Global order status process of hi-tech companies

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GLOBAL ORDER STATUS
PROCESS OF HI-TECH COMPANIES

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ABSTRACT

This paper focuses on the *global order status process* of high-tech companies. An effort has been made to understand how these companies approach their *global order status process*. Similarities and differences in their order status process are given. A brief history of tracking and tracing capabilities is also presented, highlighting FedEx and UPS. Some new trends in track and trace are also discussed.

INTRODUCTION

Providing order status information to a customer is important for a company's success. A simple advantage a company gains by providing such information is satisfied customers. Having state-of-the-art *order status* and *track and trace* systems may improve channel satisfaction and increase customer loyalty, which can significantly affect a company's revenue and net income in both the short and long run. In this e-business era, as more and more people begin to shop online, it will become important for companies to provide their customers with reliable order tracing systems which provide real time and accurate information. Track and trace systems have become almost mandatory for companies in the package delivery industry and it's likely that customer demand will require all companies to provide an all-time visibility of the product that the customer ordered online (or similarly by phone or catalogue).

The study described in this paper was originally conducted as a benchmarking study, which compared one company against similar companies in the same high technology industry on their order processing and tracking systems. The results were generalized and synthesized into an overview of order status processes. Managerial implications from the perspective of the buyer and
the seller are also discussed. The companies included in the study were large computer or computer equipment manufacturers.

**ORDER STATUS/ TRACKING CAPABILITIES**


Order status refers to the current status of the order placed by a customer (March 2001, private communication with a company contact). Order status tells a customer at which stage his order is (from ordering to delivery). In some cases it gives information regarding when the order will proceed to the next stage. It may contain information regarding expected delivery date, copy of the invoice, etc. Some common stages that define order status are: order received, scheduled for production, at manufacturing facility, produced, ready for delivery and delivered. This information can be provided through a secure network over the Internet or by calling customer service representatives of a company over the phone.

When a customer buys a product, he or she is typically given an ID number. The customer can then use the ID number to find information regarding the status of his/her order. Usually the last stage for any order status process is ready for delivery. When an order is ready for delivery, the company will usually provide a tracking number (which is provided to the company by their service delivery partner), to the customer. From this point, the customer starts to track the product rather than enquiring about order status. UPS defines tracking number as a number that is used by UPS to identify and trace every package as it moves through the UPS system to its destination. According to UPS, the customer can use this number to track, locate and verify arrival of his/her package, as well as other details.

The difference between order status and track and trace is that order status is an inquiry by the customer before the order has left the manufacturing facility whereas track and trace is an inquiry by the customer to find out where the product is in the delivery process. It should be kept in mind that the customer might use the web site of the company that manufactured the product to track the product also. Many companies provide a direct link to delivery partner’s web site’s or have some sort of interface where tracking information is stored (March 2001, private communication with a company contact). Other companies provide the tracking number, given to them by their delivery partner, like FedEx or UPS, and direct the customer to the partner’s web site to track the product. In other cases, e-mail notification containing the tracking number is sent to the customer. In the e-mail, a direct link is provided to both the web site of the company that manufactured the product, and the company that is delivering it. If the product is custom made, this service can be all the more important as the customer will be able to see order status information or make changes to the order (for example an upgraded CPU or a bigger monitor) long after actually ordering it.

When dealing with corporate orders, it becomes necessary to provide order status information so that the business receiving the order is able to manage its inbound logistics efficiently. Even when an individual customer buys online, he/she is interested in knowing when delivery will occur in order to
be at home when the product arrives. Also, since the tracking number provides information regarding when the product left the origin, it creates a sense of security for the receiver that the product is on its way.

THE EVOLUTION

Express carriers have invested in sophisticated information technology systems that provide precise tracking information and thus help to predict and avoid potential service disruptions (Balasubramanium, Werwaiss and Ransom, 1999). Although carriers reserve their best solutions for their largest customers, information technology has made it possible for even casual users of parcel-shipping services to gain access to sophisticated information services (March 2001, http://www.manufacturing.net/magazine/logistic/archives/1997). Providing these sophisticated tracking systems is a relatively new practice, propelled by the advent of Internet.

