

## ORIGINAL ARTICLE

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## ABSTRACT

The present work aims to reveal the possibility of reducing costs of companies with interference in Supply Chain Management, specifically in Warehousing and Distribution, through the detailed presentation of the theme cost reduction and case study of the results obtained by the company UPS, chosen for being the largest company in the logistics area.

The study seeks to answer the question of how we obtain cost reduction through Storage and Distribution, from the perspective of Logistics. For this, the perspective of logistics in business administration will be presented, clarifying the concepts of management and vision of the supply chain, transportation and storage, collection and distribution of products, combining the proposed case study with the concepts of relevance in the area of Supply Chain Management (CS). As a result, we found that it is possible to achieve cost reduction by rational management of CS, highlighting the importance of Logistics, its tools and its history, showing the methods used by UPS in its management of CS, to achieve international levels of excellence in the area, and results above expected, paying special attention to each of the stages of management: Storage and Distribution of products. The paper concludes that companies that intend to establish themselves in the complex field of logistics must not only understand all the links in the supply chain, having as value the commitment to the result of quality, but also an efficient Storage and Distribution Management, with the use of modern integration tools as is the case of ERP systems, aiming at their real insertion in the international market that has numerous attractions. In order to succeed in reducing supply chain costs, a business model based on response with the financial sophistication required by best practices, total management and vision of the supply chain cycle is essential, achieving greater agility and effectiveness.

**Keywords :** Logistics, Supply Chain, Cost Reduction, Warehousing, Distribution.

### INTRODUCTION

The question “how to obtain cost reduction through Storage and Distribution, from the perspective of Logistics?” leads to the need to conceptualize some terms, from the area of business administration, such as logistics, which will be dealt with in the first Chapter of this work.

Considering the importance of knowledge of management tools, especially Logistics, which encompasses an impactful part of the companies’ business, the work as a whole seeks to demonstrate the way in which it is possible to achieve cost reduction through storage and distribution. In Chapter I we will explain the concepts of logistics and its history.

In the course of the conceptualization, it is intended to discover how it is possible to achieve cost reduction by the management of the supply chain, by the Storage and Distribution of products, with the substrate of the theory of Business Logistics, being this matter seen in detail in Chapter II, Supply Chain Management (CS).

Chapter III will often be addressed to reduce costs in the Supply Chain, informing of the business model based on response, the financial sophistication generated by best practices and the cycle of greater agility and effectiveness.

In Chapter IV we will explain the selected success case study that is the United Parcel Service of America (UPS) company. Ups was chosen for a case study because it is considered the largest company in the world in the logistics area. It was also chosen for distributing orders around the world, called express deliveries, being a world leader in the supply chain services category.

UPS in partnership with its subsidiary Supply Chain Solutions, a company created by UPS itself, which has achieved international levels of excellence in the area. The proposed study is of an applied nature, through documentary research and case study.

The study will be based on the elements published and located on the Internet about UPS (United Parcel Service), with a theoretical review on Supply Chain Management and cost reduction techniques, analyzing the results obtained by UPS.

The methodology is based on Vieira:

Data collection will be done at a certain time, but it recollects data and information from other past periods. The focus is on the phenomenon and the way it is characterized at the time of collection, and the data recovered from the past are usually used to explain the current configuration of the phenomenon. (VIEIRA, 2004, p. 21)

Finally, we will present the results and the answer to the question whether it is possible to reduce costs through the Management of Storage and Distribution under the Logistics approach.

### CHAPTER I - LOGISTICS

Logistics is a branch of the administration that has its birth and growth *pari passu* with the art of war, having evolved since the beginnings of humanity due to the need for organization and maintenance of soldiers in battles, and, constituting today in the military area, the difference between winning or losing. It deals eminently with the planning and operationalization of strategies to maintain war aimed at victory.

Expanding to Business Administration, Logistics is applied as the planning and realization of the collection, storage and distribution of products, constituting a vital part of the guarantee of the sustainability of companies, and can make it profitable depending on the management of their logistics system.

Logistics in business administration encompasses the concepts of management and vision of the chain that has as elements the transport, storage, collection and distribution of products, involving an intricate production chain and important share of economic activity. We will be allied to the proposed case study the concepts gathered by the theorist Ballou (2004), which has relevance in the area of Supply Chain Management.

Ballou informs that according to the International Monetary Fund the costs of logistics represent approximately 12% of the world's Gross Domestic Product! (BALLOU, 2004, p. 33)

Due to the above, we propose to highlight the importance of effective logistics with minimal costs, considering quality of service that is directly proportional to the reduction of rework or loss of customers among other consequences.

The weight of ups in the world market justifies the choice for case study, in view of its insertion that counts on the delivery of 15.5 million packages and documents daily, an air and land transport, with presence throughout the globe and a revenue that counted in 2008 more than U\$ 51 billion, equivalent to 3.9 billion packages and documents , with approximately 415,000 employees worldwide.

Logistics arises from the need to rationally organize the war area, as Ballou explains:

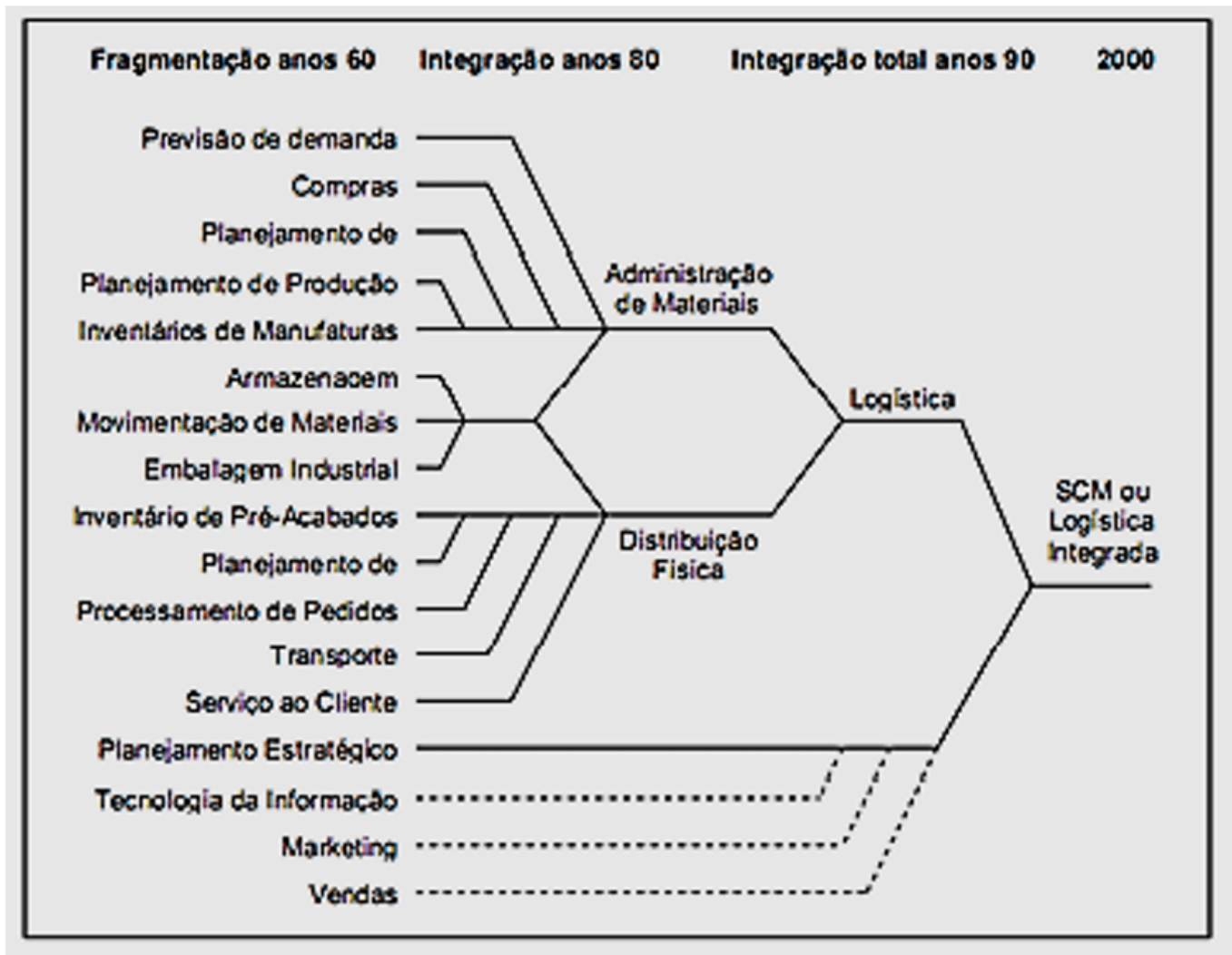
Before 1950, logistics was designed in military terms. It had to do with the acquisition, maintenance and transportation of military facilities, material and personnel. Although some authors before this time began talking about exchanging one cost to another, such as transportation costs with inventory costs, and discussed the benefits for the company of getting the right goods in the right place at the right time. [...] Physical distribution begins to emerge as a space of study and practice, which is the coordination of more than one physical activity associated with supplying the product to the market. LaLonde and Dawson (LaLonde and Dawson, 1969) traced the initial story. and [...] Fred Clark 1922 identified the nature of physical distribution and showed how different it was from the demand for marketing nature creation. Marketing as a discipline has been creating interest at this time and scholars that include distribution as a primary activity in the marketing mix, however, distribution seems to be defined more in terms of operating activities than physical distribution channels. Paul Converse (Converse, 1954), a marketing professor, said in 1954 that companies were paying much more attention to buying and selling than physical distribution. (BALLOU, 2006, p. 1)

