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Survival in a globalised economy : maintaining the competitiveness of Kingston as a transhipment port

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SURVIVAL IN A GLOBALISED ECONOMY:

Maintaining the Competitiveness of Kingston as a Transhipment Port

By

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DECLARATION

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

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ABSTRACT

With the onset of globalisation, the maritime industry has been affected by sweeping changes which have had a profound effect on the trade patterns, technology and organisations involved in the sector. These changes have primarily affected shipping lines initially, and by extension, the ports that serve them.

The aim of this paper is to determine the extent of the effects of these changes on the commercial environment in which the container terminal operates, examine the implications of these changes for the port of Kingston, and to determine if the port can remain a competitive transhipment centre in the face of these changes.

This exercise will be conducted by examining the nature of the global trends which are developing, establishing the present situation of the port with respect to its institutions, domestic and transhipment container traffic, and, with the use of a SWOT analysis, determine the peculiar characteristics of the port and what they reflect about the port's readiness to cope with its changing environment.

Based on these findings, strategies will be proposed to consolidate Kingston's position as a premier transhipment hub port for the Caribbean region by building on its strengths, overcoming its weaknesses, dealing with threats and capitalising on opportunities.

This thesis then concludes that based upon an analysis of Kingston's circumstances, it possesses all the necessary qualities to meet the challenges brought on by the onset of globalisation, but that there are certain critical actions that need to be taken if it is to successfully maintain its role as the key transhipment hub centre of the Caribbean region.

KEYWORDS: Globalisation, Transhipment hub, SWOT analysis, Port competition.

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LIST OF ABBREVIATIONS

APL	American President Lines
BITU	Bustamante Industrial Trade Union
CMA	Compagnie Maritime d' Affretement
CGM	Compagnie Generale Maritime
CSA	Caribbean Shipping Association
COSCO	Cosco Container Lines
CSAV	Compania Sud Americana de Vapores
ECT	European Combined Terminals
EDI	Electronic Data Interchange
FCP	Freeport Container Port
FEFC	Far East Freight Conference
FMG	Frota Maritima Grancolombiana
ha	hectares
HPH	Hutchinson Port Holdings
ICTSI	International Container Terminal Services Incorporation
IMS	Invicta Management Services
IPP2	Improving Port Productivity 2
IT	Information Technology
k	kilometre
KTO	Kingston Terminal Operators
KWL	Kingston Wharves Ltd
LA	Los Angeles
m	metres
mil	million
MIS	Management Information System
MISC	Malaysian International Shipping Company
MIT	Manzanillo International Terminal
MOL	Mitsui – OSK Lines
mt	million tons

NCS	New Caribbean Service
NOL	Neptune Orient Lines
NSCSA	National Shipping Company of Saudi Arabia
NYK	Nippon Yusen Kaisha
OOCL	Orient Overseas Container Lines
OSC	Ocean Shipping Consultants
PAJ	Port Authority Of Jamaica
PSA	Port of Singapore Authority
RTG	Rubber Tyred Gantry
RTW	Round the World
SAJ	Shipping Association of Jamaica
SSA	Stevedoring Services of America
TACA	Trans Atlantic Conference Agreement
TEU	twenty foot equivalent
TSL	Terminal Services Ltd
TUC	Trade Union Congress
UASC	United Arab Shipping Company
UPSU	United Portworkers and Seamens Union
WMU	World Maritime University
ZIAS	Zim Inter American Service
ZIM	Zim Israel Navigation

1 INTRODUCTION

The Port of Kingston is set upon the seventh largest natural deep water harbour in the world, containing approximately 20 square kilometres of navigable water approached by a clearly marked 244 metre access channel. This is just one of the several natural advantages this facility has, which serves to enhance its position as the leading transhipment centre for the Caribbean and Latin America, a fact which will be underscored during the course of this treatise. Besides its harbour, Kingston also has the good fortune of sitting astride two of the world's major trade routes, another fact which has not been lost on the major international shipping lines that utilise its facilities. Kingston has sought to capitalise on these advantages by developing its facilities so as to offer these lines ample and uncongested terminal capacity, cargo handling systems and procedures which are in line with international standards, and berths which can accept the largest vessels that can reasonably be expected to serve the region. After more than twenty years in the transhipment business, the terminal managers of the Kingston Container Terminal can legitimately claim to be the most experienced in the Caribbean, and the steady growth of the volumes handled by the port, which will also be discussed in further detail later on, attests to their continued competence.

With all that the port has to recommend it however, in recent times there have been dark clouds on its horizon, in the form of developments in the international maritime industry. With the onset of the phenomenon called globalisation, the port of Kingston has found itself playing in an entirely new ballgame for ever-increasing stakes. That globalisation should affect the maritime industry, which by its very nature is international, is a foregone conclusion.

As a matter of fact, according to columnist Martin Henry (Jamaica Gleaner,1999) quoting from the 1999 UNDP Human Development Report:

> Globalisation began when little sailing ships set out from European ports in the 15th century to explore, and colonise a round world. The supremacy of European technology, culture and ideas has increasingly bound the peoples of the world together over the last 500 years, a period of human history without parallel or precedent. But, the present era has distinctive features: shrinking space, shrinking time, and disappearing borders are linking people's lives more deeply, more intensely, more immediately than ever before. Globalisation...is the growing inter-dependence of the world's people...a process integrating not just the economy but culture, technology and governance. People everywhere are becoming connected - affected by events in the far corners of the world. There are new markets, new tools, new actors and new rules.

The manner in which globalisation has manifested itself has served to fundamentally change some of the precepts upon which the business of the maritime industry is conducted. Information and communications technology have already reduced the world to essentially a global village, and these improvements have lent themselves to facilitating the growth of shipping lines from regional carriers into truly global operators. With their growth, comes also an increase in their demands on those that serve them, thus ports have subsequently come under tremendous pressure to keep pace. Thus the transfer of technical, financial and human resources have become necessary and commonplace, even in the realm of ports, which up to this point were bastions of sovereignty governed by an attitude of 'take it or leave it' in terms of service orientation.

As the maritime industry is swept up in the relentless demands for greater economies of scale, which bring about truly global players, the competition for cargo is no longer a regional matter, but rather one which has assumed international overtones. The effect of shrinking space, shrinking time and disappearing borders brought about by globalisation has indeed brought about new markets, tools, actors and rules, which are all now combining to subject the port of Kingston to pressures it had never experienced before, and which it will be hard pressed to survive.

The author will attempt during the course of this paper to outline the exact nature of the changes brought about in the maritime industry by the phenomenon of globalisation, outline the situation in the port of Kingston and show how these changes have impacted on it, and finally, with the use of a SWOT analysis, determine the options open to the port as a recourse for coping with the effects of globalisation on its business environment.

Figure 1. Map of Jamaica's Strategic Location

Source: Port Authority, 1997

CHAPTER 2 GLOBAL TRENDS IN SHIPPING

2.1 CHANGES IN PATTERNS OF TRADE

According to Martin Stopford in his book Maritime Economics, the liner shipping trade routes of the maritime industry are basically divided into three groups, namely the East-West trades, the North-South trades and the Intra regional trades.

2.1.1 East-West Trades

The East-West trades account for 44% of the cargo and circle the globe in the Northern Hemisphere, linking the major industrial centres of North America, Western Europe and Asia. These trades can be further broken down into three subcategories, namely the trans-Pacific, trans-Atlantic, and Western Europe to Far East trades.

The trans-Pacific is the biggest deep sea liner route, trading between North America and the Far East with 7.5 million TEU of traffic representing 22% of the world total. Operating from North American ports on the East, Gulf and West coasts to the industrial centres of Japan and the Far East, these services employ the biggest ships i.e. post-Panamax vessels of over 4000 TEU capacity. They are able to do this partly due to the use of double stack landbridge trains to connect the US East and West coasts, therefore avoiding the necessity of a Panama Canal transit.

The North Atlantic trade was however the first to develop, and linked the industrial centres of East Coast North America (Boston, New York; Philadelphia, Baltimore, Wilmington, Charleston and Hampton Roads) and Canada (Halifax and Montreal) to those of Western Europe (Gothenburg, Hamburg, Bremerhaven, Antwerp, Rotterdam, Felixstowe and Le Havre). In the mid 1990's this trade averaged 3 million TEU which accounted for 8% of world container trade.

The Western Europe to Far East trade covered the trade from North Europe, stretching from Sweden to St. Nazaire in France to the Far East comprising of West Malaysia, Singapore, Thailand, Hong Kong, Philippines, Taiwan, South Korea and Japan.

As these three trade routes matured, the next logical development was the formation of the round the world service. By following the three main arterial routes, the service went westbound after calling at the UK and North European ports, proceeded down the East Coast North America (ECNA) through the Panama Canal to the West Coast North America (WCNA), then across to Japan and the Far East before going through the Suez Canal to the Mediterranean.

2.1.2 North-South Trades

The second major grouping is the North-South liner routes, which covers the trade between the industrial centres of Europe, North America and the Far East and the developing countries of Latin America, Africa, and Australasia. In addition, there is an extensive network of services between the smaller economies, especially those of the Southern Hemisphere. These trades are very different in character from those of the East-West in that although the cargo volumes are much lower (accounting for only 22% of cargo volume), the fact that there are many more ports to visit and less efficient port itineraries results in significantly more business being generated than the cargo volume suggests. There also remains a considerable amount of breakbulk cargo which cannot be efficiently containerised, so the liner services have to be more varied. Vessels in this trade have been increasing in average size, as the introduction of the post-Panamax megaliners into the East-

West trades have displaced the previously used third generation Panamax vessels into these trades.

2.1.3 Intra regional Trades

Finally, the Intra regional trades and feeder services comprise the last category. These are essentially short sea trades, which have developed rapidly as a result of operators on the major trade routes increasingly opting for the hub and spoke system of distribution. The vessels in this trade have always been relatively small, but have also been gradually increasing in size.

2.1.4 Relevance to Kingston

Against this background, the Port of Kingston, by virtue of its geographical location in the virtual centre of the Caribbean Sea just 51 kilometres NNW of the Panama Canal, finds itself positioned close to the main shipping lanes which transit the canal. With respect to the above mentioned liner trade routes, Kingston has the following specific trade lanes running past its front door :

<u>NORTH - SOUTH</u>
Europe - West Coast South America
ECNA - West Coast South America (WCSA)
ECNA - North Coast South America (NCSA)
ECNA - East Coast South America (ECSA)
US Gulf Coast - WCSA
US Gulf Coast - NCSA
US Gulf Coast - ECSA

EAST-WEST

Europe - WCNA

Far East - ECNA

Far East - East Coast South America

In addition to the above, it is also advisable that traffic destined from Europe/North America/Far East to the East Coasts of Mexico and Central America, and the wider Caribbean, be taken into consideration as possible trade routes.

As can be seen, the North-South trade routes have particular importance to Kingston, especially in light of the fact that Europe-WCNA and Far East-ECNA have largely ceased to use the Panama Canal due to the combination of intermodal economics and fourth generation (post-Panamax) containerships. Intra regional trade is of course also important.

Besides these subtle but significant changes in the nature of the trade routes, of note is the change in the trade itself, in terms of volume and type. According to Ocean Shipping Consultants, world containerised and general cargo trade increased by 52% to 1215mt between 1980-1996. Containerised cargoes increased their share from 18.5% to 52% over the same period. For the Americas, container port throughput increased by 93% to 33.23 million TEU between 1985-1996. Now, Kingston's market has been defined as including the Caribbean, US Southern and Eastern ports, and the Atlantic coasts of Central America, Columbia, and Venezuela. This makes the regional market for Kingston stand at 9.6 million TEU in 1996, which was a 260% increase over 1985. Of this regional market, the Caribbean accounted for 35%, the US ports for 37%, Central American ports for 22% and Columbia/Venezuela for 6%. Over this period, growth has been most rapid in Central American, Venezuelan and Colombian ports, averaging 400% (compared to 98% for the Caribbean) as a result of not only increased trade, but also dramatic increases in containerisation.

Should this trend continue, then global general cargo and containerised trade is to increase by a further 21% by the year 2000. Containerised traffic is also expected

to steadily increase its share from 52% to 60%. By the year 2005, total general cargo traffic is expected to grow by 21-34% to between 1786 -1978mt, of which 69% will be containerised. For the Americas, this means a growth in container port throughput to 43 million TEU by year 2000 and 56 million TEU by 2005. The Kingston regional port market is expected to grow to 13 million TEU by 2000 and further to 18 million TEU by 2005. All ports within the region are expected to experience increased container traffic, but the Caribbean is expected to increase its market share to 36% by 2000 and 38% by 2005.

Against this backdrop of well established trade patterns and strong growth anticipated in both trade volumes and levels of containerisation, it seems relatively safe to assume that the global trends of these trade patterns will not overtly affect the Port of Kingston adversely.

2.2 CHANGES IN LINER SHIPPING ORGANISATION

Since the advent of liner shipping, shipping managers have sought to control market forces in a variety of ways. These methods included, at one time or another, seeking to fix prices for the whole trade, using a range of complex arrangements such as loyalty rebates, commodity discounts, service agreements and other strategies designed to blend price fixing with a degree of flexibility. Another way sought to control capacity, by fixing trade shares so as to artificially protect each company's market share. The first system which developed along these lines was that of the Conference system, which saw major shipping lines band together on certain trade routes in order to achieve stability in this volatile industry by trying to adjust the supply of vessel capacity to the demands of the market, while at the same time maintaining acceptable service standards. This system grew in popularity since its inception in 1875 on the East India tea trade from Calcutta to the UK to the point that presently there are approximately 350 conferences in force throughout the world.

Due to practices such as establishing agreements governing freight rates, market share, cargo carrying capacity, port rotation and sometimes even membership, liner conferences have often been accused of 'price fixing' and as such been branded as cartels. As a result of this, conferences have a long history of having their practices come under intense scrutiny. Beginning in 1909 in the UK with "the Royal Commission on Shipping Rings" and lately with the US Federal Maritime Commission, EU's DG.IV and the emerging Shanghai Shipping Exchange, authorities have tried to regulate the various agreements existing between shipping lines. This attention has had a two-fold effect on the conference system, which is to render it lawful in the face of accusations that they were in breach of monopoly anti trust principles, while at the same time undermining their influence in the evolving maritime industry.

Despite their waning influence, liner conferences in both their “open” (unrestricted membership) and “closed” (restricted membership) forms still account for some 50-60% of lines involved in certain trades e.g. Far East Freight Conference (FEFC) and the Trans Atlantic Conference Agreement (TACA). However, due to their continued persecution by politicians, shippers councils and even members themselves, conferences have been giving way to shipping consortia, alliances and mergers in terms of importance as shipping lines seek to control their own destiny.

