Creating Value From

Lean, Agile and Adaptive Global Organizations

Global Commerce Management

A ***3rdwave*** White Paper

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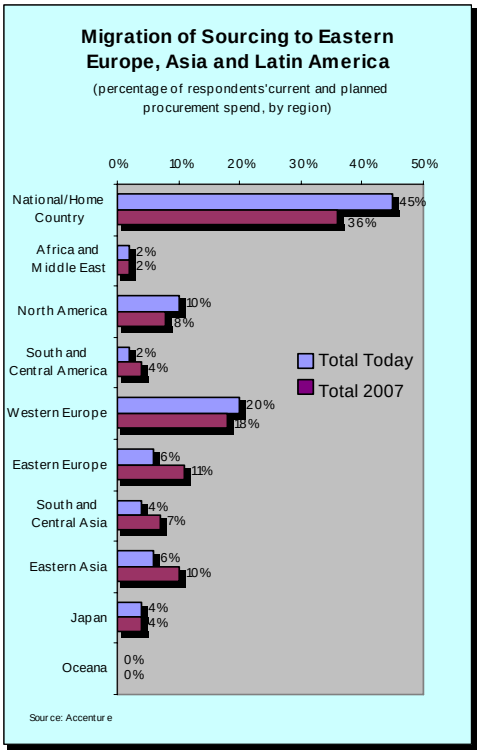
Executive Overview

Fact: Globalization of the world economy is accelerating and those companies that manage it best will win the competitive wars. A current Accenture study of 238 senior purchasing executives indicates that in 2005, 55% of product was purchased outside of the domestic market. This is expected to grow to 64% in the next 2-3 years.

Fact: Global sourcing/distribution organizations that have implemented integrated and synchronized enterprise solutions to manage their global commerce have been able to create lean organizations and drive dramatic value by eliminating needless waste. Results from companies that created a lean global commerce environment have seen:

- operating efficiency increase from 30-300%;
- inventory reduction across the global supply chain of 30-50%;
- improvement in asset utilization of 50-200%;
- reductions in total landed cost compared to domestic sourced products of 15-30%; and
- reduction in total landed cost of globally sourced products of 2-3%.



To compete in the global economy, it is essential to continue to perform at levels that meet or exceed customers' expectations. Price, quality and service continue to be the three variables that determine a company's competitive position. The Wal-mart and Dell affects – reasonable quality and service at the most competitive prices – are the benchmark against which businesses and consumers make their purchasing decisions.

Achieving market leadership in today's global economy requires global supply networks - suppliers, carriers, agents, customs and government agencies, and distribution networks – that respond quickly to changes in the global environment and adapt to longer, unforeseen developments. To be a world-class participant in the global economy requires supply networks that move quickly to balance the three variables -- price, quality and service -- to meet consumer-driven demand. Depending on the organization, the exact configuration of the global supply network will be a shifting blend of domestic and global manufacturing and international sourcing.

Creating a lean, agile and adaptive global organization that is efficient as well as effective is becoming a critical strategic imperative for many, if not most, companies. Consumer goods, electronics, pharmaceuticals, food, automotive, furniture, clothing and apparel, footwear - the industries that have become truly global are as varied as the number of industries that exist.

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The concept of lean is not new as it is applied to manufacturing principles, but in the specific context of global supply chain management and global commerce it is. Yet the overriding principle of lean – the elimination of waste from a business system – applies equally. Waste manifests itself in the underutilization of physical assets, the inefficient use of financial assets, and the underperformance of management and the use of information.

A 2004 Aberdeen study, "The Lean Strategies Benchmark Report," shed some very interesting light on the adoption of lean within the manufacturing environment. The enlightened conclusion from the study is that lean is a concept more in theory than in practice in the vast majority of American organizations. Lip service is paid to the concept of lean but in many organizations top management commitment falls very short of the mark in over 75% of companies surveyed. The findings indicate that companies that actually do implement lean practices broadly and deeply in their organizations significantly outperform their counterparts and competitors. Not surprisingly, there has been no significant study done to date of lean implementation in a global commerce management context.

Lean requires a dedication to three basic cornerstones: continuous process improvement, skilled people, and strong supporting information systems. The Aberdeen study found that of the three cornerstones of lean, the one element that was consistently downplayed and under-utilized was the role of information technology. Aberdeen concludes however, that companies will not truly achieve lean leadership without powerful information systems supporting the people and processes that use them.

Lean, agile and adaptable global organizations are dependent on information that provides transparency into all aspects of the global supply chain. As a company moves further away from its basic manufacturing paradigm – both physically and geographically – it depends more and more on information to provide insights into events and the resulting impact on their supply chains. To become lean, the information must provide a corporation with the upstream and downstream implications to events so that action can be taken when and as needed. To efficiently get information that is contextualized and meaningful, systems have to be successfully integrated and the data totally synchronized.

> In almost every industry, the first mover advantage is gone. To gain sustainable competitive advantage, companies will compete based on the efficiencies inherent in their global supply chains.

