

Workers spent 10 years building ramps to transport rocks. They may have lifted the blocks into position with a crane fashioned of wood and rope, and with a ramp lubricated with sand and water, or both.

### ELEPHANTS AND MOUNTAINS

When the Carthaginian general Hannibal traversed the Alps with 9,000 cavalry, 50,000 Men and 37 elephants, he surmounted a logistical challenge that involved crossing 999 miles of dangerous physical obstacles, food shortages, hostile tribes and freezing weather. His army required a ton of food daily (more during combat) plus forage for his animals. He probably took provisions from towns he passed, commandeering pastures for his animals. He combated raging rivers, which frightened the elephants, and raced against time, fearing that winter snows would clog mountain passes. The elephants, which swam the rivers or crossed them on rafts, required specially constructed paths through the Alps, another engineering feat. Hannibal's strategy required different kinds of transport (rafts, pack animals and elephants), efficient cargo handlers, motivation and leadership.

### THE GREAT WALL

China's Great Wall was started in 290 B.C. and took 2,500 years to build. The greatest military barrier ever built began as a series of obstacles to block attacks from northern nomads and ultimately stretched 1,491 miles. As it expanded, people paid for it with heavy taxes. Up to 400,000 peasants a year were drafted as builders. Construction materials often came from the rural areas where the wall was being built. As construction progressed through the countryside, local materials changed, until its composition included bricks, stones, granite, mud, soil and hay. Workers moved blocks weighing some 2,500 kilos with rollers, winches and levers. Today, the Wall is considered a logistical marvel.

### MARITIME AND INDUSTRIAL REVOLUTIONS

While trade has existed along land routes for thousands of years, the exploration and establishment of waterborne trade routes fostered a revolution in wealth creation and mobility. Economic expansion led to political and cultural advances and enabled global commerce. Once underway, the Age of Exploration opened doors that never closed. For 450 years, Europe financed explorers, created trade routes, imported materials and exported its culture and political systems. These forces launched the Industrial Revolution, characterized by stellar innovation and mechanization. Its changes transformed Europe and, later, America. The farm economy declined as manufacturing soared. Factories drew rural workers. Cities became transportation hubs and logistical centers, the roots of today's seaborne, ground and air transportation systems. The Industrial Revolution is the benchmark for gauging society's progress in transportation and logistics. The transportation revolution followed its wake, powered by the steam engine. First invented in 1712 by Thomas Newcomen and improved in 1769 by James Watt, the steam engine empowered change worldwide. Larger, faster ships required better harbors, bigger warehouses and faster expediting machinery.

In the nineteenth century, shipping companies began building specialized facilities for commodities. Steam locomotives (introduced in England in 1802) linked ports to cities. European companies began financing railroad construction in India and East Africa,



increasing the demand for steel and iron. The shipping infrastructure sparked other inventions: the internal combustion engine (1885), refrigeration (early 1880s), and refrigerated boxcars and ship cargo holds (1875). After great travail, the Panama Canal, which started in 1891, was completed 33 years later. It marked another milestone in logistical and technological advancement.

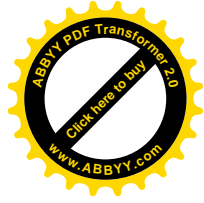
## SUPPLY CHAIN

The supply chain is the path your products take from concept to your customers. All businesses are under pressure to make their supply chains more efficient. Supply chain optimization is essential to accomplishing this goal. With supply chain optimization, you break down the boundaries that have separated supply chain participants from one another. To begin, analyze your entire process, from initial supply to ultimate consumption, so you can identify goals and avoid pitfalls. Optimization is a joint effort of manufacturers, suppliers, distributors and retailers. Companies achieve optimization by forming partnerships with these parties. These partnerships are a win-win situation for all involved. By partnering, small firms reap benefits previously available only to larger companies. Partnering helps all parties solve problems and meet current market needs.

A supply chain is the journey your products or services take from concept and creation through delivery to your customers' outlets and, finally, into the hands of your ultimate Consumers. Today, businesses are under extreme pressure to find new and more effective ways for their products and services to traverse the supply chain. Supply chain optimization is essential to accomplishing this goal, because it breaks down the boundaries that have traditionally separated supply chain participants from one another. That separation has fractionalized each participant's earning power, so by breaking down those boundaries, you can increase your earnings. When you analyze your entire supply chain process, from manufacture to consumption, you can identify your goals, avoid pitfalls and implement a focused optimizing plan. You want to mobilize a joint effort and focus the resources of your suppliers, manufacturers, distributors and retailers on initiatives that seem to have good potential. Many companies are already using the methods suggested here to achieve supply chain optimization, including Proctor and Gamble, Baxter Healthcare Corporation, Packaging Corporation of America and Dominick's.

By establishing partnerships and forming groups that can compete with the volume leverage of large companies, superstores, and warehouse stores, smaller companies can reap benefits typically only available to larger companies. When these groups analyze their shared supply chain and pool their resources, they can find hidden savings to protect their profit margins and remain competitive. The supply chain network is always evolving. Its historical evolution has already led to such ideas as efficient consumer response (ECR), continuous replenishment process (CRP), electric data interchange (EDI) and other replenishment and quick-response methods. Use these concepts throughout your organization to achieve supply chain optimization.

You must move from a buyer-versus-seller philosophy to one in which the supply chain network endeavors to build a supply system with a united, organizational purpose. The typical "let's only worry about our company's way of doing business" that drives much of supply chain management today is simply not effective.