Logistics science has evolved from this need for rational organization. This evolution occurred, according to Ballou:

The study and practice of physical and logistical distribution emerged in the 1960s and 1970s. [...] The cost of logistics in the USA represented 15 percent of the gross national product (Heskett et al., 1973). [...] For example, in the United Kingdom, they were 16 percent of sales (Murphy, 1972), in Japan, they were 26.5 percent of sales (Kobayashi, 1973), in Australia, they were 14.1 percent of sales (Stephenson, 1975), and in 1991 in China, they were 24 percent of GDP (Wang, 2006). [...] The recognition of these high costs led [Drucker] to declare physical distribution as one of the “most sadly neglected, most promising areas of American business (DRUCKER, 1962). (BALLOU, 2006, P. 1)

Taking advantage of the retrospect located in Rondado’s thesis (2007), we illustrate the evolution of Logistics:

Figure 1 - Evolution of the Logistics System



Source: Rondado (2007, p. 30)

## BUSINESS LOGISTICS

Business Logistics is a new area concerning the “study of integrated management, the traditional areas of finance, marketing and production” (BALLOU, 2004, p. 26), according to Ballou:

[...] logistics activities were carried out for many years by individuals. The companies were also permanently involved in movement-storage activities (transport-stock). The novelty then derives from the concept of coordinated management of interrelated activities, replacing the historical practice of managing them separately, and from the concept that logistics adds value to products and services essential to the satisfaction of the consumed and the increase in sales. (BALLOU, 2004, p. 26)

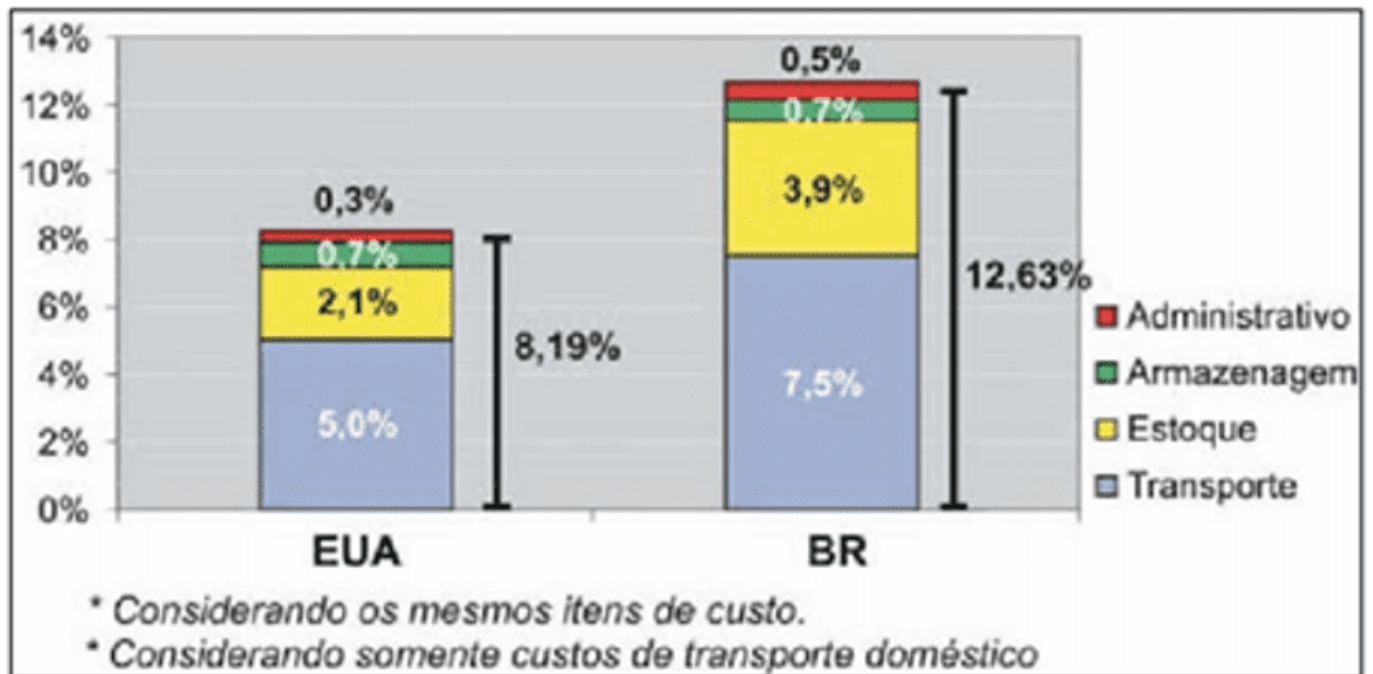
Business Logistics gives value to customers and suppliers, also for everyone who has an interest in the company. Manifest in time and space, or place. Ballou says that “products and services have no value unless they are in the hands of customers when (time) and where (place)” (BALLOU, 2004, p. 23), being strategic part as Ballou asserts:

When management recognizes that logistics/CS affects a significant portion of the company's costs and that the result of decisions made regarding supply chain procedures provides different levels of customer service, it is a condition of effectively penetrating new markets, increasing its market share and increasing profits. (BALLOU, 2004, p. 36)

Proof of this is in the Chart below, in which it compared the cost of logistics in Brazil with that of the USA, and Brazil has a higher cost:

Figure 2 – Supply chain

## How To Achieve Cost Reduction Through Warehousing And Distribution: A Logistic Approach



Source: Lima apud Rondado (2007, p. 30)

Checking the logistics costs in the USA it is worth presenting table contained in Bowersox; Closs and Cooper (2002, p. 46):

Table 1 – Supply Chain



**Tabela 1** Custos logísticos dos EUA, 1980 – 2000 (\$ bilhões exceto PIB)

Ano	PIB nominal (\$ trilhões)	Valor total dos inventários	Percentual da taxa de manutenção do inventário	Custo de manutenção do inventário	Custos de transporte	Custos administrativos	Total dos custos logísticos nos EUA	Custos logísticos (% do PIB)
1980	\$2,80	692	31,8	220	214	17	451	16,1
1981	3,13	747	34,7	259	228	19	506	16,2
1982	3,26	760	30,8	234	222	18	474	14,5
1983	3,54	758	27,9	211	243	18	472	13,3
1984	3,93	826	29,1	240	268	20	528	13,4
1985	4,21	847	26,8	227	274	20	521	12,4
1986	4,45	843	25,7	217	281	20	518	11,6
1987	4,74	875	25,7	225	294	21	540	11,4
1988	5,11	944	26,6	251	313	23	587	11,5
1989	5,44	1005	28,1	282	329	24	635	11,7
1990	5,80	1041	27,2	283	351	25	659	11,4
1991	5,99	1030	24,9	256	355	24	635	10,6
1992	6,32	1043	22,7	237	375	24	636	10,1
1993	6,64	1076	22,2	239	396	25	660	9,9
1994	7,05	1127	23,5	265	420	27	712	10,1
1995	7,40	1211	24,9	302	441	30	773	10,4
1996	7,81	1240	24,4	303	467	31	801	10,3
1997	8,32	1280	24,5	314	503	33	850	10,2
1998	8,79	1323	24,4	323	529	34	886	10,1
1999	9,30	1379	24,1	332	554	35	921	9,9
2000	9,96	1485	25,4	377	590	39	1006	10,1

