Homefield Advantage in The Global Supply Chain
Understanding, Measuring, Mitigating and Managing Exposures in a Supply Chain Dependent Globalized Market

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EXECUTIVE SUMMARY

"You have to be very rich or very poor to live without a trade."[1]

With the evolution of technology and society, we have seen a drastic change in the movement of goods and resources between countries. We have advanced from the days of trading silk and spices via ancient land routes to a global system that sends raw materials and finished goods across the world by land, sea and air. This paper aims to discuss the advantages and weaknesses of the modern global supply chain system, as well as explore ways for participants in the global economy to minimize or transfer risks resulting from interruptions in the supply chain.

Often times, in this modern economy, components are shipped from the point of manufacture to the point of assembly and then to the point of sale. A perfect example of this evolution is the auto manufacturing industry. The Ford F-150, often considered a symbol of the American truck, while assembled in Illinois, is largely composed of component parts manufactured in Mexico and China. By contrast, according to the National Highway Traffic Safety Administration, the Toyota Tundra has the highest U.S. parts content at 80%.

The importance of maintaining the safety and predictability of supply routes is not limited to component parts, but includes commodities such as wheat or fruit. For example, the United Kingdom imports 90% of its fruit and 60% of its vegetables. As a result, supermarkets were in danger of running out of these commodities during the height of the volcanic ash cloud that interfered with flights during the summer of 2010.

It is against this backdrop that we consider interruptions in the supply chain for components and commodities and the resulting risks and costs. Arguably, the greatest strength of this global economy, i.e., relative ease in moving parts and commodities, is the basis for its greatest weakness - the fragility of the system and the concurrent susceptibility to interruption.

This dichotomy was noted by the National Strategy For Global Supply Chain Security, which is tasked with articulating the United States' policy to strengthen the global supply chain. A report issued in January 2012 noted that the global system relies upon an interconnected web of transportation and infrastructure and stated, "[W]hile these inter-

[1] Albert Camus, French Philosopher 1913-1960

dependencies promote economic activity they also serve to propagate risk across a wide geographic area or industry that arises from a local or regional disruption."

There has been no shortage of natural events that have affected the global supply chain such as the mentioned volcano ash cloud in 2010, the Japanese earthquake and resulting tsunami, and Hurricane Katrina which struck New Orleans with devastating effect. The risk of these types of events is compounded by man-made crises such as terrorist attacks, piracy, political upheaval, or outright military conflict. In fact, one need look no further than the recent Iranian threats to close the Straight of Hormuz and the resulting effect on oil prices to appreciate the volatility of the global supply system and the inherent risks involved.

In light of these perils, both natural and man-made, it is incumbent upon companies reliant upon the global supply system to properly assess and, to the extent possible, transfer the risk of losses attributable to interruptions in the global system.

To that end, Part I of this paper further considers the modern global supply system and analyzes potential points of vulnerability. Understanding the evolution of this modern system and its points of vulnerability are key to mitigating risks along the supply chain.

Part II carries this concept further and analyzes the need for a participant in the supply chain to assess its susceptibility to losses caused by trade disruption and details what contingencies should be considered. Threats to the efficient functioning of the supply chain are both internal and external. A company must properly define these risks and act to mitigate potential losses.

Finally, Part III of this paper offers ways companies can shift the risks of losses due to supply chain disruptions to third parties. Unfortunately, not all risks or losses can be limited or prevented by best practices, or forethought. Developing strategies for transferring risks or liabilities where needed, or possible, is also an important step in limiting a company's exposure and losses that can occur when its supply chain is interrupted or broken.

PART I
IT'S A SMALL WORLD AFTER ALL

There is no disputing that over the past 50 years we have seen the growth of the globalized economy. Long gone are the days when manufacturers procured the necessary materials from local quarries or suppliers. Today, more and more companies must manage their global supply chain in order to stay competitive in this new market place.

For the purposes of this discussion, we will define the global supply chain as an international network of companies that cooperate to convert ideas into goods or services for customers.[2] The partners in this chain must efficiently exchange information as raw

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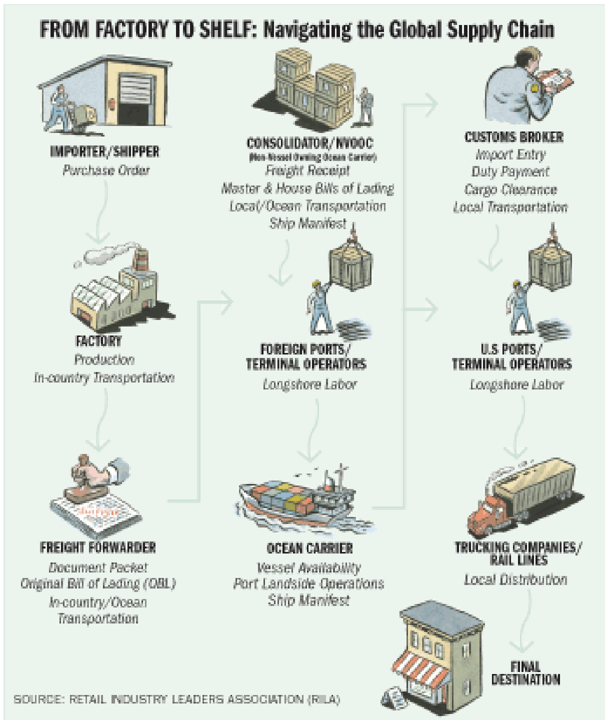
[2]Cross, B., Bonin, J., *How To Manage Risk In a Global Supply Chain*, Ivey Business Journal, November/December 2010.

