GSCLG

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GLOBAL SUPPLY CHAIN REVIEW

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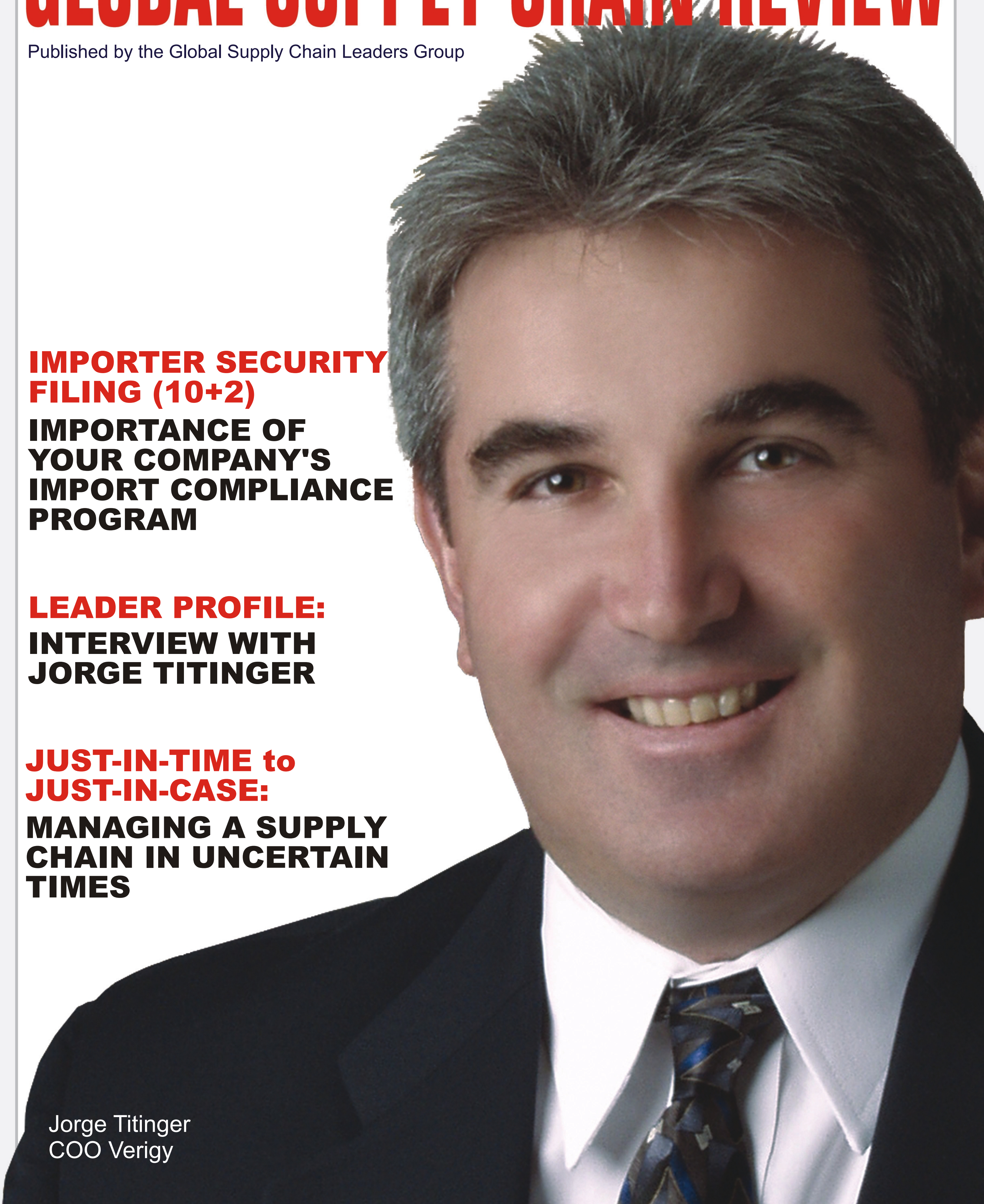


IMPORTER SECURITY FILING (10+2)

IMPORTANCE OF YOUR COMPANY'S IMPORT COMPLIANCE PROGRAM

LEADER PROFILE:

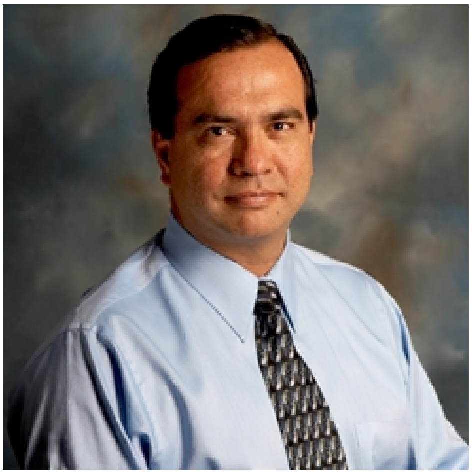
INTERVIEW WITH JORGE TITINGER

JUST-IN-TIME to JUST-IN-CASE:

MANAGING A SUPPLY CHAIN IN UNCERTAIN TIMES

Jorge Titinger
COO Verigy

Message from the President of GSCLG



As supply chain professionals we are expected to deliver results which are difficult to attain under the current market conditions. However, these are the same conditions that will open the doors for you and your organizations to implement new levels of efficiency and creativity which can only be achieved during times of instability. During turbulent times companies must be willing to try different strategies to maintain a competitive advantage.

