# Re-consideraton of Rail Logistics of Port : Development and Optimization of Jinhae New Port

**2024 BIPC**

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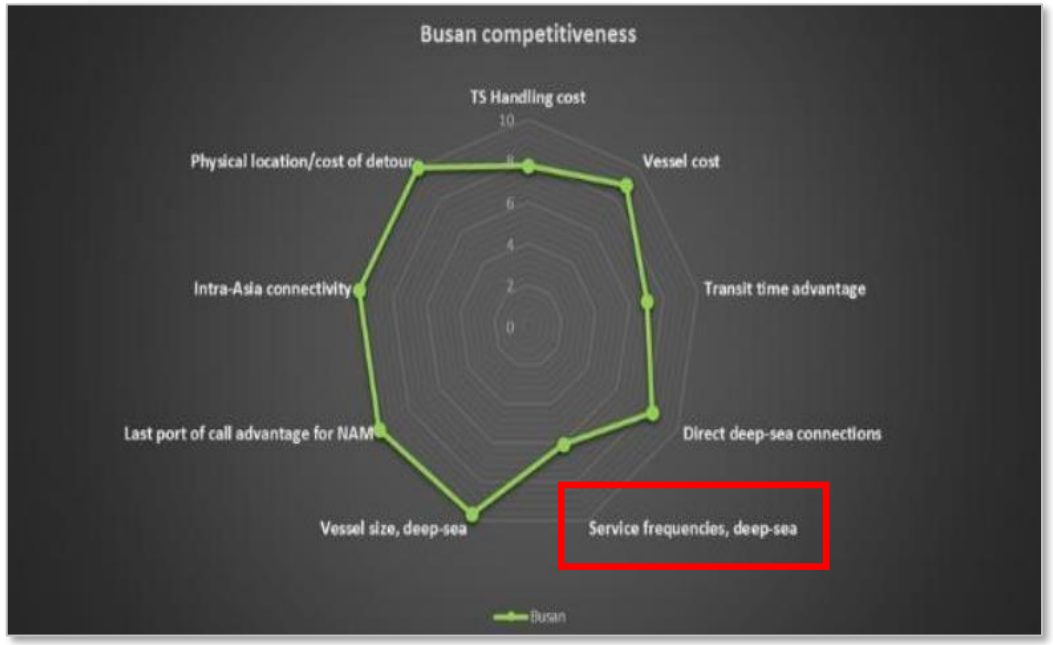
# 1-1. Purpose

## 1.Purpose of re-modeling




Graph for competitiveness of Busan Port

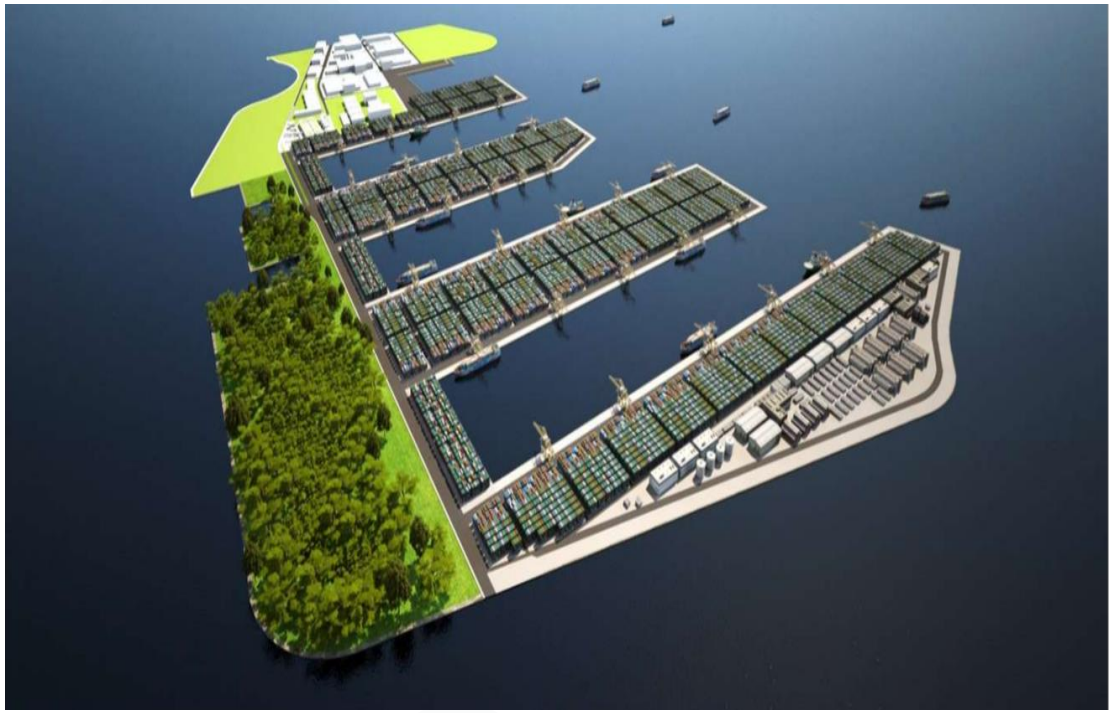
Service frequencies, Deep sea: **6 out of 10**

