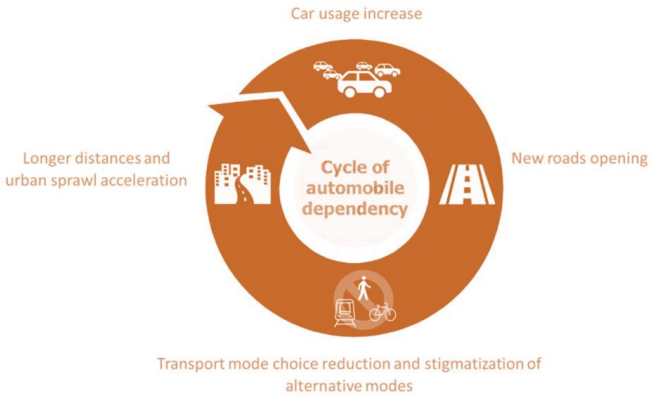
SMI Insight – Transit-Oriented Development Q4 - 2019

Images credit: ***https://www.jakartamrt.co.id/2017/12/02/sulap-dukuh-atas-jadi-tod-berkelas-mrt-jakarta-sewa-konsultan-asal/; https://serponggardenapartmen.com/kemacetan-jakarta-duduki-peringkat-ke-22-di-dunia/***

Urbanisation Challenge in Indonesia



Source: https://www.transportshaker-wavestone.com/urban-transports-spatial-footprint-much-space-used-transports-city/

Similar like other growing economies, Indonesia is becoming more and more urban. Currently more than half of Indonesia's total population lives in urban cities and towns, of which more than 30 million people live in Indonesia's capital city, Jakarta, and its surrounding cities (Roberts, M. et al., 2019). However, Indonesia's urbanisation trend was not compensated with the right policies and investment. For example, instead of capitalising the productivity gains of agglomeration caused by urbanisation, the government promoted urban sprawl or suburbanisation. Around 57 per cent of affordable housings in Indonesia are built in the suburban and 40 per cent of subsidised housings are located in more than 20 km outside the city centre (it even reaches up to 50 per cent In Surabaya and Denpasar) (Perumnas, 2019). The situation forced people to move to the suburban areas as they offer more affordable land and housings. Access roads to the newly developed suburban areas were improved, but not the same case with the public transportation. As a result, people become more and more dependent on car usage, further straining traffic congestion and air pollution in the cities.

Let's take Greater Jakarta area as an example on how suburbanisation exacerbates the city's condition. Jakarta constantly ranks as one of the top 10 most congested cities in the world. The latest TomTom Traffic Index issued in 2018 placed Jakarta as the seventh-most congested city in the world. Apparently, the main culprit for Jakarta's perennial traffic jams according to a study done by JICA and BAPPENAS in 2017 is the 50 million people commuting from outside the city to the capital every day. The traffic has cost annual losses amounting to IDR 65 trillion (equivalent to USD 4.6 billion) (the Jakarta Post, 2019).

Jakarta skyline, by Josh Haner, *The New York Times*.

This severe congestion also contributes to the worsening air quality in Jakarta. According to Indonesia's Ministry of Environment and Forestry, 75 per cent of air pollution in Jakarta comes from land transportation (Dewi, 2019). This led to Jakarta becoming one of the cities with the worst air pollution in the world according to air quality monitor application, Airvisual. Jakarta's air on 8 August 2019 recorded an ultimate high (under 'unhealthy' category) with Air Quality Index (AQI) of 160 with a fine particulate matter (PM2.5) concentration of 73.5 micrograms per meter cubic (µg/m3) (Atika, 2019). A perception survey done by the World Bank in 2018 shared that 70 per cent of surveyed Jakarta city residents identified "pollution" as the most pressing urban environment issue that needs to be addressed soon to make the capital city more liveable (Roberts, M. et al., 2019).

Another challenge is the lack of affordable housing in the city centre and in general as mentioned earlier. Recent reports showed that Indonesia requires around 500,000 – 700,000 new affordable homes annually on top of the huge housing backlog of 7.6 million units due to growing population and demand (pu.go.id, 2019). This affordable housing backlog is particularly acute in urban cities. Consequently, urban cities in Indonesia have to deal with slums and overcrowded housing, aside from suburbanisation, and this leads to another problem: fragility to natural disasters.

