

Accelerating Change in TOD: An International Perspective

Transit Oriented Development And Urban Real Estate Conference Los Angeles, May 4, 2016 Gerald Ollivier TOD CoP Leader The World Bank

A Growing Development Agenda

China Railway-HSR and new 200 km/h Railways

(Operational, under construction and planned, by December 31, 2015)

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Mapped by the authors based on data from China Transportation and Communications Year Books Lines shorter than 50km are not shown on the map. Part of the Hengyang-Liuzhou Railway (towards Guilin) will in part follow a 200km/h speed standard.

Legend Operating, 200 km/h Operating, 250 km/h Operating, 350 km/h Under Construction, 200 km/h Under Construction, 350 km/h Planned, 250 km/h Planned, 350 km/h

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19,000 km and 1 billion passengers in 2015 30,000 km in 2020



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2542 km of mass transit in operation, 2607 km under construction and 2548 km planned/under construction across 38 cities (*Sept 2014*)



India Mass Transit



City Scale

Land Use Policy and Strategy Legal and Regulatory Framework Integrated Land Use and Transport Modeling of TOD Leveraging Private Sector Improving Accessibility around Stations Capacity Building

Corridor Scale

Understanding Transformation Potential Integrated urban/transport development Legal and Regulatory Framework Design and Planning Guidelines Feasibility Study Operational guide Accessibility Plan and Integrated Transport Financing Scheme Citizen Engagement Capacity Building Evaluation

Station Scale

Feasibility Study for PPP and TOD Conceptual Design Case Studies



Transformational Opportunities

Tokyo urban form

Compact polycentricity connecting people to people across many scales (including HSR) along the Yamanote loop

Source: Erik Fischer



The Spiky Urban Economy of Global Cities



London Peak 141600 jobs/km² New York Peak 151600 jobs/km³

Hong Kong Peak 120200 jobs/km²

They be a real frames fragment (2004) 2014 US Constant Processing France (2014) 2014



Share	Рор	Area pop	Job	area jobs
33%	2,724,646	145	1,500,160	16
33-66%	2,724,646	285	1,500,160	150
66-100%	2,724,646	1144	1,500,160	1408

Source: Urban Morphology Institute.





GDP per km² (100 million RMB per km Less than 2.00 2.01 - 5.00 5.01 - 10.00 10.01 - 20.00 More than 20.00

Source: Urban Morphology Institute/World Bank 3V Framework Application to Zhengzhou, China. Subway networks converge towards a characteristic structure with a dense and interconnected core and with spoke



Source: QuantUrb, CASA







Source: Urban Morphology Institute/World Bank 3V Framework Application to Zhengzhou, China.

Need for a Typology

- Identify development potential (scale, type, timing) based on market demand, social and environmental priorities
- Develop planning and implementation measures and prioritize limited public resources
- Communicate with private developers a vision for the city

Source: World Bank; Serge Salat and Gerald Ollivier, 3V Framework (2016)

The "3V Framework"

- Node Value based on its location in the network
- Place Value based on its urban qualities
- Market Value, based on its economic potential



The 3V Framework (Serge Salat, Gerald Ollivier)

Node Value (London Tube)





Source: Urban Morphology Institute

- Hub, Interchange, Single station
- Diversity of connectivity
- Node Accessibility/Centrality
- Intensity of node activity



Place Value



- Mix of land uses
- Density of social infrastructure
- Compactness
- Physical form and street patterns
- Walkability and bikability

Source: Urban Morphology Institute

Market Value



- Economic attractiveness for developers (job densities/accessibility; People density)
- Land and real estate opportunities (FAR/unbuilt land)
- Market prices and activity
- Land shortage at city level

Source: World Bank; Serge Salat and Gerald Ollivier, 3V Framework (2016)

for Inclusive Principles $\overline{\mathbf{O}}$ U Ω



Removing Obstacles to TOD

Constraints for Private Sector

- Lack of clear city/local area plans for TOD/mass transit
- Poor overall integration/risks in station location changes
- Many stakeholders with different objectives
- Higher short term cost vs. potential long term benefits
- Preference for residential properties (cash flow)
- Higher risk levels (timing/counterpart)
- High cost of financing (interest and term) compared to infrastructure
- Difficulty in assembling parcels
- No flexibility in approval/control plans for TOD areas
- Lack of realism from public sector side

