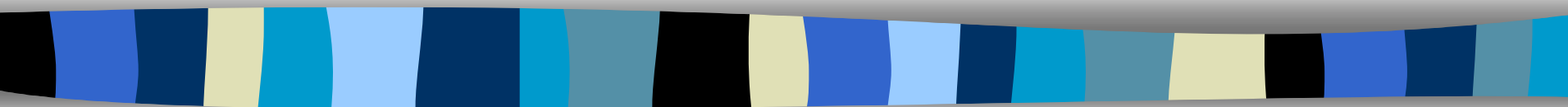


THE ROLE OF COMPETITIVE STRATEGIES IN THE INTERNATIONAL LINER INDUSTRY



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and
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2003



OUTLINE

- KEY QUESTIONS/ISSUES
- ROLE OF CHARTER MARKET
- STATUS OF INDUSTRY
- PORTER'S INDUSTRY STRUCTURAL
 - ANALYSIS
- FRAMEWORK FOR STRATEGY-
 - TECHNOLOGY CONNECTION
- FUTURE CHANGES



KEY QUESTIONS

- HOW IS THE INDUSTRY STRUCTURE CHANGING?
 - COMMODITIZATION OR SERVICE DIFFERENTIATION?
- WHAT ARE IMPACTS OF EMERGING TECHNOLOGIES?
- WHAT DOES THE CUSTOMER WANT? WILLING TO PAY FOR?

Characteristics of Optimized System



Unit Train Services



Local Distribution by Road



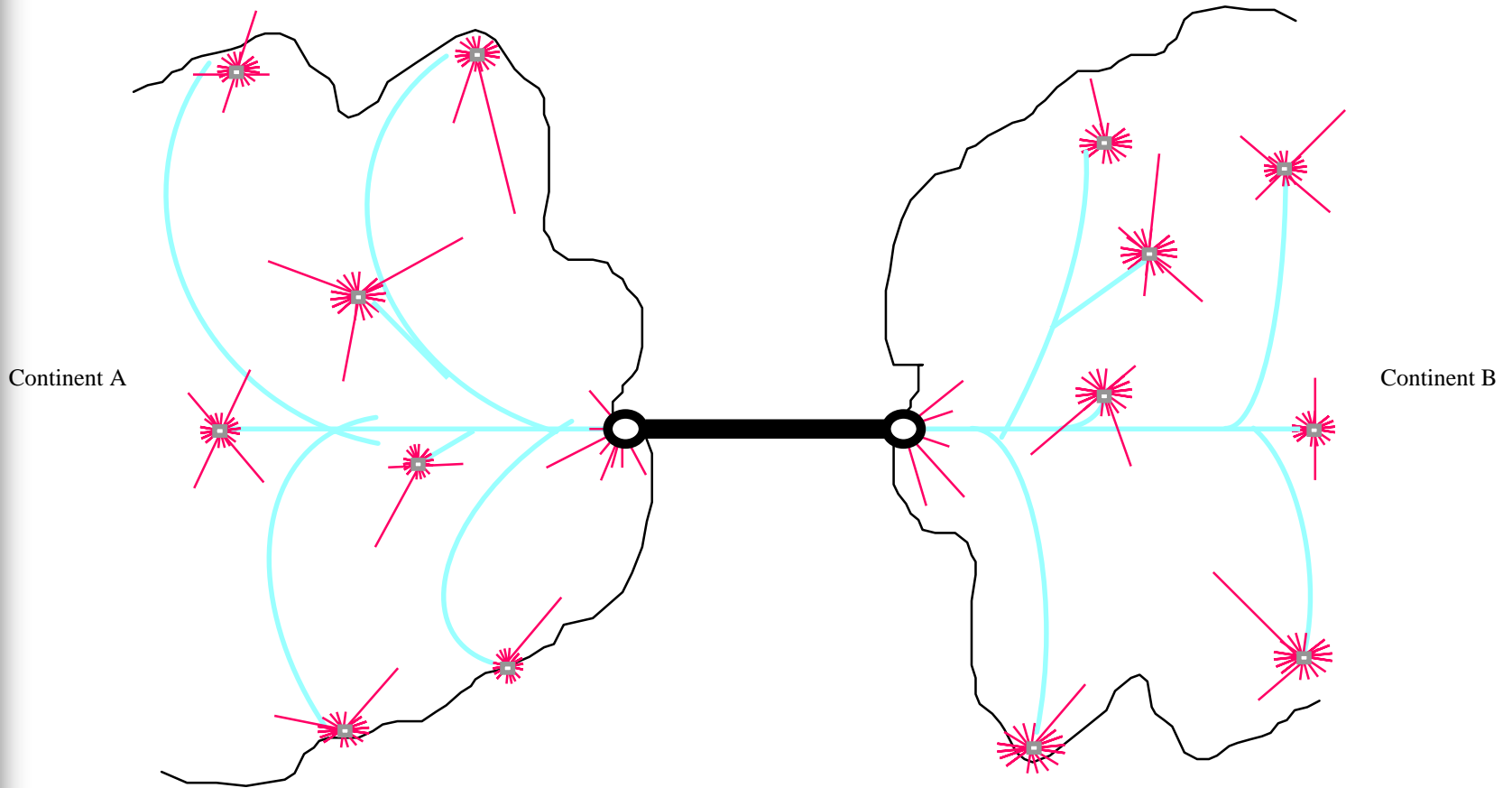
Large Capacity Containership Service



Major Container Port



Outport/Inland Depot in major population center



Source: Adapted from *Containerization: The key to low-cost transport*, McKinsey & Co., 1967.