Without integration and synchronization of information, significant waste creeps into a company's business processes and decision-making activities at considerable cost and a likely reduction in profitability. Managing the global supply chain environment is labor and asset intensive without the proper processes and supporting IT systems. There are too many events to be manually executed and managed through the entire product life cycle process. To be efficient requires powerful, highly specialized technology components. This solution must be masterful in the way it can gather, store and disseminate the appropriate information within the global commerce management context. Sourcing, purchasing, logistics, customs management, costing, compliance must all be managed and monitored to insure that remote locations are performing. Without highly integrated systems in place, the only way to manage the necessary processes is via human intervention, which increases costs and is prone to inaccuracies and duplication of effort.

The reality is that many of the low-cost benefits of global sourcing are lost if the right information systems are not in place to alleviate information overload, inaccuracies or lack thereof. A fully automated technology environment provides accurate global visibility into execution and the implications of these activities.

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Companies that have entered the global arena are finding waste manifesting itself in larger than planned infrastructure, growing inventories, greater product obsolescence, unforeseen logistics' costs, increased financial cost and risk, compliance risk, reduced fulfillment, and lower customer service. All of these areas have hidden costs that add significantly to the total cost of a globally sourced product.

Point solutions – Trade Management Systems, Compliance Solutions, Sourcing solutions - all provide some assistance. These point solutions deliver value to the functional area they are designed for but often fail to optimize overall global commerce value because they are difficult to integrate and synchronize with the enterprise solutions. They can't and don't deliver upstream and downstream detailed contextual information that affects the whole supply chain value proposition. They mask the symptoms but don't address, let alone offer enough information to solve, the root problem.

Traditional ERP solutions also fail to deliver the full global commerce value proposition because they were not designed to support a global sourcing/distribution model. While some ERP solutions providers are addressing this issue, they still lack a comprehensive framework and expertise to successfully deliver extended enterprise capability.

To be lean requires knowledgeable people and strong business processes. However, without the proper integrated information technology environment to support the vast amount of data and make it meaningful most, if not all of the benefits of going global will be lost. A lean agile, adaptable organization is a function of having the right information at the right time available to the right people to make the right short-term tactical and long-term strategic decisions as they relate to global commerce initiatives and organization objectives.

Although companies have deep experience in domestic supply chain management (SCM), many lack experience and expertise in global trade. As a result, they are faced with developing processes and evaluating applications in areas in which they have little or no experience. Even sophisticated companies that have more global trade management (GTM) experience and were early GTM adopters have only automated a small fraction of their global trade operations.
(The Gartner Group, November 2005)

Becoming an agile and adaptable organization is essential to drive continuous value from the global sourcing environment. Competing in the business world is no different from any other competitive activity. Like athletes, companies that compete to win need to be able to make quick adjustments as the competitive environment shifts around them. Some of the changes are relatively immediate while others are more structural and designed for longer-term results. Companies, like athletes, need to be fit to maximize their potential, enhance their agility and adapt to their environment. Those companies that adopt lean concepts will be able to out-perform their competition.

This white paper explores why lean principles are vital to creating agile and adaptable organizations and it provides a blueprint of what to look for in a solution that can make an organization lean. It explains how the three variables of lean – physical, financial and information - are of equal importance and why ignoring one undermines the organization's entire global effort. The paper discusses why information infrastructure is vital for companies that have extended global supply networks.

Finally this paper lays out a framework so that a firm can sharpen the enterprise capabilities needed to manage all aspects of the global supply chain better and, in the process, become a lean, agile and adaptable world-class organization.

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Overview

As physical distance increases between the business command center and its owned or outsourced manufacturing facilities, the importance of information accessibility increases proportionately. What is required to effectively and efficiently manage this extended and often outsourced supply chain environment is an infrastructure that provides visibility into the activities of the company's supply and services partners. Execution tools must support the organization's oversight of its partners. Unlimited visibility with appropriate monitoring and workflow tools insure that routine and mission critical activities are proactively monitored, managed against plan and executed in support of maximizing project objectives and customer satisfaction.

What will determine a company's ultimate success is its ability to manage the extended global supply chain efficiently. In our January 2005 white paper, "Creating Value from Global Commerce Management: People Process and Technology," we discussed in-depth, the three factors of people, process and technology and the importance of their inter-relationship in achieving excellence in global commerce management. These same three factors are the foundation needed to create and maintain lean, agile and adaptive global supply chain competence and sustainable competitive advantage.

The ability to manage global supply chains is difficult to execute efficiently because it does not fit the traditional buying or logistics processes of most domestic organizations. The requirement to manage multiple third parties, many-to-many purchase orders and distribution environments over long lead times, diverse geographies and political regimes, great distances, multiple cultures and a myriad of logistics events, geometrically increases the complexity of the global supply chain compared to its domestic counterpart.

National security issues have added further complexity and increased the demands on every participant in the supply chain. This particularly impacts importers and global logistics providers. CSI, C-TPAT, FDA and other government initiatives require companies to validate that the physical supply chain is secure. Inability to comply with the increasingly demanding regulatory environment puts companies at risk - competitively and financially.

Because of the complex physical relationships, the financial supply chain is equally intricate and difficult to manage. Terms and conditions, currency risk, payment execution, and financial reconciliation are all the more difficult to manage than in the traditional domestic environment. Failure to have tight controls on the financial supply chain exposes the organization and its management to Sarbanes-Oxley (S-OX) indiscretions and penalties.

As complex as physical and financial global supply chains are to manage, they are at least supported by systems that have strong standardized procedures in place. The same cannot be said about the supporting information infrastructure.

