

***Section III:
New Business Opportunities***

III. New Business Opportunities

3.1 Evaluation Approach

Profitable growth from new business initiatives starts with a disciplined process of opportunity selection. The proposed process that the consulting team is utilizing has been successfully applied to a variety of growth challenges, in a variety of corporate settings.

The key feature of this process is the use of growth strategy concepts to narrow the list of opportunities. This involves evaluating the strategic case at a level of detail for an ever more focused list of opportunities. One of the advantages of this approach is its time and resource-efficiency. Research and analysis at each level of detail is devoted only to those opportunities that have had good cases established at the previous level.

Another advantage is that it allows the evaluation process to flow gradually and seamlessly into the strategy formulation process. The strategy for a new business initiative is necessarily intertwined with the strategic case for adopting that initiative. The question, "should we invest our scarce resources in this opportunity?" is a close relative of the question, "how can we ensure that an investment in this area will succeed?" At the end of the process, the original universe has been pared down to a fraction of its starting size, but the case for moving forward with the survivors has been worked out at a compelling level of thoroughness. At this point, the development of a formal business strategy generally requires only a small incremental effort.

This approach lends itself to the phasing called for by the present scope of work. Activities carried out as part of Phase I are described immediately below. Activities that belong to Phase II are described in Section IV.

3.2 The Phase I Opportunity Screening Process

The Canal's political context of the last 20 years has mandated a tight focus by the PCC on its core vessel transit business. A retreat from some existing business activities has occurred and no new business initiatives have been pursued. Now, with the imminence of the passing of ownership, it is appropriate for the PCC to think broadly, creatively and aggressively about growth-oriented new business opportunities.

The opportunity screening process had four steps in Phase I:

- Compilation of a starting universe;
- Initial screening;
- Initial prioritization; and
- Assessment of institutional roles.

Step 1: Compilation of a Starting Universe

The starting point for the exercise is compilation of a universe of business formation and expansion opportunities. The guiding spirit should be inclusiveness. Consideration of ideas that seem improbable will help ensure that the process is not bounded by the confines of conventional thinking.

Step 2: Initial Screening

The initial screening involves answering basic questions from the business strategy and economic development frameworks:

- Does the PCC have competencies that will support successful pursuit of the opportunity?
- Is the target market large enough and/or growing quickly enough to support a business with enough scale to justify the investment of organizational resources?
- Will the initiative avoid infringement on Panamanian private sector businesses?

The goal at this stage is to distinguish lower-priority opportunities from higher-priority opportunities. An opportunity will be considered low priority if a clear “no” can be given to one or more of the questions above on the basis of general knowledge and common sense. For example, the PCC might consider leveraging its relationship with the steamship lines by entering the marine insurance business. This would clearly fail the competence test on a common sense level; analysis of the marine insurance market and development of pro forma financial statements are not necessary to conclude that this idea should be a low priority.

Step 3: Initial Prioritization

The screening process by its nature should not result in a radical pruning of the starting universe. Given the relatively high proportion of surviving ideas, a method of prioritization is desirable to ensure that the likeliest ideas receive an appropriate level of subsequent attention while less likely ideas are given a chance to prove themselves. The approach employed here returns to the two business strategy questions used for the initial screening: (i) fit with strategic competencies and (ii) market attractiveness. Fit at this level adds a more general consideration of economic development impact.

In the case of strategic competencies, a high score is given if the PCC clearly has the complete competence needed for a given initiative. Maritime training receives a high score, for example, because it is something the PCC is already doing for itself. A lower score is given if the PCC's competence is less clear, or is incomplete.

In the case of market attractiveness, a high score is given if the market is clearly large, or if it is generally understood to be growing. A telecommunications business initiative receives a high

market score, for example, because there is no doubt that the market is large and that it is growing rapidly.

In the case of economic development, three considerations will contribute to an opportunity's score:

- If it will be a traded business;
- If it will deepen and extend national competencies; and
- If it will strengthen Panama's maritime industry cluster.

For example, vessel repair for outside customers receives a high score based on all three considerations given: (i.) the customer base will be largely non-Panamanian (ii.) vessel repair involves engineering expertise and (iii.) skilled industrial trades; and it is obviously a part of the maritime industry.

Step 4: Assessment of Institutional Roles

Like any business, the PCC can consider a range of institutional options for pursuing new business ventures, from "intrapreneurism" (starting new businesses from within an existing organization) to internal growth of existing businesses, to joint ventures and informal alliances. In addition to being a business, however, the PCC is a quasi-public agency whose business development efforts will influence and be influenced by other public sector agencies. This adds another set of institutional relationships that should be considered in the new business development process.

Institutional relationships often prove to be the most challenging aspects of new business initiatives – more challenging even than building a customer base or staying ahead of competitors. It is critical, therefore, for the PCC to start to think about institutional roles even in the preliminary stages of growth strategy development. A useful expedient in this regard is to break the portfolio of new business opportunities down according to the PCC's institutional role. Three categories present themselves:

- Opportunities that the PCC can drive forward based entirely on its own competencies and institutional position. Vessel repair for outside customers is an example of an opportunity that belongs in this category.
- Opportunities for which the PCC would be well-advised to seek a business partner because it has some aspects of the requisite competence but is weak in other aspects. For example, the PCC's facilities and experience in power generation provide a start for a growth-oriented business initiative, moreover, the organization's expertise is weak in such areas as thermal power facilities engineering and regulatory relations.
- Opportunities that may align with PCC competencies but which will require collaboration with other public sector organizations. Initiatives that might fit in the national maritime strategy, such as rail and port transshipment services, belong in this category.

3.3 Analysis of New Business Opportunities

A long list of possible businesses has been developed: the "universe" of business diversification options based on reviewing existing and historical Canal operations and interviewing representatives of the PCC, GOP and private sector who may have insights to, or interests in, new business opportunities involving the Canal. Clearly, additional opportunities can be added. The intent at this stage was not to define each business opportunity, nor to limit the initial universe, but to make sure that the various categories of possible new business opportunities were included in view of the Canal's core competencies.

The analysis considered a large universe of business opportunities and categorized them based on four major factors:

- relationship to the core business (e.g. the Canal's unique competencies and/or its business experience);
- market potential;
- economic development impact; and
- the Canal's role (whether the Canal should explore the opportunity unilaterally, in conjunction with other Government of Panama agencies, and/or as a private-public venture).

Clearly, the list of opportunities will be refined (e.g. to spell out market focus) as the process evolves and other opportunities could be added.

Business opportunities were divided into the following categories:

- Initiatives that the Canal should pursue based on its unique competencies;
- Opportunities where the Canal has competencies and/or experience but associating with the right partner would add to the business potential; and
- Other business opportunities where the Canal has no unique competence or experience, but its physical, human, and financial resources make it an appropriate player. These opportunities should be pursued with private sector partners and/or as part of a multi-agency initiative. Initiatives where the Canal should or could be involved include: Panama's National Maritime Strategy, Canal area tourism development efforts, and other development programs in the Canal area.

These three categories, together with the core business, would need to be explored in Phase II and eventually integrated into a portfolio of related profitable businesses that support economic development in Panama; utilize the Canal's financial base to encourage private sector investment; and fulfill the Canal's promise as the premier public sector entrepreneurial organization in Panama.

The universe of business opportunities included in each of the three categories are summarized in Figure III-1. Each business opportunity is then described and analyzed subsequently.

Category 1 Businesses Where the Canal Has Unique Competencies

■ Vessel and Heavy Equipment Repair and Fabrication

Vessel and heavy equipment repair and parts fabrication are carried out by the Industrial Division in Mt. Hope and a small repair facility at Miraflores. The Mt. Hope plant includes a foundry and medium level steel-working capability, giving the capacity to fabricate simple assemblies like barges, caissons, steel pipe and towers. The Division employs approximately 600 people (including 200 temporary employees). The main plant is fully manned for only one shift working from 7 am - 3 pm five days a week. In addition, there is a small night shift of about 50 employees and a weekend shift of 45.

