

New Role of Busan Port & Strategy for Sustainable Growth

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I . New Era of Global Alliance

II. Global Carriers' Strategy

III. Busan Port Status

IV. Strategy for the growth of Busan Port

I . New Era of Global Alliance

1) Current Global Alliances

Alliance	2M	Ocean Alliance (OA)	The Alliance (TA)
Members	MSC, MAERSK	CMA CGM, Evergreen COSCO, OOCL	ONE, Hapag Lloyd HMM, Yang Ming
Market Occupancy (Y2022)	32.3 %	29.4 %	17.2 %
Alliance Coverage	North America, Europe, Atlantic	North America, Europe, Atlantic, Middle East	North America, Europe, Atlantic, Middle East, Asia
Alliance Period	2015 ~ Jan 2025	2017 ~ March 2027	2020 ~ April 2030
Termination	2-year Notice (Y2023)	1-year Notice	1-year Notice

└ (Jan. 2025)

└ (Apr 25th, 2024)

2) New era of Global Alliance is expected with the end of 2M and the CBER extension

: Current Alliance structure might be weakened and new form of cooperation with slot exchange is expected.

I . New Era of Global Alliance

○ Decarbonization & New-building Order

1) Major carriers' New-building Order : LNG vs Methanol

Fuel Carrier	LNG	Methanol	Ammonia	Hydrogen
MSC	63	•	•	•
MAERSK	•	19	•	•
CMA CGM	45	24	•	•
COSCO	•	9	•	•
Hapag Lloyd	12	•	•	•
HMM	•	9	•	•

■ LNG
■ Methanol
■ LNG + Methanol
(Source : Clarksons Research 2023.04)

2) Global Carriers and Ports are taking actions for Decarbonization

- Carriers are using more Bio-fuel (30% of Decarbonization)
 - Hapag-Lloyd's retrofit of an LNG vessel (1-vessel)
 - Maersk's retrofit of a methanol vessel (total 11-vessel scheduled from 2024)
- Green Port : Eco-fuel facility, AMP(Alternative Maritime Power), Slow Steaming Zone, etc

II. Global Carriers' Strategy

○ Fleet expansion and Strategic Business Differentiation

1) Global Top Carriers : New-building order, Investing on logistics sector, Strengthening Strategic Partnership

(As of Sep. 2023, Unit 10,000TEU)

Carrier	Fleet (TEU)	Current On order	Market Share	Business Differentiation	Details
MSC	679	531	19.1%	Fleet expansion Focus on Shipping Business	- Launched MSC Air Cargo - Took over Logistica, Bollore Group
		148			
MAERSK	455	415	15.0%	Expanding to Total Logistics Service	- Launched Maersk Air Cargo - Took over LF logistic, Visible SCM
		40			
CMA CGM	470	350	12.7%	Fleet expansion Reinforcing Air Logistics	- Launched CMA CGM Air Cargo - Took shares of CEVA Logistics - Took over Spanish Continental Rail
		120			
COSCO	388	297	10.7%	Expanding to Total Logistics Service	- Took shares of COSCO shipping logistics supply chain
		91			
Hapag Lloyd	215	187	6.8%	Expanding investment on terminal sector	- Took over SM SAAM Port & Logistics
		28			
ONE	215	168	6.1%	Major shareholder of SEASPAN Corp (1903 TEU)	- Took over three terminals at Rotterdam and US West Coast
		47			
HMM	105	79	2.9%	Under company sell-off Bulk fleet expansion	- Plan to order (Bulk ship)
		26			

(Source : Alphaliner 2023.09)

2) Fleet rearrangement is expected to cause the supply increase on the Intra services.