We at GSCLG Review would like to promote competitive advantage, efficiency and creativity by providing knowledge to those who are just beginning in the supply chain industry and to the C-Level individuals whose own corporations can benefit via an improvement in their supply chains.

GSCLG has expanded its online training library. Complimenting the seminar series on import compliance, we have added modules on the essentials of export controls. Both will enrich your knowledge of the import and export businesses from a compliance perspective.

These training programs provide hours of valuable training, they are completely free, online, and can be completed at your pace. If you are just starting in the supply chain business, go online and deepen your knowledge. If you are the responsible for the efficiency of your company's supply chain, but don't have the budget for training, instruct your teams to go take advantage of the webinars.

Most importantly, we will keep searching for new material to be added to the collection. We are open to suggestions from our readers to determine what is that you want us to provide.

In this issue of the Global Supply Chain Review, we are profiling Jorge Titinger, COO of Verigy, a large, multinational company in the high tech industry. If we aspire to reach the C-Level, we need to know what is required of those positions.

We will continue to profiling high level leaders to ensure that you know who they are, what they do, and how they do it. We can learn from them and prepare ourselves to take on similar positions in the future.

Finally, I would like to say that we have a very timely and timeless article, "Just in Time - Just In Case," which highlights the need for supply chain professionals to prepare for those unexpected events which that will inevitably disrupt the supply chain.

One the GSCLG's goals is to promote the role of supply chain professionals within business organizations that navigate the global market. We are excited to have you as a member of our audience and please don't forget that we are always looking for new leaders to profile, articles to share, and opportunities to enhance your network.

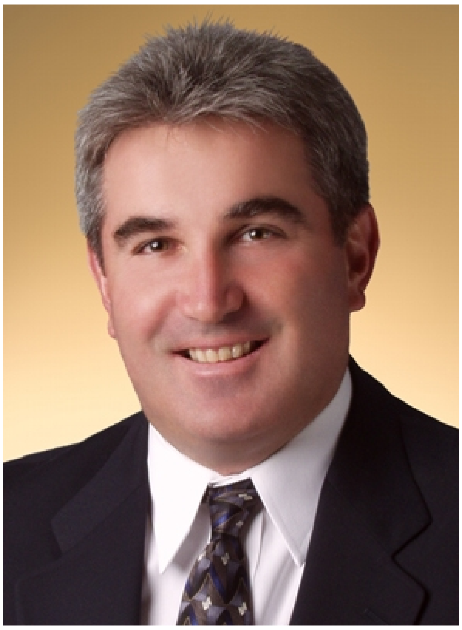
With the start of the New Year, we wish you continued success in your supply chain careers.

Sergio Retamal
President, GSCLG

GSCLG

Interview with Jorge Titinger, COO of Verigy

By Nancy Ellen Dodd, MPW, MFA



Jorge Luis Titinger is the Chief Operating Officer for Verigy, Ltd., which designs, manufactures, sells, and services advanced test systems and solutions for the worldwide semiconductor industry. As COO, Mr. Titinger is responsible for Verigy's product business groups, including product marketing, business development and R&D; as well as the manufacturing, supply chain, and quality operations. His focus is to ensure the company has the right product development roadmaps and to drive the company's global operations through initiatives that continue to increase Verigy's capability in design excellence, operational execution, integrated cross-functional activities and organizational excellence, resulting in improved technical, operational and financial performance.

Before Verigy, Mr. Titinger served as Senior Vice President of FormFactor, Inc.'s Product Business Groups. Prior to that, he held several executive leadership positions at KLA-Tencor Corporation, the leading supplier of process control and yield management solutions for semiconductor and related microelectronics industries. His roles during his tenure at KLA-Tencor from 2002 to 2007 included EVP of Global Operations and Chief Manufacturing Officer, Chief Administrative Officer, Senior Vice President and General Manager of KLA-Tencor's Global Support Services and Field Operations Group. From 1997 to 2002 he held several executive positions at Applied Materials.

Mr. Titinger holds a B.S. and M.S. in Electrical Engineering and an M.S. in Engineering Management from Stanford University.

What was your very first job and do you see any similarities between that job and being Chief Operations Officer?

