

## Taking Advantage of E-Logistics to Strengthen the Competitive Advantage of Enterprises in China

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### ABSTRACT

With the fast development of the global economy, how to deliver the right products to the end-users in the demanding time and places becomes more and more important to the enterprises. In order to improve the competitive advantages, Chinese enterprises, especially the large manufacturers, need to develop e-logistics function and modern supply chain management systems. This paper describes the changing environment, such as competition, global trends, and logistics operations. Then the e-logistics is discussed, and it presents that the Descartes can improve the level of the information sharing and creates a new source of advantage to ensure competitiveness in today's dynamic manufacturing marketplace. At last some suggestions are given, including establishing an integrated network, selecting the right industries, and so on.

**Keywords:** E-logistics, supply chain, information system

### 1. INTRODUCTION

Now China has become the manufacturing powerhouse in the world. With the development of the global economy, the vast majority of goods are bound for global destinations. China produces the majority of the world's televisions, VCD, refrigerators and other goods. China's share of world trade is already in the top 10 nations and has an annual economic growth rate of almost 8% the past decade. In 2003, China accounted more for 3% of the global trades; some experts forecast it will be 10% in the 2020 (Shawn P. Daly, Lindsay X. Cui.2003).

Fueling Chinese industry is an increasing number of multi-billion dollar Chinese enterprises with manufacturing, distribution and services on the whole country or global scale. Many of these enterprises have regional manufacturing capabilities and distribution, warehousing and service facilities close to customers in the whole country, even in Japan, North America, Europe and other parts of the world.

### 2. IMPACT ON COMPETITION

Since the advent of internet technology, the computing environment in many applications has been changed drastically. The increased information requirements have facilitated an integration of logistics information systems (LIS) and supply chain information systems in many companies. The increasing use of electronic commerce and enterprise resource planning and other logistics information systems tools and techniques will shape the business process for the foreseeable future. Companies should understand their options and their impacts when making decisions to support their supply chain systems (Stephen M. Rutner.2003).

Of the four key elements to succeed in business -- product, price, promotion and place -- manufacturers nowadays are able to produce the same quality of products at the same price using the same promotions. However, they have developed a different strategy for place -- the channel of distribution to deliver goods and services from factories to end-users. But China's logistics infrastructure is straining under the weight of its new economic growth. Chinese companies have begun to realize that E-logistics is the new frontier of competition in the digital economy.

### 3. GLOBAL TRENDS AND LOCAL IMPLICATIONS

Most large-scale Chinese companies have developed strategic partnerships with global information technology leaders such as SAP, IBM, HP, Dell, Gateway, Ericsson, Motorola, NEC, and many others. As a result, Chinese companies are becoming increasingly integrated into global supply chains that must be agile, flexible and -- with the adoption of the internet -- electronically linked to ensure they are responsive to the needs of today's rapidly changing and demanding marketplace.

Accelerating this integration is the rapid adoption of various Internet technologies by global technology leaders as they work to sustain and strengthen their competitiveness in today's digital marketplace. These initiatives tend to fall into two broad categories (1) supply chain management; (2) customer relationship management

#### 3.1 Supply Chain Management

To send products that customer needs to the retailer and the final customer quickly becomes the main means of the enterprise's surviving and competitive advantage.

The competition not only happens between the firms, but also happens in the different supply chain in the future. The main task of supply chain is supporting logistics from the primitive supplier, several processes of produce and transport to customer finally (Niklas Aldin.2003).

Companies large and small are launching a broad range of supply chain management initiatives designed to improve operating efficiencies, raise service levels and boost profitability. Initiatives such as B2B integration, e-procurement, collaborative planning and – more recently – e-logistics are being launched in cooperation with trading partners to increase efficiencies and drive waste out of supply chains.

### 3.2 Customer Relationship Management

Customer Relationship Management (CRM) can manage the customer's information effectively and meet their needs of production and service, in order to attract new customer, lock the frequent customer for enterprises and improve benefits and competitive advantage it develops long-term, steady and trusting relationship with the customer.

More and more firms communicate with their customer by information technology under the environment of e-business, which makes it possible to extensively collect and analyze the customer's information. It resolves the problem of customer information management, which puzzled the enterprises for a long time, it also improve the customer's service level and customer's satisfaction. It obtains and keeps the customer for the enterprise; i.e expends and keeps the financial resource for the enterprise. So the customer relationship management has already become the important content of the organization management innovation under the e-business.

Every communication between the firm and the customer is regarded to be beneficial and value-added in the CRM, the customer's loyalty to the firm is won by mutual communication with the customer. Through correctly guiding, most customers would like to share their own information with enterprises (Nianlian Yi.2003 [6]).

CRM mainly involves such "enterprise's front desks " as market intelligence analysis, marketing and customer service etc, in order to complete it requires the positive cooperation of customer -oriented functional departments. Meanwhile, if it wanted to offer satisfactory products and service to the customer, the processes such as product design, manufacture and produce controlling etc which are regarded to be the "enterprise's backstage supporter" should be involved. The idea and practice of CRM in the e-business need the cooperation of the function department of the whole

enterprise; it also needs the adjustment and innovation to the whole enterprise's procedure.

