6. BUSINESS OVERVIEW

6.1 Background

The import and export of cargoes via sea ports has always been a major economic activity of a country. Prior to the 1970s, cargoes were generally transported in crates, boxes, bags (commonly referred to as conventional cargoes). At times, these crates, boxes or bags were loaded onto pallets for ease of handling. However, goods are also shipped in its natural forms without any packaging. These cargoes are transported in bulk (e.g. grains) or liquid.

The 1970/ 1980s saw the advent of containerisation of cargoes in the shipping industry whereby conventional cargoes were grouped and stuffed into containers (excluding the bulk and liquid cargoes) and shipped via specialised container vessels. This mode of handling and transporting of cargoes further improved handling efficiencies. Today, container vessels are built to carry as many as 6,000 to 7,000 TEUs on board and this has greatly improved trade and commerce through efficient transportation of cargoes. Containerisation of cargoes has therefore influenced the growth of maritime ports tremendously because ports now have to change their operating systems to handle the increasing throughput of container cargoes. However, in certain countries/ ports, conventional cargoes are still a major activity especially in developing countries or feeder ports where importers or exporters do not have enough volumes in using containers. Because of its nature, bulk and liquid cargoes will continue to be transported in its existing form.

With the development of bigger vessels, Governments have also over the years viewed ports as a major revenue earner and a major economic impetus for national growth. However, not all countries have ports that can cater for these bigger vessels. As such, Governments in various countries have over the years constructed new ports or upgraded existing ports to attract shipping lines with the aim of becoming the "hub port" for their respective regions.

As a result, ports now not only have to provide facilities to handle import and export cargoes but must also be efficient and competitive to compete with their regional counter-parts in order to maintain their market share and stay profitable. These factors have accelerated the computerisation of maritime ports in recent years.

With the advancement of E-commerce in all industries, the maritime industry is no exception. Manufacturers and importers can now transmit trade information over the Internet. However, if the maritime industry does not keep pace with such developments, there will still be a "bottleneck" in the overall value chain. Thus, over the last few years, ports have been looking internally to implement E-business solutions. Small and medium size ports are challenged as to how they can embark onto E-business to keep abreast with the development with their counterparts in the bigger (and more profitable) ports as the cost to do so is prohibitive. In addition, rapid advancement in technology means that ports must continuously upgrade its technology to stay competitive. It is an industrial norm for technology to be obsolete within eighteen (18) months. This creates challenges to management on the need to continuously reinvest but at the same time to stay profitable. A report by the UNCTAD confirmed that quality of port services can be greatly improved using IT and modern communication methods. However, it was also noted that smaller ports in developing countries lack the revenue base that would allow them to make investments for sophisticated software solutions. (*Source : "Study on the use of information technology in small ports" issued in January 2001 by UNCTAD*).

Recognising these challenges, Portrade's vision is to develop an application that will not only support the operations and improve the efficiency of a port but at the same time also allow ports to have access to Portrade's applications at an affordable cost (via the ASP business model) thereby allowing them to have immediate access to port computerisation and E-business applications.

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6. BUSINESS OVERVIEW (cont'd)

6.1.1 The Client-Server

Before the arrival of the Internet age, ports application software were mainly developed via client-server which entails the setting up of a central computer (known as "**server**") to host (i.e. store) all the enterprise's database and applications. PCs or workstations (known as "**client**") are then connected (known as "**network**") to the server for users to access the database and applications stored in the server. Thus, these networks carry large volumes of data between the clients and the server.
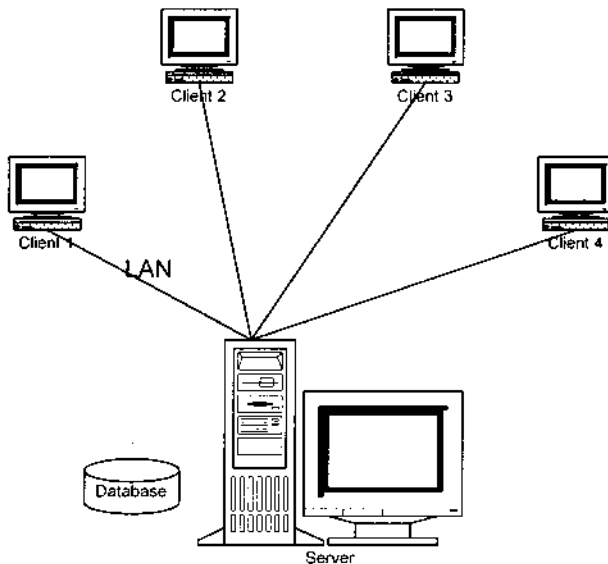
Traditionally, these networks of computers are connected via short-distance copper cable hence client-server has been confined to within the enterprise's premises and as such is most suitable for localised operations. Advancement in telecommunication services has led to the creation of LAN and WAN where computers located in diverse geographical locations are linked remotely via dedicated private telecommunication lines.

Due to the large volumes of data that moves through the network in a client-server architectures, the cost of these high capacity telecommunication lines are high. Furthermore, each client PC typically has to be individually re-configured whenever new software has to be distributed. These client PCs also have to be of a specific configuration, which leads to high costs in respect of PC hardware.

6.1.2 The Internet

The Internet came of age around 1997 when the Web browser enabled users to surf Internet pages across the world. The power and success of the Internet are its ability to allow everyone to connect with everyone else that facilitates easy information sharing and gain access to Web pages and applications in a border-less world. The Internet today has become a commonly accepted phenomenon and is driving the adoption of IT in every corner of the world.

The Internet phenomenon also brought change to application software development. By 1999, applications were moving to adopt this change in application architecture and moving from the traditional client-server models to the Internet model (also known as a three-tier model). The most notable change in this application model is the need for a second server, where all application logic traditionally sat at the client end was moved to this second server (called the "**application server**") and the client PC merely served as a Web browser. This application model had several advantages. Firstly it resolved all the challenges that the client-server model posed, namely the communication lines costs and the challenges in software distribution. Secondly the Internet model also enabled software providers to move their applications to reside on the Internet, thus enabling users across geographies to access these applications via the easily accessible Internet.

6.1.3 The ASP

Since the advent of the Internet age, costs of computers and networks have been driven down further. Networking is now possible through the Internet via ordinary telephone lines (Web protocol) and even wireless via the WAP. With fibre optics technology, the availability of high speed digital lines (e.g. ISDN) and improved modems speed, the speed of data transfer between computers have been greatly enhanced. These factors have spurred the development of ASP in recent years.

6. BUSINESS OVERVIEW (cont'd)

The ASP model enables users for the first time, enabled by the Internet, to "rent" services from a application provider. By renting their applications, organisations do not have to come up with upfront costs to purchase hardware and software. The ASP will charge on a usage basis. This would also mean that the amount paid for the usage can be treated as an operating expenditure as oppose to capital cost if the organisation were to purchase the hardware and software.
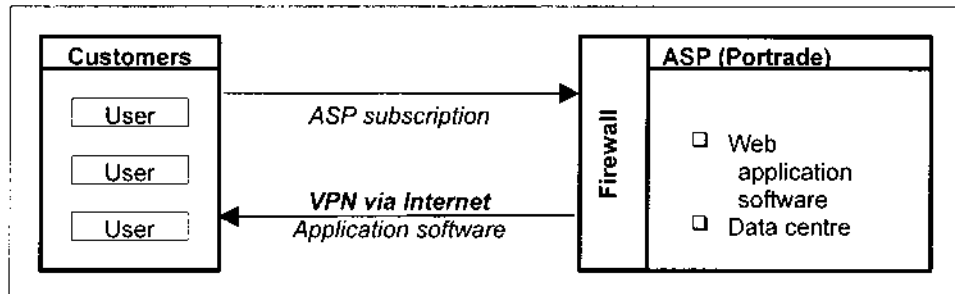
ASP also enables users to access applications from anywhere using standard Internet access. From a development point of view, the development team is required only to migrate the central computing servers (the main server and application servers) and the software across all users get upgraded. This minimises cost of management and expedites deployment of software. ASP also leverages on the technical capabilities of the central facilities to help ease management of users (e.g. through Web-based bulletin boards), and provide value adding features (e.g. Web-based email systems).

ASP is not only limited to the leasing of applications software over the Web. Instead, ASP is also considered a form of outsourcing of IT functions and is set to revolutionise the way businesses operate, communicate and transact. It is a total departure from the traditional method where a company buys, installs, utilises and maintains software on a client-server system that usually entails huge capital outlays.

For an ASP customer, the advantages are :-

☑ **Speed to deploy application**

By subscribing to an ASP, enterprises are able to overcome the complications, long development and implementation time frame and in certain circumstances, inefficiencies as compared to developing the application on their own. A typical ASP implementation takes two (2) to six (6) months, compared to a client-server implementation which usually takes twelve (12) to eighteen (18) months for applications as complex as a port application.

☑ **Cost Effective**

ASP is a cost effective approach to computerisation (especially for small to medium organisations) as there is minimal capital expenditure outlay. The cost savings are as follows :-

♦ ASP operates on a "pay-per-use" basis hence allowing users to eliminate idle time and under-utilisation of IT investments;

♦ ASP also takes care of support, maintenance and future upgrades of application software, hence eliminating the need for in-house IT support unit thereby reducing operational costs. ASP also enables enterprises to focus on their core businesses; and

♦ There will be a reduction in hardware costs as there will no longer be a need to acquire expensive servers and networking equipment. Only Internet ready computers are required and these can also be leased from the ASP.