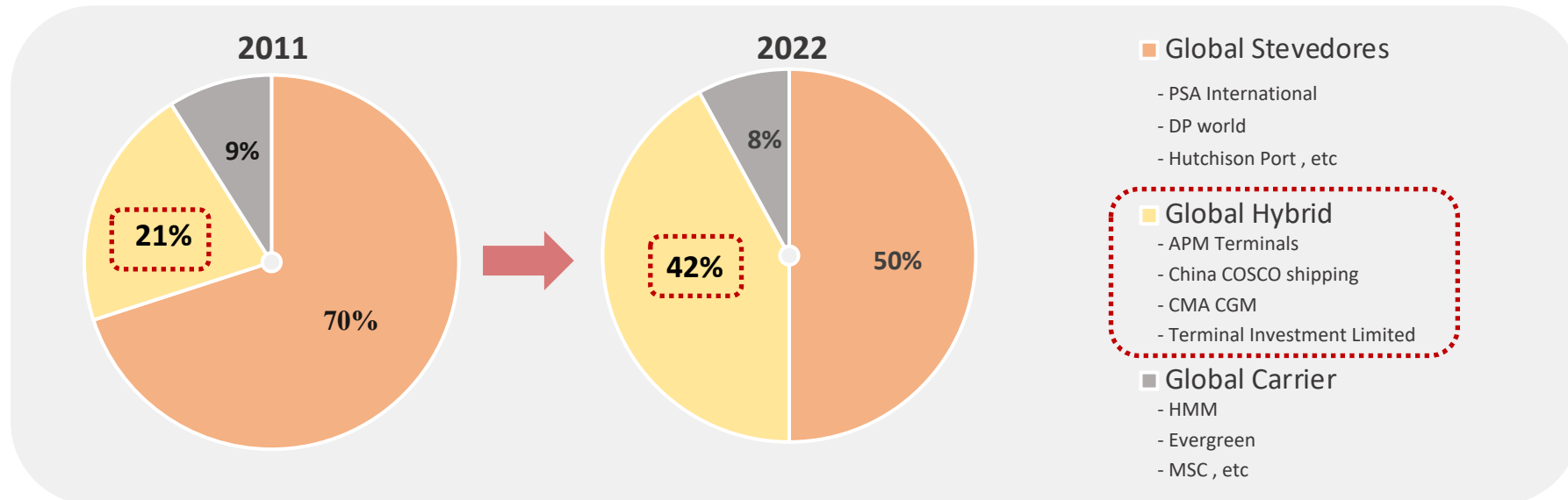
- Global Carriers : Alliance functions weakened reinforcing Hub & Spoke Network
- Local Carriers : Calling Non-hub ports or increasing direct service connecting Out Ports

II. Global Carriers' Strategy

○ Asset Terminal or Terminal Equity purchase at Major Hub Ports

- 1) Carriers competition shall reinforce the **Hub & Spoke strategy**, which will make the role of **Transshipment Port** more important.
→ Competitiveness of Busan Port needs to be reinforced to attract more T/S volume from global carriers.
- 2) Ports need to provide **infra for General Logistics Activities** as ocean carriers transform into Total Logistics Solution Provider.

[Total Throughput by Operators' Type]



(Source : Drewry Maritime Research 2023)

III. Busan Port Status

○ Global No. 2 Transhipment (T/S) Port

- 1) Busan Port recorded over 21 Mil. TEU during latest 5 years (Volume growth during COVID era)
- 2) T/S took 54% while Local(Import & Export) took 46% in 2022.

(Unit : 1,000 TEU)

Year	Y2018	Y2019	Y2020	Y2021	Y2022
Local	10,233	10,354	9,803	10,433	10,051
(Portion)	47%	47%	45%	46%	46%
T/S	11,429	11,638	12,020	12,275	11,571
(Portion)	53%	53%	55%	54%	54%
Total	21,662	21,992	21,823	22,708	21,622

○ 3 Alliances (2M, TA, OA) took 78% of total Transhipment

(Unit : 1,000 TEU)

Y2022			
Alliance	Local	T/S	Total
2M	1,005	3,482	4,487
TA	1,920	3,771	5,691
OA	1,216	1,804	3,020
Alliance Total	4,141	9,057	13,198
Busan Port Total	10,051	11,571	21,622
(Portion)	41%	78%	61%