## MORE EFFORT, BETTER RESULTS

By partnering, you can form a network that focuses on optimization across your supply chain. Partnering efforts across supply networks typically realize these improvements:

- Inventory reductions of 40% to 60% result from working out communications systems and just-in-time deliveries that reduce the need for safety stocks.
- Inventory turns of five to seven increases to 25 to 30 because the supply chain achieves more pull-through of demanded products with lower inventories and fewer stock-outs.
- Cycle-time improvements of 50% to 60% result from collectively mapping and analyzing flowcharts, creating new ideas and bringing these innovations to commercial realization. The largest factor in this improvement is eliminating steps that do not add value.
- Sales and market share increase by 45% to 55%, as a result of creating the most responsive system and inducing the final consumer to shop the network.
- Profit improvement of 15% to 30% is achieved through improved process designs that eliminate waste and reduce costs.
- Customer relations improve 20% to 40% as you respond to customers who identify their true supply needs. You can overcome the many obstacles that get in the way of creating and maintaining working partnerships across your full supply chain. These conflicts usually start with one party's flawed perception of the value of good relationships among those in the same supply chain. These perceptions are based on a lack of trust, a necessary ingredient in making any alliance function. Everyone needs to adopt the perception that partnering will work if every entity involved applies mutual resources for everyone's mutual benefit.

Anything less than that perception will doom the parties to short-term maneuvering by buyers and sellers, with no real improvement in the competitive advantage of partnering in the supply network.

## EFFECTIVE PARTNERING TECHNIQUES

The partnering techniques that work the best don't have to be complex. National Semiconductor of Santa Clara, Calif., worked with a supplier of silicon wafers, Siltec, to cut expenses. An example from the Fortune magazine writer Shawn Tully is that, "At National's plant in South Portland, Maine, workers on the loading dock used to discard the expensive plastic cassettes that silicon wafers arrived in. Now a giant box sits on the loading dock, already inscribed with the address of Siltec's plant in Salem, Oregon. As workers unload the wafers, they chuck the cassettes into the box. When the box is full, a driver from UPS carts it off to be returned to Siltec, which passes the resulting savings along to National — more than \$300,000 a year."

Another example is that AT&T's purchasing chief, Daniel Carroll, calls for helping key suppliers "manufacture more efficiently and thereby hold down prices." That is the so-called win-win situation for AT&T. In the spirit of partnering, AT&T allows these



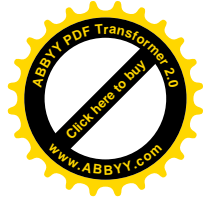
suppliers to have “a share of the savings,” and that’s a win for the suppliers. Jack Barry, a former purchasing specialist with Electronic Data Systems Corporation’s A.T. Kearney consulting division, sees a promising future for those in partnering relationships. He says, “As we move to a seller’s market, companies win by treating suppliers not as adversaries but partners.”

Whirlpool found itself under a short time constraint as it prepared to present a new line of refrigerators to Sears, one of its major customers. To extricate itself, Whirlpool got the help of a software supplier. Together they made a presentation that used virtual reality techniques to demonstrate the new line of refrigerators on a computer network. “The buyers at Sears were regaled with a show on the interactive computer network they were watching that took them into a kitchen to use the innovative features contained in the new line of products.” The basic purpose of customer partnering is to find the best way to meet current market needs.

## ADVANCED PARTNERING TECHNIQUES

Successful advanced partnering techniques include the following:

- Share valuable engineering and design talent — Focus on projects that have a clearly defined market advantage. This kind of sharing, which goes beyond the typical electronic linkages available through computer-aided systems, also includes joint identification of development and improvement projects and the assignment of joint resources to work out innovative and saleable solutions. The automobile industry is becoming quite adept at using supplier talent to design and engineer features on new cars.
- The most skilled trainer from any participating organization can conduct joint training sessions for everyone — With combined planning, material covered can include problem solving, the latest business planning techniques, skills applied to planning and scheduling tools, and the use of logistics capabilities. A larger group shares the cost of the sessions. Partners develop techniques to share the valuable resources and knowledge that result as they search for beneficial opportunities. The Atlanta Consulting Group stands out as an organization that effectively conducts these sessions.
- Executives should take an overview that focuses on joint practices that could benefit both parties. The supplier and the customer can arrange briefing sessions about the best practices they have observed and used.
- Under the conditions of advanced partnering, the firms can quickly set up a test to find the real benefits of an idea — Companies generally avoid pilot studies that are intended to test improvement ideas because they are difficult to establish and arrange. But partners can make joint investments in focused facilities or specialized equipment. The partners share the cost of the new machinery and the savings from the new results. For example, partnering efforts can focus on improving packaging costs. This might lead to an investment in cutting-edge machines that increase packaging speed and efficiency to a new level, double or triple the previous “Best Performances.”
- Your firm can set up experiments using qualified third-party organizations to test new technologies or systems — For example, firms can enter partnering arrangements as part of trying to make their supply chains more effective by finding and adopting



improved electronic data exchange techniques. Some of these arrangements allow the supplier and the customer to engage third parties who have hardware and software knowledge plus the ability to plan and equip test sites. This enables the partners to test a wide variety of potential enhancements.

#### BUSINESS CASE – “FEDEX DELIVERY”

When Federal Express opened for business on April 17, 1973, a small group of employees sorted 186 packages for delivery the next day in 25 U.S. cities. That made FedEx the first company to specialize in overnight deliveries. By 2005, FedEx processed five million packages daily and provided delivery in 215 countries. FedEx established some records along the way to this pattern of growth and success. It was the first company to hit \$1 billion in its first 10 years of existence (based on internal growth without acquisitions). From 1979 to 2001, the company built its airplane delivery fleet from 60 to 600 planes, and increased revenues from \$400 million to \$22 billion. In its early days, FedEx benefited from a lack of competition. The company's early competitors were passenger airlines, which also carried packages but could not guarantee timely delivery. Commercial airlines planned their flights around the best times for passengers, not packages, and often had delays. This meant packages arrived at their destinations based on passenger flight schedules. Airline companies did not provide pickups or deliveries, so senders had to rely on third parties to get the packages to collection or drop-off points. As a result, FedEx became the first airfreight company with the mission of delivering packages on a guaranteed overnight basis anywhere in the U.S. To develop that business, CEO Frederick Smith rethought the entire process of airfreight deliveries.

He was aware that companies needed to deliver time-sensitive documents, computer parts and medicine promptly. His deliberations about a specialized airfreight delivery service led him to create FedEx's hub-and-spoke transportation system. Smith, who is also a pilot, originally suggested an overnight airfreight delivery service to the U.S. Federal Reserve Bank as a way of distributing checks throughout its 36 nationwide processing facilities. He suggested that faster delivery would expedite the entire check clearing process.