ROLE OF CHARTER MARKET SINCE THE 1980'S

- CHARTER MARKET GROWING IN SIZE
- CONTAINERSHIPS INCREASING IN SIZE BUT STABLE DESIGN
- SHIPS (& SERVICE) BECOMING COMMODITIES
- MEGA-SHIPS LEAD TO FEEDERSHIPS
- CARRIERS USE CHARTERS TO SAVE NB CASH FLOW
- CHARTERS PROVIDE FLEXIBILITY DURING INDUSTRY CONSOLIDATION
- CHARTER MARKET IMPORTANT PLAYER
- LOWERED BARRIERS TO ENTRY

**WORLD CELLULAR
CONTAINERSHIP FLEET IN
PROFILE**

Class (TEU Range)	IN SERVICE		ON ORDER	
	Ships	Avg. TEUs	Ships	Avg. TEUs
Feeder (100-499)	460	307	1	208
Feedermax (500-999)	539	708	62	739
Handy (1,000-1,999)	879	1,414	93	1,388
Sub-Panamax (2,000-2,999)	437	2,477	79	2,514
Panamax (3,000 & Over)	379	3,764	119	3,981
Post-Panamax (4,000 & Over)	201	5,617	95	6,287
Totals	2,895	1,867	449	3,218

Source: Clarkson Research Studies, *The Containership Register 2002*, pp. 6, 10.

Top 20 Container Carriers 2001

Rank (2000)	Carrier	Country	Total TEU capacity		% increase	No. of owned ships (TEUs)	No. of charter ships (TEUs)
			2001	2000			
1 (1)	Maersk Sealand/Safmarine	Denmark	659,459	624,787	6%	101 (347,347)	188 (312,112)
2 (3)	P&O Nedlloyd group	U.K./Netherlands	396,088	296,668	34%	53 (156,196)	100 (239,892)
3 (2)	Evergreen group	Taiwan	375,006	336,688	11%	127 (352,350)	14 (22,656)
4 (5)	Hanjin/Senator Lines	South Korea	319,751	225,799	42%	20 (85,816)	62 (233,935)
5 (4)	MSC	Switzerland	252,938	236,230	7%	69 (135,774)	65 (117,164)
6 (6)	APL	Singapore	243,455	200,481	21%	n/a	n/a
7 (7)	COSCO	China	224,936	200,328	12%	108 (201,115)	12 (23,821)
8 (12)	CP Ships	Canada	170,700	130,560	24%	23 (40,800)	63 (129,900)
9 (8)	MOL	Japan	161,221	153,000	5%	n/a (86,611)	n/a (76,610)
10 (11)	CMA CGM group	France	151,660	135,699	12%	18 (39,227)	66 (112,433)
11 (9)	NYK	Japan	151,481	146,496	3%	26 (n/a)	50 (n/a)
12 (10)	Zim	Israel	145,460	145,717	0%	25 (70,402)	56 (75,058)
13 (14)	OOCL	Hong Kong	142,541	114,008	25%	16 (68,582)	33 (73,959)
14 (16)	Hyundai	South Korea	141,294	109,092	30%	20 (74,641)	16 (66,653)
15 (13)	K Line	Japan	137,497	125,455	10%	18 (54,072)	40 (83,425)
16 (15)	China Shipping	China	126,000	110,002	15%	n/a	n/a
17 (18)	Hapag-Lloyd	Germany	114,035	100,000	14%	24 (95,123)	6 (18,912)
18 (19)	CSAV group	Chile	105,840	81,535	30%	4 (4,356)	50 (101,484)
19 (17)	Yangming	Taiwan	103,214	107,449	(4%)	n/a	n/a
20 (20)	Hamburg-Sud group	Germany	96,060	74,655	29%	13 (25,718)	40 (70,342)
Total			4,218,636	3,654,649	15%		
Average			210,932	182,732	15%		

Source: Carriers and ComPairData (www.compairedata.com).

Taken from: American Shipper, August 2001

Top 20 Containerports in 2000 & 1999 (TEUs)

Ranking	Port Name	Year 2000	Year 1999	Ranking in 1999
1	Hong Kong	18,100,000	16,210,792	1
2	Singapore	17,040,000	15,944,793	2
3	Busan	7,540,387	6,439,589	4
4	Kaohsiung	7,425,832	6,985,361	3
5	Rotterdam	6,275,000	6,343,242	5
6	Shanghai	5,613,000	4,216,000	7
7	Los Angeles	4,879,429	3,828,852	8
8	Long Beach	4,600,787	4,408,480	6
9	Hamburg	4,248,247	3,738,307	9
10	Antwerp	4,082,334	3,614,246	10
11	Port Klang	3,206,753	2,550,419	15
12	Dubai	3,058,886	2,844,634	12
13	NY/NJ	3,006,493	2,863,342	11
14	Tokyo	2,899,452	2,695,601	14
15	Manila	2,867,836	2,147,422	21
16	Felixstowe	2,800,000	2,696,659	13
17	Bremen/Bremerhaven	2,712,420	2,180,955	18
18	Gioia Tauro	2,652,701	2,253,401	17
19	Tanjung Priok	2,476,152	2,273,303	16
20	San Juan	2,392,749	2,084,711	22
	Total	107,878,458	96,320,109	

Percentage of World Total

47.9%

47.4%

(Source: Containerization International Yearbook 2002)

Liner Operators in the North American West Coast-Far East Trade

1980 (Total 38)

APL
BBS
Cosco
CSC
EAC
Evergreen
Fesco
Yangming
Galleon
Hanjin
Hapag-Lloyd
HKIL
Hoegh
Japan Line
K-Line
MOL
KSC
Knutsen
Lykes
Maersk
MOL
NOL
NYK
OOCL
Phoenix
P, M&O
Ro-Lo
SCI
Sc India
Seaboard
Sea-Land
Seatrain
Showa
Star Shipping
US Lines
Yangming
Y-S Line
Zim