The current plant workload is primarily support to the locks and floating plant of the PCC. Efforts focus on maintenance and repair of lock gates, locomotives, tugs, launches and barges. Additionally, the Industrial Division repairs other lock parts, such as valves, gates, and penstocks; power plant parts at the dams; cranes; caissons; the dredging plant; and other major equipment and installed plants of the PCC. Finally, on a space-available basis, some emergency repairs are done for transiting vessels.

There is currently pent-up demand for additional repair services to ships. Additionally, the land-based support capability of the Industrial Division makes potential growth in services to outside customers possible. The large number of heavy construction equipment and cranes in both private and public sectors in Panama represent a potential market for major repair and overhaul. The main source of demand potential comes from the strategic location of the facilities. There is a ready market in the ships that transit the Canal and the pending privatization of the port of Cristobal near the plant.

There is no other competing capability in Panama that can match the Industrial Division. The dry-dock in Balboa (on the Pacific side) is the only other maritime repair facility and is limited in both skills, available area and equipment. Operated by a private company, Astilleros Braswell, the dry-dock is the size of the Canal locks and the largest in the region. This dry-docking capability should actually enhance the market attractiveness of the Industrial Division by attracting other business to the area. The possibility of joint venturing with Astilleros Braswell could also be examined.

Outside Panama, there is no significant capability nearby, short of the US Gulf ports that can match the capability of the Industrial Division. The nearest facility is located in Curaçao in the Netherlands Antilles, one and a half days sailing distance away.

**Figure III-1
Universe of Business Opportunities**

Categories	Business Opportunities
Businesses where the Canal has unique competencies	<ul style="list-style-type: none"> ■ Vessel and heavy equipment repair and fabrication ■ Maritime and industrial training ■ Dredging services ■ Maritime services
Businesses where the Canal has some competencies and experience	<ul style="list-style-type: none"> ■ Electric power generation ■ Potable water supply ■ Marine statistics publishing and information services ■ Telecommunications and the Teleport concept ■ Chilled water supply ■ Wastewater treatment ■ Solid waste disposal ■ Fire protection ■ Emergency services ■ Printing services ■ Administrative services
Other businesses	<ul style="list-style-type: none"> ■ National Maritime Strategy-related businesses ■ Tourism-related businesses ■ Colon airport development ■ Real estate and other development in the Canal area

Growth of the business could easily be accomplished in phases. First, growing the workforce to fully utilize the existing plant. Then expand the plant. Finally selected parts of the work would be outsourced. The addition of about 150 employees would permit manning a second shift with minimum impact on management or support function and avoid interference with current activities to support Canal operations.

There is a large pool of unskilled labor available in the immediate region of Colon. The rate at which employees could be brought on line would be limited by the capacity of the training and on-the-job apprentice programs in the Industrial Division. Currently 46% of the workforce commutes from Panama City. However, skilled labor is not readily available anywhere in Panama.

Land for expansion is available. There is a potential for expanding the plant south towards the water plant, and across the highway into the area of the old milk/ice cream plant. With the removal of the yacht club at Cristobal, a potential site for a new large dry-dock could be made available.

The Canal has unique competencies in these businesses and excess capacity that would make market entry easy. The growth of this business is perfectly aligned with Panama's maritime strategy objectives and economic development interests. Joint venture arrangements and apprenticeship programs could help transfer skills to the private sector and the Panamanian workforce that could produce the emergence of an economic cluster centered around vessel and equipment overhaul. Given its central location in the region and "captive" customer base of transiting vessels, the Canal is well positioned to capture a significant share of the potential market making revenue potential high. Market potential also includes expanded Canal needs, such as fabrication of new locomotives. Therefore, further study of this new business opportunity is recommended for phase II.

■ Maritime and Industrial Training

The Canal has a training program that is unique in Panama, including industrial, maritime and commercial training. Possible maritime training services that could be a profitable business opportunity include seamanship and tugboat operations, pilot training, marine fire fighting, hazardous materials. Potential clients include private and public ports in Panama, vessel crews, and other port and maritime organizations from Latin America. The American Association of Port Authorities (AAPA) has established a training program for Latin American ports headquartered in Chile. Possibly, Panama could establish a branch centered on its unique facilities (marine simulator) and location (serving Mexico, Central America and the Caribbean area). The organization of Central American Ports, COCATRAM, could also be a potential user. Industrial training services can also be offered to private clients in Panama and other countries.

Opportunities related to training can be considered in two categories: 1) industrial/commercial training, and 2) maritime training.

■ Industrial/Commercial Training

Industrial training refers to the trade skills required primarily in manufacturing/plant environments. While some may be appropriate to the maritime sector, they also have direct relevance to other sectors. Commercial refers to those PCC training programs that are more relevant to commercial environments, typically white-collar positions such as those held in Panama's bank and hotel industries. In some cases, other organizations in Panama offer programs that are similar. In such cases, the PCC would have to pursue a product differentiation strategy. This effort will be furthered by the PCC's quality reputation which facilitates this product differentiation.

Industrial training is primarily under the purview of the PCC's Industrial Training Branch, which employs about eighteen instructors representing a variety of disciplines ranging from Electrical and Electronics repairs to Auto Mechanics, Machining, and Hoist Operations. The Branch has the capability to address about 175 course topics, although not all are offered on an annual basis and are scheduled in accordance with the PCC's personnel requirements and the workloads of individual units. Apprenticeship training is generally conducted in the PCC's Trade School, a facility consisting of a variety of fully-equipped workshops required to support the apprenticeship training. Personnel holding industrial (craft) positions also have access to the Technical Multimedia Training Center, which offers 31 different multimedia courses addressing various craft areas, ranging from electrical and mechanical to welding, machining, and crane operations.

The Safety Division also provides training that could be of interest to the industrial as well as commercial sectors. The Division typically provides training to about 3,500-4,000 PCC employees and contractors per year. In fiscal year 1995, more than 25 courses were offered for a total of 804 sessions representing a total man-course hour load of 41,314. Courses ranged from CPR, First Aid, and Defensive Driving to Confined Space Training and Hazard Communications. The training is offered in a short-course format; each program's duration falls within the range of 2-13 hours.

Virtually all of these training programs have broad industrial and commercial applications, within and outside the maritime environment, for managerial, technical, professional, and skilled worker positions. The array of apprenticeship courses offered by the Industrial Training Branch, with an apparent excess capacity at its Trade School, is appropriate for a range of industrial environments in Panama.

The Safety Division's unique Confined Space Training is pertinent to all employees working in confined spaces in industrial environments not just those of the Canal. Ergonomics training is of interest to the office and industrial applications in Panama; while the Division's array of safety training courses, given their short-course formats, are well-suited for refresher training for the crew members of the vessels transiting the Canal as well as for industrial and commercial environments.

■ Maritime Training

The Maritime Training Unit, with programs in seamanship, towboat operations, and pilotage, is of great potential interest to the region's maritime community in general and to Panama in particular given the traffic growth projected from the concentration of container transshipment activities in Panama and around the region. There is a surge in transshipment activity and associated operational support activities (e.g. pilotage, tug services). No less than eleven ports in the Caribbean region have undertaken, or are in the process of planning, major expansion programs to serve the expanding container markets.

The Maritime Training Unit provides training in seamanship and towboat operations. In this capacity, the unit serves various divisions that operate small crafts/launches. The Training Unit also provides training to personnel of other agencies that use small water crafts/launches, including the U.S. Army and Navy, and Panama's Forest Service and Coast Guard (Servicios Marinos) (no fee is charged to these participants). Other training-related activities include an orientation program to students at Panama's Nautical School as well as to a private sector tug company (Smith Towing) to improve integration between Canal services and those provided by Smith Towing.

The Training Unit also administers the Pilot-in-Training Program, the Pilot Understudy Program, and the Towboat Training program. The Pilot Training Program is a 34-week program consisting of both classroom and on-the-job training. For those potential trainees that do not have the minimum qualifications for entering the Pilot Training program, prospective pilots may attend the Pilot Understudy Program as a prerequisite for entering the Pilot-in-Training program.