I was a martial arts instructor in Peru where I was born and raised. While these jobs are very different, there is one fundamental similarity - in teaching, as in my role as a COO, it is ultimately all about “the people” and how to get people to perform at their best possible level.

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

I think I have a good blend of formal education and broad experience in related industries, and an ability to influence people and accomplish results. I have a master's degree in electrical engineering, which is the core technical field for our products at Verigy. As a manager, different from when I was an engineer, I learned to lead people and developed from being an individual contributor to managing. From a personal perspective, it is an orientation to results which is very valuable. It is a critical change in a career evolution when one moves from expecting to be rewarded for one's efforts to being rewarded for one's results. The higher you go, the more it is about "What have you accomplished?" I have also invested in developing a strong network both in and out of the industry. Having strong relationships with peers, customers, suppliers etc, can significantly accelerate time to results…I think it is a critical skill and something that takes time and focus to develop.

As COO, how “hands-on” are you in operations?

I guess the right answer is that it depends on what is necessary to accomplish the results we are after. When it isn't necessary to be too “hands-on”, I think I strike a good balance of being able to delegate effectively to my team and staying involved at the right level of detail - I have the good fortune of having a very strong team working for me. I want to rely on the team and on their judgment and their direction.

But there are times when I absolutely need to intervene and get into a pretty deep level of detail so that we can make progress and make certain decisions quicker. I think it is important to remember that delegating does not mean abdicating responsibility; in the end I am responsible, so I look for where it is I need to be hands-on in order to help the decision-making process.

What is the main difference in roles between CFO and COO? Have those roles changed after Sarbanes-Oxley?

Clearly a CFO is responsible for the financial aspects of the company—for the treasury, controllership, financial planning and compliance, etc., especially with all the new regulations like Sarbanes-Oxley, etc. More so in the past than now, the operational aspects of some companies were tied either directly or indirectly to the CFO's responsibility. I think as the regulatory world has become more demanding for CFOs you see more pure play CFOs than in the past. In our company in particular, our CFO and I work very closely together in making sure that the execution of our strategies is in line with our financial targets. Since my responsibilities are for both product generation and operations, there are several areas that are solely my responsibility, but in the end, our CFO and I work as a team to ensure we meet our business objectives. In a lot of companies, having that distinction depends on how critical operational executives are for the company's success.

How do you grade Verigy's overall performance in customer satisfaction?

Unlike industries where products are mass produced, in our industry we have a relatively small number of customers and repeat business is absolutely critical. Our sales cycles are long because we sell pretty technical products. We engage with customers, in some cases, years before products are designed. We align roadmaps with them, we sell them products that get installed and are used for many, many years, so we have an ongoing service and support relationship with them. I think we continue to look for improvement in the way we provide support, in the programs that we offer our customers with regards to maintaining their installed base, and in improved ability to react to their changing needs. Customer intimacy is absolutely one of the critical focus areas for us.

I think there always are improvement opportunities in customer satisfaction. These opportunities are in technical alignment, in execution of product elements from a timeliness perspective, and then in ongoing support of the installed base. How do we do it more effectively, more cost effectively, etc. But absolutely one of the top three priorities of the company is to take care of our customers.

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

I think it is even more important now for people to be really connected to the vision and the strategy of the company. It is time for more communication rather than less, time for more transparency and clarity, and for continuing to focus on the strengths of the company. For Verigy, clearly one of the strengths is our people - we need to make sure they know that and they see how they can help us emerge stronger out of these tough times. I think people understand the severity of the current downturn and will really value strong leadership during these times.

Do you have any ideas that could turn around this economy?

I think this is a very broad, deep and complex situation; in order to fix it, one needs to really understand the root causes, and there are many. The situation is further complicated by how interconnected the potential drivers are - tax policy, monetary policy, foreign policy, etc. There are no simple answers, but, when we emerge out of this, I believe this will be a different world. I don't think that we will stop progress or that we will stop competitiveness in other places. We (the USA) need to be okay with being in a constant state of reshaping our skills, both in retraining, and in focusing on the new things that we can do better than anybody else. What are we going to bring that gives us a very unique competitive position? What are our new core competencies? How do we get the American workforce really capable of performing better than anybody else? We need to drive that, get retrained in those areas, get competitive in those areas, so that we can provide an environment in which people in the U.S. can thrive.

Who do you rely on for advice?

One of the best things that people can do as they're evolving in their careers is to build what I call "networks of help." Somebody who has been a mentor to me for years gave me that pearl of wisdom. I participate in industry groups where people of similar industries and interests - clearly in areas that are non-competitive - can discuss ideas. I really try to figure out how to leverage my different networks to help me, to provide sounding boards, to make sure that some of my choices and decisions have the right probability of success. The higher up you go, the fewer people there are within your own circle that you can count on to give you that kind of advice or criticism, so you have to seek it from different sources.