These two supply chains are married in practice, however for most organizations, in the area of global commerce they are sub-optimized because of traditional ERP solution functionality. ERP, even when augmented with "best-of-breed point and third party solutions, lacks what is needed to have global supply chain completeness. This sub-optimization of these two supply chains exposes the organization to increasing commercial and regulatory risk.

The highly competitive and relatively lower-margin environment of global commerce requires the organization to drive out any extraneous waste from the global supply chain while enhancing its agility and adaptability. To achieve this

requires well-designed business processes supported by an information technology backbone and data repository. To be effective, this information neural network must standardize the flow of information between the physical and financial worlds and all users of the information.

Challenges to Building Lean, Agile and Adaptive Global Organizations

Commercial organizations have recently committed themselves to the global environment at a level not previously experienced. Senior management has mandated that they move aggressively to low cost sourcing countries in an effort to reduce costs and remain competitive in an increasingly price conscious world.

Many firms moved without a strategy or the tools to effectively manage the global environment. These early moves were accompanied by a restructuring (closing and relocating) of domestic manufacturing capability, which is now often irreversible. As these organizations gain more experience in the global environment, they are beginning to question the true value and cost of these global low cost country sourcing (LCCS) initiatives and find that in almost all instances, their ERP solutions do not have enough information to provide them with necessary answers.

As these organizations gain more experience in the global environment, they are beginning to question the true value and cost of these global low cost country sourcing initiatives and find that in almost all instances their ERP solutions do not have enough information to provide them with proper answers.

The three most important factors in establishing a truly global environment is having the right people, processes and technologies in place.

For the sake of expediency, many organizations simply redeploy people with domestic experience and require them to adapt to a dramatically different global business environment. Their level of success is clearly dependent on their ability to be sensitive to different cultural values, language capabilities, timing issues, international trade conventions, and different rules and regulations that surround the global sourcing decision-making process. To take domestic experience in sourcing, procurement, and logistics and translate that into a global commerce setting is proving to be most challenging to most organizations and has become an area of competitive and financial risk.

The people and knowledge deficit associated with global commerce is possibly the greatest challenge for companies to overcome. Its impact on immediate and future execution capabilities and its express impact on the organization to create effective on-going business processes and supporting technology solutions is profound.

The second challenge for organizations is designing and implementing the correct processes with which to manage the global commerce environment. As companies recognize that they lack the internal knowledge capabilities, they have the option of building the competency or outsourcing these activities to third parties. The decision to outsource has merit if the organization does not have the requisite expertise or capability to manage the activities internally.

Global sourcing until recently has not been a significant component of most companies' overall strategy. However, today globally sourced products amount to >50% of most organizations raw material or finished product (COGS) inventory with 45% of companies that responded to an Aberdeen study, similar to that reported in the Accenture study.

Clearly the importance of global sourcing is strategic for many companies but they still lack the internal competency to manage it. Of greater concern is that in many cases, in spite of the high percentage of a firm's business that

is now centered in global commerce, its strategic importance is hardly recognized in the corporate suite.

The third challenge that companies face is to find or build the right technology platforms. Much is being written by analysts, consultants and the press about the complexity of managing global trade and the types of information technology needed to support the environment. They generally agree that without the right information technology in place, managing the suppliers, service providers, and regulatory agencies is labor intensive, a waste of resources and is costly. Inappropriate technology support erodes the cost benefits that should accrue to a true low cost sourcing environment by increasing waste across the entire global supply chain environment.

The complexity of global commerce boils down to several key elements – the distance from the supplier geographically, temporally, culturally and linguistically. Each of these factors individually is difficult to manage but collectively they are a huge challenge.

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Scenario:

<u>The Environment</u> A company has seen its competition move from domestically manufactured and sourced raw materials, components, subassemblies, and finished products to a hybrid environment where globally sourced products (owned and outsourced) complements their reduced domestically owned manufacturing operations. A company has encountered increased price and margin pressure and has recently set up a global sourcing group to purchase products in China and other low cost producing countries in an effort to respond to the challenges.

- The company has developed significant infrastructure (internal and outsourced) to manage the globally sourced products, but are not sure whether they are seeing all the cost benefits that are supposed to accrue.
- A professional operations' team is in place and has created strong processes to manage their suppliers and service providers.
- The organization believes that it is buying as competitively as their competition, but there are still considerable competitive pressures.
- Management realizes that they do not have a good handle on their actual total product cost or profitability.

Senior management is now asking hard financial questions around profitability and organizational effectiveness and the operations group is hard pressed to provide answers as to why they are not achieving the types of results originally envisioned. Management puts in place a senior level cross-functional team to analyze the business and come up with a plan to improve their global sourcing results.

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Analysis – The Business Symptoms: The global commerce environment on its surface does not look dramatically different from its domestic counterpart. The same elements of sourcing, purchasing, inbound logistics, inventory management, and accounting practices are all required. However, as they scratch the surface it becomes clearly evident that each area of the global business is much more complex than they originally understood. What appears to be uni-dimensional processes are multi-faceted and highly inter-related and inter-dependent.

Within the global sourcing network, each product can be purchased from a set of 3-10 suppliers from several different countries. The costs associated with sourcing products is much more time consuming and expensive. Many of the costs associated with travel and communications, agency fees, supplier validation and quality management, forwarding fees, etc., were not required domestically.