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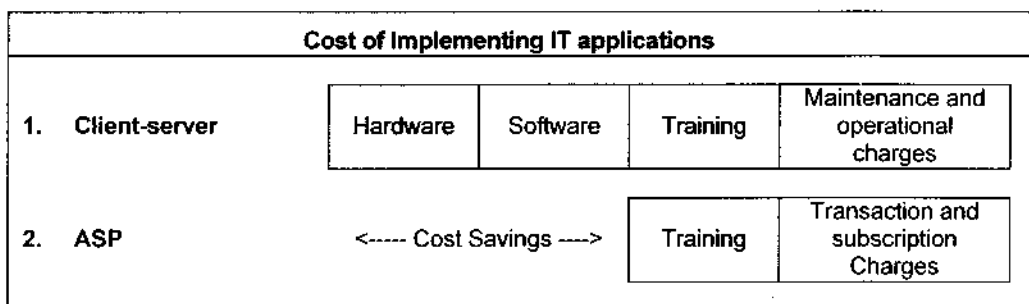
6. BUSINESS OVERVIEW (cont'd)

☑ *Flexible*

All application software are installed and maintained by the ASP, with customisation to cater for the client's unique business processes. In addition, customers can customise their level of usage of ASP services quickly in response to changes in the scale of their business operations, with minimal costs and disruption.

☑ *Technical advantages*

All upgrades and maintenance of the application software are performed centrally by the ASP's dedicated IT professionals. The ASP will also perform back-up services as well as ensuring the security and confidentiality of the data.

A comparison of the costs involved in the implementation of IT applications using client-server and under the ASP is set out in the following diagram :-

Cost of Implementing IT applications				
1. Client-server	Hardware	Software	Training	Maintenance and operational charges
2. ASP	<----- Cost Savings ---->		Training	Transaction and subscription Charges

While ASP may mainly cater for the small and medium enterprises, it is also becoming more relevant to large corporations as a means of outsourcing their IT functions. Outsourcing of IT functions is not only cost effective, it also enables enterprises to better focus on their core businesses to attain to their corporate goals and objectives.

The ASP model is an emerging trend of the way application software are delivered to end users and many internationally recognised software development houses have or are in the process of releasing applications that are Web-enabled (e.g. SAP, Oracle and PeopleSoft).

All the above factors have led to the development of ASP and ASP is set to be the emerging standard in software delivery and outsourcing of IT services.

6.1.4 The Creation and The Need For A Port Trade Community Portal

The key success factor of any e-business ventures is the creation of a highly interactive networks of people and companies with common interests and needs that come together on-line. Such pooling of resources result in critical mass of purchasing power and the exchange of information. It also creates an infrastructure for the start of B2B transactions whereby participants in the community portal can now trade with each other via the portal. Generally such portals are industry focused such as the portal for the motor industry, aircraft manufacturing industry, the computer industry, airline industry et cetera. It is under such a backdrop that Portrade is currently developing, *portrade.com*, a Web-based maritime port community portal that, once completed and operational in 2003, will bring together certain key players of the port trade community.
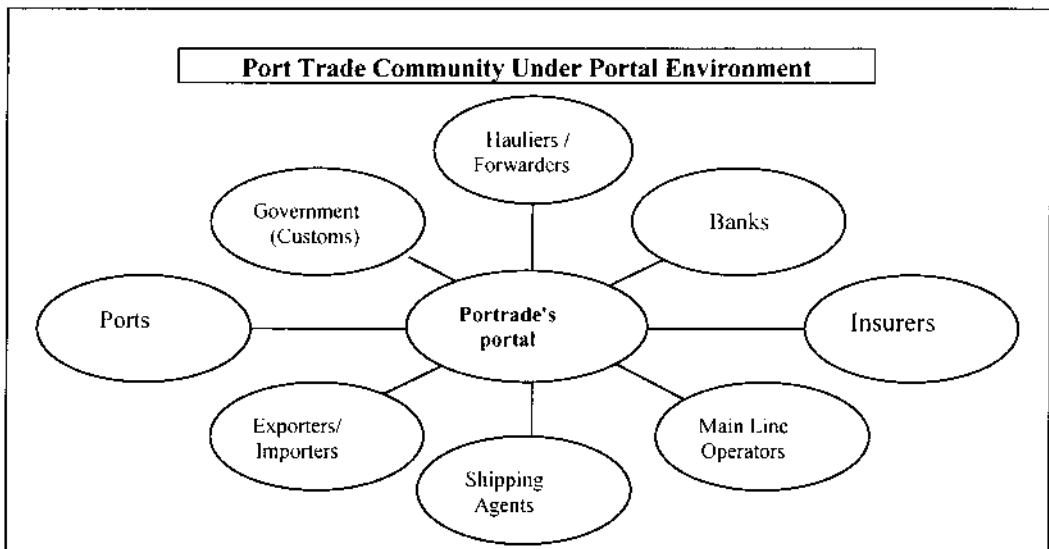
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6.   BUSINESS OVERVIEW (cont'd)

An example of the business interactions between the different players in the port trading community is diagrammatically depicted as follows:

Port Trade Community Before Portal Environment
(Fragmented communication system)
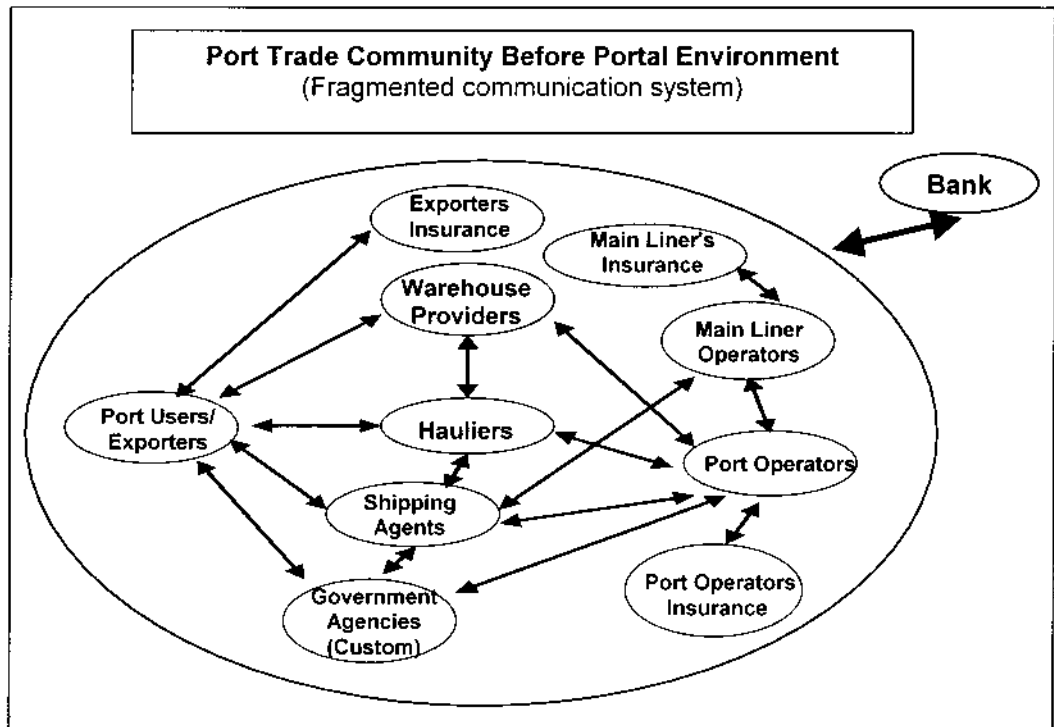
With the introduction of a community application to be hosted by the Portrade portal, business interactions and processes can be streamlined as follows:

Port Trade Community Under Portal Environment

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6.   BUSINESS OVERVIEW (cont'd)

