Integrating development of multi-modal transportation and logistics infrastructure in medium-sized cities in Vietnam: case study in Danang

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- Infrastructure capacity deficiency in Vietnam medium-sized city
- Case study of Danang:
  - General Overview of Danang situation
  - Danang SWOT analysis
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- Conclusion and Recommendation

Overview on integrating multi-modal transport and logistics service

Multimodal transport refers to the transportation of goods by at least two different modes of transport (such as road, rail, air or inland waterway, and short- or deep-sea shipping) as part of the contract where often a multimodal transport operator (MTO) is responsible for the performance of the entire haulage contract from shipping to destination (UN, 1980)

- Logistics industry is the major economic connection going through the whole chain of goods production and distribution.
- Logistics acts as the essential element to push the economic development at regional seaports, international gate in order to improve the operation capacity and efficiency in the seaport as well as other transportation modes.
- Logistics service plays the key role in efficiently operating maritime and other transportation modes.

Overview on medium sized cities in Vietnam

- Accelerating urbanization: 27% (2005) to 40% (2030) and further increase for long to 60% to 70%
- Increase in the number of MSCs: currently 19 cities with population of more than 250.000 to the number of 100 by 2025.
- Importance of MSCs for sustainable and balanced urban/regional development
- MSCs are not provided with adequate support mechanism for their sustainable growth
- Lack of capital leads to non-synchronization in transport networks, causing difficulty in connecting transportation modes, as well as negative influence on smooth flow of logistics and supply chain.

Summary of City Visits

The short review over transport and logistics system has been conducted in 2014:

- All cities expressed interests in participating this attempt in expectation that MOC can help MSCs to access funding sources.
- At present, urban transport and logistics infrastructure of MSCs in general is relatively well provided, though they claim lack of budget for investment and maintenance as well as human resources.
- Resettlement and compensation costs are getting high.
- Knowledge on logistics service and logistics infrastructure at the management and operation levels are both rather limited.

Summary of Main Problems facing MSCs

- Traffic congestions are yet limited. Flooding/drainage, traffic safety and parking are main problems.
- Logistics infrastructure:
  - Freight transportation depends much on road network
  - Lack of mordern and advanced logistics infrastructure and facility
  - Lack of intermodal transportation system
  - 10-60% of urban roads including national, provincial and city roads are in poor surface conditions.
  - Road hierarchy is unclear in many cities. In some cities, urban and inter-city traffic are mixed in urban areas
  - Maintenance is lacking in all cities.
- Communication network and IT application:
  - Internet and communication network has been developped in almost MSCs
  - Most of enterprises combine IT and manual measurements in logistics management system. The highest ratio of IT application is in the field of order management.
- Resettlement is becoming increasingly a serious concern.
- Funding is insufficient and unstable for infrastructure development.

Gap in Planning and Management Capacities

- All cities suffer from lack of adequate capacities both in planning and management.
- Lack of budget is the number one constraint followed by human resource.
- Construction Plans are mostly prepared by VIAP. Cities assess the plans are too big to be implemented and do not indicate implementation strategies. More intensive involvement of cities stakeholders is considered necessary.
- For logistics planning development and management, cities need to increase staff considerably in all steps (policy formulation, planning, budgeting, project preparation and appraisal, implementation, maintenance and monitoring). On-site training is also needed.
- Need for coordination mechanism between city and province on planning and management activities, as well as establishment of standard and norms on capacity building

Need for appropriate policy and investment framework for logistics and infrastructure provision for MSCs