The Maritime Training Unit uses a marine simulator that recreates various Canal navigation and incident scenarios that might be encountered during a pilot's career. With Radar/Arpa capabilities, the simulator uses data bases that recreate the navigational areas and maneuvers within the Canal using 12 different vessel types/sizes. The Unit's marine simulator has potential application for training in other marine environments if the simulator's hydrodynamic and other data bases could be expanded.

The Fire and Emergency Services Division provides training in ten different areas ranging from basic and marine firefighting to CPR and EMT training. Additionally, the Fire and Emergency Services Division is developing a school for hazardous materials training designed to focus on land spills from containerized cargoes and water spills as well. Fire protection and emergency training, especially that related to marine fire fighting, is pertinent to Panama's and the region's expanding maritime sector, as would be the Division's new capabilities in hazardous materials training in both land and water environments.

In summary, the following training areas have potential interest in Panama and/or in the region:

- trade/craft skills
- confined space
- ergonomics
- safety certification/refresher course
- training-of-trainers
- seamanship
- pilotage
- towboat
- marine fire fighting
- hazardous materials
- security

Training activities have the potential for revenue generation and will also assure that the unique facilities and personnel skills available are better utilized, so as to lower costs to Canal users. The expansion of training activities as a new business area also contributes to the development of Panama's national maritime strategy. The unique skills and infrastructure that the Canal possesses can serve as the basis for the development of economic clusters centered around maritime and industrial services. Over the long-run, they could result in the transfer of technology and skills to the local private sector. Further study is recommended during phase II.

■ Dredging Services

The Canal has a skilled force and equipment plant (2 dredges, scows, pipelines, etc.) that are available for both maintenance and new work. These Canal operated dredging services are also unique in Panama and nearby countries. These resources could be utilized to develop into a source of revenue. Potential clients include Panama private and public ports, private construction companies and developers. Possibly, the business at certain times could use its plant and personnel to undertake dredging projects in nearby countries, while always maintaining required equipment for Canal maintenance and emergencies in the Canal area.

The potential for taking on outside work is constrained by several factors. First, the dredges and crew will be fully utilized for Canal work until the completion of the Gaillard Cut widening around 2005. Acquisition of a new dredge is under consideration as part of the accelerated schedule for the Gaillard Cut project, but an additional crew will also be needed to fully utilize the equipment. Second, there could be a conflict between the Canal and other dredging users over scarce disposal area capacity. Presently there is sufficient disposal capacity to accommodate the Canal's needs for the foreseeable future. Before considering providing services to outside customers, it is necessary to insure against negative impacts on the Canal's normal operations. Disposal capacity would not be a problem in the case of customers outside the immediate region.

The Canal has unique competencies in this area and there is a potentially large market in which it could compete. However, dredging services are a very competitive market at a worldwide level. There may be opportunities where the Canal is obviously in the best position to provide dredging services to ports and others in Panama, but the business potential may not extend to a wider market. In light of the competitive situation and the issues regarding the potential impact on core operations, this opportunity should be studied carefully during phase II.

■ Maritime Services

Some of the maritime services provided by the Canal present opportunities for increased revenue generation, although the Canal is not the only service provider in Panama. The opportunity in this area lies primarily in supplementing private services and achieving better utilization of the Canal's resources, without impacting the core business. Maritime services that could be provided by the Canal include:

- Pilotage services
- Tugboat rental and services
- Launch rental and services
- Line handling services

Pilotage services are already provided by the Canal to the vessels calling on ports that require navigation through the Canal operating area, i.e. Balboa and Cristobal. This service could be expanded to private ports close to the Canal, such as Manzanillo and other planned developments (Evergreen terminal in Coco Solo), and possibly other ports in Panama. Similarly, the Canal has the largest tug boat fleet in the area. Both pilotage and tug services are critical needs for the Canal's core business. These business opportunities also should only be pursued as incremental revenue generators to lower costs to core business customers and if they do not affect service level of Canal transits. Careful study is necessary in phase II to assure no impact on the vessel transit business.

Category 2 Businesses Where the Canal Has Some Competencies and Experience

■ Electric Power Generation

The Canal power plant operators have physical control of lake level regulation. The power houses and control of lakes are directly linked and the PCC must retain full and autonomous authority over lake level regulation. Therefore, because of the nature of the operating requirements of PCC's core business, PCC is required to be an electric power generator. The thermal resources serve PCC as important backup power to guarantee the ability to operate the core business reliably.

The PCC and IRHE (Panama's electric utility) maintain a cooperative relationship, although they have no long-term relationship. In recent years, the PCC has been unable to buy any cheap hydro

power from IRHE, but IRHE buys all available PCC hydro power, saving its own water for dry season use. For power generated by other means, IRHE costs exceed those of PCC production.

PCC electrical charges are thought to be considerably below market rates. Except for the commercial rate, the rate structure does not include overhead. In addition, the PCC subsidizes service to certain customers including employee residences.

All power provided to the US military, as well as that required for PCC operating and administrative needs comes from the PCC. This could be a growth area for the PCC as areas revert to Panama and IRHE cannot easily serve these areas. As areas revert, the PCC has an opportunity to continue selling electricity directly to the new customers in the former military and PCC areas. This is a natural customer base and probably the major potential electrical sales market for the PCC. Indications are that IRHE would encourage this move and customers would be better served than is now possible by other providers.

Based on treaty implementation, the IRHE supplies the reverted areas. Since 1991, IRHE has not been able to provide this service so the PCC has been providing service and charging IRHE. Distribution in the reverted areas has been over PCC lines for which IRHE pay a wheeling charge.

The projected loads and resources in the potential market are an important determinant of the revenue potential of the PCC to become a power provider. The following graphs describe historical generation for PCC and IRHE. The graph for PCC shows historical and forecast sales (losses were not included in available data). This forecast is based on assumed U.S. military drawdown. The IRHE graph projects energy requirement (sales and losses) based on historical growth rates. The medium forecast projects load growth at 5% per year, near the average growth rate in recent history. A low scenario projects loads growing at 3.5% per year and a high scenario projects loads growing at 6.5% per year.

The graphs in Figures III-2 and III-3 show the surplus that will develop for the PCC and developing resource constraints for IRHE. The relatively high growth for IRHE load may require significant expenditures to satisfy.

The resource portfolios of PCC and IRHE differ which may offer opportunities for a comparative advantage in the exchange of baseload and peaking generation. Figures III-4 and III-5 show the historical distribution of PCC and IRHE between hydro and thermal resources.

The PCC thermal plants at Miraflores are strategically located and have room for expansion. Miraflores facilities include: cooling water without risking Canal operations, fuel pipelines, distribution and transmission facilities.

Panamanian electrical demand has been growing steadily in recent years and is expected to continue to grow at a rate of approximately 5.5% per year. IRHE is undergoing an expansion plan that will