2001 (Total 44)

American President Lines Ltd.
China Shipping Container Lines Co. Ltd.
CMA CGM SA
Columbus Line USA Inc.
Compania Chilena de Navegacion Interoceanica SA
Compania Sud American de Vapores
Contship Containerlines Ltd
Cosco Container Lines Ltd.
Cosco/K-Line/Yangming Alliance
Evergreen Marine Corp. (Taiwan) Ltd.
Far Eastern Shipping Co.
Grand Alliance
Great Western Steamship Co.
Hanjin Shipping Co. Ltd.
Hapag-Lloyd Container Linie GmbH
Hyundai Merchant Marine Co. Ltd.
Italia di Navigazione SpA
Kawasaki Kisen Kaisha Ltd.
Kien Hung Shipping Co. Ltd.
Lloyd Triestino di Navigazione SpA
Lykes Lines Ltd LLC
Maersk Sealand
Maruba SCA
Mediterranean Shipping Co SA
Mitsui OSK Lines Ltd.
National Shipping Co. of Suadi Arabia
New World Alliance
Norasia Container Lines Limited
NYK Line
Orient Overseas Container Line Ltd.
P&O Nedlloyd Container Line
Phillipines, Micronesia & Orient Navigaiton Co.
Sakhalin Shipping Co.
Seaboard International Shipping Co. Ltd.
Senator Lines GmbH
Sinotrans Container Line
TMM Lines
Trans-Pacific Lines Ltd.
United Alliance
Wallenius Wilhelmsen Lines AS
Wan Hai Lines Ltd.
Westwood Shipping Lines Inc.
Yangming Marine Transport Corp.
Zim Israel Navigation Co. Ltd.

Liner Operators in the Europe-North American East Coast Trade

1980 (Total 14)

ACL
CMC
Dart
Hapag-Lloyd
Ibero
Jadroplov
POL
Prudential
Sea-Land
Star Shipping
TFL
Transatlantica
U.S. Lines
Waterman

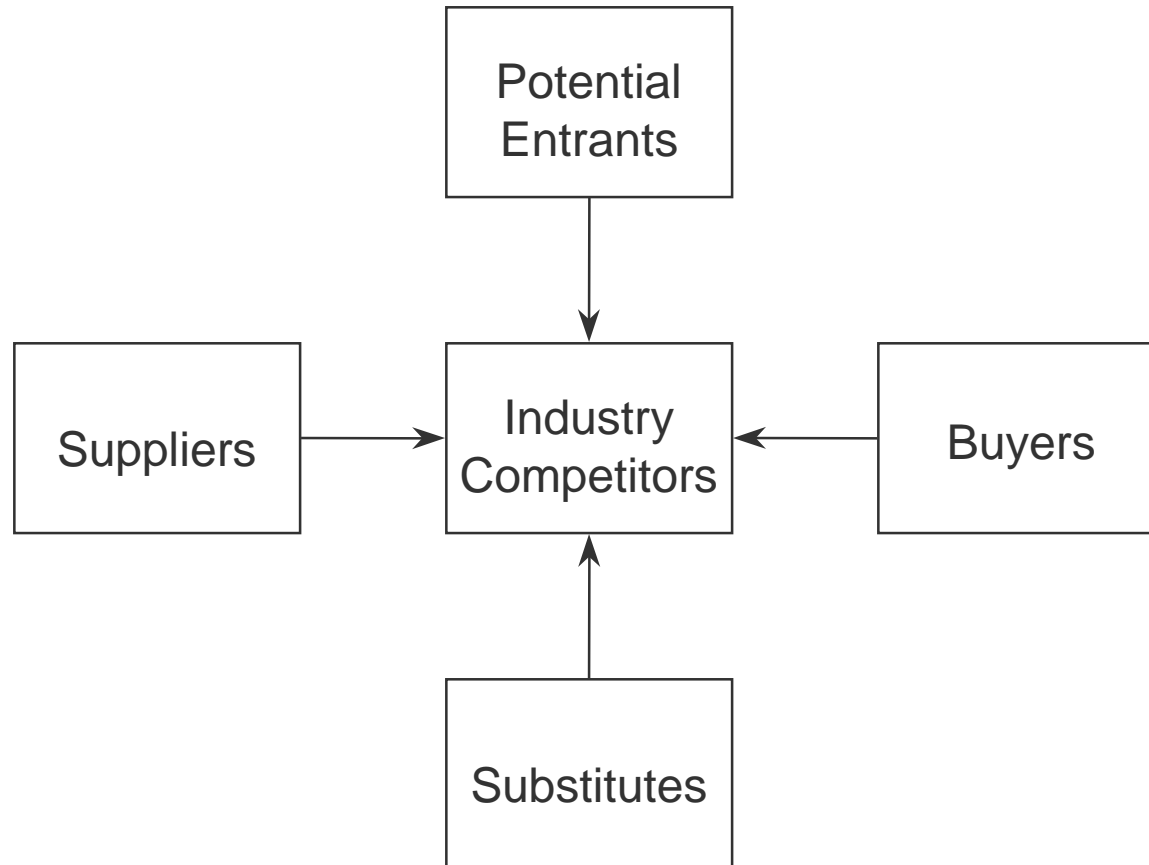
2001 (Total 42)