Strategy for Logistics infrastructure development

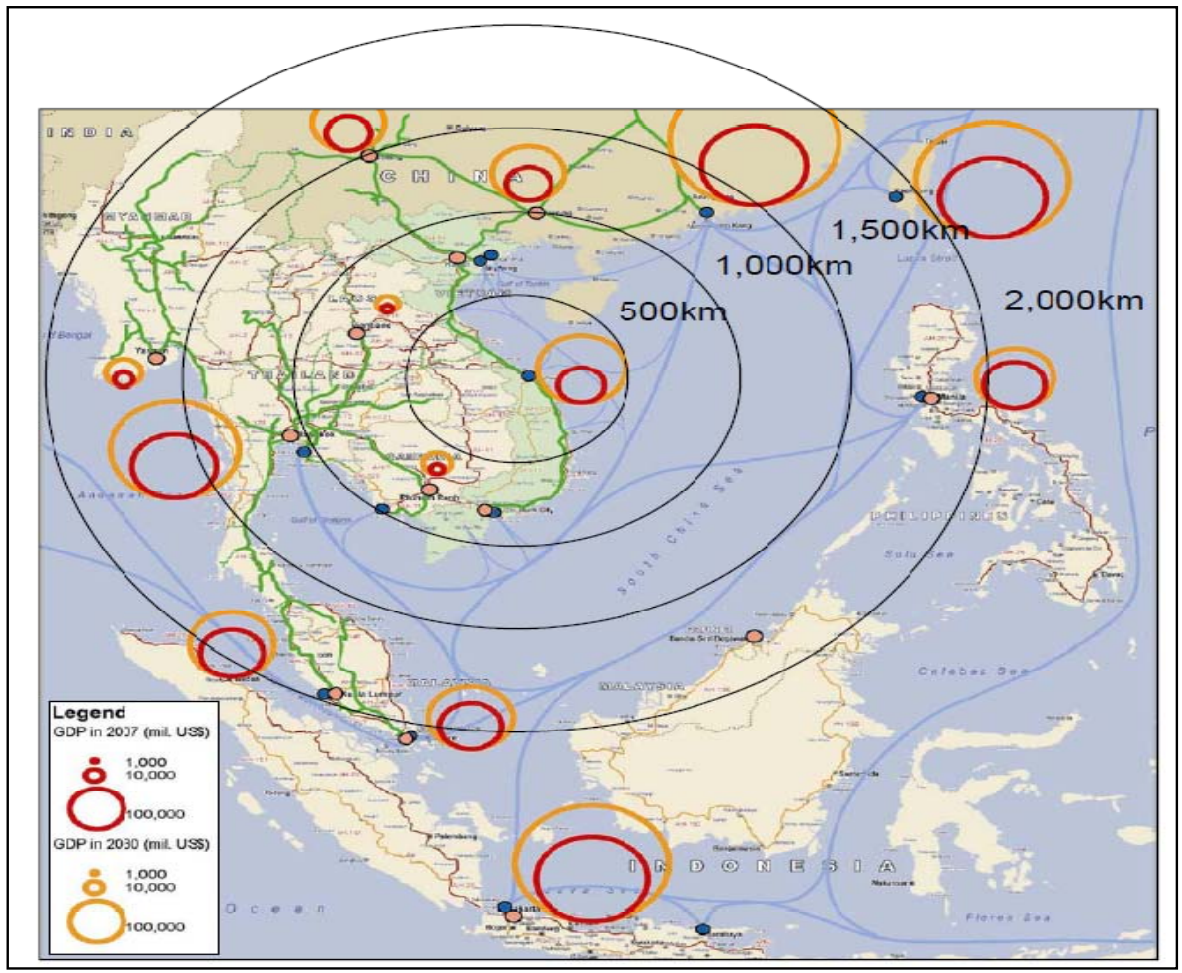
Issues	Recommendation	Action Plan	Priority
Logistics infrastructure quality			
1. Limited capacity of marine ports	Investment on seaport infrastruture Enhancing capacity of communication and IT application in ports management Ensuring seaport connection with national logistics system	• Developing and applying managing ports and port groups with IT in some pilot ports • Further developing the system in other gate seaports	High Medium
2. Limited capacity of inland waterway	Improving inland waterway network	• Upgrading inland waterway ports and improving multi-modal connection	Medium
3. Limited capacity of road network	Enhanicing capacity and improving standards of road transport system	• Controlling the axle loading capacity • Applying road certification	High High
4. Limited capacity of railway system	Improving national and local railway system	• Improving the management of railway freight transportation • Determining double railway network • Designing and using the system of monitoring freight and wagon. • Centralized controlling trains	High High Medium Medium
5. Lack of interconnection and mordern logistics infrastructure and facility	Mordernizing and extending local port Developing logistics centers/parks to improve the logistics system Improving connection and modernizing national distribution network	• Developing regional logistics centers/parks • Establishing distribution centers at national, regional and local levels • Implementing master plan of multi-modal transport and logistics network	High High High

Case Study of Danang

- Danang locates in the centre of Vietnam, with the population of more than 1mil.
- Danang has ample opportunities to grow to a truly competitive hub for socio – economic activities at national and international levels through much enhanced strategies to tap its potentials of the city as well as CFEZ.
- The study is the basement for Danang PPC to take into consideration and make decision on plans and projects to develop logistics fields, aiming at:
  - Establishing the chain of logistics services in the Central Economics Focal Zone, with Danang city as the Logistics Hub;
  - Danang port is acting as the gate of logistics chain into ASEAN and APEC countries;
  - Developing a comprehensive and interconnection logistics network for Danang and surrounding area.

Danang city in the Region

Distance of Major Growth Centers from Danang City



Sources: Base map from JETRO's ASEAN logistics roadmap, GDP from ASEAN Secretariat data for 2007, and VITRANSS 2 estimates for 2030