What have you learned as COO that has surprised you or changed the way you do business?

One of the things that was a surprise is that no matter what the role, in the end, it's about the people. It is really important to understand the ecosystem in which you work, meaning your internal organization, your suppliers, your customers, and your competitors. How well do you understand what they need or what they're doing?

I think that the number one lesson for anybody who is in a competitive business is “everybody out there is trying to get better”. So, if you're not, you're going to fall behind. Can you achieve what you are committing to? Can you leverage your resources in the most efficient and effective manner? Don't become complacent. At some level, be paranoid because somebody is going to fulfill the need of the customer, and chances are, if it is not you, it's going to be your competitor. Be diligent about keeping that in the forefront of how you think every day.

About the Author:

Nancy Dodd serves as editor of the Graziadio Business Report, an online business practitioner's journal, at the Graziadio School of Business and Management. Dodd's journalistic career includes publishing more than 125 articles in local and national publications including interviews with celebrities and business leaders. She also served as editor of Marshall, a USC academic/alumni magazine, and started the Marshall Review, an online academic and business practitioner journal for the Marshall School of Business at USC. She began her career as managing editor of Elan magazine, a lifestyle and arts magazine. Dodd has also coached and served as consultant to other non-fiction writers and to start-up magazines.

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 are 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.

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Module 3: Import Compliance

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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**.

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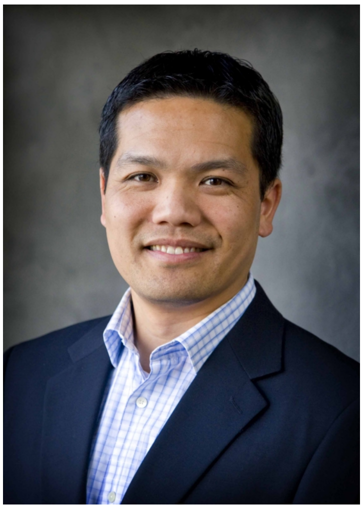
Import Compliance a Measure of Readiness for 10+2

Jeff Chiu, Vice President, Global4PL Supply Chain Services



✐In the past year, United States Customs and Border Protection ("CBP") issued the Proposed Rule on the Importer Security Filing ("ISF" or "10+2") to satisfy section 203 of the Security and Accountability for Every Port Act of 2006. CBP received and reviewed comments from the import community; the Office of Management and Budget officially signed off on the Proposed Rule; and on November 25, 2008, CBP published the interim Final Rule in the Federal Register.

http://edocket.access.gpo.gov/2008/pdf/E8-27048.pdf

The requirements of the Importer Security Filing - unofficially named "10+2" for the 10 data elements supplied by the importer and the two elements supplied by the ocean carrier - will take effect on January 26, 2009. The interim Final Rule allows for public comments (on six of the importer's data elements) to be received on or before June 1, 2009, and provides a compliance date of one year from the effective date.

Although much has been said and published on this subject, many have remained on the sidelines contemplating the resources in preparing for the implementation. CBP has granted a 12-month informed compliance period, during which importers are expected to gradually comply without the threat of full enforcement and monetary penalty. What do importers need to do to get ready? Who has the responsibility of gathering, validating, and transmitting this information? How will this latest security initiative affect importers' businesses?

The importer is required to submit these "10" data elements:

- Manufacturer (or Supplier) name and address
- Seller name and address
- Buyer name and address
- Ship-to name and address
- Container stuffing location
- Consolidator name and address
- Importer of record number
- Consignee number
- Country of origin
- Commodity HTSUS number (minimum 6 digits)

The vessel carrier is required to submit these "2" data elements:

- Vessel stow plan
- Container status messages

The Importer Security Filing initiative states that the electronic transmission of the data elements must be executed no later than 24 hours prior to the loading of cargo onto a vessel destined to the United States. Chronologically, this requirement shifts the transmission to an earlier stage of the supply chain. An importer may designate, with the proper power of attorney, its freight forwarder to submit the data elements. A freight forwarder normally receives shipping documents with the cargo. Thus, it has access to, and may be familiar with, six of the "10" data elements: manufacturer (or supplier) name and address, seller name and address, buyer name and address, ship-to name and address, container stuffing location, and consolidator name and address.

Many mid to large importers employ the services of a Customs broker. In the course of electronically filing a Customs entry, the broker normally transmits eight of the ten data elements: manufacturer (or supplier) name and address, seller name and address, buyer name and address, ship-to name and address, importer of record number, and consignee number, country of origin, and HTS number.

The Customs broker may be asked to submit the information to CBP. A Customs broker normally transmits electronic entry summary information to CBP while an ocean vessel is on the water. The Importer Security Filing, as noted above, would shift the transmission of data to an earlier stage of the supply chain. CBP will allow for a single transmission of the ten data elements and entry summary information by the importer or a licensed Customs broker to help in reducing the amount of data entry.

