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Suitability of Brazilian ports to international standards of port needs: a case study in the port of Salvador

[Adequabilidade dos portos brasileiros aos padrões internacionais de necessidades portuárias: um estudo de caso no porto de Salvador]

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Abstract

The objective of this paper is to identify what requirements must meet Brazilian ports to suit the demands of the international market. To meet this goal the study discusses the evolution of the law from port modernization of ports and port participation in the Brazilian transportation system. It also discusses the major theories of international trade and theories of competitive strategies, utilizing the contributions of Adam Smith, David Ricardo, Michael Porter and Klaus Esser. The study makes a comparative analysis of the major ports in Latin America, identifying their position in the standings port in accordance with the guidelines established by the United Nations Conference on Trade and Development - UNCTAD, and makes a case study of the Port of Salvador, highlighting aspects such as organizing logistics and port infrastructure in identifying which generation port this port is the guidance from UNCTAD. The paper provides scientific contributions to the revision of theories dealing with international trade and shows the position of ports in Latin America in comparison.

Key words: UNCTAD, classification of ports, port modernization law.

Resumo

O objetivo desta pesquisar é identificar quais os requisitos que os portos brasileiros precisam atender para se adequar às exigências do mercado internacional. Para atender a este objetivo esta pesquisa discute a evolução portuária a partir da lei de modernização de portos e a participação portuária no sistema de transporte brasileiro. Também discute-se as principais teorias de comércio internacional e teorias de estratégias competitivas, utilizando as contribuições de Adam Smith, David Ricardo, Michael Porter e Klaus Esser. A pesquisa faz uma análise comparativa dos principais portos da América Latina, identificando suas posições na classificação portuária de acordo com as diretrizes estabelecidas pela Conferência das Nações Unidas para o Comércio e o Desenvolvimento – UNCTAD, e faz um estudo de caso do Porto de Salvador, destacando aspectos como a organização logística e infraestrutura portuária identificando em qual geração portuária este porto se encontra a partir das orientações da UNCTAD. A pesquisa traz contribuições científicas com a revisão das teorias que tratam do comércio internacional e apresenta a posição dos portos da America latina em comparação entre eles.

Palavras-Chave: UNCTAD, classificação de portos, Lei de Modernização Portuária.

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Introduction

This paper aims to identify what requirements must meet Brazilian ports to suit the demands of the international market. According to the National Transport Confederation- CNT (2011) Brazilian waterway system is comprised of inland and maritime waterways and port terminals, this system is divided into two subsystems: the river or waterway, which uses the waterways and rivers waterways, and the sea, which covers the movement on the Atlantic coast. The National Agency for Waterway Transportation - ANTAQ (2010) points out that part of these subsystems, ports and inland terminals and sea ports organized totaling 45 organized ports and 131 private-use terminals. These ports are managed by the public sector or the private sector through public concession, and are responsible for 14% in cargo transportation matrix.

The port sector handles annually about 700 million tons of diverse merchandises and is responsible for more than 90% of exports, highlighting the strategic role that the port system has to the economy, CNT (2010). In 2007, the ports were responsible for handling 76.7% of Brazilian international trade, totaling a value of US$ 188 billion in merchandise transactions, in 2010 the volume transported by sea accounted for 96% of exports and 88% of imports.

Still, Brazil has an unexplored potential waterway. There are about 40,000 km of navigable rivers and almost 7000 kilometers of coastline with strong potential for cargo and passengers transport (CAMPOS NETO et al., 2009a). Investment Program for Accelerated Growth - PAC will contribute to maintain and increase the level of competitiveness in the maritime transportation system, especially the cargo, but still won't satisfy the demand.

The strong growth of international trade between 2003 and 2008, highlighted the present demands in the Brazilian port system. Brazil, in harvest period, shows how unprepared is its transportation system when the Brazilian ports are embraced by massive queues of trucks for loading and unloading of merchandises. Besides this restriction, we can also highlight the lack of depth and coves of the cradles of movement, lack of effective accessible routes, and the lack of a comprehensive railway network, among other problems that prevent the evolution of Brazilian ports in domestic and foreign markets. The low efficiency and the deficit, especially

of infrastructure, which plague the industry began to warn a possible collapse, demanding an immediate action from the national government.

Therefore this research aims at identifying what requirements must meet Brazilian ports to satisfy the demands of domestic and foreign markets. For that, a methodology developed by the evolution UNCTAD port (United Nations Conference Trade and Development) is used, it can be considered as a port classification tool that classifies the ports according to the generation they belong. This tool allowed us to identify the position of the South American ports comparing them with each other. It was noticed that these ports need more investment in infrastructure, technology and especially management.

The research methodology adopted in this study was qualitative, were made researches and consultations on sites and in specific bibliographic collection that allowed the survey of necessary information for its development.

The research provides theoretical contributions about the review of the theories of international trade which allows to identify the features expected of a port by the international market. Another contribution of that research is the identification enables the position of the South American ports in comparison to each other. It was noticed that the Brazilian ports, despite numerous bottlenecks, have better structure to compete in foreign markets.

