

***Section II:
Review of PCC Business***

II. Review of PCC Current Business

2.1 Overview of Business Areas

The Canal's core business is the transit of commercial vessels across the isthmus of Panama between the Atlantic and Pacific oceans, which is the source of most of its revenues. The PCC serves as an international maritime trade resource of global importance. The use of the Canal is affected by worldwide trade patterns which fluctuate based on the relative economic situation in different regions, and supply, production and consumption patterns. The Canal market is also affected by reduced trade barriers in regional multinational economic blocs, which encourage trade within the major world regions. Finally, the market share of the Canal is affected by its competitors, i.e. the available alternative shipping routes. The PCC list of customers includes the largest maritime transportation companies in the world, a highly competitive industry which has been rapidly evolving as they seek to lower their costs to attract additional business.

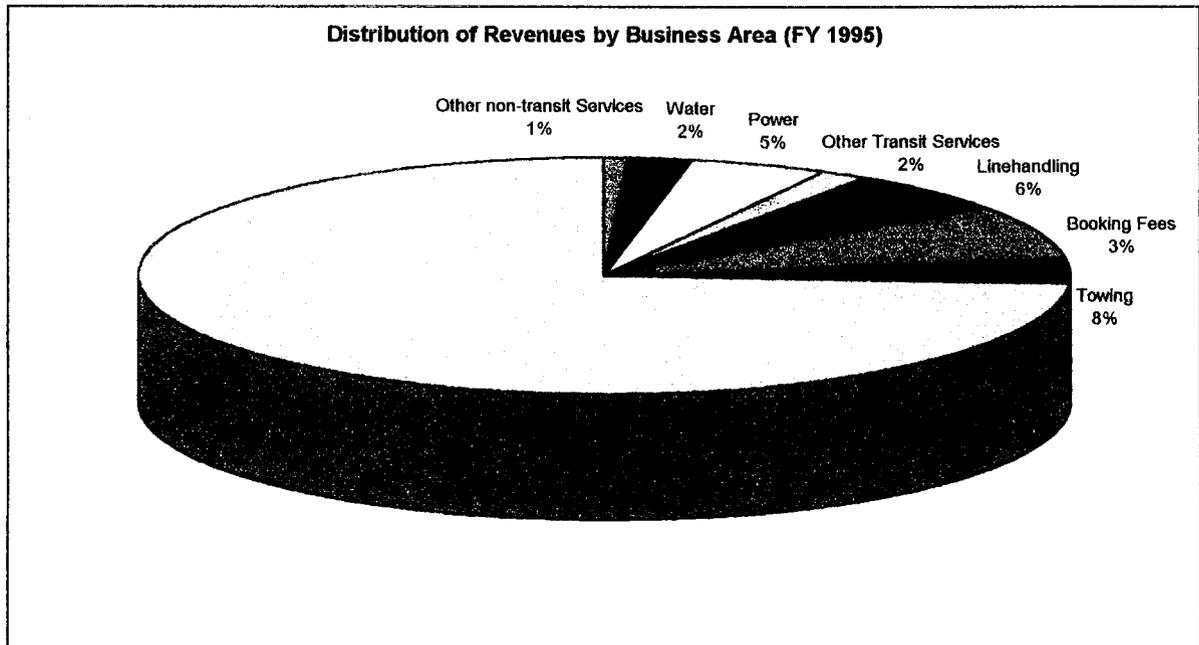
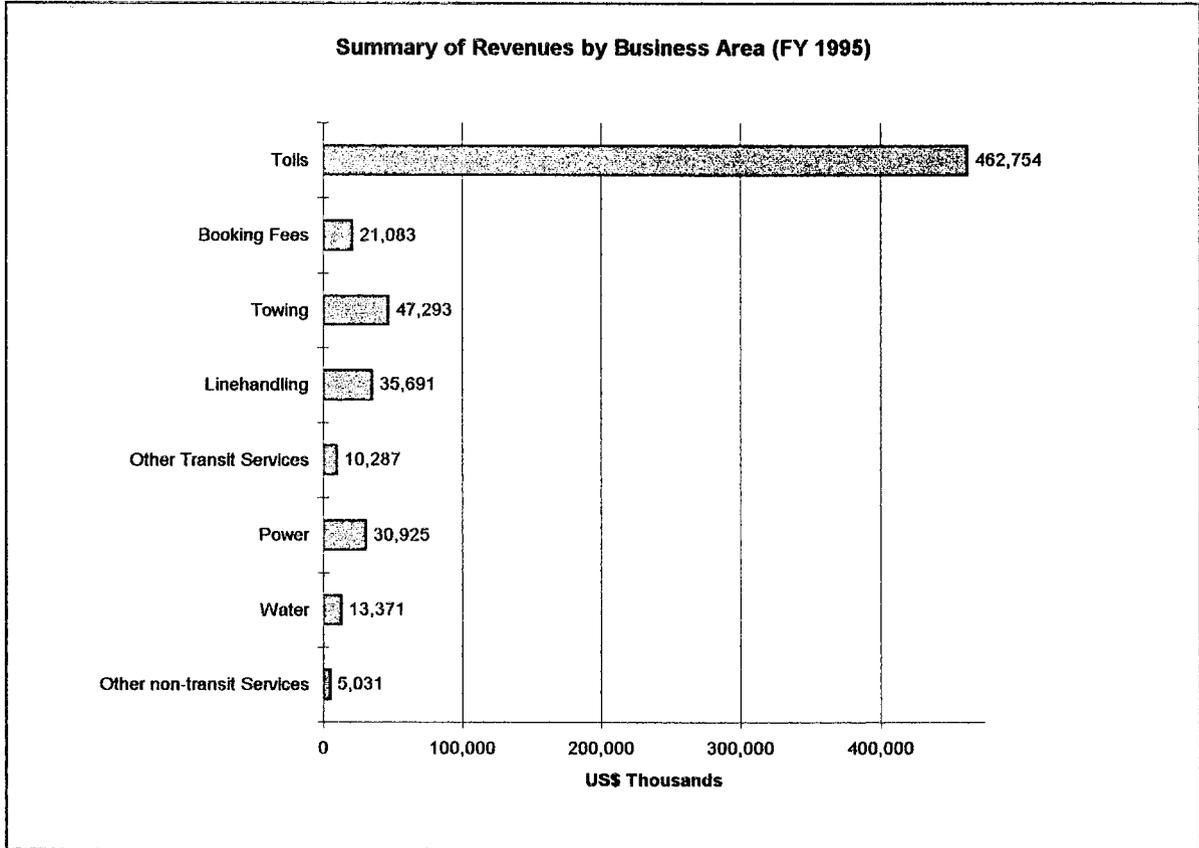
There are several other relatively minor business areas which are carried out by the Canal organization, because of their relationship to the core business and the historical evolution of the PCC, such as power generation, potable water supply and chilled water supply. Prior to 1979, the Canal organization was also involved in several other commercial ventures. Unconstrained by any legal limitations, the PCC has unique human, physical and financial resources that can be used to optimize its core business market position as well as develop other business opportunities. These key organizational competencies are key factors to consider in the process of developing a growth strategy for the Canal organization. The focus of this section is the core business itself and the major competencies of the organization.

Revenues earned by the PCC in FY 1995 reflect its focus on its core business. Figure II-1 provides a graphical representation of the breakdown of revenues by business area, in which the combination of activities directly related to ship transits account for over 90% of total revenues for the year. Tolls themselves represent 72% of total receipts.

As noted, the PCC's commercial activity can be categorized broadly into two groups: transit-related and non transit-related. The first includes tolls, advance booking fees, and services to vessels such as linehandling and tugboat rental, and pilotage services. Pilotage services are part of the basic transit service offered by the Canal, but there are cases where additional charges are incurred by transiting vessels, such as, when the vessel stops at a Canal area port. As such, they can be considered an integral element of core transit operations.

The second group is composed essentially of services that, although not provided directly to transiting vessels, are deemed as essential to the core business, i.e. power generation, water supply, chilled water, telecommunications, sanitary sewer services, etc.

Figure II-1
Summary of Revenues by Business Area (FY 1995)



As can be seen in Figure II-1, the two major activities are power and potable water services, which account for a combined total of less than 8% of total revenues, or \$44.3 million. Power generation and distribution (\$30.9 million or 5.3% of total revenues) is essential to the operation of the locks and other Canal facilities, and given that some of the PCC's power is generated by hydroelectric plants, it is directly related to management of the Canal's watershed on which the Canal is dependent for uninterrupted operations. One of the reasons why the PCC has been involved in the power area as a revenue generating business, besides its need to control its own requirements, is that they have had the opportunity to sell surplus output to other users. In other words, since the PCC already has the plant to produce electrical power, why not sell excess capacity to other users. The PCC has provided these power services to the US military bases and the GOP.

Water supply is the other main related business area (\$13.4 million or 2.3% of total revenues). The Canal organization has historically served as a major source of potable water to Panama's two urban areas in the region. In the case of Colon, the PCC is the only source of potable water. Initially, the PCC provided these services to the Canal employees and US military forces only, but the Canal has more recently been providing potable water also to the government of Panama for use in the metropolitan areas. Water treatment facilities are not essential for the Canal to control, although the Canal needs to be involved in management of lake levels and available water to effectively assure that no situations arise when Canal operations must be interrupted. Although direct control is not necessary for water supply, it has historically been the case, due to the PCC's needs to supply Canal area housing.

