the IT organization. Yes retailers are awash in data and much of it lies inert: buried in giant databases. Accessing this data, extracting key data elements, and combining disparate data can provide new insight into the state of the business, or for this paper's purpose, enable real progress in the ongoing effort to prevent stockouts in the stores.

What follows is a number of data-intensive approaches that address stockout visibility, potential stockouts due to imperfect merchandise allocations, potential stockouts due to inadequate merchandise purchases, and current stockouts due to poor execution in the stores.

ADDRESSING DATA INTEGRITY

"*In the land of the blind, the one-eyed man is king.*" Desiderius Erasmus

Data integrity should be confronted immediately as really poor data integrity will render any reporting useless, generally. In particular, poor data integrity in the store inventory positions will effectively blind the allocation team (the team within the supply chain tasked with balancing store inventories to cover demand and prevent store stockouts). Efforts to improve data integrity should begin immediately if the SKU/store inventory numbers are suspect.

One way to test data integrity in the store inventory counts is to randomly select SKUs in a sample of stores and have physical counts taken and then compared to systems counts.

A data-intensive approach would be better in that the results would be comprehensive as one can check every SKU in every store, and conclusive as the results would be based on hard facts rather than extrapolation from a small sample set.

The first step in this approach is to obtain the complete inventory counts by store from the company's last full physical count and compare them to the IT inventory system counts captured at the time of the last physical inventory count. Essentially, this would be a system count to physical count comparison of every SKU/store in the company. This comparison at the SKU/store level should have been conducted by the finance, internal auditing, or loss prevention team at the time of the company's last full physical inventory count. Unfortunately, the prevailing practice is to net all of the physical count to system count variances in order to arrive at a total company shrink number for financial reporting purposes. Usually, netting all of the variances produces shrink numbers in the low single digits (e.g., 2%).

This is not a measure of data integrity. However, using the same large data set and taking the absolute variance of the physical count to the system count will reveal the size of the company's data integrity problem with respect to SKU/store inventory positions in the stores.

If the absolute variance is unacceptably large, take full physical counts more frequently. Taking a full physical count once a year is not enough. If the cost of incremental full physical counts is prohibitive, then layer in cycle counts. Slicing and dicing of the absolute variance data will reveal where the bulk of the inventory integrity exists. Employing a pareto (80/20 rule) approach will probably reveal that 80% of the absolute variance is due to 20% of the stores: or 20% of the SKUs account for 80% of the variance.

Note: calculating the absolute variance between the physical and system counts of inventory in the distribution centers will also reveal whether or not the DC teams have to contend with a data integrity problem: yet another cause of data integrity in the store onhand inventories.

STOCKOUTS ARE INVISIBLE…..MOSTLY

Once the store inventory onhand data integrity issue is addressed the next area to tackle is the actual measure of stockouts in the stores. Many retailers archive a weekly snapshop of the inventory levels or "onhands". This view is available after a company runs its large weekly batch jobs to process sales and all of the other transactions that update inventory levels for its stock ledger. From the perspective of an analyst studying and reporting SKU performance over time, a SKU can be out of stock everyday in a given week except for one day – the day the snapshot is taken – and give the appearance of being in stock that week. In other words, stockouts occurring in 6 of 7 days of the week are essentially invisible to the company. A much more complete picture can be provided by developing a stockout measure of the SKU/store computed for each day. Computing daily SKU/store stockouts will involve manipulating an enormous amount of data, particularly if the SKU/store count is high. There are several viable ways to develop this metric. One method is outlined below.

Calculating stockouts at the day/SKU/store level:

- Take a weekly snapshot of inventory unit counts for every SKU in every store over some period of time.
- Obtain all transactions that affect inventory levels (e.g., product returns, store receipts, store sales, exchanges, interstore transfers, etc.) at the day/SKU/store level for the time period to be measured.
- For day 1 take these day/SKU/store transactions occurring on that day (the day after the inventory snapshot) and increment or decrement the store/SKU inventory levels appropriately (e.g., subtract sales, add store receipts).
- The ending inventory level for day 1 will be the beginning inventory level for day 2.
- To get the day 2 ending inventory level, take the day 1 ending inventory level and adjust it based on SKU/store transactions occurring day 2.
- Roll forward the same process to get the ending inventory levels by day for every SKU in each store for the rest of the days in the week.
- Any day/SKU/store ending inventory level with an inventory level of "0" is a stockout.

Armed with a truer measure of stockouts a company can confidently size their stockout problem by calculating “lost sales” and then take the next step by calculating lost gross margin and adding incremental expenses (historically) to fill in stockouts in order to calculate bottom-line impact to the company's income statement. Knowing the actual bottom-line costs associated with the company's true stockout rate will inform the senior management as they prioritize initiatives to reduce stockouts against other corporate initiatives competing for corporate attention and resources.