If the trend continues, imagine how it would be like in 2045 when urban population is expected to increase to two third of the total population according to the World Bank's 2019 report entitled "Time to ACT." These problems could exacerbate further if not tackled timely and properly.

TRANSIT-ORIENTED DEVELOPMENT (TOD): A PANACEA?

TOD is a systematic approach that promotes urban development that closely integrate land use/properties (i.e., housing, office buildings, services, and amenities) with public transportation facilities. This "densification around transport corridors" enables a seamless transition for commuters to change between different modes of transportation to reach their destination within walking distance (Salat, S. and Ollivier, G., 2017; Roberts, M. et.al., 2019; Thomas, R. and Bertolini, L., 2014).

Eight principles of TOD: Compact, Connect, Densify, Shift, Transit, Mixed-use and mixed-income, Cycle-friendly and Walk-friendly.
Image credit: https://www.treehugger.com/urban-design/transit-oriented-development-key-better-cities.html

According to Institute for Transportation and Development Policy (ITDP), to qualify for a good TOD, it should promote the following eight principles:

1. **Walk** – develop areas within the city that encourage walking;
2. **Cycle** – promote the use of a more sustainable alternative to motorised vehicle like bicycle for short trips;
3. **Connect** – create dense networks of streets and pathways;
4. **Transit** – develop areas near reliable public transport;
5. **Mix** – plan for mixed-use development, mixed demography, and mixed-income households;
6. **Densify** – optimise density by immersing urban growth through building vertical housings;
7. **Compact** – create within-city areas that enable short-trip commutes; and
8. **Shift** – regulate parking and road use to increase mobility.

If implemented correctly, there are many benefits associated with TOD that offer panacea to the aforementioned urban challenges of Indonesia. These benefits include, among others (Salat and Ollivier, 2017):

(a) **Create agglomeration effects** through densifying within-city areas and concentrating jobs, which in turn could increase the competitiveness of the city. Studies suggest that concentrating job densities in a small area could increase economic productivity by 5 to 10 per cent;

(b) **Enhance the livability of the city.** With shorter commutes, reduced motorised vehicles, smaller carbon footprints, and access to good quality public areas, people will appreciate the cities more as they become more livable;

(c) Mutually reinforcing compact urban development and high-quality, reliable public transport. High density development provides large traffic for public transport and thus, making public transport financially viable.

(d) Increased land value that can be used to finance TOD improvements. Since TOD can boost the attractiveness of the area through their proximity to mass transit, thereby increasing the land value, this increase in land value may be 'captured' by turning them into a public revenue stream to finance other TOD improvements, such as public facilities, affordable housings, transit improvements, and other initiatives that encourage inclusive and sustainable growth.

(e) Improve the city's resilience to disaster. If planned properly, TOD approach can actually improve the city's resilience to hazard by locating high-density housing and activities in areas less exposed to natural disasters.

Regardless of the benefit that TOD has, there are still many misconceptions about TOD. The following infographic depicts the facts and myths surrounding TOD.

TOD: FACTS VS. MYTHS

TOD means developing compact properties 400 – 800 m around transit stations/corridors…

FACT #1

…of railway-based transportation only (MRT or commuter line).

MYTH!

Fact:
In fact, the more modes of transportation available within TOD areas, the better. This is to provide different options for urban population to go from and to outside, or within TOD areas.

TOD entails the creation of public spaces near stations equipped with broad sidewalks that are pedestrian-friendly, disabled-friendly, and bicycle-friendly to encourage people to walk more…

FACT #2

… as well as build more parking lots so that people can park their private vehicles around the TOD areas.

MYTH!

Fact:
Since TOD aims to encourage more people walking, parking lots should be reduced significantly within TOD areas. Instead, parking lots should be built outside of TOD areas, using park and ride scheme.

TOD increases real estate value around the transit networks…

FACT #3

… resulting in unaffordability for low-income families to buy properties in TOD areas. Thus, benefitting the developers and the rich people only.

MYTH!