With the presence of a portal that provides community applications that facilitate the value chain of the port trading community, the value chain can be enhanced as follows:-
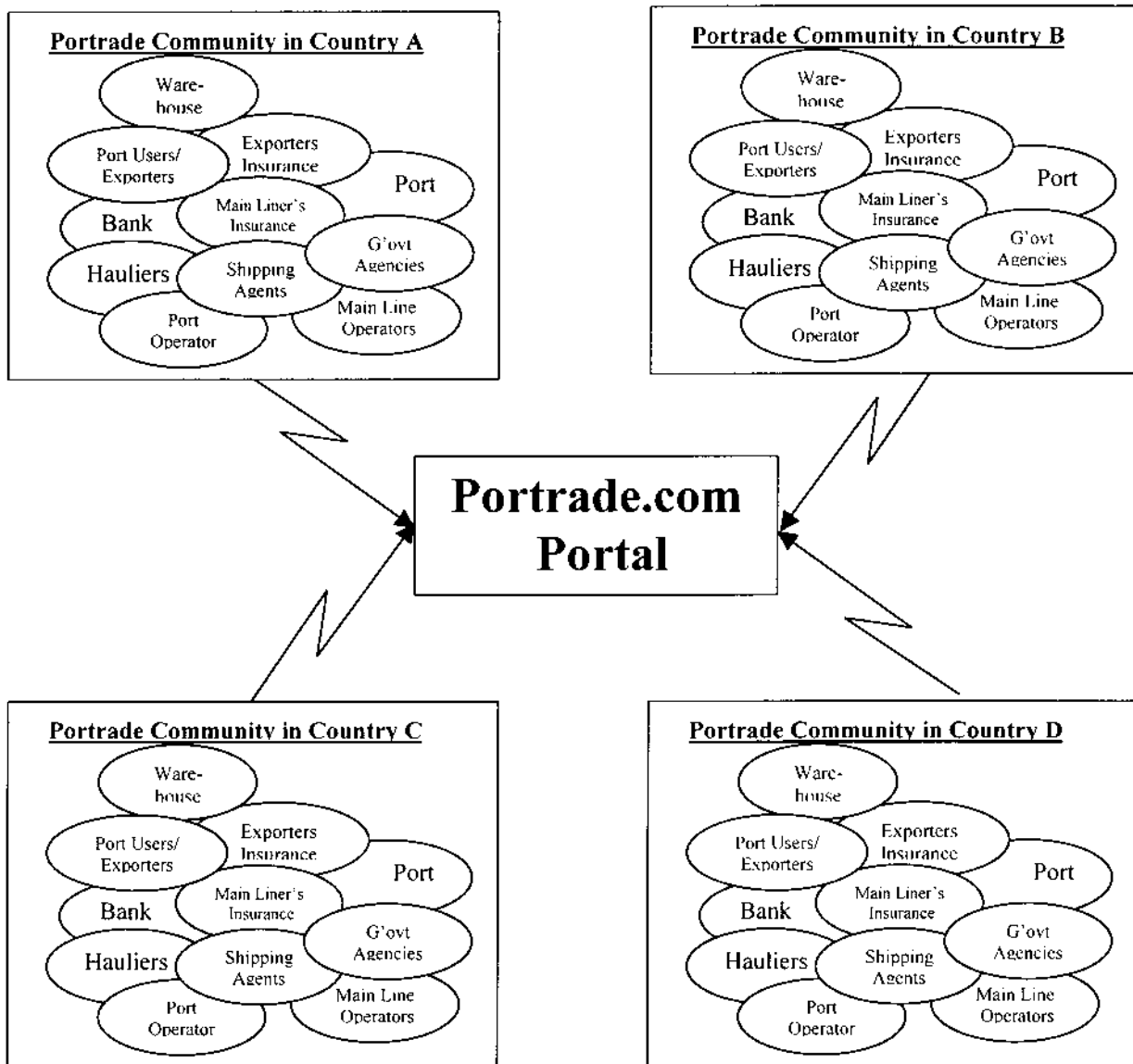
6.2   The Group's Business

6.2.1   Vision

Portrade's vision is "To be the company that develops, provides and manages computerised applications for sea port operators and its related trading and port user community" while TSSB's vision is "To be the premier IT consultant and business ASP in Malaysia".

6.2.2   The Group's business

In order to realise Portrade's vision, the management of Portrade proposes to develop its business in three (3) broad categories:

(a)   Development of computerised applications for sea port operators and port related trading community

6. **BUSINESS OVERVIEW (cont'd)**

Portrade currently has the following products:

* For sea port operators, Portrade has two (2) core Web-based applications, namely CTS and VSS. Portrade will continue to enhance these applications and plans to have a version upgrade and/or new releases on an annual basis. New versions will be made available at no additional costs to its ASP clients.

* For shipping agents, Portrade's SAS consists of five (5) modules, namely Vessel Schedule, Cargo/ Container Booking, Cargo/ Container Tracking and Financial Management module.

Portrade is in the process of developing computerised applications for freight forwarders business.

(b) *Provision of products via the ASP business model*

Portrade's applications will be deployed via the ASP model and Portrade is currently making plans to establish three (3) data centres (i.e. in Malaysia, Thailand and Philippines) to deploy its applications to clients. While the data centres for Malaysia and Philippines will solely serve the community in the respective countries, the data centre for Thailand will also cater for the Indo-China community. Over the next one year, there is also plan to set up another data centre in North Asia to cater for the China and Hong Kong community.

As part of the business process, Portrade will undertake to enter into a service level agreement with its subscribers which will cover the provisioning, managing, servicing, maintaining and upgrading of all hardware and software.

(c) *Aggregator of port related trading community*

Portrade plans to launch its community portal in 2003. Once launched, the community application will initially bring together certain key players of the port trade community such as port operators, shipping agents, freight forwarders and banks. Over the next two (2) to three (3) years, with the completion of more community applications, the community will be extended to include, among others, main liner operators, insurance providers, government agencies (e.g. Customs & Exercise, Marine Department), manufacturers and other export-oriented services providers.

6.2.3   CTS

CTS is an online real-time system for the management of container movements in a container port terminal. The system enables the tracking of the movements of, and services rendered to containers from the point of discharging from vessels till delivery to importers (import cycle), and the receiving of containers from exporters up to loading onto vessels (export cycle).

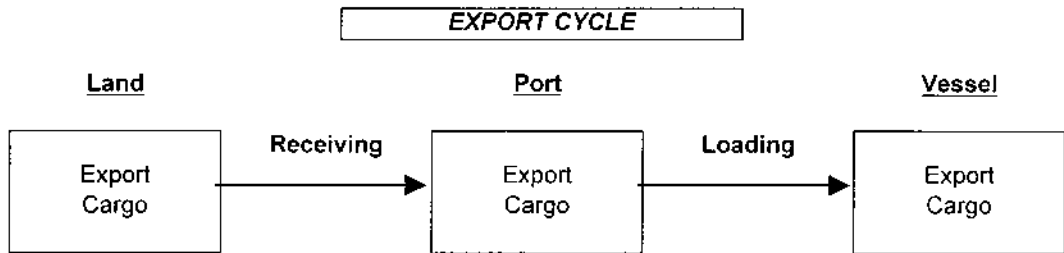The import and export cycles handled at the ports are shown below :-
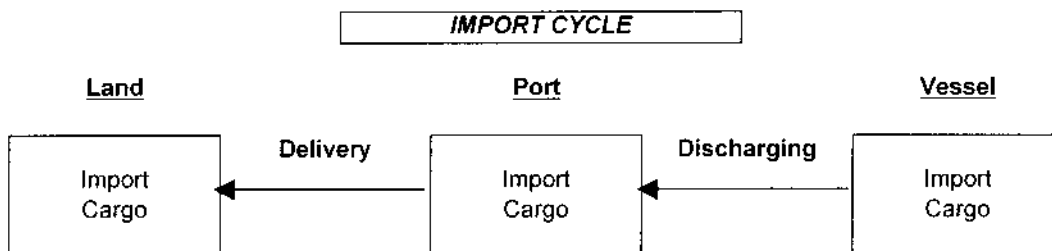
Notes :-

Discharging :   This is when vessel discharges the cargoes onto the wharf and then to the port compound (i.e. containers go into the container yard and general cargoes go into a go down)

Delivery :   This is when the port delivers the cargoes to the consignees (i.e. importers)

6. **BUSINESS OVERVIEW (cont'd)**

```
                  ┌─────────────────────────┐
                  │      EXPORT CYCLE       │
                  └─────────────────────────┘

        Land                    Port                    Vessel

    ┌──────────┐  Receiving  ┌──────────┐  Loading   ┌──────────┐
    │  Export  │ ──────────► │  Export  │ ─────────► │  Export  │
    │  Cargo   │             │  Cargo   │            │  Cargo   │
    └──────────┘             └──────────┘            └──────────┘
```

Notes :-

Receiving :   *The port receives cargoes (containers or general cargo) from the exporters (land) into the port compound*

Loading :   *The cargoes are loaded onto the vessel after the vessel has discharged its cargoes*

CTS facilitates the preparation of daily reports and retrieval of historical and statistical information for the monitoring of the port's performance. CTS enables ports to improve the efficiency of their container terminal operations as well as optimising the usage of container yard space. CTS also co-ordinates the activities between ports and port users by providing a means for planning, tracking and controlling of containers movements within the container terminal. Such integrated system streamlines the operations and activities among the ports and its users thereby improves the overall efficiency of the port trading community.

There are two version of CTS, namely the client-server system and the Web-enabled version. The client-server system was previously implemented by MSB and has been successfully implemented and used in three (3) ports in Malaysia, namely Kuching Port Authority, Rajang Port Authority and Bintulu Port Sdn Bhd in improving their efficiency and throughputs.
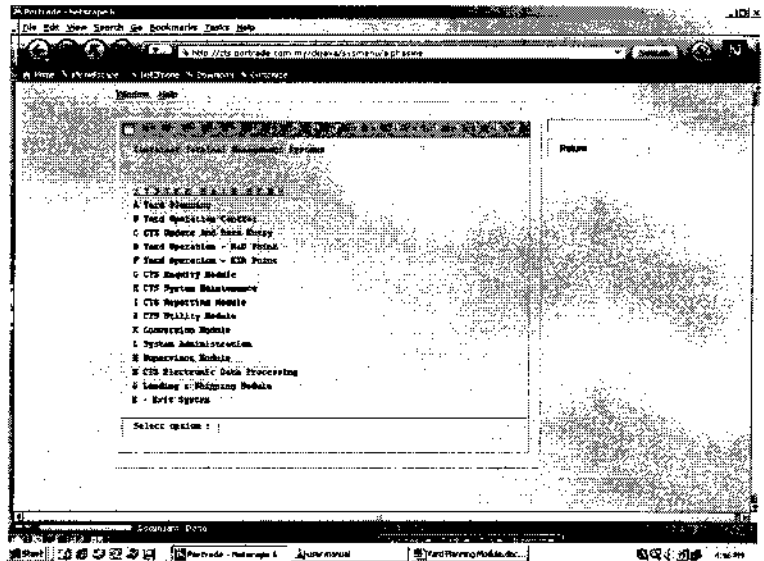
In 2001, Portrade successfully enhanced the CTS to become Web-enabled CTS and is progressively being implemented for the ports of Sabah Ports Authority.