Addressing Challenges to TOD

- Building political support and vision at national and city level
- Vision adapted to market demand/timing
- Institutional integration vertically and horizontally
- Policy, legal and regulatory framework facilitating land aggregation, mixed use, financing
- Integrated and participatory planning process
- Adapted solutions for different types of stations
- Flexible regulatory parameters and control plans around stations
- Flexible land policy and land use rights (vertical separation)
- From short term to long term business models
- Grant access to information/data for integrated planning

An Example of Catalyst Project

Nanchang: City vision for TOD

- Goals
 - Integrate land use plan with transit infrastructure and build livable communities along the transit corridors;
 - Ensure smooth multi-modal connection, optimize transport network and provide convenient travel options to people;
 - Improve the efficiency of transport system and support compact development to save land resource;
 - Stimulate new development around the public transit nodes;
 - Demonstrate the benefits of low-carbon urbanization and contribute to sustainable development of the city;
 - Capture land value appreciation to finance urban development.

Nanchang: Scale and sequence of TOD

- Metro Group adopted phased strategy for TOD along Line #1, starting from stations in downtown and move on to the suburbs.
- As of 2016, estimated profits from TOD will cover 15-20% of the total construction costs of Line #1 and #2.



Nanchang: Diversified strategies for stations • Metro Line #2 connects two transport hubs and passes through three major urban districts, each with its own pattern of land uses and demand for transport services.



Nanchang: Diversified strategies for stations • Station areas along metro Line #2 will also be developed following a phased and diversified strategy, considering variations in priority and existing/planned land use patterns.



Nanchang: Station area design

- Case study: Time Square station on Line #1
 - A mixed-use, high density community with high-end apartments, retail stores, recreation facilities and offices
 - Floor area of 388,827 square meter over 8.3 ha of land, FAR of 3.5.
 - 80% of revenue from land sales allocated to finance metro investment, in addition to sales of apartment and rental income from office buildings and commercial space, etc.



Nanchang: Procedure & instruments

1. Strategic plan	 Finalize development plans, modes and priority Difference between vertical and horizontal development 			
2. Business promotion	 Identify partners for cooperation and optimize physical plans to meet needs Agree on targets of and operational details 			
3. Land auction	 Based on optimized plan, communicate zoning conditions and increase FAR as is necessary Prepare for land auction 			
4. Project development	 Making profit from land concession Making profit from real property development (e.g., sales of housing units, etc.) 			
5. Property management	 Making profit from asset management (rents) via an in-house property management agency or the joint-venture partner 			

Lessons Learnt

Lessons Learned

- Typically long term process building on urban growth-Need periodical adjustments
- Needs a joint effort within public agencies vertically and horizontally
- Strong governance/institutional mechanisms and capacity/transparent rules are required
- Strong planning, Land use regulation and design guidelines for urban space
- Best handled through public private partnerships



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TRANSFORMING CITIES WITH TRANSIT

Transit and Land-Use Integration for Sustainable Urban Development

Hiroaki Suzuki, Robert Cervero, and Kanako luchi



THE WORLD BANK

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TRANSIT-ORIENTED DEVELOPMENT WITH LAND VALUES

Adapting Land Value Capture in Developing Countries

Hiroaki Suzuki, Jin Murakami, Yu-Hung Hong, and Beth Tamayose



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MDTF Sustainable Urhanization

The 3V Framework

Maximizing Economic Value of TOD Station Areas by Matching Place Value, Node Value and Market Value

> Seege Salat Gezald Olivies

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Transit Oriented Development Community of Practice Website now OPEN to External Members by Registration

https://collaboration.worldbank.org/groups/tod-cop

For more gollivier@worldbank.org