# Implementing transit oriented development in Greater London

**Papa, E.**

Chapter 12: Implementing TOD in Greater London

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<a> TOD in London: introduction

Transit Oriented Development (TOD) refers to mixed-used developments of high density, oriented towards and in proximity to walkable distance of a public transport station. As a counterbalancing force to urban sprawl processes driven by private car dominance, the principles of TOD are being perceived as particularly useful in a vast range of geographical and policy-making contexts (Bertolini et al., 2012; Cervero, 2004; Curtis, 2012; Dittmar and Ohland, 2004). The concentration of development around infrastructure is not a new concept, but only in the last decades has TOD's popularity increased in various planning strategies and visions around the world.

TOD in the United States (US) and Australia has become the dominant urban growth-planning paradigm, fighting uncontrolled urban sprawl and intimately connected with Smart Growth (SG) and New Urbanism (NU) approaches (Dittmar and Ohland, 2004). TOD has been defined by, and applied to achieve environmental and economic sustainability in many US and Australian cities to cope with the sprawl forces. In the US, several experiences were pioneered in the 1970s in cities such as Portland, Oregon, and TOD has become the dominant urban growth-planning paradigm, particularly since the 1990s. TOD has been applied in Europe since the late nineteenth and early twentieth centuries when the construction of streetcar and metro lines was coordinated with urban developments. After the Second World War, planners in parts of Europe, most notably in Stockholm, Sweden (Cervero, 1995), and Copenhagen, Denmark (Knowles, 2012, 2017), were able to channel suburban development into satellite suburbs along transit corridors. In Europe still, many metropolitan areas (Bertolini et al., 2012; Givoni and Banister, 2010) are promoting urban development along rail corridors. Land-use and transport integration has also been applied in rapidly growing and motorising cities in the Global South, such as in Bogota, Colombia and Ahmedabad, India. TOD in these contexts is usually connected with bus rapid transit (BRT) and rail investments (Cervero and Dai, 2014).

The term TOD is known worldwide and it is used across the globe in different contexts. Nevertheless, a significant difference exists in the diverse cities where TOD strategy is applied. The underlying idea, supported by international literature is that foreign models cannot just be applied in a different context. TOD is inherently context specific, dependant on

highly subjective socio-cultural factors and local contingencies (Pflieger et al. 2009; Tan, 2013). There are limitations in the transfer of lessons across different contexts. The examples mentioned above refer to cities characterized by car dependency and which aim to reduce sprawl, such as cities in Australia and the US; or cities that aim to achieve multimodal sustainable regional development and to boost public transport ridership such as the Randstad region of the Netherlands, Munich, Germany, and Copenhagen metropolitan areas. In developing cities, goals and institutional barriers are also entirely different (Cervero and Dai, 2014).

It is for this reason that studies should be more dedicated to specific cities and discuss context specific limitation and challenges of TOD. In this chapter the focus is on the application of TOD in the metropolitan area of London, where this concept has experienced renewed attention though with the use of different terms. Joint rail and land use development has a long history in London, starting with the building of garden suburbs together with the extension of underground railways (Miller, 2002). In London, rail was a precursor to population growth, which in turn was a precursor to rail deployment. Land development and rail networks have co-developed gradually, circumstantially but importantly (Levinson, 2007; Sharma & Newman, 2017). However, during the years between 1850 and the 1930s, development around new stations was not a diffuse planning strategy (Kat and Bosetti, 2017) as most of London's rail network was owned by private rail companies and the stations and lines were built much more quickly than land developments around them. In that period London failed to take a coordinated approach to developing land at existing or new stations. From the 1960s until the 1980s a significant shift took place with the introduction of a legal duty to make rail operations financially profitable (Kat and Bosetti, 2017). New developments took place around station areas including Wembley Central, Euston, Liverpool Street and Charing Cross stations. From the 1980s, public investment in rail has been an incentive to development opportunities and regeneration in parts of inner London. The primary example is the development of the dockland areas in conjunction with the Jubilee (metro) line extension and investments in the Docklands Light Railway. Since the Greater London Authority (GLA) was set up in 2000, most development projects have concurred with the construction of new railways and, in particular, in sites owned by the public transport bodies of Transport for London (TfL) and Network Rail.