Similarly, historically the PCC has been involved directly in serving its own needs for telecommunications, chilled water service for air conditioning, sanitary sewer services, and other utility services. These services have been provided for its own operation, housing for employees, and US military needs. Telecommunications is an integral part of the Canal operation needs for vessel operations, while the other utility services are not as integrally related to the Canal operation. All of these other services contribute less than 1% of total PCC revenues.

2.2 Market Demand and Trends

In FY 1995, 15,135 vessels transited the Panama Canal, of which 13,631 were large ocean-going vessels over 300 tons, transporting over 190 million long tons of cargo. After two years of rapid growth the Canal achieved a record level of tonnage and near-record number of vessel transits. Transits grew by 7.9% over the previous year, while cargo tonnage grew by 11.5% and tolls revenues grew by 10.4%. Overall traffic returned to levels of the early 1980's.

Before drawing conclusions about future growth prospects, however, it is important to consider the present situation within an historical context. Figure I-4 depicts annual traffic volumes in terms of tonnage, vessels and revenues from 1959 until the present year. It is interesting to note that in spite of the sharp increase in transits in each of the past two years, the total number has not risen substantially over the past 35 years. Localized increases and decreases have tended to cancel each other out resulting in traffic that hovers around 12,000 to 15,000 vessel transits per year.

In terms of cargo tons, the present levels represent the accumulation of decades of growth, averaging 3.7% per year since 1959, although cargo levels dropped in the mid 1980's with the opening of the oil pipeline and the record level of 1982 was not surpassed until 1995. The growth in cargo while vessel transits remained in the same range are primarily related to the trend towards greater utilization of larger vessels. Since Panamax and other large vessels now represent a greater share of total traffic, the same number of vessel transits can now transport more cargo.

These observations do not fully explain the rise and fall of vessel traffic over such a long period of time. International maritime trade is influenced by many factors well beyond the ability of the PCC to control and even predict. Wars, droughts, changing trade relationships, new technologies and changes in competing transport routes and modes have all played a role in the Canal's traffic history. To better understand the implications for planning for future growth, the current market situation of the Canal will be discussed in the following sections, with a focus on the major market segments and their distinct characteristics.

2.2.1 Major Market Segments

The Canal's major markets can be defined broadly to include both maritime cargo and passenger flows as a combination of three basic attributes:

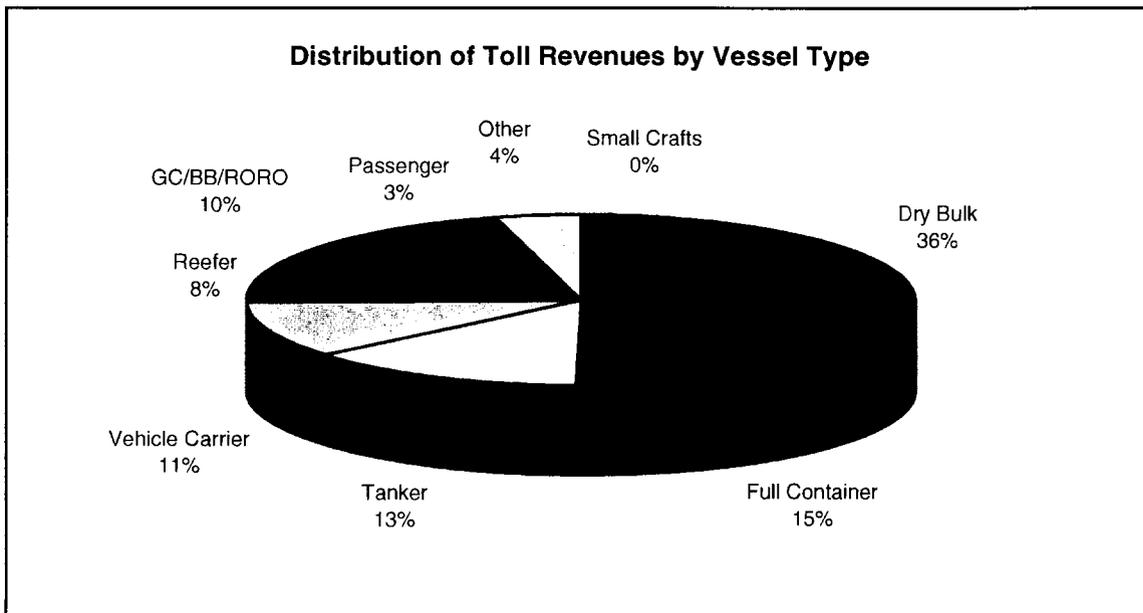
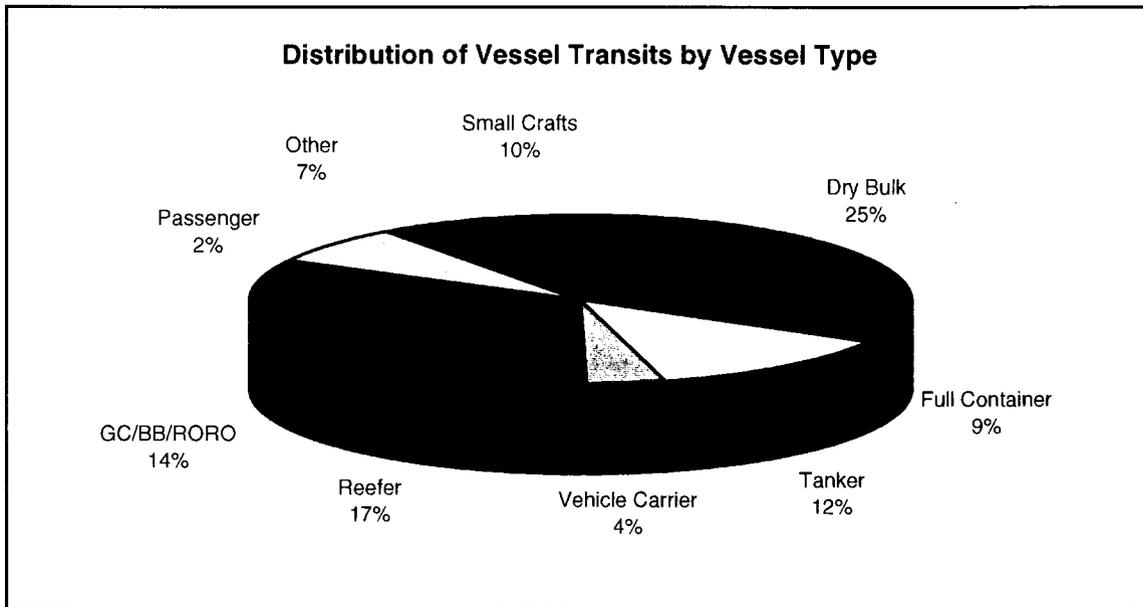
- Vessel type or alternative transportation service used;
- Trade route or origin & destination regions;
- Commodity, cargo type, or passengers

Although there are many combinations of these characteristics, a small subset of dominant segments can be identified for each that both enable one to focus on the most important segments of Canal users and identify the aspects of the transit service that help explain the Canal's share of the overall market within each segment.

The graphs in Figure II-2 summarize the distribution of FY1995 traffic across the most important market segments, in terms of both number of transits and toll revenue. The largest market segment is dry bulk, accounting for 25% of transits and 35% of tolls revenue. Other important segments are full container ships and tankers, especially when considered in terms of tolls revenue. It is interesting to note that the combination of dry bulk, containerships, tankers and vehicle carriers account for 75% of tolls revenues versus only 50% of transits. This reflects the larger carrying capacity of these vessel types. Reefers, general cargo vessels, break bulk and other smaller cargo vessels represent 33% of transits and just 22% of revenues.

Passenger cruise vessels account for only 2% of transits and 3% of revenues. Although not as significant in terms of toll revenues as other market segments, cruise vessels can have a substantial economic impact and related tourism potential (if vessels stop in Panama) that should be carefully considered in the growth strategy development. Small crafts less than 300 tons account for 10% of transits and produce little or virtually no revenue.

Figure II-2
Distribution of FY 1995 Canal Traffic and Revenues by Vessel Type



A similar pattern can be observed with respect to the distribution of traffic by trade route as observed in the graphics in Figure II-3. Five major trade routes, or origin-destination pairs, account for 76% of cargo tonnage, with just one, between East Coast North America and Asia, making up 44% of cargo tonnage in FY 1995. The other major routes link the East Coast of North America with other Pacific locations and Europe with the West Coast of the Americas. The Canal is particularly important to trade in the hemisphere. About 64% of Canal business originates or is bound for the US and about 14% of total US trade makes use of the Canal. The Canal is the major trade route also for some countries in Latin America.

In the container ship segment, the six major trade routes that involve a transit of the Panama Canal are generally consistent with the overall distribution:

- US East Coast - Far East
- US East Coast - West Coast South America
- US East Coast - Australia
- Europe - West Coast South America
- Europe - US West Coast
- US West Coast - East Coast South America

The largest by far is the US East Coast/Far East trade route. In 1995, the carriers on that route made over 500 voyages in each direction - hence making just under 1100 transits of the Canal. That represented an increase of approximately 10% over the transits made in 1993.