Companies are adopting e-business to develop deep, personalized relationships with their customers (often consumers). Nearly 50% of Dell's \$32 billion in annual revenues are now transacted over the web and other manufacturers and distributors are also reporting sharp increases in on-line sales. And the U.S. is not the only country with booming e-business sales. In Japan, for example, e-business is expected to grow from \$7 billion in 2001 to \$25 billion by 2003, with approximately 40% of this from PCs and peripherals alone.

### 4. IMPACT ON LOGISTICS OPERATIONS

Both types of initiatives – supply chain management and customer relationship management – dramatically impact how China suppliers and their foreign business partners manage their global logistics operations. The initiatives highlight the need for real-time, accurate logistics information that can be shared by supply chain players to allow for more intelligent logistics decision-making and timely responses to planned and unplanned events in the supply chain.

E-business in particular is accelerating the way logistics are managed by companies across the entire value chain. The size of shipments are shrinking, shipment frequencies are increasing and the ubiquity of the internet is providing new opportunities – and challenges -- for companies serving customers who are geographically dispersed, difficult to predict and sensitive to price and service levels.

Table1 compares traditional logistics with e-logistics of today (Yaohua Song, Hanping Hou.2003).

Table1. The Difference between Traditional Logistics and E-Logistics

	Traditional Logistics	E-Logistics
Shipment Type	Bulk	Parcel
Customer	Strategic	Unknown
Customer Service	Reactive, Rigid	Responsive, Flexible
Distribution Model	Supply-driven Push	Demand-driven Pull
Inventory/ Order Flow	Unidirectional	Bidirectional
Destinations	Concentrated	Highly Dispersed
Demand	Stable Consistent	Highly Seasonal, Fragmented
Orders	Predictable	Variable

E-business has a ripple effect up the supply chain that impacts China assemblers and their suppliers as foreign buyers work to synchronize their operations with actual customer demand. Historically, supply chains have been structured to "push" products from suppliers to consumers with limited – if any – information available

about real-time consumer demand. This “push” approach typically results in supply chain distortions marked by excess inventories, obsolete products, unsatisfied consumer demand and an inability to forecast accurately.

On the other hand, “pulling” products across the supply chain helps to ensure supply and demand are synchronized by feeding information about actual - not forecasted - orders to the enterprise, suppliers and third party logistics providers. The benefits of a pull system are obvious but realizing them requires fundamentally rethinking how logistics should be managed throughout the entire order to delivery process.

Now, Chinese companies and their customers gradually begin to rely on third party logistics providers (such as freight forwarders) to coordinate the logistics and related decision-making required to ship products from main land factories to various destinations. However, due to industry fragmentation and technology limitations it has been difficult (if not impossible) to obtain accurate information on the position and status of goods as they move across the supply chain. As a result, the logistics operations of most shippers, customers and logistics providers themselves function in an extremely information poor environment despite the fact that logistics plays a critical role in their business operations: the timely and cost-effective delivery of goods to customers.

## 5. E-LOGISTICS

E-Logistics is a dynamic set of communication, computing, and collaborative technologies that transform key logistical processes to be customer centric, by sharing data, knowledge and information with the supply chain partners. E-logistics also enables synchronization of events and right decision-making. The ultimate objective is to deliver the right products in right quantities at the right place and time to the right customers.

E-Logistics leverages the power of the internet and other technologies (such as wireless) to provide robust information to supply chain participants and offer unprecedented levels of visibility across the entire supply chain. A growing number of e-logistics solution providers and service companies are tapping into this opportunity by addressing logistics issues such as supplier selection, asset utilization, pricing, inventory management, order visibility, and order fulfillment. Start-ups, software companies, and “old economy” logistics providers are bringing to market a variety of products and services that address the huge logistics inefficiencies burdening today’s supply chains.

While these companies may indeed provide value to Chinese shippers, the Descartes can provide the level of global connectivity required to create value through

networked communities. The key attractions of this networked community are (1) fewer integration points required to connect to network members; (2) an exponential increase in value for each member as more participants join the community; and (3) a common infrastructure for the communication and exchange of information. Imagine for a moment a world without a global telecommunications network where instead phone users strung a separate line to each new person they wished to speak with.

The Descartes’ Global Logistics Services Network (GLSN) provides technology to ensure consistency and integrity of communication throughout supply chain communities. It is an information platform encompassing thousands of transportation carriers, logistics intermediaries, and users of transportation services around the globe. The network securely registers, connects, and manages participants. In addition to providing a standard for inter-enterprise business connectivity, it acts as a logistics process framework for end to-end shipping management.

The GLSN enables organizations to build high-performance supply chains, providing real-time visibility and decision support. Its open architecture allows trading partner systems to seamlessly integrate with logistics-critical data and business rules, wherever and however they reside. It enables organizations to connect with a single, simple mechanism that incorporates security, so only preauthorized users access information, applications and documents. The GLSN manages the integration of the hundreds of data communication standards, and maintains responsibility for data monitoring, quality and integrity. And recognizing that each participant may have different technological abilities and needs, it supports all common communication protocols, leveraging comprehensive embedded dictionaries for translation.