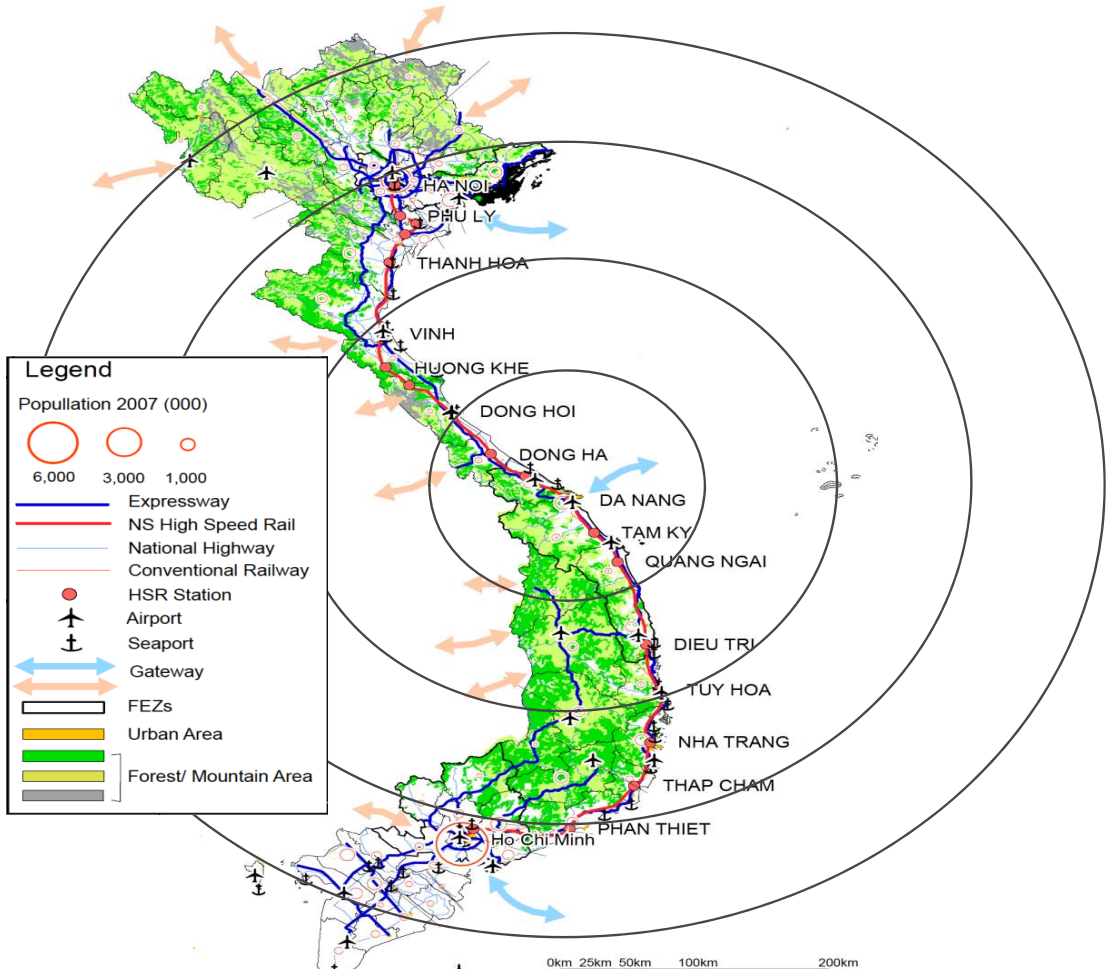
Danang city in the Region

Location in GSM

Sources: Base map from JETRO's ASEAN logistics roadmap, GDP from ASEAN Secretariat data for 2007, and VITRANSS 2 estimates for 2030

Danang city in the Region

Location in Vietnam



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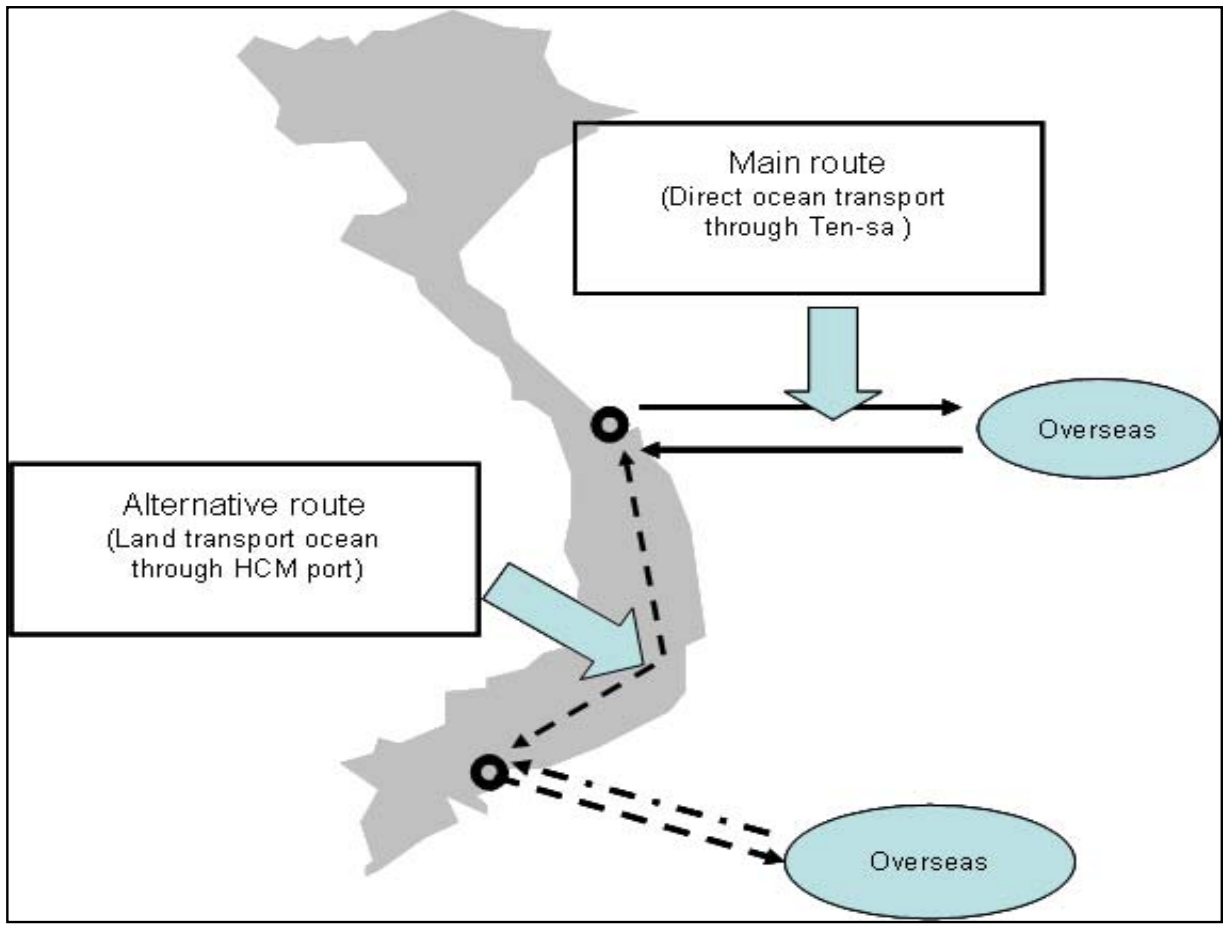
Cargo Flow from Central Region