In recent years increasing attention has been paid to TOD strategy and its potential. In particular TOD has an important role in the new statutory Spatial Development Strategy for Greater London prepared by the Mayor of London: the new London Plan (GLA, 2018). The plan includes the London Mayor's general policies in respect of the development and use of land in Greater London. In the London Plan TOD strategies are referred to with the name of 'London's Opportunity Areas' (GLA, 2018 p.27) and other growth area designations. In the New London Plan a comprehensive package of investments to maximize the potential of Opportunity Areas and integrate them into the transport network has been developed. This is also stated in the Mayor's Transport Strategy according to which TOD is defined as 'housing developments in areas where new transport links are going to open in the future' and as 'joint infrastructure investment corridors (where infrastructure is planned to open up housing and other development) that stretch out beyond London's borders' (Mayor of London, 2018).

This chapter focuses on TOD in London for two main reasons. The first is that, as explained above, it is difficult to apply foreign models into a different context and it is therefore important to understand limitations and strengths of TOD strategy applied in the London context. The second is that even though TOD is not a new policy in the London metropolitan area, a new interest is spreading along this integrated transport and land use planning strategy. This chapter discusses the application of TOD principles in the London context, starting from the following central questions: in which ways should TOD be addressed and conceived for London? What are the main differences in context, and what lessons could London learn from international TOD applications?

The remainder of the chapter is structured through three sections: methodology and data-gathering methods used in this work, primary results, and conclusions.

<a> Methodology and data-gathering methods

Information was first gathered via a comprehensive literature review to collect and analyse information on the state of the art of TOD in the London context, guided by the following questions: (i) what is the core literature on TOD? (ii) How has it evolved in the last decades? (iii) What are emerging themes and future research agendas in this domain? To identify core literature, citation analysis was used to identify journals, authors, source countries, and institutions.

Analysis of policy documents relating to London-based TOD and land use and transport planning from the last decades was conducted. Documents from different sources and referring to different administrative boundaries were reviewed for their objectives, goals and implementation instruments.

In addition, twelve open in-depth interviews were conducted to aid the identification of context-specific TOD issues in London. TOD experts were selected for interview with a prevalence for London context specialists and included academics and practitioners with expertise on transport, urban development and finance, who were working in the field of TOD in public and private bodies. Experts were chosen from an original group of most cited authors as defined in the literature review. Experts also featured in essential policy documents or had critical roles in relevant organisations as informed by the literature review and policy analysis. A snowball process helped to identify other key stakeholders to interview. In total, twelve respondents were included in the final sample (one from North America, one from the Netherlands, one from Australia, and nine from the UK). The sampling of interviewees included relevant expert stakeholders from various scales (local, regional and national), sectors (land use, transport and finance), and organisations (private and public). Experts from over sea are professors working in the University of Amsterdam, Curtin University and the University of Minnesota. Experts from the UK included one professor working at the University College London, and professionals working in leading consultancies such as ARUP, Jacobs, local authorities such as the Westminster City Council, and in research centres and no profit advocacy group such as London First, Centre for London, and CPRE (the Campaign To Protect Rural England). All of them work on TOD-related projects in London, in research or practice, with an average work experience of 10 years. All respondents were involved with TOD transport and land use projects at different geographic scales. The purpose of the interviews was to obtain in-depth and detailed insights into London's TOD and its barriers to planning practice. The interview script focused on (i) a brief review of respondents' experiences in TOD, (ii) concepts and definitions and (iii) what, how and who characterize TOD in London.

With respect to the last point, the interviewees were asked several questions organised into two main blocks.. The first consisted of issues related to the design challenges: what is the type of TOD for London? What are the specificities of the geographical context of London? Which TOD strategies could support achieving London's needs? Under favourable conditions, TOD is seen as delivering multiple benefits, such as helping shape polycentric

cities and regions, mitigate urban sprawl, boost public transport ridership, increase biking and walking, while accommodating economic growth and creating attractive places. Thus, are such results in line with London's desirable future?

The second block of questions related to implementation barriers and opportunities: what are the governance, financial and knowledge barriers that are hampering TOD application in practice? What are the specific implementation problems in the London context? Who are the stakeholders involved and what is their role in the implementation process?

<a> How does TOD fit in London?

<b> Challenges of plans and policies: the regional scale

The current core principle of London transport and development strategy is that new and existing transport infrastructure should act as catalysts for regeneration, and introduce new opportunities for development beyond central London. The actual strategy is to create a more compact and connected city with more cycling, walking and public transport to reduce the use of cars (GLA, 2018).