The study was divided into four sections: the first discusses the port evolution based on the port modernization law, the law n. 8.630/93, and the port participation in the Brazilian transportation system. In the second section is made a discussion about the main theories of international trade and theories of competitive strategies, using the contributions of Adam Smith, David Ricardo, Michael Porter and Klaus Esser. In the third section, we make a comparative analysis of the major ports in Latin America, identifying their positions in the port classification, according to guidelines established by the United Nations Conference on Trade and Development - UNCTAD.

In the fourth and last section, is made a study about the Port of Salvador, highlighting the aspects of logistics organization and port infrastructure, port hinterland and quality service level and the identification of the port generation according to UNCTAD. Also in this section will be identified the investments that the federal, state and city are doing to contribute to the

advancement of port infrastructure so that it assumes an important role in the international market and achieve a degree of competitiveness necessary to consolidate itself in the internal market and overseas market. Finally are made these final considerations.

1. Brazil and the new vision port

In 1993, Brazil created the Federal Law 8.630/93, called the Port Modernization Law. The purpose of this law was to decentralize and break up monopolies, encouraging collective participation and competitiveness between the Brazilian ports. According to Barat (2007) Ball State remains responsible under the infrastructure including, for example, supervision, environmental management and the promotion of commercial ports. So in 2001, was created the National Water Transport - ANTAQ, responsible for supervision and regulation of the operation of the waterway and port infrastructure. In 2007, they created the Special Secretariat of Ports - SEP, responsible for fostering the development and management sector.

The Brazilian port system also changed with the privatization of port operations such as granting to the States, the lease of terminals, the implementation of port authorities, the creation of the Port Authority Councils (CAPs), the loose management of port services through the Governing Body of Labor (OGMO), among others.

Technological advances and globalization made the concept of port suffer changes, it passed from the conception of the entrance door, to the conception of organized port. The Port Modernization Act brought the concept of organized port to port operations in Brazil. This concept defines the way the port is built and equipped to satisfy the needs of handling, storage and shipping of merchandises. From these new ideas and influence, the ports of the world, began to assume functions that add value to their core business, such as the commercial, industrial and distribution of merchandises. Those who took these functions are according to UNCTAD, called ports of the second and third generation. For Silva and Coco (1999), these ports attain the status of ports hubs or hub port, while the other ports are restricted to food service or feeder port.

With the Port Modernization Law, the country now has a new institutional setting. Monie and Vidal (2006), as can it be seen in Table 1 (Appendix), presents the new institutional structure

of Brazilian ports. This new structure established by the Port Modernization Law contributes to the advancement of Brazilian ports in relation to the concepts of infrastructure, planning and port management.

Another change that modernization of the Brazilian ports brought was the perceived need of multimodality and intermodality for freight transportation. Unfortunately the system of cargo transportation Brazil still faces problems, such as low investment in infrastructure and almost exclusive use of the roads, preventing the intermodal transport thereby increasing the logistics and costs of operation.

2. Theories of international trade and theories of competitive advantage

In the early eighteenth century economists Adam Smith and David Ricardo, addressed the issue of the advantages of international trade at this time had as main objective the trade surplus. His theories have helped to identify why the need for trade and what their actual benefits and costs that contribute to the development of a nation.

The theory of competitive advantage of Smith (1985) also known as the theory of absolute advantage was considered the basis for foreign trade that considered the absolute advantage of a country was a result of its productivity. Smith (1985) stated that the absolute advantage of a country was the result of its efficiency to produce more using less inputs. He claimed that the trade surplus does not always reflect the benefits of trade transactions, and volunteer activities among the countries involved in the transaction would have great potential to benefit those involved in commercial operation, because for him there in exchange transactions between countries, only one scarce factor of production, labor and constant returns to scale. In this analysis, Smith (1985) does not focus on the interests of the nation, but rather the needs of economic agents involved.

If a foreign country is able to deliver a commodity at a lower price that the goods manufactured by the country concerned is best to buy it with a portion of the production activity itself employed so that one can derive some advantage. It is noteworthy that this approach absolute cost advantages of a country are linked to its natural advantages are best export products, which has an absolute cost advantage and import those in which there is no

such advantage. Thus the result of this transaction will increase production, increase the wealth of nations and world welfare, since the country became an expert on low-cost products as soon produce more using less capital, Smith (1996).

Are perceived limitations to the theory of absolute advantages in the cost of Smith, country inefficient costs in absolute terms could not participate in international trade transactions. This limitation was discussed by David Ricardo, who introduced the theory of comparative advantage. Ricardo (1982) mentions that even if a country has higher efficiency in producing goods, it may have advantages with free trade for both countries involved in the transaction. That is, even if a country is the leader in cost of a product, they need the exchange mechanism for a lower price for the products in which it has absolute advantage.

Melo and Moreira (2003) emphasizes the importance of the theory of comparative advantage of Ricardo, who still maintain the reality of international trade contributing to the growth of world production, with the premise that each country specializes in producing the good in which it has comparative advantages. The authors explain that the Ricardian trade theory would be entirely determined by supply, in which countries need to import products relatively cheaper than if they were produced domestically and export products relatively more expensive than if they were sold domestically, the comparative advantage is measured by the opportunity cost of production.

In this context arises Michael Porter, who denies the classical theories of international trade and proposes the theory of competitive advantage among nations, which goes beyond the concept of the theory of comparative advantage of Ricardo. The theory of competitive advantage of nations Porter (1989) aims to identify the key aspects of each nation. This theory allows companies members of a nation to build and maintain competitive advantage by providing integration and maintenance in the international market.