The Importer Security Filing initiative states that the importer is the party ultimately responsible for the submission of (the "10") data. Between the freight forwarder and the Customs broker, the importer should have all of the data required. It would be a simple exercise of providing the appropriate party the respective missing elements. The freight forwarder and Customs broker would require the respective balances of data elements.

CBP provides some flexibility in the reporting of four of the importer's data elements. Importers are allowed to provide a range of responses for the manufacturer / supplier, ship-to party, country of origin, and commodity HTSUS number. Although this helps in meeting the filing deadline for each shipment, it requires the additional work of submitting one or more subsequent update(s) to the original filing.

CBP provides additional flexibility in the reporting of two additional importer's data elements. Importers are allowed to provide the container stuffing location and the consolidator name and address no later than 24 hours prior to arrival of the vessel at a U.S. port.

All of the required data elements exist; that is certain. Whether the data is transmitted by the freight forwarder, the Customs broker, or the importer, there remains an uncertain level of burden in the exercise of data collection.

Taking the "10" data elements and turning them into questions is the very first step. How many suppliers / vendors do I have? How many manufacturers do my suppliers / vendors represent? With how many manufacturers do I deal directly? From how many countries do I import? What are the products' countries of origin? What are the tariff numbers for those products?

An importer must be able to answer this set of questions with practically 100% certainty as the penalty for the submission of false information to CBP would result in a penalty of 100% of the value of the shipment. That was the penalty under the Proposed Rule; the penalty under the Final Rule is $5,000 for each violation of the Importer Security Filing. (100% accuracy of the data elements has the additional benefit of contributing to overall import compliance.) Whatever the penalty amount, with which department should the responsibility lie within each importer's organization? Who will take charge?

An importer's organization may include both Customs compliance and logistics departments. These groups are heavily involved in the daily operations and generally do not have the time nor the perspective to execute this data collection. Even when the data is easily accessible, the task of validation could be daunting. For example, Accounts Payable has an address for a vendor to which it sends payment, but is that vendor the actual manufacturer? Is that vendor's mailing address the physical location at which the goods were made or stuffed into the ocean container?

Some other questions to consider are:

- How many Customs brokers does an importer employ? Does each broker have the authority to classify product independently or does the importer supply all classifications?
- Does the Customs broker have the support and coverage overseas to avoid lengthy delays due to time zone difference and the timing to correct those issues at origin?
- Does the vendor know how to classify products correctly and does it provide the information timely and consistently?
- Does the contract manufacturer provide support needed for its products?
- Do the procurement, logistics, import and trade compliance groups work together to coordinate the information and avoid Customs delays? Is there an inefficient inbound of materials due to lack of information from origin?

An importer's current processes may work well, but without a clean and efficient operations model, including the documentation with the required information from contract manufacturers, vendors, suppliers, etc. at origin, not only will an importer subject itself to potential delays and penalties under the Importer Security Initiative, the import supply chain will suffer. Now is the time to assess and correct any deficiencies before they affect a company's import compliance record as well as its bottom line.

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, possesses over 12 years of experience in import operations and compliance, with emphasis on internal Customs audits, commodity classification, tariff engineering, trade programs, and training.

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http://gbr.pepperdine.edu/032/supplychain.html

Managing a supply chain in uncertain times

Charla Griffy-Brown, PhD

In the current uncertain political and economic environment, companies need to adapt their supply chain to deal with uncertainty.

Developing better ways of dealing with supply chain disruptions is particularly important since sustainable competitive advantage is often driven by speed, delivery and cost-reduction. Whether intentional or due to natural catastrophe, these disruptions for businesses usually go straight to the bottom line.

What makes disasters and the resulting business disruptions particularly significant today is the emphasis on speed and efficiency. This is generally epitomized in the Just-in-Time system of delivery of materials and components that was pioneered by Japanese manufacturing firms. This technique requires inventory to arrive at the production lines precisely when it is needed. In the 1980s, a few U.S. manufacturing firms took their cue from their Japanese competitors and began to cut the slack and related waste out of their own supply-chain networks. As a result, Just-in-Time concepts have now been widely adopted across both traditional and high-tech industries in the United States and Europe. The inventories of both raw materials and finished goods have been dramatically reduced for these organizations, thus making capital available for more profitable uses.

However, shortages caused by natural, political or technological disruptions can erode productivity and even bring business to a halt, thereby causing customers to defect, never to return. The potential for supply-chain disruptions means business operations are less predictable than most managers believe. In the current uncertain political and economic environment, companies need to adapt their supply chain to deal with uncertainty.