With conferences becoming relegated to forums for discussion rather than decision making, consortia, alliances and groups have come to the forefront to champion the cause of the shipping lines. The major ones presently in force are (Containerisation Intl,1998b):

- The Global Alliance - comprised of Hyundai, MOL, NOL/APL
- The Grand Alliance - comprised of Hapag-Lloyd,MISC,NYK,OOCL,P&O Nedlloyd
- The United Alliance - Hanjin, DSR-Senator, Cho Yang, UASC
- COSCO / K-Line / Yangming
- Maersk / Sea-Land
- Canmar / CAST / Contship / Ivarans / Lykes
- CMA / CGM / NSCSA

Table 1 details the fleet size, market share, etc. of these consortia. It should be noted that between them, these consortia control upwards of 50% of the world’s container traffic, which illustrates their growing power.

POSITION	GROUP	TEU CAPACITY	% OF WORLD FLEET
1	GRAND ALLIANCE: P&O Nedlloyd, HL, NYK, OOCL/MISC	1,212,048	16.0
2	GLOBAL ALLIANCE: Hyundai, MOL, NOL/APL	713,161	9.4
3	K-Line, COSCO, Yang Ming	700,161	9.2
4	Maersk/Sea-Land	659,374	8.7
5	UNITED ALLIANCE: Hanjin, DSR-Senator, Cho Yang, UASC	507,122	6.7
6	Canmar, CAST, Contship, Ivarans, Lykes	213,894	2.8
7	CMA, CGM, NSCSA	211,263	2.8
	TOTALS	4,217,023	55.6

Table 1. Main Alliance / Consortia (1998)

Source: Containerisation Intl. 1998b

Outside of the above, further alliances have been formed on specific trade routes. With respect to Kingston, these alliances are as follows:

- New Caribbean Service (NCS) - P&O Nedlloyd, Hamburg-Sud, CGM, Hapag Lloyd, Harrison Lines
- EUROSAL - P&O Nedlloyd, Hamburg-Sud, Hapag Lloyd, CSAV, FMG
- ZIAS - ZIM, Montemare

Between them, these three alliances have been responsible for transhipping some 125,000 containers through Kingston, and are, as such, important customers (PAJ,1997,43). However, there is an element of this trend towards formation of alliances that poses a real threat for ports, in that, in their drive for cost savings and operational efficiencies, these lines rationalise several of their administrative and operational procedures, such as or including vessel allocation, schedules, feeder networks, tariffs and most importantly for us, terminals, depots and ports of call.

In essence the danger posed by formation or switching of alliances by carriers is that the port runs the risk of losing a line's business altogether if a decision is taken to patronise a competing port with which a member of the alliance already has significant ties. As a case in point, in November of 1993 Maersk lines pulled out of Kingston in order to re-establish its operations on the Sea-Land terminal in Rio Haina, Santo Domingo as part of its developing partnership with Sea-Land. This loss of some 5,000 containers per annum (in addition to the line's connections) proved a hard blow for the port, but this loss was further compounded when in May 1998 as part of further consolidation of its alliance with Maersk, Sea-Land Services also stopped calling Kingston after 25 years and instead diverted all its vessels to Rio Haina. The traffic lost to the port was approximately 12,000 containers per annum, and it is sobering to know that presently Sea-Land is shipping about 160,000 containers through the Rio Haina yearly, of which approximately 50,000TEU are transhipments (OSC,1997,12). However, of greater significance was the shocking realisation that the decision taken was totally beyond the control of the port and that there were forces at work in the maritime industry that they were virtually powerless to influence.

Some measure of comfort can however be taken from the realisation that this phenomenon works both ways. In at least two instances, Kingston has benefited from an influx of new business as a result of the formation of liner alliances. The ZIAS service brought Multimare to the port and this has resulted in over 21,000 containers handled in 1997 (PAJ,1997,38), while the NCS consortia repositioned one of its services from Ponce, Puerto Rico to Kingston resulting in an additional 25,000 TEUs annually (C. Donaldson,1998).

Bearing these experiences in mind, the port would be well advised to take stock of its situation and take action accordingly. Table 2 gives a complete listing of the carriers that presently call the port (PAJ,1997,55) while table 3 lists the world's top carriers (Containerisation Intl Yearbook,1999).

From this list, a shortlist of top operators presently serving the Caribbean and Latin America can be prepared, which include the following :

- P&O Nedlloyd
- Evergreen
- Maersk/Sea-Land
- NYK
- MOSK
- CMA/CGM
- ZIM
- Canmar
- K-Line
- Hapag Lloyd
- Mediterranean Shipping

Of the remainder, the following have expressed their intention to enter the market, either individually, or through an alliance :

- DSR-Senator, Hanjin, UASC (members of United alliance)
- APL/NOL and HMM (members of Global alliance)
- OOCL (member of Grand alliance)
- COSCO, Yangming (members of the same alliance)

Against this background, the port could effectively target these major lines, as they are already affiliated with lines that presently either call Kingston or as yet have no firm ties in the region (IMS,1998b,52).

RANK	CARRIER	SLOTS DEPLOYED
1	Maersk	232,257
2	Evergreen	228,248
3	P&O Nedlloyd	221,531
4	Sea-Land	215,154
5	COSCO	201,573
6	Hanjin	174,546
7	Neptune Orient Lines / APL	165,582
8	Mediterranean Shipping Line	154,185
9	NYK / TSK	128,154
10	Mitsui - OSK	128,154
11	Hyundai Merchant Marine	112,958
12	Zim Isreal Navigation	98,086
13	Yangming Marine Transport	96,145
14	CMA - CGM	89,658
15	OOCL	85,940
16	CP Ships	85,016
17	K - Line	84,198
18	Hapag Lloyd Container Line	73,372
19	Cho Yang Shipping	55,882
20	SCL	51,002
TOTAL		2,669,210
Total Fleet		5,265,745
% Top 20		50.7%

Table 2. Top 20 Container Service Operators by slots deployed (1997)

Source: Containerisation International Yearbook 1998

MAINLINERS	REGIONAL	FEEDERS
Zim Container Service	Zim Container Service (Gulf/Mexico)	Zim Container Service (Caribbean)
Evergreen (RTW west)	Evergreen (Caribbean/Miami)	Evergreen (Caribbean)
P&O Nedlloyd (NCS-Eurosal))	P&O Nedlloyd (ECSA/Gulf)	P&O Nedlloyd (Inter-Caribbean)
Hapag Lloyd (NCS-Eurosal)	Hapag Lloyd	Hapag Lloyd
FMG (NCS -Eurosal)	FMG (Caribbean)	Ivaran
Harrison (Eurosal)	Lykes	Harrison
Transnave (Eurosal	Cagema	Florida SVC
Suda America Vapores - CSAV (Eurosal)	Pan American Independent	
Zim Inter America Service (ZIAS)	Crowley American Transport	
Jamaica Producers Line	Jamaica Producers Line	
Hamburg SUD/Laser Line	Seaboard Line	
Columbus Line	Seafreight Lines	
Safmarine	Melfi Marine	
Pacena	Kirk Line	
Blue Star Pace	Techmarine Lines	
	Coral Container Lines	
	Kent Line	

Table 3. Listing of Carriers Presently Calling Kingston

Source: Port Authority of Jamaica, 1997

2.3 EFFECT OF PORT COMPETITION

According to Ocean Shipping Consultants (OSC), in 1981 only 6 of the 26 container handling ports in the region were equipped with gantry cranes, and of these 6, only 3 had water depth greater than 10 metres, of which one was Kingston. By 1996, the number of container handling ports had increased to 52, the number of specialised container terminals had grown to 26, and the number of berths with depths exceeding 10 meters had increased to 32 (table 4). These statistics serve to illustrate the point that the port of Kingston faces growing competition from other regional ports, several of which are being developed specifically with the regional transhipment market in mind. These facilities (to name the most prominent) are being developed in the following locations, and will be discussed in greater detail in section 5.4.1 as part of a SWOT analysis of Kingston's situation:

- Panama - Manzanillo, Coco Solo, Christobal and Balboa
- Dominican Republic - Rio Haina
- Bahamas - Freeport
- USA - Miami and Port Everglades

Depth	Terminals with Gantry cranes				Terminals without Gantry cranes				Totals			
	'81	'86	'91	'96	'81	'86	'91	'96	'81	'86	'91	'96
< 6m	0	0	0	0	2	2	3	1	2	2	3	1
6 - 6.9m	0	0	0	0	1	1	2	0	1	1	2	0
7 - 7.9m	0	1	0	1	3	4	2	2	3	5	2	3
8 - 8.9m	0	0	1	1	3	4	6	7	3	4	7	8
9 - 9.9m	3	2	4	4	4	6	4	4	7	8	8	8
10 - 10.9m	0	2	3	4	3	2	3	8	3	4	6	12
11 . 11.9m	2	3	4	3	2	1	0	1	4	4	4	4
12 - 12.9m	1	4	7	10	2	2	1	1	3	6	8	11
13m +	0	0	0	3	0	0	0	2	0	0	0	5
Total	6	12	19	26	20	22	21	26	26	34	40	52

Table 4. Regional Container Handling Terminals by Depth: 1981/'86/'91/'96

Source: Ocean Shipping Consultants Ltd. 1997.

Besides the obvious concerns raised by the prospect of direct competition from these terminals, there is a further aspect of this situation which needs to be contemplated. This is the emerging trend of Global Terminal Operators, or Superport Companies. According to Adrian Bascombe (Containerisation Intl, 1998c), in the present environment of port privatisation, political changes and carrier globalisation, in an effort to overcome limited opportunities for domestic expansion, spread investment risk across several economies and control handling operations and costs, terminal operators, port authorities and shipping lines have all become increasingly involved in the global container handling traffic sector. Given the burgeoning growth of containerisation world-wide, the terminal operating business has been one of the fastest growing sectors of the industry in the 1990s and as such has attracted more and more companies into the international management of marine box facilities. The major players in this market can be broadly categorised as follows :

- Terminal operating companies - firms whose origins are in the successful operations and management of national container terminals and are now extending their expertise into the international arena. Firms such as Hutchinson Port Holdings (HPH), P&O Ports, Port of Singapore Authority Corporation (PSA Corp) and Stevedoring Services of America (SSA) fall in this category.
- Terminal operating port authorities - state owned bodies such as the Dubai, Indonesian and Sri Lankan Port Authorities which still control port operations.
- Terminal operating shipping lines - global carriers such as Maersk, Sea-Land and Evergreen which control and manage dedicated terminals for themselves and their partners.

The significance of this latest trend to the port of Kingston is that in their quest to become global terminal operators, several of the firms involved have been directly responsible for the development of regional ports which now compete directly with Kingston in the transhipment market. The extent of their involvement will be elaborated upon in section 5.4.2, as part of the port of Kingston's SWOT analysis.

The existence of these terminals however constitutes only one element of the overall threat to Kingston. As expressed by David Hunter (Cargo Systems,1998), the other danger is the competitive advantages that these ports will have versus other regional ports which are being operated on the traditional, independent, stand-alone basis. In the areas of marketing, port pricing, productivity, human resource management, information technology, equipment procurement and capital financing, the global operator will be able to introduce higher standards and skills into a region, thereby differentiating its facility from that of regional competitors. Kingston would thus be hard pressed to maintain its competitive advantages in the face of the tremendous resources these super-powered port operators would have at their disposal.

2.4 EFFECTS OF TECHNOLOGICAL CHANGE

One of the most profound technological changes to have taken place in the shipping industry over the last thirty years is the advent of the container. This innovation has been the catalyst of sweeping changes in the sector, affecting such aspects as cargo flow patterns, vessel designs and cargo handling techniques. In the effort to remain relevant and competitive in this fluid environment, ports and terminals have had to continuously monitor these developments and adapt accordingly. Here we will examine some of the latest technological trends which are taking place and their implications for ports in general and the port of Kingston in particular.

2.4.1 Trends In Vessel Type And Size

Since the use of containers took hold in the 1960s, container dedicated ships have grown in size and number consistently. This trend can be illustrated by examining table 5, which shows second rank vessel deployment in the Caribbean by type from 1986-1996.

The most significant feature is the major increase in the deployment of fully cellular vessels from 6 to 26 and from 667 to 16905TEU, which makes them the dominant vessel type in the region, accounting for 26% of total capacity deployed in 1996, as opposed to only 2.8% in 1986.

In Kingston, growth is portrayed by tracking the development of Zim and Evergreen line's round-the-world services from 1986. Vessel sizes on Evergreen's westbound service has increased in stages from 2743TEU in 1986, to 3428TEU in 1991 and 4229TEU in 1996. Zim lines started with vessels of 2224TEU in '86, then 3000TEU in '91 and 3500TEU in '96 (OSC,1997,42). The significance of these increases is that as shipping lines seek to achieve economies of scale in order to reduce unit costs and absorb trade growth, there is an increasing demand for bigger ships.

In 1986 container vessels with capacities of 2500TEU and over accounted for 12% of total containership slots. By 1995, this figure had increased to 29%. The trend does not stop here, as in the late 1980's the 4000TEU barrier was breached and post-Panamax container ships arrived, culminating in the Sovereign Maersk, which is the world's largest containership of dimensions 347m length, 43m beam and over 6600TEU capacity. At the time of writing, serious discussions are taking place for 8000, 10000 and even 12000TEU vessels.

Ship Type	Number			Capacity (TEUs)			Average		
	'86	'91	'96	1986	1991	1996	1986	1991	1996
Fully Cellular	6	6	26	667	3013	16905	111	502	650
Semi - cellular	30	44	45	7939	14097	15832	265	320	352
Barge carrier	-	2	13	-	1040	10569	-	520	813
Ro - ro	261	37	32	10192	13022	8573	392	352	268
Ro - ro / Cellular	1	4	9	328	2120	7226	328	530	803
Breakbulk	7	11	14	158	1313	3093	23	119	221
Conbulker	1	3	2	456	3191	1726	456	1064	863
Cellular conversion	3	7	2	4020	3056	1203	1340	437	602
Total	74	114	143	23760	40852	65127	321	358	455

Table 5. Second Rank Caribbean Container Vessel Deployment by Type: 1986-1996

Source: Ocean Shipping Consultants, 1997.

The growth in size and number of containerships carry serious implications for ports. Faced with this expansion, ports had to make critical decisions about their own development in order to keep pace. With the growth of main line vessel size, ports had to decide if they were indeed main line ports, and if so, undertake costly investments to maintain their position. Even if they were not main stream, ports were still affected because the flood of post-Panamax tonnage into the east-west trades has caused their previous Panamax vessels to be displaced into north-south and other routes, which in turn sets off a domino effect resulting in the gradual increase in vessel size thoughout the industry as illustrated above. As a result of this cascade effect, even secondary ports have to be making substantial investments in post-Panamax gantry cranes.