Source: Bowersox; Closs E Cooper (2002, p. 46)

## LOGISTICS IN PRACTICE

A very didactic explanation of Costa summarizes the possibilities of performing logistics:

To collect, store and distribute goods, a transportation company may use its own facilities, contract third-party services, partner with other transportation companies, or combine all these alternatives. To evaluate the alternatives regarding the adequacy to the objectives of ensuring economic profitability for the company and quality of services provided to customers, at least four variables should be considered: level of quality of services intended to be provided, location of operating units (OUs), transport routes and cargo volumes moved in an OU and

between OUs. These variables are interdependent, which is why the evaluation of alternatives is a complex problem. (COSTA et al, 2008, p. 1)

Quality level, location of units, routes and volume of loads are interdependent and important variables in the effectiveness, efficiency and effectiveness of Storage and Distribution. In this sense Ballou informs:

In retrospect, which play a crucial role in defining the basis for physical distribution was a study conducted by Lewis et al. (Lewis et al., 1956). This study for the airline industry researched how it could compete better in transporting goods when costs were significantly higher than other forms of transportation. The study pointed out that it is necessary to display navigation from a total cost perspective and not just a cost of a transport. That is, although air freight costs can be high, air cargo, faster and more reliable, service can lead to lower stock costs at both ends of distribution. (BALLOU, 2006, p. 1)

The outsourced logistics market in 2000 was estimated at around US\$56.4 billion (BOWERSOX; CLOSS and COOPER, 2002, p. 29).

Logistics can be briefly presented according to Bowersox; Closs and Cooper (2002, p. 40-41):

Logistics is the process that connects supply chains in integrated operations. The cost of logistics performance is a relevant expense in almost all enterprises. Logistics service is measured in terms of availability, operational performance and reliability of services. (BALLOU, 2006, p. 1)

## CHAPTER II – SUPPLY CHAIN MANAGEMENT (CS)

It is important to conceptualize ‘supply chain’, for this we use the teachings of Ballou who says that supply chain:

is a set of functional activities (transport, inventory control, etc.) which are repeated numerous times along the channel through which raw materials are being converted into finished products to which consumer value is added

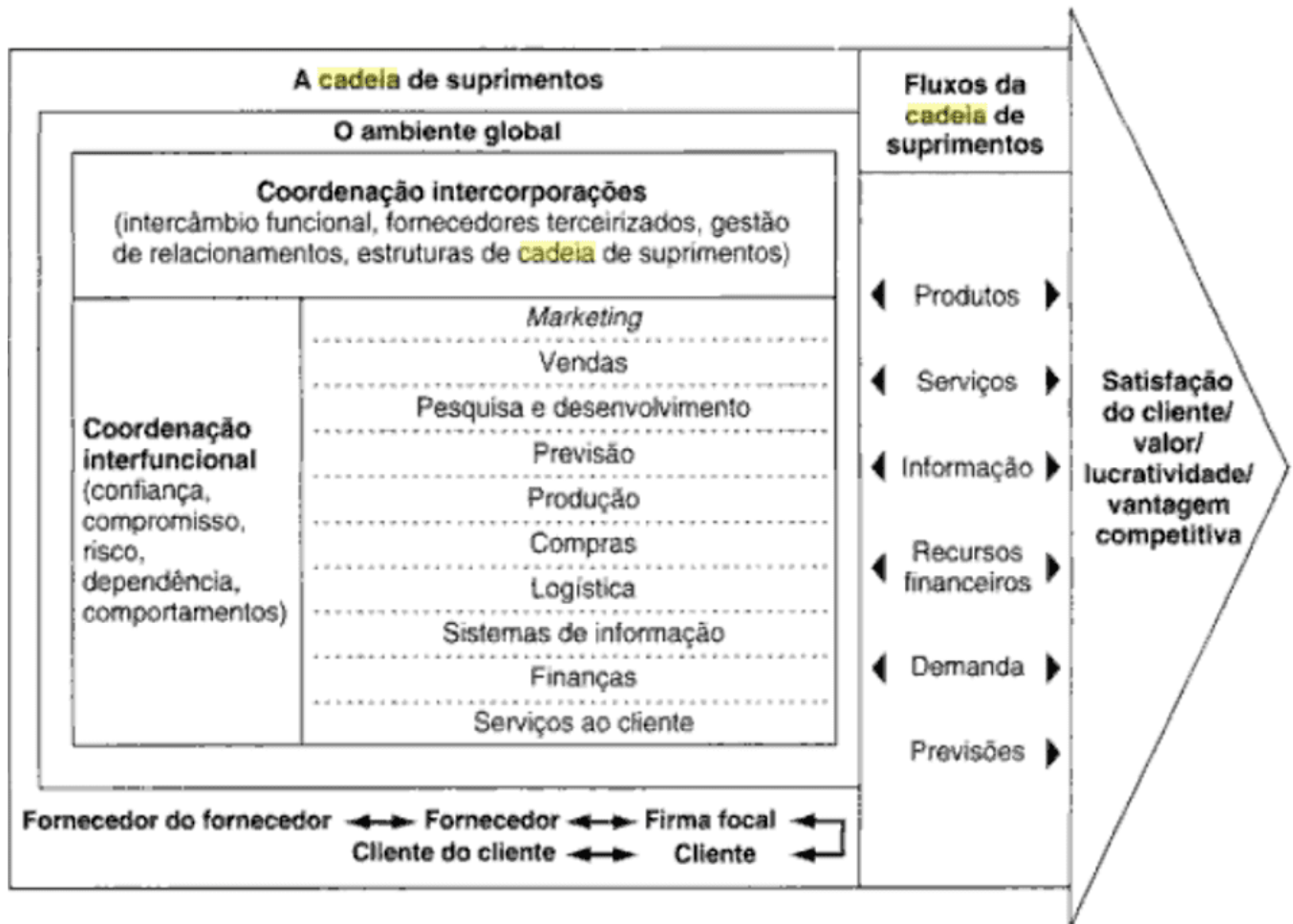
(BALLOU, 2004, p. 29)

A set of functional and repeating activities demonstrates the need to establish the standard. Also, according to Ballou Logistics is a part of the “supply chain process, not the entire process” (2004, p. 27). In this way it is necessary to define the supply chain process, also called supply chain management:

Supply chain management (SCM) is a more recent term that captures the essence of integrated logistics and even surpasses it. Supply chain management highlights the logistical interactions that occur between the marketing, logistics and production functions within a company, and those same interactions between companies legally separated within the product flow channel. Opportunities for improving costs or services to consumers are realized through coordination and collaboration between the members of this channel at points where some essential activities in the supply chain may not be under the direct control of logistics experts. (BALLOU, 2004, p. 27)

The following supply chain schema applies to any organization:

Figure 3 – Supply chain



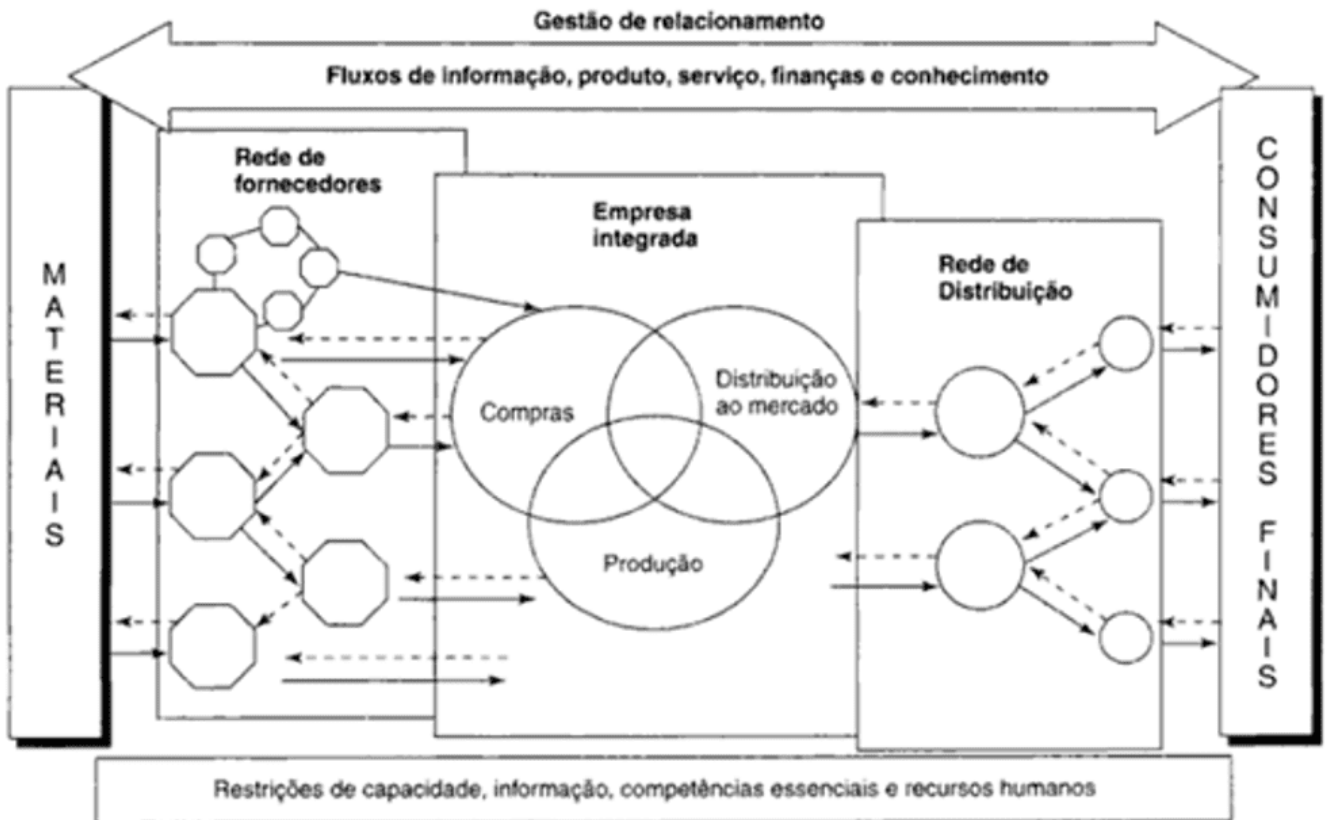
Source: Mentzer et al apud Ballou (2004, p. 27)

### CHAPTER III - COST REDUCTION IN CS

The overall supply chain model located in Bowersox; Closs and Cooper (2002, p. 23), provides for the shift of traditional independent business arrangements to management coordination, "in order to increase market impact, total efficiency, continuous improvements and competitiveness". According to the authors the idea is simple, as explained in the figure below:

Figure 4 - Supply chain simplified scheme

## How To Achieve Cost Reduction Through Warehousing And Distribution: A Logistic Approach



Source: Bowersox; Closs E Cooper (2002, p. 23).

In the supply chain there is one element that makes a difference that is information technology. To Bowersox; Closs and Cooper (2002):

The most important element that enables supply chain management is information technology. In addition, the rapid appearance of supply chain arrangements is driven by four related forces: (1) integrated management; (2) responsiveness; (3) financial sophistication; (4) globalization. (BOWERSOX; CLOSS and COOPER, 2002, p. 24)

Bowersox; Closs and Cooper (2002, p. 27) present important paradigms in supply chain management:

## How To Achieve Cost Reduction Through Warehousing And Distribution: A Logistic Approach

- Paradigm of information sharing – related to cooperation in information sharing. It is a collective work;
- Paradigm of process specialization – elimination of non-productive tasks, designing all processes in the supply chain in order to identify responsibilities and financing.

The benefits of integrated management, according to Bowersox; Closs and Cooper (2002, p. 30) revolutionized the supply chain, and the response-based business model shows gains over timing:

The response-based business model seeks to reduce or eliminate confidence in forecasting by joint planning and rapidly exchanging information between participants in the supply chain. For example, administrators can share information to improve forecast accuracy or even eliminate forecasts in an effort to reduce early inventory disposition. (BOWERSOX; CLOSS and COOPER, 2002, p. 30)

In the business model based on the response the cycle obeys the sale, followed by the purchase of components and materials, production, delivery. In this sense it really is simple (BOWERSOX; CLOSS and COOPER, 2002, p. 30).

The financial benefits of the response-based model are undeniable. “Direct and fast delivery represents less inventory and less need for distribution capabilities.” (BOWERSOX; CLOSS and COOPER, 2002, p. 34).

The aspects that give financial sophistication to the model are the “conversion of (cash to cash), minimization of on-call time and cash turnover” (BOWERSOX; CLOSS and COOPER, 2002, p. 34).

However, there is an antitrust concern regarding the possibility of “commercial collaboration between large corporations [which] could serve as a disadvantage to consumers and other less powerful commercial organizations”. Another concern is related to consumer value. (BOWERSOX; CLOSS and COOPER, 2002, p. 40-41).

The importance of supply chain management in financial terms, according to Ribeiro; Coscarelli; Ladeira (2008, p. 5)

The value created by reducing the cost of financing goods along the supply chain

is considered more representative than any reduction in the costs involved in their transportation or storage. In Lugli's sense (2006), through SCF companies could intelligently obtain this strategic advantage by managing their cash flows for the benefit of their suppliers, and not to their detriment. (RIBEIRO; COSCARELLI; LADEIRA, 2008, p. 5)

For control and movement, a good logistics information system is needed, which is how it functions as "links that connect logistics activities in an integrated process, combining hardware and software to measure, control and manage logistics operations", since operations take place within and along the supply chain, and hardware use includes computers, data storage devices, input and output instruments, barcode printers, optical readers, GPS and others, added to software that includes systems and applications or programs used in logistics. (NAZÁRIO, 2008, p. 2)

Logistics information systems have four different functional levels: transactional system, management control, decision support and strategic planning. The pyramidal format presented in Figure 1 suggests that the implementation of a robust transactional system is the basis that sustains the improvement of the other three levels. (NAZÁRIO, 2008, p. 2)

The information system is the basis for logistics planning and coordination activities, called a transactional system, system information is made available to other areas such as marketing, finance, etc. "A transactional system is characterized by formalized rules, interfunctional communications, large volume of transactions and an operational focus on day-to-day activities." (NAZÁRIO, 2008, p. 3)

The emphasis on information system efficiency is related to the combination of structured processes and large volume of transactions. In this way occurs the transactional process that is the heart of logistics: the order cycle. All activities and events related to the cycle must be processed: "order entry, credit check, inventory allocation, banknote issuance, shipping, shipping and product arrival to the customer". (NAZÁRIO, 2008, p. 3)

Information about all cycle events should be readily available, considering that order status is a key point for the quality of customer service. If there is a lack of integration between



logistics operations, it will focus on a problem “commonly found in transactional systems that are not under an integrated management system” [...] and may occur in three ways: “Between logistics activities performed within the company; Between company facilities; Between the company and others belonging to the supply chain or logistics service providers.” Financial, productivity, quality and services data are used to measure indicators (NAZÁRIO, 2008, p. 3)

The systems are the basis of the success of logistics operations, according to Nazário (2008):