Segmented by commodity type, cargo is similarly concentrated in a few major classes, with grains making up 23% of total cargo, followed closely by petroleum products including crude oil at 14%, and containers at 13% (see Figure II-4). The majority of the cargoes are low-value bulk commodities which typically are influenced more by low transport cost than time and reliability of service. Nevertheless, some important segments such as containers and other fast-growing high-value cargo segments (edible oils, perishable food products, automobiles, etc.) place a premium on transit time and reliability as the time value of the cargo and the cost of delays are often far greater than the direct cost of additional transport time.

In the container market, the influence of the Alliances is increasing--not just in number of transits, but also in the volume of containers, since the vessels are increasing in size. There are now 5 alliances operating in the USEC/FE trade route. There are a total of 13 lines in the 5 alliances (see Table II-1) plying that trade, to which must be added the three major independents (Evergreen, Cosco and Zim). Obviously, if all those large lines had served the trade independently, that would have doubled the operating capacity--and the number of transits. So the carriers' urge to rationalize has made for an economically sensible and superior service--but a reduction in PCC revenues.

Figure II-3
Distribution of FY 1995 Canal Traffic by Trade Route

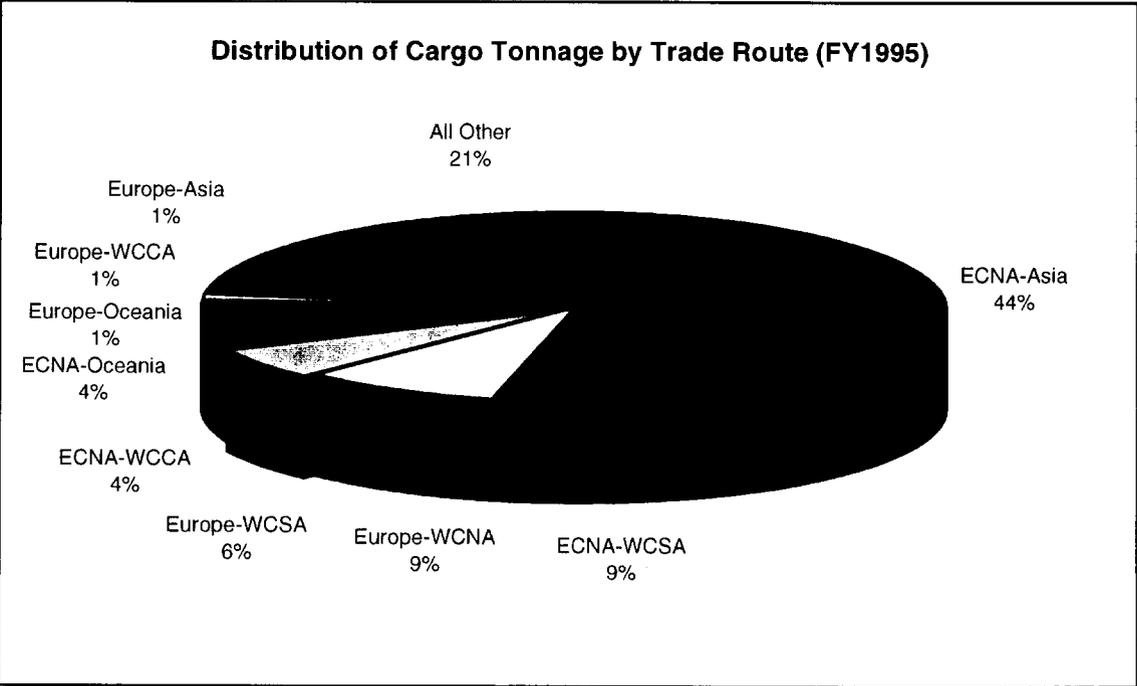
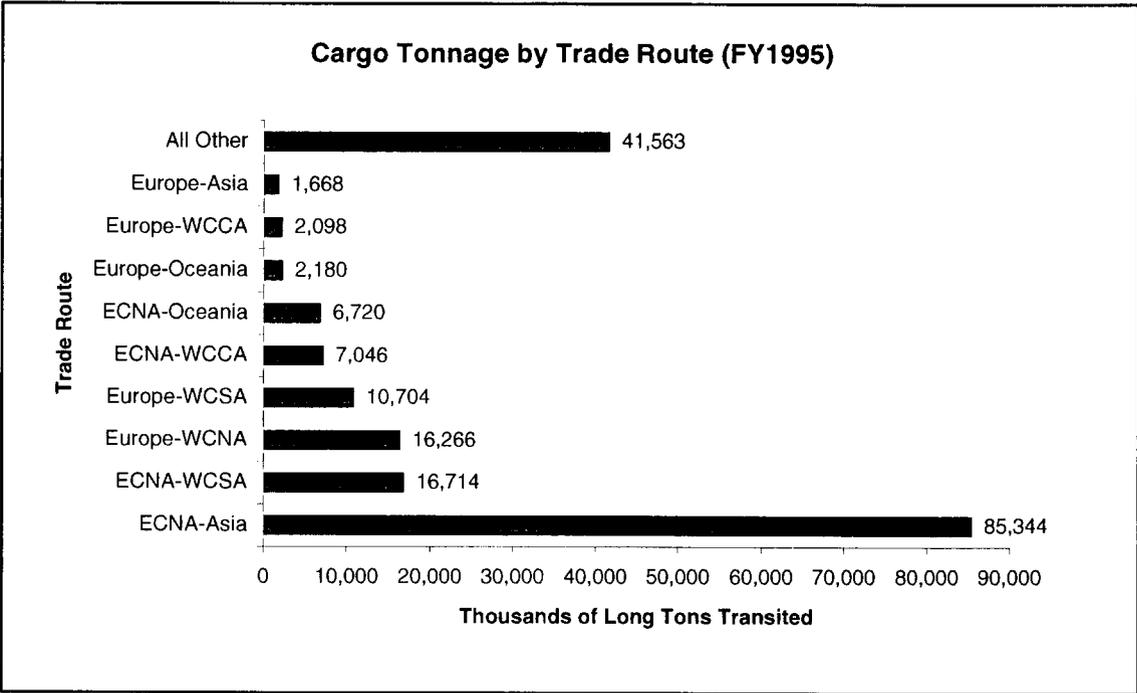
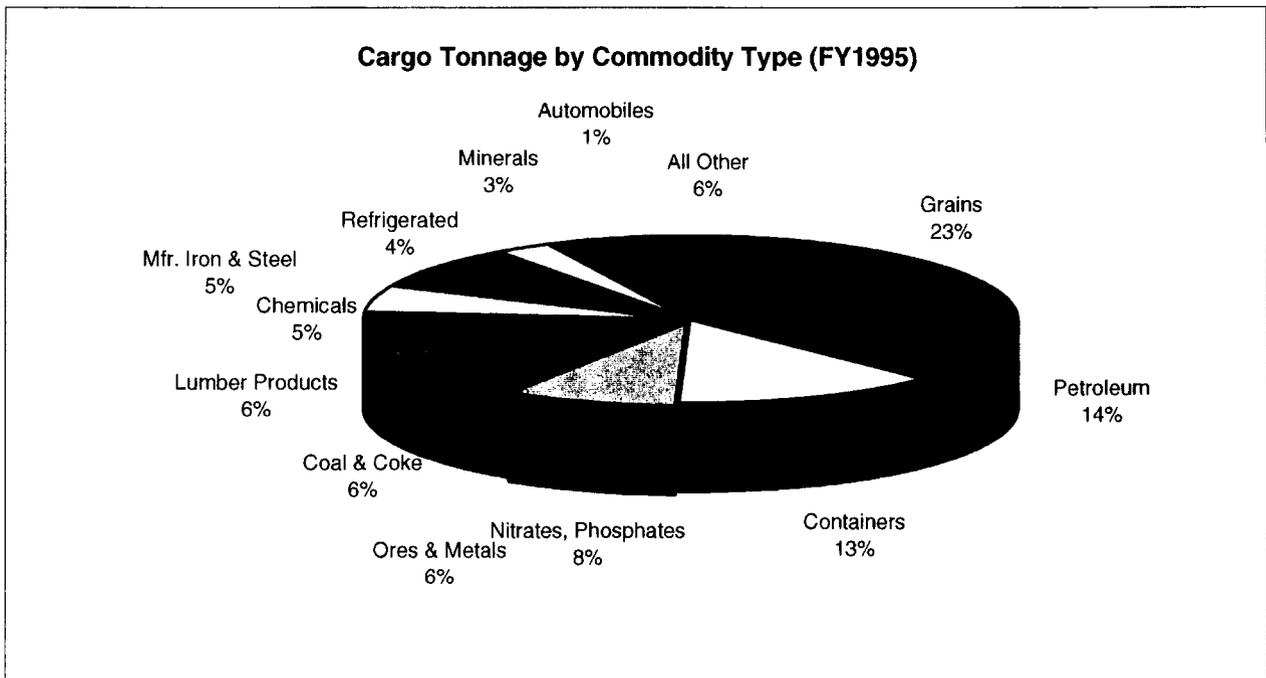
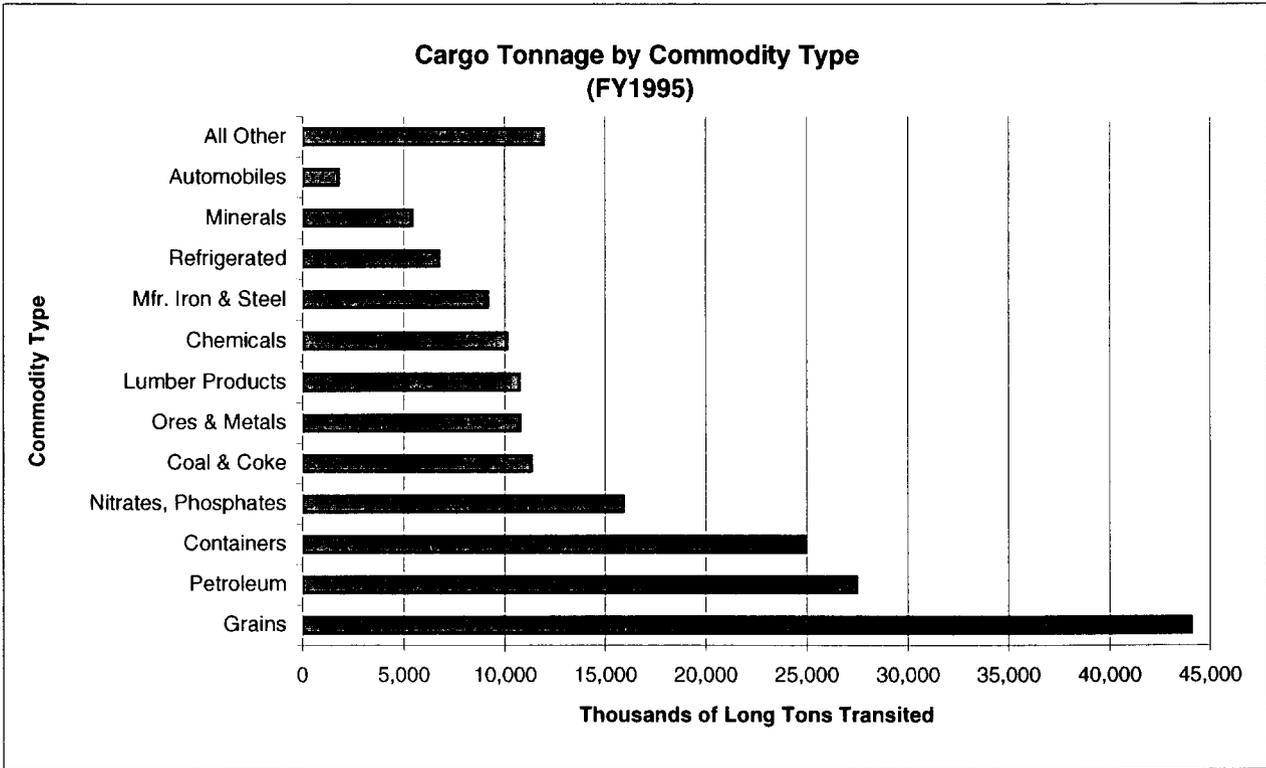