materials are transformed to finished goods while traveling through the network's physical infrastructure. Such physical facilities would include manufacturers' warehouses, wholesalers' distribution centers, retail chains' warehouses, and retail outlets.[3]



SOURCE: RETAIL INDUSTRY LEADERS ASSOCIATION (RILA)

The growth of the global economy is unprecedented and must be considered one of the most pronounced and remarkable economic trends in recent history. With the advent of growth and development of international freight; improved efficiencies that add capacity; reduction in the actual cost of units moved; and the expansion of a fast moving global communications in various forms; companies have been able to expand production and delivery despite any time delays inherent in moving components great distances. As a result, companies have been able to simultaneously use low cost skilled labor from developing countries to produce goods and services at a cheaper cost, while concurrently expanding the potential market place for these same goods and services.

Arguably, global trade has become a precondition to sustained profits as opposed to an economic advantage available to only a certain segment of companies. Managing the global supply chain has now become central to companies' strategic plans to increase profits and market share.

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[3] Banham R., *Reducing Disruption in the Global Supply Chain*, The Wall Street Journal. (http://online.wsj.com/ad/article/managingrisk-disruption)

Conceivably, the global economy has reached a tipping point that renders it unlikely that we will ever see a retraction in the growth and/or reliance on the global supply chain system.

Proper management of a company's global supply chain is obviously key to maximizing profits and limiting losses caused by a disruption in the chain. While outsourcing may lead to cost savings, there is a litany of dangers and challenges that must be managed in order to maintain production.

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It is central for a company to organize its supply chain management structure to support its overall business strategy and design a system to motivate behaviors that optimize performance for the company as a whole. For example, failing to completely understand the costs of importing goods from foreign locations can lead a company to make a decision that serves to increase costs rather than save money.[5]

Whatever internal structure that is created by the company must be able to handle all required supply chain issues, with perhaps, flexibility and responsiveness being the most central requirements. Absent the ability to properly manage the supply chain in the absence of a specific peril, a company will not reap the benefits of cheaper labor or components residing in other markets. In practical effect, a company determining its internal structure for managing its supply chain is a first step in safeguarding against losses caused by an interruption of the chain.

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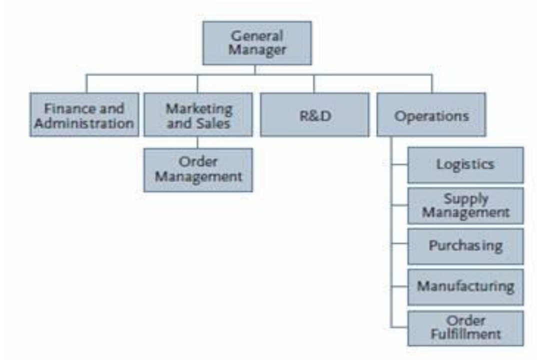
[4] Image located at Cerqa (http://www.cerqa.com/services/supply-chain-management.aspx)

[5] Gillai, B., Vorburger, A., *Business Value of Global Trade Management Solutions, Stanford Graduate School of Business*, March 2007.

In managing the supply chain, companies could take a traditional approach and view supply chain management as a subset of a larger department or divide supply chain management amongst various departments.[6] For example, companies could divide responsibility for managing the supply chain, and by definition, various individual "departments" amongst larger departments such as "Purchasing" or "Operations." Such a hierarchy may look akin to:



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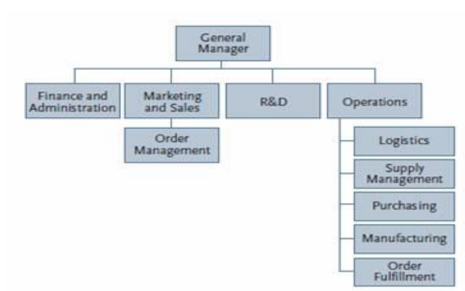
In contrast, companies could render supply chain management a department unto itself consolidating various other departments under this umbrella. In a sense, the parts of a supply chain could be viewed as a collection of "departments" and individuals that have responsibility for executing each department core process.[8] Again, such a hierarchy may look like:



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With the growth of the global economy, and its resulting complexity, it is fair to expect that companies will shift to the more unified approach indicated above, whereby, a

[6] Cohen, S., *The New Supply Chain Organization*, PRTM 2003, 2006.
[7] *Id.*
[8] *Id.*
[9] *Id.*

supply chain manager oversees the supply chain, incorporating numerous departments such as purchasing, order fulfillment and manufacturing.

Conceivably, such an arrangement would increase a company's flexibility and responsiveness in managing its supply chain. Regardless of how the supply chain is managed, proper management is clearly required to maintain cost control and profits. This is all the more necessary in light of the innumerable factors that could leave the supply chain disrupted, or even terminated.

ONLY AS STRONG AS THE WEAKEST LINK

As indicated, there is no shortage of threats to a company's supply chain. Commentators have characterized threats that may arise as internal and external, all with the potential to disrupt the supply chain.[10] The number of such threats can only be compounded by the increased scope of the chain. The sheer variety of perils makes it difficult to quantify all the potential dangers, but for the purposes of this discussion, we will initially, separate perils based upon those within the control of the company and those perils that may arise, irrespective of how a company manages its supply chain.