It is the basis for logistics operations and source for planning and coordination activities. Through a transactional system, logistics information is shared with other areas of the company, such as: marketing, finance, among others. A transactional system is characterized by formalized rules, interfunctional communications, large volume of transactions and an operational focus on day-to-day activities. The combination of structured processes and large volume of transactions increases the emphasis on information system efficiency. From it, the main logistic transactional process occurs: the order cycle. With this, all activities and events belonging to this cycle must be processed: order entry, credit check, inventory allocation, issuing notes, shipping, shipping and arrival of the product to the customer. Information about such activities/events should be readily available, as order status is an increasingly necessary issue for good customer service. (NAZÁRIO, 2008, p. 4)

The integration between logistics operations is necessary and the lack of it results in a problem commonly encountered in transactional systems and that can occur in three instances: “Between logistics activities performed within the company; Between company facilities; Between the company and others belonging to the supply chain or logistics service providers.” This level allows you to use the information available in the transactional system for the management of logistics activities. Performance measurement includes indicators: financial, productivity, quality and customer service. (NAZÁRIO, 2008, p. 4)

In strategic planning, information is, according to Nazário

support for the development and improvement of logistics strategy. Decisions



often made are extensions of the level of decision support, although they are more abstract, less structured and focused on the long term. As an example, we can cite decisions based on the results of facilities location models and the analysis of customer responsiveness to improving a service. (NAZÁRIO, 2008, p. 5)

The companies operated with a number of programs and systems, the system aimed at the integration of other systems comes to solve old problems of information integration in companies, "In addition, the implementation of an ERP system allows companies to make a review in their processes, eliminating activities that do not add value". (NAZÁRIO, 2008, p. 4)

To have a base of the cost of deploying an ERP system, which sums up gigantic amounts, note the following:

The costs of acquiring and implementing these packages generally range from R\$ 400,000 to R\$ 20 million. These values depend mainly on the size of the company (number of users and installations) and its operation (chosen modules of the system). In general, it is estimated that for each R\$ 1 spent on the acquisition of the license, R\$2 is spent on consulting and between R\$0.5 and R\$1.5 on equipment. Some of the main companies that supply this type of software in the world are already in Brazil. SAP, in addition to occupying the world leadership in this market, as shown in Figure 2, also occupies this position in Brazil with 38% of software license sales, on the other hand Datasul has the largest number of customers with 23% of the market. (NAZÁRIO, 2008, p. 5)

In terms of values, the entry of ERP systems to companies brings gains and this occurred by stimulating the millennium bug. In a survey by AMR1 (an American business management application research company) it was estimated that "this market will go from a global turnover of \$14.8 billion in 1998 to \$42 billion in 2002." (NAZÁRIO, 2008, p. 7)

#### CHAPTER IV – RESEARCH

United Parcel Service[3] (UPS) began operations in 1907 in the United States with the goal of being a messenger company. UPS today is a \$49.7 billion company with a focus on world trade. Considered the largest package delivery company and a leading global provider of

specialized transportation and logistics services. Its activities include controlling the flow of goods, funds and information in more than 200 countries and territories worldwide. UPS manages the movement of goods and all the information and values that follow in these goods.

According to Rondado “package operation is the company’s main source of revenue” that generated in 2006 about 80% of UPS revenue, reaching 47.5 billion. There are more than 60,000 authorized stations, hundreds of vehicles and aircraft are part of the UPS fleet. UPS supply chain solutions (UPS-SCS) has warehouses in 120 countries. (RONDADO, 2007, p. 124).

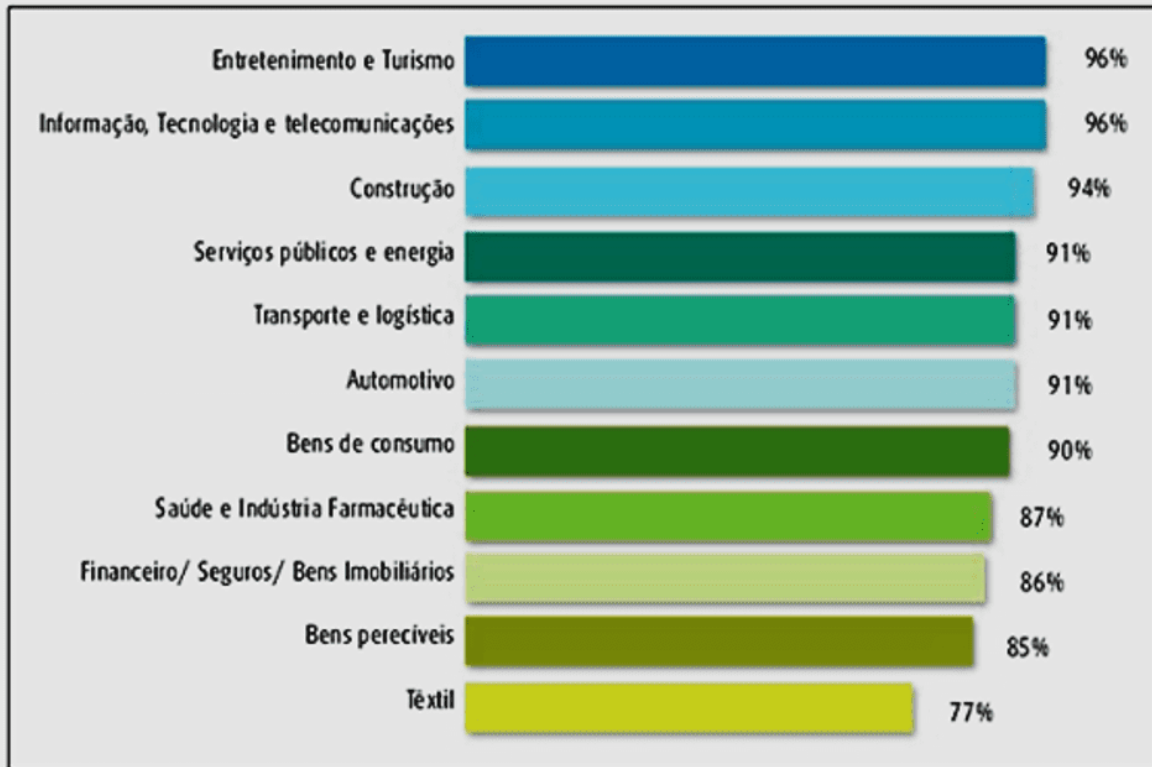
UPS-SCS has “international cargo transportation, logistics and distribution consulting, customs services, supply chain design and planning, urgent shipment of goods and technical repair of equipment and parts” (RONDADO, 2007, p. 124)

UPS, from 2002, acquired companies in Latin America, such as the Fritz company that guaranteed the presence of UPS in South America. With “the range of services that were offered by Fritz and incorporated into UPS [that] go in transportation under all types of modes for storage, materials management and distribution ”. (RONDADO, 2007, p. 127)

In this incorporation, we highlight the collection, storage and management of products, clearances and cargo transportation, UPS greatly increased its performance, there was spectacular expansion of UPS. (RONDADO, 2007, p. 127)

With excellent growth prospects evaluated in 2006, in addition to growing vertically in terms of operations, UPS grows in terms of segments covered. UPS projects its expansion in the sectors of the economy “detail is that transport and logistics appear in fifth place” (RONDADO, 2007, p. 129):

Figure 5 – UPS growth projectiontion



Source: UPS apud Rondado (2007, p. 30)

It should be noted that in 2004 through its president, UPS spoke in this way:

[...] At the 2004 Third Part Logistics-3PL Summit USA in Chicago, United Parcel Service of America (UPS) President Mike Eskew declared that the world of commerce was at a tipping point where several rules and concepts would have become outdated. In Eskew's sense, the emergence of global customers would characterize a new scenario, in which companies would have to devise innovative ways of obtaining strategic advantages (SHISTER, 2004), and part of this effort would depend on greater alignment of decisions regarding the physical and financial integration of logistics flows, either in the context of integrated logistics or in the context of SCM. (RIBEIRO; COSCARELLI; LADEIRA, 2008, p. 4)

### UPS CASE

UPS has a history of working with large companies. Bowersox; Closs and Cooper (2002, p. 29) exemplify the work of UPS, which stocks Nike shoes and accessories in its warehouse, processing that company's orders, hourly.