Figure III - 2

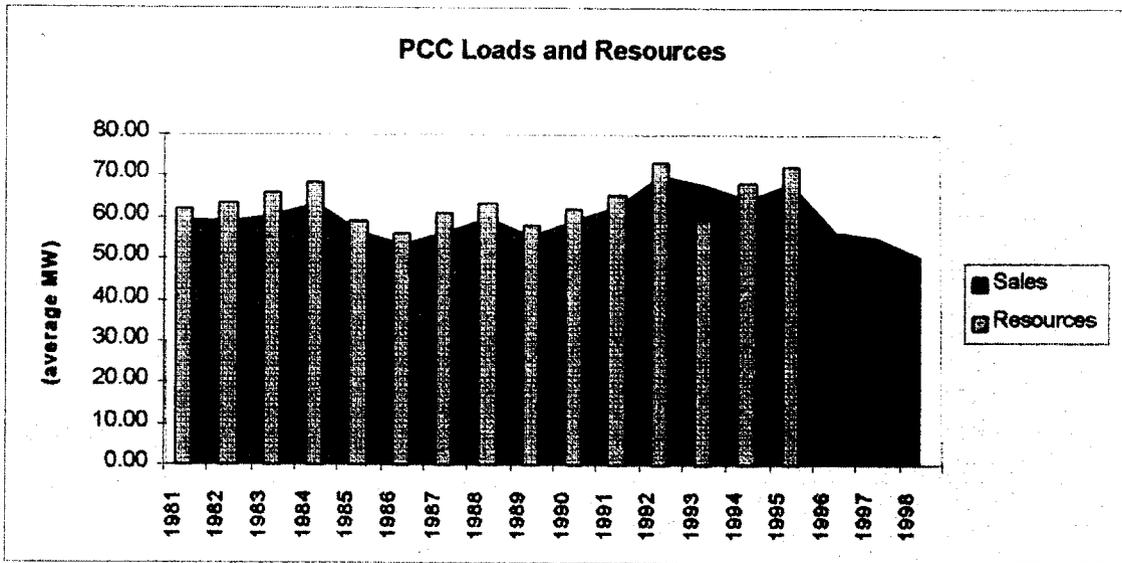


Figure III - 3

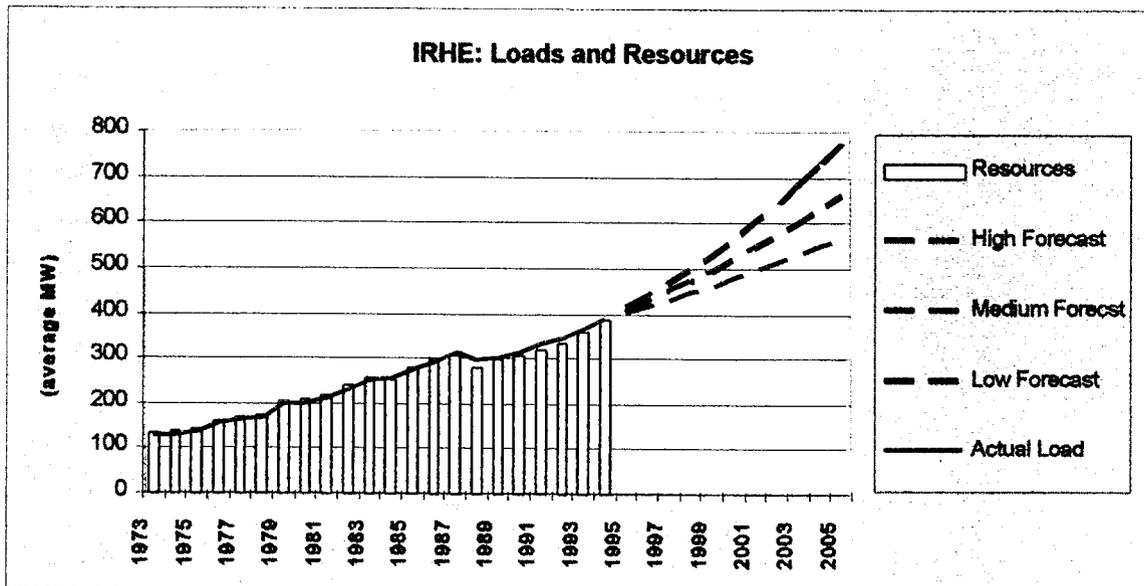


Figure III - 4

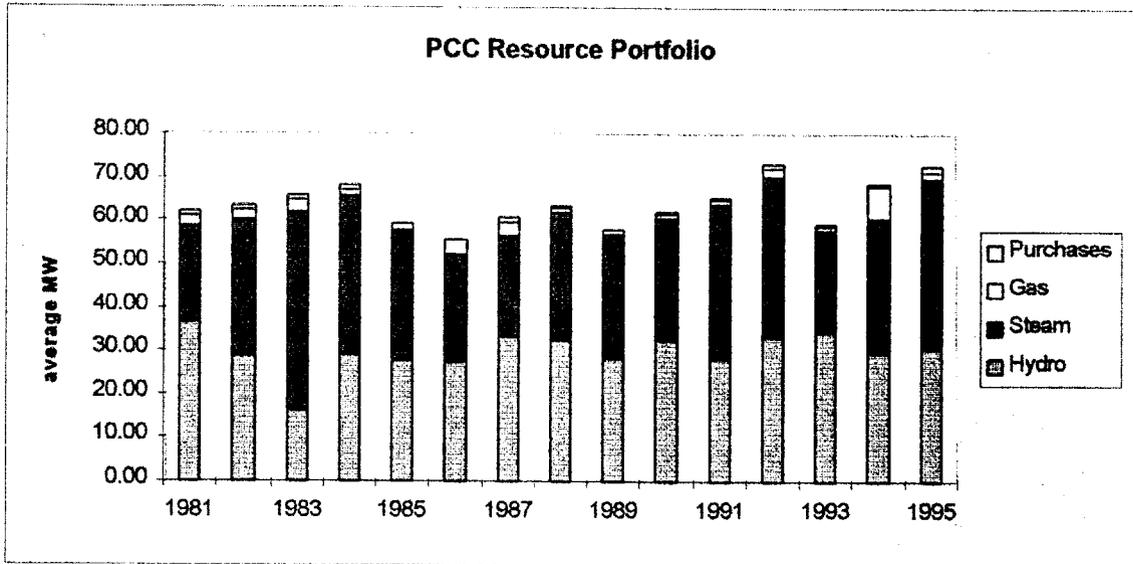
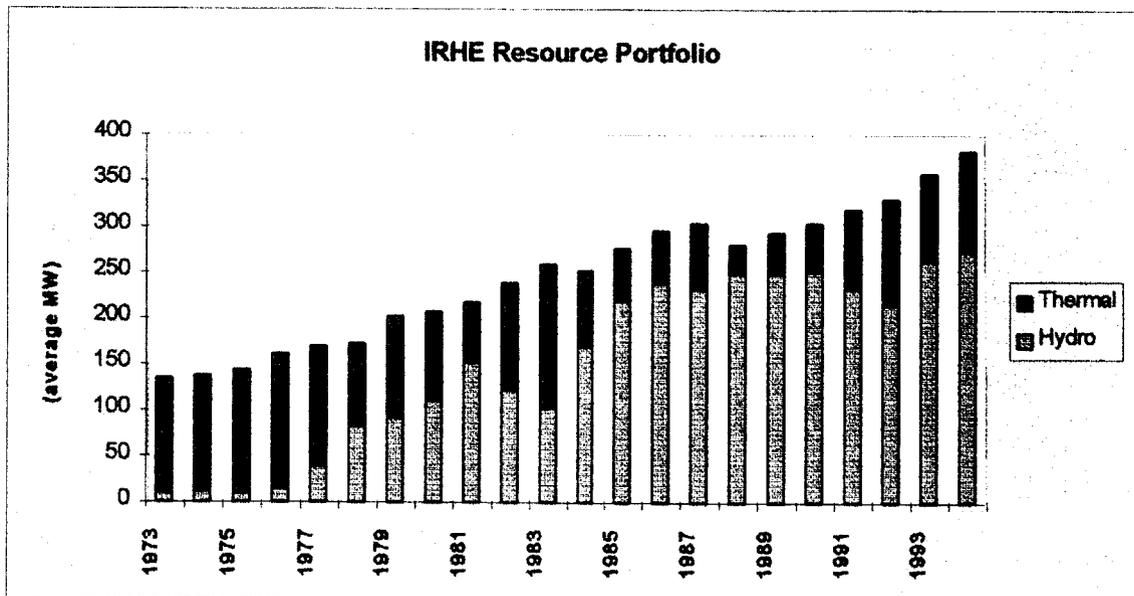


Figure III - 5



result in 100 MW of thermal generation in 1998, rehabilitation of several plants adding 68 MW of new capacity by 1999 and 130 MW of new hydroelectric capacity by 2000. IRHE expects this to provide adequate capacity by 2000, although there may be a shortfall in 1997/1998. The Government of Panama may have to purchase some power to meet this deficit from neighboring Central American countries.

The PCC could help with the expected shortfall in the near term and could also serve longer term demands given the decline in demand by PCC's US Military customers. Department of Defense demand from PCC is expected to drop from about 350 MW in 1996 to nearly zero if facilities are closed as scheduled by 1999.

