Technical Note on Transit-oriented Development

Abstract

This Technical Note summarizes the core messages that came out during the Transit-oriented Development (TOD) Technical Deep Dive (TDD), conducted in May 2016 by World Bank TDLC in collaboration with TOD CoP, to catalyze World Bank TOD projects across regions. The first section of this note covers the client cities’ challenges regarding TOD, with the focus particularly on implementation. Next, the Japanese experience of TOD is presented and examined in terms of institutional arrangements, policies and planning, and implementation mechanisms. The final section shares a number of After Action Plans created by client cities based on the key takeaways from the TOD TDD. The event drew on the Japanese expertise on TOD and successfully addressed the identified client needs.

TOD and Client Challenges

TOD is an approach to maximize public transport accessibility and economic benefits. It promotes densification of population, jobs, and socio-economic activities around transit centers, which provokes agglomeration effects hence leading to increased land value and local economic growth. When successfully implemented, the economic and financial viability of mass transit investment is enhanced by an increased ridership base and further accessibility benefits are enjoyed by the residents.

In addition to economic benefits, TOD can also be a potential solution for urban challenges common across cities globally. Socially, TOD enhances equity by improving accessibility and mobility and providing affordable housings for low-income households along corridors. Environmentally, TOD contributes to reducing greenhouse gas emissions and air pollution by reducing car use and increasing open/green space through planned land use.

Given the complexity of TOD schemes, it is often the case that the implementation of TOD is deemed complex to manage, particularly in developing countries. The participants of this TDD face challenges in the planning and implementation stages of TOD projects, particularly in the latter as do others approaching TOD. Listed below are the key challenges raised by the participants from World Bank’s client cities.
Strategic and Comprehensive Planning

Participants unanimously agreed that strategic and comprehensive planning is crucial for a successful TOD project. Without it, different plans made by different agencies often conflict with each other in the later stages of urban development, making further implementation difficult and costly. A number of cities face challenges specific to planning such as Mexico City (Mexico), who explained that only building-level private development is occurring in their city and that comprehensive development strategies at the station, corridor, and city level is urgently needed given the rapid progress of ongoing constructions. Also stressed by Lima (Peru) and Ho Chi Minh (Vietnam) was the need for well-designed laws and regulations which will make easier the necessary procedures such as land readjustment and transport infrastructure development.

Institutions / Mechanisms for Implementation

Many participant cities brought in well-designed strategic TOD plans to the TDD; they already understood the potential of TOD prior to the TOD TDD and had incorporated the concept into their urban and transportation planning. There is a common need for specific and detailed methodologies on implementation, particularly on financing and regulation. Cape Town (South Africa) and Dar es Salaam (Tanzania) asserted that the next step for most of the participant cities was really to go into the practicalities of implementation.

DEMARCATION OF FINANCING AND OVERCOMING HIGH UPFRONT COSTS

Most participant cities commented that they do not have sufficient funds for their TOD projects. Indeed, financing is one of the most difficult aspects in TOD due to high upfront costs and the vast number of stakeholders involved. In order to overcome these challenges, government agencies must be aware of available methodologies such as (1) land value capture through taxation, planning conditions and obligations, and land development and (2) cost sharing schemes between the public and private sectors.

REGULATING AND GUIDING THE PRIVATE SECTOR

Cooperation with private stakeholders, particularly railway companies and real estate companies, is critical for a successful TOD project. A healthy relationship between the public and private sectors not only makes operations smooth, but also benefits TOD projects by drawing on the expertise and financial capability of private entities. Many participants such as India HSR and Mexico City (Mexico) noted that controlling and guiding the private sector is not an easy task and one that the public sector struggles with. This TOD TDD provided participants with examples of cost-sharing schemes between the public and private sectors where the government successfully regulated and guided private entities by creating pertinent incentives, typically land space or Floor to Area Ratio (FAR) bonuses.