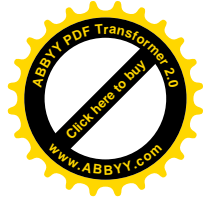
The name Federal Express derived from this idea. Smith theorized that the Federal Reserve needed overnight delivery since its alternative means of transporting documents was passenger airlines' freight systems. Smith's idea was a radical innovation in the existing freight business. Such innovation happens when a new idea is introduced and applied effectively.

For a significant innovation like this to succeed on the corporate level, it must pass through three steps:

1. Employees must feel that their new ideas are welcomed and heard.
2. People in the departments affected by new ideas should work together in small teams to turn the ideas into viable solutions.
3. The entire company must implement ideas developed by its small teams.

Other major business leaders, such as Sam Walton and Walt Disney, recognized that individuals are creative and want to be part of winning organizations. While many people think being creative means developing unique ideas, it also means being open to change and able to put new ideas into action. The corporate ability to respond to great ideas with prompt action deploys good ideas quickly and fulfills the psychological needs of individual employees to have their ideas recognized. In some cases, just the





process of implementing an ordinary idea in the best possible way proves more productive than the idea itself, because even a mediocre idea can be well implemented.

Alternately, great ideas that are poorly executed can lead to bad results, reduced market share and disgruntled customers.

## THE INNOVATION CULTURE

To encourage innovation, FedEx developed a "People, Service, Profit" culture based on a "People First" philosophy. These concepts mean that the company works to maintain good relations with its employees, thereby encouraging employees to put customers first. In the field, this translates into individual initiative and cooperation since employees all know their roles and how their work matters to the company's goals. For instance, FedEx delivery personnel routinely help each other complete their rounds so customers get their packages by the specified deadlines. At FedEx customer service centers, customers frequently comment that people standing in line after the closing time all get helped before the doors are shut. Employee initiatives also help solve the inevitable logistical problems that arise in the delivery business due to bad weather or flight delays. FedEx's profit sharing plan means that everyone benefits when the company does well. Employees understand how their service translates to a bottom line personal benefit.

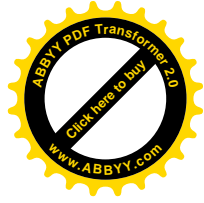
Since the company promises, and customers expect, on-time deliveries by 10:30 a.m., employee cooperation in the field is critical to the company's profits. One study estimated that a one-minute delay at crucial points anywhere in the FedEx sorting or delivery system could cost the company \$1 million. Senior management also plays a critical role in innovation. FedEx's top executives routinely visit company offices to meet employees and see the operations firsthand. The company has also incorporated a "what if?" process to stimulate new ideas at the management and operational levels. Employees and managers are encouraged to ask, "What if we did it this way...?" – The pivotal question that leads to innovation.

FedEx's long range planning committee meets three times a month with sequential levels of managers to develop and evaluate new ideas. Smith and his team submit their own ideas at the strategic and tactical levels. They remain personally involved and they followup on their ideas to guarantee that they are implemented successfully.

As a result of its innovative culture, FedEx became the first company to:

- Own and operate package-sorting facilities, and fleets of airplanes and package delivery vans.
- Run TV ads for express package deliveries (1977).
- Push for deregulating the airfreight industry (1979).
- Build its own central computerized package routing and tracking system (1979).
- Install real-time customer pick-ups on request (1980).
- Provide branded overnight mail packaging materials to customers (1981).
- Provide office deliveries by 10:30 a.m. (1982).
- Install a personal computer-based shipping system, eliminating paper forms (1984).
- Use a hand-held bar code package tracking system (1986).
- Build a seamless international and domestic delivery network (1989).
- Offer online package tracking for all customers (1994).

In one impressive feat, FedEx worked with Amazon.com to deliver 400,000 copies of J.



K. Rowling's book, *Harry Potter and the Order of the Phoenix*, in a single day to eager children around the U.S.

## FIVE CRITICAL CULTURAL CHARACTERISTICS

FedEx follows a three-step innovation process – “generation, acceptance, implementation” – and relies on the following five cultural characteristics to inculcate “innovation and performance:”

### 1. “Engaged people”

Get your employees involved. When people get involved, they focus on current issues or problems. This means that they are more likely to be creative and that the organization benefits from the collective power of engaged employees. People want to be involved with winning teams and companies. To give them that stake, keep employees informed about corporate strategy, why it's relevant to them, how they benefit and what they have to do to get involved. Engaging your employees meets their wish for meaningful work in two ways: they have an impact and they can attain their own goals while developing as professionals.

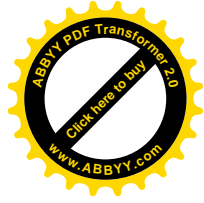
### 2. “Growing people”

Develop your employees' knowledge and creativity. Employees are more involved when they are learning. A learning environment helps people become more creative and stimulates their imagination, vision and creativity. Fred Smith learned the requirements of the Federal Reserve check clearing system and pioneered FedEx's innovative hub-and-spoke distribution system based on those requirements. He then applied that idea to other industries that needed express delivery service.

### 3. “Secure people”

Create a supportive managerial environment. People will not voice new ideas if their input is discouraged or minimized. Managers must create settings where new ideas are welcomed and fairly evaluated. Management should support and encourage innovation by making sure that employees feel secure about their business relationships, social networks and professional stature.

People who trust these assurances are more open to suggestions. People also become more receptive to change and innovation if their lives are anchored in meaningful experiences outside of work, so FedEx encourages balance between employees' lives at work and their personal lives. Given a secure setting, employees can propose new suppositions and managers can entertain ideas that vary from their own concepts without feeling that their leadership is being challenged. Creating a culture where people can express new ideas also requires inculcating the understanding that the company welcomes fresh thinking. To demonstrate that willingness, provide “formal and informal” channels for making sure that new concepts get attention. People need



to know that they will be recognized for contributing innovative concepts and those managers will consider their suggestions seriously.