- **Even 52.7% of transportation quantity is for transshipment, System of Busan port is not optimized.**

- Optimization of transshipment logistics is necessary for Busan Port to be a world-class port and have an advantage over other ports.

# 1-1. Purpose

## 1.Purpose of re-modeling



**Singapore –**
**TUAS Mega Project**


### STRENGTHENING THE ECOSYSTEM

Singapore's maritime cluster comprises the **twin pillars of Hub Port and International Maritime Centre (IMC)**. As the world's largest container transhipment hub and the world's leading bunkering port, it is supported by a strong ecosystem of port services. In addition, Singapore's IMC consists of a diverse group of international players, and is home to over 170 international shipping groups, over 30 leading international shipbroking firms, over 30 law firms with shipping practices, about 20 international banks with shipping portfolios, and 10 IG Protection and Indemnity Clubs. This diverse ecosystem includes the major stakeholders involved in the maritime AM supply chain – classification societies such as the American Bureau of Shipping, Bureau Veritas, Lloyds Register, and DNV, international ship managers with presence in Singapore, and about 330 ship chandlers/ suppliers.

**Timeline**

| | |
|---|---|
| 2012 | Then-Minister for Transport Mr Lui Tuck Yew announced the long-term plan to consolidate Singapore's container port activities at Tuas. |
| 28 Feb 2015 | Commencement of reclamation works for Tuas Port Phase 1. |
| 7 Mar 2018 | Commencement of reclamation works for Tuas Port Phase 2. |
| 3 Oct 2019 | PM Lee at PSA Bicentennial Event and Groundbreaking Ceremony for Tuas Port. |
| 30 Nov 2021 | Completion of reclamation works for Tuas Port Phase 1. |
| Dec 2021 | PSA commences operations of the first 2 berths in Tuas Port Phase 1. |