- Low frequency
- Few direct service
- Unavoidable transshipment at other ports, resulting in long transit time
- The high risk of skipping for vessel arrival
- High ocean freight

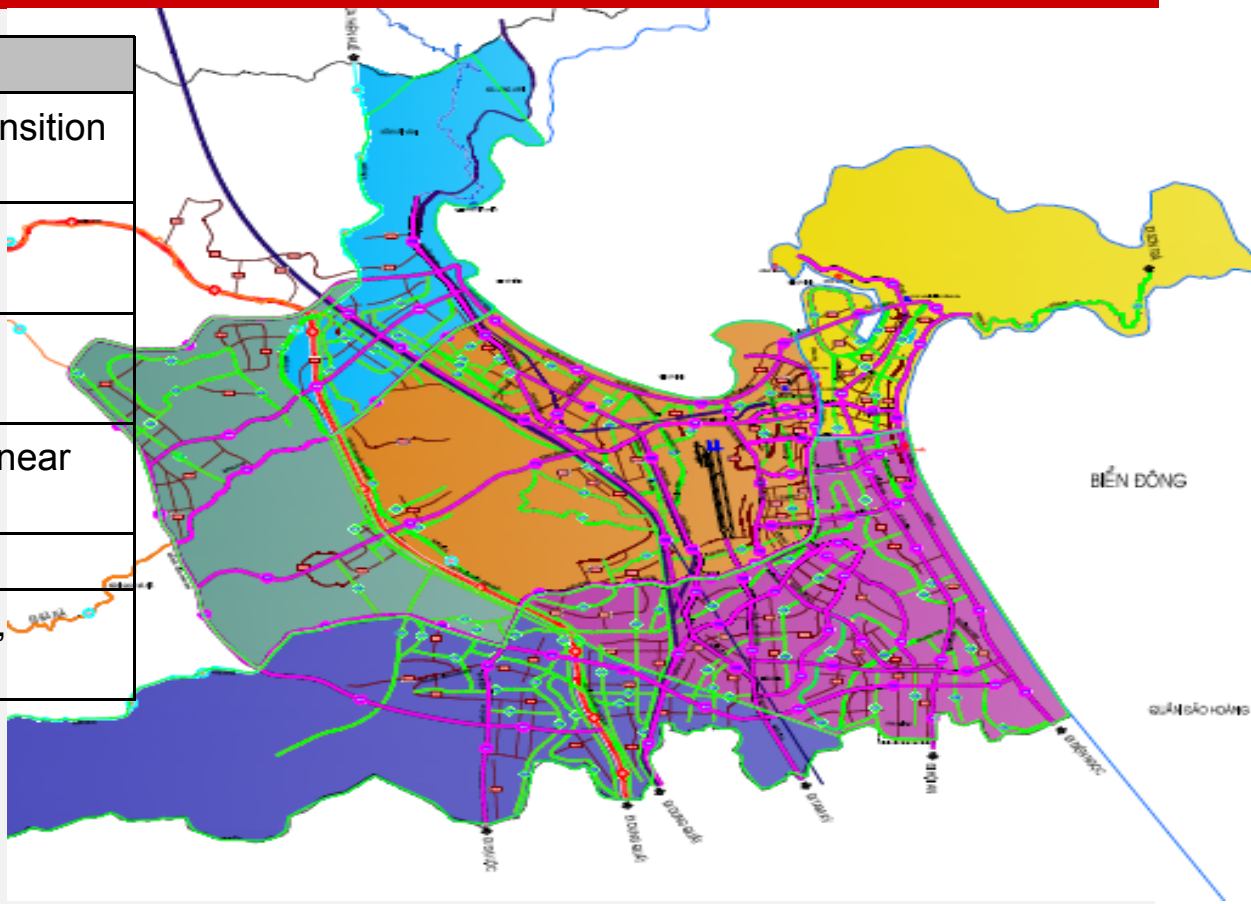
Source: VITRANSS 2, 2010

Requirement for the system standardization

- Danang aims at 3PL logistics service in 2020
- Standardizing full logistics service:
  - The logistics center can fully connect with transportation infrastructure.
  - Good access to main seaports, airports and railway stations.
  - Attracting high volume of export-import containers.
  - Providing new logistics services.
  - Efficient customs service (electronics);
  - Gathering customers with the high demand for 3PL service (FDI and industrial zone enterprises)
- Objective categories of logistics system:
  - Import and transit cargos (in both directions) through seaports, railway, road and airline, aiming at container;
  - Danang export cargo, mainly focus on aquaculture and industrial products