Already in 1990 the Cisco company was able to achieve 100% growth thanks to the partnership with UPS, according to Bowersox; Closs and Cooper (2002):

Working with UPS, Cisco acquired control of the distribution of its supply chain, enabling time-definite deliveries across Europe from five to eight days via a single point of contact. With the Oracle inventory control system connected directly to ups logistics management system, Cisco now tracks product-to-destination journey in real time. The extra control measure allows you to intercept, reroute, or reconfigure requests in no time. (BOWERSOX; CLOSS and COOPER, 2002, P. 49)

United Parcel Service, Inc. is a delivery company that operates worldwide. Headquartered in Atlanta, Georgia, it delivers 1.8 6.1 million customers and recipients each business day. United Parcel Service strives to integrate efficient transportation and information processes to better accommodate its customers and remain the largest packaging and delivery industry. The operates in three segments: National Packages (United States) operations, international package operations and Supply Chain & cargo operations. (BATSON et al, 2009, p. 1)

In 2000, UPS was named by Fortune magazine as the Most Admired in the World, acting in mail, packaging and delivery of company merchandise. The UPS information technology unit, which had been the recipient of the Smithsonian Computerworld award in 1991 and 1997, the company won a place among the 100 most important companies of the year 2000. (ROSS, 2001, p. 5)

At that time it was already recognized as the most advanced company in physical integration and online business practices, and senior managers described how UPS "offers total solutions to the needs of global commerce customers." Many of the awards received in UPS 1999-2000 were due to recognition of UPS's ability in terms of information technology. (ROSS, 2001, p.

5)

UPS has had the ability to identify new business opportunities, in addition to improving its core activity, UPS Believes that the Internet offers new opportunities to provide global trading solutions to its customers. UPS created e-Ventures, a subsidiary of UPS. E-Ventures was an incubator in which ideas explored generated internally or by potential alliance partners. The group had evaluated more than thirty ideas in its early years and senior management funded four of these concepts as new business initiatives. Each of the four companies was expected to quickly deliver profits. (ROSS, 2001, p. 5)

In 2000 the company acknowledged that the organizations focused almost entirely on the front end of their companies and were unable to accomplish. E-UPS Logistics completes the “behind the scene” menu to the services that were wanted to be managed by logistics as a fine process. In this sense, an order given at the location of a web client to when the order was delivered. Services included storage, inventory management, transportation and delivery, management reports, returns management, customer service and telephone support. (ROSS, 2001, p. 5)

The success of e-Logistics, UPS management decides whether to fold it into a business unit registry, such as Worldwide Logistics, or continues to operate as a separate subsidiary. (ROSS, 2001, p. 5)

UPS’s IT Management for E-Commerce meant an initiative in which they were built on a highly centralized and standardized IT infrastructure. A replicated data center in Atlanta, with operations from the main data center in Mahwah. Sensing that UPS could not afford downtime, Ken Lacy, the CIO, decided to switch operations on a daily basis between the two data centers to ensure they could deliver operations without interruption in the event of a disaster. (ROSS, 2001, p. 5)

Centralization and standardization led to high profitability and effective IT operations, which had long been a priority at UPS. In the mid-1990s, however, management wanted to leverage its infrastructure to make it more flexible and responsive to the customer. UPS identified a variety of ways it could leverage its infrastructure to generate value for its customers. For example, customer information, database maintenance information about each customer,

browsing habits. (ROSS, 2001, p. 5)

The customer gives us information so that we can provide them with source and destination management. If they perform different shipping products, then this is good, but if they are shipping similar products. (ROSS, 2001, p. 5)

With this really wanted to minimize warehouses, minimize personnel to warehouses, reduce their stocks, so you can do this out of one or two warehouses. In addition, the IT unit started to create more modular applications that can be reused. This development time reduced, so that applications could be delivered faster. (ROSS, 2001, p. 5)

With the Internet, tracking was the first application and it was just reusing mainframe-based technology. An interface module was written that was originally used for customer service with an environment monitoring interface. (ROSS, 2001, p. 5)

As the company learned how to leverage its infrastructure, the IT unit found new ideas to solve the agility of order delivery using new systems that quickly multiplied. However, the emergence of exacerbated the demand for IT resources. (ROSS, 2001, p. 6)

Despite an annual IT investment of nearly \$1 billion, UPS could not respond to every system development request that could show a positive ROI. UPS Management noted the need for governance of structures that would allocate IT resources to preserve the most strategic opportunities and infrastructure standards. (ROSS, 2001, p. 6)

In 1985, when UPS offered a single package delivery service at a single price and was generating revenue of about \$8 billion, the company's IT unit had a budget of approximately \$50 million. Some of the company's operating units based their own IT teams to support local needs, so total IT spending was about \$75 million. By this time, the competition was introducing package tracking services most notably, which were heavily dependent on information processing. However, UPS Management was not convinced that customers really cared about follow-up and they were initially reluctant to invest in a monitoring capability. According to Barron (Forbes), "UPS used to be a truck company with technology. Now it's a technology company with trucks." (ROSS, 2001, p. 5)

However, when Nelson Oz became CEO in 1986, it forced the company to invest heavily in information technology and develop the ability not only to control, but packages to offer a wider range of services. (ROSS, 2001, p. 5)

The International Package segment delivers in 200 countries and territories businesses around the world, including between Member States. Supply chain and freight operations specializes in freight shipping, logistics and business and service solution internationally. Operating as the ninth largest airline in the world and with a fleet of land approximately 107,000 vehicles covering all residential ZIP Codes in the United States. (BATSON et al, 2009, p. 1)

In his study on “The Importance of Information Systems for Logistic Competitiveness”, NAZÁRIO reports that with ERP (Enterprise Resource Planning) companies have opportunities to develop their businesses. “Customer orders and resupply, inventory requirements, warehouse movements, transport documentation and invoices are [...] more common information and logistics”. (NAZÁRIO, 2008, p. 1)

Not long ago all the information was mainly based on paper, which was unreliable and error-prone. “The decreasing cost of technology, coupled with its ease of use, allows executives to be able to rely on the means to collect, store, transfer and process data more efficiently, effectively and quickly.” (NAZÁRIO, 2008, p. 1) Exemplifies saying

An example of strategic positioning based on information technology is the case of express delivery companies. Fedex was the first to offer delivery services for the next day in 1973 in the United States. In the late 1980s, with high investments in IT, she started to control the entire customer order cycle. With that, it was able to maintain full traceability of the order. Currently, its system processes 63 million transactions per day, which is equivalent to 3 million packages delivered. UPS, the largest American company in this segment, invested US \$ 1.5 billion between the years 1986 and 1991 to reach the same level as its competitor with respect to the services provided. (NAZÁRIO, 2008, p. 1)

In the institutional presentation it is possible to perceive the diversity of the products offered by UPS:



Figure 6 - UPS technology services

## Serviços de Tecnologia

- O **UPS WorldShip®**, um software grátis baseado no Microsoft® Window, usa os dados de clientes existentes em sua empresa para gerar etiquetas de remessa e outros formulários. Ele captura as informações de faturamento de seus clientes, tornando a contabilidade mais eficiente
- O **UPS Internet Shipping®**, Prepare, envie, rastreie e pague remessas on-line. Você pode não apenas enviar pacotes individuais, pode também criar um conhecimento de embarque para remessas de frete aéreo e LTL usando endereços e informações de mercadorias armazenados.
- UPS CampusShip®** é um sistema de remessa seguro, baseado na Web, que permite que vários funcionários espalhados por ambientes do tipo campus, grandes edifícios de escritórios ou em locais dispersos em todo o mundo enviem documentos e pacotes a partir de qualquer computador com acesso à Internet. Integre os dados de remessa em seus processos da sala de correio de retaguarda, de rastreamento, faturamento e pagamento para aumentar ainda mais a sua eficiência.