Another factor that they discovered was that because they are geographically remote and removed by many time-zones, they are not able to exert the same control or influence over their suppliers. Requests for Quotations, product development management, purchasing, shipping execution, product quality assurance, compliance management, security conformance and cost management are all much more complex and labor intensive.

The sheer number of events and documents that must be managed at each stage of a product's source-to-deliver life cycle is overbearing and regardless of the number of people employed, "things" fall through the cracks without being noticed. Analysis shows that the additional charges to correct errors discovered after the fact are considerable but undetected in establishing total landed cost. The resulting costs associated for late shipment due to poor monitoring and follow-up with the supplier and logistics' service providers were additional expediting fees (air instead of ocean), demurrage fees, customs charges and lost sales.

In order to compensate for the possibility of late shipments and logistics delays, inventory levels have increased to insure the company can meet their service levels to their customers.

The finance department's analysis shows that because of the inability of operations to control their suppliers, shipments are at times delayed with negative cash flow ramifications and an increase in the cost of managing the credit line. The purchase-to-pay cycle, days sales outstanding, days inventory outstanding and other financial metrics had deteriorated significantly when compared to the traditional manufacturing environment. Where 30-45 days inventory was the norm for manufacturing, the company is now experiencing inventory levels of 90-150 days for their globally sourced products.

The company has invested in technology to help them with strategic sourcing, purchasing, global transportation management, and compliance with the expectation that the solutions would streamline the organization and deliver significant impact in helping manage the global environment. However, in spite of the benefits that the solutions provide, mistakes still happened, product is still shipped and received late, and they still cannot get a handle on what their true total landed costs are. The sales and marketing organization has poor visibility into the supply environment and little confidence that product purchased will be in stock to meet critical promotional program commitments.

The Process: Once the business symptoms of the problem were identified, the team looks at their processes. It quickly becomes apparent that while operations are structured to work in functional areas of expertise, they are highly reliant on upstream and downstream activities and information to do their work. While this did not come as a major surprise, the inefficiencies - because of the lack of synchronization between individuals and across functional areas – and the resulting negative impacts are poorly understood or appreciated for their magnitude.

In each functional department, underlying business process is thought to be well designed. In many cases, it is still heavily paper-based and supported by a combination of poorly architected ERP, point, spreadsheet and word processing applications. Because of the poor integration of these systems, work is often duplicated and time is wasted in meetings reconciling information from the various supporting systems.

Reviewed in detail, each department quickly highlights the number of activities that require monitoring and management to execute a RFQ, purchase order, shipment, custom entry, or delivery receipt. Even with strong underlying process in place, the inability to insure that accurate information is available upstream or downstream across the processes means considerable loss of efficiency and much higher cost in operations.

More important than the obvious operation inefficiencies were the ramifications that these inefficiencies had on adding risk and cost to the organization. Cost areas that were affected by poor information support were inventory carrying cost; expedited shipping charges; inaccurate customs entries; penalties and re-filing of entries, duty drawbacks; pier demurrage costs; lost orders; claims management; incorrect payments; and deteriorating cash management. Risk areas identified were customer service and loyalty, regulatory compliance, Homeland Security (C-TPAT) and Sarbanes-Oxley compliance.

Finally, the team finds that they cannot get an accurate reading of the actual total landed cost of an item and therefore they can't determine whether they are buying most effectively.

The People – As part of the review, the team looks at their people and conclude that they have dedicated staff work diligently. They also note that many in the global sourcing group have been seconded from other parts of the organization and don't have substantial experience or knowledge of the international environment. This lack of experience and knowledge in what has become a core competency area is a concern particularly when coupled with the inefficiencies in the processes.

The Technology – This area of analysis surprised the team because the company had invested very heavily in extending their ERP capability and enhancing it with a combination of "best-of-breed" point solutions, service provider solutions and ASPs in support of the people and processes.

Several findings in this area shed significant light on the overall problem. In spite of the organization's heavy commitment to technology to support global sourcing, they find that information is not easily accessible across the organization for efficient decision-making support or activity execution. Information resides in multiple systems across multiple databases that are poorly integrated. Poor integration of the various IT solutions means information is not

synchronized and requires significant effort to make it meaningful to the users. In order to make sense of much of the information, the data was manually re-keyed into off-system spreadsheets.

Another issue that became apparent was that the solutions in place were not designed to support their specific global commerce processes. The rigidity of the ERP, point or ASP solutions, while having a lot of practical functionality, have proved to be rather inflexible and procedural. These solutions don't support change in process(es) as is required by the organization. This, in turn, leads to further fractionating of information and more manual intervention to get the right analysis in support of critical decisions.

Creating a Lean, Agile and Adaptive Organization

Lean, agile and adaptive global supply chains are the result of, "a set of organizations linked by upstream and downstream flow of products, services, finances and information that collaboratively work to reduce cost and waste by efficiently pulling what is needed to meet the needs of the individual customer." (Council of Supply Chain Management Professionals' definition)

To achieve lean, agile and adaptive global supply chain capability, organizations require an information infrastructure that acquires, integrates and synchronizes data from all upstream and downstream participants in the supply chain and contextualizes the data into meaningful information. It is the contextualization of data into meaningful information that enables operators and managers alike to quickly understand the implications of an activity and to take corrective action where necessary.