# 1-1. purpose

## 1.Purpose of re-modeling

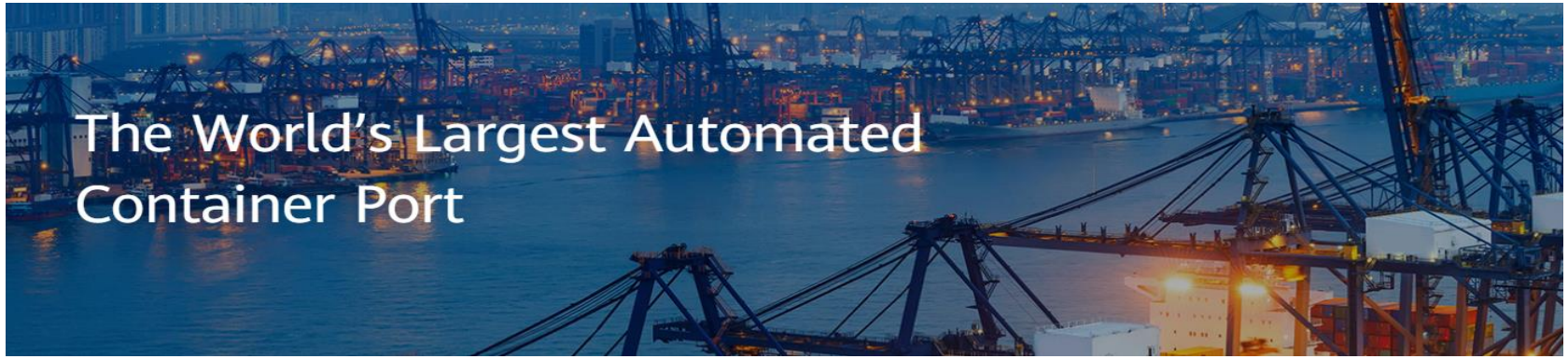
HUAWEI

京东物流 JD Logistics

xiaomi

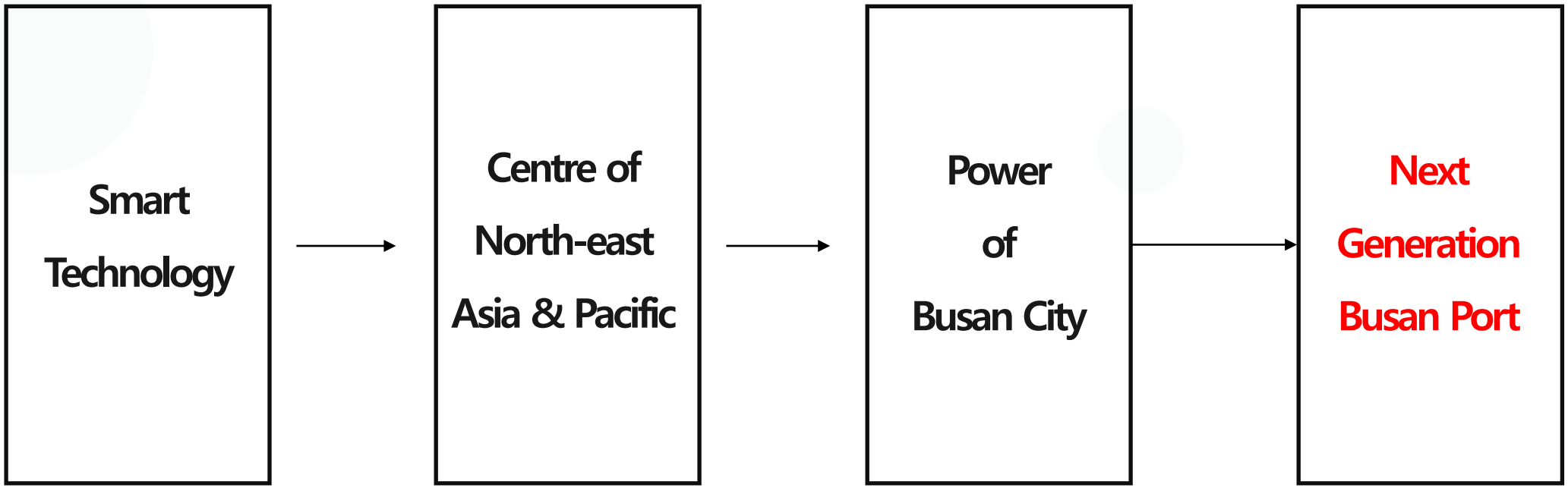
**China –**
**Tianjin, Shanghai, Ningbo**





# 1. Purpose

**[How about Busan?]**




## Railway Logistics Plan

# 2. Business Model

2.1 Infrastructure

2.2 Maintenance

# 2-1. Infrastructure


[사진 = 부산항만공사 (2023.08.). 2023 BPA 브로셔 국문]

**1 - Track**

1->6 Terminal (Up) 6->1 Terminal (Down)

**Railway : 2**

(Internal Track / External Track)

**Number of Tram : 2 ~**

12HR On / 12HR Off

Depends on Situation

**Station : 1 station per 1 terminal**

**Charge station & Base**

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# 2-2. Maintenance

| | Track | Maintenance of Container | Workforce |
|---|---|---|---|
| way | • At least 1 stations for each terminal. Operates 1,2 rail line that circulates all terminals. | • Minimize hesitation & waiting for carriers<br>• Application of an automatic customs clearance system through QR and iOT systems. | • manager for Cell Guide & container maintenance, safety<br>• Administrator of Data and Control Centre. |
| Tech | • H2 Container Tram<br>• H2 Fuel charge system<br>• Railrway maintenance<br>• MOU with KORAIL. | • Optimizing Algorithm Development<br>• Smart logistics system (iOT, QR)<br>• One-way Custom system | • Port and IT Technology Training Course Supporting universities in Busan<br>• with a major in port logistics |

# 2-2. Maintenance

## Emergency Shut Down (ESD)

If tram has any problem for operating , the ESD system The ESD system automatically stops the train and activates the safety device.