Fact:
*TOD may increase land prices, but the idea is for the government to capture this increase in value (**land capture value**) to finance a significant portion of the new development for affordable housings and facilities to prevent gentrification and social exclusion.*

Sources: ITDP Indonesia (2017) and Salat and Ollivier (2017)

TOD itself has been tried and tested in many countries and many cities, from big metropolitan cities like Hong Kong SAR and Tokyo, to smaller cities like State College town in Pennsylvania, US. A meta-matrix study done by Thomas and Bertolini (2014) tried to distil 16 critical success factors (CSFs) from TOD implementation in 11 cities, namely Tokyo, Perth, Melbourne, Montreal, Vancouver, Toronto, Naples, Copenhagen, Amsterdam, Rotterdam – Den Haag, and Arnhem – Nijmegen. The 16 CSFs are as follows.

1) Ensure there is a consistent planning policy over time that support TOD, e.g. planning over specific station areas, transit corridors, and land use;
2) Both city and regional to have a stable vision for land use – transport planning;
3) Receive good support from higher levels of government, including funding and policy support for TOD projects;
4) Continuously supported by national political agenda on TOD;
5) Stable local political agenda (both municipal and regional) supporting TOD;
6) Good relationship between municipal and regional actors, ensure that there is communication and coordination on TOD policies (no overlapping);
7) Existence of a regulatory regional land use – transport planning body;
8) No competition among municipalities for new developments/funding;

9) Presence of multidisciplinary teams to implement TOD, instead of sector-specific teams;
10) High public participation in land use – transport planning processes;
11) High public acceptance of high densities and public transit;
12) Obtain buy-ins from elected officials, citizen, and business leaders over time;
13) Common practice of site-specific planning tools, like Floor Area Ratio (FAR) bonuses, leasing of air rights, density targets;
14) Existence of corridor-level planning, such as coordination of land use and transport in extensive transit corridors;
15) High degree of certainty for developers, plans and policies supporting higher densities, tools to enable mixed uses at station areas, designation of areas for development/transit corridors; and
16) Actors are willing to experiment with new policies, practices and tools.

Of the 16 CSFs, it was revealed by the study that there were five CSFs that can be considered as important as they keep on appearing in most cases, namely, (i) continued political stability at the national level; (ii) good relationship between municipal and regional actors; (iii) having a regional body that handles land use-transportation; (iv) establish a multidisciplinary implementation team to implement TOD; and (v) proactive public participation.

Case example: Hong Kong Mass Transit Railway Corporation (MTRC)

Inside Hong Kong MTR, by JC Gellidon, *Unsplash*

Hong Kong SAR invested heavily in its public transportation systems and implemented TOD surrounding its stations to address the growing population with limited land.

When planning a new railway line, the Hong Kong Mass Transit Railway Corporation (MTRC), which is owned by the Hong Kong government, assesses both the cost of railway line construction and prepares a master plan to assess the potential for property developments along the railway line. It purchases the development rights – right to "construct property above railway stations and depots, and land adjacent to the railway" – for 50 years from the government. Later, these development rights are publicly tendered to private developers with an additional land premium that considers the rising value resulting from the transport project. The private developers construct and commercialize the properties in the area, and share the revenue generated with the MTRC.

This land value capture has brought in around HK$140 billion (equivalent to US$18 billion or Rp150 trillion) in revenues from 1980 to 2005 and provided 600,000 public housing units despite limited land. Hong Kong's MTRC now has generated almost twice the amount of money spent on railway line construction from the property-related operations.

Sources: UNESCAP (2014) and Salat and Olivier (2017)

Nonetheless, these CSFs should not be seen as a checklist of what needs to be done, but more of providing a variety of factors that cities can consider improving or address depending on their own specific context as different cities have different circumstances for TOD to thrive. For instance, Hong Kong's MTRC case was successful due to the following inherent factors:

- Due to land scarcity, TOD concept proposed by MTRC became attractive to the private sectors as they do not have many options.
- Hong Kong has already high traffic volumes of railway network, averaging around 4.5 million passenger trips every weekday. The high traffic volume creates a massive commercial potential for the properties linked to the railway network.
- Hong Kong's MTRC has already a became a property developer powerhouse, which makes it hard to imitate elsewhere, especially in cases with inadequate market potential or in one-off projects.
- Hong Kong's MTRC also benefited from being majorly owned by the Government of Hong Kong as it helped facilitate the whole design of the project, including granting the development rights along the railway network.