Capturing and contextualizing information in a completely integrated environment has been, and continues to be, the objective of enterprise information technology solutions, legacy and ERP. This has been the case since the beginning of the information age. However, the business model that the ERP solution providers were designed to manage centered on domestic manufacturing operations based on relatively static procedures and a common set of financial applications. These solutions were not designed to support dynamic supply chain environments involving multiple third parties across multiple geographies with disparate rules, regulations and cost elements. The two enterprise perspectives, manufacturing vs. global commerce, are very different and require radically different approaches and therefore radically different tools to achieve lean, agile and adaptive capabilities.

The objective of getting lean is at least two-fold. Firstly, it is about removing waste from the supply chain. Global supply chain waste manifests itself in the form of excess inventory, inflated financial expenses, product costs (COGS – first cost, transformation costs, logistics costs, duties and taxes, handling charges, agency fees, 3PL charges, and other ancillary costs), operational inefficiency and ineffectiveness, and information inefficiency.

Secondly, getting lean is about creating a business environment that has the agility to react quickly to rapid, unforeseen and unplanned external environmental influences; i.e., demand, supply, logistics, government and financial. For companies to be agile and adaptable, they need information systems that realistically reflect their physical environments across the entire organization in near real-time so that they can make decisions based on complete, accurate information.

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To achieve a lean, agile and adaptable organization requires skilled and professional people and proper supporting business processes. The key to creating this type of organization is insuring that operations, finance and management are all synchronized.

The key differentiator between organizations is the information solutions and infrastructures that support workflow and informed decision-making based on timely and precise information that accurately reflects their world and eliminates business process waste.

To achieve an agile, adaptive and lean organization requires efficient information infrastructures that:

- provide people with the right information to optimize their work and decisions,
- streamlines processes by eliminating redundancy, reduces paper-based systems, and reduces the need for meaningless meetings, and
- removes unnecessary inventory and appreciably improves financial management.

People can be effective and processes can be well designed but they are less efficient without proper systems to support them. In the context of global commerce, well-designed information systems comprise the crucial neural network because of the sheer volume of data that must be collected, rationalized, contextualized, disseminated and managed.

The Solution

Lean, agile and adaptable global commerce management solutions clearly require three elements: effective people, solid business process and strong information technology support. The first two elements are the most evident as they are always visible within the organization. The third element of global commerce management, information technology support, is very difficult for companies to address for several critical but germane reasons.

1. Global commerce management is not a well understood discipline. It grew as an offshoot of the domestic manufacturing activities of most organizations. Companies became seriously involved in global commerce management more by default than by design and therefore a coherent strategy for effectively executing within the environment is not generally present.

2. The focus of management is not on the area of global sourcing and logistics and therefore does not get the attention and direction required to develop a solid infrastructure in people, process and technology. The level of corporate understanding and expertise is by and large limited and often resides in operations' silos and not at the senior and executive management levels.

3. Without a holistic view of the issues associated with global trade, the overall remedies for problems are dealt with symptomatically and not systemically. Therefore, solutions are usually adopted without analyzing the ramifications for the upstream and downstream effects on the activities being executed.

4. This is a relatively new area for most companies, particularly for information technology providers. The information technology solutions (software) have evolved in response to the knowledge of the individuals designing the solutions. The solutions almost invariably reflect the siloed design of the clients that the vendors sell to. Therefore solutions are traditionally designed to support

compliance, global track and trace, total cost, and customs clearance. Over time, software vendors realized that their narrow approach to solutions was not a sustainable business model and they began to expand the footprint of their offerings to appeal to broader constituencies within their client community. This evolutionary process is continuing as the vendors that are left continue to strive to offer more value and capability within their solutions. Some solutions are useful; some are not.

Like any IT solution a comprehensive global commerce management application is only effective if it allows the organization to:

a) optimize its demand:supply ratio so that minimal inventory is required to meet corporate customer order fulfillment and service levels,
b) improve its financial capabilities by better managing its cash and assets,
c) enhance organization efficiency,
d) reduce corporate risk – financial and legal, advance its competitive position, and
e) improve its profitability and shareholder value.

To accomplish these goals, a global company must put into place the tools that support its people and processes and deliver the overall value proposition. To deliver effective global commerce management capabilities requires seven critical information technology components:

1) **Comprehensive database / data warehouse structure**: A comprehensive database is required to support the cross-functional activities that share the same information in the execution of their activities to meet the corporate business objectives. Compliance regulatory rulings and/or partner compliance profiling is necessary in several interdependent and seemingly independent functional areas of the business. This requirement is the same for costing components, commercial terms and conditions, product details, etc. Similarly, if one analyzes the information that is available from the myriad of information providers and the impact it has on different operations across the organization, it becomes apparent that having a single, highly synchronized information repository that provides accurate, consistent, and real-time reporting and analysis is critical for effective and efficient operations.

   This basic global data repository is virtually absent in today's ERP and point solutions. The "best-of-breed" point solutions are designed to complement the ERP solutions and make the fundamental assumption that the ERP providers have the database and warehouse information slots to capture and normalize the vast amounts of granular information required to support global commerce management. This assumption is a false assumption.

2) **Deep cross-functional capability**: The same piece of information related to purchase orders, global logistics, total cost, compliance, customs, etc., is most often required by different operators executing different functions across the organization. An IT solution that does not address this issue nor support the dissemination of information across the organization automatically introduces significant waste into the process. The inability to automate cross-functional information flow leads to unplanned and unforeseen operating and financial costs.