#### 4. "Collaborative people"

Encourage group reliance. Five departments at FedEx must collaborate smoothly to move packages through the system. The Domestic Ground Operations department picks up and delivers packages. Airport Operations loads packages on and off the planes.

Flight Operations handles aviation. Sort Operations deals with sending the packages where they are supposed to go, and Information Systems keeps track of exactly where that is for every package. Innovations in these areas, or in administration, marketing or sales, ripple throughout the organization. Therefore, FedEx establishes working teams with representatives from various departments, so programs are coordinated collaboratively from their inception. However, most modern corporations tend to be insular, which reduces communication.

To break this cycle, and encourage interaction and collaboration, take these steps:

- Create goals that are shared by different departments whose clients are similar.
- Encourage managers and employees to spend their lunch hours or other more relaxed time with their peers from other departments.
- Develop group opportunities for people from various units to socialize.
- If cross-departmental work groups have problems collaborating, focus on finding solutions, not on determining who is at fault.

#### 5. "Committed people"

Build mutual trust. When employees and employers trust each other, their mutual confidence can change an entire company's dynamics. People who trust one another can commit to common goals. To develop employee commitment, provide honest feedback and encouragement. Involve employees in the creative process, so they are encouraged to produce good ideas. When front line people are involved from the inception of a new idea, they can implement change quickly. FedEx managers are coached to "let appreciation flow from the heart."

Employees who excel often get a "Bravo Zulu" commendation letter from Fred Smith. In the U.S. Navy's signal flag code, Bravo Zulu means "well done." The award program has many facets – including letters, plaques, Bravo Zulu flags, bonuses, and the occasional pizza party or parking lot hamburger cookout – because FedEx believes, "An organization's reward system defines its culture."

#### REGIONAL IMPORT & EXPORT CASE – MEXICO'S NAFTA

There's nothing strange to suppose that major movements, even political, commercial or social can change dramatically the business environment. But when you are talking about Import and Export business, the things can get really difficult with this kind of





International agreements. Let's take an overview of the NAFTA, the North American Free Trade Agreement. It was not a true trade agreement but an investment agreement designed to reassure American manufacturers that it was safe to locate in Mexico. NAFTA exists to entice American manufacturers to exploit Mexico's cheap labor, weak liability laws and lax environmental enforcement. NAFTA was never intended to create jobs in the United States. Mexican President Salinas initiated NAFTA because his "reforms" had exhausted the Mexican economy and Mexico needed foreign investment.

El pacto, Mexico's minimum wage law, was considered a shame. The NAFTA labor and environmental "side agreements" were deliberately weak. Bill Clinton's support for NAFTA was part of a historic Democratic Party shift away from organized labor and toward big business. NAFTA boosters used many distortions, half-truths and outright lies. Ross Perot blew his NAFTA debate with Al Gore. NAFTA has cost the U.S. many thousands of manufacturing jobs.

NAFTA was an investment agreement designed to protect American corporations in Mexico, lock in the low wage rate and raise cash for a nervous political oligarchy." When we talk about economic 'forces,' we should never forget those that are embodied in actual human beings." To pretend that Mexico had any genuine leverage, or that the United States and Canada had a compelling need to get Mexico to lower its tariffs, is to believe in fairies and goblins." Job creation was never the real point of NAFTA. Most of America's so-called 'exports' to Mexico were chasing cheap labor, not consumers. The whole point of NAFTA was to make it even easier for U.S. factories to take advantage of cheap labor and weak regulation, and to lock the two countries into a low- or no-tariff deal that neither could easily escape."

The only rational reason for an American company to decline Mexico's standing invitation to exploit its low-cost labor environment (and easily polluted natural environment) was the concern that angry Mexicans, weary of being pushed around, would rise up and seize American assets a la 1938." "Salinas' drive to 'modernize' Mexico into an exporting dynamo had created a great distortion in its national economy, suggesting health where there was really sickness." "The question really is: How poor does Mexico have to get before the de la Madrid and Salinas policy is declared a failure?"

"The Washington establishment — some calls it the permanent government — was firmly behind free trade, and their voices were heard loud and clear before the vote." Kantor, Emanuel and Daley could be ignored or disrespected only at the risk of losing what lobbyists cherish above all else — access to the President himself." "From August 13, the day Kantor completed negotiations on the NAFTA side agreements, to November 17, 1993, the day the House voted on NAFTA, Clinton behaved in many ways like the leader of the opposition Republican Party."

## 1. Logistic Glossary

The logistic world is even vaster than the promotional world and obviously has its own particular language. It combines different glossary words as in any professional world, related to its administration and also includes many of the engineer technique words, because of its particular interrelation with these area. The main difference I have found is easy. The logistic world is a world of its own. It involves many, many people in it, millions of people around the world and logically it has to be a special argot on it. The terms expressed here were compiled from a specialized book and reflect a main opinion of their meanings, but as far as I am concerned and have been studying them, what I



like most is that they are so “friendly and common sense terms” that they are very useful for the beginners in the matter and even more for the ones that are, like me, trying to start a new professional life in this passionate world and to live in for many years.

Something fascinating to me is founding at my age learning. I have made great efforts in another industrial, mainly marketing activity for the past 17 years and now that I am trying to proof myself and have a professional challenge, I am impressed that only talking about words, terminology, slangs, argot, calo, I still have a lot to learn. Just making a quick exercise, reviewing thee listed words, (866 the most), you can try to be familiar with 3.3 daily and you can be learning from them and finding direct application with the job you are developing each week for a whole year from Monday to Friday.

Can you imagine that? It is great! It is not so difficult. The main thing is to try to associate the explanation, with the particular need it feeds and you will also find that their use is applicable to many other activities and I if can share a personal thought with you, they not just apply for another activity or professional area, they show, they teach and give a proper lane for many other activities you must do.

The more I read about it, the more I like it. You an say I am bored about marketing and so forth its related topics, words and market in general; you can say it is just because this glossary is so different to mine and my previous experienced one that is a brand new toy or you can say that is because it is really a friendly experience to anyone, but even without identifying the reason, the logistic glossary is being a great experience for my life.