The industry that can be given credit for initiating sophisticated tracking systems is without a doubt the express package delivery industry. The main players in this industry are FedEx, UPS and DHL Express. The company that laid the foundation for providing track and trace information to the customer is FedEx. In 1979 FedEx launched FedEx COSMOS® (Customer Operations Service Master On-Line System), a central computer system that manages vehicles, people, packages and routes, and tracks weather conditions. The only option a customer had at that time to track the product was to call a customer service representative. Often, the customer service people didn’t have the updated information since the technology was not very sophisticated.

In 1992, Federal Express introduced Tracking Software allowing customers to track and trace their packages from their own workplaces (March 2001, http://www.iccuk.net/b2b/fedex/pages/1990.html). The customer had to install the software on his/her computer before using it. In 1994, FedEx launched its web site (www.fedex.com) and became the first company to offer instant online package status tracking (March 2001, http://www.fedex.com/us/about/corporation/timeline.html). Any customer can go online, enter the tracking number, and get real time tracking information. This was considered to be a significant development for the package delivery industry and laid the foundation for a large amount of value-added services.

At about the same time in 1994, when FedEx put its web site online, the UPS web site (www.ups.com) went live. In the mid-1980's, as with FedEx, the only option the UPS customer had to trace an order was to call customer service. By 1993, UPS was delivering 11.5 million packages and documents a day for more than one million regular customers (March 2001, http://www.ups.com/latin/bs/about/engstory.html#early). With such a huge volume to handle, it became necessary for the company to use information technology to keep track of its shipments. UPS introduced UPSnet, a global electronic data communication network that has more than 500,000 miles of communications lines and includes a UPS satellite. It links more than 1,300 UPS distribution sites in 46 countries and tracks 821,000 packages daily.

The UPS website soon included an option for tracking packages in real time. Online tracking requests on www.ups.com exceeded one million per day for the first time, on Dec. 22, 1998 (March 2001, http://pressroom
This clearly indicates the importance of tracking information to the customer, whether he/she is waiting for a product or an important document. UPS provides many customer information services, including TotalTrack. TotalTrack, based on a nationwide cellular mobile data system, can instantly provide customers with tracking information for all bar-coded air and ground packages (March 2001, http://www.ups.com/latin/bs/about/engstory.html#early).

Information technology has been a critical enabler for ensuring that package delivery companies can provide services to their customers, such as tracking and tracing a product, from the time it leaves its origin to the time it reaches its destination. Companies acknowledge that information technology plays an important role in this process. FedEx, for example, announced in 1999 that it would spend $1.6 billion in the following year on technology, much of it for upgrading systems that collect, manage and distribute shipment data. The new trends in tracking and tracing generally involve the use of wireless technology.

**METHODOLOGY**

The main objective of this article is to analyze the various stages at which companies provide information about the order status process. The number of stages at which companies collect and provide information are noted. Then the type of information they provide is documented. An analysis is provided describing how this information adds value to the order status process.

Some of the parameters used for comparing processes across companies are:

- How soon does a customer get an ID number? Is the ID number assigned at the time of ordering or is an e-mail notification sent to the customer?
- How are the companies providing order status information? Do the companies have a secure network over the Internet through which they provide order status information? Some companies also send e-mail reminders to the customer to tell them where their order is in the production process.
- How good is customer service? Customer service support can be in the form of a FAQ list, e-mail service (with a promised turnaround time), and 24/7-toll free phone service. Some companies also have a text based chat service with a customer service representative.
- Once an order has left the manufacturing facility and has been delivered to a carrier, how is the tracking information provided? Does the company send an e-mail notification to the customer that the order has left their facility and is now with the carrier? It is important to note whether the company has a direct link to the carrier’s web site (from its own web site), through which a customer can track the order, or does the customer have to go to the carrier’s web site and track the order using the tracking number?

In choosing companies to analyze, two of the selection criteria that were applied were that the company should be in a high technology industry and should provide for online shopping. For this research project, ten companies were chosen. As mentioned in a previous section of this paper, this was a benchmarking study. Thus, the companies were selected on the basis of similarity to the reference company. The companies’ products included:
• computers—desktops, laptops, mainframes, and network servers

• microprocessors and chips for communications, industrial equipment, and military markets

• networking services and communication infrastructure

• computer peripherals, routers, storage devices

• a wide range of computer software

Most of the companies also offered computer and computer-related consulting services.