**Descubra o encaixe perfeito**

Não importa se você faz uma remessa por dia ou mil

Source: UPS institutional slide

Although UPS gained market share in the United States due to DHL's departure, conditions of economic instability still offset any increase in margins and profits. U.S. operations. S. Domestic has recently due to total volumes suffered from a decrease of 4.3% due to lower rates that resulted from the current economic situation. International operations did not have the same type of fall in operating margin, but still suffered falls. This was due to the decrease in total volume of only 1% Y/Y and a gain of 1.6% in 4Q08. Supply Chain & Cargo Operations decreased 291 bps Y/Y. UPS did a good job of maintaining its Q/Q margins even though logistics recorded a revenue swell. (BATSON et al, 2009, p. 1-2)

UPS has continued to grow in its long-term operations over the past two years in relation to Transportation/Industry Delivery Services. Within the United States, UPS has improved its position with the absence of DHL, one of its main competitors in the domestic package market. However, the gains in your position are not



enough to cover the volume losses that have occurred due to the current economic crisis. UPS's projection is to expect a year of challenges throughout 2009 because of the low economic and change in the packaging mix that began in 2008. (BATSON et al, 2009, p. 2)

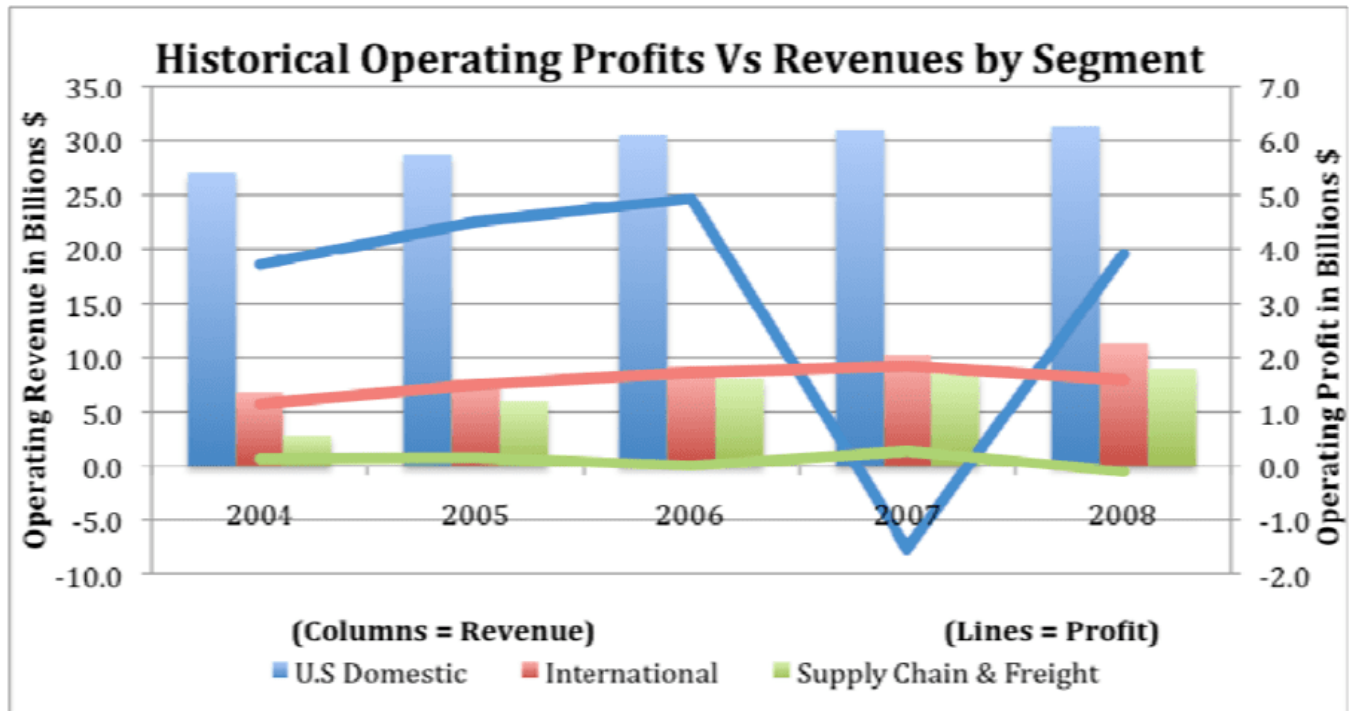
Global economic growth, eventually UPS will have the opportunity to benefit from the future. UPS will continue to grow as trade barriers are reformed and, when growth in consumer markets is evident. Currently, UPS prioritizes just-in-time inventory management, which allows them to reduce operating costs and potentially improve their service. (BATSON et al, 2009, p. 1-2)

Increased use of the internet to order goods has given UPS a tremendous opportunity to introduce its efficient transportation services. UPS Market Risk coverage is exposed to market risk of changes in certain commodity prices. Foreign currency exchange rates, interest rates and stock prices, and UPS mitigates its coverage exposure through the use of contracts, options and swaps. (BATSON et al, 2009, p. 1-2)

Commodity Price Risk UPS is exposed to changes in refined fuel prices. UPS applies fuel surcharges and option contracts for domestic and international services to reduce unfavorable fuel volatility and energy prices. Fuel surcharges are based on the U.S. Department of Energy's. For example, the spot price of a gallon of jet fuel kerosene averaged the fuel surcharge in 2008. Compared to the 2007 average the price of domestic air delivery of products was 25.17%, this was due to the substantial increase in fuel prices in 2008. (BATSON et al, 2009, p. 1-2)

Figure 7 – UPS Historical Profit

## Operating Segment Past Performance



When the cost of fuels rises at a rate significantly faster than the fuel surcharge rate, operating profit is negatively affected. Harmful changes in foreign currency exchange rates can have terrible effects on UPS. To mitigate your exposure to foreign currencies risk, they exercise the options and forward contracts. According to the "10K UPS, the managed company was successful in covering a negative spinning currency from \$42 million in 2007 to \$241 million positive in late 2008. The Risk Interest Rate is highly correlated with the interest curve. UPS adjusts fixed and fluctuating interest rates in response to market changes. AUPS has issued large amounts of debt in the past, which will accrue expenses associated with fixed and floating interest rates. UPS uses interest rate and interest swaps for currency transactions (BATSON et al, 2009, p. 2)

Comment on Recession's CEO says

We can look back on 2008 and 2009 as a true test of endurance and management skill that has been our brand for over 100 years. At some point, the recession will end and the economy will improve. A lot of companies won't make it. Others will

emerge and in a more competitive position. But a team will come out leaner, more focused, and in a better position to compete and grow... and I'm confident that UPS is going to be one of those companies. (DAVIS CHIEF EXECUTIVE OFFICER apud BATSON et al, 2009, p. 1-3)

### RESULTS

UPS home services account for 62% of operating revenues and has only fallen 1% since 2007, while its international service grew faster 22% in 2008. One of its biggest competitors, DHL, recently withdrew its U.S. operations, leaving a gap in market share for UPS to take advantage. United Parcel Service has a long history of having a strong ROE of about 25%, despite having a result of about 4% for shareholders. (BATSON et al, 2009, p. 1)

UPS Global has the numbers and results:

Figure 8 – UPS overview

## UPS Global Panorama Geral

- A UPS é a maior empresa do mundo em entregas expressas e líder global em serviços da Cadeia de Suprimentos.
- Entrega 15,5 milhões de pacotes e documentos diariamente
- Transporta no marítimo mais de 700.000 TEUs (unidades equivalentes a vinte pés)
- Áreas de atendimento: Mais de 200 países e territórios. Todos os endereços nos Estados Unidos e Europa
- A receita em 2008 excedeu U\$ 51 bilhões, total equivalente a aproximadamente 3,9 bilhões de pacotes e documentos
- 415.000 funcionários no mundo



Source: UPS institutional slide

UPS's strategy is to increase internal service revenues to its customer base by providing a wide and diverse range of products. UPS can also control costs through effective network change and limited expense growth. (BATSON et al, 2009, p. 3)

On the volatility of operating profit the same exhibited increases until 2007, when UPS experienced a drastic drop, resulting in an operating loss of \$1.531 billion. This was largely due to the Withdrawal of the Pesonfund's \$6.1 billion charge. (BATSON et al, 2009, p. 3)