2.4.2 Trends in Cargo Flow Patterns.

2.4.2.1 Development of Hub and Spoke Concept

With the transition from breakbulk to containerised cargo, shipping lines shifted from the "milkround" pattern of port calls to focus on major ports or "hubs" which generated the majority of the cargo from within their hinterland. The secondary ports became serviced by feeder networks or "spokes". With the ongoing rationalisation of major carriers into alliances and the introduction of post-Panamax mega carriers on weekly sailing schedules, this "hub and spoke" system became an even more integral part of container operations. Using the tremendous volumes of the northern hemisphere's east-west trade corridor as a base, hub terminals developed in Tokyo, Hong Kong, Singapore and Colombo (in the Far East), Dubai (in the Middle East), Algeciras (in the Mediterranean), Rotterdam, Hamburg and Antwerp (in North Europe), New York/New Jersey (on the USEC) and Long Beach and Los Angeles (on the USWC). These front rank ports were required to provide the extensive infra- and superstructure necessary to remain in contention, as only ports which could provide water depth of 14-15m, at least 3-4 post-Panamax cranes per vessel and handle at least 1 million TEU per annum are able to cope effectively.

Such is the concentration of cargoes being routed through these hub ports due to the need to achieve the necessary economies of scale, that now even major north-south cargoes are being channelled through hubs on the east-west corridor strings and subsequently transhipped to their destination. For example, considerable ECSA and Caribbean cargo from the Far East is being moved through ECNA hubs. The spin-off effect of this however is that secondary or regional hubs have to be established to further facilitate this revamped string network and the subsequent feeder slings. These second tier ports, although outside of the main east west trade lanes, still need to be equipped to handle the Panamax sized vessels which have now cascaded into their service area and thus strategically capitalise on this emerging trend.

2.4.2.2 Development of Pendulum Type Services

Another notable change which emerged in cargo flow patterns was the fact that major lines were now displaying a preference for pendulum type service patterns rather than round-the-world services. This was of course due to the mega-carriers not being able to transit the Panama canal. In this scenario, it is conceivable that those carriers providing pendulum services between the Far East and ECNA via the Suez canal could be extended into the Caribbean as part of providing a comprehensive service. As a matter of fact, according to John Fossey (Containerisation Intl,1998b), the Grand Alliance expressed an intention to extend its service which presently links Northern Europe, USEC, USWC and Asia to include a hub in the Caribbean, from which they will target Central and South America. Provided that these vessels were in the 5000-6000TEU range, Kingston would be well placed to become the regional hub, being that Panama would be too far west for vessels not actually transiting the canal.

2.4.2.3 Development of Double Stack trains

At the start of the container revolution in the mid-1960s, the freight services operated by the American, Canadian and European national railway services were subservient to passenger trains. With the persistent growth of container traffic however, the concept of "block trains" entirely dedicated to box movement between fixed destinations along passenger pathways eventually arose. But it was not until the development of the "double stack" train in North America that rail transport of containers had a profound impact on the shipping industry. This technological development enabled 8x20' or 4x40' containers to be carried on an 80' platform, and reduced the cost of rail transport to the extent that it virtually eliminated the all water transport of containers between the Far East and the USEC. It became far more economical to ship the cargo to the USWC and then transport it intermodally via train to the East Coast or any point in between via a "micro", "mini" or "landbridge" rail operation. The loss this caused to USEC ports is obvious, and Kingston, by virtue of its position, also lost the tremendous opportunity of participating in significant transhipment business.

As it turns out, due to the emergence of post-Panamax vessels and the cultivation and refinement of fast all-water routes between the US and the Far East via the Suez canal, landbridging is currently losing favour with shipping lines. This augers well for Kingston, because it is still well placed to serve as the regional hub along this new trade lane.

Also of interest is the fact that there are two major railway projects under consideration which may have implications for Kingston. The first is the planned reconstruction by the Panamanian government of the trans-isthmus Panama railway in order to provide an intermodal rail link between the country's Atlantic and Pacific coasts. The intention is to maintain the Canal's strategic role in the face of post-Panamax shipping operations. Secondly, Costa Rica is also evaluating the creation of a "dry canal" which would be a rail link to rival the Panama canal, as part of a 25 year development plan for a free trade zone, intermodal mega hub and state of the art container terminal at Puerto Limon.

2.4.3 The Development of Cargo Handling Techniques.

Innovation in container shipping must be accompanied by innovation in container handling. Mega carriers are placing ports under increasing pressure to maintain turnaround times despite dramatic increases in vessel size, which leads to ports having to rely in turn on increased automation in order to improve productivity levels. Examples of this automation can be seen in both quayside and landside operations, with the introduction of pre-programmed crane cycles, fully automated onshore and container yard gantries and stacking cranes, remote controlled automatic guided vehicles for yard transfers and of course, “super” post-Panamax gantry cranes capable of handling superships carrying containers 18 across. The proliferation of these cranes is probably the most visible evidence of the search for increased efficiency being experienced by container terminals. Under constant threat of competition from ports eager to take their business, terminal operators constantly seek to maintain their advantage with new and better cranes. Whereas the standard post-Panamax cranes were characterised by quayside outreaches of 44m and trolley travel speeds of between 150-180m per minute, the latest generation carry specifications of 48m and 180-240m per minute respectively.

In addition to the quest for speed, the search for accuracy is equally important. To this end, technology in the form of sophisticated information technology (IT) and electronic data interchange (EDI) systems are being utilised to plan, administer, track, advise and report on operational details.

For its part, Kingston has prepared itself with the purchase of 5 post-Panamax cranes during its phased terminal expansion. These cranes feature outreaches of 45.5m and travel at speeds of 210m/minute. Besides these state of the art gantries, the port further invested in the following IT systems:

- SHIPS - designed to generate optimal vessel discharge and loading sequences.
- SPACE - yard planning system for optimal container positioning, movement, and inventory as well as maximising use of handling equipment.
- TRAFIC - provides enhanced terminal communications via radio data modules, for tracking and management of yard equipment and containers.
- SIGNAL - an EDI link between terminal and shipping lines.

It could reasonably be stated that in this respect, Kingston appears well prepared to defend its position.

CHAPTER 3 THE SHIPPING INDUSTRY IN THE PORT OF KINGSTON

3.1 MAJOR PLAYERS IN THE INDUSTRY

Due to historical and political influences, the port of Kingston has developed along certain lines into its present form. In order to place things in their proper perspective, it is necessary that these major players be identified and their relationship to each other outlined.

3.1.1 The Port Authority of Jamaica.

The Port Authority of Jamaica (PAJ) is a statutory corporation empowered by the government to be the country's principal maritime body. It is responsible for the regulation and development of Jamaica's port and shipping industry, as well as operational supervision of the nation's ports on the government's behalf.

The Authority owns Kingston Container Terminals, the Port of Montego Bay, the cruise ship terminals at Ocho Rios, Montego Bay, and Port Antonio, together with the Free Zones in Kingston and Montego Bay. It is also responsible for the pilotage services used by all vessels, the provision of tugs, publication of Notices to Mariners, the maintenance of all navigational aids, infrastructural development and the raising of capital for investment.

With regards to Kingston Container Terminals, the Port Authority also owns the superstructure, controls all marketing functions and sets tariffs. It however contracts out the management of the terminal operations to the private sector.

Figure 2. Schematic Layout

Source: Port Authority of Jamaica, 1997.

3.1.2 Kingston Container Terminals

Kingston Container Terminals is managed by Kingston Wharves Limited through a subsidiary company named Kingston Terminal Operators (KTO). This is under a contractual arrangement with the Port Authority. Developed as a multi-purpose container terminal, Kingston Terminals comprises of Berths 8-12 featuring:

- 1400m of berth (with water depth ranging from 9.5-14.6m)
- 47ha of container yard with a total storage capacity of over 18,000TEU
- 2 freight stations of 12,000 sq.m
- 428 reefer outlets
- 24m ro-ro ramp
- 8 gantry cranes (4 super post-Panamax)
- 30 straddle carriers, 9 RTGs, 34 yard tractors, 50 trailers
- US$ 3 million state-of-the-art maintenance facility
- Four integrated management and operational information technology systems (refer section 2.4.3).

The terminal is undergoing a phased expansion of its facility at Gordon Quay of which phases one and two are already completed. Phases three and four will consist of construction of 305m of additional berth and further landside terminal and storage areas. A diagram of the layout of the port of Kingston is given in figure 2.

Since its inception as a container handling facility, KTO has steadily improved its world ranking, going from 105 in 1991, to 72 in 1996, as illustrated in table 6 below. The terminal's throughput went from 88,000 containers in 1990, to 327,000 in 1996, and is expected to surpass 600,000 by the year 2000. The terminal's throughput will be discussed in greater detail under section 3.3.

3.1.3 Kingston Wharves Limited

Kingston Wharves Limited (KWL) is the port of Kingston's single public wharf company, created by the merger of the original KWL (berths 5-9) and Western Terminals (berths 1-4) in 1994. The result was a true multi-purpose terminal, with its throughput being comprised of seventy percent containerised cargo, and the remainder consisting mainly of bulk cargo and motor vehicles. The company operates berths 1-7 and has the following facilities:

- 1220m of berth (with water depth ranging from 6.7-9.4m)
- 20ha of container yard
- modern transit sheds of 43,000 sq.m
- cold storage space of 14,000 cu.m
- 88 reefer outlets
- 24m ro-ro ramp
- 6 heavy duty mobile cranes of capacity 140-280 tons
- 4 reach stackers, 5 toploaders, 3 heavy duty forklifts, 10 yard tractor/trailers
- modern information technology systems

KWL committed itself to a US$30 million expansion programme over a 10 year period in 1996. As part of this programme, it recently completed a strategic study in conjunction with the Inter-American Development Bank, and is reviewing this document with an eye to continue upgrading and modernising its facilities to international standards. It has demonstrated its commitment to the rationalisation of port operations in Kingston by allowing the use of berths 8-9 free of cost by the Port Authority as an integral part of the transhipment terminal, covered under the management contract arrangements for KTO. KWL has also offered to invest upwards of US$10 million in the Gordon Quay project.

3.1.4 The Shipping Association of Jamaica.

The Shipping Association of Jamaica (SAJ) is an employer's union representing 63 private sector companies in the island's shipping industry. Its membership includes shipping agents, wharf owners, terminal operators, stevedoring companies, ship owners/operators and providers of ancillary services to the port of Kingston. The primary function of the SAJ is to manage and provide highly trained and cost effective port labour, and as such maintains a pool of 400 port workers on its roster. Additionally, the Association oversees the interests of its members in areas such as training, security, industrial relations, computerisation and liaison with government and trade agencies.

The SAJ is governed by a Managing Committee drawn from the membership, and convenes several Sub-committees which are assigned special areas of responsibility, such as actions pertaining to matters of security, agency, industrial relations and other maritime concerns. The staff of the association manages and attends to the requirements of port labour, as well as the activities and requirements of the membership.

The SAJ also serves as host of the Secretariat of the Caribbean Shipping Association (CSA), which represents maritime interests in the Caribbean, Latin America, United States and Europe.

Finally, the SAJ has a fully owned subsidiary company called Port Computer Services, which provides a wide range of data processing and computer services to the shipping industry. These services include website development, accounting software packages, wide area network development with unlimited Internet access, and customised software solutions among others.

3.1.5 Other Players

There are other organisations besides the above-mentioned who have considerable influence in the industry. Among these are:

- the steamship agents for the major shipping lines calling Kingston e.g. Caribstar Shipping for Zim lines and Lannaman & Morris for Evergreen.
- the major independent stevedores working at KWL e.g. Port Services Limited and Shipping Services Limited.
- The labour unions representing the dock workers e.g. the Bustamante Industrial Trade Union (BITU), the Trade Union Congress (TUC) and the United Portworkers & Seamen Union (UPSU).

For the purposes of this paper however, their significance is limited.

PORTS	1991	1992	1993	1994	1995	1996
Kingston	**105**	**100**	**94**	**79**	**78**	**72**
San Juan	16	15	15	16	17	17
Miami	55	52	43	41	43	48
Pt Limon	129	127	72	(74)	74	74
Pt Cabelle	(240)	220	202	(180)	129	108
New Orleans	56	56	54	118	82	114
Cristobal	115	102	105	107	113	123
Port of Spain	176	271	240	165	145	139
Fort de France	(172)	162	158	172	160	152
Point de Pitre	131	166	151	169	174	170
Willemstaad	173	188	173	193	193	(185)
Oranjestad	223	229	213	235	220	(218)

Table 6. Caribbean Region's Key Ports: Ranking in World (from top 300 ports)

Source: IMS,1998b

NB. Based on container throughputs. Figures in brackets are estimated.

3.2 DOMESTIC CARGO MARKET

In the context of this paper with its focus on Kingston as a regional hub port, the significance of Kingston's domestic cargo volumes is that they are, for all practical purposes, too low. High domestic cargo volumes is one of the prerequisites of shipping lines as to their requirements of a transhipment terminal, and in this respect, Kingston is falling short. An examination of table 7 will show that in comparison with its major competing ports in the Dominican Republic, Puerto Rico, Panama and Florida, although Kingston compares favourably in terms of total volume, it performs dismally in terms of domestic cargo. Kingston shows a domestic throughput of only 86,000TEU, accounting for only 18% of its total container throughput. This is in comparison to Rio Haina, which has 357,000 domestic TEU representing 82% of its total, Manzanillo (MIT), which has 169,000 domestic TEU representing 48%, and Port Everglades, which has 526,000 domestic TEU representing 75 % of total throughput.

At the moment, Jamaica's port cargoes show a high level of containerisation, already running at 84%, so there is little scope for expansion based on further containerisation of general cargoes. Any growth in domestic container trade would therefore have to come from domestic economic growth.

In terms of economic growth, Jamaica's record has not been impressive. Between 1981-1996, the world economy has expanded by 65%, with the US showing slower growth at 50%, the developing economies of the Americas showing even less growth at 41% and Jamaica lagging considerably with only 33% growth over the period. Since 1991, Jamaica's growth rates have been less than 2% per annum, despite consistent growth in the US (its major trading partner) of 3.5%, and in the regional developing countries of between 1.3-5%. There is a strong correlation between GDP growth and container port volumes, as shown in figure 3, therefore it seems that in light of Jamaica's dim prospects for the foreseeable future, the port of Kingston will have to depend heavily on transhipment traffic for future expansion.

'000 TEUs	1985 Total	Transhipment Domestic	% %	1990 Totals	Transhipment Domestic	% %	1996 Totals	Transhipment Domestic	% %
KINGSTON	218.9	172.0 46.9	78.5 21.5	139.4	71.5 67.9	51.3 48.7	483.3	397.1 86.2	82.2 17.8
DOMINICAN REP	133.9	5.4 128.5	4.0 96.0	200.6	16.0 184.6	8.0 92.0	435.6	78.7 356.9	18.1 81.9
MIT	-	- -	- -	-	- -	- -	352.0	183.0 169.0	52.0 48.0
CRISTOBAL	77.3	23.2 54.1	30.0 70.0	123.3	61.7 61.6	50.0 50.0	169.0	84.5 84.5	50.0 50.0
COCO SOLO	-	- -	- -	3.4	- 3.4	- 100.0	72.7	21.8 50.9	30.0 70.0
SAN JUAN	881.6	39.3 842.3	4.5 95.5	1381.4	48.5 1332.9	3.5 96.5	1640.6	108.3 1532.3	6.6 93.4
PT EVERGLADES	88.5	8.9 79.6	10.0 90.0	200.1	40.0 160.1	20.0 80.0	701.3	175.3 526.0	25.0 75.0
MIAMI	144.0	14.4 129.6	10.0 90.0	373.9	71.0 302.9	19.0 81.0	656.8	144.5 512.3	22.0 78.0

Table 7. Domestic and Transhipment Volumes for Major Competing Ports: 1985-1996

Source: Ocean Shipping Consultants, 1997.