Most of the interviewed experts explained that one challenge of putting this into practice and achieving desirable results is the limited administrative boundary of London. The metropolitan area extends further than the GLA administrative boundary where the London plan is effective and within which TOD principles are aimed. For example, to reduce the number of commuters travelling into London by car, one must look beyond the current administrative boundaries and consider, as London's limits, the 60 minutes commuting travel zone, which includes 127 Local Authority (LA) areas. As observed by the urban planning experts interviewed, this constitutes an enormous task and an immense coordination effort between several stakeholders. Currently, the most significant limitation of TOD in London is the lack of integrated land use transport planning that looks at the London regional scale and at the Wider South East (WSE) area, where most London commuters are living (Bowie, 2016). The current governance structures for the planning of the metropolitan region are inadequate (Bowie, 2016). Reports on the potential for urban extensions to London along transport corridors have already identified significant potential growth in areas of the new stations in the wider London metropolitan region (Roger, 2005; Mayor of London, 2014; AECOM, 2016; Outer London Commision, 2016). However, a comprehensive TOD regional

plan is still missing. London in this sense could learn from the Dutch experience where TOD is applied at regional scales , as in different regional plans including the Stedenbaan plan (StedenbaanPlus, 2013) and the Maak Plaats plan (Noorth Holland and Deltametropool, 2013).

<b> The challenge of TOD locations in London. Where and how to increase density?

Transport planning expert interviewed, explained that another challenge of TOD implementation in London is the shape of the original railway network, which is strongly radial with a highly accessible centre. The current development locations around station areas reinforce this strongly concentric shape. This also means that TODs, mostly located in the centre reinforce the agglomeration of jobs in Central Activity Zones (CAZ) and commuting times from the centre of residential areas in the suburbs. The effects of this phenomenon also reinforce the centripetal force of job locations and the centrifugal force of housing. Consequences of this location of TODs in central London include an increase of (already very high) commuting times, land values in CAZ, and car trips for non-commuting purposes, as well as tube network congestion and unaffordability of properties in costly station areas. Central London is already an area based on public rail transport with high density of jobs in CAZ. Do Londoners need more TODs in those areas? How much is TOD contributing to the London rail network congestion? On the other side TODs in outer London, such as outside the green belt or along the rail corridors in Wide Wider South East would increase the risk of urban sprawl and car use for non commuting trips, as happened in other cities (Coppola and Papa, 2013).

London is a multicultural city and its diversity is also reflected in the multiplicity of its station areas and rail services. TODs in London include international projects such as Kings Cross and Paddington station area developments (see Figure 12.1), but also new mixed development along new corridor, such as along the Northern line extension (see Figure 12.2) and local scale housing improvements. As observed by the interviewed planner working for Westminster local authority, the challenge of applying TOD in London is to understand and deal with such diversity. It would necessarily include an analysis of different rail corridors and station area features: each station is different, and each corridor needs detailed planning according to its transport and land use characteristics. In some cases, the planning goal would be to preserve local identity of TOD areas and keep this diversity. In other station areas the

challenge is how to coordinate the needs of the night and the day users, now that some stations are open 24 hours, after the introduction of the night tube services. In some station areas the main problems are gentrification effects and a need for affordable housing urgency.

***[INSERT Figure 12.1]***

*Figure 12.1:* TOD around Paddington station (photo by the author)

***[INSERT Figure 12.2]***

*Figure 12.2:* London skyline and TODs along the Northern line extension: higher densities are located in most rail-accessible areas (photo by the author)

The characteristics and functioning of the stations in London vary actively, and TOD specific applications significantly differ in form, function and impacts, calling for context-based TOD typologies. A station and corridors classification would enable TOD stakeholders to invest in each type of TOD to achieve better overall leverage of benefits across metropolitan areas. A context-based typology and station area classification would also provide policymakers with a better understanding of the station area's urban problems, by analysing the impacts of different types of TOD. The international expert from the US argued that studies and application of TOD classifications have been developed in different cities across the world (Reusser et al., 2008; Lyu et al., 2016) and recommended that London should also proceed in this way.

The academic expert from London outlined that another critical aspect is always to consider a network perspective. London TODs are usually focused on the specific area where the development takes place, without considering the network effect that this might have (in terms, for example, of increase or decrease of accessibility to other station areas in the network). This lack of network approach is also reflected in how the main accessibility indicator used by TfL is measured in terms of a public transport accessibility level (PTAL). PTAL does not consider any network effect, but only local accessibility of stations. On the other hand, TOD's impact analysis should consider the network as a whole and estimate the land use and transport effect that new development could have on the network and land use along the network.