TOD IMPLEMENTATION IN INDONESIA

TOD concept itself is not new in Indonesia, especially Jakarta. The terminology was first introduced in Jakarta's local regulation Number 1 of 2014 on detailed spatial arrangement and zoning regulation where it envisioned Harmoni, Senen, Grogol, Blok M, Dukuh Atas, Manggarai, Pulo Gebang, and Jatinegara as TOD zones. However, the regulation has a broad definition of TOD as an integrated area that holds city's various functional activities with local and inter-local connection.

Subsequently, Jakarta's local authority issued a dedicated regulation for TOD Area Development in April 2017 through a Governor Regulation Number 44 of 2017 that governs the planning principles, classification, and criteria for TOD area development, as well as mechanisms for and technical direction of the use, development, and management of TOD area. The regulation was further stipulated in Jakarta's local regulation on regional spatial plans (Rencana Tata Ruang Wilayah – RTRW) (Tambun, 2019).

Later on, in September 2017, a nation-wide TOD regulation was introduced in Indonesia by the Ministerial Regulation of the Ministry of Agrarian and Spatial Planning/National Land Agency of Indonesia Number 16 of 2017 on Guidelines for Developing Transit-oriented Area. The Ministerial Regulation defined TOD as a "zone within a radius of 400 m to 800 m centred around an integrated intermodal and multimodal mass transportation transit. This zone has a medium to high intensity development rate, particularly for dense and mixed-use development." The regulation provides a guideline on TOD, including determining the location of the area, how to develop the area, and TOD governance in general (Prihatini, 2017).

Concurrent with the issuance of the Minister Regulation in 2017, TOD projects started to roll out and spearheaded by SOEs to fill-in the almost 800,000 housing unit gap per year in the Greater Jakarta region alone (Haryanti, 2018). The following are the initial plans for TOD-based housing and commercial area development locations and zones.

Company	Location/ Node	Means of Transportation
PT PP Tbk.	Juanda Station	Train
	Tanah Abang Station	
	Manggarai Station	
PT Wijaya Karya Tbk.	Senen Station	Train

Company	Location/ Node	Means of Transportation
PT Waskita Karya Tbk.	Bogor Station	Train
Perum Perumnas	Tanjung Barat Station	Train
	Pondok Cina Station	
	Rawa Buntu Station	
PT Hutama Karya Tbk	Jurang Mangu Station	Train
PT Adhi Karya, Tbk.	LRT City	LRT
	Bekasi	
	Royal Sentul Park Bogor	
	Jati Cempaka	
	West Bekasi	
	Cisauk Station	Train
PT MRT Jakarta	Dukuh Atas Station	MRT
	Fatmawati Station	
	Cipete Raya Corridor (Cipete Raya Station, St. Haji Nawi and St. Blok A	
	Blok M-Sisingamanga-raja Station	

Source: Bisnis Indonesia, 2017 and 2018 as cited from *pwc.com* website; Chandra, 2017

However, years after the issuance of those regulations, TOD implementation is still facing some issues. Some of the problems are highlighted below.

1. **No coordination among institutions doing TOD**. In early January 2019, President Joko Widodo mentioned that TOD management had been inefficient for years due to overlap among different institutions handling TOD, including Jakarta, West Java, and Banten administrations, as well as Ministry of State-owned Enterprises (SOEs) and Ministry of Transportation (the Jakarta Post, 2019). For example, the TOD development in Bogor Station was delayed despite having the MOU signed between the Ministry of SOEs and Bogor administration since September 2017. The Ministry of SOEs stated that the project was derailed due to difficulty in obtaining license from the local authority, while the Bogor administration defended that the delay was because the proposal from the Ministry of SOE has yet to meet the spatial requirements (Movanita, 2018 and Saudale, 2018). As a result, the TOD development in Bogor station temporarily stops since there was no clear line of coordination and communication between the national and local institutions.

2. **Blurred lines between transport policy and land use**. Ideally TOD policies require combined planning and coordination efforts from land use-transport institutions at all levels. However,

Indonesia's current planning system are still blurry when it comes to connecting transport policy and land use. On one hand, land use is being managed by federal regulations, which limits the possibilities for different local regions to integrate. On the other hand, transport plans are managed by local authorities, with policy development done by Government Regional Development Planning Agency (Bappeda – Badan Perencanaan dan Pembangunan Daerah Pemerintah) and its implementation managed by the local Transportation Department (Singh, Raghupathy, and Aurora, 2017 as cited from Roberts, M. et al., 2019).