The energy sector in Panama, and around the world is in the midst of unprecedented structural change. Activities that have until now been carried out almost exclusively by IRHE are being distributed among private operators and other organizations. Since 1992/1993 Panama has been moving toward restructuring. The recently passed Law 6 is expected to speed this process. The outline of the prospective structure is as follows:

Generation will be distributed among private concessionaires, but not more than 45% and only thermal generation. IRHE will maintain no less than 55% of total generation. Transmission will be under the exclusive authority of IRHE. Distribution will be 100% private.

This restructuring is coincident with a strong global trend to electric power privatization and deregulation. This trend is especially strong in Latin America where Chile, Argentina, Brazil, Bolivia and Peru are some of the most advanced countries in deregulation and privatization. At the same time as Panamanian and global electric power restructuring, the Central American isthmus is becoming increasingly integrated in general economic terms and specifically in the electric power sector because of the upgrade of Central American electric transmission systems. For current and potential future power producers, this restructuring and integration poses a great potential for new markets, but also risks from increased competition.

Other industries have experienced a restructuring program similar to what the electric power industry is now experiencing. The telecommunications, natural gas and airline industry have all moved from either public ownership and strong regulation to a deregulated or private paradigm. Common trends have emerged among these industries. Deregulated industries pass through five common stages summarized as follows:

Stage 1 - Traditional Equilibrium

Provider: Vertically integrated, protected, obligation to serve

Regulators: Socially-driven cost allocations; determines financial results

Competitors: Inter-modal only

Customers: Captive

Financial markets: Consistent expectations and returns

Stage 2 - Change Begins

Provider: Confidence in barriers to entry; bundled services
Regulators: Growing consumer sympathy; permitting niche player access
Competitors: Undercapitalized niche players
Customers: Target customers confused; ill-equipped to choose
Financial markets: Believe traditional structure may hold

Stage 3 - Transition

Provider: Price cutting to defend market; across the board O&M cost cuts
Regulators: Increasingly adversarial to company; skeptical of costs and competence
Customers: Rising customer expectations; increasing defections
Financial markets: Perceive greater risk for traditional providers

Stage 4 - Refocus

Provider: Clear winners and losers
Regulators: Deregulation reaches core services; regulating price not cost
Competitors: Some full service; wider open access
Customers: Expanding market; declining vendor loyalty; more sophisticated buyers
Financial markets: Interested in cash flow and risk management

Stage 5 - Dynamic Competition

Provider: Successful companies avoid commodity trap; market pricing
Regulators: Consumer protection concern
Competitors: Mature market place
Financial markets: Same as for other competitive industries

Panama now is between Stage -1 and Stage -2. There are unique circumstances in the electric power market in Central America. However, there are also some common factors to global power restructuring and restructuring in other industries. Once a transition is begun it often progresses more rapidly than expected. Large consumers, highly capitalized independent power producers and budgetary pressures on the government all exert pressure to accelerate the emergence of competitive markets. The common trends in other industries will be summarized and analyzed for the applicability to the power industry in Panama. An understanding of these market conditions is important to determining the risks and opportunities for the PCC in marketing power.

Restructuring also opens up the possibility of increased competition. A competitive threat assessment will need to be conducted in Phase II to determine the likelihood of independent power producers or other agencies entering the power market. The corporate strategies and cost structures of potential competitors must be assessed.

Marketing in a competitive environment raises issues as to how to structure contracts and delivery of service. In the deregulated electric power situations a spot market often matures rapidly. This

type of sale offers firms the ability to manage costs and revenues in the short term. However, many power producers prefer to sell some power in long term bilateral contracts either to a distribution utility or directly to end-users, typically industrial or large commercial customers. The portfolio mix between these marketing strategies will depend on corporate goals with respect to revenue maximization and on the resource mix of the PCC and other potential marketers. The goals and cost structure of the PCC should be compared with other power producers and the outlook for the development of the spot market and the potential for bilateral contracts to assist in the development of a corporate strategy.

In the current situation, the hydro and steam plants generally are in good shape and would be able to compete well against other producers without the need for substantial investment. 20 MW of the capacity of the gas turbines are from relatively old units that may not be cost effective to operate without significant investment in rehabilitation. The PCC has developed competence and technical expertise in power generation that can be leveraged if it chooses to enter the market as a private power generator within the context of the present deregulation scheme.

However, the institutional culture at PCC may not be accustomed to a competitive marketplace. PCC is a government corporation operating in a traditionally noncompetitive environment. However, this is also true of many public service companies such as IRHE that will be the immediate counterpart to PCC should the PCC become a power marketer. Therefore the PCC with its current structure may be more able to rapidly institute the kind of organizational structure needed for a private power industry. A review of PCC's institutional framework should be conducted in phase II.

Several possibilities exist if the PCC pursues the power market. The PCC may act as a sole proprietor, in a joint venture with private firm under varying management and authority structures, or as an issuer of concession to private sector operator. The legal and institutional framework required under each of these scenarios needs to be examined. There is at least one private firm that has already expressed interest in a joint venture with the PCC, and this type of venture might make sense to minimize risks.

In light of the PCC's technical competence, existing infrastructure and the strong market potential, this business opportunity is recommended for further study during phase II of the growth strategy.

■ Potable Water Supply

The PCC's potable water system serves both the Pacific and Atlantic sides of the isthmus. On the Pacific side, the system consists of the Miraflores filtration plant, six pump stations, 18 reservoirs and 550 miles of water lines. Miraflores produces a rated maximum of 48 million gallons of water per day. Approximately 80% of the output is sold to IDAAN.

The Atlantic water system is comprised of the Mt. Hope filtration plant, the Mt. Hope pump station, eight reservoir and 70 miles of pipeline. The Mt. Hope filtration plant is supplied by gravity flow from Gatun Lake. The plant treats approximately 24 million gallons of potable water per day.

The PCC Water System has 96 employees. 40% of the workforce is dedicated to the production of potable water and the remaining 60 % to the operation and maintenance of the distribution system. Water system expenses for fiscal year 1995 were \$6.1 million, excluding energy costs. Revenue for the year was \$13.4 million.

IDAAN is responsible for providing water to the Panama City metropolitan area, Colon, Arraijan and La Chorrera. Some of these areas could be served by the PCC. IDAAN also provides water to other population centers such as David and to outlying areas including Herrera, Los Santos, Chiriqui and even Darien with water systems which include wells, pumping stations, infiltration galleries and treatment plants.

The total water use of the Panama Metro area and Colon is in the range of 175 to 219 gallons per person per day. Losses are very high within IDAAN's service territory. A program has been approved to repair water main leaks which contribute about 40 percent to current demand.

The largest treatment plant is the Chilibre plant with treatment capacity of 49,275 million gallons per year. This plant draws water from Lake Alejuela (Madden Lake). This amounts to about 120 million gallons per day serving a population of slightly less than one million. The next two largest plants are those of the PCC; the Miraflores plant with an annual capacity of 10,25 million gallons and the Mount Hope plant with a capacity of 7,468 million gallons. Both of these plants draw water from Gatun Lake. In addition to serving PCC needs, these plants also provide water to the U.S. military and to IDAAN. Over 80 % of the water needs for the Atlantic communities, including Colon, are served by the Mount Hope plant.

There are seven additional plants and a number of wells serving the region of Panama City and Arraijan. These plants range in size from 2,190 million gallons to 158 million gallons. All draw their surface water from various rivers in the region. The diversion of water from Madden and Gatun Lakes to serve municipal water supply has no significant current or projected impact on Canal transit capacity. PCC and IDAAN have not formally discussed any anticipated needs for water service for potential customers or concessionaires on reverted military bases and areas.

There are two main alternative for the PCC water plants. The PCC can continue operating the two plants, or IDAAN can assume this responsibility. It might also be advantageous for the PCC to establish smaller, modern package-type treatment plants to serve just PCC needs and preserve self sufficiency. The Canal has the competence and skills to continue to serve water supply needs. Atlantic side capacity will need to be expanded to serve projected growth from development of reverted areas. The Canal can provide this additional capacity at a relatively low cost, possibly less than a \$10 million investment. There is no other logical cost-competitive source. It would be

appropriate for the Canal to propose, either unilaterally or as a joint venture, to serve this need. Further study is recommended during phase II.