Urban zoning

No.	Zones	Main functions
Z1	Liên Chiểu Port	Supporting export - import and transition cargo transported by seaport
Z2	Industry and warehouse	Importing materials and exporting finished products
Z3	Central urban area	Logistics for house-hold goods
Z4	New urban area	Logistics for house-hold goods in near future
Z5	Tourist area	Logistics for tourists
Z6	South agricultural area	Importing materials for agriculture, exporting finished products



SWOT analysis

- **Strength:**
  - Danang lies in the strategic location, connecting transportation corridors of North-South and East-West, connecting inland countries with the ocean.
  - In Danang, there is development of all transportation modes, including marine, airway, railway and road, with comfortable conditions to develop multi-mode transportation, in order to highly support logistics development.
  - In recent years, Danang paid a lot of attention into improving transportation infrastructure, especially road and seaport network, as well as communication system.
- **Weakness:**
  - Marine transportation still cannot take full advantages, marine master plan cannot attract big ships in long distances
  - Lack of multi-modal connection with transportation and warehouse system, lack of standardized chain and network connection
  - Poor road transportation with few providers with big truck and services in big area;
  - Most of logistics suppliers just provide single services, the service of 3PL has not been reached; the service is unreliable and unforecasted for the freight forwarding.
  - Lack of well-educated human resource for managing logistics and supply chain;
  - Low rate of IT application in service logistics providers with the expensive international communication.

SWOT analysis

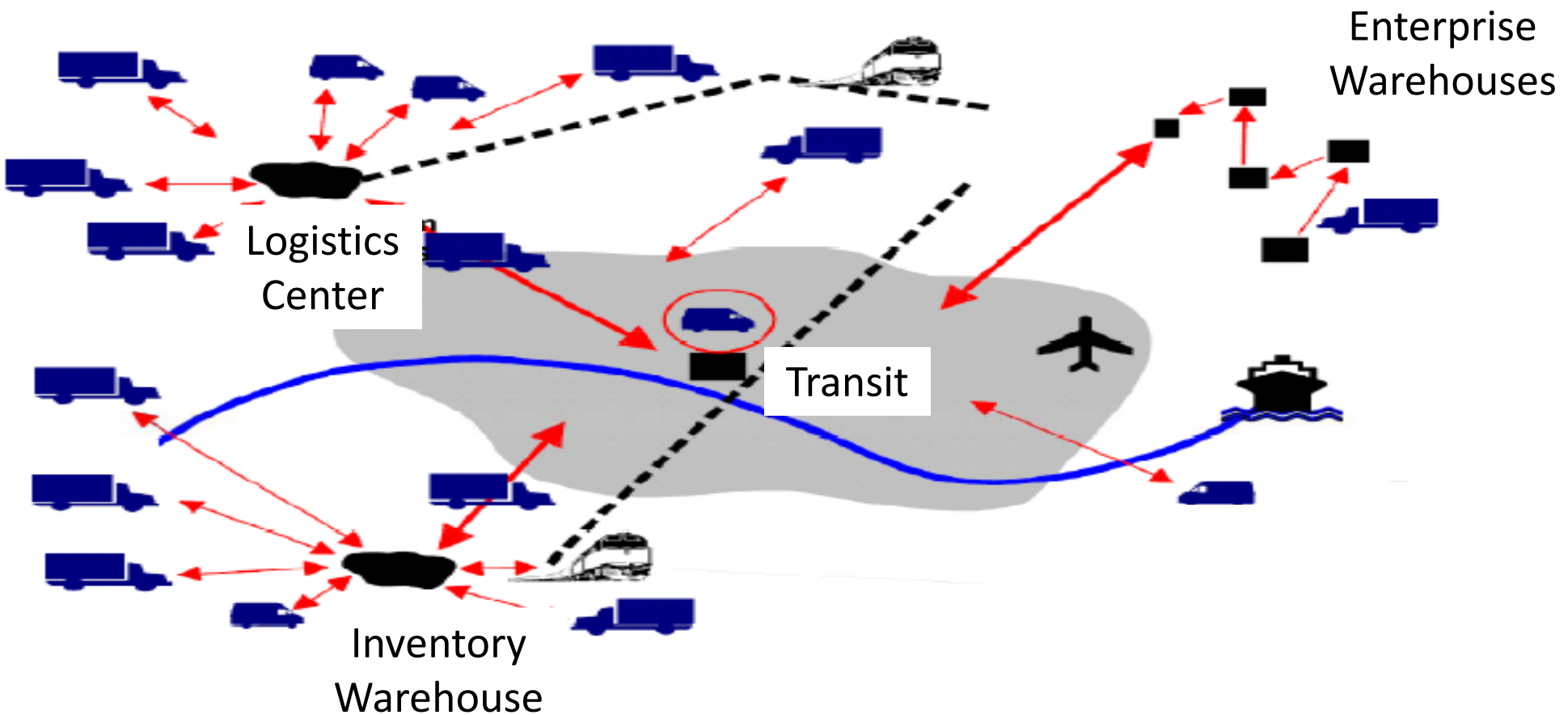
- **Opportunity**
  - Avalaible mordern and advanced logistics facility can reduce the pressure (temporarily) and provide chances for potential logistics industry to develop
  - The high demand for logistics service in the region and surrounding
  - Việt nam becomes a WTO member
  - VN has positively purged commerce through the border gate, especially with countries in the extended GSM;
  - Large FDI can bring new technology and help supporting mordern and advanced logistics service in Vietnam;
  - Mutual commerce and transportation charter with Laos, Cambodia, Thailand will help reducing logistics barrier in importing and exporting goods, improving forwarding time;
- **Challenges**
  - State protection institution over logistics service may slow down the 3PL development.
  - Global economics crisis.
  - Increasing oil price in the long-term trend and global climate change lead to increase in transportation cost.
  - Competition of seaport groups of Sài gòn – Vũng tầu, regional ports (Vũng Áng, Dung Quất…)
  - Logistics development in the South (with Trảng Bom Distribution Center), the North (ICD system development)