3. **Conflicting national and local regulation.** This is particularly true in the case of Jakarta where it issued its own regulation well before the national government issued a nation-wide regulation on TOD. As a result, there are some conflicting items in the regulation pertaining to TOD development, including the definition. To address the problem, Jakarta government plans to revise the Governor Regulation to streamline it with the Ministerial Regulation prior to issuing the Governor Regulation on City Design Guide. As a consequence, TOD projects under PT MRT Jakarta have to be postponed (Tambun, 2019).

4. **Potentially create unhealthy competition among players.** The regulation gives TOD management mandates only to SOEs and Regional-owned Enterprises (ROEs). The private sector can enter into TOD project only through cooperation with the SOEs/ROEs using Public-Private Partnership (PPP) scheme. However, in reality, Secretary-General of Indonesian Real Estates (REI) stated in January 2019 that the private sectors have not been involved by the SOEs/ROEs in TOD Development (Anwar, 2019). Meanwhile, best practices suggest that it is best for the private sector to develop the real estate while leaving the transit and supporting infrastructure investment to the public sector (Financing Sustainable Cities Initiative). By involving the commercial players, it allows them to do what they do best, build and commercialise the real estates and get a good bargain, while the government could generate sustainable revenues to fund TOD improvements or other city renewal programmes. Other than missing potential revenues from commercial players, with no competition, it could also compromise the quality of TOD itself and put the potential buyers at a disadvantage.

5. **TOD concept as a mere marketing gimmick**. TOD concept is currently being used by developers in Indonesia to market housings/business area built next to a station/terminal. However, this concept is far below the ideal state of a TOD. TOD is not only about housings/business area attached to a station/terminal, but is also about connectivity, making people more comfortable to walk and move from one public transportation to another instead of using private vehicle, existence of public facilities, and keeping the area socially inclusive for low-income households (see **Facts vs. Myths**) (Haryanti, 2018; Dwinanda, 2019). However, this superficial interpretation could partly be attributed to unclear regulation. For instance, the Ministerial Regulation stipulated that the developer can be given an incentive to increase the Gross Floor Area (GFA) beyond the maximum limit in TOD areas in exchange for the development of public facilities inside and outside TOD. In other words, the creation of such public facilities is not required if the developers keep the GFA at maximum limit.

RECOMMENDATIONS

Based on the aforementioned analysis, the following are the recommendations that could be considered for a successful TOD implementation in Indonesia.

1. The first stage for a successful TOD is to develop a good Masterplan that integrates both land use and transport. As described before, land use and transport planning in Indonesia are still fragmented and handled by different institutions. Given this condition, the lowest hanging fruit would be to **integrate the strategies** highlighted in the RTRWs of the local government, with the transport and land use plans (Roberts, M. et al., 2019).

2. Nonetheless, a good Masterplan is of no use if there is no one to follow it up. In this regard, it may be worthwhile for the government to establish a **regional body that coordinates land use and transportation**, with a team comprising people coming from different sectors as suggested by the study done by Thomas and Bertolini (2014) since it is considered as two of the important CSFs of a TOD. This regional body would be responsible for, but not limited to, streamlining the land use and transport plans with RTRWs, ensuring that the eight principles of TOD are well placed in the plans, identifying and help resolving conflicting regulations among local, regional, and national, coordinating among different institutions as well as overseeing the implementation of the TOD projects.

3. TOD implementation requires long-term efforts, is usually capital intensive and require substantial up-front investments which may not be covered by public funds alone (Financing Sustainable Cities Initiative). Therefore, the **involvement of private sectors is key** to make TOD achievable and sustainable, particularly using Land Value Capture (LVC) strategy. In Indonesia, private sectors can only be involved in TOD projects through PPP scheme. But so far, the private sectors participation are still very limited due to restricted information on TOD projects using PPP or the PPP projects offered to private sectors are those that are not appealing to them (Fajar, 2019). To boost the attractiveness of a PPP project, PT SMI stands ready to assist Government Contracting Agencies (GCAs) managing TOD projects in PPP project preparation services including project development financing, advisory to contracting/tendering agencies; and capacity building.

■■■

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