INTER-JURISDICTIONAL COORDINATION (HIERARCHICAL AND CROSS-AGENCY)

Many participant cities such as Ho Chi Minh (Vietnam) and Mumbai (India) have voiced that inter-jurisdictional disconnections severely inhibit the smooth operation of TOD projects. The lack of hierarchical coordination between national and municipal governments results in multiple layers of inconsistent regulations. The lack of cross-agency coordination between land-use planners and transport planners and between public and private entities results in future conflicts in their respective plans,
particularly in terms of land-use. These consequences lead to inefficient implementations of TOD projects, or worse a discontinuation altogether. For example, Mexico City (Mexico) shared that different regulations by different agencies complicate the procedures necessary for a TOD project in their city, thus making the process more painful and time-consuming.

The challenges raised above are strongly interrelated; none of the challenges can be overcome without addressing the other issues. In such complex projects, policymakers and practitioners are often unsure where to begin. Thus, participants came to Japan with one basic question in mind: “how can it actually be done?” This TOD TDD tries to provide answers to this question by looking at successful examples in Japan and deriving practical implications applicable to TOD projects in client cities.

“We have the ideas and the concepts, the question is where we actually start – practically.”

Cape Town, South Africa

Takeaways from Japan’s TOD

Boasting top-class mass transit systems, Japan is one of the most advanced countries in terms of TOD. TOD has always been a central concept for urban policies throughout the history of Japanese cities. Although the success of TOD in Japan is a result of various factors combined, integration of urban and transportation development and active participation by the private sector can be raised as key aspects.

Through the TOD TDD, participants captured a number of key elements from successful cases in Japan. This section provides the major takeaways from the viewpoint of institutional arrangements, policies and planning, and implementation mechanisms, which are the three pillars for a successful TOD.

Institutional Arrangements

AGENCY DEDICATED TO COORDINATION

The presenters in this TOD TDD all raised cooperation between stakeholders, particularly between the public sector and the private sector, as the foundation for Japan’s success. Although this aspect can be observed in every case introduced, the Umekita project in Umeda, Osaka is perhaps the most prominent example highlighting its importance. Osaka city is currently developing the surrounding areas of Osaka station into a multi-purpose city center with functions of business, commerce, residence, and public space. This project is driven primarily by the “Council for Urgent Urban Redevelopment in Osaka Station and Surrounding Areas”, a council consisting of not only Osaka city officials but also government officials and experts from the economic field and academia. This council oversees the entire Umekita project and ensures that the multitude of stakeholders involved are well coordinated. The existence of such an independent agency fully dedicated to coordination led to well-integrated planning and consistent policies and regulations, contributing significantly to a smooth and efficient implementation.
“The Umekita project is the most successful example of a Public-Private Partnership project I have ever seen.”

Mr. Yonas Eliesikia Mchomvu, Senior Transport Specialist, SURR, World Bank

Policies and Planning

INTEGRATING URBAN AND TRANSPORT DEVELOPMENT

The combined development of cities and their transportation systems is undoubtedly one of the key factors for success in Japanese TOD. A quote from the presentation by Mr. Kiyoshi Shimizu (MLIT) neatly summarizes this point: “In most countries, urban development takes place first – then transport planning and management measures follow to combat serious congestion, hence making it both difficult and costly. Japan implemented urban development and transport planning/management together based on accurate demand forecasts and efficient traffic control.” This prevented urban and transportation development from interfering with each other in Japan and, furthermore, allowed for a synergy between the two. The key message here is that land-use planning and transport planning are a cyclic and repetitive process rather than one being an input for the other.

FUTURE TRENDS AND STRATEGIC PLANNING

Today, Japanese policymakers pay close attention to the future trends of Japanese society. Past urban development had been driven by rapid economic growth and population increase, but the major future trends for Japan are population decrease and aging. Efforts toward a smooth transition were observed in Senri New-Town, Osaka. Being one of the new-towns constructed in the post-war housing development, which aimed solely to meet rising housing demands, Senri New-Town now faces issues of population decrease, aging, obsolete facilities, and dysfunctional communities. As a countermeasure, Osaka prefecture is working to renew buildings and urban infrastructure and is constructing new facilities that are better able to meet contemporary needs. They are also working to improve Osaka city’s connectivity to other cities and neighboring airports, particularly those welcoming many tourists, by further development of railways. The impacts of population decrease and aging are also evident in Tama Plaza, Yokohama, where strengthening community functions and preparing for the next generation of residents are raised as key priorities.