SWOT analysis – strategy for logistics development

		Facing with challenges	Taking opportunity
Strategy	Improving Strength	• Implementing The Charter of transportation through border gates in extended GSM to increase the commerce • Extending the export market of Vietnam main goods beyond G20 countries. • Developing the 1st cargo terminal in the Central Area. • Devoping the regional Logistics network in combining with road, marine, airline and railway transportation.	• Re-assessing logistics and supply chain of main export items in order to determine fields to reduce the cost. • Establishing the mordern ICD/logistics center in Danang to provide logistics service to FDI enterprises.
	Reducing Weakness	• Setting up electronics communication gate to improve customs transactions in ports and border gates • Reviewing and modifying current regulations as obstacles over 3PLs development	• Establishing the logistics Forum, logistics consultant unit for capacity enhancement • Determining airline logistics service to support export goods with high value

Strategic target: until 2020, developing the regional logistics center

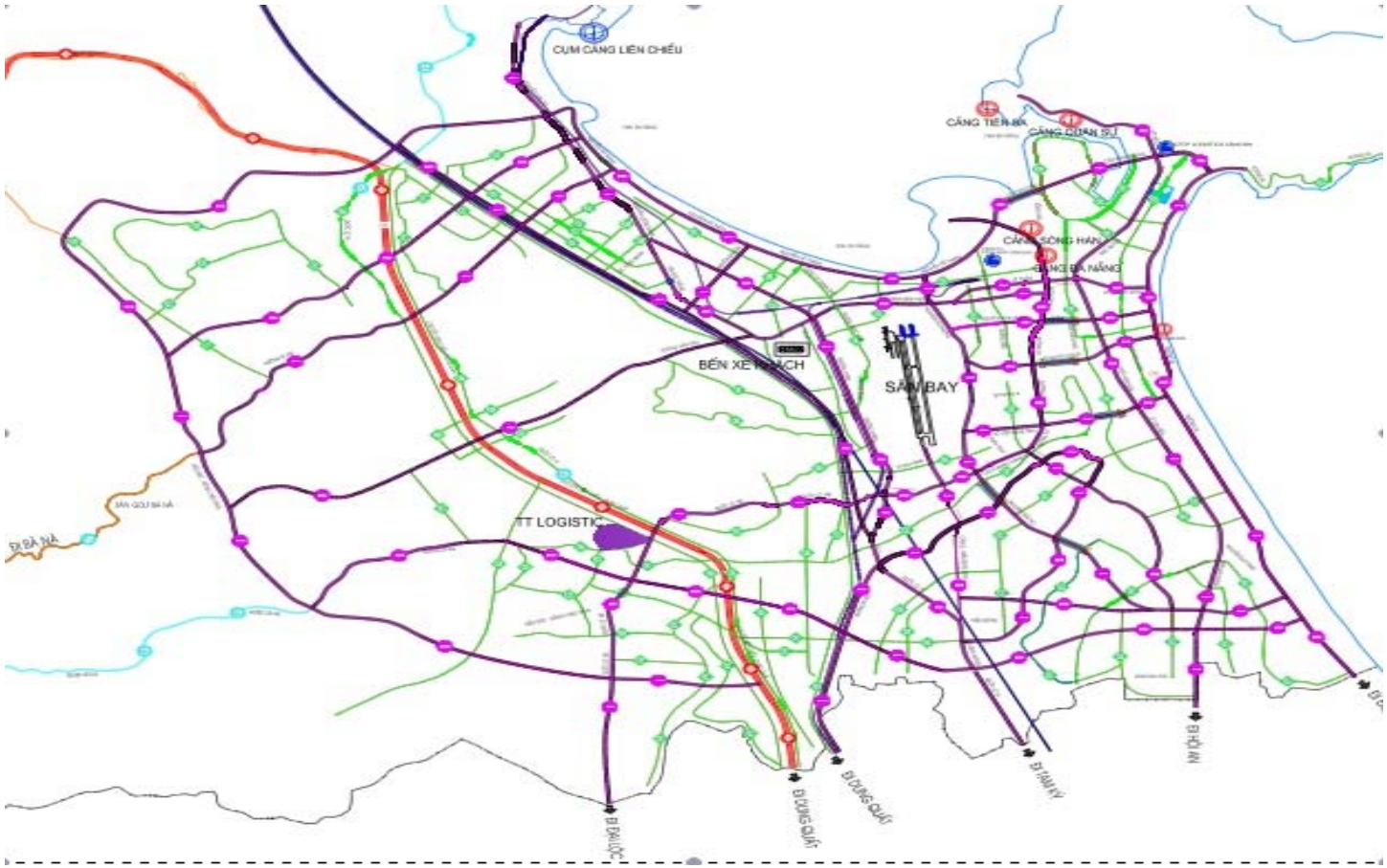
Recommended model for logistics system



Logistics center

- Customers:
  - Industrial zones (within 40 km): 6.000 ha.
  - Industrial zones (within 100 km): 12.000 ha in Quảng Nam, Quảng Ngãi, Tây Nguyên.
  - Transition cargo from South China to South Thái Lan and vice versa; ASEAN and China.
  - With Đà nẵng – Quảng ngãi highway, Đà nẵng can support import-export of Thái lan, Lào, Myanmar through Đà nẵng, Dung Quất port to Central and Northern area with the average distance of 1000km shorter than through Cát Lái, Vũng tầu ports.
- Strategical location: near the city center (15km), Đà nẵng railway station (8km); Đà nẵng airport (12km), Chu Lai airport (101km); Liên Chiểu port (23 km) and Dung Quất port (116km)
  - → The Logistics center can easily connect with the whole transportation network, making full use of planned road transportation main corridors.
  - → The Logistics center can connect with the railway: (i) by road transport; (ii) by railway with new line invseted by VN Railway

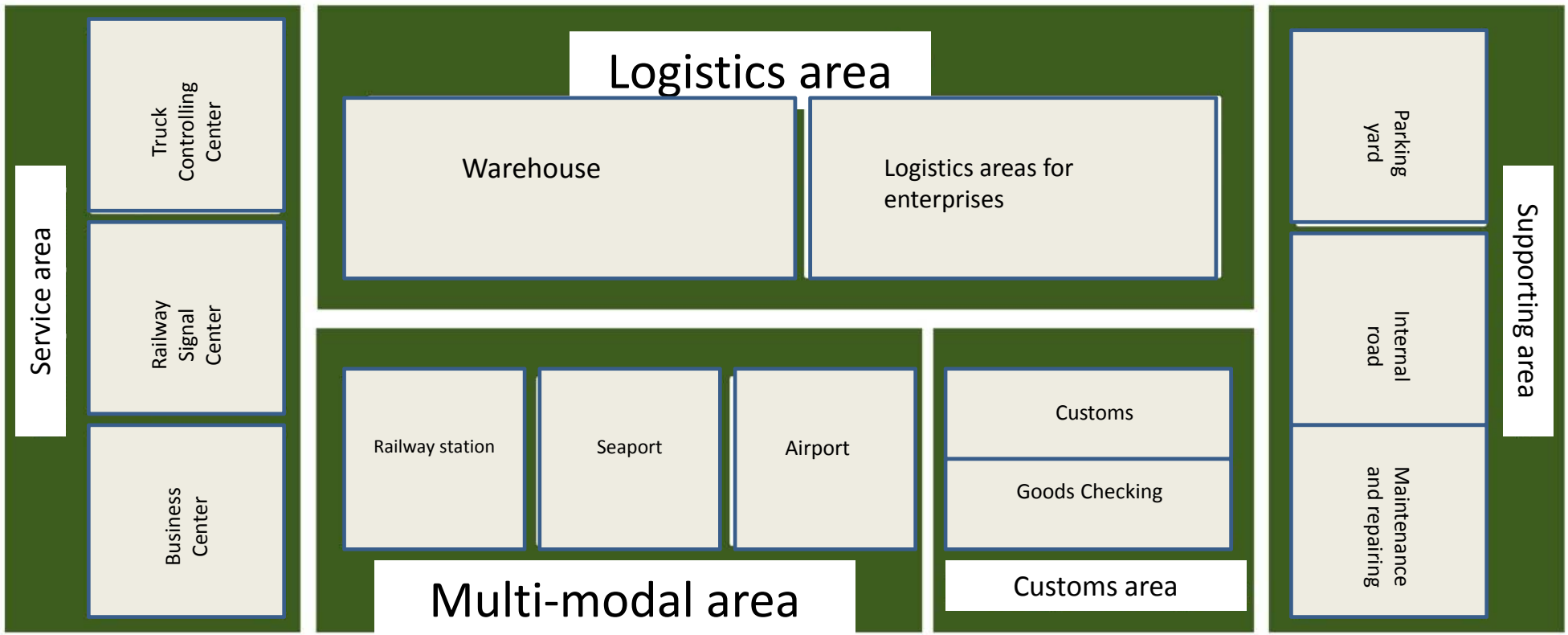
Recommended location for Logistics center