Internal Pressures

- **Processes**: Refers to the proper execution of administrative and/or managerial processes undertaken by the company. Proper management and execution are dependent upon internal assets and infrastructure. This could include communication systems, responsiveness of departments and leadership structure. To the extent the internal infrastructure of the company fails to run efficiently, the more likely supply chain disruptions could occur.[11]

- **Controls**: Represent the assumptions, rules, systems, and procedures that dictate how a company exerts control over the processes. With respect to supply chain management, this could include order quantities, batch sizes stock policies, and return policies. Control risk arises from the application or misapplication of these procedures.[12]

- **Mitigation**: It is essential for a company to plan for contingencies that may occur. The failure to prepare a plan to mitigate losses from an interruption in supply chain is a risk in and of itself.[13]

- **Supply Chain Confidence**: Different departments such as sales, customer service or operations may view the viability of a supply chain differently. As a result, sales persons may order more then is required, or hold stock to avoid a shortage due to a lack of confidence in the chain. The same crisis of confidence may lead

[10] Braithwaite, A., *The Supply Chain Risks of Global Sourcing*, LPC Consulting, 2003
[11] *Id*.
[12] *Id.*
[13] *Id*.

to customer service being unable to give accurate information to customers. As a result, operations may be unable to derive patterns on sales or trends layering the existing inefficiencies.[14]

- **Inability to Measure Demand**: Forecasting demand is important to quantifying units produced and shipped. The inability to properly assess demand or respond to a change creates inefficiencies that can disrupt the supply chain and result of economic losses. This has been characterized under certain circumstances as the bullwhip effect, meaning the distortion of demand information as it is transmitted up the demand chain. The distortion appears between trading partners as the demand signal moves further away from the consumer. This can lead to excessive inventories, higher operational costs and lower customer service.[15]

In the end, a company's internal infrastructure must be geared toward efficiently managing its supply chain. This must include everything from communication systems to how the supply chain is presented, or even marketed, to employees. The interruptions potentially caused by the risks listed above are within the control of the company, and although complex can be assessed, amended and improved upon.

These risks, generally speaking, are not likely to cause significant economic losses, result in litigation or be the types of risks that a company would transfer to a third party. These risks, although important, are internal and systemic and therefore, can be mitigated by the company's own best practices.

Unfortunately, external risks, especially those outside the control of the company, can have a significant impact on the supply chain and consequently, cause significant economic losses. It is not difficult to consider the myriad of external risks that could interrupt a supply chain. Such calamities like political instability; natural disasters; dock strikes; cyber attacks; and terrorism all could have a devastating on supply chains across the world, with dire impacts on companies. These and other external risks could be categorized as:

- **Demand Risk**: This relates to potential or actual disturbances to the flow of product, information, and cash emanating from within the network between the focal firm and the market.[16]

- **Supply Risk:** This relates to the actual or potential disturbance of the flow of product or information emanating within the network, upstream to the focal firm.[17]

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[14] Christopher, M., Lee, H., *Supply Chain Confidence: The Key to Effective Supply Chains Through Improved Visibility and Reliability*, Cranfield Univ. & Stanford Univ. November 6, 2001.
[15] *Id; see also* Lee, C., *Demand Chain Optimization: Pitfalls and Key Principles*, Evant White Paper Series, 2003.
[16] Braithwaite, A., *The Supply Chain Risks of Global Sourcing*,
[17] *Id.*

- **Geo-political Risk:** This risk relates to natural and/or political risks that can occur. This category includes events such as natural disasters and political upheaval. This risk can impact the firm directly or through its suppliers and customers.

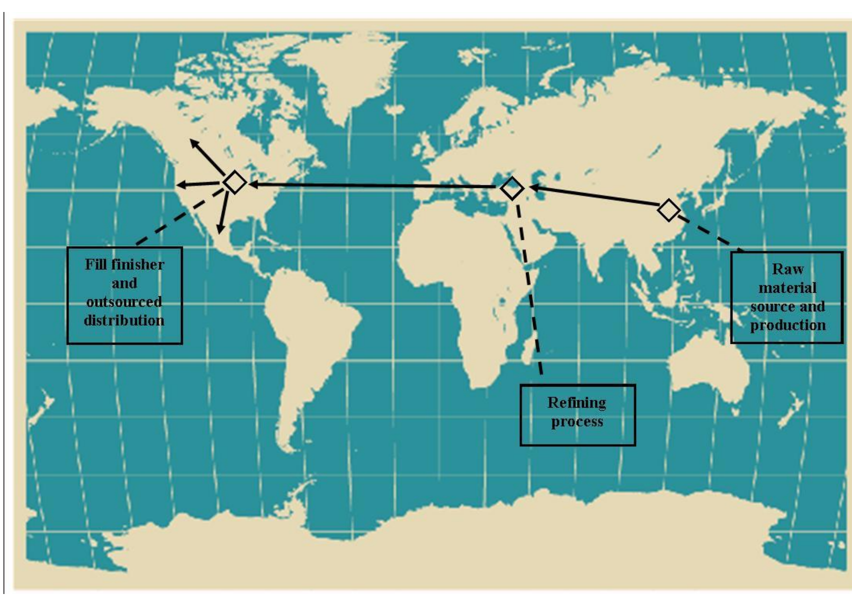
Clearly, it is the final category that is most unnerving. While all of the above categories are, by definition, outside the control of the company, it is the geo-political risks that arguably pose the greatest single chance for a significant disruption or cessation of the supply chain. There is no shortage of recent examples of such risks that have affected the supply chain such as, piracy, tsunami, earthquakes and political unrest. If unprepared, a geo-political event could have devastating effects on a supply chain system. Everything from raw materials, supply routes, manufacturing and the end marketplace can be eliminated for an extended period.