Most of the information about the order status process of these ten companies, discussed in the next section, is available on their web sites. Some of this information was obtained by calling customer service representatives at these companies. E-mails were also sent to the companies for obtaining the required information. The formats of the e-mails sent and the questionnaire are given in Appendix I and Appendix II, respectively. All of the information obtained would be readily available to customers of these companies.

COMPARISON OF GLOBAL ORDER STATUS PROCESS OF COMPANIES

Some of the criteria used for comparison are as follows:

• Does the company provide the capability of buying the product online, by phone or both?

• Can the customer obtain order status information online, by phone, or both?

• What are the number of stages in the order status process?

• Does the company provide any text based online chat facility for customer service related questions?

• Is the customer notified whenever the order is received or shipped?

• Does the company have a promised turnaround time for e-mail inquiries?

• Is the customer service toll free number accessible 24 hours a day, 7 days a week?

• Can the customer track the product online through the company's web site, through the carrier's web site, or both?

• How soon does a customer get an order number?

• Is the company offering customized products, i.e., is the customer allowed to configure the product according to his/her needs?

Table 1 gives information regarding whether the various companies give the option of ordering a product online or ordering by phone and whether they provide the facility of checking the order status online or by phone.
TABLE 1
ORDERING AND ORDER STATUS

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Order by Phone</th>
<th>Order Online</th>
<th>Order Status Phone</th>
<th>Order Status Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>B</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>C</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>D</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>E</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>F</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>G</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>H</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>I</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>J</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Only Company I still does not provide order status information online and the customer has to contact the company by telephone or a feedback section provided on the online shopping menu.

Table 2 gives the number of stages in the online order status menu of each company. One thing to be noted is that five companies give order status information at just two stages, order received and order delivered. Also, Company I has not started giving online order status information. Company C and Company H have excellent customer service and one of the most detailed order status menus.

Table 3 compares the 10 companies on three different parameters:

- Text based chat (customer service)—Is it available or not?
- E-mail updates when order shipped—Do the companies send e-mail updates when the order ships?
- 24/7 toll free access—Is customer service available around the clock to help customers in online ordering and related inquiries?

Only Company G and Company H provide for online text based chat service. Most of the companies do have the infrastructure for providing online text-based chat service. This is evident from the fact that almost all of these companies provide technical support through that medium. Either the idea of providing customer service through text-based chat service did not occur to these companies or the companies think that it does not add real value. After chatting with the customer service people from Company G and Company H, the authors feel that it is an
### TABLE 2

NUMBER OF STAGES IN THE ORDER STATUS PROCESS

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Number of Stages*</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6</td>
</tr>
<tr>
<td>B</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>8</td>
</tr>
<tr>
<td>D</td>
<td>4</td>
</tr>
<tr>
<td>E</td>
<td>2</td>
</tr>
<tr>
<td>F</td>
<td>2</td>
</tr>
<tr>
<td>G</td>
<td>2</td>
</tr>
<tr>
<td>H</td>
<td>7</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
</tr>
<tr>
<td>J</td>
<td>2</td>
</tr>
</tbody>
</table>

*While ordering online

### TABLE 3

ONLINE ORDER SERVICES I

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Text Based Chat (Customer Service)</th>
<th>E-mail Updates When Order Shipped</th>
<th>24/7 Toll Free Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>No</td>
<td>Yes</td>
<td>Yes*</td>
</tr>
<tr>
<td>B</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>C</td>
<td>No</td>
<td>Yes</td>
<td>Yes*</td>
</tr>
<tr>
<td>D</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>E</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>F</td>
<td>No</td>
<td>Yes</td>
<td>Yes*</td>
</tr>
<tr>
<td>G</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes*</td>
</tr>
<tr>
<td>H</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>I</td>
<td>No</td>
<td>No</td>
<td>Yes*</td>
</tr>
<tr>
<td>J</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

*Store Assistance Only

excellent medium of communication. Another advantage includes less waiting time than on a typical toll free call. Also, it becomes easier to dictate the order number online (rather than remembering names from all alphabets; A for Alice, B for Brian, etc.). One disadvantage could be that customers are more accustomed and comfortable with actually talking to people about their problems rather than writing about them.
The customer can effectively use a combination of both telephone and chat service to have queries answered.