By asserting that the theory of comparative advantage does not assign a role to corporate strategy, seeking to improve the technology and product differentiation leaving the business at the mercy of government policies, Porter (2001) criticizes the Ricardian theory and reinforces the goals of competitive advantage nations. Despite the criticism, Porter (1989) as well as Smith (1985) and Ricardo (1982) argue that a nation should specialize in industries and

sectors in which their companies are relatively more productive and import the products and services for which their firms are less productive than foreign rivals.

Productivity is defended by Porter (1999) as the main significant factor in national competitiveness. For him, the economic competitiveness of companies and nations depends on the way productivity labor and capital are employed. Porter (1989) argues that productivity growth when companies invest in new technologies, training, advertising, improvement of production processes and management. In his work "The Competitive Advantage of Nations" Michael Porter identified the determinants of competitive advantage in a nation or industry, and describes how these determinants behave together and the roles they play in a nation, strengthening the value of innovation to be fostered by a country to their companies. Therefore, in addition to productivity and innovation, the author emphasizes that the success of an industry or nation in the international market depends on four determinants: factors of production, domestic demand, suppliers and the strategy and structure, forming the so-called National Diamond that is the creation of competitive advantage in a systemic strategic environment.

Porter (1989), describing each determinant, states that they are internal to a country contribution, its ability to create, innovate and improve to achieve and maintain competitiveness in the international market. This capability enables companies to increase their income through new products and processes, rather than just transfer the funds for higher yields. Therefore, the theory of competitive advantage through the National Diamond aims to group the determinants into categories such as human resources, physical resources, knowledge resources, capital resources and infrastructure that may contribute to the competitive advantage of nations who know how to reduce costs and increase quality of these determinants.

An important point stressed by the author on domestic demand is the fact that the need to satisfy the most demanding domestic consumers leads the industry or the nation to seek constant improvement of its production process, and be careful to identify the need to create and innovate to satisfy these buyers, allowing these companies to anticipated the country's needs of the customers of rival companies domestic and foreign markets. About determining supplier, Porter (1989) highlights the fact that an industry or nation having suppliers that have international competitive advantage contributes to national competitive advantage. The

efficiency and competitiveness of a supplier is measured by the ability to lower costs, meet deadlines, give preference in the supply of their buyers, provides access to information, among others. This relationship as well as providing companies with the creation of new methods and opportunities, facilitates the application of new technologies, contributing to technical exchanges between other vendors creating a conglomerate of industries with competitive potential.

He also stresses the importance of strategy, structure and rivalry in the industry or nation in the domestic market. For him the structure and strategy of an industry depends on the scenario in which it is inserted. He said that competitiveness in a particular sector is a result of a combination of strategic and managerial practices and organizational models adopted. In this context, the author also highlights the role of government should be to facilitate the convergence between the four determinants of national diamond. So the government should take actions that allow the creation of a competitive environment, the creation and application of antitrust law, and is not directly involved in the process. Porter (2001) states that the government has the tools to create competitive advantage, plus it lacks the power to create this advantage. The author also describes the role of chance, war, changes in international financial markets, among others, that may affect the patterns of competitiveness for better or worse. Michael Porter, when considering the productivity, innovation and the determinants of the national diamond as essential to the achievement of national competitiveness and hence international, allowed industries or nations, had the opportunity to make more dynamic analysis of the production process, allowing quantitative and qualitative production.

Some authors go beyond the concept of competitiveness of nations or competitiveness among industries, while incorporating the key aspects and actors of the productive relationship, does not meet the needs of all stakeholders involved. For this research we use the concept of stakeholders according to Freeman (1983), in which stakeholder is any group or individual who can affect or be affected by the achievement of company objectives, and Frooman (1999) explaining that complements of the stakeholder theory must provide a method of how stakeholders attempt to influence an organization in decision making thus affecting their behavior.

For this gap, that treats the needs of the factors involved in the management of industry, the concept of "systemic competitiveness", subtly addressed the determinants of national diamond

Michael Porter, this concept is further developed by Esser et al (1996) that defines as a framework for industrialized countries and developing countries. According to the authors there are two elements that distinguish the systemic competitiveness of other concepts in order to determine the factors of industrial competitiveness: the first are the four different levels of analysis (meta, macro, meso and micro) factors as the ability to integrate and strategy with the society and promote the improvement and increase the company's efforts. The second is the connection of elements belonging to the industrial economy, the theory of innovation and industrial sociology with the arguments of the recent debate on economic management plan developed in political science from around the network policy.

The systemic competitiveness provides to the state and social actors the creation of conditions for industrial development, which is not only at the micro level of institutions and macro macroeconomic conditions, but mainly by the participation of government and non-governmental institutions (Altenburg, Hillebrand and Meyer -Stamer, 1998). This structure provides the strength of the meso level (business competitiveness) and the relationship with the target level (stakeholders). Esser et al (1994) point out that the systemic competitiveness is based on a multilevel and multidimensional support which covers the target levels, macro, meso and micro level, where competence is the result of dialogue and joint decisions by the stakeholders involved to provide a competitive . The authors highlight the target levels (civil society), macro (state, political, market economy), meso (state, horizontal policies) and micro (company) as relevant to the organization's social network full of competitiveness.