By virtue of the fact there is no sign of a retreat from this globalized economy and continued escalation of threats facing companies dependent upon a smoothly running supply chain, it is clear companies must act to safeguard their interests and plan for the worst.

PART II
HE WHO FAILS TO PLAN, PLANS TO FAIL

It is important for a company to fully understand the entirety of its supply chain, and more importantly, its points of vulnerability. This objective assessment will allow a company to prepare for interruptions, create flexibility in its supply chain and be able to respond in kind to potential disruptions.

The first thing a company should do is draw a map of its supply chain and consider what perils may arise that would interrupt its supply chain. This may appear simple and obvious, however, it is easy to overlook and easy to make certain assumptions about its supply chain absent a clear and objective view of the chain as a whole. As depicted below, consider a company that mines copper in Russia, refines the copper into tubing in the Middle East and distributes the finished product throughout the United States.



By drawing the supply chain and considering the potential perils that may occur, the company can choose what risks it will transfer and what risks it will bear. As the mining and fabricating are inland, it is unlikely to be affected by coastal flooding or wind damage. That said, given the location of these activities it is certainly possible that an earthquake or industrial accident (Russia) or political unrest (Middle East) could cause an interruption in the supply chain.

In the scenario pictured above, there are further steps the company could take to mitigate potential disruptions. For example, the company could position inventory in the chain to buffer against uncertainties of demand or uncontrollable environmental risks. By limiting shipment to the refining area pursuant to demand, the company limits the risk of lost materials due to political unrest and has the opportunity to shift refining elsewhere without having to re-direct significant amounts of materials already in transit.

Further, looking forward, companies should retain multiple suppliers along each point of the chain at the outset, where possible. By limiting refining or mining to a single provider in a single location, the company risks the loss of materials in the event of a disruption. This does not mean that each supplier must be on equal footing or be expected to produce equally, rather each should compliment each other and exist, in part, to avoid the cessation of supplies in the event of a loss.[18]

Companies should invest in understanding cultural differences among the stops in the supply chain. Although readily apparent, the importance of communication among the players in the supply chain cannot be overstated, as well as a full understanding of the practical mechanics of maintaining a successful relationship in various countries.[19] This is key to moving product, while also responding to changes in demand and even handling returns or defective materials. A company should strive for the situation where the interests of the multiple parts of the supply chain align with the interest of the end seller.

Early warning of problems is also important to handling and resolving disruptions in the chain. In light of the distances materials travel, there is an inherent lag time between when an item is shipped and when it is received.[20] For example, there is a 17-23 day window between when materials may leave Asia and reach the U.S. If a company only learns of a problem when the product arrives in the U.S. this creates a serious supply-chain problem that could affect sales and overall customer satisfaction. Companies should endeavor to have quality control standards in place along the chain to avoid such a situation.

This latter point goes hand in hand with information transparency. In order to reduce lead times and achieve greater coordination across the demand chain, information must flow seamlessly. This information must include end consumer demand, knowledge of inventory on hand, product still in transit and overall capacity.[21]

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[18] Cross, B., Bonin, J., *How To Manage Risk In a Global Supply Chain*.
[19] *Id*.
[20] *See*, Lee, C., *Demand Chain Optimization: Pitfalls and Key Principles*, Evant White Paper Series, 2003.
[21] Lee, C., *Demand Chain Optimization: Pitfalls and Key Principles.*

These are just a few options a company may utilize to limit risk of a break in the supply chain. Forethought and planning are key. That said, a company must prepare for the possibility of litigation and the need to sufficiently prove damages in the event of a loss due to a disruption of the supply chain.

IF IT WASN'T FOR LAWYERS, WE WOULDN'T NEED THEM

Choice-of-law Provisions

No discussion of risks and loss is complete without considering legal options available to limit those risks and protect a company in the event litigation results. Given that a company may have contractual arrangements with manufacturers or suppliers in country and abroad, the company should consider adding choice-of-law and choice-of-venue provisions to its contracts. This, of course, assumes the ability to gain jurisdiction over another the manufacturer or supplier. Nonetheless, such clauses are beneficial and allow the company to choose the law and jurisdiction governing any resulting litigation.

Generally, courts are apt to uphold a choice-of-law or choice-of-venue provision. The case of *M/S Bremen v. Zapapa Offshore Co.*, is an early and prominent case concerning the validity of choice of forum provisions.[22] In *M/S Bremen*, the defendant had contracted with the plaintiff to tow the plaintiff's ocean-going, self-elevating drilling rig from Louisiana to a point off Italy in the Adriatic Sea. The contract contained a provision stating, "[a]ny dispute arising must be treated before the London Court of Justice."