On a more immediate and tactical level, visibility to daily stockouts at the SKU/store level can enable pinpoint supply chain actions like increasing store receipt frequency or changing the delivery days of store receipts by store to better match supply with demand.

Another benefit of developing an accurate stockout measure compiled at the day/SKU/store level is that the senior management team will likely trust the veracity of this metric given the thought and rigor employed in developing it. This will be helpful initially in galvanizing the senior management team to support discrete efforts to reduce stockouts in the stores. After these efforts are launched to reduce store stockouts, reporting the day/SKU/store stockout measure will reflect exactly where real progress is or isn't occurring.

A QUERY TO PREVENT FUTURE STOCKOUTS THROUGH ALLOCATION

Every week, several times per week, allocators review the company's sales performance (usually with system support) and then conduct the process of allocation – invoking the systems commands that release specific DC held SKU quantities into the DC work flow to be processed and ultimately transported to the store. Depending on the amount of system support on the front end, this process can be laborious as each allocator is responsible for allocating a sizeable number of SKUs multiplied by the number of stores in the fleet.

One way to assist (or follow up) on the allocation team is to develop and run a data query addressing each and every SKU in every store to determine whether or not further (after the formal allocation process has been completed) action should be taken to prevent a stockout in the near future. To create this query one will need to extract current and historical store onhand inventory data and sales history at the SKU/Store/week level, and DC onhand and intransit data for every SKU from various corporate data bases. The data will be voluminous. For example, pulling data on 20,000 SKUs for a company with 1000 stores will create 20 million SKU/store combinations. Too much data to manipulate in a spreadsheet or even in Microsoft Access as each SKU/store combination will in effect become 20 million rows of data in a very large data set. My recommendation is to leverage the company IT team to extract and manipulate the data in a more robust database.

At a high-level the objective is to incorporate all of this data into a program that will first forecast sales for the next one to three weeks (depending on the store replenishment cycle time) for every SKU/store combination in the company. The sales forecast should factor in trend and seasonality. If then the forecasted sales exceed the current on hand inventory (plus in transit inventory) for any SKU/store combination, the query should then check the distribution center to see if that particular SKU is available in the DC to allocate back to that particular store. If DC quantities are available, the program should surface the SKU/store combination, organize it with other SKU/stores that need to be addressed, and send it to the responsible allocator who can then move the products out of the DC and into the specific stores identified.

In effect, what is created is an exception list of SKU/store combinations requiring inventory sitting in the DC. Developing the query may seem straightforward for a programmer or database expert with access to all of the required data. There are, however, some potential pitfalls. At a more detailed level, one must control for data integrity and the forecasting issues associated with building a demand forecast on top of sparse data. Factoring seasonality into the SKU/store demand forecasts can also be a tricky maneuver. My recommendation is to involve somebody with expertise in demand forecasting to avoid these pitfalls.

A QUERY TO PREVENT FUTURE STOCKOUTS BY RE-BUYING

A similar program can be created to identify SKU/store combinations that will stock out over a longer time frame where no DC inventory exists in the supply chain to fulfill the projected demand. These potential stockouts are not actionable by the allocation team because the DC itself is out of stock. Only the merchants can take action on this information and only if they are able to buy more of the same SKU to be delivered to the DC in short order. This will leave out SKUs with medium to long production lead times. To the extent a SKU can be ordered and received within two months, this query can be useful to prevent future stockouts in the stores.

In addition to all of the data elements required for the allocation query (listed above), one will need access to all of the incoming purchase order data.

The objective is to identify all SKU/store combinations in the company that will run out of stock in the forecasted time frame (based on the re-buy cycle time) where there are inadequate or no inventory quantities in the DC and where no purchase orders have been written for merchandise to arrive in the near term. The forecast will be at the SKU/store level and should factor in trend and seasonality. The forecasted time period will be based on how quickly the merchants can get the products back into the supply chain network. SKU/store combinations matching the criteria of the query can be organized into an exception list and delivered to the merchants every week. The merchants can review the list of SKUs and stores that will stock out in the near future and then write new purchase orders where it makes sense.

EMPLOY THE STANDARD DEVIATION FORMULA

"*The future is here, it's only unevenly distributed*". William Gibson

To the extent the ratios of sales to allocated inventory for every store for any particular SKU are uneven across the fleet of stores, the allocation was imperfect. An imperfect allocation could result in some stores stocking out while other stores are overstocked; lost sales in some stores and unnecessary markdowns in others. It is not an easy task to identify all of the SKUs with poor allocations. One has to sift through every SKU/store combination and study the demand/supply relationships for each. This could easily result in analyzing tens of millions of combinations depending on the SKU count and store count of the company.