■ Marine Statistics Publishing and Information Services

The Canal has one of the largest vessel information data banks in the world, possibly second only to Lloyd's of London. It adds over 1,000 records per month and has around 30,000 ships with trailing data for every Canal transit. Private firms have expressed interest in getting access to this data for their own use or to sell the information to others. One firm is known to have offered to develop software and pay for the data. The Canal should explore this business opportunity during phase II which may not be a large revenue generator, but can at least help pay for the Canal's own data bank maintenance costs.

■ Telecommunications and the Teleport Concept

The Canal has some competency and experience. The Canal has a sophisticated telecommunications system for its own needs, including fiber optics cable, microwave and satellite services, switching systems, narrow band radio systems, video-conferencing network system. However, the telecommunications technology is rapidly evolving. Panama is pursuing privatization of INTEL, the nation's telephone utility, and two firms have been pre-qualified. Bell South has been selected to provide cellular services.

Private sector interests in Panama have also been pursuing the concept of a Teleport in Panama. The Teleport concept originated by the Port Authority of New York and New Jersey in the early 1980's. Teleports are integrated facilities that give their users fast, convenient access to advanced communications. Teleports cut communications costs to and increase flexibility for information-intensive industries, such as finance, broadcasting, shipping, and publishing. Two of these, finance and shipping, are important sectors of Panama's economy.

The PANYNJ Teleport was developed as a joint effort with several private firms. Present users include Merrill Lynch, American Express, Metropolitan Life, State Farm, etc. The Teleport has been a profitable venture for the PANYNJ, generating \$13.8 million in revenue, \$3.3 million in income from operations and \$421,000 in net profit in 1995. The Panama Canal could pursue the development of a Teleport in Panama with the interested private sector group, offering its competencies and resources.

Major Teleport facilities presently are located in the US, Europe and Japan. A Teleport would help establish Panama as the Singapore of the Americas, and as Latin America's international trade, distribution and shipping center, complementing the Canal, the Colon Free Zone, and the private

sector finance and shipping businesses. The substantial risks involved because of rapidly changing technology will have to be evaluated. Further study is recommended during phase II.

■ Chilled Water Supply

The Balboa chilled water plant consists of three main chillers with a total available capacity of 3,000 tons. At present loading requirements, only two of the chillers are needed at any one time. Sixty-five % of the load is sold to the U.S. Department of Defense for buildings in the Balboa and Ancon areas. Thirty percent of the chilled water output is used by the PCC and five percent by the Government of Panama.

The distribution system consists of 4 miles of insulated pipes. The network is totally underground. En route to the separate facilities, the water is diverted into smaller lines totaling twelve miles of pipe.

The opportunity exists for the Canal to sell the surplus output of its existing plant to future tenants of the reverted areas once the military bases have been deactivated. The Canal does have skill in the operation of its plant, although it does not probably have unique competence in the marketing and customer service aspect of the chilled water service business. Since the plant will most likely continue to be operated to satisfy the PCC's own needs, it makes sense to try to sell surplus output to outside users to offset the plant's operating costs and improve the Canal's cost efficiency. However, some attention should be given to changes in technology and the needs of users in the reverted areas to assure that the Canal's continued operation of the existing plant is the most efficient means of provided chilled water/air conditioning services. It does not appear that this business opportunity can develop into a long-term revenue producer and profit generator for the Canal.

■ Waste Water Treatment

The Canal's waste water treatment facilities could be used to provide service to outside customers, either directly or through the GOP agencies responsible for sanitation. However, this opportunity does not appear to represent a long-term priority area to generate revenues and profits for the Canal.

■ Solid Waste Disposal

If the Canal were to continue to operate its two landfills for its own waste disposal purposes, it could use excess capacity to provide the service to outside customers, either directly or through the responsible GOP agencies. It is understood that the Canal is planning to close its existing landfills which are close to capacity. The PANYNJ has developed a solid waste resource recovery facility, which can be an example of a potential business opportunity for the Canal to meet Panama's solid waste disposal needs. Such an opportunity might be more appropriately considered long-term.

■ Fire Protection

The PCC maintains a specially trained and well-equipped fire protection corps with expertise in marine fire emergencies, including hazardous materials. This service could be sold to ports in the region who have the need for fire protection services, but are not able to make the necessary investments to develop a response capability similar to that of the PCC.

The combination of specialized equipment and personnel in marine fire protection result in a level of competence in maritime fire protection that can not easily be matched by others in the region. The existing port facilities at Balboa, Cristobal and Manzanillo, the facilities being reverted to ARI and the potential new port terminals all form a substantial potential customer base. It is unlikely, however, that the total market would generate high revenues as compared with the core business. Therefore, this opportunity should be considered in Phase II as part of the National Maritime Strategy and not as a major near-term business opportunity for the Canal.

■ Engineering Services

The Engineering and Construction Bureau has a large, highly skilled workforce dedicated to serving the engineering needs of the Canal's core operations. Many of the facilities and capabilities that have been developed are at such a high level that they are unique to Panama and the region, such as the geotechnical design, soils laboratory and channel design capabilities. This presents the opportunity to sell these services to outside customers, such as Panama's public and private ports, other private Panamanian businesses, and even other customers in the Central America and Caribbean region. The revenue generating potential is relatively small as is the sustainability of the competitive advantage it now would have over private regional and local firms. Additionally, to compete as a full-fledged private firm, some expansion of its equipment and human resource base would probably be necessary to avoid diverting resources away from functions essential to Canal operations. In the long run, if there are needs for these services in the local market, the private sector will probably be well equipped to satisfy them. Therefore, this opportunity should not be studied as a priority new business opportunity during phase II.

■ Printing Services

The Canal has a printing plant that is used to serve its internal needs. It currently operates well below capacity on one shift per day. The Canal could enter into competition with the local private sector to provide printing services to outside customers, using the plant's excess capacity. The Canal does not have unique competency in this area beyond the plant and staff that mans it. Furthermore, entry into the Panamanian market would raise concerns of its effect on private sector firms. Finally, the revenue generating potential is small compared with core revenues and other new business opportunities. This opportunity should not be studied as a priority new business opportunity during phase II.

■ **Administrative Services**

The magnitude of the Canal organization and the complexity of operations have resulted in the development of high-level administrative support systems that are not common in Panamanian business. Specific examples are procurement, inventory control, payroll management, and fleet management. These services could potentially be provided to other firms or government agencies in Panama as a new business. Although the Canal has competence in these areas, the revenue potential is not high and it might cause conflicts with the local private sector or require expansion to insure against a negative impact on core operations. Therefore, this opportunity should not be studied as a priority new business opportunity during Phase II. Depending on the definition of the new ACP role and relationships within the government of Panama, it may be appropriate to use some of the Canal competencies in these areas to improve overall government operational efficiency longer-term.

Category 3 Other Businesses

■ **National Maritime Strategy-Related**

Panama's National Maritime Commission (COMAR) is currently developing a National Maritime Strategy in which the public and private sectors will combine to help Panama take advantage of its strategic geographic location, the presence of the Canal, its long tradition as a maritime nation, its strong skill base and other resources to establish itself as a hub of international maritime services. The maritime projects to be promoted in Panama as the International Maritime Center can be divided into the following types of services or business opportunities:

Services to Ship Owners

- Registry
- Professionals, Legals and arbitration
- Brokerage, Chartering (Naked hull, Time and Trip)
- Financial, banking, and vessel financing
- Communications
- Corporate Infrastructure

Services to Ships

- Cleaning of the hull
- Cleaning of tanks
- Analysis of oils and lubricants
- Shipyard repairs
- Emergency repairs and anchorage

- Spare parts and supplies
- Repair and installation of Electronic and Communication Systems
- Repair of Motors, Plants and Refrigeration Systems
- Pilotage (in port)
- Water, Fuel, and Goods Supply
- Services to the Crew
- Salvage and towing (in port and sea)
- Medical services
- Brokerage of cargo space
- Insurance to the hull and P & J
- Vessel Agent, Administration, etc.