In this study, five companies provided e-mail updates when the order was shipped. Some companies provide off-the-shelf products and the customer can know when to expect the delivery of the product by analyzing the various delivery options provided on the checkout menu. In this case, an e-mail notification may not be of much significance. In cases where the product is built to specifications provided by the customer, e-mail updates should be provided to the customer. Company H, although known for its other customer service initiatives (like text based chat service, 24/7 toll-free assistance), does not have such capability. For corporate orders, e-mail updates become even more significant because of the need to efficiently manage inbound logistics.

Most of the companies in the study provide round-the-clock, toll-free customer service access for ordering products. Some companies provide 24/7 customer service support for inquiries beyond ordering a product. They will tell a customer to call back during normal office hours for any reason other than ordering.

As online ordering increases in volume, 24/7 customer service support will become necessary for most order-related inquiries. This capability supports one of the main objectives or purposes of online shopping: the convenience of ordering at any time.

Table 4 compares the companies further on three other parameters:

- **Track (only carrier/both)—** Can the customer track the product from the source company's (manufacturer) web site or is it necessary to go to the carrier's web site to track it? Some companies also give the option of tracking the product in both ways.

- **Order number assigned—** When is the order number assigned to the customer, instantly or via an e-mail?

- **Customized products—** Does the company offer customizable products?

Most of the companies provide the capability of tracking the product both ways. Customers like going to just one place to either find the status of their orders or to track their products and being able to use just one number throughout. This means that the company should have a direct link to the carrier's web site. Although it does not require much information technology investment to provide this value added service, some companies still lack this ability (as is evident from Table 4). Interestingly, there is one company that does not give out tracking numbers at all for security reasons. It is necessary to contact its customer service representative via telephone to track products.

There are two options available for giving order numbers to customers. One method is to give the order number instantly on the screen, and the other is to send it via e-mail. Using both methods, i.e., giving a number instantly on the screen and following it up with an e-mail confirmation, would be an even better approach. There are some technological implications in assigning the number instantly. Also, some companies want to confirm the availability of all production materials before assigning an order number because the order number, in many cases, has a direct link to when the order is scheduled for manufacturing. Companies that sell only off-the-shelf products can find it easier to assign an order number instantly since they only have to check the availability of one final product instead of checking an entire list of raw materials.
Most of the companies in the study provide the capability of customizing a product. Customers can configure their product online and can have it made to specifications. Many of the customer related issues change to some extent when it is a made-to-order product. The customer needs more help regarding the order when it is made-to-order. The most important thing that he/she may need is 24/7 toll-free access or 24/7 online text-based chat service. All of these customer service issues are closely related to each other, and the company that provides the best mixture will create much goodwill.

**CONCLUSIONS OF THE RESEARCH**

It appears that most of the companies in the study have started to take their order status process seriously. Although only some provide a comprehensive set of information through their web sites, detailed information can be obtained from all by calling companies’ toll free numbers. As previously mentioned, some of the companies provide off-the-shelf products and therefore detailed order status information may not add real value for the customer. One important criterion that may distinguish one company’s service from another is how soon it provides the customer with a tracking number and what options there are for tracking products.

The situation changes when the product is built-to-order. In this case, the time from ordering to final product delivery is quite variable. A customer in this case will appreciate getting as much information as possible regarding the product. Therefore, it becomes more important for the company to keep the customer updated concerning the status of the order. Providing detailed order status information online may also reduce the number of customer service calls from customers wanting to know the status of their orders.
Based upon this sample, there is certainly room for improvement in the area of providing order status information to the customer. Most of the companies provide information at two stages only, namely order received and order shipped. While this sort of information may be enough for some customers, others may demand more visibility. One difference between companies is in the way they provide information. Depending upon how a company provides information, some customers may rely more upon the online order status menu and some are more likely to call customer service. Another difference between companies in the sample is that, when an order is shipped, only some companies provide e-mail updates. One similarity is that the customer has the option of buying the product online or by telephone from all of the companies. Another similarity is that all of the companies have customer service representatives for assisting customers during their online shopping experiences.