Tapping into this global network can provide Chinese shippers and their customers with visibility of orders (not just shipments) across their supply chains. Manufacturers can use the Descartes network to “link” together their manufacturing order systems with shipment tracking systems to provide a single, unified view into the status of orders as they make their way from PO to final delivery. With true order visibility, shippers, buyers, and logistics providers understand where goods and inventories reside across the supply chain and can make intelligent, proactive logistics decisions based on this information

Beyond the obvious benefits of order visibility across the supply chain, access to accurate, real-time logistics information provided by the Descartes Network allows companies to undertake various improvement initiatives that can drive savings, increase revenues and improve their overall competitive advantage. Based on experts’ estimates and experience, companies undertaking such

initiatives can realize a 10-20% reduction in their total logistics costs, improve productivity and enhance service levels.

Logistics improvement initiatives enabled by Descartes include inventory management, shipment planning, mode selection, reverse logistics optimization, performance measurement and other efforts. In the past, such efforts have been extremely burdensome to implement due to limited logistics data. However, armed with meaningful logistics information, management can bring their logistics operations out of the dark ages and into new era. This will improve the overall responsiveness of their supply chains and create a new source of advantage to ensure competitiveness in today's dynamic high-tech manufacturing marketplace.

## **6. SUGGESTIONS**

### **6.1 Establishing an Integrated Network**

Looking at it from a bigger picture, the current logistics landscape is fragmented. Therefore, the key challenge is for us to ally together to establish a proper network of services to cover the whole region efficiently. It is an arduous challenge to pick out the right partners to work with in providing an end-to-end supply chain solution. Further to that, our country alone has very different customs, cargo and tax policies. Therefore, it is vital to engage local partners in order to overcome any barriers involved in clearing overseas shipments.

### **6.2 Improving the Awareness Level Of Logistics Services**

The low awareness level of high-value online logistics services is a most pressing issue to deal with at present in the market. There are a lot of enterprises in China that are not fully convinced of the value of adopting IT-enabled processes in their operations let alone e-logistics services. Creating the much-needed awareness is very important in order to keep the business flowing. Actually, customers need to view e-logistics services as the means not just to lower costs and shorten time cycles but, more importantly, to enhance their competitiveness in the marketplace by concentrating on their core competencies.

### **6.3 Selecting the Right Industries**

Another addressed challenge is to pick the right industries to target. Each industry has its unique culture and requirements and thus it is difficult for a service firm to cater to a wide range of industries. The firms need to focus on building up expertise in particular market segments so as to capitalize on particular market opportunities.

### **6.4 Establishing Training Mechanism**

With regards to available resources, traditionally the manpower in industry is of a physical nature or manual-labor-intensive. Incorporating IT into the services requires a higher level of skills. This type of skill set is lacking at the moment. Thus, the challenge is to establish training facilities to increase the availability of skilled and qualified labor to man the IT-enabled processes.

### **6.5 Building an E-Logistics Product Portfolio**

Local and foreign clients have different requirements and cultural expectations. Although the current demand stems more from foreign clients, it is important not to overlook the potential demands of locals. Hence, a key challenge is to be able to create a product portfolio that can encompass the needs of both sets of clients. Furthermore, it is already hard enough to cope with the ever-changing needs of client requirements. Turning all the customer needs into an integrated and flexible set of services is a tall enough order even for the most experienced industry players. A good way to understand the customer needs thoroughly is to embrace the customers' business challenges as one's own.

### **6.6 Improving the Technology Level**

It is inevitable that companies with strong financial backing or relevant industry experience will have an upper hand in developing sophisticated technology for their clients. As such, newly established companies will find it difficult to compete with them in building a solid set of services. In this industry, credibility and reputation are valued assets to have. Research has revealed that even a simple but important technology such as bar coding is still missing in most warehouses in the whole country. The technology gap between the local and international players is also a key concern. So we should narrow the technology gap between the local and international players as soon as possible.

### **6.7 Industry, Government and the Academic Working Together**

In order to take advantages of e-logistics, the industry, government and the academic should work together.

The industry should focus their effort on the following issues:

- Adoption
- Technology development
- Investment and integration
- Adoption and development of processes.

The issues that belong to the government are as follows:

- Awareness development
- Standards setting
- Regulatory oversight
- Intergovernmental relationships
- Infrastructural support and development.

Academia should take the following aspects into their research fields:

- Basic research and development
- Implications of technology on the environment
- Determining what works and what doesn't
- Educating and publicizing into their research fields

## 7. CONCLUSION

Today's supply chains require effective logistics management to meet the requirements of increasingly demanding global customers able to choose when, how and where they want to receive their goods. The urgency for improvement is being accelerated by the widespread adoption of internet technologies and applications such as e-business in the global market. E-logistics can improve the overall responsiveness of supply chains and create a new source of advantage to ensure competitiveness in today's enterprises.

## ACKNOWLEDGEMENT

This paper is supported by the National Natural Science Foundation of China (No: 70031020).

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