Figure II-4
Distribution of FY 1995 Canal Traffic by Commodity Type



By 1997, Hanjin is anticipated to have joined the Tricon group in a full Alliance. Its then ex-partner Yan Ming will want to continue in the trade and it is quite possible that it will have persuaded K-line its partner in the Transpacific and Europe/Asia trades, to re-enter the USEC/FE trade via the PC. If so, the number of transits made by those lines would be unaffected.

One important development is the Global Alliance's inauguration of an all-water FE/USEC service via the Panama Canal. This signaled the re-entry to the trade of OOCL, the entry of APL and Nedlloyd, and the enhancement of MOL's frequency and volumes. This was one reason for the recent increase in transits and volumes on that route, despite Cosco's change to the Suez route. It is expected that in 1996 the major Alliances will represent around 80% of the Canal transits on the major trade route (USEC/FE).

Table II - 1

Major Container Carriers Transiting the Canal	
■	Carrier Alliances
•	Grand Alliance (NOL, Hapag-Lloyd, P&OCL, NYK)
•	Global Alliance (APL, OOCL, MOL, Nedlloyd)
•	Sea-Land/Maersk Alliance
•	Tricon Alliance (Hanjin, DSR-Senator, Cho Yang)
•	Yang Ming (K-Line)
■	Major Independents
•	Evergreen
•	Cosco
•	Zim

2.2.2 Competition

Users decide to transit the Canal because the value of the service is greater than that of other competitive options or because they have no other alternative, i.e. they represent what is known as captive cargo. Historically, a larger share of Canal business had few if any alternatives, so much of the Canal business was captive. This is no longer the case. When considering the impact of service level improvements or pricing policies to achieve greater market penetration in various segments, it is essential to consider the Canal competitors, or the value of the Canal to the users, compared to other alternatives. This value, both perceived and real, varies according to the market segment which can be defined as a combination of vessel type, trade route and commodity type. Passenger service is an additional market segment.

As a facility that links suppliers to their markets, the Canal faces the following major competitors:

1. *The "Land Bridge"*. The intermodal transportation system that links maritime transport in the Atlantic and Pacific Oceans via a direct cross-country rail link offers a significant time advantage to cargoes that are transported by container. Depending on the specifics of the ports and vessels, the time savings is at least 5 days and can be as much as 8 to 10 days. The cost of the Canal route is at face value less than the land bridge route, based simply on the relative costs per ton of rail versus maritime transport. This can be offset, however, by the use of post-Panamax container vessels in the ocean segments of the land-bridge route, the use of double stack technology for the rail route, the Panama Canal toll savings, and the value of time and reliability in the case of high value cargoes (which can produce significant savings in inventory costs). This competitive route is most relevant for cargoes with either an origin or destination in the United States East Coast for Far East originating or destined cargo.
2. *The "Bypass" Maritime Routes*. Without considering intermodal options, all vessels face the option of bypassing the Canal and taking the route below South America that joins the Atlantic and Pacific Oceans, across the Straits of Magellan or Cape Horn. Other possible routes involve the Suez Canal or the Cape of Good Hope route at the southern tip of Africa, depending on origin and destination. For all of the major trade route segments that currently use the Canal, the Strait of Magellan route or other alternative maritime routes are significantly longer and more costly in terms of vessel operating costs than the Canal. The Canal's advantages may be offset by the amount of tolls and other crossing fees and economies of scale achieved by post-Panamax vessels using the by-pass route. These routes are most attractive to market segments that do not place a relatively high value on time or where high volumes can make use of the economies of scale of larger vessels. These routes would most likely capture Canal cargo in the case of significant toll increases or during periods of high Canal congestion.

3. *Supplier or Product Substitution.* In many cases, shippers may choose to change the supplier-market pair to avoid transiting the Canal. This may tend to happen naturally as a result of changes in the supply-demand relationship in certain commodity markets, but may also be affected by increases in transport cost or time, or declines in service level for the Canal route. This is most likely for commodities for which transport costs are a significant percentage of its value or for which time and logistics advantages may be gained by finding shorter supplier-market distances. In some cases, customers may also choose to change their product mix, although such changes are not as likely in the near-term.

It should be noted that vessel owners will adjust their routes to reflect cost and time considerations. For example, when the Suez Canal was closed, Panama Canal traffic increased as vessels chose alternative routes. Significant cost and vessel transit time increases can result in changes in vessel routings all across the world in some market segments.

2.2.3 Market Share

The market share of the Canal can be assessed by looking at the share of total world trade or cross-America trade routes. The Canal has handled about 4% of total world trade, but its share has declined from about 4.5% in the 1970's and early 1980's to about 3.8% in 1994.

For different market segments, the Canal share varies. For example, for the 5 main dry bulk cargoes, the Canal handled an average of 6 to 7% of total worldwide trade over the past 10 years. The Canal also represents about 14% of US total international trade and an even higher share of the total trade of other countries in the hemisphere. The Canal's share of US corn exports to Asia has been about 70 to 80% (1992-1993). The Canal share of US phosphate exports to Asia is close to 100%. The Canal handles about 90% of bananas from Ecuador to Europe. In the containerized trades, the Canal's share (US East Coast to Asia) of total containerized US-Asia trade has recently been about 16% of US exports and about 10% of imports.

2.2.4 Factors that Affect Market Share

The Canal's core business is primarily affected by the level of overall international trade in each of the trade lanes that the Canal competes, the cruise passenger business in the Canal's region, and the Canal's market share of the total market where it competes. Canal core business revenues are further affected by the Canal's pricing of its services and its impact on market share.

There are a number of ways in which the Canal can influence its market share in certain segments by improving the economics and level of the transit service. Nevertheless, it is important to recognize that the Canal can do little to affect the size of the overall market in which it competes. In addition, there are many factors that affect market share and the decisions to use the Canal or competing routes that are beyond the control of Canal management.

A segmented market strategy should focus on those actions that can be taken to improve the Canal's competitive position within certain segments and planning for, but fighting against, those that it can not control. Following are several features that fall within each category.

■ **Features of Transit Service Within Control of the PCC**

Transit time
Reliability of transit time
Transit cost
Safety and vessel damages
Complementary vessel services

■ **Features Beyond Control of the PCC**

Cost advantages of other routes due to vessel size and lack of toll (other maritime routes)
Time advantage of competitive routes/modes due to distance and mode advantages (land bridge)
Supply and demand of world trade by origin and destination

Taking this into account, several examples of actions that may be taken by the Canal to improve its market share in certain segments are provided as follows.