American President Lines Ltd
Atlantic Cargo Services AB
Atlantic Container Line
Atlantic Ro-Ro Carriers, Inc.
Canada Maritime Services Ltd.
Cast Group Services Ltd.
CGM Antilles
CMA CGM SA
Compagnie Maritime Marfret
Compania Sud Americana de Vapores
Contship Container lines Ltd.
Cosco Container Lines Ltd.
Cosco/K-Line/Yangming Alliance
Costa Container Lines SpA
Eimskip
Evergreen Marine Corp (Taiwan) Ltd.
Fednav International Ltd.
Grand Alliance
Hanjin Shipping Co. Ltd.
Hapag-Lloyd Container Line GmbH
Hoegh Lines
HUAL AS
Hyundai Merchant Marine Co. Ltd.
Independent Container Line Ltd.
Kawasaki Kisen Kaisha Ltd.
Lloyd Triestino di Navigazione SpA
Lykes Lines Ltd. LLC
Maersk Sealand
Mediterranean Shipping Co. SA
Mitsui OSK Lines Ltd.
New World Alliance
NYK Line
Orient Overseas Container Line Ltd.
P&O Nedlloyd Container Line
Royal Arctic Line A/S
Samskif hf
Senator Lines GmbH
TMM Lines
United alliance
United Arab Shipping Co.
Wallenius Wilhelmsen Lines AB
Yangming Marine Transport Corp.

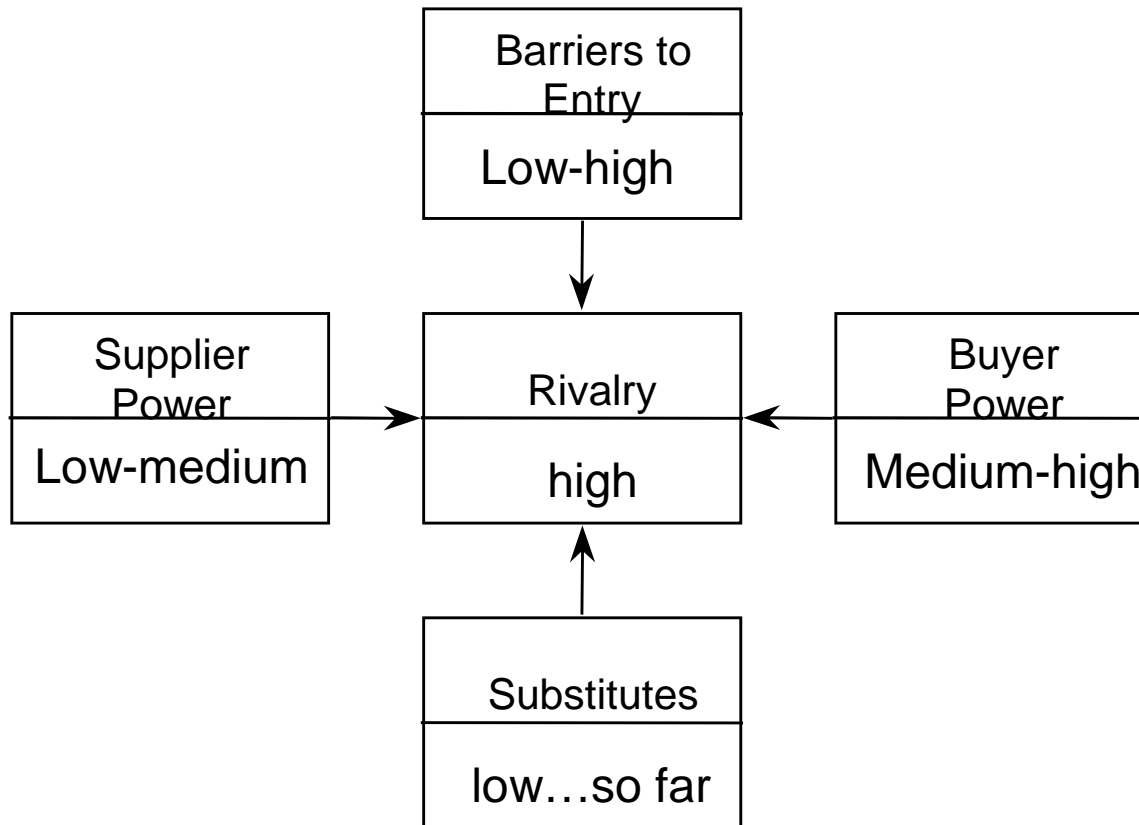
Source: Containerization International Yearbook,
1981 and 2002

The International Liner Industry Structure

Porter model - profitability determined by the 5 forces



The International Liner Industry Structure





Three Tiers As Strategy-Technology Connection for Carriers

First Tier Carrier - Industry Leader

Differentiated Product: Price (and/or Service)

Huge Containerships

Modern Terminals

Stevedoring Company

Double Stack Rail Cars

Trucking Subsidiary

Worldwide Information

Barriers to Entry

Third Tier Carrier - Market Niche

Cargo

Vessel (Possibly Chartered or Purchased Second Hand)

Specialized Technology

Shipper

Shallow Draft Port

Isolated Geographic Location

Flag (Government Preference Cargo)



Second Tier Carrier - Remainder of Carriers

- Vulnerable
- At Mercy of General Market Condition
- Mass Market Focus
- Limited Resources
- Suboptimal Ships
- Limited Inland Services
- Limited Information Services