A dispute arose after the rig was damaged and the plaintiff filed suit in the United States. The defendant moved to dismiss citing the choice of forum clause and asserting the United States court did not have jurisdiction over the matter. As expected, the central issue before the court was whether the choice of forum clause was valid. In upholding the validity of the provisions, the court stated in part:

> The choice of that forum was made in an arms-length negotiation by experienced and sophisticated businessmen, and absent some compelling reason, it should be honored by the parties and enforced by the courts.[23]

A similar result was reached in *Milanovich v. Costa Crociere*.[24] There, the plaintiff resided in the District of Columbia and booked passage for a Caribbean cruise on an Italian vessel. The plaintiff alleged that while in international waters, a deck chair collapsed, causing Mr. Milanovich to sustain serious injury. Plaintiff filed suit in the United States District Court for the District of Columbia.

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[22] 407 U.S. 1, 92 S. Ct. 1907 (1972).
[23] *Id.* at 12.
[24] 954 F.2d 763, 293 U.S. App. D.C. 332 (Cir. D.C. 1992)

The defendant argued that the ticket issued to the plaintiff stated that any personal injury actions had to be instituted within one year of the date the accident occurred and that Italian law was the "ruling law of this contract."[25] The court asserted the determination of whether the statute of limitations incorporated into the contract was valid depended upon the resolution of the governing law. The court noted that, while some courts view choice of law provisions as only one factor in determining the applicable law, this interpretation mainly reflects the court's reluctance to automatically enforce the terms of such adhesion contracts against passengers. The court went on to state:

> While these concerns warrant heightened judicial scrutiny of choice of law provisions in passage tickets, they do not sanction their utter disregard, especially when there are no countervailing policies of the forum implicated and what it is the non-drafting party that seeks enforcement of the choice of law provision.[26]

In referencing the *Bremen* decisions cited above, the court stated:

> Under the *Bremen & Carnival Cruise*, then, courts should honor extra-contractual choice of law provision in a passenger ticket unless the party challenging the enforcement of the provision can establish that enforcement would be unreasonable and unjust, the cause was invalid with such reasons as fraud or overreaching or enforcement would contravene a strong public policy of the forum in which suit is brought. [27]

In the context global commerce and sophisticated business entities, there is no reason to expect such provisions would not be upheld. Choice-of-law and choice-of-venue provisions represent an initial strategic decision that could have a strong impact on a resulting litigation. This is proactive step a company can take to place itself in an advantageous position prior to any litigation being filed.

<u>Transferring Liability</u>

Assuming a company has written a contract detailing its choice of law and jurisdiction, a company should also consider ways to transfer liability for a potential loss, including the use of an indemnity provision running in its favor. This will act to shift any resulting liability to the indemnitor. Understanding local law, as well as the law governing the dispute is key to properly transferring the risk of a loss when able. While transferring the risk to a carrier or even a warehouse could limit the exposure of damages caused by an accident, however, the company will still be required to effectively mitigate any interruptions in the supply chain.

[25] *Id.*
[26] *Id.*
[27] *Id.*

Generally losses in the context of airfreight are generally governed by the Montreal Convention.[28] The Montreal Convention applies to "all international carriage of persons, baggage or cargo performed by aircraft for reward."[29] Courts have construed the Treaty as having a complete preemptive effect over all claims within its scope.

With regard to indemnity, courts have held, "[W]hile the Montreal Convention does not create a cause of action for indemnification or contribution among carriers, it does not preclude such actions as may be available under local law."[30] The Ninth Circuit went on to state, "[T]he Montreal Convention refers to these local law causes of action for indemnification, contribution, apportionment, or set-off, not as a "right to damages," but as "a right of recourse."[31] As example of an indemnity provision is found in the *Eli Lilly* decision, the portion of the agreement read:

> Except for claims for personal injury or property damage which are caused by the failure of Lilly to observe any of the terms and conditions of this agreement and those claims for personal injury or property damage which arise from the gross negligence or willful misconduct of Lilly, Supplier hereby agrees to indemnify and hold Lilly harmless against and from any and all claims arising from any breach or default in the performance of any obligation on Supplier's part to be performed under the terms of the agreement, or arising from any act, neglect, fault, or omission of Supplier or of its agents, employees, visitors, invitees, or licensee and from and against all costs, attorney's fees, expenses, and liabilities incurred in or about any such claims or any action against customer by reason of such claim. Supplier, upon notice of Lilly, shall defend same at Supplier's expense.[32]

Claims based upon freight traveling by sea are treated differently. For losses litigated within the United States, we must look to The Carriage of Goods By Sea Act enacted by the United States' Congress. The statute provides an avenue to shift the burden of a loss to the carrier. In describing the complex shifting of burdens of proof, the Fifth Circuit stated:

> Initially, the plaintiff must establish a prima facie case by demonstrating that the cargo was loaded in an undamaged condition and discharged in a damaged condition. "For the purpose of determining the condition of the goods at the time of receipt by the carrier, the bill of lading serves as prima facie evidence that the goods were loaded in the condition therein described." If the plaintiff presents a prima facie case, the burden shifts to the defendants to prove that they

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[28] *Eli Lilly & Co. v. Air Express Int'l USA, Inc.*, 615 F.3d 1305 (11th Cir. 2010).
[29] Olaya v. Am. Airlines, Inc., 2009 U.S. Dist. LEXIS 94010 (E.D.N.Y. 2009).
[30] *Chubb Ins. Co. of Eur. S.A. v. Menlo Worldwide Forwarding, Inc.*, 634 F.3d 1023 (9th Cir. 2011)
[31] *Id.* at 1027.
[32] *Eli Lilly*, 615 F.3d at 1315.