3.3 Transhipment Cargo Market

Once again, because of Jamaica's proximity to major trade routes, the port of Kingston is ideally located to serve as a regional hub for the Caribbean and Central America. Table 8 details the performance of the port's domestic and transhipment cargo throughput from 1980-1996. Of note is the growth of over 130% to 505,000TEU between 1985-1996. The slump in transhipment volumes during 1988-90 was caused by the withdrawal of Evergreen's services due to concerns over drug smuggling. Traffic however regained former levels in 1991-92 and has been increasing ever since. Also illustrated here is the growing importance of transhipments to the port as a percentage of total throughput, as already referred to in section 3.2 above. This relationship is graphically displayed in figure 5.

In terms of transhipments, the scope of Kingston's regional market is defined as inclusive of container throughput at ports in the Caribbean islands, the US East coast from Jacksonville south, the US and Central American Gulf coasts and the Caribbean coasts of Central America, Colombia and Venezuela. This market has been quantified at 9.61 million TEU in 1996, of which the Caribbean accounted for 35%, the US ports for 37%, Central American ports for 22% and Colombia /Venezuela for 6%. Table 7 summarises the development of transhipment volumes at principal transhipment ports in the regional market since 1985.

Of the Caribbean's 35% share of the region's market, Jamaica has always demonstrated steady growth, except in the late 1980's when it suffered the setback due to Evergreen's withdrawal. As shown in table 9, Jamaica's market share fell from 13.0% in 1985, to 5.9% in 1990, but recovered steadily to 14% in 1996.

Now, as already observed in section 3.2, there is a strong correlation between GDP growth and container port volumes. It has already been recognised that due to the limited performance of the Jamaican economy, any significant expansion in container trade will have to come from growth in transhipment volume.

YEAR	DOMESTIC		TRANSHIPMENT		TOTAL	
	'000 TEUs	%	'000 TEUs	%	'000 TEUs	%
1980	38.7	24.4	120.0	75.6	158.8	100.00
1985	47.0	21.5	172.0	78.5	218.9	100.00
1986	57.1	21.3	210.8	78.7	267.9	100.00
1987	60.0	22.2	210.2	77.8	270.2	100.00
1988	85.2	45.6	101.6	54.4	186.8	100.00
1989	88.7	56.6	68.1	43.4	156.8	100.00
1990	73.3	50.6	71.5	49.4	144.7	100.00
1991	72.1	41.3	102.5	58.7	174.6	100.00
1992	67.3	34.6	127.1	65.4	194.4	100.00
1993	83.8	30.5	190.8	69.5	274.7	100.00
1994	82.9	21.6	300.5	78.4	383.4	100.00
1995	96.1	23.3	315.6	76.7	411.7	100.00
1996	86.9	17.2	418.9	82.8	505.8	100.00

Table 8. KTO: Domestic and Transhipped Container Throughput 1980-1996

Source: Kingston Terminal Operators / Ocean Shipping Consultants - 1997

	1980		1985		1990		1991		1992		1993		1994		1995		1996	
	'000 TEU	%	'000 TEU	%	'000 TEU	%	'000 TEU	%	'000 TEU	%	'000 TEU	%	'000 TEU	%	'000 TEU	%	'000 TEU	%
Kingston	**158.8**	**12**	**218.9**	**13**	**139.0**	**5.9**	**170.0**	**6.6**	**189.2**	**7.4**	**265.0**	**9.5**	**340.1**	**12**	**384.3**	**12**	**483.3**	**14**
Bahamas	43.4	3.4	54.2	3.2	80.2	3.4	54.4	2.1	64.1	2.5	62.5	2.2	62.0	2.1	64.5	2.1	67.4	2.0
Barbados	18.6	1.5	30.9	1.8	37.1	1.6	36.9	1.4	31.4	1.2	37.5	1.3	43.4	1.5	45.2	1.5	47.1	1.4
Dom. Rep.	27.0	2.1	133.9	7.9	200.6	8.5	226.2	8.8	227.9	8.9	291.0	10	372.9	12	451.6	14	435.3	13
Leewards	30.4	2.3	83.5	4.9	115.9	4.9	114.4	4.4	110.3	4.3	110.6	4.2	117.2	4.0	112.8	4.0	124.7	4.0
Nether. Ant.	51.8	4.1	48.8	2.9	95.2	4.0	91.2	3.5	116.6	4.5	118.0	4.4	118.7	4.0	126.2	4.2	123.2	3.9
Puerto Rico	864.2	68	908.9	53	1422	60	1614	63	1594	62	1596	57	1586	53	1580	51	1668	50
Trinidad	72.0	5.6	108.9	6.8	71.0	3.1	99.4	3.8	106.0	4.0	146.2	5.3	154.9	5.3	171.5	5.6	200.4	6.0
Windwards	16.9	1.3	61.6	4.0	157.9	6.7	122.6	4.7	115.3	4.5	132.0	4.8	151.7	5.1	156.1	5.0	176.6	5.3
Haiti	n.a.	-	40.3	2.4	45.7	1.9	40.3	1.6	18.9	0.7	29.0	1.0	29.0	1.0	20.0	0.6	20.0	0.6
TOTAL	1283.1	100	1689.9	100	2364.6	100	2569.4	100	2573.7	100	2787.8	100	2975.9	100	3112.1	100	3346.0	100

Table 9. Caribbean Container Port Throughput and Market Shares: 1980 - 1996

Source: OSC,1997

Figure 4 serves to underline the strength of this relationship, as it graphically compares the GDP growth of the developing nations of the Americas with KTO's transhipment throughput growth. Aside from the fallout caused by the problem with Evergreen in the late 1980's, the similarity between the two is readily apparent. This augers well for Kingston, since, as will be shown, the prognosis for growth in regional cargo volumes is very good.

As opposed to forecasting domestic demand, there is no sure way of forecasting transhipment demand since there are more factors involved than just volume of trade. For instance, whether and how often cargoes are discharged/loaded. However, future development is certain to be more rapid for transhipment business than for domestic volumes, given their historical rates of growth in the region and the global trend towards transhipment as a consequence of increasing vessel size. Furthermore, every transhipment involves 2 additional moves within the region besides the initial loading and final discharge, which has a multiplier effect on port throughput. It is reasonable therefore to anticipate a rate of growth which is at least double that achieved by domestic traffic, with a further boost due to the increasing proportion of cargoes which are being transhipped. Based on this, table 10 sets out forecasts for both regional transhipment and container port volumes to 2000. A 55% growth in regional transhipment volumes is forecast over 1997-2000, yielding throughputs of 2.14 million TEU, with further growth to between 3.75-4.19 million TEU in 2005, according to the pace of economic growth in the region.

Such is the potential for growth in this market that it is anticipated that even if there was a gradual erosion of Kingston's market share, the port would still experience growth in traffic volumes. Table 11 below outlines three scenarios wherein Kingston's market share is improved, maintained or eroded. As can be observed, even in the worst case, the port's throughput is still expected to increase by 100%, as compared to a 200% increase if regional market share is maintained, and a 250% increase if market share improves.

million TEUs	1997	%	1998	%	1999	%	2000	%	2005	%
Total Demand	10.39		11.22		12.10		13.06		17.99	
Transhipment *	**1.38**	**13.3**	**1.60**	**14.3**	**1.85**	**15.3**	**2.14**	**16.4**	**3.75**	**20.8**
Domestic Demand	9.01		9.62		10.25		10.62		14.24	

Table 10. Forecast Regional Container Transhipment and Domestic Demand to 2005

* At regional hub ports only: currently Kingston, Rio Haina, San Juan, Freeport, MIT, Cristobal, Coco Solo, Port Everglades and Miami.

Source: OSC,1997

million TEUs	1997	%	1998	%	1999	%	2000	%	2005	%
Maintain position	0.46	33.6	0.54	33.6	0.62	33.6	0.72	33.6	1.41	33.6
Improve position	0.47	34.0	0.56	35.0	0.67	36.0	0.79	37.0	1.68	40.0
Position eroded	0.46	33.0	0.51	32.0	0.57	31.0	0.64	30.0	1.13	27.0
Total Transhipment	**1.38**		**1.60**		**1.85**		**2.14**		**4.19**	

Table 11. Kingston Target Container Transhipment Volumes to 2005

Source: OSC,1997

It must be pointed out that much of the success enjoyed by the port as a Caribbean hub is attributable to the volume and range of deep sea and feeder services which call the port. Tables 12 and 13 below respectively give details of the major carriers which use the terminal (based on container moves) and the key markets served by carriers calling at Kingston. Appendix 1 gives a comprehensive schedule of all lines calling the port of Kingston, their agents, schedules and port rotations.

Carrier	Moves	%
ZIM	145,839	38.0
ZIAS	21.623	5.0
NCS	84,574	22.0
Eurosal	24,481	6.0
Evergreen	65,888	17.0
Kent Line	13,406	3.0
Sea-Land	9,123	2.0
Others	28,448	7.0
TOTAL	393,382	100.0

Table 12. Kingston Container Terminal Users by Container Moves: 1997

Source: Port Authority of Jamaica,1997

Key Markets	% of Carriers
ECNA	25.3
North Europe	19.0
Central America	10.1
ECSA	8.9
USGC	6.3
Far East	6.3
WCSA	6.3
Mediterranean	5.0
NCSA	3.8
Others	9.0
	100.0

Table 13. Key Markets Served by Carriers Calling at Kingston

Source: IMS,1998b

CHAPTER 4 FACTORS OF PORT COMPETITIVENESS

There are several criteria by which the competitiveness of a port is judged, however, the main standards used are usually indicators which are physical, operational and financial in nature. In this chapter, we will examine each set of indicators in turn with a view of determining how the port of Kingston compares to other players in the industry.

4.1 PHYSICAL INDICATORS

Using physical indicators is the most straightforward way to carry out a comparison between ports. In table 14 below we have detailed the 'vital statistics' of the major ports in the Caribbean region, as well as other prominent terminals for contrast.

Upon observation it can be determined that within the Caribbean region, Kingston is one of the leading ports in terms of its physical characteristics, and furthermore, compares favourably with several other terminals of international standing.

PORT	QUAY LENGTH (m)	YARD SIZE (ha)	WATER DEPTH (m)	CRANAGE (#)	CAPACITY ('000 TEUs)
Kingston	**1400**	**47**	**14.6**	**8**	**700**
Freeport	548	23	15.5	4	560
Rio Haina	273	5	10.6	2	500
San Juan	1372	14	10	5	1,800
Miami	1370	263	12.8	10	2,000
Pt Everglade	880	70	13.4	7	800
MIT	600	25	13.0	6	450
Christobal	445	12	10.7	2	200
Coco Solo	320	25	13.0	3	600
Malta	1480	39	15.5	10	1,500
ECT Delta	970	60	15	8	500
LA APL	1223	90	15	8	600
Le Havre	5250	190	14.5	22	3,500

Table 14. Physical indicators.

Source: OSC,1997; Container Intl.1999a; Malta Freeport,1998; PAJ,1997; Irscha,1999; Guide to Port Entry,1999.

4.2 OPERATIONAL INDICATORS

Operational indicators are the ones most commonly identified with by parties seeking to determine a port's capabilities. These indicators are generally divided into two categories, namely productivity and output criteria.

4.2.1 Productivity Indicators

The sheer volume of containers handled is very important in determining a port's position in the industry, but this quantity must go hand in hand with quality if it is to be of any consequence. Big ports can be outmanoeuvred by smaller entities if attention is not paid to maintaining certain levels of efficiency and productivity. Monitoring productivity levels can be done in several ways. For this exercise, the following methods will be used to analyse the relative performances of the ports:

- TEUs handled per kilometre of quay per year
- TEUs handled per crane per year
- Containers handled per crane per hour
- Berth occupancy rate

4.2.1.1 TEUs Handled Per Kilometre Of Quay Per Year

In the 1980s, productivity in Kingston ranged between 0.19-0.37mil TEU/km of quay. The 1990s saw a growth in units handled to a 1995 peak of 0.60mil TEU/km of quay. In 1996, further capacity came on stream in the form of Gordon Quay, resulting in a fall in utilisation rates to 0.39mil TEU/km of quay.

In the same way that Kingston suffered a fall in utilisation rates due to increased capacity, so too did Miami, whose rate fell to 0.17mil TEU/km. Miami's reduction was also due to a loss of throughput to Port Everglades, whose utilisation rates mounted to 0.52mil TEU/km as a result. In Manzanillo, the concentration of several large gantry cranes on the terminal has caused the quayage to be stretched to 0.59mil TEU/km, while in Rio Haina and San Juan, Sea-Land's dominant presence and operational techniques have boosted their rates to 1.5mil TEU/km and 1mil TEU/km respectively. Table 15 sets out this information.

PORT	'000 TEUs per gantry crane	'000 TEUs per berth kilometre
Kingston	**60.4**	**389.8**
Miami	65.7	170.4
Port Everglades	116.9	517.2
MIT	58.7	586.7
Rio Haina	200.6	1469.2
San Juan	273.4	971.9

Table 15. Major Regional Transhipment Ports: Terminal Productivity 1996

Source: OSC,1997

Table 16 shows the development of average utilisation rates at major port ranges in Asia, North America, Europe and the Caribbean. In 1996, the average throughput per kilometre of quayage was 0.27mil TEU in the US Atlantic South range, 0.22mil TEU in North Continental Europe, 0.43mil TEU in North East Asia and 0.38mil TEU in the Caribbean. Utilisation in Asia is higher due to high land prices in Japan and congestion in South Korean ports, while Caribbean rates have been boosted by high rates obtaining at Rio Haina and Puerto Rico due to Sea-Land's dominant presence and special operational techniques. Overall however, Kingston's rate of 0.39mil TEU/km compares favourably, especially in light of the fact that it has a history of substantially higher performance.