- Guarantee of transit to market segments with high time-sensitivity (e.g. regularly scheduled services) willing to pay a premium price (following the concept of the advance booking fee).
 - Within the current target average transit time (24 hours) for those users for whom the current transit time is acceptable but for whom reliability is critical.
 - Within a lower transit time (for example 16 hours), for those users who value not only reliability of the transit time, but for whom a reduction in the current average would be significant. The value of this lower transit time is greatest to a vessel that is behind schedule and has a regularly scheduled port call or customer delivery commitment that has financial implications if not met.
- Improvement of reliability and transit time due to improvements in operational efficiency, expansion of capacity or better scheduling and traffic management.
- Tariff structure designed to ration capacity among market segments according to their desirability and their perceived value of the service provided by the Canal, employing elements such as volume discounts for frequent customers, true cost recovery pricing by vessel type/size, premium to segments with high value cargo and certain competitive trade routes, or a focus on service to largest and/or fastest growing segments.

- Reduction of tariffs through cost efficiencies in operations and administration.
- Provision of complementary services to transiting vessels, such as vessel repair, bunkering, crewing, tourism to cruise ships.
- Other improvements in the quality of service to customers that do not directly affect the transit time or cost.

2.2.5 Market Trends

Several trends have been observed that may affect future Canal operations and its strategy for growth of its core business.

Increased Vessel Size

The Canal has experienced steady increases in average vessel size over at least the past 35 years, as was discussed previously in the context of the tradeoff between rapidly increasing tonnage versus number of transiting vessels. In FY 1995, the number of Panamax size vessels as a percentage of the total of oceangoing transits reached 27%. This comes after a long and gradual shift toward greater use of larger vessels. Many expect this trend to continue, resulting in a Panamax share of 35-40% by the year 2010.

While the tendency toward larger vessels implies greater efficiency for the Canal--more cargo/revenues per transit--it also adds to the complexity of the Canal operation. As will be discussed later in this chapter, Panamax vessels are faced with transit restrictions due to safety. Furthermore, they take longer to transit as a result of their size and more difficult maneuverability as compared with smaller vessels.

Beyond the trend observed within the universe of Canal-transiting vessels, the quantity of post-Panamax vessels has also continued to rise worldwide. These vessels achieve economies of scale along alternative routes without the size restrictions imposed by the Panama Canal.

By the end of the Century, in the containerized trade, most of the lines crossing the Canal on the main USEC/FE route, whether through a round-the-world or pendulum service, will have maximized the size of vessels deployed. Economies of scale, and competitive pressures, drive this trend. An example is the spate of orders placed for new buildings for the Tricon service. Up to 20 ships each of 4545 TEU capacity will be delivered in this time period. The Tricon round-the-world service started just a few years ago with vessels under 2000 TEU. Currently it is using mostly 2700 TEU units. Maersk has been running its pendulum service from Europe to the FE for a number of years with Panamax size containerships. Evergreen, with its series of new building orders, will soon have maximized the vessel size deployed on both legs of its service. Zim and Cosco will stay at the 3600/3800 TEU level for another few years, given the size of vessels they are ordering.

Available data on vessels on order support the trend toward greater use of large vessels as summarized below:

■ **Post-Panamax:**

- A total of 38 vessels in operation
- 54 ships on order
- 27 vessels to be ordered in the next few years (under consideration)

■ **Panamax Vessels:**

- 60 Panamax containerships on order
- 21 more probably to be ordered in the next few years.

If all probable orders materialize by the end of the decade:

- Current fleet would be increased by 33% in numbers and 51% in capacity
- Panamax vessels would increase by 82
- Post-Panamax ships would increase by 81

This means that by 1999, there will be some 92 Post-Panamax vessels operating; and possibly up to 119 by 2000. Similarly, there will be some 136 Panamax containerships operating; and up to 157 by 2000.

It is evident from the statistics that the major carriers are not only ordering the Post-Panamax sizes but also ordering more Panamax vessels.

The figures also support the contention that the major lines are maximizing the size of the Panamax vessels they are going to deploy on the Panama route. Especially Tricon, with its orders for 4545 TEU ships, the absolute maximum.

Implications of Trends on Competitive Position of Panama Canal

Given the trends in container ship size and deployment, the question is how the PCC can extract maximum benefit from the strategic location of the Panama Canal. Geography dictates its continued utility; so the questions are:

- What technological improvements can be made to ensure its enhanced use?
- Can it be done at an economically sensible cost?
- Will the landbridge economies still exist in the future, and how can the Canal compete better with those routes?

2.3 Sources of Strategic Competence

A strategic competence is a set of attributes that allows an organization to compete effectively in a given business arena. An organization should not enter a market based solely on its size or growth potential. To perform well over the long run it must be able to establish a strong competitive position based on strategic competencies that differentiate it from other potential entrants to the market.

Strategic competencies can be based on a number of factors, but they may be classified along three distinct dimensions of any organization: human, physical and financial. The *human* dimension incorporates those elements that make up the organization's human resource. These may include managerial, technical and industrial skills; business processes; and relationships with customers, suppliers and regulators.

The *physical* dimension includes those aspects of the organization that enable it to physically perform the tasks associated with its business, such as facilities, equipment and other fixed assets; information systems and other technologies; and production processes.

The *financial* dimension is composed of the attributes necessary to sustain finance operations within its business, including profitability, magnitude and reliability of cash flows, investment requirements and borrowing capacity.

The strategic competencies necessary for an organization to compete depend on the nature of the market it is entering: the needs of the customers and the capabilities of the competition. For example, mass merchandisers such as K-Mart and Wal-Mart combine on purchasing know-how, vendor relationships and advanced information systems to form a *procurement competence* that is necessary to maintain a healthy competitive position within the mass merchandise retail market.

In order to properly evaluate growth opportunities, it is necessary to first assess the areas in which the Canal possesses sources of competence. The current situation of the Canal will be discussed in the following sections for in terms of each of the three dimensions that have been defined.

2.3.1 Human Resources

The PCC currently has a permanent workforce of 7,504 employees that is organized among three bureaus and eight other units that could be placed in an "Administration" category. These latter units are not directly involved in the operational functions of the Canal, but instead play important support roles in furthering of the Canal's mission, Treaty obligations, and administrative responsibilities. Table II-2 shows the distribution of the PCC's workforce.

Roughly 2,500 members of the PCC's existing permanent workforce hold positions that are considered critical to the operational requirements of the Canal. Such positions typically require skills that are not readily available, are unique to the PCC's requirements, or pertinent to maritime

Table II - 2
Distribution of the PCC's Workforce

Unit	Permanent Positions
Executive Administration	
-- Office of the Administrator	12
-- Office of the Secretary	7
-- Inspector General	25
Total	44
Administration	
-- General Counsel	28
-- Industrial Relations	5
-- Personnel Administration	320
-- Exec. Admin./Treaty Trans.	94
-- Equal Opportunity	7
-- Financial Management	294
-- Public Affairs	39
-- Executive Planning	38
Total	825
General Services/Direction	20
-- Liaison	8
-- Canal Protection	238
-- Facilities Mgmt./Support	391
-- Fire/Emergency Services	145
-- Logistical Support	224
-- Motor Transportation	326
-- Printing	27
Total	1,379
Marine Bureau/Direction	39
-- Marine Safety	6
-- Maritime Training	37
-- Canal Operations	18
-- Admeasurement	59
-- Canal Services	1,561
-- Lock Operations	1,272
-- Pilotage	282
-- Traffic Management	61
Total	3,335
Eng. & Con./Direction	11
-- Construction	40
-- Dredging	488
-- Electrical	397
-- Engineering	169
-- Industrial	405
-- Maintenance	405
Total	1,915
Other	6
Total	7,504

and industrial environments from which external recruiting is not easy because of the uniqueness of the skills that are required in these positions. In addition to these, a review of the roughly 1,000 occupational categories within the PCC shows an array of other positions requiring skills that are not readily available in Panama, yet of potential interest to other industrial or maritime sectors in Panama and the Latin American/Caribbean region.

The PCC has a history of continuous and uninterrupted service on the Panama Canal. This record of achievement is attributed in part to the PCC's strategy of continuously preparing and upgrading the skills of its personnel to perform their duties effectively. Therefore, the competencies as they relate to the PCC's human resources can be viewed in two dimensions: 1) one refers to the continuous training opportunities available to the vast majority of PCC employees that could be marketed to industrial, commercial, and maritime sectors outside the PCC organization; and 2) the other refers to the unique technical skills that many of the personnel have that could be made available to markets outside the PCC.

The PCC's commitment to training is obvious. More than 86,750 employees have participated in the various training and development programs offered by the PCC in the last five fiscal years. Training expenditures for the PCC exceeded \$13.3 million in Fiscal Year 1995, on an average expenditure of \$1,772 per employee (or \$622/participant), which compares favorably with private sector companies of similar size that are engaged in transportation services.

The majority of training activity is undertaken by the 91-person Human Resources Development staff of the Panama Canal's Office of Personnel Administration. The Staff generally is responsible for assessing training needs; developing training plans, programs, and employee development opportunities; monitoring and evaluation of training program effectiveness; and managing training facilities.