The need for such efforts arose because the original planning span was not long enough to anticipate the future transition of the Japanese society from rapid growth to gradual decline. In a way, planners in the past have failed to foresee future demographic shifts, and many Japanese cities are facing an urgent need for urban re-development today. This current situation in Japan implies that policymakers should look far into the future when planning TOD projects. They must think 50 or 60 years ahead of time and consider possible shifts in demographics and social trends in order to plan strategically and ensure that the city will remain functional in the long run.

Implementation Mechanisms

REGULATORY MECHANISMS FOR PRIVATE-LED DEVELOPMENT IN SUBURBAN AREAS

First implemented by Hankyu in the early 1910s, creating markets along their suburban service lines (i.e. corridors) by providing housings, commercial facilities, and offices is now the dominant business model for major private railway companies in Japan such as Tokyu, Hankyu, Keio, and Odakyu. Core to this
scheme is the provision of better accessibility and low-price housings. At each local sub-center along the corridor, shopping malls are placed at the center, increasing inbound ridership to city centers for non-commuting times and weekdays. Residential areas are spread out from the city centers, and recreational facilities are located in the outskirts, increasing outbound trips for commuting times and weekends. By not being just a transport-provider but rather a lifestyle-designer, private railway companies secure their revenue despite transportation services having the characteristics of a public good. In this way, TOD in major Japanese cities have been driven in large part by private railway companies.

The above model is an important mechanism supporting the urban development in Japan where the central area is mainly developed by the government and the suburban developments are mainly led by the private sector, predominantly by railway companies. The government did not over-regulate non-transport businesses by private railway companies but rather encouraged them, and this allowed private railway companies to have strong initiatives in urban development. Such division of roles between the public and private and regulatory mechanisms encouraging private development eased the burden of the city government.

**DESIGNING INCENTIVES FOR PRIVATE DEVELOPERS IN CENTRAL AREAS**

Participants visited Shibuya, Tokyo and Umeda, Osaka as exceptionally successful cases of Public-Private Partnership (PPP). Common among these two cities were the existence of strong incentives for private developers in the form of rewards toward “public contribution”. The basic concept of public contribution is that private developers are awarded bonuses, in exchange for the provision of urban infrastructure and public facilities/services in special designated areas.

Shibuya is a typical example where the developer of “Hikarie”, a recently built high-rise commercial building, is awarded land space in exchange for the construction of an escalator system which serves Shibuya’s metro station as well. Since the inconvenience of vertical mobility has always been an issue of concern for Shibuya ward, the implementation of this escalator system was attested as a public contribution. In the Umekita project in Umeda, bonuses in FAR were rewarded to developers for their public contributions. “Grand Front Osaka”, which is also a recently built high-rise commercial building like “Hikarie”, dedicates some of its floors to an innovation park where firms, entrepreneurs, and individuals can casually gather and share their knowledge or ideas. This project called the “Knowledge Capital” serves the public as a center for innovation and was certified as a public contribution, thus providing the developers with FAR bonuses.

The key takeaway of these two examples is that governments and municipalities can successfully guide the private sector by providing strong incentives in exchange for public contributions. Participants can draw on this concept of “public contribution” as an effective method to create incentives for private developers to provide public facilities or services.
After Action Plans

On the last day of the TOD TDD, participant cities presented their TOD development priorities and a detailed action plan. In this section, a visualization of the priorities is shown, followed by a number of After Action Plans presented by the participants.

Development Priorities

The twelve participant cities rated the items shown in the figure as “highly important”, “important”, or “limited importance”. The numbers in the figure indicate the how many cities rated the item as “highly important”. Both at the city scale and corridor scale, integrated land use and transport gathered the largest number of votes, telling us that the participants well understood the importance of integrating urban and transportation development. At the station scale, ten cities rated PPP schemes as highly important. This implies that the site visits to Shibuya, Tokyo and Umeda, Osaka were particularly impressive for the participants.