GLOSSARY OF LOGISTIC TERMS.

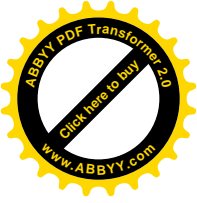
These explanations are only a helpful guideline -- not a legal or definitive resource.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

A  
A.T.A.: Actual time of arrival.  
A.T.D.: Actual time of departure  
ABC analysis: classification of items in an inventory according to importance defined in terms of criteria such as sales volume and purchase volume.  
ABI: See Automated Broker Interface  
Accessibility: A carrier's ability to provide service between an origin and a destination.  
Accessorial charges: A carrier's charge for accessorial services such as loading, unloading, pickup, and delivery.  
Action message: An alert that an MRP or DRP system generates to inform the controller of a situation requiring his or her attention.  
Active stock: Goods in active pick locations and ready for order filling.  
Activity-Based Costing: A method of cost management that identifies business activities performed, accumulates costs associated with these activities, and uses various

cost drivers to trace costs of activities to the products.  
Ad Valorem Duty: See Duty  
Advanced shipment notice (ASN): A list transmitted to a customer or consignor designating items shipped. May also include expected time of arrival.  
Agency tariff: A rate bureau publication that contains rates for many carriers.  
Agent: An enterprise authorized to transact business for, or in the name of, another enterprise.  
Agglomeration: A net advantage a company gains by sharing a common location with other companies.  
Aggregate tender rate: A reduced rate offered to a shipper who tenders two or more class-related shipments at one time and one place.  
Air cargo: Freight that is moved by air transportation.  
Air Carrier: An enterprise that offers transportation service via air.  
Air taxi: An exempt for-hire air carrier that will fly anywhere on

demand; air taxis are restricted to a maximum payload and passenger capacity per plane.  
Air Transport Association of America: A U.S. airline industry association.  
Air Waybill (AWB): A bill of lading for air transport that serves as a receipt for the shipper indicates that the carrier has accepted the goods listed obligates the carrier to carry the consignment to the airport of destination according to specified conditions.  
Aircargo Agent: An agent appointed by an airline to solicit and process international airfreight shipments.  
Aircargo Containers: Containers designed to conform to the inside of an aircraft. There are many shapes and sizes of containers. Aircargo containers fall into three categories: 1) aircargo pallets 2) lower deck containers 3) box type containers.  
Airport and Airway Trust Fund: A federal fund that collects passenger ticket taxes and disburses those funds for airport facilities.



**All Water:** Term used when the transportation is completely by water.

**All-cargo carrier:** An air carrier that transports cargo only.

**American National Standards Institute (ANSI):** ANSI was founded in 1918 to coordinate national standards in the U.S. ANSI is the central body responsible for the identification of a single consistent set of voluntary standards called American National Standards. ANSI provides an open forum for the identification of standards requirements, development of plans to meet those requirements, and agreement on standards. ANSI itself does not develop standards. In 1979 ANSI chartered a new committee, which is now known as Accredited Standards Committee (ASC) X12 Electronic Data Interchange, to develop uniform standards for electronic interchange of business transactions.

**American Society of Transportation & Logistics:** A professional organization in the field of logistics.

**American Trucking Association, Inc.:** A motor carrier industry association composed of sub-conferences representing various motor carrier industry sectors.

**American Waterway Operators:** A domestic water carrier industry association representing barge operators on inland waterways.

**Amtrak:** The National Railroad Passenger Corporation, a federally created corporation that operates most of the United States' intercity passenger rail service.

**ANSI:** See American National Standards Institute

**Any-quantity (AQ) rate:** A rate that applies to any size shipment tendered to a carrier; no discount rate is available for large shipments.

**API:** Application Programming Interface

**Arrival Notice:** A notice from the delivering carrier to the Notify Party indicating the shipment's arrival date at a specific location (normally the destination).

**Artificial intelligence:** A field of research seeking to understand and computerize the human thought process.

**ASN:** Advance Shipment Notice

**Assignment:** The transfer of rights, duties, responsibilities, and benefits of an agreement, contract, or financial instrument to a third party.

**Association of American Railroads:** A railroad industry association that represents the larger U.S. railroads.

**ATFI:** Automated Tariff Filing Information System

**Audit:** In reference to freight bills, the term audit is used to

determine the accuracy of freight bills.

**Auditing:** Determining the correct transportation charges due the carrier; auditing involves checking the freight bill for errors, correct rate, and weight.

**Automated Broker Interface (ABI):** The U.S. Customs program to automate the flow of customs-related information among customs brokers, importers, and carriers.

**Automated guided vehicle system (AGVS):** A computer-controlled materials handling system consisting of small vehicles (carts) that move along a guideway.

**Automated storage and retrieval system (ASRS):** An automated, mechanized system for moving merchandise into storage locations and retrieving it when needed.

**Average:** See Marine Cargo Insurance

**Average cost:** Total cost, fixed plus variable, divided by total output.

**AWB:** See Air Waybill

## B

**Back Haul:** The return movement of a means of transport that has provided a transport service in one direction.

**Back order:** The process a company uses when a customer orders an item that is not in inventory; the company fills the order when the item becomes available.

**Backhaul:** A vehicle's return movement from original destination to original origin.

**Backup:** Making a duplicate copy of a computer file or a program on a disk or cassette so that the material will not be lost if the original is destroyed; a spare copy.

**Balance of Trade:** The surplus or deficit which results from comparing a country's exports and imports of merchandise only.

**Bale:** A large compressed, bound, and often wrapped bundle of a commodity, such as cotton or hay.

**Bar code:** A series of lines of various widths and spacings that can be scanned electronically to identify a carton or individual item.

**Bar code scanner:** A device to read bar codes and communicate data to computer systems.

**Bar Coding:** A method of encoding data for fast and accurate readability. Bar codes are a series of alternating bars and spaces printed or stamped on products, labels, or other media, representing encoded information which can be read by electronic readers called bar.

**Barge:** The cargo-carrying vehicle which may or may not have its own propulsion mechanism for the purpose of transporting goods. Primarily used by Inland water carriers, basic barges have open tops, but there are covered barges for both dry and liquid cargoes.