Services to Cargo

- Port Services and Facilities: loading, unloading, storage, transshipment (land and air intermodal service)
- Regional Distribution (Colon's free zone)
- Stuffing/Consolidation, destuffing/deconsolidation, and packing
- Storage and distribution petroleum derived
- Lease, Repair and Storage of containers
- Financial services to the cargo
- Cargo security
- Cleaning of refrigerated containers

Related Services

- Repair of yachts and motor-boats
- Pleasure Craft Marinas
- Tourism and cruisers services
- Ecotourism
- Sport, industrial, and recreational fishing
- Vessel crewing
- Dredging
- Nautical training
- Maritime Training (Licensing and Masters)
- Licensing and sailor's certification

One of the business opportunities in this list - transshipment - has significant implications on the Canal. Transshipment services could use the railroad to establish an intermodal cargo link between both sides of the Canal. This suggestion has implications on the future use of the Canal and as such should be considered with input from the Canal. The railroad could also serve to move Canal

employees and Colon area workers that reside on the Pacific side in Panama which face a long and difficult commute today. The railroad also has potential as a tourist attraction on its own right (see discussion on tourism). It is understood, however, that the highway concession for this corridor includes a provision that the railroad will not compete with the road during the concession period.

The transshipment business has significant potential in Panama, both maritime and intermodal (see also discussion on Colon Airport below). The vast majority of Latin American countries is engaged in economic and port sector reform that has already impacted trade volumes and even trade routes. As the fruits of trade liberalization materialize, so does the reliance on containerization. Increases in imported consumer items and in Latin American goods shipped to foreign markets will depend on services of international carriers. This requires greater transport efficiencies and speedier services, thereby converting shipping systems from traditional breakbulk forms to containers. South America now appears to be outperforming the container growth of the majority of other world regions. The result is greater interest in transshipment as a natural extension of existing port services in the region.

Panama has certain advantages for engaging in transshipment activity. The country (and the Canal) enjoy two types of cross-Canal services, including around-the-world and pendulum. Both in general are connecting the Far East with Europe, with intermediate calls in the U.S. An example of these services is the "grand alliance" (which currently is composed by APL/OOCL/MOL), which serves the U.S. East Coast through the Canal. This service is a major user of transshipment services at the Manzanillo International Terminal facility in Colon.

Transshipment activity depends on the development of more of the above-described maritime routes. However, these services are facing competition with other routes, such as trans-Pacific and the Suez route, which are already deploying post-Panamax vessels. These post-Panamax services will likely encroach on the market shares of the other services, but the natural growth of containerization will still mean that the through-Canal services will enjoy growth in absolute volumes.

Transshipment operations are becoming more efficient as ports begin to compete for what is expected to be a slower growth market for transshipment containers. Slower growth is expected because the recent high rate is not expected to be sustained given the size of the Latin American economies. At the same time, more and more ports are vying for this transshipment traffic (Figure III- 6), resulting in stiffer competition because of the excess capacity that will be on-line. This possibility then would have to be further examined in Phase II.

The Panama Canal Commission today does not have a distinct competence in cargo handling operations. The PCC, however, essentially performs some of the functions that are needed to support cargo handling operations (e.g. crane maintenance, line handling services, facility maintenance, security, etc.). Given the opportunities in the transshipment area, the PCC could participate in the transshipment business through a joint venture or other similar arrangement.

Figure III-6: Transshipment Trade Developments in the Caribbean/ Canal Region

Port	Transshipment Status
Freeport	construction underway: 4 post-Pan. Cranes, 50-acre yard, with design throughput of 750,000 TEUs
Port Everglades	capturing transshipment business in new 43-acre terminal, serving Sea Land
Miami	established transshipment center, handling about 164,000 TEUs transshipment/year
Kingston	established transshipment center; \$72 million expansion underway -- 2 new berths, 32 acre yard, 3 cranes/12 straddle carriers
San Juan	established with 100,000 TEUs/year
Rio Haina	established and growing strongly, serving as one of Maersk's Caribbean hubs
Manzanillo (Panama)	established and growing; handled 114,000 TEUs from April-December 1995; served by 6 cranes, and currently expanding yard.
Coco Solo (Panama)	terminal concession gained by Evergreen; to be operational in 3 years
Cristobal/Balboa Port-Rail Service System	concession offer submitted by consortium headed by Bechtel
Trinidad and Tobago	established; handling about 70,000 TEUs/year; planning facility expansion
Guadalupe; St. Lucia; Curacao; Barbados	small amount of transshipment; planning facility expansion
Cartagena (Colombia)	small amounts (currently about 4,000 TEUs/year), but expanding facilities with 2 Panamax cranes to be on line by end of 1996; 2 post-Panamax cranes coming on line in 1997
Buenaventura (Colombia)	small amounts (12,000 TEUs/year) with plans for 3 berths/6 cranes and yard improvements

The government of Panama is planning for the Canal to play a central role in the realization of the National maritime Strategy. This might mean that it should consider pursuing several of these

activities as new business ventures in which it engages commercially. Several of the other services and activities in the list being discussed as part of the Strategy have already been described and are being recommended as high priority business areas for the Canal. Others will be discussed later as related high priority opportunities for analysis. However, because the role that the Canal should play is not clear and will depend on the evolution of the National Maritime Strategy and the involvement of other public and private sector participants, most have not been analyzed in detail or prioritized. It is recommended, however, that the role of the Canal vis a vis the Maritime Strategy and associated new business opportunities that might entail be studied during phase II.

■ Tourism Related Businesses

The Canal is the largest tourism attraction in Panama. There are a number of different ways in which the Canal can engage in the tourism business, such as:

- Develop land within the Canal operating area or in conjunction with adjoining ARI lands, as destinations for ecotourism or sport-oriented activities. IPAT, the Panamanian tourism agency has identified several tourism development opportunities in the Canal area, including developing an ecotourist area near Gamboa and Summit, ecotourism tours of Lake Gatun, cruise passenger terminals, tours of the Canal, the railroad and other attractions, hotel resort development in the reverted areas, etc. The potential for a cruise terminal at the entrance of the Atlantic side of the Canal appears to merit serious consideration, as it is understood there are interested cruise lines that want to establish Cristobal as a port of call on their regular itineraries. A Cristobal cruise terminal connected to a waterfront, duty-free shopping area is being considered. A Canal "Theme Park" has also been suggested. A passenger airport in the Colon area would also support other proposals for tourism oriented development in an area with high unemployment.
- Take greater advantage of the Canal itself as a tourist attraction, developing a Visitors Center with tours, souvenir shops, restaurants, hotels, museums, and auditorium and other facilities. "Themes" such as the Canal as an engineering wonder, cultural and historical resources and ecology should be exploited. Besides a Visitors Center, the Canal can generate significant revenues from tourism by offering land based tours, Canal tours on a vessel (possibly limited to evening hours once a week so as not to overly impact capacity), tours of Gatun Lake, etc. These services can probably best be offered through concessions to private companies or similar arrangements

Tourism has been one of the world's fastest growing industries over the past decade. The Caribbean region, in particular, has shown strong growth, taking advantage of its proximity to the United States as a source of customers and strong trends in the passenger cruise liner business. Ecotourism is expected to grow at about 4% per year over the next 15 years. Panama has not established itself as a leader in the region, currently attracting just over 1% of the more than 35 million foreign tourists

visiting Central America and the Caribbean in 1995. This is partly due to image problems and inadequate investment in tourism infrastructure and promotion.

This situation has been improving in recent years and Panama has room to carve out a sizable share of the regional tourism by exploiting its natural advantages of geography and natural resources, as well as the uniqueness of the Canal. IPAT's tourism master plan targets over 2.1 million foreign tourists by 2010, capturing over 3.5% of the regional market and growing at about 13% annually. In summary, the market is strong and offers good growth potential.

The Canal has several sources of competitive advantage from which to draw strength in the tourism business.

- the Canal itself as a unique attraction;
- Panama's central and convenient location for vacationers and especially cruise lines;
- Superior ecological and cultural resources, including rain forest, flora and fauna, etc.;
- a "captive" customer base in the passing cruise liners; and
- Integration potential with the railroad (the oldest railroad connection between the Atlantic and the Pacific Oceans in the hemisphere).