Table No. 2

Shipping lines ranked by 2001 operating profit

All figures are in million U.S. dollars / million local currency when specified

Rank/Carrier		TOTAL REVENUES	OPERATING PROFIT		NET PROFIT / LOSS	
			Amount	as % of revenues	Amount	as % of revenues
1.	Atlantic Container Line	\$289	\$35	12.1%	\$21	7.3%
	SKr	3,062	370		223	
2.	Hapag-Lloyd Container Line	\$1,978	\$197	10.0%	n/a	n/a
	euro	2,235	223		n/a	
3.	Tropical Shipping	\$230	\$18	7.8%	n/a	n/a
4.	Matson	\$787	\$62	7.8%	n/a	n/a
5.	Mitsui O.S.K. Lines group (1)	\$6,784	\$449	6.6%	\$79	1.2%
	Yen	903,943	59,772		10,544	
6.	Seaboard Marine	\$385	\$24	6.2%	n/a	n/a
7.	Hyundai Merchant Marine group (1)	\$4,156	\$234	5.6%	(\$242)	(5.8%)
	Won	5,557,822	309,214		(919,605)	
8.	NYK group (1)	\$8,577	\$492	5.7%	\$132	1.5%
	Yen	1,142,904	65,558		17,538	
9.	Evergreen Marine Corp. (2)	\$1,551	\$69	5.7%	\$48	3.1%
	NTS	54,431	3,116		1,695	
10.	United Arab Shipping Co. (3)	\$743	\$42	5.7%	\$42	5.7%
11.	Hanjin Shipping group (1)	\$3,486	\$192	5.5%	(\$59)	(1.7%)
	Won	4,612,000	254,000		(78,300)	
12.	CSX Lines	\$691	\$32	4.7%	n/a	n/a
13.	OOIL (parent of OOCL)	\$2,379	\$107	4.5%	\$60	2.5%
14.	Zim Israel Navigation	\$1,677	\$68	4.1%	\$13	0.8%
	Shekel	7,378	298		56	
15.	CP Ships (4)	\$2,646	\$103	3.9%	\$76	2.9%
16.	Wan Hai	\$855	\$30	3.5%	\$18	2.1%
	NTS	30,027	1,059		638	
17.	"K" Line group (1)	\$4,285	\$143	3.3%	\$36	0.8%
	Yen	571,014	19,049		4,758	
18.	A.P. Moller / Maersk Sealand (5)	\$9,237	\$303	3.3%	(\$39)	(0.4%)
	DKr	77,868	2,553		(329)	
19.	P&O Nedlloyd Container Line (6)	\$4,132	\$87	2.1%	\$31	0.8%
20.	CMA CGM	\$1,961	\$40	2.0%	\$25	1.3%
	euro	2,238	45		28	
21.	NOL/APL (1)	\$4,737	\$79	1.7%	(\$57)	(1.2%)
22.	Unigloiy Marine Corp.	\$642	\$9	1.4%	\$6	0.9%
	NTS	22,537	331		201	
23.	Cia. Sud Americana de Vapores	\$1,735	\$19	1.1%	\$26	1.5%
24.	Yang Ming Marine Transport	\$1,294	(\$13)	(1.0%)	(\$19)	(1.5%)
	NTS	45,412	(443)		(675)	
25.	China Shipping Container Lines (6)	\$940	n/a	n/a	(\$136)	(14%)
	Rmb	7,782	n/a		(7,123)	
26.	Trailer Bridge	\$62	(\$26)	(31.7%)	(\$29)	(36.4%)

Notes:

The operating profit is defined as profit from normal activities before finance (earnings before interest and tax). The results for "K" Line, MOL and NYK are for their financial year ended March 31, 2002.

(1) Denotes a diversified shipping group with substantial maritime transport activities other than liner shipping.

(2) The results are those of Evergreen Marine Corp., the listed arm of the group, not those of the entire group.

(3) The results for United Arab Shipping Co. are preliminary.

(4) CP Ships is the parent company of Canada Maritime, Cast, Lykes, Contship, TMM Lines and ANZDL.

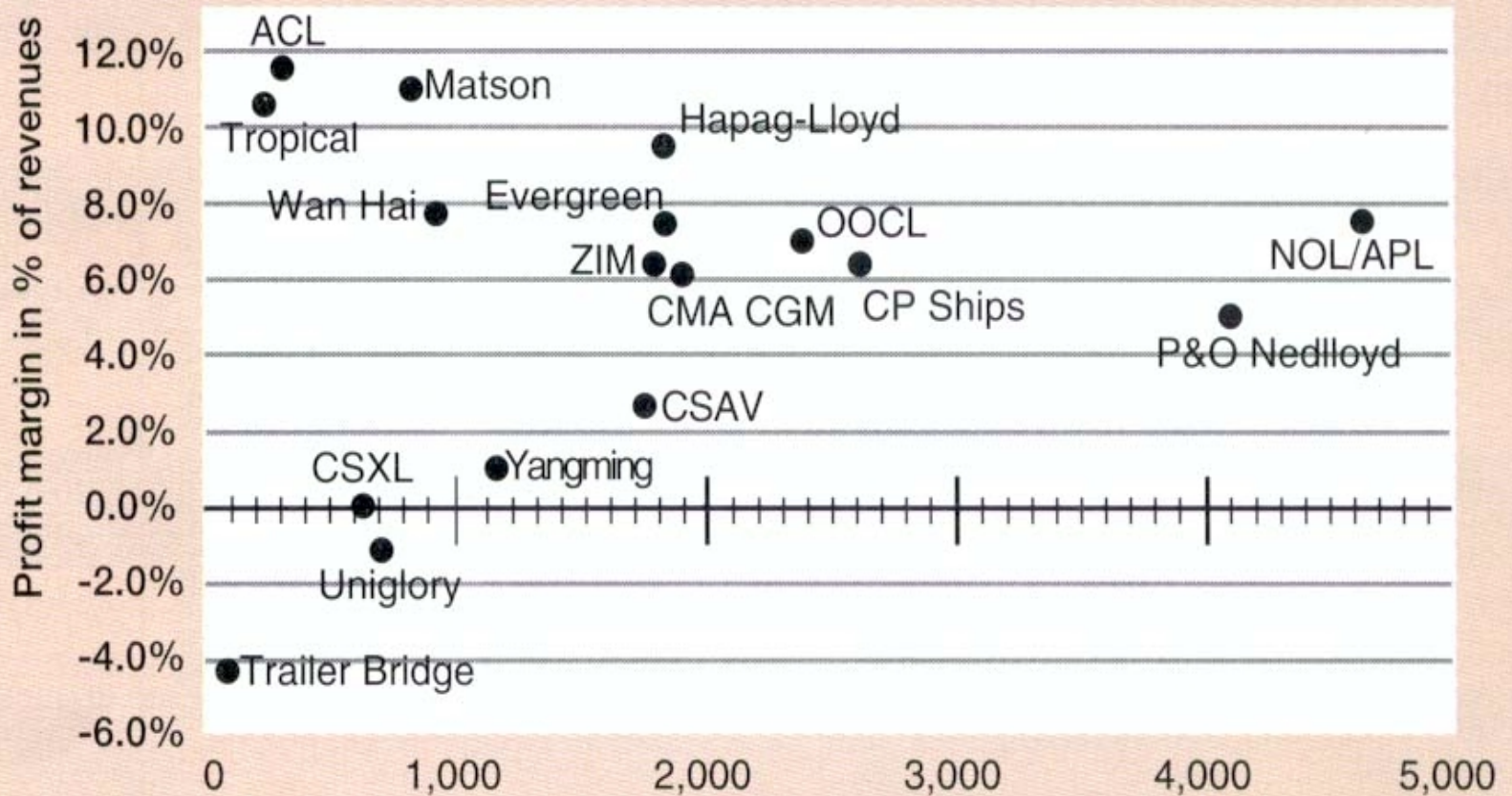
(5) The results for A.P. Moller / Maersk Sealand are those of the group's Tankers and Liners in Partnership unit. The figure shown under operating profit is the company's result before interest and depreciation, less depreciation and write-downs. Separate figures for Maersk Sealand are not published. A.P. Moller is also the parent company of Safmarine.