YEAR	KINGSTON	Caribbean	North American: Atlantic South Range	European North Continent	North-East Asia
1986	**366.0**	350.1	115.0	226.8	343.4
1987	**346.9**	332.0	122.4	214.6	346.2
1988	**248.2**	354.9	144.0	198.8	347.4
1989	**209.2**	381.6	155.0	211.8	363.7
1990	**190.4**	410.5	161.2	204.5	383.8
1991	**232.0**	348.2	166.2	189.8	384.2
1992	**295.6**	324.1	186.5	186.4	350.8
1993	**414.1**	338.7	193.5	192.4	370.0
1994	**531.4**	383.0	202.9	207.8	398.1
1995	**600.5**	381.9	253.4	211.9	489.2
1996	**389.8**	380.2	269.5	217.2	427.4

Table 16. Kingston and Major Port Ranges: Berth Kilometre Productivity per '000 TEUs (1986 - 1996)

Source: OSC,1997

YEAR	KINGSTON	Caribbean	North America: Atlantic South Range	European North Continent	North-East Asia
1986	**67.0**	142.7	58.7	87.8	58.7
1987	**63.3**	102.9	64.7	75.6	60.9
1988	**45.4**	110.0	69.5	75.7	64.2
1989	**38.3**	109.9	60.6	66.8	66.6
1990	**34.8**	118.2	63.0	63.7	67.0
1991	**34.0**	111.7	50.9	66.7	67.2
1992	**37.8**	95.3	55.6	64.0	65.0
1993	**53.0**	103.3	52.6	64.7	66.8
1994	**68.0**	110.2	56.4	71.7	69.1
1995	**76.9**	111.1	61.7	71.9	83.5
1996	**60.4**	107.9	65.9	72.5	75.7

Table 17. Kingston and Major Port Ranges: Gantry Crane Productivity per '000 TEUs (1986 - 1996)

Source: OSC,1997

4.2.1.2 TEUs Handled Per Crane Per Year

With respect to throughput handled per crane annually, productivity in the port of Kingston ranged between 33,900-67,000 TEU in the 1980s. This peaked at 76,900 per crane in 1995, when the introduction of additional cranes resulted in a reduction to utilisation rates of 60,400 per crane per year.

Table 17 outlines Asian, North American, European and Caribbean average utilisation rates in from 1986 - 1996. Here we see again that in 1996, Kingston's rate compares favourably with average throughput rates per gantry crane of 65,900 TEU in the US South Atlantic range, 72,500 TEU in north continental Europe, and 75,700 in north east Asia. The relatively high rate of 107,900 per crane for the Caribbean is skewed by the high rates of Puerto Rico and Rio Haina, which together accounted for 63% of Caribbean port traffic in 1996.

4.2.1.3 Containers Handled Per Crane Per Hour

Probably the most easily recognisable productivity indicator for container terminals is the speed with which they can work a vessel, i.e. how many moves per hour their cranes can consistently achieve. This factor varies widely around the world, with leading ports like Singapore and Hong Kong handling boxes at a rate of 86 and 74 containers per hour respectively. These rates are exceptional however, as Singapore's rates are actually 35% higher than Rotterdam's and twice those recorded in Osaka (D.Hunter,Cargo Systems,1998). According to Mike Ircha during his IPP2 seminar, a study on average gross output of gantry cranes working on third generation ships revealed a productivity rate of 17.7 container moves per hour. This is in line with the findings of Hunter who maintains that in most regions, productivity rarely exceeds 25 moves per hour. Our own field trip experience seems to bear this out, as Le Havre maintains a rate of 24 moves/hr and Malta Freeport operates at a modest 18 moves/hr. Bearing all this in mind, Kingston's rated performance of 24 container moves per hour is on par, and should be acceptable to any shipping line.

4.2.1.4 Berth occupancy rate

Given the escalating daily running costs of operating a liner service, shipping lines are very keen on avoiding delays in any form, and particularly those related to waiting on a berth due to congestion. According to Professor B. Francou in his lectures on Port Performance Indicators, a port of Kingston's dimensions should have a berth occupancy rate not exceeding 66%. Figure 6 below shows the progress of both berth occupancy and vessel delay rates in the Kingston Container Terminal from April '95 to December '97. The dramatic impact of the opening of Gordon Quay in mid 1996 is clearly reflected, with berth occupancy rates falling from a peak of 90% to acceptable levels of between 50-55%. Vessel delays due to unavailability of berth similarly fell from a total of 225 hours per quarter, to level out at 50 hours by December '97.

Figure 6. Kingston: Vessel Delays / Berth Occupancy (1995 - 1997)

Source: KTO

4.2.2. Output Indicators

It has already been noted in section 3.1.2 that in terms of volume, Jamaica ranked 43 in the world and Kingston ranked 72 as a port in 1996. Table 19 shows the container port throughputs for 1985-1996 for the major competing ports in the region.

At the time, Kingston was the leading boxport in the Caribbean, and was surpassed in the region only by Miami, Port Everglades and Puerto Rico, due to their having much stronger domestic cargo volumes. Table 18, featuring the top twenty container terminals in the world, has also been presented so as to facilitate comparison and provide perspective.

RANK(Last Year)	PORT	1998 TEUs	1997 TEUs
1 (2)	Singapore	15,100,000	14,135.300
2 (1)	Hong Kong	14,650,000*	14,567,231
3 (3)	Kaohsiung	6,271,053	5,693,339
4 (4)	Rotterdam	6,032,000*	5,494,655
5 (5)	Busan	5,752,955	5,233,880
6 (6)	Long Beach	4,097,689	3,504,603
7 (7)	Hamburg	3,550,000	3,337,477
8 (9)	Los Angeles	3,378,218	2,959,715
9 (8)	Antwerp	3,265,750	2,969,189
10 (11)	Shanghai	3,066,000	2,520,000
11 (10)	Dubai	2,800,000	2,600,085
12 (15)	Felixstowe	2,500,000*	2,251,379
13 (12)	New York/New Jersey	2,450,000*	2,456,886
14 (14)	Tokyo	2,450,000*	2,332,000
15 (13)	Yokohama	2,200,000*	2,347,635
16 (27)	Gioia Tauro	2,125,640	1,448,531
17 (17)	Kobe	2,087,000*	1,944,147
18 (19)	San Juan	1,922,150*	1,781,250
19 (19)	Tanjung Priok	1,898,069	1,908,711
20(23)	Algeciras	1,825,614	1,537,627

Table 18. World's Leading Boxports: 1998

* Estimated
Source: Containerisation International Yearbook 1999

'000 TEUs	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Kingston (Jamaica)	**218.9**	**267.9**	**253.2**	**181.7**	**153.2**	**139.4**	**169.8**	**189.2**	**265.0**	**340.1**	**384.3**	**483.3**
Bridgetown (Barbados)	30.9	30.7	31.2	33.5	37.4	37.1	36.9	31.4	37.5	43.4	45.2	47.1
Port of Spain (Trinidad)	107.4	73.0	53.5	42.5	47.2	57.0	81.5	86.6	101.5	129.5	145.2	185.8
Dominican Republic	133.9	179.7	156.0	126.8	171.5	200.6	226.2	227.9	291.0	372.9	451.6	435.6
Freeport (Bahamas)	18.5	20.7	20.9	23.9	25.9	46.2	24.4	24.6	25.6	24.8	26.5	29.6
Pt.a Pitre (Guadeloupe)	74.9	72.7	79.0	93.7	95.7	102.1	99.9	95.2	95.6	100.5	95.8	103.5'
San Juan (Puerto Rico)	881.6	963.0	1169.8	1245.3	1289.0	1381.4	1584.0	1563.7	1559.4	1533.6	1539.0	1640.6
Pt. Limon (Costa Rica)	94.0	106.0	117.4	157.6	172.1	192.1	229.2	310.6	320.0	323.0	365.0	395.0
Colon-MIT (Panama)	-	-	-	-	-	-	-	-	-	-	180.0	352.0
Cristobal (Panama)	77.3	102.8	128.6	106.2	102.7	123.3	162.4	177.9	192.3	194.4	169.7	169.0*
Coco Solo (Panama)	-	-	-	-	-	3.4	18.2	49.4	54.7	61.0	72.6	72.7*
Pt. Everglades (Florida)	88.5	110.9	206.5	228.5	241.5	200.1	192.5	209.6	226.7	251.7	632.8	701.3
Miami (Florida)	144.0	150.3	175.9	273.1	338.0	373.9	408.0	520.0	572.2	629.3	656.2	656.8

Table 19. Caribbean, Central American, USA South East: Container Port Throughputs 1980 - 1996

* Estimate
Source: Ocean Shipping Consultants

4.3 FINANCIAL INDICATORS

The current economic environment in the maritime industry has created a situation wherein as shipping lines demand greater value for their money, ports are forced to invest in costly equipment and infrastructural expansion in order to meet service requirements. At the same time, because of depressed freight rates, shipping lines are not willing to pay any for these facilities, making it necessary for ports to finance these investments through increased throughput and greater operational efficiencies. The need to carefully monitor their financial progress in order to realise a return on their investments has made ports come to attach increasing importance to financial indicators as a guide to them achieving their economic objectives.

Based on either cost or revenue related elements, these financial indicators are drawn from such areas as revenue, taxes or the cost of capital infrastructure, equipment, labour, or land. It is however very difficult to achieve proper comparisons between ports based on these items, because the situation of each port is different, and any analysis would have to make allowances for differences such as government subsidies, tax exemptions, and salary fringe benefits, to name a few. Probably one of the most straightforward financial indicators available, and certainly the one most interesting to shipping lines, is the port's tariff of charges.

Table 20 below itemises the container handling rates charged by the competing ports in the region. Kingston's ship to gate cost of US$ 273 per domestic container places it in the top half of the list, but its transhipment rate of US$ 116 per move is about average.

On the other hand, when compared to charges in other regions (table 21) taken from a recent survey of 84 ports world-wide, Kingston is substantially more expensive. This disparity may however be due in part to the fact that port charges in most developed countries have been driven downwards by intense price competition.

These figures will be revisited in section 5.2.1 as part of the SWOT analysis of the port.

COUNTRY/PORT	Status	IMPORTS		EXPORTS	
		Full	Empty	Full	Empty
1. Jamaica					
Kingston	20’	273	273	273	273
	40’	273	273	273	273
	Feeder	116	116	116	116
2. Colombia					
Barranquilla	20’	266	95	304	110
	40’	342	152	323	182
Cartagena	20’	304	95	332	110
	40’	399	152	427	182
	Feeder	171	58	226	58
3. Costa Rica					
Pt. Limon	20’	331	77	243	115
	40’	331	77	243	115
	Feeder	357	204	372	134
4.Dominican Republic					
Rio Haina	20’	71	39	107	59
	40’	71	39	107	59
5. Panama					
Cristobal	20’	270	53	190	28
	40’	540	105	380	56
	Feeder	488	116	346	81
6. Puerto Rico					
San Juan	20’	349	220	335	220
	40’	349	220	335	220
7. North America					
Miami	20’	205	91	205	91
	40’	205	91	205	91
New Orleans	20’	276	146	256	146
	40’	295	172	276	172

Table 20. Caribbean Region’s Key Ports: Terminal Handling Charges

Source: IMS,1998b

PORT REGION	RATE per TEU	
	Full	**Empty**
Kingston	**273**	**273**
South & Central America	252	98
North America	213	142
Asia / Far East	120	93
Mediterranean	118	74
North Europe	89	78
Middle East	80	65

Table 21. Major Port Ranges: Average Container Handling Charges

Source: IMS,1997a

CHAPTER 5 SWOT ANALYSIS

In order to present a comprehensive picture of the circumstances of the port of Kingston a SWOT analysis was undertaken. The findings are presented below and will appraise the reader of all the issues surrounding the port's situation.

5.1 STRENGTHS

5.1.1 Excellent Geographical Location

Probably the greatest advantage the port of Kingston possesses is the fact that it sits near the geographical centre of the Caribbean sea, being flanked to the north by the US Gulf, to the east by the islands of the Eastern Caribbean, to the south by the north coast of the South Americas and to the west by Central America. This location, just 51 kilometres from the Panama canal, places the port in close proximity to both major global east-west trade routes transiting the canal and north-south American trade lanes, all of which have been discussed in greater detail in section 2.1 above. Calling the port of Kingston would therefore require a minimum of deviation by main line vessel services, thereby fulfilling one of the main criteria of a 'hub' centre port. For instance, as mentioned in section 2.4.2.2, the fact that Kingston is closer to the ECNA than the Panamanian ports which are on the extreme western rim of the Caribbean basin, makes Kingston the better choice for the location of a transhipment hub to serve a pendulum service from the Far East relaying cargo to the region. This unique quality of being centrally positioned gives Kingston a similar advantage over such competitors as Miami, Freeport, San Juan and Port of Spain.

5.1.2 Modern Terminal Facilities

The port facilities offered by Kingston, as detailed in sections 3.1.2 and 3.1.3, rank among the finest in the region. The Port Authority and the private sector have gone to great lengths to provide a terminal which can efficiently handle the requirements of major shipping lines seeking a regional hub for their operations.

5.1.3 Abundant Space

One of the features of modern day container terminals is the requirement for increasingly large amounts of container storage space. With the trend upward of vessel size and capacity, it is also essential that terminals have room for expansion. In both these respects, Kingston is one of the few ports in the region that is blessed with lots of room for both present operations and for expansion when necessary. By comparison, competing ports such as Rio Haina, Cristobal and Miami to a lesser extent have little scope for expansion, or would have to do so at great expense through land reclamation.

5.1.4 Deep Water Approaches and Short Estuarial Passage

Maintaining a reliable schedule and spending a minimum of time in port are both essential to a successful shipping operation. Carriers therefore favour ports that require minimal deviation from main shipping routes and the shortest distance from the fairway buoy to the berth. Kingston's proximity to the trade lanes has already been discussed at length, and it only takes approximately one hour to transit the approach channel once the pilot has boarded.

5.2 WEAKNESSES

5.2.1 High Port and Terminal Costs

As shipping lines struggle for survival in the current environment of depressed freight rates, they naturally seek to cut their costs and thus pressure ports and terminals to reduce their charges. Terminals which can provide quality service at competitive rates will therefore have a major edge. The prices charged by Kingston relative to other ports has been discussed in detail in section 4.3. Of note is the fact that in the Caribbean region, Kingston's domestic rate of US$ 273/move makes it relatively expensive, but more significantly, its transhipment rate of US$ 116/move, is the cheapest among its competitors with the exception of Rio Haina, which is 25% lower. With respect to international standards, when compared to the average regional charges listed in table 21, Kingston transhipment rate is 23% more expensive than North European ports, 31% more expensive than the Middle East, about the same as both the Mediterranean and the Far East, and more than 40% cheaper than North, South and Central American ports. Whereas it appears that within the region Kingston's rates are very competitive, it is foreseeable that shipping lines will continue to press for reductions in an effort to bring port charges in line with the lowest common denominator. It therefore behooves Kingston to take stock of its situation and prepare to rid itself of any 'fat' which is built into its rate structure. As such it is good that certain costs in Kingston which are presently being passed on to shipping lines, such as dead time charges and certain premium allowances for the labour which are a result of restrictive labour practices are presently being reviewed. Other expense elements resulting from high finance charges and low productivity will also have to be examined with a view to reducing or eliminating them in the short to medium term.