The UPS international package attributes its overall success to its high-regarded E.u. domestic business. Expanding into international territories, UPS has been able to capitalize on growth opportunities. Growth in Asia has been driven primarily by global demand that has

increased air services between Asia and America in recent years. (BATSON et al, 2009, p. 3)

Europe is UPS's largest customer outside Brazil contributing 50% of its international revenues. The Supply Chain segment offers a supply chain design, cargo distribution, customs, email and consultation services. Its growth strategy is to increase the number of customers who benefit from repeatable supply chain. In 2008, revenue grew 5.8% due to the increase in international and domestic air transport. Revenues constantly increasing, but a declining growth rate. Operating profits were very volatile, with a decrease. (BATSON et al, 2009, p. 3)

The reduction in capital expenditures in 2008 was mainly a result of the timing of aircraft deliveries. This was the result of its global hub of expansion, as well as new constructions in Europe, Canada and China. UPS has also recently opened an international air hub in Shanghai, China. They have also begun building their new intra-Asia air hub in Shenzhen, China. In 2009, UPS expects capital expenditure reduction by another \$200 million, continues to expand as a company, but until the economy stabilizes, one can expect to continue its growth in a decreasing category. (BATSON et al, 2009, p. 3)

UPS Dividend amounts show the satisfaction of its shareholders. The company firmly believes in repurchasing shares and paying dividends in cash to increase shareholder value. The chart below represents UPS's commitment to delivering dividends at an increasing rate. (BATSON et al, 2009, p. 3)

Figure 9 – UPS Historical Profit

## Increasing Shareholder Value



### *Dividends*

Source: Batson et al (2009, p. 4)

In 2008, UPS increased its dividend by 35.4%, resulting in payment of \$2.219 billion, compared to \$1.703 billion paid in 2007. On February 11, 2009, UPS declared its first dividend of 2009, which was \$45 per share. (BATSON et al, 2009, p. 3)

The practice of regular payment in cash dividends has been adopted and the repurchase of UPS shares for the past few years at an increasing rate. With a huge increase of 36% compared to 2007. In the first quarter of 2008, the Board of Directors authorized an increase in the repurchase share of up to \$10 billion. The parties will be redeemed in the form of repurchase, open market purchases, or any UPS methods they deem necessary. The program ends when all authorized parties have been rescued. (BATSON et al, 2009, p. 3)

Figure 10 - UPS Value-Added Services

## Serviços de Valor Agregado

UPS World Ease <sup>SM</sup>	UPS Returns	Despacho Aduaneiro
<ul style="list-style-type: none"> <li>• Este serviço permite que sua empresa consolide vários embarques destinados a um único país em um único embarque.</li> <li>• Disponível para a área de exportação para mais de 70 países na América do Norte, Europa, América Latina, Ásia, África e Oriente Médio.</li> </ul>	<ul style="list-style-type: none"> <li>• Mercadorias ou documentos que precisam ser devolvidas de outros países.</li> <li>• O processo de devolução é automatizado através do sistema de remessas UPS.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimiza a quantidade de despachantes necessários e simplifica seus desembaraços alfandegários.</li> <li>• 80 anos de experiência nesta área.</li> <li>• Escritórios em mais de 80 países no mundo todo.</li> </ul>



In Figure 11 we have the diversification of products, which add revenue input in the company. Investors can therefore expect future repurchase in the next several years, which reinforces that they continue to increase equity. In the first quarter of 2009, average volume per day decreased 3.9% Y/Y as total revenue fell by 14.2% Y/Y. This was no surprise, as many analysts were expecting the company's revenue to fall in this first quarter due to global economic downactivity. Diluted EPS also fell dramatically to 54%. On a more positive note, UPS maintained its leading industry with small package margins and expanded its share in the domestic and international markets. (BATSON et al, 2009, p. 3)

UPS maintains a strong balance sheet ending 2009 with 4.3 billion cash and other negotiable

securities. UPS also created \$1.9 billion in free cash flow, dividends paid in the amount of \$449 million and \$113 million purchased from common stock. Valuation For our valuation analysis we reached an intrinsic price of \$3.48. (BATSON et al, 2009, p. 3)

The ups international segment was hurt by the depreciation of the dollar, as well as the economic crisis in Europe's environment. Macroeconomic trends continue to hurt UPS in its bottom line through the second quarter of 2009, causing pressure on margins. In 2010, UPS is able to regain margins and increase its top line. (BATSON et al, 2009, p. 3)

UPS also has the benefits of DHL's departure and the quality of logistics and distribution services: (BATSON et al, 2009, p. 3)

Figure 11 - UPSb CS Services



## Serviços de Logística e Distribuição

Gerenciamento de Fornecedor	Gerenciamento de Logística	Serviços de Distribuição	Serviços de Pós-venda
<ul style="list-style-type: none"> <li>• Conformidade de Fornecedor e Controle de Pedidos</li> <li>• Gerenciamento Mundial de Informações</li> <li>• Gerenciamento Mundial de Distribuição</li> <li>• Gerenciamento de Conformidade Regulatória</li> <li>• Gerenciamento de Transporte</li> </ul>	<ul style="list-style-type: none"> <li>• Desenvolvimento de <i>supply chain</i> e otimização de rede</li> <li>• Planejamento de partes e peças</li> <li>• Agilização de produtos para o mercado</li> <li>• Aperfeiçoamento de Atendimento ao Cliente</li> </ul>	<ul style="list-style-type: none"> <li>• Recebimento Interno</li> <li>• Serviços de Armazenamento</li> <li>• Reabastecimento</li> <li>• Operações "Pick-and-Pack"</li> <li>• Sistemas de Embarques Integrados</li> <li>• Devoluções Básicas</li> <li>• Controle de Estoque</li> <li>• Relatórios Padronizados de Gerenciamento</li> </ul>	<ul style="list-style-type: none"> <li>• Gerenciamento de Recuperação e Reciclagem de Ativos</li> <li>• Suporte Técnico em Campo</li> <li>• Planejamento de Partes e Peças</li> <li>• Gerenciamento de Devoluções e Consertos</li> <li>• Logística de Peças de Serviços</li> </ul>



## CONCLUSION

The work led to a deepening of the question posed "how to obtain cost reduction through Storage and Distribution, from the perspective of Logistics?" showing that many theorists showed that the most productive path is also the simplest: attention to the customer's request.

Companies that intend to establish themselves in the complex field of logistics must

understand all links in the supply chain, having as value the commitment to the quality result.

The tools of the administration fulfill a role of the search for the optimal result, rationality of resources and profitability, building of fundamental importance the knowledge of these tools. It is highlighted the ERP system that integrates the sets of systems and stands up to a need of companies with full vision of the business.

It has been seen that it is possible to achieve cost reduction through storage and distribution, through the UPS case study that in partnership with its subsidiary Supply Chain Solutions, has achieved international levels of excellence in the area demonstrated in this work.

The integrated Supply Chain Management allows to achieve the levels of excellence that UPS has achieved, with results higher than expected, paying special attention to each of the stages of management: Storage and Distribution of products.

In reducing costs in the Supply Chain, a business model based on response with the financial sophistication required by best practices and a total management and vision of the supply chain cycle is essential, achieving greater agility and effectiveness.

The successful case study of the company United Parcel Service of America (UPS), demonstrated this possibility, the results in terms of profits speak for themselves.

The offer of a range of services from the core of the UPS business to services that include consulting, integrated information systems, based on the ERP itself, among other products of the most diverse branches, confer the sustainability of the business, shielding even the occurrences of global crises.

All these alternatives of products and services have made UPS what it is today, a giant in the logistics area, which does quality work, valuing its focus, which is the customer.

UPS presents considerable income by guaranteeing its shareholders the product they expect regardless of the world scenario, as it is a consolidated company.

Finally, it is left to Brazilian companies operating in the logistics industry to seek a Storage

and Distribution Management with the use of modern integration tools such as ERP systems, aiming at their real insertion in the international market that has attractive numbers.

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#### APPENDIX – FOOTNOTE REFERENCE

3. Free translation of UPS history on the company's website: <http://www.ups.com/content/corp/about/index.html>

<sup>[1]</sup> Graduation in Business Administration.

<sup>[2]</sup> Guidance counselor. PhD in Education.

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