This theory arose from the need of countries, both developed and developing countries, increase their competitiveness. This need comes as an increasingly fierce competition, a race in order to adopt and adapt to Japanese production models, productivity with efficiency, rapid technological change, the common models of production. Esser et al (1996) portray the competitive companies must meet two basic requirements, the first is the fierce competition to be able to improve products and production efficiency of enterprises. According to the authors this requirement was not met for a long time in developing countries, given the protection that kept the industrialization strategies geared towards the domestic market.

The second requirement is intended to incorporate the strategic networks that support their efforts by a number of externalities, services and institutions. According to the authors this also has not been sufficiently considered in the recent debate on development policy. For

them the orthodox concept of structural adjustment was moving to the macro and micro level to macro-level measures aimed at a generic way to stabilization, liberalization, denationalization and openness to foreign markets in order to correct distortions in the structure incentives and stimulate latent entrepreneurship at the micro level, whose development had been zero due to the multiple state restrictions and price distortion, which corroborated with the World Bank studies published in 1993 that dealt on the subject. More practically, attempts to revitalize and boost the business sector were often below expectations due to the complexity of the requirements for companies and the importance of the institutional environment.

To Esser et al (1996) the most competitive countries should:

- Have structural target level which promotes competitiveness;

- Having a macro context that puts pressure on business performance, and a meso-structured where the state and social actors to develop specific policies to support and encourage the formation of structures and articulate the learning process at the level of society;

- Having a large number of companies located at the micro level while seeking efficiency, quality, flexibility and responsiveness, while many of them articulated in collaborative networks.

In addition to the features highlighted above, the authors describe what are the necessary requirements to be overcome by countries that want to develop internationally competitive industries and achieve the profile of a competitive country. According to them, you first need to macroeconomic stability (to contain the budget deficit, external debt, inflation, exchange rate and the economic rules that should not change often), that fit the macro level, then the authors suggest a macroeconomic policy structures with the formation of meso interdependent. This means that macroeconomic stabilization requires not only a coherent concept in technocratic terms, but also considerable political effort. Success will only be assured if the government is determined to impose the reforms difficult and controversial, and to organize a national coalition of forces reform to restore the balance of the economy by getting inside and out, including support in international .

The authors stress that stabilize the macro level is necessary but not sufficient to guarantee the sustainable development of competitiveness, so it is necessary to implement policies at the meso level, because of no use, for example, a technology policy with the objective of strengthen the technological capacity of the company, if entrepreneurs do not seek their own competitiveness. Another aspect is that the authors emphasize the need for a social release, observing their social and cultural characteristics, such as values, tradition, structure, which despite being part of a slow transformation, can contribute to building the competitiveness of enterprises, unlike many countries that have remained long attached to a strictly economic orientation and failed to develop a strategy that, for example, favoring at least the economic release.

The systemic competitiveness is premised on social integration, requiring not only economic reforms but also a project to transform society. The challenge in many developing countries and transition lies in overcoming social fragmentation and to improve learning, especially the ability to respond quickly and effectively to requests for adjustments. The formation of structures at the level of society increases the capacity of different stakeholder groups to articulate their interests and satisfy the needs of all technological, organizational, social, and environmental, to conquer the world market. Esser et al (1996) point out that to achieve an efficient allocation of resources is essential to have efficient markets for factors, goods and capital. This is a condition in which the concept of management is multidimensional, it is aligned with commitment to competition, cooperation and social dialogue for potential national channel and thus develop the ability to operate successfully in the global market.

Considering the micro level, the authors raised the requirements that must be observed by organizations:

- The globalization of competition in a market growing product;
- The proliferation of competitors;
- Differentiation of demand;
- The decrease of the production cycle;
- The implementation of radical innovations and new organizational concepts;
- The radical advances in technology systems that require redrawing of boundaries between different disciplines or between mechanics and optoelectronics.

In order to successfully meet the new demands, companies and organizations need to reorganize internally and largely within their immediate environment. For this purpose it is not enough incremental changes, as designed in the eighties with intensive automation and networking software (Esser et al 1996). The simultaneous search, according to the authors, efficiency, quality, flexibility and reaction speed require profound changes in the plans of the organization of production, organization and product development organization and relationship with suppliers.

The increasing demands for business go hand in hand with increasing demands on the environment in which they operate. That's why companies that operate in the world market no longer compete in a decentralized manner and even isolated, but in the form of industrial clusters, organized as business groups in collaborative networks. The dynamics of their development depends largely on the effectiveness of each of the industrial locations, close and constant contact with universities, educational institutions, and institutions of R & D and extension of information technology, financial institutions, agencies information for export, non-state sector among others.

In the meso level, Esser et al (1996) emphasize that the policies that define it have a national dimension, regional or local level. Nationally, meso policies aimed at developing the physical infrastructure (transport networks, ports, railways and roads, telecommunications systems, water supply and waste disposal, energy, water and sewage waste) and intangible infrastructure (vocational education systems, etc.). appropriate for clusters. Equally important are the policy of selective and active foreign trade (trade policy, the strategies of market penetration) and the active defense of the interests at international level (for example, in developing countries against protectionism in industrialized countries).