CTS under client-server technology was written using the Informix 4GL programming language while the Web-enabled version is coded in Informix Dynamic 4GL language.

6.2.4   VSS

VSS is an online real-time system that enables port operators to manage the handling of and services rendered to conventional cargoes (i.e. non-containerised cargoes but excluding bulk and liquid cargoes) and the processing of operation information for financial management (such as the billing for services provided to exporters/ importers and vessels calling at the ports). The system is also capable of providing operational performance indicators and statistics as management tools for port operators to monitor and improve the quality of services to port users.

Currently, Portrade's VSS is being used in four (4) ports in Malaysia namely Kuching Port Authority, Rajang Port Authority, Sabah Ports Authority and Penang Port Sdn Bhd.

6. BUSINESS OVERVIEW (cont'd)

The Web-based VSS is a JAVA-based application that integrates operational, managerial and financial systems for the port operators to monitor and control its daily operations. VSS consists of various sub-systems that handle the various aspects of the maritime port covering vessel and cargo information.
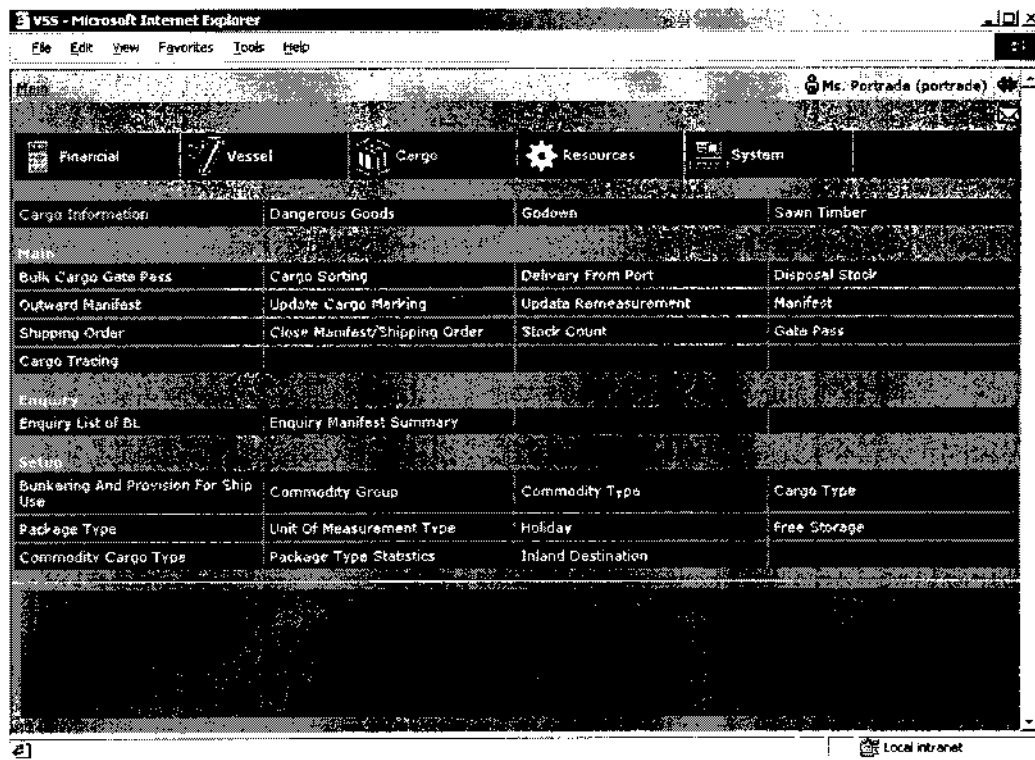
6.2.5 SAS

SAS is a client-server system that enables a shipping agent to process booking of vessel cargo space and shipping documents for exporters/importers and billing. It records and maintains vessel scheduling. This system also enables the tracking of the movement of containers.

The Web-based SAS will also be developed in the near future and is primarily targeted at small and medium size shipping agents which cannot afford to computerise their operation systems.

6.2.6 MMS

In addition to the above port and shipping-related systems, TSSB has developed an application software that caters for the management of membership of co-operative organisations. MMS handles the recording and maintenance of members' personal particulars and their regular subscriptions. In addition, it is able to keep records of the loans taken by members and their subsequent repayments.

The MMS system using client-server technology is currently being used by two major co-operatives in Malaysia, namely Koperasi Pekerja-Pekerja Kerajaan Sabah Berhad and Koperasi Pekerja Kerajaan Sarawak Berhad and the Web-enabled MMS will also be developed in the next two (2) to three (3) years time to capitalise on the Internet and ASP technology.

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6. BUSINESS OVERVIEW (cont'd)

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(B) TELNET (8.0.0.2) - PowerTerm InterConnect/32                              _ □ X
File  Edit  Terminal  Communication  Options  Script  Help

[toolbar icons]

MENU:█  A  B  C  D  G  H  I  Exit
Access to all membership master and transaction file


   MAINMENU            S Y S T E M    M A I N    M E N U        19-11-2001
   +-----------------------------------------------------------------------+
   | A - Membership Processing System                                      |
   | B - Cheque System                                                     |
   | C - Main Account Processing                                           |
   | D - Angkasa Reconciliation System                                     |
   |                                                                       |
   | G - Member's File Monitoring System                                   |
   | H - AGM System                                                        |
   | I - User Access Priviledge Maintenance                                |
   |                                                                       |
   | E - Exit System                                                       |
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  F1      F2      F3      F4      F5      F6      F7      F8      F9    F10   F11   F12
 VT100       16   Caps  Wrap  Hold  OnLine

 Start    (A) TELNET (8.0.0.2) - Po...   (B) TELNET (8.0.0.2)...                   11:35 AM
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6.2.7 Maintenance Services

To complement the provision of its application software, the Group also provides maintenance services on software and hardware for users of its application software on a contract and/ or outsourcing basis.

6.2.8 Web-Portal "portrade.com" for e-port community

To leverage on its existing application software and clientele, Portrade is in the process of developing a suite of community applications that will be hosted on Portrade's Web-portal. These community applications will enable the port trading community to conduct their business and enable them in communicate more efficiently via the Internet. Through the portal, Portrade will provide value added services to its ASP community such as B2B transaction and E-commerce facilities. The portal is scheduled to be launched in 2003 and will host community applications and trade information. The first version of the community application will cater primarily for port operators, shipping agents, freight forwarders and interfacing to banks to facilitate E-payments. Over time and with the completion of more community applications, the community will be extended to include, among others, main liner operators, insurance providers, banks, government agencies (e.g. Customs & Exercise, Marine Department), manufacturers and other export-oriented services providers.

Information that are needed by port operators from the community applications and vice versa will be uploaded or downloaded to and from the community via Portrade's VSS and CTS applications. This integration will automatically be available if port operators use Portrade's VSS or CTS application.

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6. BUSINESS OVERVIEW (cont'd)
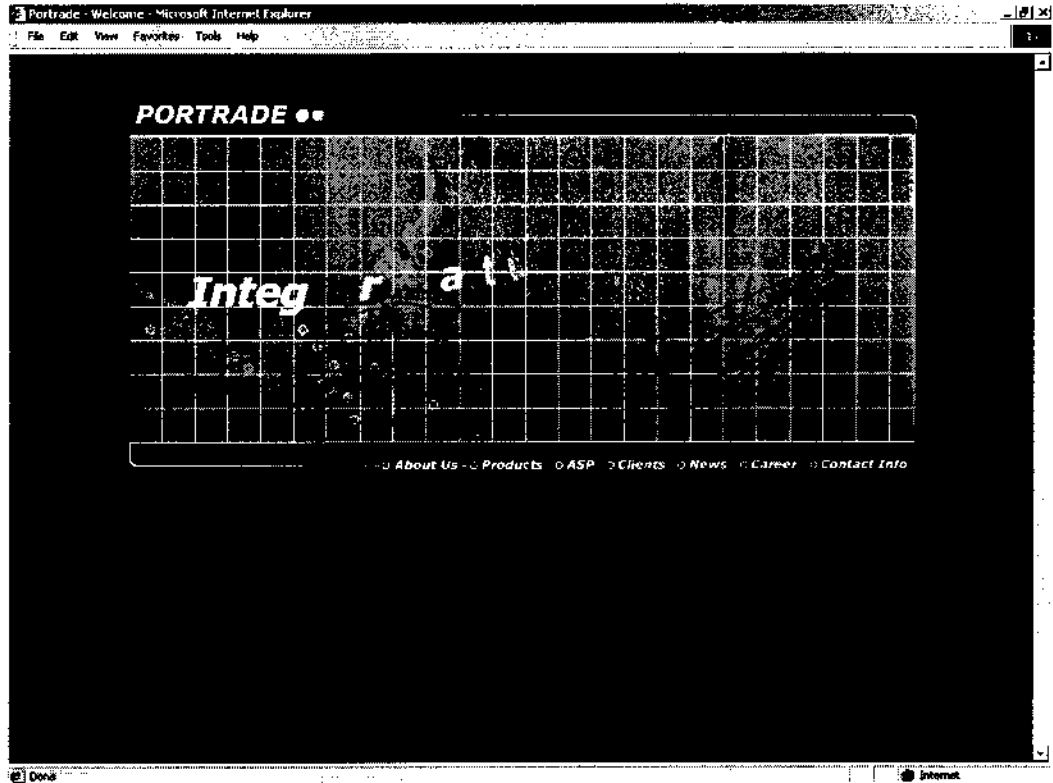
The Web-portal will also contain information on ports, shipping and the logistic industry and a range of on-line services which can be utilised by the members of the port community to communicate more efficiently and effectively. The Web-portal would comprise the following :-

☑ **Information**

The information to be incorporated into the Web-portal will cover areas of the port community from shipping schedules to port and maritime newsletters and will be accessible to the public. *Portrade.com* will also incorporate links to other existing port-related Web-portals. *Portrade.com* aims to be a one-stop resource centre for maritime port and shipping-related content.