**Barter:** The exchange of commodities or services for other commodities or services rather than the purchase of commodities or services with money.

**Base Currency:** The currency whose value is "one" whenever a quote is made between two currencies.

**Basing-point pricing:** A pricing system that includes transportation cost from a particular city or town in a zone or region even though the shipment does not originate at the basing point.

**Batch picking:** The picking of items from storage for more than one order at a time.

**Benchmarking:** A management tool for comparing performance against an organization that is widely regarded as outstanding in one or more areas, in order to improve performance.

**Benefit-cost ratio:** An analytical tool used in public planning; a ratio of total measurable benefits divided by the initial capital cost. see Cost Benefit Analysis.

**Bill of Lading (BOL):** A document issued by an entity providing transportation services that serves three purposes: 1) serves as receipt for the goods delivered to the carrier for shipment, 2) defines the contract of carriage of the goods from the point of origin to the point of destination according to the responsibilities of the service provider listed on the bill of lading, 3) under certain conditions, provides evidence of title for the goods.

**Bill of Lading Number:** The number assigned by the carrier to identify the bill of lading.

**Bill of Lading, Through:** A bill of lading to cover goods from point of origin to final destination when interchange or transfer from one carrier to another is necessary to complete the journey.

**Billing:** A carrier terminal activity that determines the proper rate and total charges for a shipment and issues a freight bill.

**Binder:** A strip of cardboard, thin wood, burlap, or similar material placed between layers of containers to hold a stack together.

**Blanket rate:** A rate that does not increase according to the distance a commodity is shipped.

**BOL:** See Bill of Lading

**Bond, In:** Goods are held or transported In-Bond under customs control either until import duties or other charges are paid,



or in order to avoid paying the duties or charges until a later date.

Bonded: See Bond, In.

Bonded warehousing: A type of warehousing in which companies place goods in storage without paying taxes or tariffs. The warehouse manager bonds himself or herself to the tax or tariff collecting agency to ensure payment of the taxes before the warehouse releases the goods.

Bookable Leg: See Leg.

Booking: The act of requesting space and equipment aboard a vessel for cargo which is to be transported.

Booking Number: The number assigned to a certain space reservation by the carrier or the carrier's agent.

Boxcar: An enclosed railcar, typically forty to fifty feet long, used for packaged freight and some bulk commodities.

Bracing: To secure a shipment inside a carrier's vehicle to prevent damage.

Break Bulk Cargo: Cargo that is shipped as a unit or package (for example: palletized cargo, boxed cargo, large machinery, trucks) but is not containerized.

Break Bulk Vessel: A vessel designed to handle break bulk cargo.

Break-bulk: The separation of a consolidated bulk load into smaller individual shipments for delivery to the ultimate consignee. The freight may be moved intact inside the trailer, or it may be interchanged and rehandled to connecting carriers.

Broker: There are 3 definitions for the term "broker": 1) an enterprise that owns & leases equipment 2) an enterprise that arranges the buying & selling of transp., goods, or services 3) a ship agent who acts for the ship owner or charterer in arranging charters.

Buffer Stock: A quantity of goods or articles kept in storage to safeguard against unforeseen shortages or demands.

Bulk area: A storage area for large items which at a minimum are most efficiently handled by the palletload.

Bulk Cargo: Goods not in packages or containers. See also, Break Bulk Cargo.

Bundling: An occurrence where two or more products are combined into one transaction for a single price.

business logistics: The process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements.

Buyer: An enterprise that arranges for the acquisition of goods or services and agrees to payment terms for such goods or services.

C

C & F: See Cost and Freight

Cabotage: A federal law that requires coastal and intercoastal traffic to be carried in U.S.-built and registered ships.

CAD: See Cash against Documents.

CAF: See Currency Adjustment Factor.

Cage: (1) A secure enclosed area for storing highly valuable items, (2) a pallet-sized platform with sides that can be secured to the tines of a forklift and in which a person may ride to inventory items stored well above the warehouse floor.

Capital: The resources, or money, available for investing in assets that produce output.

CAPSTAN: Computer-Aided Planned Stowage and Networking system.

CARAT: Cargo Agents Reservation Air Waybill Issuance and Tracking.

Cargo: Merchandise carried by a means of transportation.

Carmack Amendment: An Interstate Commerce Act amendment that delineates the liability of common carriers and the bill of lading provisions.

Carnet: A customs document allowing special categories of goods to cross international borders without payment of duties.

Carousel: A rotating system of layers of bins and/or drawers that can store many small items using relatively little floor space.

Carriage: See Transportation.

Carrier: An enterprise engaged in the business of transporting goods.

Carrier Assets: Items that a carrier owns (technically or outright) to facilitate the services they provide.

Carrier Certificate and Release Order: Used to advise customs of the shipment's details. By means of this document, the carrier certifies that the firm or individual named in the certificate is the owner or consignee of the cargo.

Carrier liability: A common carrier is liable for all shipment loss, damage, and delay with the exception of that caused by act of God, act of a public enemy, act of a public authority, act of the shipper, and the goods' inherent nature.

Cartage: There are two definitions for this term: 1) charge for pick-up and delivery of goods 2) movement of goods locally (short distances).

Carton flow rack: A storage rack consisting of multiple lines of gravity flow conveyors.

Cash Against Documents (CAD): A method of payment for goods in which documents transferring title are given to the buyer upon payment of cash to an intermediary acting for the seller.

Cash In Advance (CIA): A method of payment for goods whereby the buyer pays the seller in advance of shipment of goods.

Cash with Order (CWO): A method of payment for goods where cash is paid at the time of order, and the transaction becomes binding on both buyer and seller

Central processing unit (CPU): The physical part of the computer that does the actual computing.

Centralized authority: The restriction of authority to make decisions to few managers.

Certificate of Insurance: A negotiable document indicating that insurance has been secured under an open policy to cover loss or damage to a shipment while in transit.

Certificate of Origin: A document containing an affidavit to prove the origin of imported goods. Used for customs and foreign exchange purposes.