## Adaptive Auto-Driving

Trams are automatically driven without the need to have an engineer on board.

## AI Logistics Managing System

This program automatically calculates data such as the volume of goods and the entry and exit of ships. After that, an optimized cargo plan is presented to the manager.

## Self-estimating system for tram

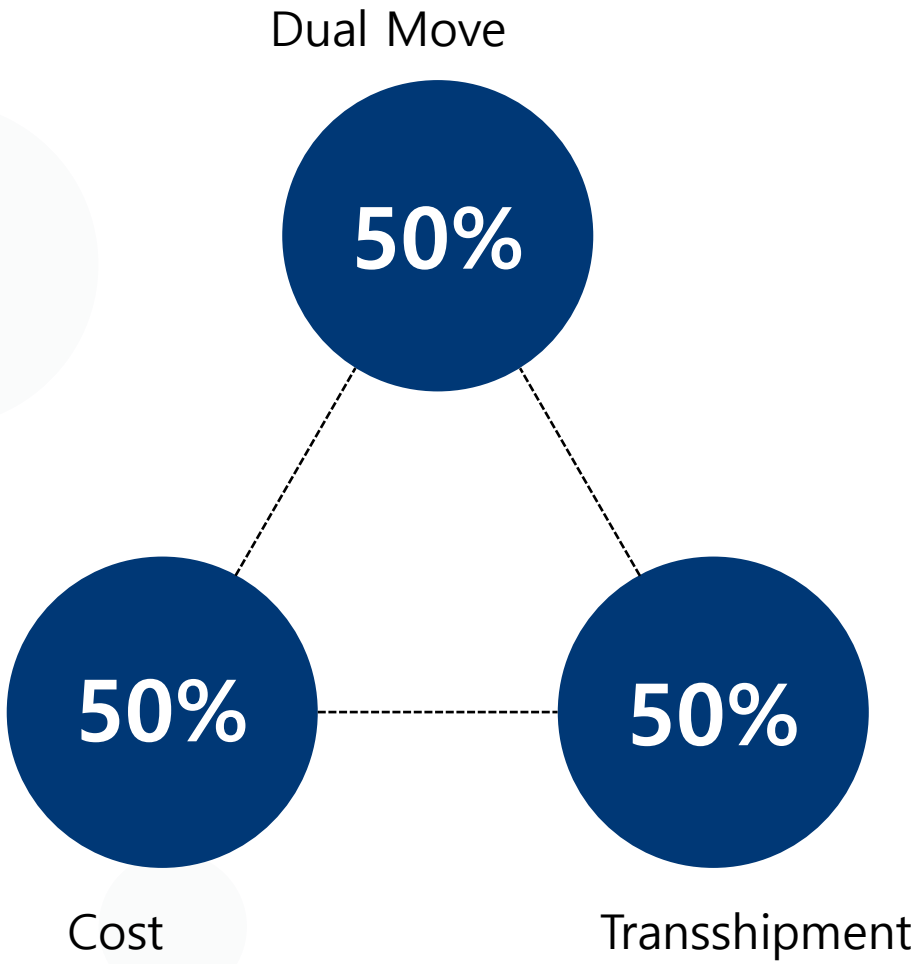
Automatic report to the administrator if the tram needs to be maintained and repaired.

# 3. Agenda for 3D Development

3.1 3.50 AGENDA

3.2 3D Suitability

# 3-1. 3-50 AGENDA




- Dual move rate of Current Transshipment Program : 36%

➔ Enhance to 50%

- Estimated amount of logistics at Jinhae new port : 10M

➔ Estimated target amount of Rail-logistics : 5M

- Target cost compared with container truck

➔ 50% of truck cost

# 3-2. 3D Development Suitability

**1D** Digitalization through Unmanned Automation & Big Data System

**2D** Decarbonization through hydrogen fuel-based cargo tram operation

**3D** Diversification to Rail-Logistics, IT & other Business

## Goal

**Differentiated Transshipment Cargo Efficiency Strategy in Busan Port**
**Branding original transportation system of Busan Port**
**Numerous added values through the formation of Busan Port Cluster**

# Thank you