☑ **Services**

A wide range of services will be available to the port community via *Portrade.com* and will only be accessible to registered users. The proposed services will range from Web on-line services such as E-submission of documents to ports (B2B transactions) and E-payment and other value-added Web services.

Portrade is also in the process of setting up such port trading communities in other ASEAN countries and in some countries outside ASEAN. By linking these communities together via a common portal, Portrade will be able to provide end-to-end logistic tracking of cargoes.

6.3 Principal Markets, End Users and Demand for Products and Services

(a) **VSS and CTS**

The principal markets for these two (2) applications are the port operators.

(b) **SAS**

The principal market for this application is shipping agents that have the responsibility of selling container space on a given vessel.

6. BUSINESS OVERVIEW (cont'd)

(c) MMS

The principal market for this application is the co-operative organisations in Malaysia.

(d) Community Application

The principal market for this application will be all port trading parties including port operators and shipping agents, freight forwarders, forwarding agents, main line operators, exporters and importers. Other service providers such as insurance agents, banks and financial institutions and relevant Government departments will also be a target market for Portrade as they form a critical part of the port related value-chain for importation and exportation of cargoes.

At present, the Group's operations and the end-users for its products and services are mainly located in Malaysia. In line with its regional expansion and the proposed establishment of the Web-portal, *Portrade.com*, the Group envisages that its operations, markets and the end-users of its products and services will eventually cover the Asia-Pacific region.

6.4 Competition and Competitive Advantages

The Group operates in a niche market in the provision of integrated port management systems and co-operative management system. The port IT industry is a niche market where new comers would face high barriers of entry in terms of the high costs involved in the development of a port IT-system as well as the availability of knowledge workers. In addition, it also takes considerable time for new entrants to build up its reputation in order to establish long term relationships with port operators and/or port authorities.

To-date, the Group has implemented/ is implementing its port IT software applications for nine (9) ports in the states of Sabah and Sarawak. The Group believes its competitive advantages are its vast experience in the port IT business as well as its port IT application software, which through continuous enhancements over the past five (5) to fifteen (15) years, have proven to be reliable as well as efficient and effective. In addition, the Group, with its existing customer base in Malaysia coupled with its ongoing expansion plans to other ports in the ASEAN region, has established relationships with port operators in the region. All these factors are expected to further entrench the Group's reputation as the premier IT-solution provider for the port and shipping industry and enables the Group to be in a better position to secure additional IT projects from the regional ports as well as securing the necessary critical mass for the Group's forthcoming Web-portal, *portrade.com*.

There are other application software developed by overseas IT vendors which offers similar features and functionality as the Group's application software. For major container terminals, Cosmos N.V., Navis LLC and Tideworks Technology are three of the main suppliers of relational database software systems which are the backbone of the applications that manage the use of the container yard and the working of ships. (*Source : "Study on the use of information technology in small ports" issued in January 2001 by UNCTAD*). The management of Portrade is confident that, through ongoing enhancements to the Group's application software, its ASP business model, proper market positioning as well as price differentiation, the Group's offerings has and will remain competitive to existing and potential customers in Malaysia and abroad.

The management of Portrade believes that to be a successful ASP, it must focus on industry vertical application and compete based on value of services rendered as opposed to competing on pricing and cost differentials. The management takes cognisance that ASPs in general have not been making headway for the past few years because of the lack of these factors. In addition, most ASPs are fragmented and driven based on their own organization's business requirements. Portrade believes that it has formulated the right business model for ASP by looking at the operation from a business value chain standpoint as opposed to an organization's own internal requirement.

6.5 Modes of Marketing

The initial marketing strategy for Portrade will be marketing its flagship products, namely VSS and CTS. For Malaysia, Portrade will directly approach its existing clients with a view to convert them into an ASP customer. Upon completion of its other applications, Portrade will be marketing directly to the organisation concerned and where applicable, to leverage on its business relationship with the ports to establish and encourage the port trading communities to subscribe to its Web-services. For other ASEAN countries, Portrade envisages to work with business partners in the respective countries and may incorporate companies in each of the target countries to market its products and services.

6.   BUSINESS OVERVIEW (cont'd)

Similarly, TSSB will also build on relationship with existing client base to secure additional customers in Malaysia and eventually to convert them to its Web-based applications.

6.6   Major Customers

The Group secured a port IT project from the Sabah Ports Authority in 2001 and Sabah Ports Authority has been the largest revenue contributor to the Group for the financial year ended 30 June 2002. For the financial year ended 30 June 2002, the Group achieved a turnover of approximately RM7 million of which approximately 73% were generated from Sabah Ports Authority. Other major revenue contributors are mainly from provision of maintenance services to SESCo (approximately 8% of revenue), Kuching Port Authority (approximately 3% of revenue), Majlis Perbandaran Petaling Jaya (approximately 3% of revenue) and Koperasi Pekerja Kerajaan Sarawak Berhad (approximately 3% of revenue). These customers, which are based in Malaysia, have been involved with Portrade and TSSB for an average of two (2) (for Sabah Ports Authority) to four (4) years (for SESCo, Kuching Port Authority, Majlis Perbandaran Petaling Jaya and Koperasi Pekerja Kerajaan Sarawak Berhad). The Group is actively marketing and tendering for new IT projects in Malaysia and the ASEAN region to diversify its customer base and has successfully secured a new sub-contract works from Unisys Australia Limited (Philippines Branch) for the implementation of IT project for the Philippines Ports Authority. Nevertheless, as set out in Section 3.3.3 of this Prospectus, the Group is currently dependent on its major customers for a significant portion of its revenues.

6.7   Major Suppliers and Consultants

The following are the major suppliers of IT hardware and software and consultants engaged by the Group and the amount of purchases/ contract works for the financial year ended 30 June 2002 :-

Suppliers	Type of Products/ Services	Length of relationship
Purchases over 30% of total purchases		
(i) Malitnet Computer Services Sdn Bhd [#]	Third party IT hardware/ software	4 years
Purchases over 10% to 30% of total purchases		
(ii) Sanderson Computers Malaysia Sdn Bhd	Software licensing	4 years
(iii) Eix Solution Sdn Bhd	Software development	1 year
(iv) Malitnet Research & Engineering Sdn Bhd [#]	Third party IT hardware/ software	4 years
Purchases over 5% to 10% of total purchases		
(v) Achieva Services Centre Sdn Bhd	IT hardware	2 years

Note :-
 #   transactions with related parties. Further details are set out in Section 11.1.2 of this Prospectus

The Group is not dependent on any single supplier as the supply of third party IT hardware and software are readily available in the market and the Group has also identified alternative suppliers to limit its dependence on any single supplier. However, certain customised services such as specialised IT programming and development may be confined to certain consultants as alternative consultants are unable to offer competitive pricing or the unavailability of the skills required.

6.8   Location of Operations

The head office of the Group is housed in Cyberjaya which consist office space of approximately 3,500 square feet. The Group also operates on the clients' premises in the various ports in Penang, Sabah and Sarawak.

To support its marketing strategy, the Group has set up operations in Thailand (to service the Indo China market) and the Philippines and is planning to set up operations in China and Indonesia.

6.   BUSINESS OVERVIEW (cont'd)

6.9   Technology, Intellectual Property and Licences

All the Group's application software are internally developed using various development tools such as Informix 4GL, Informix Dynamic 4GL, Visual Basic, JAVA and other Web-related tools to develop its application software. These development tools are deployed under various operating systems such as Unix, Windows NT and Windows 95/98/2000. Databases used are mainly Informix and or MS SQL Server. With the acquisition of Informix Inc by IBM, Portrade is migrating to new platforms that support new environment and database independent.

Portrade Group owns the intellectual property for all the various application software that were acquired and/ or developed in-house. The Group has also obtained the necessary ASP Class Licence from CMC to enable it to operate as an ASP and has registered with various governmental departments, ministries and agencies to enable it to tender for government's projects. Portrade has registered with the CMC as an ASP Class Licence holder since 3 July 2002 and is currently in the process of submitting the application for the registration of trademarks for its application software and services to the relevant authorities. At present, the Group does not distribute/ sell/ market any software developed by third parties.

6.10   Quality Control Procedures And Quality Management Programmes

Portrade has set up a quality assurance team to test and provide feedback on the application software developed before implementation. Testing is carried out at the R&D centre in Cyberjaya and on clients' sites as follows :-
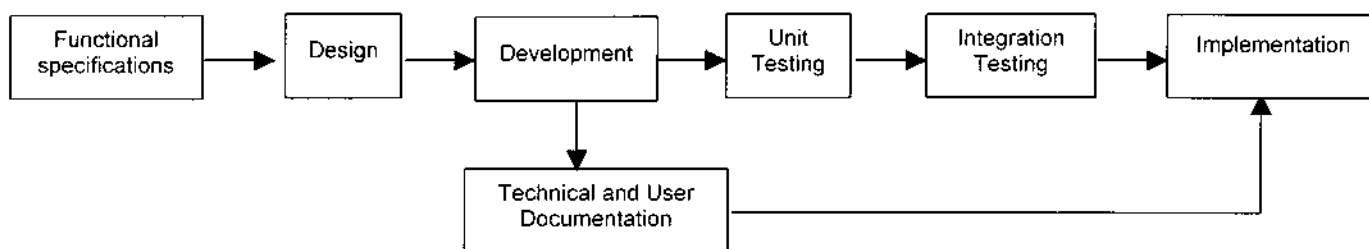
The scope of the quality control procedures is to ensure that the performance of the application software is optimised and in accordance with the clients' functional requirements.