> exercised due diligence to prevent the damage or that the damage was caused by one of the exceptions set forth in section 1304(2) of COGSA, including "perils, dangers, and accidents of the sea or other navigable waters" and "latent defects not discoverable by due diligence." If the defendants show that the loss was caused by one of these exceptions, the burden returns to the shipper to establish that the defendants' negligence contributed to the damage. Finally, "if the shipper is able to establish that the [defendants'] negligence was a contributory cause of the damage, the burden switches back to the [defendants] to segregate the portion of the damage due to the excepted cause from that portion resulting from the carrier's own negligence."[33]

To the extent the purchaser can satisfy its burden of proof and avoid the application of any exception, the purchaser can successfully pass the burden of the loss to the shipper.

A second treaty that may come into play in the course supply chain disputes is the Contracts for the International Sale of Goods ("CISG"). As the Second Circuit noted, Under the CISG, "the seller must deliver goods which are of the quantity, quality and description required by the contract," and "the goods do not conform with the contract unless they . . . possess the qualities of goods which the seller has held out to the buyer as a sample or model." The CISG further states that "the seller is liable in accordance with the contract and this Convention for any lack of conformity."[34] The Treaty goes on to detail the damages available in the event of a breach of contract, the Treaty states, in part:

> Damages for breach of contract by one party consist of a sum equal to the loss, including loss of profit, suffered by the other party as a consequence of the breach. Such damages may not exceed the loss which the party in breach foresaw or ought to have foreseen at the time of the conclusion of the contract, in the light of the facts and matters of which he then knew or ought to have known, as a possible consequence of the breach of contract.

Finally, as with the choice-of-law provision, companies can always agree by contract to shift the burden of a loss. Parties can include indemnification provisions that specify the extent and nature of damages the indemnitor is entitled to in the event of a covered loss.

In the end, ideally, a contract will be worded to sufficiently avoid litigation. As is all too common, however, litigation will ensue nonetheless. At that point, it is key to think strategically and be prepared to prove every element of damages.

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[33] *Steel Coils, Inc. v. M/V Lake Marion*, 331 F.3d 422 (5th Cir. 2003).

[34] *Delchi Carrier Spa v. Rotorex Corp.*, 71 F.3d 1024 (2nd Cir. 1995)

Damages

Unfortunately, strong contract terms are not always sufficient to avoid litigation. In the event litigation is inevitable, a company must be prepared to prove its case and more specifically, its damages.

Companies must be prepared to present evidence establishing the full extent of damages and be able to explain the rationale used to reach its conclusions. As discussed below, forensic accountants may be required to sift through records and calculate actual losses. Simple statements as to expected losses or prior sales will likely be insufficient. Damage cannot be speculative and the claimant will bear the burden of proof. The failure to sustain this burden will limit or preclude recovery regardless of whether the claim is against a tortfeasor or an insurer.

For example, in *Texpor Traders*, the plaintiff filed a breach of contract action against Oxford Industries, Inc. based upon the sale of cotton sweatshirts and the refusal to honor a line of credit.[35] Oxford, which had ordered the sweatshirts, contended the sweatshirts were defective and counterclaimed for $ 61,036.40 paid to Texpor under the letter of credit for shipment and $163,265.95 for lost profits on confirmed customer orders and potential customer orders that Oxford claimed was unable to deliver because of defects in the merchandise.

The court concluded that the goods Texpor delivered to Oxford under purchase orders were materially defective and not of "first quality" as the contract specified. Turning to the issue of damages, the court held that Oxford was entitled to damages for lost profits in the amount of $111,112.78. The court noted that Oxford had met is burden of proof in establishing the damages by providing computerized printouts of order confirmations and cancellations; summary of confirmed customer orders; and a tabular analysis of price per item sold on confirmed customer orders and acquisition cost of such items.

However, the court declined to award Oxford any damages for potential orders because, "Oxford presented no evidence, however, of such prospective sales, and the court will not speculate in attempting to assess them."[36]

It remains incumbent upon the party seeking damages to provide sufficient evidence to sustain its burden of proof. Expected profits based upon a continuing relationship, or promises of additional order may be evident to a company, however absent actual evidence it is unlikely a judge or jury will award such damages. Companies that sustain losses as a result of defective goods or a breakdown in its supply chain must be able to present evidence of lost profits or other damages in order recover such damages in a resulting litigation, or even receive reimbursement from an insurer.

Given the complexities of these issues, careful attention must be paid to selecting experts when needed to help establish the full extent of damages.

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[35] *Texpor Traders, Inc. v. Trust Co. Bank*, 720 F. Supp. 1100 (S.D.N.Y. 1989).
[36] *Id.*

Experts

Generally, courts will not accept a witness as an expert unless it can established that the witness possess sufficient knowledge, experience, training or education to qualify him as an expert. Again, the proponent bears the burden in establishing the requisite expertise. Testimony cannot be vague or unsubstantiated and often, the scope of an expert's testimony must be limited to his area of expertise. *See Hernandez v. Lutheran Medical Center,* 46 A.D.3d 517 (2d Dept. 2007)

Under the Federal Rules of Civil Procedure, an expert may be permitted to offer testimony:

> If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert . . . may testify thereto . . . if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.
> (Fed. Civ. P Rule 702)

Application of this rule essentially relies upon a three-prong analysis: (1) whether the expert is properly qualified; (2) whether the testimony's reasoning or methodology is scientifically reliable; and (3) whether the testimony assists the trier of fact in understanding the evidence or determining a fact. [37]

Further, "[T]o be admissible under Rule 702, the expert's opinion must offer more than a "bottom line." The expert must explain the methodologies and principles supporting the opinion."[38]

The failure to retain the appropriate expert, or establish the requisite knowledge can result in a party's disclosed "expert" being precluded. For example, in *Slaven,* Mr. Slaven alleged that he slipped and fell on a soapy substance on the sidewalk in front of Mee Noodle and that it was an employee of Mee Noodle who negligently covered the sidewalk with that substance, creating a dangerous condition.[39] He claimed that he suffered at least five million dollars in damages as a result of the fall, in part, due to missed business opportunities in advertising and advertising production cost management consulting.