5.2.2 Poor Industrial Relations

The Kingston Waterfront has been hailed as the birthplace of the Jamaican labour movement over 50 years ago and as such the there is a strong tradition of labour representation that exists to this day. The dock workers are primarily represented by three main trade unions, namely, the Bustamante Industrial Trade Union, the Trade Union Congress and the United Portworkers and Seamen Union. This multiplicity of bargaining units is a weakness in itself, and made for disruption and duplicity at the best of times, and at worst has resulted in labour unrest and industrial action. The situation on the port has been likened to that of the UK dock scene of twenty years ago, before the repeal of the National Dock Labour scheme.

In the past the management of the port, in an effort to achieve an all important reputation for reliability, granted many concessions which came back to haunt them in the form of restrictive practices. These practices burdened the port with inflexible and outdated manpower solutions, the costs of which were passed on directly to shipping lines, who were becoming more and more unwilling to pay.

This increasing reticence by shipping lines, coupled with their demands for lower prices and higher productivity, left the port's management in a difficult position, as any attempt to broach the topic of restrictive practices with the unions was met with total resistance. In desperation, a Board of Enquiry was convened under the auspices of the Ministry of Labour in an effort to break this deadlock. The scope of this enquiry will be discussed further in section 6.1.2, but suffice it to say that preliminary estimates indicate that successful revision of present working practices to those in force on competing ports would result in cost savings for the port of approximately US$ 2 million annually.

5.2.3 Low Domestic Cargo Volumes

As discussed in section 3.2, Jamaica's domestic container cargo volumes are relatively low, both in absolute terms and as a percentage of total port traffic. As shown in table 7, Kingston's domestic volumes in 1996 of 86,000 TEUs does not compare favourably with those of its main competitors, namely Dominican Republic with 357,000 TEUs, MIT with 169,000, San Juan with 1,532,000 and Miami and Port Everglades with 512,000 and 526,000 TEUs respectively. As a percentage of total traffic, Kingston's position is equally unimpressive. Domestic cargo accounts for only 18% of Kingston's container traffic, while amongst its rivals, the figure ranges from a low of 48% (MIT) to a high of 93% (San Juan). It has been noted that Kingston's present levels of domestic cargo could easily be handled using only berths 1-9 , three gantries and a fraction of the remaining port equipment, thus it is clear that the domestic traffic alone is unable to support the major part of the investment on the port.

This is not to say that Kingston cannot compete successfully as a transhipment hub given this handicap, as terminals such as Freeport, Bahamas (500,000TEU of which only 5% is domestic) and Marsaxlokk, Malta (1 million TEU of which only 2% is domestic) have overcome this disadvantage. It would however strengthen Kingston's position if this situation could be addressed and any increase in domestic cargo would enhance Kingston's attractiveness as a transhipment centre.

5.2.4 Inadequate Market Research

According to Invicta Management Services, after having discussions with the senior port management in Kingston they were left with the impression was that there was a general lack of knowledge about the changing face of liner shipping and developments in the container industry. This resulted in a reactive rather than proactive approach to marketing, and the use of 'shotgun' rather than 'sniper' strategies to attract new business to the port.

Market research is a fundamental tool for any strategic planning, and the lack of clear targets of where the port should be positioning itself in the market place will create serious difficulties in the port's efforts to become the regional transhipment hub of choice.

5.2.5 Limited Market Penetration

Analysis of table 12 above reveals that 65% of Kingston's container traffic comes from only two customers, namely Zim/ZIAS and NCS. Having such a narrow customer base is cause for concern, particularly in the current environment where carriers are proving increasingly fickle in their choice of ports. One only has to recall the discussions in chapter 2 wherein Maersk and Evergreen, for differing reasons, transferred their transhipment business from Kingston to other ports. Having as wide a customer base as possible is the only safeguard against suffering severe repercussions when any particular line pulls out of the port.

5.2.6 Cumbersome Organisational Structure

There are a number of parties within the maritime sector of the port of Kingston with vested interests in the port's welfare. The key players are the PAJ, SAJ, KTO, KWL, other stevedores, and the labour unions (BITU, TUC, UPSU). The existence of these players is not a problem in itself, as other ports such as Le Havre feature many parties at work in their port. What is cause for concern in Kingston is that, as opposed to Le Havre which has its 'Port Alliance' program, there is no central blueprint guiding the port's development, and each party seems to be operating on its own agenda. This does not auger well for the port's steady advancement.

5.2.7 Under-utilised Labour Pool

As a result of port labour's historical development, and due in no small part to restrictive practices, the blue collar labour pool in the port has grown to the point where there is now not enough work to keep all the dock workers fully occupied. Attempts are presently being made to rationalise the workforce by offering early retirements and redundancies, and by training the remainder to become multi-skilled and multi-functional.

5.2.8 High Levels of Capitalisation

The ambitious development of Gordon Quay has absorbed huge amounts of capital, sourced from international development banks through the Port Authority and guaranteed by the Government of Jamaica. Thus, the rates of interest are reasonably low, but the repayment schedules still dramatically increases the capital costs of the terminal, which will have to recoup this investment from present traffic until such time that the throughput increases, justifying the investment.

5.3 OPPORTUNITIES

The opportunities open to the port of Kingston will form part of the basis of proposals made by the author and as such these discussions will be deferred to chapter 6.

5.4 THREATS

5.4.1 Growing Competition From Other Regional Ports

Kingston has certain natural advantages as a candidate for being the major transhipment hub of the region. These advantages are however being eroded for a variety of reasons, and other ports in the region are seizing the opportunity to develop facilities of their own to tap into this lucrative market.

Extracted from OSC data, the author considers the following port developments as the most significant :

- Freeport - Bahamas was commissioned in July 1997 with 548 meters (m) of berth, 4 super post-Panamax gantry cranes, 23 hectares (ha) of container yard and 15m of water depth alongside. Already running at volumes of 500,000TEU annually, work has already started on phase II. Scheduled for completion in late 1999, this phase will add another 366m of berth, 3 more cranes, 37ha of container storage and boost capacity to 950,000TEU per year.
- Manzanillo - Colon, Panama was opened in March 1995 featuring 600m of berth, water depth alongside of 13m, 6 gantry cranes (of which 4 are post-Panamax) and 25ha of yard space. Expansion plans for the port are to add a further 600m of berth, 16ha of storage space and 4 more gantry cranes which will effectively increase the terminal's capacity from 450,000 to 800,000TEU per annum.
- Christobal - Panama has 445m of berth, depth alongside of 11m, 2 Panamax gantry cranes and approximately 10ha of container yard. Plans are to upgrade the cranes to post-Panamax, increase yard capacity to 18ha, and increase throughput to 300,000TEU annually.
- Balboa - Panama is being developed alongside Christobal. Plans are for a 350m berth equipped with 3 super post-Panamax cranes and suitable storage area and depth alongside which will allow it to accommodate the worlds' largest vessels

- Colon - Coco Solo, Panama features 324m of berth, water depth in excess of 10m, and 3 post-Panamax gantry cranes. An extension of 312m of berth with 2 additional gantry cranes is planned which will raise capacity from 600,000 to 1 million TEU per annum.
- Miami - Florida has added to its already considerable facilities. The port now features over 1400m of berth, with the berths at Dodge Island dredged to 13m depth. 4 post-Panamax cranes were added, bringing the total number of cranes to 10, and a 40ha landfill boosted container storage. Port capacity now stands at 2 million TEU, of which 813,000 was used in 1998.
- Port Everglades - Florida has 600m of berth with depth of 13m, 7 post-Panamax gantry cranes and over 70ha of container storage, handling over 4 million tons of cargo annually.
- Rio Haina - Dominican Republic has had its container yard extended by 2ha and its water depth increased from 8 to 10.5m.
- There are also developments taking place in Port of Spain, Trinidad; Pointe a Pitre, Guadeloupe; San Juan, Puerto Rico; Puerto Limon, Costa Rica; Cartagena, Columbia and Veracruz/Altamira/Tuxpan, Mexico, but these are of less relevance with regards to Kingston.
- It should also be borne in mind that Cuba has great potential once the US trade embargo is lifted.

5.4.2 Emergence of Global Terminal Operators

The emerging trend of global terminal operators or superport companies, as raised in section 2.3, is one that carries serious implications for the port of Kingston. The threat this development poses to Kingston arises from the fact that many of the regional port developments discussed in section 5.4.1 above are the direct result of initiatives taken by these organisations in their drive to establish global networks of container terminals. Below is a breakdown of the relationships between these global operators and their projects in the Caribbean region:

- The Freeport Container Port (FCP) is a joint venture between the Grand Bahama Port Authority and the Hong Kong-based Hutchinson Port Holdings (HPH), reputed to be the largest independent port operator in the world.
- The Manzanillo International Terminal (MIT) in Colon, Panama, is a joint venture between Motores Internacionales of Panama and the Seattle-based Stevedoring Services of America (SSA).
- The Panamanian ports of Christobal and Balboa are both being developed and operated by Hutchinson Ports under a 25 year concession granted to them.
- The Colon Container Terminal at Coco Solo North in Panama is a dedicated terminal facility being developed by Evergreen.
- Rio Haina in the Dominican Republic has undergone substantial development as a dedicated relay terminal for Sea-Land.

Not only is the factor of increased competition a serious concern for Kingston, but also the fact that the tremendous resources that these mega-operators have at their disposal could well result in the port being outmatched and unable to compete effectively, especially since these global players could well decide to adopt global pricing strategies as part of their efforts to attract shipping lines to their facilities world-wide, using one facility to subsidise another. Kingston could not withstand such financial pressure for any extended period.

5.4.3 Changes in the Nature of the Maritime Industry

The increasing effect of globalisation on the maritime industry, as addressed in Chapter 2, has thrown the entire industry into a state of transition. The following factors now have to taken into consideration by ports and terminals wishing to remain relevant:

- growth of mega consortia and alliances
- relentless pursuit of economies of scale
- growth of hub and spoke operations
- effect of declining freight rates

- concentration of bargaining power into the hands of fewer operators
- increasing pressure by shipping lines to reduce operating costs
- political influences

The old ways of doing business no longer apply, and the successful hub centres of tomorrow will be the terminals which address the issues of today.

5.4.4 Inadequate Return on Investment

Conventional wisdom in the shipping industry formerly maintained that if you built the facilities, then the ships would follow. In today's increasingly competitive environment however, careful planning is necessary to avoid the dangers of over investment, which can be just as detrimental as not investing enough. The time during which Kingston could have comfortably expanded its facilities, secure in the knowledge that the traffic justifying the investment would materialise, is probably past. Now it will take shrewd marketing to ensure that the port's recent investments will bring adequate returns and not become a burden to taxpayers.

5.4.5 Unstable Labour Platform

The fact that several strong labour unions (i.e. the BITU, TUC and UPSU) are involved in the representation of dockworkers on the port of Kingston creates an element of uncertainty on the labour scene. In this environment, the practice of 'one-upmanship' and the pursuit of differing agendas can prove inimical to the overall development of the port. Efforts to rationalise and consolidate these interests into a collective unit, and furthermore to recruit them as part of a team focused on the bigger picture of advancing the port's cause against outside forces are imperative. It is only by harmonising the relationship between the trade unions themselves, and between them and management, that meaningful progress can be made towards eliminating counterproductive policies, such as restrictive practices.

5.4.6 Political Influences

It is perhaps inevitable that in a relatively small maritime community, political influences play a significant role in the activities of the port. Unfortunately, political influences can become personalised, and personal agendas, whether corporate or individual, can cloud common objectives. Power struggles can lead to the parties involved becoming distracted from key strategic issues, which is detrimental to the formulation of policies which should be geared towards the port's survival and long term prosperity. For instance, the present situation of there being no clear understanding as to whether KTO's management contract will be renewed by the PAJ, creates a situation wherein the private sector (in the form of KWL) may start hedging their bets by developing their own facilities instead of throwing in their lot with the PAJ. Given that the 'game' is no longer local, but rather global in scope, it is imperative that previous differences be set aside and all parties concerned should apply themselves to meeting the challenges as a unified front with a common goal.

CHAPTER 6 PROPOSALS AND OPPORTUNITIES

The situation that the port of Kingston finds itself in dictates that it should take a two-pronged approach to maintaining its competitiveness in the face of the effects of globalisation. These approaches are:

1. To take the necessary steps to mitigate or eliminate those shortcomings existing in the port's make-up, which show up as weaknesses and threats in the SWOT analysis.

2. To implement measures designed to capitalise on the various opportunities which exist for the port.

6.1 MANAGING WEAKNESSES

The shortcomings suffered by Kingston (as detailed in section 5.2) tend to fall in one of four categories. These are:

a) Those problems relating to costs.
b) Those problems relating to labour.
c) Those problems relating to marketing.
d) Those problems relating to organisational structure.

The author will deal with each of these areas in turn, offering strategies geared to at least reducing the negative effects of these problems.

6.1.1 Problems Relating to Costs

High port and terminal costs have been discussed at length in section 5.2.1 as one of the principal weaknesses of the port. At present, the possibility of reducing the rates in the short term are not good, especially in light of the fact that the recent massive expenditure on the Gordon Quay expansion would have added even greater margins to the port's overhead costs. The focus here should be on measures to reduce the high incidence of dead time charges imposed on the shipping lines presently, which are actually a consequence of the restrictive labour practices which exist on the port. In the author's opinion, these restrictive practices are the root of many of the evils which beset the port, and as such it is a matter of extreme urgency that they be examined and eliminated. More will be said on this issue in the following section.

Although restrictive practices have been pinpointed as germane to the problem of high port charges, an actual analysis of the labour content of Kingston's charges reveal that compared to Europe where the labour element of port charges averages 50-55%, in Kingston they account for only approximately 20% (IMS,1998b,34). This therefore indicates that there are also other significant elements adversely affecting the rates, which are most likely high capital costs and relatively low levels of productivity. On the issue of high capital costs, little can be done at this point, because the port would have already committed itself and is liable for these payments. There is however the prospect of even more expansion of the Gordon Quay facility, and it is the author's opinion that the financing of this phase should not come from international development banks as it has been to date, but rather from equity investment from the private sector, whether local or foreign. The private sector in Jamaica, in the form of KWL, has a standing offer of some US$10 million for investment in the project, but to date the PAJ has not accepted this offer. One can only speculate that the PAJ wants to have a 'free hand' in dealing with the port, and as such prefers not to enter into any financial arrangements which would restrict their freedom.

However, there is a high price to pay for this independence, and the port's cause would be much better served by utilising any options available to reduce its debt burden, which would eventually translate into lower port charges overall and enhance competitiveness. To carry this argument to its extreme, the best option may be to privatise the port completely, going as far as to have it listed on the vibrant Jamaican Stock Exchange. However, as one of the few public sector organisations enjoying a measure of success and providing a constant source of foreign exchange for the government, it is unlikely that the port will be included in the government's privatisation program in the near future. It is however vitally important that equity financing rather than loan financing be used to underwrite any future investment in the port, and that some of its present loan portfolio should be swapped for equity, in the interest of reducing the present high levels of capital costs.