The structure of meso aims to facilitate capacity building in public and private sector, it should be understood as an intersectoral work in order to continuously improve the country's economic location. Furthermore, a well-structured meso-level not only serves to increase and maintain the international competitiveness of the economy, but also is the basis for the effective implementation of social policies, and environmental monitoring.

3. Ports in South America

Globalization, technological advances and especially the desire for competitiveness led the ports to review their functions, and adapt to new theories and practices of the international market. These new concepts suitable port services to user needs and modernize their operations, which previously were limited only to the loading and unloading of goods on forklifts and cranes. So ports have become specialized, using methods and equipment operation for specific loads, such as the use of containers, pallets, systems roll-on-roll-off, belt conveyor, conveyor belt, suction pipes for grains between other.

Santana cited Llaquet (2003), states that the port in the last decades of the twentieth century, became a space logistics activities of transportation, production and distribution. Looking at the variety of functions which ports can reveal the UNCTAD - United Nations Trade and Commerce Development, identified the different spheres of operating a port, and divided them into first, second, third and fourth generations. For Rodrigues (2001), the generations are defined in terms of the capacity of the port infrastructure in developing countries, and that the user needs are a natural complement to the development of port infrastructure.

Table 2 (Appendix) shows the characteristics and evolution of the ports according to the classification of UNCTAD. In order to better understand the classification of Table 2 and the main ports in Latin America (which will be presented below), below is the definition of generations port:

- Ports of the first generation - those are limited to providing handling services, cargo storage and support services to navigation. Typically concentrate their investments in infrastructure and has little involvement in the international market, and development plan and regional aspects of the unbound state with information system incompatible with the needs of users.

- Ports of second generation - are also those who carry out the activities of ports of the first generation, have a greater participation of federal, state and municipal. These ports carry out industrial, commercial and other specific and have more communication with the user.

- Ports of third generation - are those activities and develop a port of the second generation, also develops activities and logistics information and transportation center is a catalyst for integrated country's international trade.

- Ports fourth generation - as well as develop activities of ports of the first, second and third generation, fourth generation ports develop value-added services and participate in the production process of various companies.

The Polytechnic University of Valencia - IIRSA held in 2003, an assessment of the main ports of South America this evaluation IIRSA bothered to highlight the needs of these ports in relation to its infrastructure. The survey collected data from major ports such as Brazil, Uruguay, Argentina, Chile, Bolivia, Peru, Ecuador, Colombia and Venezuela and concluded that the South American ports are the least efficient in the world, with regard to infrastructure, accessibility, equipment, among other aspects, but also highlighted strengths such as geographic location of most of these ports.

In order to identify the generation port where some of the South American ports are found, we used information from the assessment by the University of Valencia and was drawn up a table classifying these ports along the lines of UNCTAD in the first, second, third or fourth generation, which can be seen in Table 3 (Appendix).

Currently the biggest and best seaports are concentrated in Asia, the United States and Europe, but in recent years the shipping in South America has made great negotiations and alliances between the public and private initiative to increase the use of transport mode port and increase their competitiveness in domestic and foreign markets. The Latin countries are increasingly opening their economies and international trade is growing faster. Hence the need to expand the port transportation to meet this demand.

The choice of ports in Table 3 was based on the results of trade in imports and exports of each country, it was found that Argentina (port of Buenos Aires), Chile (the port of Valparaiso), Colombia (port Buenaventura), Peru (Callao port) and Brazil (Santos port) had the best results.

Of the eighteen Latin American countries, eleven suffered a decline in export value, at the beginning of the twentieth century, and six were reduced both in unit value and volume. Chile, Colombia, Guatemala, Nicaragua, Dominican Republic and Uruguay suffered losses for two consecutive years (2001-2002), IIRSA (2003). Only Brazil and Peru have had success in exports during this period. Another important feature to be highlighted is that countries like Chile, Ecuador and Peru, trade with European countries less than Brazil, Argentina and Uruguay.

Each port has characteristics that stand out, for example the port of Callao in Peru, is the largest port with output to the trade by sea between Asia and Latin America, and has an extensive rail and inland waterways suitable for intermodal transport . Another positive feature of the port of Callao is the customs clearance that is made by electronic form, printing speed the process. Despite the strengths of the port of Callao, it also has weaknesses and problems of displacement, lack of connection of the port with the main road network, poor growth due to the growth of the city around you. The port was not initially designed for handling containers, which makes investments in infrastructure.

Another highlight is the port of Buenaventura, Colombia, he is in the Pacific Ocean, near the Panama Canal and around the ports of Vancouver and Valparaiso, he is also the center of the main shipping routes that traverse the globe from north to south, from east to west. Despite the great location, the port of Buenaventura in trouble draft, road and rail access, and difficulties with bureaucratic issues / customs. Another problem facing the harbor is the social, because the population has grown around him, cannot make investment for expansion.

The fact that research has shown that some ports is rated lower than the port that looks like it does not disqualify them for transactions in the international market, but reveals that each port needs to work. The survey showed many barriers by IIRSA in South American ports, such as corruption, mismanagement, lack of investment, among other factors that affect the advancement of these ports. The classification requirements suggested by the UNCTAD port serve as a management tool and determination of goals, which can be seen in what position the port is and would like to be. The achievement of the goal can be facilitated with the use of a benchmarking of ports in the upper stage, investing resources and technologies to achieve it.