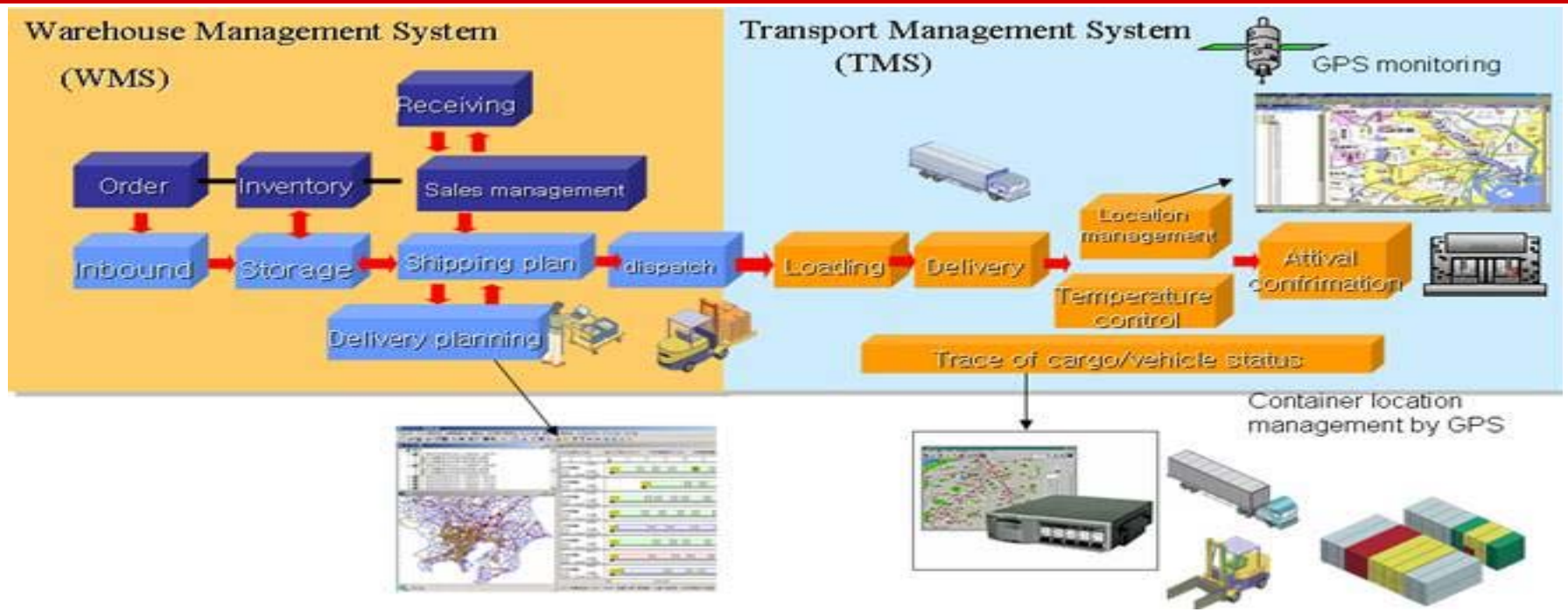
Logistics Center's functions

- Freight forwards and warehouse :
  - Providing logistics service for national, export-import and transition freights going in the direction of north-south, east-west, supporting Tay nguyen highland; freight flow from and to Lien Chieu port, Danang port; transition freight flow from Lào, Cambodia, China, Thái Lan;
  - Inventory for manufacturing/industry and households demand in CFEZ and Danang;
  - Distribution center to support commerce and manufacturing in CFEZ and Danang
- Terminal for transportation and multi-modal transportation
  - Terminal stations for freight transportation by railway and road;
  - Transition point between railway and road; sea and road; air-line and road;
  - Terminal ICD for CFEZ
- Providing other value-added services and technical support

Functional zones in Logistics Center



Solution for IT applications



The model of logistics information system in integrated management of warehouse and transportation

→ **Centralized Database**

Recommended investement measurement

- **PPP is recommended with the following measurements:**
  - Establishing State-owned investment fund to attract funding sources, including Central Budget, local budget, ODA fund, credit loans, private funds.
  - Establishing a Project Management Unit (or other management body) to management implemenation process
  - Assigning some experienced JSC. companies with most of State capital to conduct the investment project in Logistics Center.
  - Completing the investment mechanism of PPP.

Conclusion and Recommendation

- Conclusion:
  - Logisics performance of Vietnam is not comparable to its potential.
  - Main issues facing with MSCs can be mentioned as:
    - Accelerating urbanization requires sustainable and balanced urban/regional development;
    - Big gaps in Planning and Management Capacity;
    - Logistics Infrastructure limitation and low capacity, quality;
    - Inappropriate management and operation in logistics enterprises.
- Recommendation: Experience from Danang leads to the following lessons learned for MSCs:
  - Developing the Logistics model for the city is essential in the current context
  - Other elements needed in developing the logistics models shall be:
    - Conducting the master plan of logistics infrastructure with the support from inter-connecting transportation network (national and regional).
    - Developing Logistics centers/parks at regional and local areas.
    - Developing communication network and IT application, improving logistics service.
    - Enhancing capacity from Authority, management to enterprises operating in the logistics field
    - Controlling the process of master planning and implementation
    - Developing convenient conditions for enterprises to invest into constructing and operating Logistics Center.

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Thank you very much for your attention!