Certificate of public convenience and necessity: The grant of operating authority that common carriers receive. A carrier must prove that a public need exists and that the carrier is fit, willing, and able to provide the needed service. The certificate may specify the commodities the carrier may haul, and the routes it may use.

Certificated carrier: A for-hire air carrier that is subject to economic regulation and requires an operating certification to provide service.

CFS: See Container Freight Station.

CFS/CFS: See Container Freight Station to Container Freight Station.

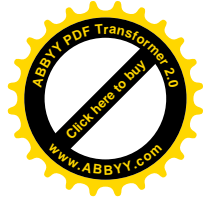
Channel of Distribution: A means by which a manufacturer distributes products from the plant to the ultimate user, including warehouses, brokers, wholesalers, retailers, etc.

Chargeable Weight: The shipment weight used in determining freight charges. The chargeable weight may be the dimensional weight or, for container shipments, the gross weight of the shipment less the tare weight of the container.

Charging area: A warehouse area where a company maintains battery chargers and extra batteries to support a fleet of electrically powered materials handling equipment. The company must maintain this area in accordance with government safety regulations.

Chock: A wedge usually made of hard rubber or steel, which is





firmly placed under the wheel of a trailer, truck, or boxcar to stop it from rolling.

CIA: See Cash In Advance.

CIF: See Cost, Insurance and Freight.

City driver: A motor carrier driver who drives a local route as opposed to a long-distance, intercity route.

Civil Aeronautics Board: A federal regulatory agency that implemented economic regulatory controls over air carriers.

CL: Carload rail service requiring shipper to meet minimum weight.

Claim: A charge made against a carrier for loss, damage, delay, or overcharge.

Class I carrier: A classification of regulated carriers based upon annual operating revenues--motor carriers of property: \$5 million; railroads: \$50 million; motor carriers of passengers: \$3 million.

Class II carrier: A classification of regulated carriers based upon annual operating revenues--motor carriers of property: \$1-\$5 million; railroads: \$10-\$50 million; motor carriers of passengers: \$3 million.

Class III carrier: A classification of regulated carriers based upon annual operating revenues--motor carriers of property: \$1 million; railroads \$10 million.

Class Rates: A grouping of goods or commodities under one general heading. All the items in the group make up a class. The freight rates that apply to all items in the class are called "class rates."

Classification: An alphabetical listing of commodities, the class or rating into which the commodity is placed, and the minimum weight necessary for the rate discount; used in the class rate structure.

Classification yard: A railroad terminal area where railcars are grouped together to form train units.

Clearance: A document stating that a shipment is free to be imported into the country after all legal requirements have been met.

Coastal carriers: Water carriers that provide service along coasts serving ports on the Atlantic or Pacific Oceans or on the Gulf of Mexico.

COFC: See Container on Flat Car.

Collect Freight: Freight payable to the carrier at the port of discharge or ultimate destination. The consignee does not pay the freight charge if the cargo does not arrive at the destination.

Collective Paper: All documents (commercial invoices, bills of lading, etc.) submitted to a buyer for the purpose of receiving payment for a shipment.

Combi Aircraft: An aircraft specially designed to carry unitized cargo loads on the upper deck of the

craft, forward of the passenger area.

Commercial Invoice: A document created by the seller. It is an official document which is used to indicate, among other things, the name and address of the buyer and seller, the product(s) being shipped, and their value for customs, insurance, or other purposes.

Commercial zone: The area surrounding a city or town to which rate carriers quote for the city or town also apply; the ICC defines the area.

Committee of American Steamship Lines: An industry association representing subsidized U.S. flag steamship firms.

Commodities: Any article exchanged in trade, most commonly used to refer to raw materials and agricultural products.

Commodities clause: A clause that prohibits railroads from hauling commodities that they produced, mined, owned, or had an interest in.

Commodity Code: A code describing a commodity or a group of commodities pertaining to goods classification. This code can be carrier tariff or regulating in nature.

Commodity rate: A rate for a specific commodity and its origin-destination.

Common carrier: A for-hire carrier that holds itself out to serve the general public passenger and/or cargo transport services at reasonable rates and without discrimination. To operate, the carrier must secure a certificate of public convenience and necessity.

Common carrier duties: Common carriers must serve, deliver, charge reasonable rates, and not discriminate.

Common cost: A cost that a company cannot directly assign to particular segments of the business; a cost that the company incurs for the business as a whole.

Commuter: An exempt for-hire air carrier that publishes a time schedule on specific routes; a special type of air taxi.

Comparative advantage: A principle based on the assumption that an area will specialize in producing goods for which it has the greatest advantage or the least comparative disadvantage.

Conference: A group of vessel operators joined for the purpose of establishing freight rates.

Conference Carrier: An ocean carrier who is a member of an association known as a "conference." The purpose of the conference is to standardize shipping practices, eliminate freight rate competition, and provide regularly scheduled service between specific ports.

Conrail: The Consolidated Rail Corporation established by the Regional Reorganization Act of 1973 to operate the bankrupt Penn Central Railroad and other bankrupt railroads in the Northeast; the 4-R Act of 1976 provided funding.

Consignee: The receiver of goods, i.e. a freight shipment, usually the buyer.

Consignment: Goods shipped to an overseas agent when an actual purchase has not been made, but when the consignee agrees to sell the goods.

Consignor: The shipper of goods, or shipper of a transportation movement.

Consolidation: Collecting smaller shipments to form a larger quantity in order to realize lower transportation rates.

Consolidation Point: The location where consolidation takes place.

Consolidator: An enterprise that provides services to group shipments, orders, and/or goods to facilitate movement.

Consolidator's Bill of Lading: A bill of lading issued by a consolidator as a receipt for merchandise that will be grouped with cargo obtained from other shippers. See also House Air Waybill.

Consul: A government official residing in a foreign country, charged with representing the interests of his or her country and its nationals.

Consular Declaration: A formal statement made to the consul of a country describing merchandise to be shipped to that consul's country. Approval must be obtained prior to shipment.

Consular Documents: Special forms signed by the consul of a country to which cargo is destined.