4. The case of a Port in Salvador Bahia

Bahia, which is located in Northeast of Brazil, has three ports: Aratu, accounting for 60% of all cargo moved by sea in th e state, especially for liquid, gaseous and solid bulk, the Ilheus, which moves each year around 800 thousand tons of charge and whose area of influence covers the Southwest and West Bahia, and Salvador, which has the second largest container handling North / Northeast and is the second largest fruit exporter in Brazil (CNT, 2010:2011).

The port of Salvador is located in the Baia de Todos os Santos, in Salvador (BA) between the tip of Mount Serrat, north, and the tip of St. Anthony, south, and is administered by the Company of the State Docks Bahia - CODEBA, a mixed economy company linked to the Secretary of Ports of the Presidency.

According to data from CODEBA, the port of Salvador is accessible by major modes of transport, road, rail and sea. On the road gives access to federal highway BR-324 in double lane from Salvador to Feira de Santana, connecting with the BR-101, BR-110 and BR-116. By rail, access is by an extension at the time of Feira de São Joaquim, the Centro Atlântica S / A, East-Central network, former Regional Superintendent Salvador (SR-7), the Federal Railway Network (RFFSA). Already by the sea, access is the bar in the Baia de Todos os Santos, offers 9 km wide and a minimum depth of 30 m. The access channel has a width of 200 m and depth of 18 m and length of 7 km.

The port of Salvador has its hinterland or catchment area that adds its own state of Bahia, and part of Minas Gerais, Sergipe, Alagoas, Pernambuco, Paraiba, Rio Grande do Norte and Ceará, and its location is considered strategic because they find the Route halfway Mercosur CODEBA. The hinterland of a port is defined by Moraes (2003) with a city or locality in which it is situated or operating their customs, their backs or margins hit by an inland port.

The main commodities handled at the port are; bulk solids, such as wheat (grain), bulk liquids such as asphalt, containerized cargo such as food, equipment, pulp, petrochemicals, tires, automobile parts, paper, cocoa, sisal, and chemical load general and pulp, steel and granite. The port has an infrastructure composed of a modern container terminal, two portainers

(specialized cranes for handling containers between the quay and the ship), a transtêiner nine forklifts reach stackers.

The handling of containers at the port of Salvador rose from 52 000 equivalent units (TEUs) in 1998 to 262,000 in 2011, handling more than 2.3 million tons of containerized cargo. With the continuing high growth in the Bahian economy the tendency is that the curve of growth in container handling at the port to maintain and even to rise in coming years, foreseeing a serious bottleneck for handling this type of load in Salvador, seen that the Port has only a single and limited specialized berth for operating container ships. Given the importance of the port of Bahia to the state's economy and the country and aimed at its development in the international market, we have developed, according to the UNCTAD guidelines, a framework that demonstrates his generation port, as can be seen in Table 4 (Appendix).

The Port of Salvador can be classified as a port of a first generation. Despite showing characteristics of a port of the second or third generation of the type of load, as to the activities performed (industrial and commercial), involvement of governments, and other machinery, still faces needs:

- Broaden the draft that is now a maximum of 12 meters;
- Expand the area of the port activities, outside the urban perimeter, because the city does not include an expansion project;
- Investing in accessibility that this land saturated with traffic and intensified;
- Invest in rail accessibility which is interrupted since 1998;
- Investing in reducing the environmental impact inherent in the handling of hazardous materials through the city;
- Increase the movement of cargo by cabotage;
- Evaluate the impact of the construction of the Railway East-West Integration into the Port of Ilheus / BA which is seen as a threat;
- Invest in services commercial, industrial and information.

The federal, state and municipal government and private, have made investments in order to contribute to the advancement of this important port of significance to the economy of the state and country. The example we highlight the PAC - Growth Acceleration Program, the federal government, which prioritizes the maintenance, restoration and expansion of port infrastructure, as well as increase logistical efficiency of the Brazilian ports in order to print to the sector more competitive and dynamic, and reduce the costs of water transport and contribute to the development of the country. In Table 5 (Appendix), there are other investments for the port of Salvador, which will contribute to your advancement.

Conclusion

The research sought to identify what requirements must meet Brazilian ports to suit the demands of the domestic and foreign markets. For this was made a discussion on the evolution of the law from port modernization of ports and port participation in the Brazilian transportation system and presents discussions of the main theories of international trade and theories of competitive strategies. The survey also made a comparative analysis of the major ports in Latin America and identified the position of its main ports.

The research identified that in relation to other modes, the water transportation is cheaper and more versatile, and has been instrumental in leveraging international trade. For Rodriguez (2001), the port acts as a link between the maritime and land transport. Currently it is only to provide services to ships and other freight transporters. Thus, ports may be a link between the chain of production-transmission-distribution, functioning as an interface between the maritime and other modes of transport. The effectiveness of communication depends mainly on the technological development of its equipment, its infrastructure, its organization and management model. But to promote the link between the maritime and other modes of transport is necessary significant investments in infrastructure.

The integration of transport modes can make a difference in the outcome of the competitive freight transportation, as it decreases costs and increases the opportunities for generating economic development regional integration. The Growth Acceleration Plan - CAP, predict improvements in transportation infrastructure, but is still limited when compared to high disparities and needs of the transportation system.