(6) The figure shown as net profit for P&O Nedlloyd and China Shipping are before tax.

Source: Global liner shipping database ComPairData at www.compairdata.com and carriers.

Carrier size, profit margins: No apparent effect

(Annual revenues for 2000 in \$millions)





AVERAGE ANNUAL PERCENTAGE CHANGE

	<u>Freight Rates</u>	<u>Operating Margins</u>
1996	-7%	NA
1997	-9%	NA
1998	-4%	4.5%
1999	0%	5.5%
2000	+2%	7.0%
2001	-5% (\$1,260 TEU)	4.5%

Source: American Shipper, 1997-2002



FACTORS THAT COULD AFFECT FUTURE CARRIER STRATEGIES

- SHIPBUILDING AND PORT SUBSIDIES
- “REAL-TIME” TRACKING
- SHIP AND PORT TECHNOLOGIES
- REDEFINING CUSTOMER SERVICE
- E-BUSINESS ACTIVITIES



Current & Emerging Technologies

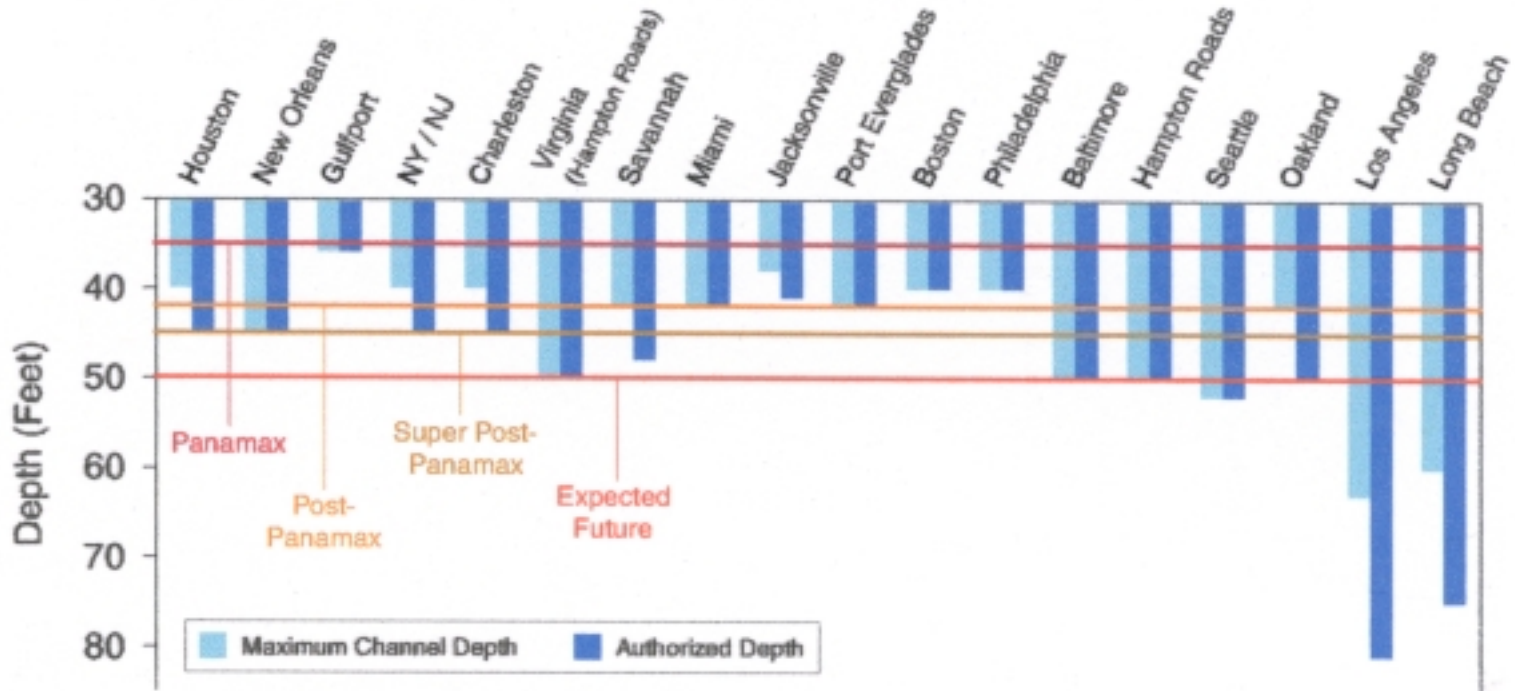
- MEGA-Containerships
- MEGA-Container Terminals
- Fast Containerships
- Integrated Computerized
- Logistical Systems
 - Identification Technology
 - Internet