Consular Invoice: A document, required by some foreign countries, describing a shipment of goods and showing information such as the consignor, consignee, and value of the shipment. Certified by a consular official of the foreign country, it is used by the country's custom

Container: This term is associated with more than one definition: 1) anything in which goods are packed 2) a single rigid receptacle without wheels that is used for the transport of goods (a type of carrier equipment into which freight is loaded).

Container Chassis: A vehicle built for the purpose of transporting a container so that, when a container and chassis are assembled, the produced unit serves as a road trailer.

Container Depot: The storage area for empty containers.

Container Freight Station (CFS): The location designated by carriers for receipt of cargo to be packed into





containers/equipment by the carrier. At destination, CFS is the location designated by the carrier for unpacking of cargo from equipment/containers.

**Container Freight Station Charge:** The charge assessed for services performed at the loading or discharge location.

**Container Freight Station to Container Freight Station (CFS/CFS):** A type of steamship-line service in which cargo is transported between container freight stations, where containers may be stuffed, stripped, or consolidated. Usually used for less-than-container load shipments.

**Container I.D.:** An identifier assigned to a container by a carrier. See also Equipment ID.

**Container on Flat Car (COFC):** A carriage of intermodal containers detached from their chassis on rail flat cars.

**Container Terminal:** An area designated to be used for the stowage of cargo in containers that may be accessed by truck, rail, or ocean transportation.

**Container Vessel:** A vessel specifically designed for the carriage of containers.

**Container Yard:** The location designated by the carrier for receiving, assembling, holding, storing, and delivering containers, and where containers may be picked up by shippers or redelivered by consignees.

**Container Yard to Container Yard (CY/CY):** A type of steamship-line service in which freight is transported from origin container yard to destination container yard.

**Containerization:** The technique of using a boxlike device in which a number of packages are stored, protected, and handled as a single unit in transit.

**Contingency planning:** Preparing to deal with calamities (e.g., floods) and noncalamitous situations (e.g., strikes) before they occur.

**Continuous replenishment (CRP):** A system used to reduce customer inventories and improve service usually to large customers.

**Continuous-flow, fixed-path equipment:** Materials handling devices that include conveyors and drag lines.

**Contract carrier:** A for-hire carrier that does not serve the general public but serves shippers with whom the carrier has a continuing contract. The contract carrier must secure a permit to operate.

**Conveyance:** The application used to describe the function of a vehicle of transfer.

**Conveyor:** A materials handling device that moves freight from one warehouse area to another. Roller conveyors utilize gravity, whereas belt conveyors use motors.

**cooperative associations:** Groups of firms or individuals having common interests; agricultural cooperative associations may haul up to 25 percent of their total interstate nonfarm, nonmember goods tonnage in movements incidental and necessary to their primary business.

**Coordinated transportation:** Two or more carriers of different modes transporting a shipment.

**CORBA:** Common Object Request Broker Architecture.

**Cost and Freight (C & F):** The seller quotes a price that includes the cost of transportation to a specific point. The buyer assumes responsibility for loss and damage and pays for the insurance of the shipment.

**Cost of lost sales:** The forgone profit companies associate with a stockout.

**Cost trade-off:** The interrelationship among system variables in which a change in one variable affects other variables' costs. A cost reduction in one variable may increase costs for other variables, and vice versa.

**Cost, Insurance and Freight (CIF):** The price quote that the seller offers to the buyer, which includes cost of the goods, insurance of the goods, and transportation charges.

**Council of Logistics Management (CLM):** A professional organization in the logistics field that provides leadership in understanding the logistics process, awareness of career opportunities in logistics, and research that enhances customer value and supply chain performance.

**Countertrade:** A reciprocal trading agreement that includes a variety of transactions involving two or more parties.

**Countervailing Duties:** Special duties imposed on imports to offset the benefits of subsidies to producers or exporters of the exporting country.

**Country of Destination:** The country that will be the ultimate or final destination for goods.

**Country of Origin:** The country where the goods were manufactured.

**Courier service:** A fast, door-to-door service for high-valued goods and documents; firms usually limit service to shipments weighing fifty pounds or less.

**Crane:** A materials handling device that lifts heavy items. There are two types: bridge and stacker.

**Credit Terms:** The agreement between two or more enterprises concerning the amount and timing of payment for goods or services.

**Critical value analysis:** A modified ABC analysis in which a company assigns a subjective critical value to each item in an inventory.

**Cross Dock:** An enterprise that provides services to transfer goods from one piece of transportation equipment to another.

**Cross-docking:** The movement of goods directly from receiving dock to shipping dock to eliminate storage expense.

**CSG:** Communications Support Group.

**Cube Out:** The situation when a piece of equipment has reached its volumetric capacity before reaching the permitted weight limit.

**Cubic Capacity:** The carrying capacity of a piece of equipment according to measurement in cubic feet.

**Currency Adjustment Factor (CAF):** A surcharge imposed by a carrier on ocean freight charges to offset foreign currency fluctuations.

**Customer:** An enterprise that uses the services as provided by another enterprise.

**Customer Order:** The seller's internal translation of their buyer's Purchase Order. The document contains much of the same information as the purchase order but may use different Product IDs for some or all of the line items. It will also determine inventory availability.

**Customer Service:** The series of activities involved in providing the full range of services to customers.

**Customs:** The authorities designated to collect duties levied by a country on imports and exports.

**Customs Broker / Customhouse Broker:** A firm that represents importers/exporters in dealings with customs. Normally responsible for obtaining and submitting all documents for clearing merchandise through customs, arranging inland transport, and paying all charges related to these functions.

**Customs Clearance:** The act of obtaining permission to import merchandise from another country into the importing nation.

**Customs Invoice:** A document that contains a declaration by the seller, the shipper, or the agent as to the value of the shipment.

**Customs Value:** The value of the imported goods on which duties will be assessed.

**CWO:** See Cash with Order.

**CWT:** The abbreviation for hundredweight, which is the equivalent of 100 pounds.

**CY/CY:** See Container Yard to Container Yard.

**Cycle inventory:** An inventory system where counts are performed continuously, often