6.11   R&D

The Group carries out its R&D activities at its office in Cyberjaya and has installed extensive security measures to ensure only authorised personnel have access to the R&D centre and its research findings. Portrade Group R&D team consists of thirty-five (35) members comprising both industry and technology expertise.

The main objectives of R&D are to enhance features of existing applications, develop new applications, as well as continuous improvement in the quality and performance of the Group's applications and services. The R&D team currently concentrates mainly on R&D of best practices and standardisation of port business processes. Under an ASP environment, all ports operate on the same application software. In order to facilitate ASP deployment, when designing its applications, it is critical that the R&D team understands the business processes of each port and endeavour to standardise and enhance the processes. In cases where standardisation cannot be achieved, the R&D team must take into account the configurability of the application to cater for the differences in the business processes as there exists uniqueness in the operation and management of the various ports. This R&D on business processes is a continuous process and will apply to all new application software of the Group.

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6.   BUSINESS OVERVIEW (cont'd)

Over the years, the R&D team has achieved the following achievements/ milestones :-

Date	Achievement/ Milestones
April 2001	Commenced the re-design, enhancement and conversion of its proprietary port applications (CTS and VSS) from the client server technology to the Web-based technology, i.e. IPMS.
August 2001	Version 1.0 of IPMS was released for implementation for the Sabah Ports Authority project
April 2002	Commenced design and development of Version 2.0 of IPMS
June 2002	Version 1.0 of IPMS was successfully implemented for the Sabah Ports Authority project under the ASP environment
October 2002	Commenced design and development of Version 1.0 of Portrade's Community Application

Going forwards, Portrade plans to release Version 2.0 of IPMS and Version 1.0 of Community Application by April 2003. These applications will continuously be developed and enhanced, and the Version 3.0 of IPMS is expected to be released by December 2003.

The Group's R&D also covers R&D into the advancement in technology and how these technology can be incorporated to enhance its applications.

6.12   Employees

As at 18 December 2002, the Group employs a total of fifty-three (53) employees. The management of the Group enjoys a good working relationship with the employees. The employees do not belong to any organised union and there is no industrial dispute in the past. The Group's employees are generally categorised into three (3) categories as follows:-

Category of Employee	Number of personnel	Average number of years in service *
Managerial and Professional	3	2
Technical and supervisory	42	3
Clerical	8	2
Total	53	

*   *inclusive of number of years in service under TSSB before it was acquired by Portrade*

Most of the senior management and technical personnel have been with the Group since the inception of the Company and many of them have been involved in the maritime port & shipping industry for the past five (5) years. The Group depends on a pool of IT personnel with division of functional duties in system analysis and programming such that there will be minimal adverse effects on the Group's operations if and when key personnel leave the Group. The Group's on-going R&D activities provide an opportunity for its employees to continuously develop, enhance and upgrade their technical expertise. In addition to the on-the-job training and sharing of knowledge and experience, the Group also regularly engages IT consultants for project implementation as well as conducting R&D, thereby providing opportunities for its employees to gain new skills and knowledge. The Group may also from time to time send its employees for external courses and training to keep them abreast with latest development in the IT industry.

6.13   Interruptions to Business during the past twelve (12) months

There were no interruption in the business of the Group which may have had a significant effect on the operations of the Group during the past twelve (12) months.

7.   **SUMMARY OF THE FIVE (5) YEARS BUSINESS DEVELOPMENT PLANS, STRATEGIES AND PROSPECTS**

The following is a summary of the five (5) years Business Development Plan prepared by Portrade Group for the purpose of inclusion in this Prospectus.

7.1   Future Plans and Strategies

To ensure the long term success of the Group, the Group has drawn up the following plans and strategies :-

7.1.1   Brand Creation

As Portrade is a relatively new player in the regional IT solutions provider for the port and shipping industry, it is crucial that the Group establish its identity at an early stage. The target audiences of this "brand awareness" exercise are businesses and end-users of the logistics chain and is/will be achieved via ongoing advertising and sponsorship of key events for the port trade communities.

7.1.2   New Products and Services

Portrade aims to be a major player in the region for providing application software to the port-related community and plans to develop additional Web-based application software to complement its existing port-related applications such as the following :-

7.1.2.1   IPMS

The product development team of Portrade is progressively redesigning the VSS and CTS into one integrated application, namely the IPMS. Portrade plans to release Version 2.0 of IPMS by April 2003 and expects Version 3.0 of IPMS to be released by December 2003. IPMS will be parameter-driven, modular and generic in nature so that it can be easily customized to suit any local port conditions and/ or business rules. It will incorporate the best practices in port management. IPMS will be deployed via the ASP business model.

7.1.2.2   Freight Forwarders System

Freight Forwarders System is intended to support the operational requirements of the freight forwarding business (e.g. freight booking, invoicing, debtors and cash management and financial reporting). The management of Portrade expects Freight Forwarders System to be developed in 2004.

7.1.2.3   Community-Based Applications

These community-based applications will include various B2B and B2C Web application as well as other value-added services to complement the community based applications. These applications are expected to be developed in 2003.

Similarly, TSSB will also take advantage of the borderless marketing capability of the Internet to develop the following Web-based applications over the next five (5) years :-

7.1.2.4   MMS

TSSB plans to develop its MMS into a Web-based application within the next two (2) years so that the application can be deployed over the Internet using the ASP model (similar to Portrade's mode of delivery) to market its MMS to co-operatives bodies in Peninsular Malaysia. The benefits of the Web-based MMS are that members of the co-operative will be able to perform various online transactions thus improving the efficiency of the co-operatives.

7. SUMMARY OF THE FIVE (5) YEARS BUSINESS DEVELOPMENT PLANS, STRATEGIES AND PROSPECTS (cont'd)

7.1.2.5 Council Management System

TSSB also plans to develop a computerised council management system for local municipal and city council bodies to facilitate E-submission of documents, E-payments as well as improving the overall administrative efficiency and security of the council's various functions. This is expected to be completed within the next five (5) years.

7.1.2.6 Pharmaceutical Inventory Control System

As a future project within the next five (5) years, TSSB will also invest in the development of a computerised pharmaceutical inventory control system for hospitals, private clinics and pharmacies to facilitate electronic sourcing and procurement of pharmaceutical products. This system is expected to be delivered via the ASP model to enable it to be cost-effective for the target audience.

7.1.3 National and Regional Expansions

Portrade is currently implementing the Web-based technologies for the Sabah Ports Authority and the Philippines Ports Authority. Concurrently, Portrade is also actively looking for opportunities to expand its Web-based application to other Malaysian ports by forging strategic alliances with local partners. For its regional expansion, the immediate targets are the port communities in the Thailand and Indonesia. In the longer term, Portrade is targeting China, Vietnam, Singapore, Myanmar and Laos.

TSSB plans to introduce its MMS to other co-operative organisations in Malaysia and upon successful development of its Web-based applications, TSSB will broaden its clientele base to include municipal/ city council, hospitals, private clinics and pharmacies in Malaysia.

7.1.4 Strategic Alliances

To ensure the success of, and to promote the usage of the e-community portal, the Group is seeking to form alliance with an international and/ or regional bank that focuses on trade finance. Such an alliance will enable the bank to offer innovative e-trade financing products and/ or to facilitate existing trade products via the Portrade portal. To cater for the needs of the logistics communities, Portrade intends to tie-up with other complementary service providers such as e-insurance, e-auctions, e-logistics.

7.2 Human Resources Development

In terms of human resources development, there is a strong emphasis on hiring qualified technical and management personnel as the Group's competitive edge depends on upgrading the skills, knowledge and experience of its knowledge workers. Therefore emphasis will be placed on training and re-training of personnel to keep abreast of technology changes. The Group's human resource development and management policy is to develop several knowledge teams amongst its own personnel with recruitment of an additional three (3) to five (5) staff per annum to undertake the development of new applications. The Group also strives to maintain a low staff turnover by ensuring its staff welfare and benefits, career development are comparable with other IT companies.

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7. SUMMARY OF THE FIVE (5) YEARS BUSINESS DEVELOPMENT PLANS, STRATEGIES AND PROSPECTS (cont'd)

7.3 Prospects

Portrade's strategy is to consolidate its position in Malaysia and to market its products and services to the regional ports in the ASEAN/ Asia-Pacific regions. Portrade will utilise the ASP business model to deliver its products and services to its customers. Leveraging on the ASP business model, the Company aims to create a digital port trade community by aggregating all the players in the maritime port, shipping and logistic industry, thereby facilitating E-Submission/ E-Payment and E-commerce. Portrade will emerge as the owner/ operator of its Web-portal that promotes and facilitates international trade and transportation of goods using IT. With the vast experience of its Promoters and relationship with port operators in the region, the management is committed to and confident of making Portrade a premier ASP for the port trading communities in the region.

TSSB will continue to be a niche player in the provision of ASP applications and plans to expand its products and services to other co-operative organisations in Malaysia. It also plans to diversify its product offering to include the municipal and city council through its Web-based Council Management System and the pharmaceutical industry via its Pharmaceutical Inventory Control System. Such expanded product offerings and clientele base will ensure the long term success of TSSB.