One approach to handle this is to begin by calculating the supply and demand (to date) ratio for every SKU/store combination. I recommend using the sell through metric. Simply take the receipt units of a particular SKU in a particular store and divide it by accumulated sales. For example, if a store received 10 units and sold 4 units to date, the sell through is 40%. In a retail chain with 1000 stores selling that particular SKU, there would be 1000 distinct sell through data points for that one SKU. The question to answer is whether that particular SKU's allocation was “good” or “poor”. That would depend on the dispersion of sell through ratios among the stores. For example, if every store had a sell through of 50%, the allocation looks good (at that point in time) because the stores are selling out evenly across the fleet. If the sell through measures are widely dispersed, then the company is probably losing sales or soon will be. Calculating a sell through for each SKU/store combination and then analyzing the sell through dispersion for each SKU against that of every other SKU in the company is a herculean task. Fortunately, there is a method to easily measure the dispersion of sell through data amongst the store fleet for each and every SKU.

Generally, leveraging the standard deviation formula is a good way to measure dispersion in any population of data points: the more disperse the data, the larger the standard deviation. Taking the standard deviation of sell through ratios for each SKU will provide a measure to compare and rank the allocation of each SKU against every other SKU in the population. This can be done by pulling sales and inventory data for every SKU/store, calculating the sell through, and then applying the standard deviation methodology to the population of sell through metrics for each SKU. Those SKUs with a higher standard deviations are the SKUs where the ratio of sales to onhand inventories is more uneven across the stores.In other words their inventory allocation was suboptimal when compared to the allocations associated with the bulk of the SKUs in the population.

This visibility into SKUs with widely dispersed outcomes provides an opportunity to rebalance the inventory in the stores through additional allocations if there is DC inventory available or invoke interstore transfers if it is cost-effective.

A side benefit of this exercise is that sorting the SKUs by dispersion rates and by allocator responsibility will reveal over time which allocators are generally better or worse at matching inventory to sales across the store fleet.

ADDRESSING THE LAST YARD

One insidious type of stockout difficult to measure occurs when the product has travelled the entire length of the supply chain from manufacturing facility to the store receiving dock and is now physically in the store but not available on the sales floor. In other words, the product is probably sitting in the store stock room literally yards away from the sales floor and waiting to be processed. Unfortunately, the company management information system will reflect that the store is actually in stock although the product is not available for purchase by the customer. Retailers address this issue differently. Some address it manually at the store level by slowly improving discipline and execution in the stores organization. Some retailers engineer the problem away by ridding their stores of backrooms thereby forcing the inventory to the sales floor. Some retailers take a data-driven approach similar to the one outlined below.

This approach to addressing “the last yard” issue is to create a program to monitor and compare sales movement at the SKU/store/day level against actual SKU/store/day level inventory receipts to identify SKU/store combinations where the store received the product and yet no sales occurred for a selected time period. This may or may not point to poor execution in those stores. There is always the chance that that particular SKU may be unappealing to the customer. To control for this, the program can have additional logic requiring the retrieved SKU/store combination to be selling in at least some large percentage of the stores in the company. Once the list of SKU/store combinations matching the criteria is pulled, the resulting data needs to be organized by store hierarchy and within each store by merchandise hierarchy so that the output of the program is an organized list of SKUs for each store general manager to use to verify that the SKU isn't actually on the sales floor and to locate the product in the back room and process it to the sales floor.

CONCLUSION

One final point on leveraging existing company data to tackle the store stockout problem. The careful reader may have noticed that I haven't covered the not insignificant financial investment normally associated with new information wielding capabilities or improvement to information systems. The reason for this is that in most cases new hardware and software is unnecessary to develop the programs I've outlined in this paper. What is necessary is access to existing corporate data, senior management support, and an analyst/programmer knowledgeable in supply chain and skilled at creating and manipulating large data sets.

About the Author:

Ray Whitley is the owner of Shibumi Consulting, LLC, a management consultancy focused on improving the supply chain and inventory management areas for retail companies specifically through leveraging data and analytics in innovative ways. Altogether, Ray has worked in the retail industry for over 20 years. Most recently, Ray transformed the supply chain and inventory management areas for Cost Plus, Inc. as their Senior Vice President, Supply Chain. In addition to working for many name brand retailers, Ray also spent several years as a retail industry focused management consultant at Ernst & Young, LLP and PricewaterhouseCoopers, LLP.

Ray has a B.A. from the University of California at Berkeley, and an MBA from Indiana University at Bloomington. He can be reached by email at whitley_ray@yahoo.com.

Global Supply Chain Leaders Group Webinar Series Complimentary Training Programs

The Global Supply Chain Leaders Group (GSCLG) is pleased to provide you with access to our complimentary Import Compliance and Essentials of Export Controls webinars. The programs offer 10 hours of all-inclusive training and can be taken at your own pace. These programs provide you with a free-of-charge and time efficient opportunity to gain knowledge critical to your company's import and export operations.