These sources of physical competence are balanced by the fact that the Canal has no managerial or technical expertise in the tourism industry.

Tourism development is central to Panama's economic development objectives. Assuming appropriate cooperation with other interested parties, such as the private sector, ARI and IPAT, Canal tourism activity should have a net positive impact on economic development.

The use of Canal operating areas for tourism activities poses a potential risk to the safe and efficient operation of the Canal's core transit business. Any opportunity should be analyzed rigorously to assure compatibility with Canal operations. Land-based activity built around the Canal as an attraction does not necessarily pose a threat of negative impact on operations. Each potential development or activity needs to be analyzed individually.

To assure success, the Canal should work closely with IPAT and ARI to establish a constructive coordinated program. It is particularly important that the Canal and ARI communicate well given the many overlaps and interdependencies in their respective jurisdictions. ARI's role is scheduled to be phased out after its mission has been achieved by 2006, unless extended. Panama's tourism opportunities are thoroughly exceptional and they need to be encouraged and supported through a clear definition of the institutional role of the various governmental bodies.

At the commercial level, the Canal should seek to include the private sector as much as possible. First, private sector firms will be more experienced and can easily be brought in through Joint

Ventures or concessions. Second, the Canal should look for ways to spread the risk because of the high investment cost and risky nature of the tourism business. Finally, this is a way of reducing the possible sources of distraction to management. Further study of tourism opportunities is recommended for phase II.

■ Colon Airport Development

Located near the Canal's Atlantic entrance, the Colon Free Trade Zone (FTZ) is the largest such facility in the hemisphere and the largest employer in Panama, with close to 14,000 employees including those who work for private businesses who operate within the zone. The free trade zone concept, however, is becoming obsolete as large multinational free trade areas are created and duties are lowered worldwide. This threatens the Colon FTZ, as evidenced by Canon's recent decision to move to Miami to take advantage of its fuller service offering including better air service. With the agreement to create a large free trade area in the Western Hemisphere, and as duties are reduced through the creation of several multinational economic blocs in the Americas, companies are using Colon less to reduce or delay duty costs and more as a distribution center. To grow, the Colon FTZ will need a fuller complement of efficient logistics services and air cargo service, in addition to its traditional warehousing and maritime services.

Colon is in the right place at the right time to become a major logistics center for the hemisphere, providing a better distribution system to manage inventories. The Colon FTZ and its users need to sell themselves as a distribution center of import products from Asia and Europe to Latin America and export products from the region. To accomplish this transformation, a new cargo air service will have to be developed to serve the Colon area and enable the FTZ to compete effectively with other distribution centers in the region. Many high-value and perishable cargoes are increasingly opting for the air transportation mode as time and logistics grow in importance.

This creates a window of opportunity for the Panamanian nation to assert itself as a major transshipment center in the region (with both maritime and air services), a concept wholly consistent with the National Maritime Strategy and the interests of economic development based on the promotion of "traded businesses," those that bring in foreign exchange or are exposed to international competition. The pent-up demand for air cargo service may make the business of operating an air cargo terminal and service financially feasible on its own right.

On the passenger side, the immediate demand for air service at Colon is not as compelling as it is for cargo. The overall economic situation in the Colon area--high unemployment and little commercial activity outside of the Free Trade Zone--does not support the argument for airport development. However, the existence of better passenger air service might provide a stimulus for cruise passenger terminal development, resort hotels, and export businesses in Colon and the nearby reverted areas, if combined with other initiatives and could be a useful component of a tourism strategy to take advantage of rich resources on the Atlantic side. It is also important for the Canal

that initiatives be undertaken to create new shopping areas, entertainment centers, and desirable residential areas on the Atlantic side to encourage employees at Gatun locks to live on the Atlantic side. The airport and other tourism oriented and distribution center development can help achieve this objective.

An airstrip exists, and some limited passenger service is provided, mostly for Panama-Colon and private traffic. The realization of this concept of developing commercial cargo and passenger air transportation services at Colon would require substantial investment in infrastructure and human resources development.

The Canal does not have competence or recent experience in airport construction, operation or air cargo services. However, its strong financial position may be used as a means for raising or participating in obtaining the necessary capital to undertake the development. Although airport development and air cargo services are not immediately related to Canal operations, on a broader level they may play integral roles in establishing Panama as a major distribution center in the Americas, which in today's world means both maritime and air cargo services. Singapore and Dubai, for example are examples of a few international air-sea transshipment centers in the world. Only Seattle, Miami, and a few other airport-port combinations in the American continent are competing for air-sea cargo. Panama has an excellent geographic position to become an air cargo hub for the continent. The institutional role of the Canal would have to be seriously considered in view of its relationship to other entities, its focus on cargo business, and its core competencies. Further study is recommended during phase II.

■ Real estate and Other Development in the Canal Area

Real estate and other development in the reverted areas is the responsibility of ARI. Other Panama government agencies have responsibility for other development efforts in the Canal area. There are many opportunities, where use of the Canal resources and competencies may help increase the potential return and the success of new businesses in the reverted areas and the isthmus. New bridges across the Canal may open opportunities for development on the western side of the Canal. Business opportunities where the Canal has competencies should be explored to determine if they meet profitability criteria and if so, determine an appropriate role for the Canal.

3.4 Results of New Business Opportunity Analysis

Based on the initial screening, initial prioritization, and consideration of potential PCC role, the most promising opportunities are summarized in Table III-1, including their relative ranking.

The results of the ranking of the most promising business opportunities indicates, as would be expected, that there is a trade-off between opportunities that appear to have the greatest fit with the organization's competencies and the two other major factors considered, i.e. market potential and economic development impact. These trade-offs will have to be carefully assessed in Phase II.

Table III-1
Results of Ranking of Priority New Business Opportunities

OPPORTUNITY	PRELIMINARY ASSESSMENT OF:		
	FIT WITH STRATEGIC COMPETENCIES	MARKET SIZE/ GROWTH POTENTIAL	ECONOMIC DEVELOPMENT IMPACT
Vessel/Large Equipment Repair and Fabrication	+++++	+++++	+++++
Maritime Services	+++++	++	+++
Colon Airport	+++	+++++	+++++
Maritime training	+++++	+	+++++
Dredging	+++	++++	+++
Power Generation	+++	+++++	+
Fresh Water Supply	++++	++++	+
National Maritime Strategy	(varies)	(varies)	+++++
Maritime Statistics Publishing	+++	+	+++
Canal-Oriented Tourism	+	+++++	+++++
Telecommunications	++	+++++	++
Other Canal Area Development	++	+++++	+++++

The fourth factor that was considered in the evaluation of business opportunities was the possible role of the Canal in each of the businesses, i.e. whether it would make sense for the Canal to pursue the business on its own, as public-private joint ventures, and/or as combined ventures with other government agencies. Based on this analysis, the various opportunities were categorized as indicated in Table III-2. The first category of business opportunities include those that the Canal could explore on its own. The second group are those that appear candidates for public-private joint-ventures. The third group are those that require further definition of the role of the Canal versus other government of Panama agencies, and based on that definition, could then be pursued as public sector led businesses or as public-private ventures.

**Table III-2
Possible Role of Canal-Business Diversification Strategy**

Categories	Business Opportunities	Canal Role
Businesses where the Canal has unique competencies	<ul style="list-style-type: none"> ■ Vessel and heavy equipment repair and fabrication ■ Maritime and industrial training ■ Dredging services ■ Maritime services 	PCC could pursue on its own
Businesses where the Canal has some competencies and experience	<ul style="list-style-type: none"> ■ Electric power generation ■ Potable water supply ■ Marine statistics publishing and information services ■ Telecommunications and the Teleport concept 	Candidates for public-private ventures
Other businesses	<ul style="list-style-type: none"> ■ National Maritime Strategy-related businesses ■ Tourism-related businesses ■ Colon airport development ■ Real estate and other development in the Canal area 	Require further definition of PCC role versus GOP Agencies