Additional Transhipment volume attraction from Alliance members are the key for sustainable growth of Busan Port

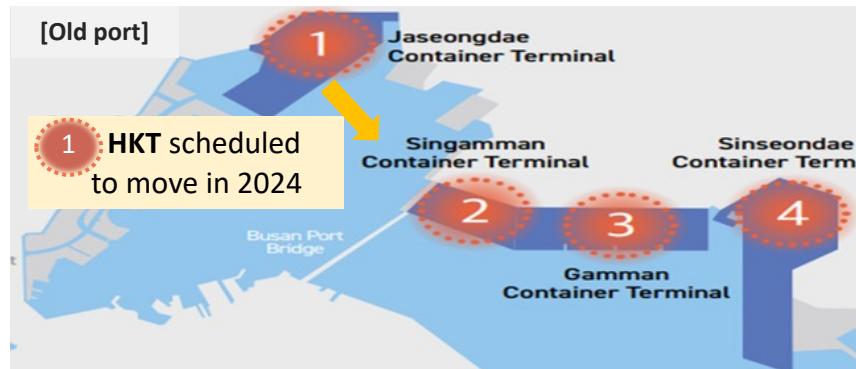
III. Busan Port Status : How to attract additional Transshipment

○ ITT(Inter Terminal Transportation) challenge for additional Transshipment

1) Y2022 recorded 21% of Other Pier Transshipment (4.5 Mil. TEU) out of total 21.6 Mil. TEU handled in Busan

→ Carriers pay additional cost for ITT(Inter Terminal Transportation)

2) Terminal Rearrangement Plan



→ Old Port shall have 2 Terminals (BPT, HKT) with the move of DPCT to New Port in 2024



→ New Port shall have 7 Terminals with the partial opening of DGTB (phase 2-5) in 2024

3) How to attract additional T/S volume to Busan Port

1. More incentives to carriers to compensate the additional ITT cost
2. Recommend to have the operations integration among unit terminals
3. More opportunity of Global carriers to have terminal equity or development in Busan new port

IV. Strategy for the growth of Busan Port

○ Acceleration to Global Logistic Hub System (Port + Air + Rail)

- 1) Consolidation of Port function into Busan New port
- 2) Development of Jinhae New port (21 berths) from year 2030
- 3) Logistics parks from Busan new port are being delivered and constructed
- 4) Opening of Ga-deok New Airport scheduled in 2030, 5.5km away from Southern Container Terminal of New Port

→ Busan port shall invest and grow as Global logistics Hub along with new technology



IV. Strategy for the growth of Busan Port

○ Terminal Automation to accelerate securing port competitiveness

(Automation Level per terminal)

Operations Process	Old Port	New Port						
		PNIT (Pier 1)	PNC (Pier 2)	HJNC (Pier 3)	HPNT (Pier 4)	BNCT (Pier 5)	BCT (Pier 6)	DGTB (Pier 7)
Stevedoring (QC)	Manned	Manned					Remote-controlled	Remote-controlled
Berth to Yard Transportation	Manned	Manned (Yard Tractor or Straddle Carrier)					Manned	Automated
Yard Stacking (ARMGC)	Manned	Remote-controlled					Automated	Automated
Opened	1978 (HKT) 1991 (BPT Sinseondae) 1998 (BPT Gamman)	March 2010	Jan. 2006	Feb. 2009	Feb. 2010	Jan. 2012	June 2022 (Full operation)	2024 (Scheduled)

※ Fully Automated Overseas Ports : Rotterdam(Y2015), Shanghai(Y2017), Qingdao(Y2018), Long Beach(Y2021)

✓ Current remote-controlled or automated process should be further improved and accelerated.

✓ BCT opened in June 2022 and it took more than a year to stabilize operations

Key factors for successful stabilization of automated operations are :

- (1) **Specialized job-training** for operations manpower for automated equipment & system
- (2) **Domestic equipment manufacturers and technicians** for automated equipment & system

Beyond Satisfaction