Although not directly stated, the high technology companies can provide added services such as accepting online signatures and online checks or other modes of payment, all of which will make online ordering easier.

Companies like FedEx and UPS are constantly upgrading and adding new services every day to enhance order traceability and to give their customers improved service. The possibility of linking up with these service providers to see what improvements can be made in the order status side of the business offers great potential for all of these high technology companies.

THE FUTURE OF ORDER STATUS TRACKING

While the order status processes discussed in this article offer significant improvements from just a few years ago, the technology exists to provide supply chain managers with what they really want—real-time supply chain visibility. Applications are already being implemented, though sometimes limited by high cost and still existing technical problems. Event management software allows managers to monitor for exceptions, such as late shipments or inventory shortages (Trebilcock 2002). The software can even notify a decision maker when those exceptions occur, simulate solutions, and even take action to correct the problem and measure the outcome.

In addition to being able to obtain information on order status, supply chain managers also want to be able to track inventory moving between stations within a plant or between facilities. Radio frequency identification (RFID) and scanning technology are examples of technologies used in real-time locator systems. RFID technology allows users visibility of products, containers, transportation, and even people. The following are some examples of RFID applications.

Gillette is attaching RFID tags to selected items that are shipped to two Wal-Mart stores equipped with “smart shelves” capable of reading signals from the chips and tracking the merchandise’s location. When the supplies on the store shelves run low, stock clerks are alerted to refill them; when stockroom shelves run low, the system orders more (Ewalt 2003).

The Ford Motor Company in Cuautitlan, Mexico, secures RFID tags to a vehicle skid, and then custom programs it with a serial number that is referenced through Ford’s operating system. The serial number can indicate what has been done
to each vehicle, as well as what still needs to be completed further along the production line (Johnson 2002).

UK retailer, Marks & Spencer, is replacing bar codes with RFID tags to track the refrigerated foods used in its supply chain from production to purchase (Roberts 2002).

CHEP, the international pallet and container pooling company, is starting a pilot program and installing RFID tags on its pallets to enable real-time tracking of assets (Hyland 2002).

In situations where RFID does not work well, other wireless technologies or use of the Internet can offer solutions. Differential Global Positioning Systems (GPS) are used in marine terminals to track containers (Werb and Sereiko 2002). Error rates are estimated at 15% in marine terminals. Eliminating these errors represents improved tracking accuracy for a very large amount of cargo. GPS-based tracking systems and Internet software tools are used to assist railroads in tracking, fuel management, and railcar maintenance (Judge 2002). Finally, many supply chain software companies offer web-based systems that span the functional areas of the supply chain (Wilson 2001).

These newer technologies offer a much greater degree of sophistication than the tracking processes examined in this research study. Nevertheless, there is still a place for the simpler systems. Along with the sophistication of the newer technologies come higher costs. Sometimes so much information is available that it is not used effectively. According to supply chain professor, John Langley, “The objective should not be visibility. The objective is having information available so managers can take action when needed. Visibility for its own sake provides no value.” (Fitzgerald, 2003) What visibility can offer is the information for managers to monitor transactions and shipments, respond to errors, and focus their attention on their most important customers. This should help them achieve a synchronized and efficient supply chain.

REFERENCES


**APPENDIX I**

**E-MAIL SENT TO CUSTOMER SERVICE DEPARTMENTS**

We need some information regarding the following.

- Do you give any order status information online/on phone?
- Will I be assigned an order status number?
- What sort of information will I have once I order? For example, will I have information as to when my order is in production, scheduled, etc? Can you please list all the stages at which you provide information.
- Do you have a live representative online (i.e., a text based chat facility) by which I can obtain my order status information?

**APPENDIX II**

**QUESTIONS ANSWERED BY CUSTOMER SERVICE REPRESENTATIVES**

- Company name and products
- Can I buy all products online (like laptops, etc.)?
• Can I customize the product; do you provide such a facility?
• Will you assign me an order status number instantly?
• Can I have order status information online?
• Can I have order status on the phone?
• Do you have a chat/text-based facility with which I can obtain my order status info?
• At what stage/how many stages do you provide order information?
• Remarks:

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