Certified Cargo Screening Program (CCSP)

Import Compliance

Module 1: The Harmonized Tariff Schedule of the United States

Module 2: Duties & Tariff Engineering

Module 3: Import Compliance

Module 4: C-TPAT Security Awareness

Essentials of Export Controls

Module 1: Export Control Basics

Module 2: Classifying your Item and Determining if you need a license

Module 3: General Prohibitions including Prohibited End-users and End-uses & activities

Module 4: Using License Exceptions

Module 5: License Application and Supporting Documentation

Module 6: Export Clearance and Record keeping

Module 7: Introduction to BIS Deemed Export Policies

Module 8: Overview of the Antiboycott Provisions of the Export Administration Regulations

This program is sponsored in part by PO Horizon and by Global4PL Supply Chain Services.

We hope you enjoy these training programs. All we ask is that you complete a short survey at the end.

Thank you for your continued support of the GSCLG. If you have topics for additional training programs please submit your ideas in the suggestion box at **http://www.gsclg.com/eCollege.php**.

To begin, please select: **http://www.gsclg.com/eCollege.php**

More reasons to join GSCLG

- Reinforce your company's commitment to support educational efforts by aligning your organization with GSCLG and its mission to provide high quality Supply Chain programs and resources.
- Capture the attention of managers and other decision-makers by exhibiting at GSCLG conferences. Members realize significant discounts and are given priority when selecting their booth location.
- Obtain member discounts on GSCLG conferences and network with the most innovative people in the industry.
- Gain participation in the Global Shipper Consortium program for qualifying companies.

Membership Levels & Dues

Senior Executive Membership - Complimentary

(For Supply Chain executives at VP / SVP / C-Level)

This membership is by invitation only, for senior Supply Chain executives of non-service provider corporations. This is not intended for sales or business development, but rather it provides a truly unique networking opportunity for senior executives at their level or higher. Membership is contingent on confirmation of the applicant's senior executive position for a non-service provider and subject to approval by the GSCLG Membership Director to ensure a balance of industries and networking opportunities.

Platinum Sponsor ($25,000)

(Includes individual member benefits for two senior executives)

- One free exhibit space (10' x 10') at GSCLG's annual conference ($2,250)
- Four annual conference registrations ($800 each)
- Four pre-conference workshops at annual conference ($400 each)
- Two seats at each of the Senior Executive Networking Dinners
- Listing in sponsor directory distributed at all GSCLG specialty conferences
- Company profile and web link
- One full page advertisement in monthly GSC Review (valued at $48,000)

Gold Sponsor ($15,000)

(Includes individual member benefits for one senior executive)

- One free exhibit space (10' x 10') at GSCLG's annual conference ($2,250)
- Two annual conference registrations ($800 each)
- Two pre-conference workshops at annual conference ($400 each)
- One seat at each of the Senior Executive Networking Dinners
- Listing in sponsor directory distributed at all GSCLG specialty conferences
- Company profile and web link
- One full page advertisement in monthly GSC Review (valued at $24,000)

Gold Corporate ($5,000)

(For companies with up to 500 employees)

- Includes individual member benefits for 20 employees
- One free exhibit space (10' x 10') at GSCLG's annual conference ($2,250)
- One annual conference registration ($800 each)
- One pre-conference workshop at annual conference ($400 each)
- Listing in sponsor directory distributed at all GSCLG specialty conferences
- Company profile and web link

Standard Corporate ($2,000)

(For companies with up to 20 employees)

- Includes individual member benefits for 10 employees
- One annual conference registration ($800 each)
- One pre-conference workshop at annual conference ($400 each)

Individual ($225)

- Includes member benefits allowing for opportunities for growth so that the individual may become a future corporate member
- Up to fifty percent discount to all GSCLG events
- Access to members-only events

Media Partner (Call for additional information)

(For Print media companies with Monthly or Quarterly distribution)

- Two annual conference registrations ($800 each)
- Two pre-conference workshops at annual conference ($400 each)
- Listing in sponsor directory distributed at all GSCLG specialty conferences
- Company profile and web link
- Cross-advertising program

Contact: andrea.kostelas@gsclg.com for pricing information

We welcome your company's involvement as a GSCLG sponsor, a corporate, or an individual member!

Click Here To Register!

GLOBAL SUPPLY CHAIN REVIEW

Publisher	GSCLG Publishing
Editor	Andrea Kostelas
Guest Contributors	Jeff Chiu, Global4PL Supply Chain Services Ray Whitley, Shibumi Consulting, LLC
Advertising Director	
Photo Editor	Sean Moore - GSC Review Photographer

How to reach us:
2953 Bunker Hill Lane
Suite 400
Santa Clara, CA 95054
800.354.8579

Web Site:
www.gsclg.com

The Global Supply Chain Review is a publication of the
Global Supply Chain Leaders Group.