The Evolution of Supply Chain Design

Existing supply chain technologies were primarily designed to reduce the friction in the flow of materials, components, and finished goods across the enterprise and its global supply chain. When these systems were introduced, the level of global uncertainty both politically and economically was not the consideration it is today. However, recent corporate experience with some natural disasters and other disruptions has made it clear that there could be significant risks in this regard. Beyond these experiences, the catastrophe of September 11, 2001, and the continuing threat of deliberate disruption have also changed the environment.

Where Do U.S. Firms Stand Now?

According to recent research, firms are not prepared to manage the risks that could hit their supply chain in the event of a local, national or global crisis. A forthcoming study by the Council of Logistics Management notes that approximately 60% of the firms queried acknowledged that they had formal continuity planning programs in place prior to 9/11 and that this number did not change significantly after this event. Though 9/11 is statistically an outlier in terms of probability of disruption, events of this magnitude should serve as a wake-up call. Preliminary findings from the study suggest the even the existing formal continuity plans do not cover the full supply chain or even enterprise supply chain resources. Additional surveys by the Chartered Management Institute and the Business Continuity Institute show that there is evidence of significant disruption to organizations from a number of crises in the late 1990s through 2002. Furthermore, according to this survey data, there seems to be an escalation in the number of disruptions, but little change in contingency planning.

Lessons from the Previous Disruptions

How can business practitioners effectively deal with these risks and capitalize on the opportunities? One way is to learn from company responses to previous catastrophic events. A brief comparison of different firms' successful and unsuccessful responses to supply chain disruptions points to some effective lessons for business practitioners. Table 2 outlines a brief comparison of some significant events from the late 1990s to the present.

Table 2. Comparison of Disasters Resulting in Significant Supply Chain Distribution and Firm Responses

Crisis	Impact	Management
Hurricane Mitch in Honduras, Guatemala and Nicaragua (November 1998)	Flooding destroyed banana plantations, thus damaging 10% of the worldwide crops.	Chiquita: leveraged alternative source of bananas to maintain deliveries. Dole suffered revenue declines and struggled to find alternative sources of supply.
Earthquake in Taiwan (September 1999)	Power outages and damaged equipment halted supply of components to PC manufactures.	Dell influenced demand toward products with available components through direct sales model. Apple faced product backlogs due to component shortages and inability to alter product configurations.
Outbreaks of mad cow and foot and mouth disease in England (Spring 2001)	Destructions of cattle caused shortage of European hides to leather goods manufactures,	Natale, Gucci and Wilson Leather were locked into supply contractors; Naturalizer, Danier and Justin Boot relied on inventories. Etienne Aigner shifted purchases to other regions, but faced stiff cost increases.
Terrorist attacks on the United States (September 11, 2001)	Increased security crippled transportation networks, thus causing cross-border shipment delays to US auto manufacturers.	DaimlerChrysler, Continental Teves used alternate modes of transportation and implemented contingency plans. Ford was forced to close five plants for several days.

Source: mmc.com and Chartered Management Institute

Transportation: Examination of this comparison shows the importance of lining up alternative transportation. While such a strategy may seem obvious, the examples of Diamler Chrysler versus Ford indicate that unfortunately, even large, profitable companies may not have alternative transportation strategies.

The attacks of September 11 immediately prompted tighter security at all U.S. customs checkpoints, thereby causing significant delays at border crossings for several weeks and disrupting critical shipments of parts and components. Ford suffered from not being prepared with alternate transportation for critical components. Consequently, Ford had to shut down five of its U.S. plants because the company could not get enough engines and drivetrain parts from Canada. Ford's production for the fourth quarter was 13% fewer vehicles than planned as a result of these problems. In contrast, Chrysler responded quickly to the restrictions on air travel after September 11. Chrysler's logistics staff in Michigan had analyzed its production flow by September 12 and realized they were likely to run out of an updated steering gear unit for the redesigned Ram pickup truck. The part was usually sent by air from a TRW plant in Virginia to the Chrysler assembly plant in Mexico. Chrysler turned to a truck service to minimize the delay in delivering the component.

Continental Teves, a large supplier to the auto industry, similarly demonstrated agile supply chain management. Their crisis team, composed of purchasing and logistics managers, immediately put together a list of all customers, parts, and suppliers outstanding. They identified where the parts came from and assessed which were considered critical and vulnerable to delay. By the afternoon of September 11, they knew which North American shipments required immediate action and expedited many of these by land. Continental Teves used existing contingency relationships with transport firms such as Emery to supplement air cargo delivery. Toyota, among other customers, benefited from Continental Teves' ability to deliver with little disruption in the week that followed.

As these events make clear, manufacturers and suppliers must have the flexibility to expand their contingent shipping arrangements. In this regard, logistics software can help by tracking goods globally and providing guidance when disruptions occur. Those that ship via one mode of transportation should consider backup routes by another mode. These steps may raise costs and affect production lead time, but determining the balance between flexibility and extra cost is part of the new "just-in-case" equation.