On the issue of low productivity, this is tied up with several elements, namely restrictive practices (again), low domestic cargo volume, and a cumbersome organisational structure on the port. Strategies to deal with restrictive practices and the cumbersome organisational structure on the port will be discussed below as individual sections. With respect to low domestic cargo volumes, the fact that at US$273/move domestic container rates serve to almost subsidise transhipment container rates of US$116/move is a fact of life in the container industry. However, the extent of the disparity between the rates is such that it is the author's suggestion that a reduction in the domestic cargo rates may facilitate an increase in trade, by allowing local businessmen to better exploit present markets and open new ones. In Jamaica, the cost of transportation and insurance is 14% of the value of import/exports, which is more than twice as much as the world average rate of 6% (IMS,1998a,67). Therefore, there is a lot of room for improvement. The spin off effect of increased domestic cargo throughput would enhance not only the port's 'bottom line', but also increase its appeal as a transhipment hub. More was said on this subject under section 5.2.3.

6.1.2 Problems Relating to Labour

A lot has already been said about the existence of restrictive labour practices in the port resulting in increasing port expenses and low productivity. In an effort to remedy the situation, the PAJ and the SAJ jointly commissioned a study in 1997 to examine the management of labour in the port of Kingston. This was to be done by a consultant GR. Collyer, and its findings were to be submitted to a Board of Enquiry, convened under the auspices of the Ministry of Labour for their perusal. The membership of this Board was drawn from the ranks of the captains of Jamaican industry, distinguished members of the Judiciary and elder statesmen of the trade union movement. The intention was that their judgements would be binding on both the management and labour of the port, as it was of the utmost urgency that a solution be found to the stalemate between them that was slowly strangling the competitiveness of the port. The following areas were among the recommendations submitted to the Board for their consideration :

- Transfer Premium. It was thought that to pay a docker an additional premium if he is transferred within his shift to work on another vessel was unreasonable, and was a practice that existed only in Jamaica. This is against the background that he was already guaranteed his pay for the entire shift, as well as guaranteed to be paid if there was no work, so as long as there was work to be done, he should not have to be paid extra to do it.
- Night Shift Premium. Workers on the 2100-0500 hours night shift were paid a premium rate 20% higher than the regular day shift rate, as well as given the next two shifts off with pay. Again, this was considered excessive, and the shift premium should be eliminated, as the time off with pay given afterwards was compensation enough.

- Weekend Premium. The fixing of Saturday and Sunday as premium time days which attracted double-time rates was proving to be a disincentive to lines, since they could not be reasonably expected to revise their schedule around this. In keeping with most world ports, it was suggested that this be replaced by a regime of working any five of seven days before overtime became applicable.
- Flexi-start times. The present inflexibility of the start times in Kingston were resulting in shipping lines being forced to absorb huge dead time and overtime charges, as in most instances they were anxious to commence operations immediately upon arrival in order to expedite vessel turnaround. In order to come in line with the practices of competing ports, it was essential for Kingston to introduce a degree of flexibility into their shift system.
- Gang Size Reduction. Despite the onset of containerisation and unitisation of cargo, Kingston still retains gang sizes of impressive proportions. As much as twenty men are assigned to a gang, which carries significant implications in high labour costs. When compared to manning levels in other world ports of between 5-7 men per gang, the disadvantages of this practice becomes obvious.

There remain many other outdated and restrictive practices in the port, of which the above mentioned are just examples. Preliminary estimates of the possible cost savings which could be achieved if this exercise is successfully completed and implemented amount to approximately US$2 million per annum, which could make a significant contribution towards making the port more price competitive. The Board of Enquiry is carrying out its duties by investigating each instance of possible redundancy in labour practices, and it is anticipated that the results of their deliberations will go a far way in reducing cost and reforming the labour regime in the port, making it more relevant to the modern maritime industry. It is therefore the author's viewpoint that this exercise should be expedited as a matter of extreme urgency, as its potential benefits outweigh any possible dislocations that it may cause.

As part of the initiatives being taken to address the labour-related problems in the port, it is essential that the question of under-utilisation of the present labour pool be dealt with. The port of Kingston presently maintains a pool of approximately 400 full time dockworkers under the auspices of the SAJ, but in recent times this amount has been proving to be greater than the current requirements of the port dictates. This situation is a result of the number of dockworkers being maintained at levels commensurate with gang sizes which obtained in the era before unitisation of cargo. There had been no substantial change in hiring policy to reflect the reduced labour requirements brought on by containerisation and such, mostly due to the SAJ taking the path of least resistance when faced with the limitations of restrictive practices and the refusal of trade unions to discuss the reduction of manning levels. The consequence of this inaction is the present situation of the SAJ having to carry an ageing labour force for which there is not sufficient work. The cost of paying these workers (based on the guaranteed pay provisions of their union contract) has resulted in the SAJ running a financial deficit since 1996 (A. Henry,1997,2).

In an effort to rid itself of this untenable situation, the SAJ has undertaken programs wherein it seeks to rationalise its workforce through offering dockworkers early retirement and voluntary redundancy options. It will attempt to make the remaining workers more efficient by training them to become multi-skilled. In the author's opinion, whereas this will alleviate much of the problem in the short term, the long term solution would be to eliminate the SAJ's role as the sponsor of the labour pool entirely and go the route of several prominent European ports (such as Le Havre in France) and make the dockworkers be affiliated directly to the stevedoring companies that use their services. This would not only eliminate some of the SAJ's involvement in what is already a port burdened with complex organisational relationships, but also facilitate a closer, loyalty-based working relationship between the dock labour and the stevedoring companies, to the ultimate benefit of the shipping lines.

Finally, also of critical importance in stabilising Kingston's labour scene, is the necessity to negate the threat of an unstable labour platform. As mentioned in section 5.4.5, Kingston's waterfront has several strong labour unions (BITU, TUC, UPSU) involved in the representation of dockworkers. This situation has several problems inherent in it, as the achieving of common objectives becomes increasingly difficult when more players are involved. In order to establish a truly collective bargaining unit where personal agendas are secondary to the interests of the port, it is the view of the author that the management of the port will have to make a substantial investment in the trade union leadership. This investment will have to take the form of holding extensive discussions with the union management geared towards building trust and forming a common understanding as to the future plans of the port. Another necessity would be the sponsoring of seminars, overseas port visits and any other forums which will result in the exposure of these men to the current developments taking place in the maritime sector, so that they can be made to appreciate the need for change as a prerequisite to survival of the port.

6.1.3 Problems Relating to Marketing

Since the inception of the Kingston Container Terminal, it was agreed that the responsibility for marketing the port would remain with the Port Authority, which was considered to have the necessary human, financial and political resources to carry it out. Whereas the PAJ has achieved some measure of success in this area, as illustrated by the growth in container traffic handled by the port, there are concerns that because the PAJ's marketing department has wider responsibilities for all the ports and terminals in Jamaica (including cruise ship terminals, specialised dry bulk terminals and freezones), that there was not enough focus placed on the specific needs of the container terminal.

According to Rosie Donaldson, Vice President of International Marketing in the PAJ, the marketing program for the port comprises mainly of keeping close personal contacts with top management of the shipping lines that call the port. It is through this medium that it was possible to 'keep one's finger on the pulse of the industry' and thus be able to be forewarned of developments which may have implications for the port. Remedial steps could then be taken. This strategy took the form of paying annual visits to principals in their headquarters to discuss matters of mutual interest, and have become so established that even in situations where there has been a 'parting of the ways' so to speak, the traditions continue regardless. An example of this approach and the dividends that it can pay is the situation surrounding Evergreen line and its decision to establish its own relay terminal in Coco Solo, Panama. The working relationship between Evergreen and Kingston has always been good, with the exception of the period in the late 1980's when they withdrew their services because of concerns over drug trafficking. In fact, Evergreen were accorded the honour of theirs being the first vessel to call at the new Gordon Quay development, using one of their newest, largest vessels, which was on her maiden voyage. When Evergreen left the port of Kingston in 1997 to commence operations in their Coco Solo hub, the PAJ continued to maintain close contact with them regardless, hosting an annual Christmas luncheon in New York in their honour as was the custom. As it turned out, when Evergreen started experiencing operational problems in their new hub, the invitation inherent in the PAJ's promotional gestures made it easier for Evergreen to decide to return their westbound RTW service to Kingston pending the resolving of Panama's teething problems.

Besides these annual visits, the PAJ also organises special promotional tours, wherein delegations are sent to visit potential customers in order to acquaint them with Kingston's potential.

The PAJ's marketing efforts also include participation in several prominent industry trade fairs and conferences, such as the annual Latin Ports Conference as well as the Miami Conference in October and December respectively, and the semi-annual CSA Conferences in June and October. Beyond this, there is also a program of placing advertisements in prominent trade journals (such as Containerisation International).

In the face of criticisms levelled at them that they have not been paying enough attention to the promotional needs of the port, the PAJ seems to have countered by making an effort to increase their marketing intelligence. An indication of this is the participation of Ms. Donaldson in the recently concluded Port Marketing Seminar jointly organised by WMU and the Port of Hamburg. This seems to be part of a conscious effort to refine their marketing approach from a 'shotgun' to a 'sniper' technique, as Ms. Donaldson further hinted at intended efforts to pinpoint and target shipping alliances and consortia not presently involved in Kingston in an initiative to increase business and broaden the port's narrow customer base. The lines presently using the port are also being encouraged to increase their presence. Furthermore, the PAJ is considering the possibility of forming a working alliance with one of the major global terminal operators in order to strengthen Kingston's international profile.

The above mentioned strategies, in the author's opinion, should go a far way in alleviating some of the concerns about Kingston's marketing program. If such strategies as the specific targeting of major consortia and alliances which presently have no firm ties in the region (such as COSCO/Yangming and APL/NOL as mentioned in section 2.2) and forming a working alliance with one of the prominent global terminal operators (as will be discussed in more detail under opportunities open to the port) do come into effect, then the marketing efforts are poised to pay rich dividends. However the author wishes to point out that Kingston's marketing efforts may be better served if a unit was formed, either within the present structure of the Port Authority itself, or as a department in the KTO management company, which would specifically concentrate its efforts on the promotion of the container terminal exclusively.

FIGURE 7a. Port of Kingston : Promotional Material

Source: PAJ,1997

FIGURE 7b. Port of Kingston : Promotional Material

Source: PAJ,1997

As an illustration of this point, it is interesting to note that in the promotional material presently available about the port (figures 7a and 7b), only passing reference is made to some of its greater strengths, such as abundant berthing and storage space. This oversight would certainly have been picked up by a dedicated marketing department.

6.1.4 Problems Relating to Organisational Structure

The rationalisation of the port of Kingston from a splintered entity into one synchronised operating unit has been an issue on the port's agenda since shortly after the container terminal's inception in 1975. The inauguration of the Kingston Container Terminal initially involved a significant degree of co-operation by the major players on the Kingston Waterfront. The Port Authority of Jamaica, representing the government's interest, agreed to undertake the construction and retain the ownership of the infrastructure, being Berths 10 and 11, as well as finance the superstructure. Recognising its lack of experience in the area of terminal management, the PAJ agreed that the terminal should be managed under a joint venture arrangement by the two major wharf companies in the port at the time, namely Western Terminals (which owned berths 1-4) and Kingston Wharves (which owned berths 5-9). This arrangement was made more substantial by the fact that KWL's berths 8 and 9 were to be joined with berths 10 and 11 at no cost to the PAJ and operated as part of the container terminal. This arrangement continued from 1975 up until 1979, when the Kingston Container Terminal was made autonomous, and a new management company named Kingston Terminal Operators was formed to manage the port under a special contract. KTO was at the time jointly owned by Kingston Wharves and Western Terminals. Stevedoring supervision for the facility was provided by another new company named Terminal Services Limited (TSL), while dock labour would be drawn from the labour pool administered by the SAJ.

These arrangements had a large element of political expediency involved in them. For instance, the contractual management of the new container terminal by the principal wharf companies was not only to capitalise on their expertise, but also served as a concession for the business they lost to the container terminal with the diversion of all their container traffic to the facility. As to the formation of the new stevedoring company TSL, this made sense from an operational standpoint, so that only one entity would be responsible for all stevedoring supervision on the terminal and enhance the 'unity of command' aspect of the terminal's operations. However, in order to compensate the existing stevedoring companies for their loss of business, they became shareholders in TSL, each according to the estimated extent of their loss.

In 1994 Kingston Wharves acquired Western Terminals to form the port's largest single public wharf company. This made KWL solely responsible for the management company KTO, and was a major step in the direction of total rationalisation of the port of Kingston. However, by this time, relations between the PAJ and the private sector were becoming increasingly strained, to the point that although the original management contract had expired in 1987, it had not been officially renewed, and as such the terminal was being run on a gentleman's agreement. One of the reasons that the relationship deteriorated was that the PAJ was becoming increasingly suspicious that because the management company KTO was owned by KWL, who had a container-handling facility of their own, there was a conflict of interest. The PAJ was therefore not convinced that their best interests were being protected at all times, especially since some amount of competition had developed between the Container Terminal and Kingston Wharves (which by this time had developed into a multi-purpose terminal) for container business. KWL had developed container traffic to the tune of 87,000TEU in 1997, which constituted over 70% of its cargo throughput. With the development of Gordon Quay in 1996, the PAJ took the position that in order to justify the investment, all container traffic should be diverted to the Container Terminal.

Of course, KWL was not in agreement with this suggestion, unwilling to be relegated to handling dwindling breakbulk and ro-ro traffic. They did however offer to invest US$10 million in Gordon Quay, but the PAJ has not as yet accepted the offer. As a matter of fact, the PAJ has increasingly adopted an attitude of 'wanting to go it alone'.

It seems that after twenty years of being a tool port, the PAJ are of the mind to now become a service port, figuring that they have learnt enough to do it themselves. This thinking is reflected in the fact that they 'fired' Terminal Services Limited in 1998, and have assumed total responsibility for stevedoring supervision themselves, and in the reticence they have shown towards renewing KTO's management contract. Unsure of its position, KWL has embarked upon a US$30 million expansion programme of its own, geared towards improving its capabilities as a multi-purpose facility and place it in a position to better hold its own against the container terminal.

When the SAJ, which is struggling to maintain its relevance as the manager of the labour pool, and the labour unions, which are also pursuing their individual agendas, are added to the mix, one can see how complex the relationships existing on the port of Kingston can become.

This internal wrangling in the port of Kingston does nothing to promote the advancement of the port, especially in light of the serious external competition it faces. It is the considered opinion of the author that it is of paramount importance that the parties concerned reconcile their differences and focus human and capital resources in a streamlined effort to advance the cause of the port as a premier transhipment hub. All is not lost, as discussions are still ongoing, but time grows increasingly short while we wait for a breakthrough in negotiations which will establish a 'blueprint' to guide the future development of the port.