The plaintiff intended to call an expert witness to testify regarding the damages arising out of the missed business opportunities. In granting the motion to preclude, the court stated:

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[37] *See Quad/Graphics, Inc. v. One2one Communs., LLC,* 2011 U.S. Dist. Lexis 108969 (E.D. Wisc. 2011).
[38] *Minix v. Canarecci*, 597 F.3d 824 (7^{th} Cir. 2010).

[39] *Slaven v. Mee Noodle Shop & Grill,* 1998 U.S. Dist. Lexis 15049 (S.D.N.Y. 1993).

> To testify as an expert, a witness must qualify as an expert "by knowledge, skill, experience, training, or education." F.R.E. vid. 702. In this case, Mr. Kaye is totally without any qualifications to testify as an expert on the operations of an advertising agency. He has neither a formal education nor a specific degree in advertising, accounting, or economics. Instead, Mr. Slaven contends that Mr. Kaye qualifies as an expert on the basis of his involvement in the advertising production cost management consulting industry since 1985. While such experience is no doubt helpful in determining profitability of a particular advertising project, it is not sufficient to overcome Mr. Kaye's apparent lack of expertise in the area of accounting or financial projections relating to the overall operation of an advertising agency.[40]

A similar result was reached in *Delehanty*. There, the plaintiff intended to call an engineer with a bachelors and masters degree in mechanical engineering to offer testimony concerning ladder design.[41] The court summarized his qualifications as:

> Fein is a self-proclaimed engineering consultant, with bachelors and masters degrees in mechanical engineering, and a master's degree in civil engineering. As of 2005, he spent "fifty percent of his time consulting for building owners and managers on safety issues; twenty-five percent of his time buying real property and developing that property for investment purposes; and twenty-five percent of his time engaged in forensic consulting, advising clients, and giving testimony regarding design safety for different products, such as tools, and in the building maintenance industry generally.

It must be noted that in federal court, experts are subject to depositions. Moreover, state courts, largely and to some degree, require disclosure of an expert's opinions and methods prior to trial. Therefore, opposing party's will have the opportunity, in some form or another, to test the qualifications of an "expert" and attempt to preclude testimony if possible.

For a company seeking damages in the form of lost profits, increased costs or replacement value careful attention must be paid to proper bookkeeping prior to the event, however, it is equally important to retain the necessary expert to meet the burden of proof in establishing damages whether in the context of a litigation or a insurance claim. Moreover, it will likely be better to retain an expert sooner then later, especially in the event of a litigation.

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[40] *Id.*

[41] *Delehanty v. KLI, Inc*., 663 F. Supp. 2d 127 (E.D.N.Y. 2009).

To this point, we have discussed, in large parts, risks borne by the company for losses arising out of a disruption of the supply chain. The remaining inquiry is the ability to transfer some or all of these risks to a third-party.

PART III
SHIFTING THE RISKS OF TRADE DISRUPTION

Mechanisms to Transfer Risk

Traditionally, companies have attempted to lower their risk or exposure of supply chain interruptions by procuring Business Interruption coverage or Contingent Business Interruption coverage (CBI). Business Interruption (BI) coverage is generally contingent upon actual physical damage to the commodity or cargo. CBI provides similar coverage to the extent the loss is caused by a covered peril.

Generally speaking, BI coverage, however, is not necessarily responsive to the variety of perils that can affect the global supply chain system. Consideration of a brief scenario illustrates the gap that may exist with respect to BI coverage.

> Pear Inc. is an American company that manufactures cutting edge cell phones. The phones are assembled in Mexico and use various components manufactured in China, Thailand and Vietnam. A typhoon causes serious flooding in Vietnam, washing out critical roadways. As a result, the components made in Vietnam sit in the plant, undamaged, but unable to be shipped until the roadways are repaired which will take 12 months. In order to maintain production and sales, Pear, Inc. is required to find a replacement manufacturer to obtain the required component, which increases costs by 30%.

In this hypothetical, the actual component did not sustain any physical damage. The plant could continue to operate and manufacture the required part, however, the flood damage has prevented, or significantly delayed, the ability to ship the part to Mexico for use in assembling the phone for eventual sale. Under the typical BI provision, the lack of "physical damage" would preclude coverage for Pear Inc.'s economic losses. For Pear Inc., the fact that there was no physical damage to its property certainly does mean it has not sustained a significant loss, even if it is purely economic. There is no actual physical damage to Pear Inc.'s property. The absence of such actual physical damage would preclude coverage under a typical contingent BI from being triggered. Therefore, in this situation, Pear Inc. was unable to transfer this risk and must bear the subsequent losses.