   Hosted point solutions have the capability of providing visibility to the information but lack the ability to provide upstream or downstream consequences to activities that don't occur as planned. The ERP solutions similarly lack the data structures to contextualize the information from the ASP. 3PL and TMS systems. The needed upstream and downstream effects on the supply:demand equation cannot be managed without inefficient and costly intervention.

Fundamental to creating a lean and agile global commerce management organization, is the ability to access necessary information while eliminating redundancy within and across business silos.

3) **A modular service-oriented architecture**: SOA is a critical element in designing lean and agile global commerce solutions because the solutions must be flexible and able to adapt quickly to changes in business process required to support the changes in the business environment.

4) **Fully integrated data management infrastructures**: Any holistic approach to any complex solution requires integration of the component parts. The greater the solution integration, the more efficient the results. In terms of GCM IT solutions, integrated data structures are the cornerstone upon which all results are supported. The fundamental concept behind the original legacy mainframe solutions and the newer ERP solutions is the integration of the data so that there theoretically is one "system of record" from which "flows" one version of corporate truth."

This laudable goal is still the key element needed to create a comprehensive IT infrastructure. From this unified data management infrastructure flows the elimination of waste in terms of data capture redundancy, information reporting, business process inefficiency, workflow ineffectiveness and inaccurate business intelligence. The results of building and maintaining a fully integrated data management infrastructure are streamlined business processes and workflow, external collaboration capability, optimal inventory control, improved financial control, greater profitability and maximized shareholder value.

Global commerce management is, by its nature, highly complex. Each item procured globally involves many activities performed by third parties executing numerous interrelated events that cross many operations, incredible amounts of information that affect many individuals across the organization, large amounts of cost data, diverse regulatory rulings, and numerous documents. The information associated with each item as it makes its way from pre-purchase across international borders order through delivery to the next destination demands a solution that can reduce the complexity associated with the process by taking the data related to each activity and putting it into a context that users of the information can effectively act upon.

Due to the complexity of the global commerce environment and the countless events and data elements that must be managed for every item sourced, the organization requires an information infrastructure that is highly robust in its ability to capture voluminous amounts of data, normalize it for consistency, integrate it across the organization, and contextualize it for operators, managers, management and business partners.

5) **Comprehensive workflow process across all functional activities**: Supported by an integrated data management infrastructure, it becomes possible to streamline workflow across all functional areas because the right information is available – to operators who are tasked with doing the work, and managers who are responsible for making the important tactical and strategic decisions for the organization – when, where and as needed.

The sheer volume of information required to support a globally sourced product through its life-cycle requires that accurate information be available to the right

people in a time sensitive fashion. Accessibility to accurate information on-demand improves efficiency by eliminating errors, streamlines operations by increasing independent action, enables greater internal and external collaboration and eliminates effort in rationalizing conflicting reports.

6) **Total upstream and downstream implication analytics in near real-time**: The capacity to manage activities between the many parties in a global commerce environment, (suppliers, agents, 3PLs, international carriers, domestic carriers, customs agents, forwarders, among others) requires the ability to quickly discern deviations from plan that have negative upstream and downstream implications on the supply/demand equation.

Since there is an inherent latency in the global supply chain, any activity that deviates from plan can have highly detrimental repercussions on the ability of the organization to meet its customer service levels without increasing inventory beyond that normally required in a domestic environment. The effect of deviation latency in the global supply chain has a dramatically greater bull-whip effect when compared to domestic supply chains. The only effective way to reduce the bull-whip effect in the global commerce environment is to insure that all participants perform according to plan. However, as difficult as this is to accomplish in a manufacturing environment, in global commerce it can be highly compromised because, in many cases, the parties are outside the immediate control of the organization and can only be influenced and *not* mandated to perform.

The capacity to reduce or eliminate latency is directly related to the capacity to positively influence unrelated third parties. This power to influence is dependent on the creation of transparency into the partners' operations. What is certain is that deviations to plan are going to occur that will negatively affect the supply/demand equation and affect downstream internal participants and external customers, impact levels of inventory, and put strains on cash flow and asset deployment.

In this regard, there are two levels of analytics that are critical for successful management of the supply chain.

- The first level is the immediate impact of the deviation of a planned event. Is the system configured to enable response to the deviation in a timely and proactive manner? Is the information system intelligent enough to determine when a deviation results in meaningful impact on the organization? Do operators and managers across the organization have visibility into the deviation so that they can make decisions that mitigate the future negative impact of the deviation? Is the system responsive enough to proficiently support operational changes required to put the overall business environment back into balance with minimal negative consequence?

- The second and more important level of deviation analysis is pattern recognition. Pattern recognition determines if at a point in the supply chain a deviation is occurring repeatedly. The pattern of deviation can be because an actor within the supply chain is unreliable or there is a systemic problem that is inherent in the supply chain design. In either case, recognition of the deviation pattern is critical to insure that the root cause of the problem is addressed and future occurrences of the deviation are eliminated or greatly reduced.

With so many events to be monitored across a corporate supply chain, it is virtually impossible to manage these events without comprehensive data and analytic and reporting tools that put the deviations into meaningful context. Only when information is properly contextualized can operators make informed decisions that reduce the negative effects of the bull-whip affect.