The low integration of modes of transport and port infrastructure deficit hinders the advance stage of most Brazilian ports. To overcome these problems are needed targeted investments to harbor works, access and luggage.

In this study it was found that both the South American ports as many Brazilians need intervention in infrastructure and other areas to advance the generation port and conquer foreign markets. Brazil has the greatest potential among the ports of South America (a fact shown in the classification of the port in Table 3), but needs more investment to achieve a competitive level on the world stage.

In relation to the port of Salvador, it was observed that despite the geographic location, the positive economic results in recent years, investments of governmental, still features a port of the first generation, but with the potential to move to a port second generation. For interventions that are needed in depth, in the territorial expansion in the rail and road access, among other adjustments such as diversification or sitting of commercial, industrial and logistics, which will contribute to the advancement of the port.

The above theories (theories of international trade and theories of competitive strategies) apply to the reality of the production, import and export of Brazilian products and services, each one is able to capture the essential leverage for this scenario, but realizes that the theory of competitive advantage systemic Klaus Esser and staff can meet all four aspects of the competitiveness of a bureaucratic institution like the public ports. In this theory the most important of all elements that ensure coordination within and among the four systems levels is the dialogue among key stakeholder groups, because the dialogue is essential to strengthen the benefits of innovation and national competitiveness and implement social learning processes and communication to promote the achievement of competitiveness in the global market. This dialogue between the parties involved (government, shippers, producers) suggested by the systemic competitiveness, more the quality of intermodal cargo transport and the search for alternatives, such as coastal and great coasters, can contribute to the Brazilian market to conquer market share domestic and international price and cost competitive.

The study has limitations regarding the classification, the guidance from UNCTAD, due to difficulties in detail each requirement set for generations, and also has limitations in the analysis of the port of Salvador. There is no indication of the capacity limitation of movement

on the docks and storage areas, and access land, this information was not found in the documents provided by the institution. The port is under renovation and is only available for internal research from 2013, so it is suggested that further research from the release of the port.

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Appendix - Table 1 - New Institutional Structure of Brazilian Ports[1]

Institution	Role and main tasks	Members
Port Authority	-Manage the assets of the port; -To promote port development; -Control the other public and private entities operating in the port	-Autonomous public institutions; -Public and private companies.
Port Authority Councils (CAPs)	-Regulatory, rationalize and optimize the use of port facilities; -Encourage action-industrial and commercial port; -Express opinions on works, investments, acquisitions; -Develop mechanisms for the berthing of cargo; -Approve the value of the tariffs set by the port administration.	-Block-government (Federal, State and Municipal); -Block-Operators of the port; -Block-Workers; -Block of the port users (exporters, importers, cargo owners, representatives of the terminals).
Governing Body of Labor	-Register, register and train dock workers; -Manage the supply of manpower for the operators; -Collect the charges from the operators and social security as well as the remuneration of workers.	-Oversight Board (3 members appointed by the holders port operators, workers and users of the port) -Executive Directors (one or more directors appointed by the employees).
Port Operators	-Improve the quality of port services; -Optimize use of port facilities; -Reduce port costs.	-Private companies.

[1] **Source**: Monie and Vidal (2006).

Appendix - Table 2 - Classification UNCTAD[2]

	1st Generation	2nd Generation	3rd Generation	4th Generation
Period of development	Before the 60	After 60 years	After 80 years	After 80 years
key Loads	General Cargo and Bulk	General Cargo and Bulk	Loads Conteneizadas, unitised and bulk	Loads Conteneizadas, unitised and bulk
Attitude and the Port Development Strategy	Conservative points of interface modes of transport	Expansionist Transportation Center, Commercial and Industrial	Oriented Trade Center for Integrated Transport and Logistics Platform for International Trade	Facing the international market
Activities	Loading, Unloading, Storage, Navigation Services	Activities of a Generation Transformation of Cargo, Commercial and Industrial linked to Ship	Activities 1st and 2nd Generation Information Distribution and Freight, Logistics Activities	Activities 1st, 2nd and 3rd Generation Industrial Processing Zones Clusters or Port Charges - Industrial Business Networks
Characteristics of the Organization	Independent activities within the Port Information Relationship between the Port and its users	Close relationship between Porto and User Relations between the bit Integrated Activities in Port	Integrated Port Community Integration with the Port Trade and Transportation Network	Integrated Port Community Integration with the Port Trade and Transportation Network
Characteristics of Production of Service	Concentrated Loads in Flow Low Value	Load Flow Integrated Services Average Value	Flow and Load Distribution and Information Multiple services	Value-Added Services
Decisive factors	Labour and Capital	Capital	Technology and Know-How	Technology and Know-How

[2] **Source:** UNCTAD (1994).