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8. INDUSTRY OVERVIEW

8.1 The World Economy

The world economy turned around earlier than expected as a result of the coordinated approach taken by major economies and posted a strong recovery in the first quarter of 2002, giving raise to optimism for a much improved global economic performance. However, the pace and strength of the recovery faltered on the back of disclosures of a slew of corporate scandals, emerging weak economic data from major economies, widening current account deficit and security problems in the US. Concerns over weak equity markets, political tensions in the Middle East as well as declining consumer spending and investor confidence have further heightened uncertainties of a strong recovery. Nevertheless, the appropriate macroeconomic policy mix pursued by the major economies as well as legislation put in place to clean up corporate fraud is expected to have positive impact on consumer and investor confidence, with world growth anticipated to pick up momentum towards the end of the year.

Growth in world economy is expected to strengthen modestly in 2002 to 2.8% (2001 : 2.5%), with momentum picking up towards the end of the year. World output will still be largely driven by the US, which is anticipated to register a stronger real GDP growth of 2.2% (2001 : 0.3%). World trade in goods and services, which suffered a sharp dent due to the global economic slowdown in 2001, is envisaged to bounce back from -0.2% to record 2.5% this year. Fuelled largely by an upturn in the electronics sector as well as a prick-up in inventory build-up, world trade is set to gain a stronger momentum in the second half of the year.

(Source : Economic Report 2002/2003)

8.2 The Malaysian Economy

The economy is envisaged to register stronger growth in 2002, following better export performance and continued pick-up in domestic demand. Brighter external prospects due to the economic recovery of the US and a rebound in global electronics demand, especially from the East Asian countries, have hastened Malaysia's export recovery, beginning early 2002. Export has somewhat broadened beyond the electronics sector, aided by the softening of the USD against regional currencies to which the Ringgit is pegged. Overall, with GDP expanding by 2.5% in the first half of 2002 and expected to strengthen further in the second-half, the full year growth is projected to be in the range of 4%-5%, achieving the forecasted rate in Budget 2002. The services and manufacturing sectors are the major contributors to growth.

The Malaysian economy, with the stronger macroeconomic fundamentals already in place and complemented by more resilient corporate and financial sectors, is now poised to benefit from the much-improved global economic environment projected for 2003. Output expansion is anticipated in all sectors of the economy, with GDP envisaged to chalk 6%-6.5%, arising from a broader based economy with growth emanating from a more pronounced role of a revitalised and dynamic private sector.

(Source : Economic Report 2002/2003)

8.3 The ICT Industry

Malaysia aspires to transform itself to be a knowledge-based economy so as to sustain its high rate of economic growth and enhance its long term international competitiveness. IT has been identified as the fundamental enabling tool to facilitate this development. The drive towards as knowledge-based economy can be traced back to 1996 when the National IT Agenda was formulated to provide the framework for the orderly development of the country into an information and knowledge-based society by 2020 (Vision 2020). Since then various initiatives have been implemented to promote and nurture the growth of the ICT. The key incentive was the MSC which was designated as a world test-bed for ICT development. In addition, a set of world-leading cyber-laws was enacted to provide an enabling environment for the development of ICT.

(a) Past Performance

During the period under the Seventh Malaysian Plan (1996 to 2000), there was a rapid growth in ICT utilisation. Investments in ICT expanded at a rate of 9.2 per cent per annum from RM3.8 billion in 1995 to RM5.9 billion in 2000. This was largely due to the increasing local awareness of the importance of production, diffusion and utilisation of knowledge and information for improving competitiveness and overall economic performance. Special incentives such as the abolition of sales tax on computers and components, and the granting of accelerated capital allowance for expenses on computers and other ICT equipment also assisted in increasing the usage of ICT.

8. INDUSTRY OVERVIEW (cont'd)

The manufacturing sector recorded the highest investments in ICT amounting to almost RM1.2 billion or 20 per cent of total ICT expenditure in 2000, as shown in table below. This was followed by the banking and finance sector with 14 per cent and distribution with 11 per cent. The Government sector also invested substantially in ICT with investments totalling RM532 million in 2000, representing 9.0 per cent of total ICT expenditure. The home sector recorded the highest rate of growth of 44.1 per cent per annum in ICT expenditure during the Plan period.

ICT EXPENDITURE BY SECTOR, 1995-2000 (RM million)

Sector	1995	%	2000	%	1996-2000	%	Average Annual Growth Rate (%), 1996-2000
Banking & Finance	1,026	27.2	827	14.0	3,723	15.0	-4.2
Manufacturing	494	13.1	1,182	20.0	4,041	16.3	19.0
Government	380	10.1	532	9.0	2,062	8.3	6.9
Telecommunications	-	-	473	8.0	2,323	9.3	-
Distribution	304	8.1	650	11.0	2,586	10.4	16.4
Oil & Gas	380	10.1	296	5.0	1,623	6.5	-4.8
Utilities	266	7.0	236	4.0	1,253	5.0	-2.3
Professional ICT & Other Services	125	3.3	236	4.0	236	1.0	13.5
Healthcare	-	-	59	1.0	59	0.2	-
Education & Research	114	3.0	236	4.0	1,008	4.0	15.6
Transportation	**114**	**3.0**	**177**	**3.0**	**1,147**	**4.6**	**9.1**
Home	76	2.0	473	8.0	2,004	8.0	44.1
Plantation & Mining	76	2.0	-	-	100	0.4	-
Others	418	11.1	532	9.0	2,736	11.0	4.9
Total	**3,773**	**100.0**	**5,909**	**100.0**	**24,901**	**100.0**	**9.2**

Source: Computer Industry Association of Malaysia (PIKOM)

The extent of ICT usage was also measured in terms of PCs and Internet penetration rates. The number of PCs installed rose dramatically from 610,000 in 1995 to 2.2 million in 2000. The number of PCs per 1,000 population also rose from 29.5 in 1995 to 95.7 in 2000. The Plan period also saw an increasing usage of the Internet by households and companies. The number of Internet subscribers increased from 13,000 in 1995 to about 1.2 million in 2000, a phenomenal rate of growth of 145.2 per cent per annum. Despite the phenomenal growth, the penetration rates were still low at 9.0 per cent of the population for PCs and 7.0 per cent for the Internet.

The rapid growth of the Internet as a consumer technology led to the accelerated use of the E-commerce globally as well as nationally. The E-commerce market was estimated to have increased from USD1 billion in 1998 to USD6 billion in 2000 in the Asia Pacific region. E-commerce not only affected business and individual consumers, but it also reshaped market places, trading relationships and even international trading boundaries. E-commerce presented opportunities for businesses to improve competitiveness, have a global presence, undertake customisation and create novel businesses.

(Source: The Eighth Malaysian Plan 2001-2005)

(b) Industry players and competition

To introduce information technology into a terminal or port, central databases with relevant information to operate a terminal are needed. Database software packages provide facilities to store data and their relationships and provide an effective way for updating and retrieving stored information. The overriding advantage of this is that all users within the organization use the same information. Software packages are supplemented with a number of tools to prepare screens for inputting, retrieving and processing information and facilitating access to databases from other computers. Standard relational database management programmes are used to build this information database. The most popular systems are Oracle, Microsoft SQL Server, Microsoft Access, IBM DB/2, Sybase and Informix. The use of database packages is strongly recommended for systems development.

For major container terminals, Cosmos N.V., Navis and Tideworks Technology are three of the main suppliers of relational database software systems. With these database systems as the backbone of operations, various applications manage the use of the container yard and the working of ships. This

8. INDUSTRY OVERVIEW (cont'd)

maximises the use of space and equipment and minimises the turnaround time of ships and inland transport equipment. These systems provide the capability to receive standard messages sent electronically.

A large number of other suppliers provide port and terminal operating systems that are scalable and can be used for smaller terminals with the ability to accept and generate EDI messages and accept radio data information from container handling vehicles. The following four are suppliers of these systems: Americas Systems Inc. (www.etermsys.com), Dockside Software (www.docksidesoftware.com), PCR Terminal Systems (www.pcronline.com) and PortTec (3DPORT) (www.discoverjade.com/3dport). The latter two suppliers make extensive use of coloured graphics that will help staff considerably in using the software. The first three companies are US based and the last one is in New Zealand. All systems work on a PC based LAN.

The development of a port community information system using UN/EDIFACT and free format messaging has been the goal of many ports as a means of speeding-up the flow of information and reducing errors. In a number of ports, concerned departments (customs, port authority) and the business community have established joint companies to develop, install and operate such systems. Examples of these companies include Portel Servicios Telemáticos (Spain), CNS Port Community Systems and Maritime Cargo Processing plc (United Kingdom), DAKOSY (Germany), SEAGHA (Belgium), PCR (the Netherlands), ADEMAR2000/PROTIS2001 (France) and PORTNET (Singapore). The primary objective of many of these companies was to create an interface with customs. Subsequently, they have expanded their functionality to send and receive other messages. All these message-switching services now allow for the exchange of information via the Internet.

(Source : "Study on the use of information technology in small ports" issued in January 2001 by UNCTAD).

The Internet has opened up a world of borderless market for IT vendors to compete on a global scale and potential customers are able to source the best products/ services that best suit their requirements from local or foreign IT vendors.

The ICT industry is, nevertheless, dependent on software development tools developed by foreign IT-vendors such as Microsoft, IBM, SAP, Oracle, PeopleSoft etc for the development of their own application software and services.