The unit consists of two branches: 1) Employee and Management Development, and 2) Industrial Training. The former consists primarily of ten development specialists who address training needs, program development, and administration of programs that are not specifically designed to meet the PCC's industrial training needs, but may have broader application and interest to the general PCC employee community. The Industrial Training Branch is responsible for assessing, addressing, and evaluating programs designed for employees falling in the several industrial-related units of the PCC.

The Branch is responsible for developing and administering apprenticeship and upward mobility training as well as the journeyman enhancement program. Training is also provided directly by other PCC units, including the Safety Division (Office of Personnel Administration), the Maritime Training Unit (Marine Bureau), and the Fire and Emergency Services Division (General Services Bureau). Other training programs are provided by the Canal Protection Division (General Services Bureau) and the Data Processing Systems Division (Office of Financial Management). The comprehensiveness and success of the PCC's training efforts indicates a unique competency that the organization may wish to extend to markets outside the PCC.

The PCC's 1,000 occupational categories and 2,500 critical positions demonstrate a variety of skills and talents that add to certain unique competencies in Panama and that could be organized and packaged to market commercially. Some of the technical services competencies will be discussed below focusing on human resources. Discussions with PCC representatives and some members of the business community indicate that the PCC has unique higher standards and competencies that are available in Panama and, in some cases, regionally. These areas of competence include:

- Toolmaking
- Gauges-Instrument Calibration/Repair
- Propeller/tailshaft/rudder repairs (small crafts only)
- Vessel cabin carpentry
- Fender repair
- Production of ropes/slings
- Electrical repairs in floating crafts
- Crane and vessel Inspection Services
- Pilotage Services
- Engineering/Design Services
- Maritime Data Base Services
- Security Services/Maritime-Ports
- Productivity Analysis/Industrial Applications
- Labor Relations Mediation/Arbitration
- Assets Valuation
- Industrial Hygiene Inspection Services
- Management Services/Training Needs Assessments

2.3.2 Physical Resources

These resources that enable the Canal to perform core business the operations establish its competence in this area. These resources may serve as the platform for entry into new areas which favor organizations with the Canal's competencies. The physical resource base of the Canal can be categorized in the following elements:

- Infrastructure
 - Locks
 - Channels
 - Support infrastructure
- Technology
 - Traffic management systems
 - Communications and information management systems
- Natural resources
 - Watershed

- Equipment
 - Floating plant
 - Land-based mobile plant

Physical Resource-based Competence

- Infrastructure and equipment with industrial applications

Many of the facility and equipment competencies of the Canal are also unique in Panama and regionally. Some of these competencies do not have a wide market and are too specialized, without significant application outside the Canal. Others, however, have some market potential, particularly to serve heavy construction industry, maritime sector, environmental, and utility needs outside the Canal.

Some of the competencies of the Canal's physical facilities with possible industrial applications in the construction, port, and industrial sectors include the following:

- dredging equipment (2 large dredges, pipeline, scows, etc.)
- dredge material disposal areas
- 17 tugboats
- 2 large floating cranes
- aids to navigation (buoys, ranges, etc.)
- vessel traffic management services
- vessel, machine, and equipment repair and fabrication facilities at Industrial Division, (including small drydock, synchro-lift, machine shop and foundry, steel working capability, etc.)
- water treatment facilities, potable water supply, chilled water distribution facilities
- solid waste landfill facilities
- power generation and transmission facilities
- fiber-optics and other telecommunications facilities

The PCC also has many other facilities and equipment to include: 5 mainframe computers, printing equipment, large motor vehicle fleet, launches.

Having available infrastructure competencies is only one of the factors that needs to be considered. An equally important factor is whether excess capacity is available and whether capacity can be expanded at a competitive cost. Another factor that needs to be considered is the uniqueness of the competence in the market to be served. The facilities with the greatest potential to serve new markets because of the uniqueness of the PCC competencies and/or the availability or feasibility of capacity additions are discussed in the next paragraphs.

■ Excess capacity of utilities and physical infrastructure

Most utility services provided by the PCC have excess capacity relative to the requirements of the Canal's core business (e.g. power, chilled water, water supply). This is particularly true as the demand generated by the US Department of Defense is reduced. At the same time, the Canal's location and basic infrastructure make it a likely competitive source of water and power for serving Panama's metropolitan areas surrounding the Canal area. In the case of chilled water, the Canal's plant is not likely to be competitive with other air conditioning technologies in the long term. Additionally, some of the utility businesses the Canal has been involved in do not have excess capacity. Therefore, plans are being made to discontinue such services (e.g. solid waste landfill services).

Capacity for dredged material disposal in approved disposal sites is available to meet Canal needs for near term needs. However, making these sites available for uses by others can jeopardize long-term availability for the Canal's business.

Excess capacity is available at the Canal's Industrial Division (only one shift is manned fully at all times and a night and weekend shift is manned partially). A small drydock, most of the foundry, vessel repair, and steel working capability is unique to Panama.

Phase II will also consider availability of excess capacity of each facility for newly targeted markets.

■ Excess capacity of floating plant (dredges, tugs, launches)

The major elements of the floating plant of the Canal are used in three activities: vessel transits (tugs and launches), maintenance (heavy cranes), and dredges (maintenance dredging and new work dredging).

The tugs and launches are heavily utilized for the Canal's core business. Additional tugs are being acquired. There are times, however, when tugs may be made available. To become a tug service vendor would require additional fleet and staffing.

Heavy cranes are used in maintenance activities and may be available at certain times for outside work depending on timing and specific requirements.

Dredging equipment is fully scheduled for dredging activities and related equipment maintenance. Acquisition of a new dredge is being considered as part of the acceleration project at Gaillard Cut. However, staffing is only available for manning a dredge at any one time. With additional trained staff and the completion of the wet excavation part of the Gaillard Cut project, there will be excess dredging capacity.

- Traffic management technology

The Canal has a uniquely available vessel traffic management technology. This technology may have other related applications in Panama, such as for vessel management in ports and harbor areas. Consideration is being given to adding a GPS capability that can also have other applications in surveying, construction, and other fields.

The existing facilities are generally fully utilized for Canal purposes. It may be possible, however, to provide related services in the Canal area not requiring additional equipment, such as traffic services to private ports and others.

Critical Operational Issues

- Near-term Capacity

The maximum capacity of the Canal has been estimated as 42 vessel transits daily based on today's vessel transit mix. This maximum capacity, however, can not be achieved on an annual average basis, principally because the locks require lane outages for maintenance and rehabilitation. Operational capacity is estimated as 37 to 38 daily transits.

The principal factors that affect daily Canal transits include: traffic management restrictions (e.g. limitations on passing at Gaillard Cut and for night transits for vessels with beam over 91 ft., limitations on vessels carrying hazardous cargo, etc.), vessel mix, lock operation interval (relay or regular), required human resources (pilots, linehandlers, locomotives crews), required floating equipment (tugs and launches), weather, traffic management efficiency and scheduling method.

The Canal is over 80 years old and its facilities require significant ongoing investment to assure uninterrupted traffic. A recent study by the US Corps of Engineers has identified over \$500 million in maintenance, rehabilitation, and modernization improvements that should be carried out over the next 9 years. These include some previously programmed needs. Eventually, rehabilitation outages and continuing maintenance may require longer outages that may further affect traffic and capacity.

In the near term, various initiatives are underway to increase capacity by about 10-15%, such as acceleration of the Gaillard Cut widening that will allow reducing operational restrictions in this area, modernization of lock machinery control systems, enhancement and modernization of the vessel traffic management system (VTMS), addition of new locomotives, and increase in the number of tugboats. These improvements will increase operational capacity to a maximum of about 44 daily transits. Maintenance/rehabilitation needs and likely continuing increase in the percentage of Panamax size vessels crossing the Canal, however, can affect the Canal's ability to fully achieve this estimated increase in operational capacity.

■ Long-term Capacity

Projected traffic is expected to grow at 2% annually, so that even with the anticipated near-term capacity increases, the Canal is likely to be close to operational capacity throughout the study period and beyond, unless a major capacity addition is planned for.

Long term, the Canal's capacity can be significantly increased only by adding a new set of locks or building a new Canal. Previous studies have indicated that the required investment cost is at least \$10 billion and possibly over \$20 billion, depending on option selected.

Implications of Canal Capacity for Growth Strategy

A core business strategy must recognize that the Canal is and will continue to be operating at close to its operational capacity . There is no excess capacity to plan for an increased level of total vessel transits. Therefore, the core business strategy should include initiatives to make the Canal relevant to the industry's future. Vessel owners make decisions on their orders based on many factors. Long term plans for the Panama Canal is one of the key factors considered. For example, on some container trade routes, there are already 38 post-Panamax vessels in operation and 54 on order. The lines are not only ordering post-Panamax vessels for their routes bypassing the Canal, but full Panamax vessels for their routes that transit the Canal. The Canal's core business strategy should seek to influence vessel owners decisions, and thereby, optimize its long-term market position.

2.3.3 Financial Resources

The financial condition of the PCC is an important element of its ability to operate efficiently and take advantage of new business opportunities. For the Canal's core business, the PCC must have adequate financial capacity to fund Canal operations and to raise capital for the necessary investments in plant and equipment to accommodate future capacity and service level requirements. The ability to raise capital is also an important issue to assess within the context of evaluation of potential expansion into new business areas.