Dimensions of Mega Containerships

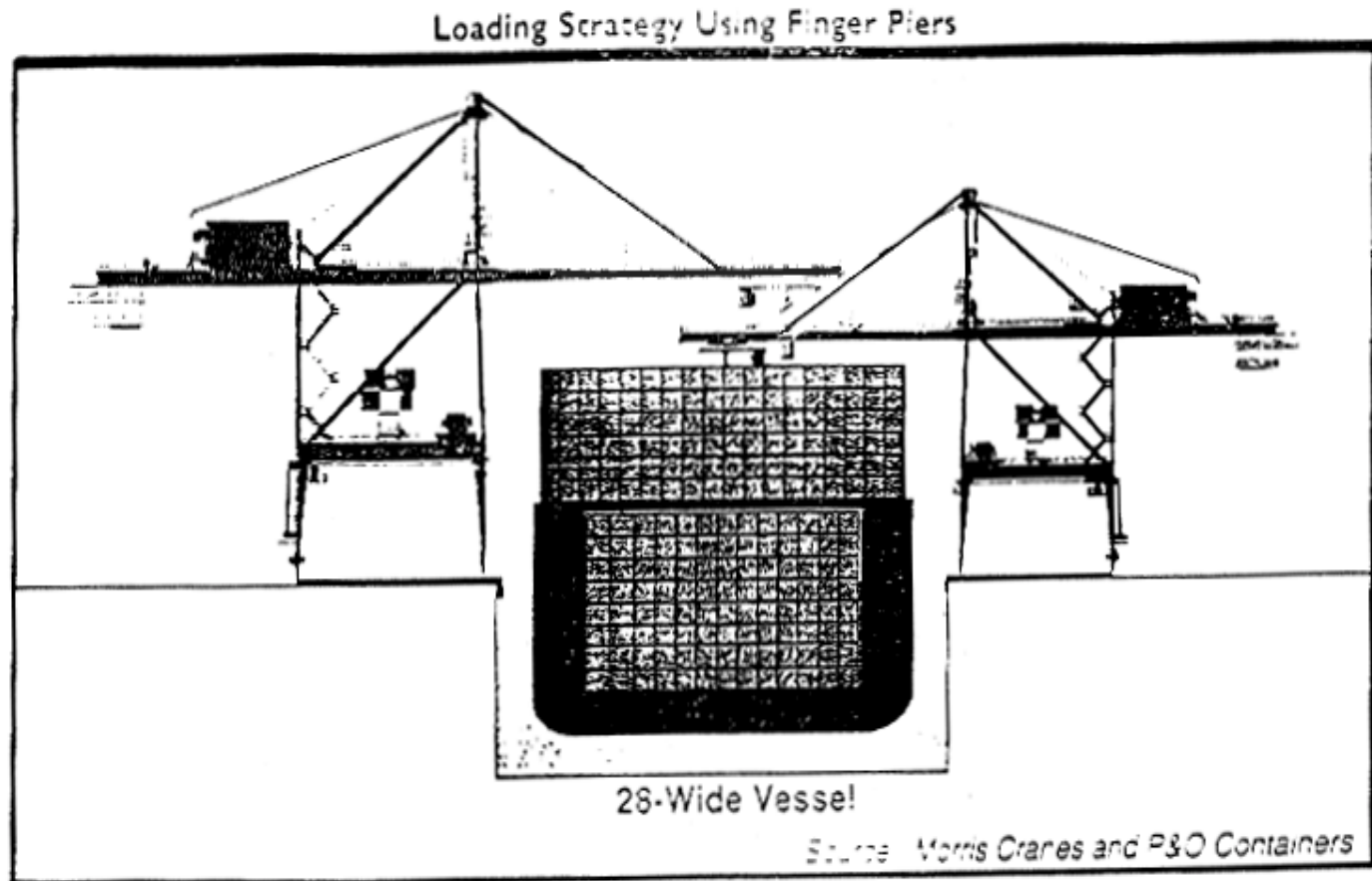
	TEU Capacity	Length Overall (Ft.)	Beam (Ft.)	Maximum Draft (Ft.)
HDW CS 5860	5,864	905	131	46
HDW CS 6800	6,800	1,000	131	46
HDW Proposed "Jumbo"	8,000	1,099	151	46
P & O "Flight of Fancy"	15,000	1,312	226	46
<i>Source: AAPA, HDW and P & O Containers</i>				