7) **Systems and business process synchronization**: Effective and efficient global commerce management can only be achieved if all participants in the global supply chain operate harmoniously. Creating the environment where players with different and at times adversarial objectives work in "sync" with one another requires transparency and responsiveness. A significant challenge to getting all participants – internally and externally – to act synchronously when objectives are in conflict rests in suasion, as opposed to direction, requires the ability to see problems and react quickly and proactively.

   Internally, organizations work in functional groups that are often organizationally siloed, separated physically and with different objectives. Often, the internal players require the same pieces of information; they need to see it in a context that relates to their business activity and objectives. If information is presented so that it is accurate, meaningful and timely to each participant, then dysfunctional activity will be eliminated and the organization will move forward effectively with a minimum of disruption.

   Managing external third parties is more difficult because there is no direct control over their actions. Critical to managing the global supply chain is the ability to discern when deviations to plan are occurring, and influencing third party providers to act responsively.

   In either case, in global commerce management, control of the environment is often diluted. The underlying imperative to ensure that the supply chain is responsive is a system that supports, influences and synchronizes activities across the many independent and interrelated partners, activities and functions.

The countless number of events and data elements that must be managed in global commerce requires information infrastructures that are robust so as to capture voluminous amounts of data, normalize it for consistency, integrate it across the organization, and contextualize it for operators, managers, and business partners. To be effective, solutions must easily support process, analysis and reporting across all internal constituencies and activities and between the organization and its external partners.

Failure to achieve information efficiency means information resides in disparate and often non-related databases, processes are sub-optimized and labor intensive, inventory across the supply chain bloats, cash and asset management is compromised and inefficient, and total product cost increases. Individually, each of these factors managed well can deliver important bottom line results. Managing these four components efficiently (information, process, inventory and cash) increases corporate performance dramatically without the need for aggressive adversarial positioning with supply chain partners.

Inefficiencies in managing and executing global commerce result in significant waste in business process, inventory, information handling and resource allocation. Reducing waste implies highly tuned organizations where internal and external processes are synchronized and products are moved to market at the lowest total cost. Because of the vast complexity and remoteness of global supply chains; the myriad number of events, documents and regulations that must be managed and monitored; the amount of cost elements that must be understood; and the opportunity for error across the supply chain, it is imperative that the proper information infrastructure be designed and implemented.

Without the right information technology infrastructure organizations quickly become wasteful in how they deploy people, process and inventory with substantial negative impact on the profitability of the organization.

Global Commerce Management

3rdwave GCM:
Solutions for Lean, Agile and Adaptive Global Organizations

3rdwave GCM (Global Commerce Management) provides the information infrastructure that insures goods move securely and efficiently through complex global supply chain networks to meet demanding and ever changing competitive organizational needs. Rich in depth, granularity and functionality, yet easy and cost-effective to implement and use, all 3rdwave GCM solutions offer unparalleled real-time visibility and reporting capabilities against all participants and activities in the global supply chain.

3rdwave GCM solutions enable companies to fulfill the promise of global commerce by extending the value of their ERP investments. 3rdwave GCM is designed to fill the critical and extensive gaps that exist in ERP solutions by providing complete planning and execution functionality for the entire **plan ➢ purchase ➢ make ➢ ship ➢ receive ➢ pay** life-cycle of a globally sourced product.

Architected specifically for supporting and managing global commerce, 3rdwave GCM provides the tools and database to automate and quickly capture data, contextualize it and provide timely access to the information so that the organization manages the business efficiently, and can respond effectively to changes in its global environment.

The key element that makes 3rdwave GCM so powerful is its coherent and fully-integrated design that manages all activities involving global commerce. At every level of a product's life-cycle, 3rdwave GCM monitors and reports on critical third party activity. Whether product is in planning, purchasing, production, transit, customs, or a warehouse, 3rdwave GCM provides visibility into the status of the item in near real time across the entire system. With this information, coupled with 3rdwave GCM's extensive reporting and analytic tools, users from all internal departments (planning, purchasing, logistics, customs, warehousing, sales, accounting and finance) and external partners (suppliers, carriers, 3PLs, agents, customs brokers, warehouses) see the impact of an activity on a products supply and demand position. By having total impact analysis upstream and downstream across the entire global supply chain, companies can efficiently and effectively make the decisions that enable them to dynamically manage inventory anywhere… anytime.

The rules of the game are changing. 3rdwave GCM provides the most comprehensive, fully-integrated and effective solutions for sourcing, trade management and global logistics available today to enable companies to respond quickly, effectively and efficiently. 3rdwave GCM is fully-integrated and synchronized from the database to execution and financial accounting. 3rdwave GCM provides a complete technology solution that insures that organizations playing in the global marketplace are lean, agile and adaptable.