Toll Setting Policy

Tolls, and consequently revenues, are established based on the full recovery of Canal operating costs:

"Tolls shall be prescribed at rates calculated to produce revenues to cover as nearly as practicable all costs of maintaining and operating the Panama Canal...including...working capital, payments to the Republic of Panama,...and capital for plant replacement, expansion and improvements." section 1602(b) of the Panama Canal Act.

This guiding policy has a profound influence on the financial condition of the PCC, limiting the degree to which prices can be used as a source of generating funds for investment or other purposes. Additionally, the requirement that the PCC pay a tonnage fee to the GOP on the order of \$80 million influences the toll rates.

Pricing policy, which includes tolls and other user fees, was discussed previously within the context of marketing strategy and is developed further in section IV in the proposed scope for Phase II of the growth strategy. There are a number of alternative pricing policies that could be employed by the PCC that could result in increased revenues. These would take advantage of a market-based approach to pricing, that is an approach that sets prices based on the perceived value of the transit service to the user as opposed to the cost of providing it. Similarly, there may be opportunities to also increase revenues by considering costs incurred by the Canal to serve smaller vessels. These options must be carefully considered within the context of the overall mission of the Canal, specifically whether it continues to operate on a break-even basis. Notwithstanding these observations, the opportunity does exist to increase revenues and cash flows through the application of different toll policies.

Debt Policy

The current legislation allows the PCC to raise up to \$100 million in debt to be used to finance operations and capital expenditures. To date this option has never been utilized. The current Panamanian Constitutional amendment creating the ACP maintains the same provision, without any apparent justification based on financial or operational criteria. Long-term debt is a common and useful means of financing capital expenditures in public works or capital-intensive industries, based on the long useful life of the facilities and the high investment cost.

Balance Sheet

A brief review of the balance sheet of the PCC for FY1994 reveals no significant changes in financial condition with respect to previous years, which have been characterized by financial stability and solvency. As can be seen in Table II-3, Property Plant & Equipment remained virtually unchanged, while current assets increased by approximately \$20 million due principally to growth in the cash account. Notwithstanding these increases, total assets decreased by \$14 million due to a \$43 million decline in deferred charges accounts.

On the capital and liabilities side, capital increased by \$11 million due to contributions to Working Capital and Capital Expenditures accounts, funds intended to finance increases in inventories and necessary plant and equipment improvements. While Accounts Payable remained virtually unchanged, other current accrued liabilities grew by about \$9 million. A decline of \$33 million in estimated long-term liabilities (accounts equivalent to deferred charges on the asset side of the balance sheet) explains the decline in total capital and liabilities of \$14 million.

TABLE II - 3
PCC Balance Sheet for Fiscal Years 1993 and 1994*
Dollars in Thousands

ASSETS	1994	1993	CAPITAL AND LIABILITIES	1994	1993
PROPERTY, PLANT AND EQUIPMENT			CAPITAL		
At cost	1,103,072	1,068,263	Investment of the U.S. Government:		
Less accumulated depreciation and valuation allowances	599,681	574,250	Interest bearing	74,800	98,237
Net PP & E Balance	503,391	494,013	Non-interest bearing	396,451	373,135
			Total investment of U.S. Government	471,251	471,372
CURRENT ASSETS			Capital Contributions:		
Cash	170,673	147,341	Working capital	9,000	4,000
Accounts receivable	9,094	9,498	Capital expenditures, being amortized	76,981	70,670
Inventories	27,866	30,550	Total Capital Contributions	85,981	74,670
Total Current Assets	207,633	187,389	LIABILITIES AND RESERVES		
DEFERRED CHARGES			Accounts Payable:		
Early retirement benefits	75,720	90,864	Commercial vendors and other	14,491	15,518
Compensation benefits for work injuries	26,500	44,775	U.S. Government Agencies	1,676	1,873
Post-retirement medical care costs	10,880	17,237	Republic of Panama	10,045	9,315
Retirement benefits for certain former employees		3,260	Total Accounts Payable	26,212	26,706
Unrecovered costs due from subsequent revenues		553	Accrued Liabilities:		
Total Deferred Charges	113,100	156,689	Employees' leave	62,618	59,582
			Salaries and wages	8,239	7,367
			Employees' repatriation	7,624	5,983
			Marine accident claims	15,432	12,961
			Net operating revenues payable to the Republic of Panama	1,099	
			Other	3,583	3,592
			Total Accrued Liabilities	98,685	89,485
			Estimated Liabilities		
			Early retirement benefits	75,720	90,864
			Compensation benefits for work injuries	26,500	44,775
			Post-retirement medical care costs to certain former employees	4,426	6,013
			Total Estimated Liabilities	129,926	162,055
			Reserves:		
			Lock overhauls	2,264	1,914
			Marine accidents and casualty losses	8,000	8,000
			Floating equipment overhauls	1,805	3,889
			Total Reserves	12,069	13,803
TOTAL ASSETS	824,124	838,091	TOTAL CAPITAL AND LIABILITIES	824,124	838,091

* Panama Canal Commission Annual Report

Statement of Operations

Total operating revenues for FY 1994 were \$548 million (\$565 million not including deductions for contributions to working capital and capital expenditures), an increase of \$21 million over FY1993. These revenues are almost completely offset by operating expenses, resulting in net operating revenue of \$1 million payable to the GOP. The revenue-expense balance reflects the PCC's "break-even" tolls policy in which tolls are set for full cost recovery (see Table II-4).

It should be noted that operating expenses include a roughly \$90 million payment to the GOP in accordance with the Treaty. Once the Canal is transferred to the GOP, it might be considered a form of "dividend". That is, it would become a distribution of operating income versus an operating expense.

Revenues and Expenses by Business Area

The revenue growth trend has continued through FY1995. Although financial statements are not yet available, data provided by the PCC indicates gross revenues of \$586 million, or an increase of \$42 million (7.7%) over the previous year. Figure II-1 graphically characterizes the distribution of revenues by source. Revenues by major business area have been separated into two major categories:

- transit-related -- including tolls, booking fees and other services to transiting vessels; and
- non transit-related -- composed principally of utilities services such as power and water.

Transit-related revenues represent over 90% of total income, with power and water services constituting the remaining significant sources of revenue. Within transit revenues, tolls revenues are 72% of the total, booking fees are 3.6%, towing services 8.1%, linehandling fees 6.1% and pilotage 0.7%.

Expenses are also listed by business area, although it is obvious that they are not directly related to revenues. It is worth noting that transit-related revenues are significantly greater than expenses, resulting in a surplus of \$135 million. Since the operation is "break-even", this is offset by a shortfall in non transit-related areas. Most of the transit-related revenues come from tolls, which roughly correspond to the expenses listed under the two "other" categories. Towing and linehandling revenues seem to cover their expenses, although pilotage does not. Based on discussions with PCC staff, it was concluded that it is difficult to establish direct revenue-expense relationships by business area; cost recovery is essentially bundled in with the tolls revenue.

Power and water services also seem to be profitable, with revenues more than covering expenses. Still, based on the way expenses are calculated, it is impossible to draw conclusions on the profitability of these as stand-alone business areas.

TABLE II - 4
PCC Statements of Operations
Fiscal Years Ended September 30, 1994 and 1993
(Dollars in Thousands)

	1994	1993
OPERATING REVENUES		
Tolls revenue	\$ 419,219	\$ 400,884
Less contribution for:		
- Working capital	\$ (5,000)	\$ (2,000)
- Capital expenditures	\$ (11,500)	\$ (13,000)
Net loss revenue	<u>\$ 402,719</u>	<u>\$ 385,884</u>
Other revenues	<u>\$ 145,402</u>	<u>\$ 140,876</u>
Total Operating Revenues	<u>\$ 548,121</u>	<u>\$ 526,760</u>
OPERATING EXPENSES		
Payments to Republic of Panama		
Public services	\$ 10,000	\$ 10,000
Fixed annuity	\$ 10,000	\$ 10,000
Tonnage	\$ 70,396	\$ 67,597
Total payments to Republic of Panama	<u>\$ 90,396</u>	<u>\$ 87,597</u>
Maintenance of channels, dams and spillways	\$ 41,697	\$ 39,376
Navigation service and control	\$ 91,766	\$ 88,444
Locks operation	\$ 57,248	\$ 54,837
General repair, engineering, and maintenance services	\$ 27,242	\$ 25,411
Supply and transportation services	\$ 19,290	\$ 19,434
Utilities	\$ 39,968	\$ 35,545
Administrative and general	\$ 99,337	\$ 91,630
Depreciation	\$ 25,756	\$ 23,767
Fire and facility protection	\$ 15,283	\$ 14,352
Interest on interest bearing investment	\$ 7,520	\$ 10,486
Other	<u>\$ 30,966</u>	<u>\$ 32,865</u>
Total Operating Expenses	<u>\$ 546,469</u>	<u>\$ 523,744</u>
Net Operating Revenue	\$ 1,652	\$ 3,016
Prior year loss to be recovered	\$ (553)	\$ (3,569)
	<u>\$ 1,099</u>	<u>\$ (3,569)</u>
NET UNEARNED COSTS TO BE RECOVERED FROM SUBSEQUENT REVENUES		<u>\$ (553)</u>
NET OPERATING REVENUE PAYABLE TO REPUBLIC OF PANAMA	<u>\$ 1,099</u>	

Cash Flows

Despite having operated on a break-even basis in terms of operating income, each of the previous two fiscal years have resulted in the generation of approximately \$23 million in cash after making the appropriate adjustments to net revenue. The cash account balance has grown to \$170 million from its historical average of about \$120 million, explained principally by growth in capital accounts (contributions to working capital and capital expenditures).