BOGOTA, COLOMBIA

Having learned the importance of integrated urban and transport development, Bogota acknowledges that their Urban Renovation department and Transport department must work more closely with each other in planning their TOD project centered around the Estación Central. Also, learning about the Japanese railway companies’ business model provided valuable insights for Bogota. They plan to reconsider the design of infrastructure and the sustainability of their business model prior to the construction of the first metro line.

MEXICO CITY, MEXICO

Mexico City will attempt to vertically integrate transit and real estate development and to fully exploit associated business opportunities for the private sector by encouraging the participation of large economic groups or conglomerates. Their TOD strategy will benefit from Japan’s experience with the usage of land readjustment and private sector participation in real estate around stations.

DAR ES SALAAM, TANZANIA

The concept of TOD will be part and parcel of the ongoing Dar es Salaam Land Use and Transport Masterplan (JICA, WB, TDLC), and it will be implemented by BRT systems. Dar es Salaam has proposed a 3 to 4 year action plan with the goal of applying TOD within the four hubs along the BRT corridors, and they are eager to exchange knowledge with Japanese TOD expatriates through future sessions organized by TDLC.
Summary

We begin with identifying client cities’ challenges. In the planning stage, the lack of strategic and comprehensive planning was raised. In the implementation stage, (1) demarcation of financing and overcoming high upfront costs; (2) regulating and guiding the private sector; and (3) the lack of inter-jurisdictional coordination were listed as challenges.

In the next session key takeaways were extracted from examples of Japanese TOD. Regarding institutional arrangements, participants reaffirmed the importance of stakeholder cooperation and learned how an agency dedicated to coordination can contribute to a smooth operation. For policies and planning, participants learned that (1) land-use planning and transportation planning are a cyclic and repetitive process where the two must be well integrated and (2) policymakers and planners must think 50 or 60 years ahead of time and consider possible shifts in demographics and social trends in order to plan strategically. As for implementation mechanisms, participants witnessed actual cases where the government successfully guides the private sector through pertinent regulations and incentives.

Finally, we concluded the TOD TDD with dedicated sessions on the development and refinement of Action Plans for each city. This allowed for delegations and WB teams to have broad level agreement on the next steps needed in implementing a TOD solution in their cities. TDLC and TOD CoP will follow-up with each delegation at set intervals to offer further assistance in implementing their TOD action plans.

After the TOD TDD, participants understood the importance of integrating urban and transport planning and also the potential benefits of PPP schemes. Based on the key takeaways, each city created a detailed After Action Plan which illustrates the next steps for their TOD projects. Many cities proposed actions to enhance coordination among relevant agencies, to integrate the urban and transportation planning, and to construct effective and sustainable business models.

This TDD drew on the Japanese expertise on TOD and successfully addressed the identified client needs. Participants acquired first-hand practical knowledge and experience from peer-to-peer learning, and the site visits allowed them to better understand the outcome and benefits of a successful TOD. By understanding both the goal of TOD and where to actually begin with, the participants are now in a better position to drive their TOD projects to success. In this respect, the first TOD TDD was a success.

“Japan’s well established TOD experience offers a different perspective for Mexico on how to look at transit provision and the promotion of urban redevelopment.”

- Mexico City, Mexico

TOD TECHNICAL DEEP DIVE

The TOD TDD is the first comprehensive learning program of a knowledge exchange series bringing together experts and practitioners to share good practices and experience on specific technical subjects. The program was developed and organized by Tokyo Development Learning Center (TDLC) with cooperation from Japan’s Ministry of Finance (MOF), Ministry of Land, Infrastructure, Transport and Tourism (MLIT), and the World Bank Task Team Leaders (TTLs) of the Technical Lead under the auspices of the TOD Community of Practice (CoP).
The Tokyo Development Learning Center (TDLC) program is a partnership of Japan and the World Bank. TDLC supports and facilitates strategic WBG and client country collaboration with select Japanese cities, agencies and partners for joint research, knowledge exchange, capacity building and other activities that develop opportunities to link Japanese and global expertise with specific project-level engagements in developing countries to maximize development impact.

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