Global Commerce Management

3rdwave GCM supports lean, agile and adaptable organizations by:

Issues	3rdwave Lean Value
Streamlines global commerce operations – 3rdwave GCM provides tools to efficiently capture information electronically or manually from all points in the global supply chain. Information is fully integrated and handled only once within 3rdwave GCM, eliminating redundant data handling and increasing data accuracy and consistency to virtually 99.999%. The result of the efficient data management is synchronized information distribution across all affected activities, accurate reporting, contextual analysis, increased global commerce efficiency.	**>30% increase in global commerce efficiency**
Reduces inventory across the entire supply chain – 3rdwave GCM provides 100% visibility into product from plan/procure to pay to cash. Total global product life-cycle visibility integrated with execution management capability allows for all goods in the supply chain to be seen and allocated against organizational budgeted and actual sale commitments. By creating a virtual global supply chain warehouse environment floor inventory can be reduced dramatically.	**Globally sourced inventory reduction of >30%; increase in inventory turns >45%**
Dynamic Total Cost Management and Payable authentication – 3rdwave GCM includes comprehensive database driven dynamic total cost management capabilities beginning with full estimated comparative total costs to support optimal make/buy decisions based on full cost information and ending with complete cost auditing and payment management. 3rdwave GCM dynamic total cost management provides for complete cost tracking as changes occur in the execution of purchase orders across the entire global supply chain.	**Optimal purchase decisions based on detailed real costs for intelligent make/buy decisions across the whole global supply chain; optimization of logistics costs during execution of purchase orders; accurate customs, regulatory and homeland security compliance; reduced demurrage through pier priority management – COGs reduction through global supply chain total cost management 0.5-2.5%**

Global Commerce Management

Issues	3rdwave Lean Value
Increases cash management capabilities – 3rdwave GCM provides accurate visibility into purchase contract terms and conditions and purchase order and global logistics execution enabling better cash planning and management.	**Better cash planning, reduced procure-to-pay cycles, reduced inventory = more cash**
Enhances supply chain asset deployment – 3rdwave GCM enables reduction of inventory at all levels of the global supply chain, including raw materials and finished goods.	**Reduced warehouse space and cost, reduced real inventory carrying cost, reduced product damage and obsolescence**
Increases corporate regulatory compliance – 3rdwave GCM maintains complete documentary and regulatory compliance information associated by product, supplier or country of origin. All documentation and compliance requirements are provided in real-time to operators, managers and trading partners on an 'as required' basis to insure that everyone across the global supply chain is informed prior to executing an activity.	**Increased levels of compliance – documentary and regulatory - result in quicker customs clearance, reduced filing errors and regulatory fines, lower administration costs**
Reduces competitive risk – 3rdwave GCM fills the ERP gap by providing a full execution, total cost and visibility infrastructure that facilitates accurate evaluation of low-cost global sourcing opportunities against current manufacturing costs. Globalization is rapidly changing the competitive position of many American and European manufacturers. Where manufacturing competency and proximity to market were competitive advantages pre-globalization, these factors are now only part of the competitive equation. Managing global sourcing (international and domestic) to optimize the balance between total cost, supply fulfillment, and order fulfillment is now the critical factor. Total global commerce capability that allows for the most efficient and cost effective supply of products to markets is now becoming the major competitive advantage or competitive risk.	**The ability to evaluate global sourcing and manufacturing options to create the most efficient, agile and adaptable global network strategy to address global distribution needs.**

Global Commerce Management

Issues	3rdwave Lean value
Improves customer relations – 3rdwave GCM insures the highest levels of Available-to-Ship, Available-to-Promise capabilities for Global Commerce management. 3rdwave GCM virtually eliminates invoice errors, and provides accurate on-demand customer positions.	**Automated customer fulfillment, customer direct global shipments with maximum on-time order fulfillment, reduced invoice errors, increased customer service levels**
Insures Sarbanes-Oxley 404, 302, 409 compliance – 3rdwave GCM provides the environment for global commerce business process standardization and workflow documentation. Provides 100% total cost control, sourcing and purchase order, logistics and 3rd party visibility. Provides financial compliance management, analysis and reporting framework.	**State-of-the-art technology infrastructure supports S-OX 404, 302, 403 compliance. Period end account reconciliation analysis and reporting <8 days, year end account reconciliation, analysis and reporting <10 days**

3rdwave GCM by Blinco Systems Inc.

Blinco Systems Inc. designs and delivers the 3rdwave GCM family of global sourcing, supply chain execution, import/export, trade, global logistics and distribution solutions. Our clients are proven leaders in their respective business verticals, and we are proud to have been chosen their technology partner.

Since 1988, Blinco Systems Inc. ("BSI") has been a leading developer and solutions provider in Global Commerce Management, synchronized global supply chain execution and has provided extensive and detailed consulting services to companies involved in global trade and commerce. BSI's clients range from global sourcing divisions of multi-billion dollar companies to SMEs global sourcing, distribution and brand management companies.

BSI's 3rdwave GCM solutions fully support our client's unique business processes. Our solutions insure that our clients can execute, manage and control their global environment to constantly improve their available-to-ship/available-to-deliver capabilities at the lowest possible cost and optimize levels of inventory.

BSI uses services oriented architecture (SOA) and spiral development methodology to deliver integrated solutions that can be rolled out incrementally or as an all-encompassing global commerce management solution. BSI provides the highest levels of integrated supply chain information infrastructure extending and leveraging existing systems. No other solution currently available is able to offer their clients the depth and range inherent in 3rdwave GCM.

BSI's consulting services support our clients' ability to develop a strategic approach for global commerce management and analyze ongoing ways to improve their business processes, reduce costs and increase corporate value. BSI's consultative experiences include global commerce business design, business process design and implementation, information systems design to support global commerce management processes, global logistics management design, inventory management control and business intelligence solutions.