Appendix - Table 3 - Classification of Ports of South America[3]

Port	Port classification	Generation Port
Port Valparaíso (Chile)	**Development Period:** 60 years before. **Main Cargo:** General cargo, fruits and cargo conteneizada. **Attitude and the Port Development Strategy:** Expansionist. Search the interface modes of transport. **Activities:** Loading, unloading and logistics activities. **Characteristics of the Organization:** Activities within the Port and independent relationship between the Port and its users. **Feature Production Service:** Focused on Cargo Flow, Low Value. **Decisive factors:** labor and capital	Port of 1st generation with potential for 2nd generation. The port has the characteristics of the port of 1st, 2nd and 3rd generation, more because of bottlenecks and barriers, the predominance is a port of a third generation
Port of Buenos Aires (Argentina)	**Development Period:** 60 years before. **Main Cargo:** General cargo, grain solids and liquids and cargo conteneizada. **Attitude and the Port Development Strategy:** Expansionist. Search the interface modes of transport. **Activities:** Loading and unloading and logistics services. **Characteristics of the Organization:** integrated activities within the Port and the relationship between the Port and its users. **Feature Production Service:** Flow of Cargo, logistics services, value-added services. **Decisive factors:** labor and capital.	Port of 1st generation with potential for 2nd generation. The port has the characteristics of the port of 1st and 2nd generation, more because of bottlenecks and barriers, the predominance is a port of a third generation.

[3] **Source:** IIRSA (2003).

Appendix - Table 3 (cont.) - Classification of Ports of South America

Port	Port classification	Generation Port
Port of Buenaventura (Colombia)	**Development Period:** after 60 years. **Main Cargo:** General cargo, bulk cargo and conteneizada. **Attitude and the Port Development Strategy:** Focusing on Trade, with little interface between modes of transport. **Activities:** Loading and unloading, storage and logistics services early. **Characteristics of the Organization:** Port Community to forming with the aim of integration, integration with the Network Port Trade and construction with the transport network. **Feature Production Service:** Flow and Load Distribution and Information; Multiple Services. **Decisive factors:** labor, capital, technology and know-how	Port of 1st generation with potential for 2nd generation. The port has the characteristics of the port of 1st and 2nd generation, more because of bottlenecks and barriers, the predominance is a port of a third generation.
Port of Callao (Peru)	**Development Period:** after 60 years. **Main Cargo:** General cargo, bulk, ore, and cargo conteneizada. **Attitude and the Port Development Strategy:** Focusing on Trade. **Activities:** Loading and unloading, storage and logistics services. **Characteristics of the Organization:** Port Community Integrated little; Port Integration with Network Commerce. **Feature Production Service:** Flow and Load Distribution and Information; Multiple Services. **Decisive factors:** labor, capital, technology and know-how	Port of 1st generation with potential for 2nd generation. The port has the characteristics of the port of 1st and 2nd generation, more because of bottlenecks and barriers, the predominance is a port of a third generation.
Port of Santos (Brazil)	**Development Period:** 60 years before. **Main Cargo:** General cargo, bulk cargo and conteneizada. **Attitude and the Port Development Strategy:** Focusing on Trade, interface modes of transport. **Activities:** Industrial Processing Zones, Business Networks, loading and unloading, storage and logistics services. **Characteristics of Organization:** Community Integrated Port, Port Integration with the Network of Trade and Transportation. **Feature Production Service:** Flow and Load Distribution and Information, Multiple Services, Value Added Services **Decisive Factors:** Technology and Know-How	Port of 3rd generation. The port has the characteristics of the port of 1st, 2nd and 3rd generation, and has strong potential for a port of 4th generation.

Source: IIRSA (2003).

Appendix - Table 4 - Classification port of Salvador[4]

Port	Port classification	Generation Port
Port of Salvador (Brazil)	**Development Period:** 60 years before. **Main Cargo:** General cargo, dry bulk and liquid cargo conteneizada. **Attitude and the Port Development Strategy:** Expansionist. Seeks to improve the interface modes of transport. **Activities:** Loading, unloading, some services. **Characteristics of the Organization:** Activities within the Port and independent relationship between the Port and its users. **Feature Production Service:** Focused on Cargo Flow and Low Value. **Decisive factors:** labor and capital.	Port of 1st generation with potential for 2nd generation. The port has the characteristics of the port of 1st and 2nd generation, more because of bottlenecks and barriers, the predominance is a port of a third generation.

[4] **Source:** CODEBA (2011).

Appendix - Table 5 - Investment for the Port of Salvador[5]

Investments	Short Term	Medium Term
Public Sector	Access Channel Dredging & Evolution Basin to -15 m; Provision of Retro-Public Area with 40 thousand m2; Retirement Adequacy of Current Passenger Station; Regularization at IBAMA Environmental and IMA, upon delivery of the PCA and Update of LO's for the Leases;	Extension of the breakwater toward the Water Boys - PAC 2; Construction of the waste; Construction of New Station Seas Cruises Warehouse 2, and revitalization of Port-City Warehouse 1, PAC World Fifa Cup; Improving Accessibility to Land Port Construction Expressway, linking the port to the BR 324 – PAC
Private Sector	Adjustment for Contract Amendment with Current Tecon Retro-Area Additional 40 thousand m2; Extension of 165 linear meters of quay, Cradle me with -15 to Drive New Equipment; Bid for Immediate Rental Terminal Retro-port today Intermaritima, with Magnification Area + additional 11,000 m2;	Construction of the 2nd Container Terminal with Cradle Landfill for new Retro-area of 169 thousand m2 and equipment specific to the movement; Bids on Commercial Wharf - Shed 1 (Port-City) and New Station Maritime Cruises, established in Warehouse 2.

[5] **Source:** CODEBA (2011).