Aside from unusual changes in asset and liability accounts, the annual depreciation charge of approximately \$25 million produces a positive cash flow that can, and should, be converted to investment in plant and equipment. Additionally, the tonnage payment to the GOP (\$80 million in FY 1995) is a potential future source of cash flow for investment in growth businesses that also generate economic development and support Panama's National Maritime Strategy. After the transfer, there is a rationale for the GOP to use the Canal organization's competencies to put these financial resources to work for the national benefit. However, this is a policy question that can not be resolved based solely on financial criteria.

Similar to the observation made previously about the Statement of Operations, the PCC's stable financial condition and the nature of historical traffic patterns means that it can depend on steady cash flows. Their magnitude, however, depends on policy questions regarding how tolls are set and the payments that are made to the GOP Treasury.

Financial Resource-based Competence

The PCC has a strong financial base and financial attributes and strengths that can help in pursuing a growth strategy involving either improvement of the PCC's market position in its core business or diversification into new businesses, including:

- The stability of traffic flows and relative regularity of revenue flows affect favorably the ability to both build reserve funds and establish long range financial plans.
- Through toll increases, cost reductions or changes in the uses of funds currently dedicated to payments to the GOP, the PCC could increase the magnitude of cash flows available to investment.
- Related to the first two points, the strong cash flow generation potential combined with the large asset base enables the PCC to raise substantial levels of capital through debt issued on private markets. This would require a change in the current debt policy of the PCC and that anticipated by the ACP. However, it would better position the Canal to realize investments in growth opportunities both in the core business and in new business areas.

Critical Financial Issues

As a result of this review of the financial resources and policies of the PCC, the following critical issues have been identified that warrant attention.

- Sensitivity of revenues to toll increases. The fact that current tolls policies do not consider the market-based value of the transit service to users or differentiate by market segment, raises concern about the consequences of future toll increases on revenues.
- Risk of revenue losses due to lane outages. Daily transit capacity and delays are highly sensitive to lane outages for locks overhaul work. Extended lane outages due to unexpected maintenance requirements could severely affect traffic volumes and the stability of revenues and cash flows.
- Need for a rational pricing policy regarding tolls and other services to vessels. Pricing should be applied in a way that is consistent with the Canal's marketing strategy, whatever that may be. Generally, prices should be above the true cost to the Canal to provide the service and below the perceived value of the service to the user. These two "bounds" for pricing should be calculated for all Canal services and market segments as a necessary first step to the development of a rational pricing policy. The same extends not only to tolls but also to services such as linehandling, tug services and pilotage.
- Need for a long-range financial plan to allow for orderly financing and implementation of necessary capital expenditures. The prospects of rising maintenance needs for the Canal's aging infrastructure and equipment and the possible need to plan for long range capacity expansion urge the establishment of a financing plan that reduces unfair and damaging impact of toll increases to current users. This plan should consider the use of debt as a financing mechanism.

2.4 Summary of Issues Related to Core Business Growth

Optimizing the Canal's market position involves a clear understanding of the relationship between market demand, pricing, and capacity. The key to optimizing the core business and achieve growth is to understand the market and how it is changing. Optimizing the performance of the Canal's core business should be based on a market-based strategy to look at each market segment, explore how customer needs are changing, and develop strategies so the Canal can help its customers become more competitive. This approach to developing the Canal's marketing strategy should emphasize key customer concerns such as: Canal waters time and its predictability, and pricing.

The proposed Phase II effort is based on looking at two major approaches to pricing Canal services, **cost and market based**. The **cost-based** approach will look at what the Canal needs to charge to

recover its costs to provide the transit service. The major factors that affect vessel transit costs are the size of the vessel, its maneuverability, and its total transit time. These factors in turn affect the total Canal Waters Time and the resources that the Canal organization must use. The Canal should at least recover the cost for the services it provides plus a reasonable profit, whenever market forces permit it. **Market pricing** reflects the value that customers gain from using the Canal. The major factors that affect what the market is willing to pay are:

- the time and cost that it takes to use the Canal route compared to alternative routes;
- the value of the cargo, its perishable nature or timeliness demanded by shippers; and
- the cost of alternative supply sources and/or products.

A yield management strategy reflecting this analysis and the best approach to grow the Canal's core business will then be developed. The evaluation of the pricing system will be based on the various factors important to customers (e.g. per ton, per TEU, or per passenger) as well as the Canal's revenue potential.

The core business strategy must also recognize that the Canal is operating at close to its operational capacity of 38-39 transits per day (assuming today's vessel mix) and there is no excess capacity to plan for an increased level of vessel transits. Accordingly, the core business strategy should include initiatives to make the Canal relevant to the industry's future. Vessel owners make decisions on their orders based on many factors. Long term plans for the Panama Canal is one of the key factors considered. The Canal's core business strategy should seek to influence vessel owners decisions, and thereby, optimize its long-term market position.

The second element of a growth strategy for the Canal is to exploit the extraordinary opportunities for leveraging the organization's competencies:

- a capable, dedicated, well trained work force, with a variety of unique skills in Panama and Central America;
- specialized facilities and equipment, some with surplus capacity;
- long-standing relationships with maritime industry customers; and
- a strong, stable revenue base.

There is a large universe of opportunities that can be explored to supplement growth in the Canal's core business. The Canal's new business strategy needs to first focus on attractive growing markets where the Canal has strategic competencies that can be developed into competitive advantages.

The Canal has a sizable revenue base with a great potential to generate stable cash flows. Today's financial policy is based on a break even operations rather than a profitable growth strategy. The financial management policies of the Canal organization will need to be examined to consider appropriate financial mechanisms under a profitable growth strategy. Policy issues need to be

identified and studied, drawing from experiences of the PANYNJ, the Suez Canal and other relevant agencies. To fulfill the Canal's promise as a successful business enterprise focused on profitable growth supporting Panama's National Maritime Strategy and economic development opportunities in the Canal area, the ability to invest its revenues and leverage them to increase its long-term profitability needs to be considered. The experience of the PANYNJ is described in the next section. Legal and financial issues in Panama will have to be explored in Phase II.

2.5 Relevant Experience of the Port Authority of New York and New Jersey

The Port Authority of New York and New Jersey (PANYNJ) has evolved over 70 years from an organization primarily focused on the operation of tunnel and bridge facilities in the New York metropolitan area to one that has diversified into other businesses that include maritime ports, airports, real estate development, export services and telecommunications services, among others. The PANYNJ now receives almost \$2 billion in revenues from its various business areas. One of its early core businesses - marine facilities - contribute only \$97.5 million, or just under 5%. The organization has earned the reputation as one of the premier public sector agencies in the region for its ability to generate revenue and "get things done."

Despite variances across business areas, the overall PANYNJ operation has consistently produced income that has enabled it to continue to fund its operations and invest in new business opportunities as they have presented themselves. At the same time, the organization has been instrumental in encouraging private investment and economic development in the region it serves. Its financial structure is a relevant example of the potential for the Canal's financial base to generate other revenues and economic development in Panama.

The PANYNJ has the ability to raise debt to fund operations and investment in new businesses with the major limitation not set in law but in bonding agreements that its debt cover ratio remain above 1.3. At the close of FY 1994, PANYNJ carried \$6.2 billion in long term obligations, up from \$2.7 billion at the end of FY 1985. In addition, it made over \$250 million in interest payments during the year.

PANYNJ debt is not backed by the full faith and credit of the government, but only by the revenues it generates. Over 75% of debt obligations are Consolidated Bonds and Notes that are secured by the overall revenues of the PANYNJ and not dedicated to individual facilities. Even if during some years individual facilities or businesses do not generate sufficient income to meet individual obligations, a General Reserve Fund is employed to allow for pooling of income from all business areas to meet debt obligations, .

The use of long-term debt instruments--principal payments extend out beyond 2030--has enabled to PANYNJ to expand into new business areas that require substantial initial capital investments, for which long-term debt financing is generally the most efficient mechanism.

The freedom to raise its own debt secured by revenues and to pursue business opportunities within a broad area has contributed to the PANYNJ's development of a richly "commercial" culture. This commercial attitude enables it not only to enter into new areas in which it enjoys a strategic competence, but also affects the way in which the organization undertakes those activities that are perceived to be core activities. Although it is not free to earn "profits" in a strict sense and does not pay dividends to its owners--net earnings must be plowed back into investments--PANYNJ focus on the profitability of businesses and economic development helps it to perform efficiently and with a strong customer orientation.

The PANYNJ is an example of how the Canal can evolve into a profit-making organization dedicated to support Panama's economic development strategies. The PANYNJ has recently sold or issued concessions for some businesses. In a dynamic market setting, it is not uncommon that conditions may change that signal the need to divest of some businesses. The Canal may in the future be able to explore similar initiatives.