Sourcing Alternatives: An examination of these comparisons reveals the importance of cultivating alternate sourcing arrangements. Relying heavily on a single source for products or critical components leaves a firm highly vulnerable to prolonged and expensive supply gaps. Again, this may seem like common sense, but many firms have not considered enough alternative sourcing scenarios. The Hurricane Mitch crisis is a good illustration.

Dole lost 70% of its 40,000 acres in Honduras, Guatemala, and Nicaragua -- roughly one-quarter of its worldwide production. The company had no strategy in place for alternative sources of supply in the region, and therefore suffered an interruption in supply from Central America that lasted more than a year. As a result, Dole suffered a 4% decline in revenue for the fourth quarter of 1998 and lost over $100 million dollars.

Chiquita Brands was able to maintain a steady supply of bananas even though it lost production from its own Central America plantations. It met volume requirements through increased productivity in other locations, such as Panama, and purchases of fruit from associate producers in the region that were undamaged. Chiquita's revenues actually grew 4% in the fourth quarter of 1998.

Leveraging Technology: The evolution of the supply chain in recent years is characterized by a move toward modularization and customer relationship management (CRM) integrated application suites. Technology vendors were moving from tightly integrated inter-enterprise suites to modular applications with a narrower focus. Modular applications with a narrower focus reduced implementation risks and costs significantly. However, they also increased the potential customer pool for software companies by bringing in small and medium-sized enterprises that were previously excluded due to the price of the software.

The evolution of technology and customer relationship capabilities provides an opportunity for managers to mitigate risks even in the worst of circumstances when supplies are just not available, provided the supply chain system is contemporary and not too thin.

This new conceptual strategy for mitigating supply chain disruption is to influence customer choice. Traditionally companies have created product lines that represent their best guesses about what buyers will want. There were generally some alterations possible at the purchase point, but choices were largely fixed. Customers were not used to variety or "mass customization," and companies could not produce a high level of variety. Traditional vertically integrated operations, using a standard supply chain, couldn't deliver custom products reliably or quickly. However, since the mid-1990s, more and more companies have developed the ability to tailor in real time the options presented to the buyer and to promote certain features over others through their digital networks.

This ability to dynamically influence customer choices is particularly powerful in times of crisis, as is seen in the way Apple and Dell dealt with the Taiwan earthquake in 1999. This earthquake cut power, damaged factory equipment and halted the supply of critical PC and laptop components for two weeks. In this case, the problem could not be resolved with alternative forms of transportation or different sources of supplies.

Apple faced shortages of semiconductors and other components that delayed production of its iBook and Power Macintosh G4 desktop computers during a period of growing demand. The company was unable to alter product configurations, but it decided to ship slower G4 comptuers than the customers had ordered and received a barrage of complaints.

Dell on the other hand fared much better. Even though Dell's direct sales model meant that it held only five days of inventory, Dell was able to continue selling and delivering product. Dell used price incentives and promotions, adjusted in real time on Dell's online choiceboard, to influence customer choice. Dell's third quarter 1999 earnings actually improved 41% over the previous year, despite the supply-chain disruption.