Figure 5 - Draft Constraints at Key Container Ports



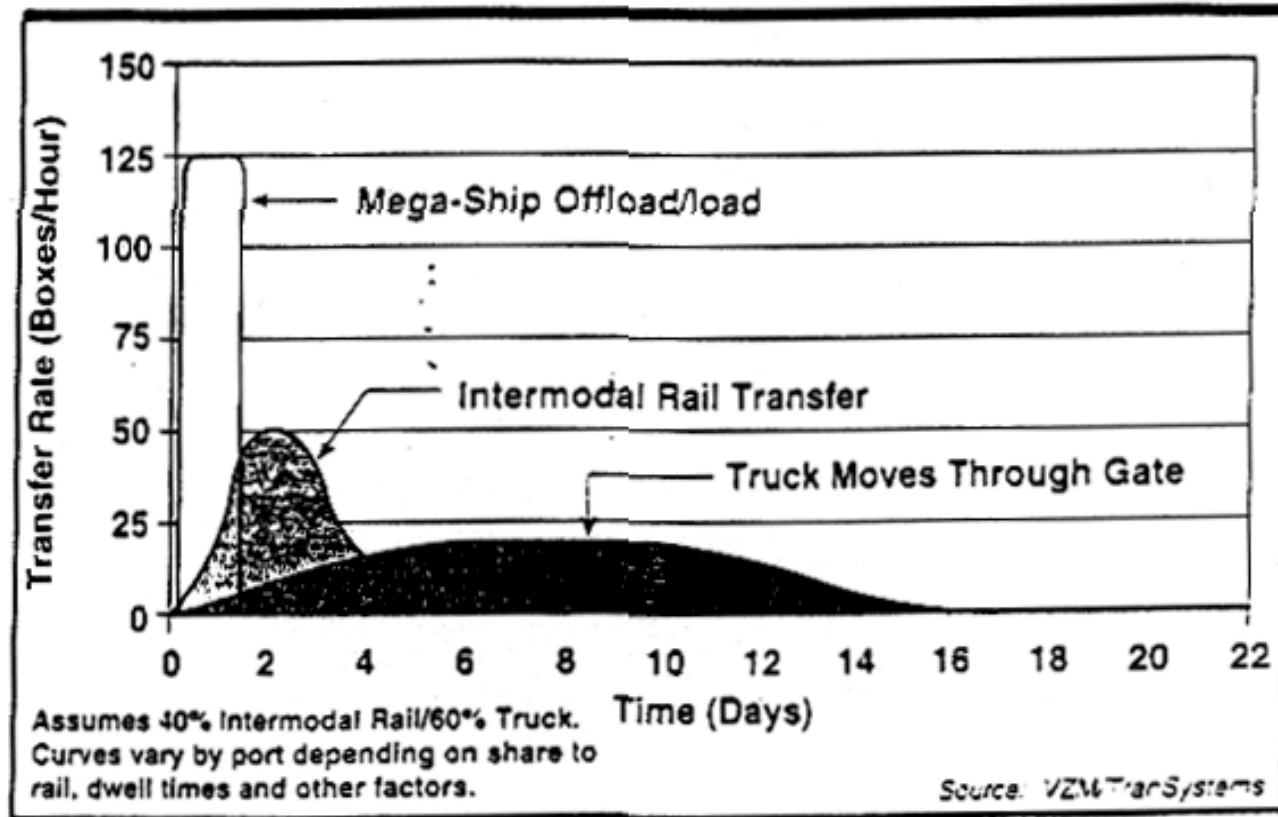
Source: JWD (Jordan Woodman Dobson)

Loading System for Mega Containership



Mega-Ship Terminal Peaking Characteristics

Mega-Ship Terminal Peaking Characteristics





FASTSHIP

- 1400 TEU
- 5 Gas Turbines
- WaterJets
- 30-40 Knots
- Patented Semi-Planing Hull Form
- Cargo Handling 4-6 Hours
- Rail-Based System/Dedicated Terminals
- Two Ports
- Halve Normal Door-To-Door Time
- Advanced Information Systems



INFORMATION TECHNOLOGY

- Identification Technology
 - Minimize or Eliminate Writing
 - Reduce Time
 - Reduce/Eliminate Errors
- DGPS
 - Locate Within the Yard
 - To & From Customer
- Integrate Computer Systems
 - Booking
 - Documentation
 - Customs
 - Terminal Operations
 - Billing
 - Interactive



REDEFINING CUSTOMER SERVICE

- “Drawing a Bigger Box Around the Business”
 - Bose JITII
 - Logistics Subsidiary Multi-Year Contract
- Key Success Factors
 - Control the Customer Interface
 - Target Market Segments
 - Taking Advantage of OSRA

E-business models in the Containership Industry

Types of e-Biz Model		Service	Examples	Current Status	Success Potential
Portal	<ul style="list-style-type: none"> . Early Portal . Carrier Portal 	. Providing market information, attracting users, and expediting business transactions among users	GT Nexus, INTTRA, CargoSmart.com	<ul style="list-style-type: none"> . Early portals went bankrupt . Carrier portals are being transformed into CTPs 	Low – Medium
E-Marketplace		<ul style="list-style-type: none"> . Providing a virtual meeting place for carriers and shippers . Charging commission for successful contract of container shipping service 	GoCargo.com GoReefers.com Interbox.com	<ul style="list-style-type: none"> . Severely hit by the dot-com crash . GoCargo.com went bankrupt . Only the e-marketplaces for managing containers survived 	Low
CTP (Collaborative Tool Provider)		. Providing internet-based software for seamless integration of logistics information among carriers and shippers	Celarix Descarte Vastera FreightDesk.com NextLinx	<ul style="list-style-type: none"> . Most popular e-business model . Sustainable even after the dot-com crash . Collaborating with carrier portals 	Medium – High
e-PSP (e-Procurement Service Provider)		. Offering internet-based trading platforms for carriers to procure ship supplies	SeaSupplier.com MarineProvider.com	. Relatively sustainable even after the dot-com crash	Medium
e-CSP (e-Chartering Service Provider)		. Providing internet-based trading platforms for chartering ships between ship owners and charterers	LevelSeas.com Shipchartering.com	<ul style="list-style-type: none"> . Relatively new e-business model . It remains to be seen whether or not it will be successful 	Low – Medium

Source: J. Auh



CONCLUDING COMMENTS

- **COMMODITIZATION**
 - Emphasis on Freight Rates
 - Megaships
- **SERVICE DIFFERENTIATION**
 - Possibly New Technology
 - Marketing Strategy & Service Approach
 - Finding Opportunities