(c) Laws, Regulations and Incentives

CMC is the regulator for the converging communications and multimedia industry and its role is to implement and promote the Government's national policy objectives for the communications and multimedia sector pursuant to the Malaysian Communications and Multimedia Commission Act (1998) and the Communications and Multimedia Act (1998), CMC is also charged with overseeing the new regulatory framework for the converging industries of telecommunications, broadcasting and on-line activities. Under the Communications and Multimedia Act (1998), there are four (4) categories of licensable activities, namely Network Facilities Providers, Network Services Providers, ASP and Content Application Service Providers. Within the four categories listed, there are two types of licences provided for - INDIVIDUAL LICENCE and CLASS LICENCE. Individual licences are granted for activities where a high degree of regulatory control is required. Class Licences are annually renewable and are entered into registers maintained by the CMC. *(Source : CMC's website at www.cmc.gov.my).*

In 1997, the Malaysian Government introduced the MSC project to promote the growth of IT companies in Malaysia and to encourage foreign IT-players to use MSC as their regional hub. Companies that are granted with MSC-Status enjoy various financial and non-financial incentives such as :-

Financial incentives include:-

* a five (5) years exemption from Malaysian income tax (for Portrade the five(5) years tax exemption period commences on 25 April 2001 and expires on 25 April 2006) and is renewable for another five (5) years upon expiry - renewal will depend on the company's performance in transferring technology or knowledge to Malaysia, or a 100% investment tax allowance on new investments made in MSC cybercities, commencing from the date on which the first qualifying capital expenditure is incurred;

* duty-free importation of multimedia equipment, provided that the equipment is used by the company in the operation of its business, and not for direct sale and trading or use as components in manufactured items; and

* R&D grants for MSC small and medium enterprises that are at least 51% Malaysian owned.

8.   INDUSTRY OVERVIEW (cont'd)

Non-financial incentives include:-

*   unrestricted employment of foreign knowledge workers;
*   freedom of ownership; and
*   freedom to source capital for MSC infrastructure globally, and the right to borrow funds globally. All MSC Status companies will be given exemptions by the Controller of Foreign Exchange from exchange control requirements which will allow them to execute transactions in any currency in Malaysia or elsewhere, borrow any amount from financial institutions, associate companies or non-residents, hedge foreign exchange exposure, remit funds globally and open foreign currency accounts in Malaysia or abroad with no limits on balances.

Malaysia has also made significant headway in terms of creating a conducive regulatory environment to support the orderly development of ICT by the enactment of several legislation. The Digital Signature Act 1997 provides an avenue for secure on-line transactions through the use of digital signatures; The Computer Crimes Act 1997 provides for the offences relating to the misuse of computers; Telemedicine Act 1997 provides a framework for licensed medical practitioners; Copyright (Amendment) Act 1997 aims to ensure adequate protection of intellectual property rights for companies investing in the ICT and multimedia environments.

The Malaysian Government is committed towards the provision of a world-class physical and information infrastructure for the development of the IT industry in Malaysia. This coupled with the various incentives, flexibilities and benefits granted by the Government is expected to further promote the development of IT-industry in Malaysia.

(d)   Future growth and prospects

During the Seventh Malaysian Plan period, Malaysia has put in place a relatively developed infrastructure and conductive environment for the development of ICT. As such, Malaysia is well placed to benefit from the new wave of growth based on the ICT revolution. During the Eighth Malaysian Plan period (2001 to 2005), concerted efforts will be made to further enhance the development of the sector and position Malaysia as a major global ICT and multimedia hub. Focus will be made towards achieving world-class performance, in terms of service availability, affordability and productivity. ICT will be used as a key enabler to facilitate local companies to compete globally, especially in sectors such as banking and finance, logistics, manufacturing and key services. Investments will also be made to upgrade communications networks in line with technological advancements. For the same period, a total of RM5.2 billion will be allocated for ICT related programmes and projects.

The Government will also implement a new policy framework for the ICT and multimedia sector that is based on rapid transition to full competition. The pro-competition framework will be the main driver of performance in terms of infrastructure roll-out, service quality and innovation, and competitive pricing. Efforts will continue to be made to create a stable and supportive environment for the conduct of commerce and trade electronically. More attention will be directed towards the effective enforcement of the various laws and institutional mechanisms established. The Government will also undertake measures to build trust and confidence in E-commerce including security and privacy for consumers. In this regard, a law on personal data protection will be introduced to address privacy concerns. Infrastructure and logistical support, which encompass networks, payment systems and logistics will also be provided to enhance the development of E-commerce.

E-commerce will bring substantial benefits to businesses in terms of a reduction in transaction costs, inventories and overheads as well as the time between the outlay of capital and receipts of products and services. For the consumers, the benefits that will be enjoyed include wider choices, quick delivery and the ability to shop anytime and from almost anywhere.

(Source: The Eighth Malaysian Plan 2001-2005)

Information systems have become an integral part of a company's business operation. Today, these information systems is not only used by corporations alone but shared with its trading partners and customers through ICT. Globalisation has also been one of the drivers in the utilisation of IT systems and communication networks. A report by the UNCTAD confirmed that quality of port services can be greatly improved using IT and modem communication methods. However, it was also noted that smaller ports in developing countries lack the revenue base that would allow them to make investments for sophisticated software solutions. *(Source : "Study on the use of information technology in small ports" issued in January 2001 by UNCTAD).* Traditionally, companies would build and operate their own IT and network infrastructure, thus having to maintain a large IT department. The IT department is responsible for all IT

8. INDUSTRY OVERVIEW (cont'd)

functions within the company. However, in today's competitive environment enterprises would need to focus on their core business and this has lead to them using service providers for their networking and application needs. Other factors that compel enterprises to outsource their IT functions are the shortage of skill workforce and the rapid changes in technology.

Today, more companies look for service providers that specialise in certain areas of IT. The benefit of this is tremendous, as companies can tap into the strengths and the competencies of the service provider. In many cases, these service providers are able to offer comprehensive solutions to meet the existing and future requirements. And often, these customer-supplier relationships evolve into partnerships.

8.4 The State of the Maritime Port and Shipping Industry in Malaysia

The major players in the ports industry in Peninsular Malaysia are Port Klang, Port of Tanjung Pelepas, Pasir Gudang and Penang Port. Port Klang remains the national load centre as the main gateway for Malaysia's shipping industry and the hub port of the Klang Valley hinterland. Port Klang has three (3) ports, namely :

* North Port - handles containers and bulk cargoes and is operated by Northport Corporation Berhad
* West Port - handles containers and bulk cargoes which is operated by Klang Multi Terminal Sdn Bhd.
* South Port - handles only bulk cargoes and is operated by Northport Corporation Berhad

The rapidly growing port is Port of Tanjung Pelepas located in the west coast of Johore. It is the hub port for the Johore hinterland and is competing with Port of Singapore as the transhipment hub for South East Asia region. Port of Tanjung Pelepas has to-date attracted two (2) major mainline operators, namely Maersk-Sealand and Evergreen Marine Corporation to tranship at Port of Tanjung Pelepas. Within a span of two-and-a-half years since its first year of operations, PTP registered a phenomenal growth in container throughput of 48,668 TEUs (20-foot equivalent units) in the first six month of 2000 to 2 million TEUs in 2001. By year-end, it is poised to surpass its target of 2.5 million TEUs. *(Source : Economic Report 2002/2003)*

The major ports in the state of Sarawak and Sabah are :-

* Kuching Port	)	
* Bintulu Port	)	Ports in Sarawak
* Rajang Port	)	
* Miri Port	)	
* Kota Kinabalu Port	]	
* Sandakan Port	]	
* Tawau Port	]	Ports in Sabah
* Lahad Datu Port	]	
* Sapangar Bay Oil Terminal	]	
* Kudat Port	]	
* Labuan Port	)	Port in Labuan

The other players in the shipping industry are the main-line-operators, shipping agents, ship owners, forwarders, hauliers, insurers, banks and the Royal Customs and Excise Department of Malaysia.

With the advent of the Internet age in the mid-1990s, the players in the Malaysian ports and shipping industry have all begun to develop e-business technology in order to gain competitive advantage over their rivals. These players has also recognised the need of an e-business environment that facilitates paperless exchange of business documents between members of a port community. There should also be facilities for electronic transactions and payments for customs duties, port charges, freight charges, insurance and et cetera. Such an e-business environment would result in tremendous time and cost savings, in addition to improvement in efficiency, effectiveness and productivity.

Many ports in Malaysia have separately developed their own Web-sites for the purpose of dissemination of information to port users. Some ports have embarked on e-business development to enable B2C and B2B applications with varying success to date. For example, the PKCS which uses the EDI standards for electronic submission of shipping documents was implemented in 1993 as the maiden E-commerce project in Malaysia. However, the UN/EDIFACT standards did not reach the critical mass of users to ensure its successful and wide adoption by the maritime port community. This was due to its complexity

8.   INDUSTRY OVERVIEW (cont'd)

and high costs of implementation. The advent of the Internet is challenging these standards because the Internet uses the XML as the messaging standards. Nevertheless, as XML is a relatively newer messaging standards, until it is widely adopted by the port communities, a third party converter may be used to convert the existing EDI standards to XML standards to ensure smooth communication among the various players in the port, shipping and logistic industry.

In light of the rapid development in the various e-port initiatives, there is an urgent need for the ports various IT players in the shipping industry to develop Web-based front-end application with emphasis on linkage with the Internet. The Internet has eliminated the barrier of time and space to conduct transactions in commerce and trade at a low cost.

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