6.2 OPPORTUNITIES

As mentioned during the SWOT analysis in chapter 5, the opportunities open to the port of Kingston are being discussed here as part of the proposals for the continued survival of the port in the face of globalisation. It will be found that measures to counter some of the threats discussed under section 5.4 will be covered here as we seek to turn these threats into opportunities.

6.2.1 Development Of A Key Regional Transhipment 'Hub' Centre

In this context, the overriding opportunity open to the port of Kingston is to develop into the key hub centre for the region. This would also effectively deal with the threat of growing competition from other regional ports, for although all market projections indicate the steady increase in regional container volumes (refer section 3.3), it is imperative that Kingston retains, if not improve, its market share. It could achieve this status by taking the following steps:

- develop and implement realistic marketing strategies, with identifiable target accounts and specific deadlines
- develop a competitively priced tariff, which should be all inclusive, without a 'grocery list' of additional surcharges, extras and dead time penalties
- enhance this tariff by working with dedicated feeder operators to provide a schedule of rates covering movement of transhipment containers from arrival in Kingston to delivery at port of destination and vice versa
- develop joint venture relationships with the region's secondary ports, including linked tariff charges
- develop added value services, and effectively become the regional transportation partner of the container carriers. Such services might include container logistics and repairs, groupage and delivery activities, container storage, etc.

6.2.2 Growth of Domestic Import/Export Market

Traditionally, domestic cargo movements, because of their captive nature, have always been made to pay a considerably higher charge than transhipment boxes. Kingston is no exception, with domestic rates running at US$ 273 compared to transhipment rates of US$ 116 per unit. Furthermore, the cost of transportation and insurance as a percentage of the value of import/exports has been determined to be about 14% in the case of Jamaica. This compares negatively with average rates of 6% in the world, and 8% in Latin America and the Caribbean (IMS,1998b,66).

The opportunity here is if the overall cost of transportation could be reduced, then the lower rates could stimulate export growth, as well as lead to the sourcing of imports from different overseas markets. The resulting increase in domestic traffic will carry significant spin-off benefits for the port.

6.2.3 Development of Additional Products

In the present environment of cut-throat competition, ocean carriers remain committed to a port only as long as it is expedient. Loyalty has become a luxury they can no longer afford. It is therefore up to the ports to enhance their basic services to the point where they become such an integral part of the carriers' operations, that the decision to switch becomes much more difficult.

The formation of joint ventures with feeder services and secondary ports, as mentioned in section 6.2.1, is one such strategy worthy of consideration. Providing a ready-made network of transhipment connections at competitive rates is a service few carriers would not find attractive.

Another tactic could be to develop depots for repair and long term storage of empty containers. This is feasible in light of the abundant space and labour supply on hand in Kingston, especially in comparison to similar facilities existing on far more expensive real estate in North America.

The main point in the development of additional products is that it should match the resources of the port with the requirements of the carriers in order to come up with customised portfolios for each customer. Providing an array of tailor-made services will certainly strengthen the tenuous grip the terminal has on its clientele.

6.2.4 Leasing Terminal Facilities

Given the recent expansion of the port through the ongoing Gordon Quay project, the port's management may be able to consider the possibility of establishing dedicated terminals for major users, like Zim/ZIAS or NCS. This is against the background of Maersk/Sea-Land redirecting their traffic through a dedicated terminal in Rio Haina, and Evergreen moving its transhipment operations to its own terminal in Manzanillo. Given this trend, it may be prudent for Kingston to overlook any loss of 'independence' and offer part of its facilities conditionally to the highest bidder, guaranteeing sustainable development and steady income.

6.2.5 Alliance with Global Terminal Operators

As introduced in section 2.3, another significant trend developing in the maritime industry is the emergence of global terminal operators or superport companies. These are terminal operators, port authorities and shipping lines extending their influence and container handling expertise into the international arena by forming networks of strategic hub terminals world-wide.

The face of Kingston's regional competition has been changed by the entrance of these players, with such developments as Hutchinson Port Holdings involvement in Freeport, Christobal & Balboa and Stevedoring Services of America's joint venture in Manzanillo. These relationships were discussed in greater detail in section 5.4.2 as part of the threats in the SWOT analysis. However, it should be mentioned here that forming a working alliance with a member of this superclub would give Kingston immediate access to human, capital and technical resources which would tremendously enhance its credibility and standing in the international maritime community. Given the affiliations which already exist in the region, of the major players, the following organisations are open to approach :

- Port of Singapore (PSA Corporation)
- Port of Hamburg (HHLA)
- P&O Ports
- ICTSI

These players are all very aggressive in their quest for compatible sites, as they seek to become diversified enough to offer a range of global facilities to the mega consortia, and thereby become their fully integrated partners in the transportation process.

In the event that Kingston was unable to form any sort of an alliance with one of the superport companies, they should instead pursue the angle of forming working alliances with other independent terminal operators like themselves. By forming themselves into a network of strategically located hub ports, these independent operators could put themselves in a position to better meet the threat posed by global operators. A place to start could be with ports affiliated to cities with which Kingston already has significant civic, diplomatic and bilateral aid through the 'twinning of cities' program.

7 CONCLUSIONS AND RECOMMENDATIONS

In closing, some specific observations pertaining to the situation of the port of Kingston will be made, followed by the author's recommendations as to how to deal with the challenges posed by these circumstances.

7.1 CONCLUSIONS

7.1.1 Global Trends

With regards to changes in patterns of trade, initially, the East-West trade routes lost some relevance to Kingston due to the introduction of post-Panamax vessels on the route, causing most of the trade to bypass the Panama canal. However, substantial growth in regional trade volume, coupled with increasing levels of containerisation (especially in Central American, Venezuelan and Colombian ports), has resulted in the regional container market expanding steadily. All ports in the region are expected to experience increased container traffic, and furthermore, the Caribbean is expected to increase its market share in the region from 35% at present to 38% by the year 2005. The port of Kingston should ultimately therefore, not be adversely affected by changes in trade patterns.

On the other hand however, changes in liner shipping organisation do pose a significant threat to Kingston. The displacement of liner conferences by consortia and alliances, and the alarming frequency with which these groupings rearrange themselves, places the port in the unfortunate position of having to be constantly vigilant of the many changes that take place in this arena. With the growth of consortia and alliances, the stakes have become much larger, because the sheer volume of business that a major consortia brings in is extremely valuable to a port, business it can ill afford to lose. Because of this, the terminal becomes vulnerable both in terms of pressure from competitors vying for the same business, and pressure from this major customer to cut rates.

Kingston has suffered on both these counts, having lost Maersk/Sea-Land to Rio Haina and having to grant tariff concessions to ZIM/ZIAS. Although Kingston has benefited from the formation of alliances (e.g. NCS Eurosal), it must remain very wary of this global trend and be prepared to do what is necessary to respond.

Another global trend of which the port of Kingston must be wary is the development of global terminal operators. These superport companies pose a grave threat to Kingston in its present state as an independent regional operator, because of the tremendous human, technological and financial resources they have at their disposal. Because these global operators can use their international connections to outbid, outmanoeuvre and outperform local ports, they make formidable opponents. To make matters worse, they seem to have taken a particular interest in the Caribbean region, as the extent of their involvement outlined in section 5.4.2 will corroborate. The management of the port of Kingston would be well advised to pay very close attention to this development.

With regards to the trending upwards of the number and size of containerships, Kingston has some cause for concern. Even though its deep water harbour and well developed container handling facility can handle all but the latest generation of containerships, the displacement of post-Panamax tonnage into the north-south trades has resulted in many of the mainliners serving the region being unable to transit the Panama canal. Coupled with the use of double stacked trains on the USWC - USEC landbridge, this development has resulted in the diversion of much container trade from the trade routes passing Kingston to or from the canal, and deprived the port of possible transhipment business. Although adversely affected in this respect, there is a positive side effect of increasing vessel size, which is the preference of large container-carrier operators for the hub and spoke concept of distribution.

The increasing popularity of the hub and spoke concept works to Kingston's advantage, since it is naturally suited to serve as the hub centre for the region. For the same reason, the growing preference shown by shipping lines for pendulum type services over the RTW service structure can also benefit Kingston. Although the Kingston Container Terminal is presently the hub for both Zim and Evergreen's RTW services, the shift to pendulum services by other carriers will not necessarily hurt it, because it is still well positioned to serve as the regional hub for any line that wants to extend their pendulum network into the Caribbean. This is so because its major competitors (e.g. Panama) are too far west for these vessels, which would not be transiting the canal.

Finally, with respect to developments in cargo handling techniques, the port of Kingston can hold its own on the international stage due to its investment in state of the art ship-to-shore, yard handling, MIS and IT systems. The use of automation is significant, but not prevalent in Kingston. This does not necessarily mean that they are worse off than European ports (for example), since one of the prime reasons for the increasing use of automation is to reduce manpower costs, which for Kingston is still relatively cheap. This is as opposed to the cost of capital, which is extremely high. Thus, an optimum balance has to be struck between the two.

7.1.2 Local Shipping Industry

The shipping industry in Jamaica actually comprises over 70 public and private sector organisations, of which the PAJ, SAJ, KTO, KWL are the major players in that they are largely responsible for the industry's development. The relationships between these organisations are close and complex, as outlined in section 3.1, and in recent times have been growing increasingly strained and tense. This does not auger well for the industry's immediate future, because although intra-port competition can be healthy up to a point, the in-fighting could prove a distraction in the face of the global threats now confronting the port.

As far as Jamaica's domestic cargo market is concerned, its prospects for growth are not good, due to the high level of containerisation already existing in the port, and the below par local GDP growth performance. As such, the present and future expansion of the port will have to be fuelled by growth in transhipment traffic.

Fortunately, the prognosis for regional transhipment cargoes is extremely positive, to the extent that even if Kingston should suffer a decline in regional market share from 33% at present to 27% in year 2005, it would still experience a 57% increase in transhipment traffic, moving from 0.46 up to 1.1 million TEUs. This is however no reason for the management of the port to become complacent, and every measure should be taken to preserve, if not improve, its market share.

7.1.3 Port Productivity Indicators

In terms of physical characteristics, the port of Kingston compares favourably with both regional and international standards. As a matter of fact, in terms of throughput it is the fourth ranked port in the Caribbean region (behind Miami, Port Everglades and San Juan) and among the top 100 ports in the world, having steadily improved its ranking over the past 10 years.

With respect to productivity, Kingston has consistently performed in line with international standards. Its 1996 TEU per berth kilometre rate of 0.39 million is higher than all other port ranges except NE Asia, and is actually an optimum balance between added capacity and vessel activity, as history shows that it can perform at much higher levels. Its TEU per gantry crane productivity of 60,400 in 1996 was marginally lower than that of other port ranges, and actually also reflected newly added capacity. As such, it also compares very favourably.

At a rated performance of 24 container moves per hour, and a berth occupancy rate of between 50-55%, the port of Kingston has established standards acceptable to all but the most demanding shipping lines. Overall, as far as productivity measures are concerned, the port of Kingston can be considered to be globally competitive.

In terms of domestic cargo rates, Kingston is admittedly expensive. At US$ 273 per move, Kingston's importers/exporters pay one of the highest prices in the region, and virtually subsidise the transhipment rate of US$ 116. On the other hand, this transhipment rate is very competitive not only in the region, but globally, undercut by only North European and Middle Eastern ports. Not being privy to the financial details of KTO's costs, on the surface it seems that it may be a good idea to reduce the domestic container rates in order to stimulate more local business, while holding the transhipment rate at the present level for the duration, at least until global competitive forces dictate that they should trend downwards to North European levels.

7.2 RECOMMENDATIONS

There is no question that the port of Kingston finds itself in a difficult situation, confronted as it is by global changes. In this concluding section, the author will make recommendations and propose strategies how the port of Kingston can capitalise on its strengths, and turn some of its threats into opportunities:

- The problem of relatively high terminal costs should be addressed by implementing strategies to reduce the high capital cost burden presently being carried by the port. Efforts to swap some of this debt in favour of equity financing should be made immediately. Furthermore, any future expansion of the port should be financed by equity rather than loans. Finally the eventual privatisation of the port through the making of a public share offer on the Jamaican Stock Exchange should be explored as early as possible.
- The issue of low domestic cargo volumes should be tackled by introducing a reduction in domestic cargo handling rates, possibly up to around 20%, in order to stimulate import/export trade.

- On the labour front, the following actions need to be taken:
    a) The present revision of restrictive practices on the port should be expedited, and changes implemented as early as possible.
    b) The present labour pool should be downsized to appropriate levels through a program of early retirement and voluntary redundancy. The remaining dockworkers should be trained to become multi-skilled in order to increase their efficiency levels.
    c) The role of the SAJ as the manager of the labour pool should be reduced, if not eliminated, and dockworkers should be assigned directly to stevedoring companies, who would become responsible for them.
    d) The management of the port need to make an investment of time, effort and money in the leadership of the trade unions in order to build trust and facilitate understanding of the changes that the unions need to accommodate for the continued well-being of the port.
- Kingston's main natural advantages of location and deep water harbour are in danger of being eclipsed. However, by coupling it with its modern terminal facilities and abundant capacity, this package should be marketed aggressively to the international shipping fraternity in order to re-establish the port's pre-eminence as an ideal transhipment point.
- Furthermore, with regards to marketing, a dedicated marketing unit should be created, either within the existing PAJ structure or as a department of KTO, for the express purpose of promoting the port. Strategies such as targeting of lines and consortias not presently using the port, encouragement of present users to increase their business and formation of alliances with other port operators could then be pursued more single-mindedly.
- The total rationalisation of the port of Kingston into a unified operating structure needs to be realised quickly, so that the port can adopt a holistic approach to its future development and strategic planning. Urgent measures need to be taken to resolve the growing impasse between the PAJ and the KWL, which has stalled this process, which made tremendous gains with the merger of Western Terminals and Kingston Wharves. This deadlock could be broken if:
    (a) The continued management of the container terminal by the private sector (through KTO) was confirmed by renewal of the contract and

(b) the private sector was given a greater role in the terminal by being allowed to invest in it substantially.

This would alleviate some of their present concerns about being 'shut out' completely and being forced to compete head-on with the PAJ. They could therefore then throw their full support behind the container terminal.

- The opportunity should be seized to develop the port into a key regional transhipment hub. This could be accomplished through the following means:

  (a) develop and implement realistic marketing strategies, with identifiable target accounts and specific deadlines.

  (b) develop a competitively priced all-inclusive tariff, which should be enhanced by the inclusion of freight rates from feeder operators and handling rates from secondary origin/destination ports, covering the total movement of transhipment containers.

  (c) develop value added services.

- The abundant space and additional capacity resulting from the recent Gordon Quay expansion should be offered to major customers of the port under lease arrangements as dedicated terminals, increasing their commitment to the port.
- Efforts should be made to form a working alliance with a major global terminal operator. Failing that, initiatives should be taken to establish a network of working alliances with other independent terminals located throughout the world in key regional areas.

Given the implementation of these suggestions, the port of Kingston would be well prepared to face the challenges posed by a rapidly changing world.

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APPENDICES