Conclusion

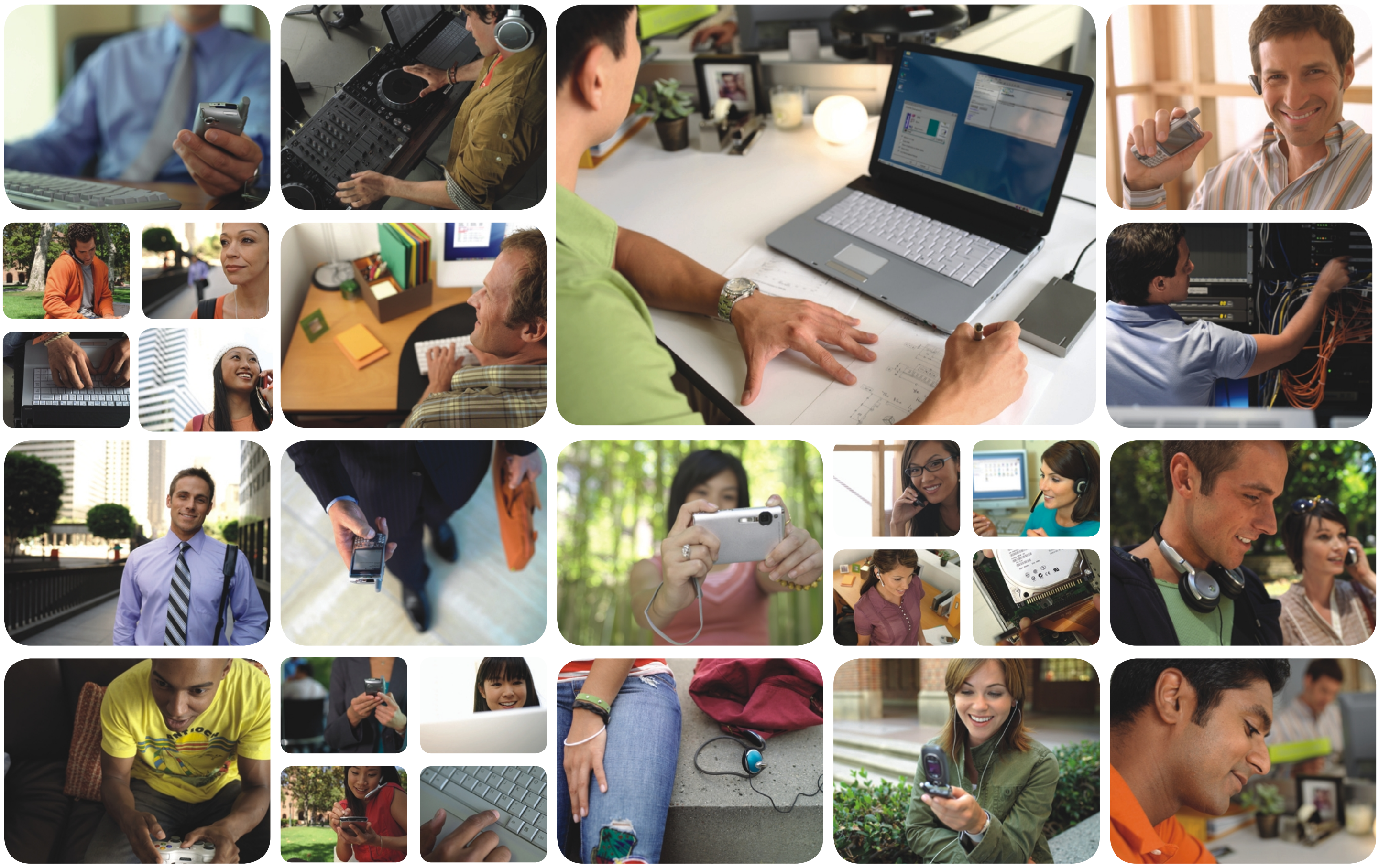
Resilience in responding to customer demand is critical for surviving in a risky economy that demands speed and flexibility. Many companies have spent decades trying to get their supply chains to flow smoothly through just-in-time concepts. However, these ultra-lean strategies have significant risks in a turbulent economic and political system. Each component in the supply chain, from sourcing to inventory to transportation and demand management, must be reassessed based on the current situation and careful consideration of risks. Furthermore, since these situations change so quickly, the supply-chain system needs to be rebalanced periodically as new information and new risks are identified. New ways of leveraging the information networks to mitigate risk represent a critical and new component of business continuity planning. This means paying as much attention to demand management and information sharing with internal and external customers as it does to logistics.

Building a flexible and responsive supply-chain service is a solid defense against inevitable catastrophe and is critical amid the growing uncertainties in today's business environment. However, the benefits are not just in risk-mitigation. This strategic approach incorporates competitive goals such as anticipating and even influencing shifts in customer priorities and creating advantages over rivals that are rigid in procurement, transportation and operations.

Large-scale disasters remind us that the frictionless economy is a just a dream, not a reality. No one can predict where the inevitable next disaster will occur or what will happen. Mitigating risk entails a high cost and sometimes constrains performance, so these things must be balanced. However, businesses can succeed with agile supply chain management, particularly by leveraging customer relationship management and other related technologies to influence customer choice.

About the Author:

Charla Griffy-Brown, Ph.D., an associate professor of Information Systems at Pepperdine University's Graziadio School of Business and Management, is currently part of an international research team examining technology and development issues. Dr. Griffy-Brown graduated from Harvard University, is a former Fulbright Scholar, and holds a Ph.D. in Technology Management from Griffith University in Queensland, Australia. She has worked for NASA at the Kennedy Space Center and has taught innovation/technology management courses in Australia, Singapore, Indonesia, Malaysia, and Japan.



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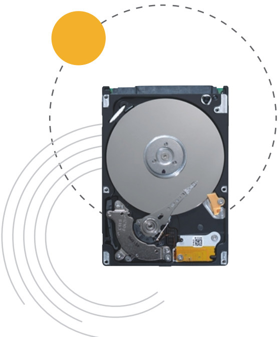

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Guest Contributors	Nancy Ellen Dodd, Pepperdine University Jeff Chiu, Global4PL Supply Chain Services Charla Griffy-Brown, Pepperdine University
Advertising Director	Fiona Lo
Photo Editor	Scott Kouns, Kouns Photography

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

Web Site:
www.gsclg.com

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