For Pear Inc., the damage and delay is limited. However, the market has seen events where resulting damage and commensurate delays are far more significant. For companies reliant upon the global supply system, tsunamis, earthquakes and even armed conflicts present the potential for a significant interruption that not only causes financial losses but may force a company to find permanent manufacturing and shipping alternatives. It is safe to assume in this context that any subsequent alternative will almost certainly represent an increase in cost.

Of course, to the extent the flooding actually caused damage to Pear Inc.'s components this analysis would change. Dependent upon the language of the policy, it is likely the resulting losses would be covered and the risk of this loss properly transferred to the insurer. The resulting question is what opportunity exists for a company to transfer the risk of financial losses that do not arise from a physical loss.

Bridging the Gap

In light of the emerging global supply chain system, there is clearly a market for transferring the risk of financial losses that result from an interruption of the supply chain that do not result from physical loss. As a result, carriers have begun underwriting Trade Disruption coverage.

Typically, Trade Disruption Insurance (TDI) provides coverage for economic damages that result from a disruption of the global supply chain. The intent is to transfer the risk of financial losses sustained by the policyholder in the event of delay, or outright break, in the supply chain. While BI or even CBI coverage is generally triggered by an actual physical loss, coverage under TDI is triggered by the occurrence of a named peril.

Returning to Pear Inc., who as a result of the flood in Vietnam, was required to find another manufacturer to begin producing the required component immediately in order to maintain production and sales. Further, production costs will be increased 30% for the 12 months it will take to repair the roads to and from the plant. Under TDI, Pear Inc. could seek reimbursement of these increased costs and any resulting lost profits to the extent this peril was covered under the policy.

The Interplay Between BI and TDI

Understanding the interplay between BI and TDI is key to properly assessing vulnerability to an interruption in the global supply system and, in turn, properly transferring the risk. Consider some recent examples:

Country	Peril	BI	TDI
Japan	Chiba Refinery Fire – loss of oil	Yes	No
	Semi-Conductor Plant Damaged – loss of manufactured products	Yes	No
	Sony – inability to ship products subsequent to earthquake	No	Yes
	Port closure – Sendai	No	Yes
Ivory Coast	Sanctions on cocoa crops	No	Yes
Ukraine	Grain embargo	No	Yes

Egypt/Libya	Political upheaval – inability to work and emergency evacuations	No	Yes
Iceland	Closure of air space – volcanic cloud	No	Yes

A further example of the interplay between BI and TDI arises from Hurricane Mitch which struck Central America in 1998, causing significant damage. At that time, a multi-billion dollar fresh fruit and vegetable marketer's sources for fresh goods were interrupted due to damage caused by the hurricane. As the most powerful storm that year, Hurricane Mitch damaged the infrastructure of Honduras, Guatemala, and Nicaragua.

As a result, the marketer lost sales and incurred increased costs in finding alternative sources. The marketer discovered that its competitors had contingency plans that were more advanced and the competitors were able to secure alternative supplies.

The marketer could not recover the economic damages under a property policy as the physical damage was to non-owned assets. That said, the TDI policy covered the lost revenues and increased costs due to the break in the supply chain.

What Insurers Will Want To Know

For an insurer underwriting coverage for TDI, it will be necessary to fully understand the potential policyholder's supply chain. Obviously, this is central to fully determining the risk. Similarly, an insurer will want to gain insight into the policyholder's supply chain management system.

Have contingencies been considered for each point on the supply chain? Has there been an estimate of cost for each contingency? Can the policyholder bear the costs of an interruption?

A full picture of the supply chain, points of weakness and the ability of the policyholder to prepare for, and react to, contingencies is integral in assessing the risk and determining the resulting premium.

Practical Application – Choosing Appropriate Coverage

In light of the above discussion, it is useful to consider the evaluations conducted by companies actually dependent upon the global supply chain system. As stated, properly understanding the exposure will assist in determining whether the risk should be transferred.

For example, a Technology Company with key suppliers in Japan purchased significant contingent business interruption coverage based upon the insurance carrier's estimation of the exposure that could occur with a break in the supply chain. The company opted to independently verify the potential exposure.

For this company, two key suppliers were located in Japan and were exposed to significant quake and wind risks. There were no known backup manufacturers available to mitigate a potential disruption. Any disruption put sales of the company's newest, most sophisticated, and most profitable products at risk. A catastrophic event would result in lost profits, increased costs and a loss of market share.

In order to assess its vulnerability, the company evaluated its business model which included equipment sales, equipment leasing, and additional revenues derived from the use of that equipment. It further investigated internal mitigation strategies including product substitution and created financial models to stress test assumptions.

Based upon its review, it was determined that the worst-case business interruption impact was less than 10% of insurer-calculated amounts. In the event of outage, the vast majority of customers would continue to utilize existing equipment, which would generate significant profits during the period of disruption and offset potential losses. Senior management including finance, product development, supply chain, and business continuity confirmed internal mitigation strategy.

In light of these results, the company reduced overall contingent business interruption limits by 85%, but increased quake sub-limits by a factor of 10 to better protect the Japanese exposure. The annual property premiums fell by 20% despite higher Japan quake sub-limits.

In this example, a study of the company's supply chain map and mitigation options revealed that it could decrease its BI coverage, while increasing property coverage for the locations potential exposure to wind and earthquake damage. Again, the key remains the proper assessment of exposure and whether it is in the company's best interests to transfer the risk.

Conclusion

In the end, as the global economy continues to evolve and presumably, continues to become more intertwined, more and more companies will be forced to consider the ramifications of interruptions in the global supply chain.