<b> Governance challenges: TODs stakeholders and processes

As discussed above, London plans for rail transit projects and related developments vary a lot, from high-speed station TODs to suburban station improvements. They both deal with a complexity of stakeholders, policy goals, economic interests, community needs and regulatory and financial instruments. The institutional complexity behind TOD processes contributes to a less than favourable institutional environment for TOD's successful implementation.

Experts interviewed from the Netherlands and Australia observed that transport bodies, in other international successful examples of TODs, are the primary stakeholders in the process, who could use their assets to accelerate housing delivery and raise revenues from properties in station areas. In London only recently, TfL increased the property development unit, recruiting personnel from the development industry (Kat and Bosetti, 2017). Also, Network Rail's real estate capability and expertise have been growing in the last years, setting a separate property company with the specific goal of implementing TOD projects. Transport public bodies, GLA and developers have established joint ventures for developments around some current station projects such as Earl's Court and Clapham Junction. However limitations and challenges still exist.

The main difference among other cities is that in most TODs, implementation it is the transport that follows the land use development. As acknowledged by local experts interviewed, London is precisely the opposite. With such an influential organisation such as TfL, it is development that follows the transport accessibility levels and the new infrastructure. It is usually mentioned in projects and plans how new rail corridors and station can 'unlock growing potential' (GLA, 2018). Usually, LAs do not have enough power to face negotiation with public transport bodies or developers. Not enough attention is paid on who is benefiting from the actual TOD policies, and on who is paying the highest prices. In most cases, the lack of coordination among stakeholders and the lack of participation of local communities in TODs debates increase the risk of gentrification phenomenon and the loss of place identity.

The number and complexity of stakeholders involved in London's TODs slows down the process. In particular, the lack of data on public land ownership makes it difficult for decision-makers to set priorities and define a comprehensive TOD plan. The dispersed responsibility for planning between the GLA and London Boroughs is another challenge. In

total, 36 LAs have planning control in London, and this number increases the challenge of institutional collaboration, which is a central element to identifying and delivering station developments projects. Fragmentation is due to different policy instruments alongside with fluctuating policy goals.

In some cases there is inconsistency between goals and corresponding strategies. In other terms, the main institutional barriers in London is the complexity in governance which is reflected in the multitude of stakeholders at various scales (international, national, regional and local), opposing sectors (land use and transport), a different set of agendas, jurisdictions and powers. It is true also considering the lack of coordination among the GLA, rail transport providers and smaller LAs outside London. TfL's intention to take control over Southern's train franchise could boost TODs instead, in areas outside GLA. The complexity of stakeholders is another barrier also in managing the operational and engineering operations of TODs projects.

Finally, experts interviewed who work for transport planning consultancies in London observed that financial difficulties are probably the main problem in TOD implementation for they involve significant risks. An on-going debate in London relates to the application of value capturing mechanisms used to monetise the increase in land values that arise in catchment areas of public infrastructure projects (GLA, 2017). Existing value capture tools (such as business rates on commercial premises; Stamp Duty Land Tax; development taxes such as the Community Infrastructure Levy CIL; and negotiated developer contributions) extract only a small part of land value gains from transport investment and in a poorly targeted manner. Studies are evaluating the possibility of introducing a new financial mechanism to enhance TODs with the aim to improve the ability to capture land value uplift systematically from significant transport investments. To enhance TOD projects and to improve the extraction of land value uplift on new and existing stock, the leading solution would be to give the Mayor direct control over the significant property taxes and eventually the power to introduce a new one that might take into account accessibility level changes.

<a> Conclusions

The research underpinning this chapter provides some discussions around barriers to implementation of TOD in London, highlighting both structural and governance issues.

Despite a new interest arising in London for TOD, the process remains blocked, and both economic and social risks remain high. Rather than providing a solution to these problems, some open questions, which ought to be included as part of a TOD research agenda in London, are posed.

The first question regards institutional feasibility. From the expert interviews, one of the recurrent themes was on the governance complexity in London. The central open question would be then on governance and how to make the processes more flexible and adaptable to the complexity of type and number of stakeholders. How can TOD become more flexible and which TOD types could better adapt to the London context?

Another question concerns efficiency: How to make real estate benefits and costs and transport benefits and costs more transparent? How to make TOD cost-efficient? How can TOD be made cost-efficient (and for whom)? Which TOD types are cost-efficient (and for whom)? Assessing the distribution of costs and benefits among stakeholders, including the local community should be a priority in London, in the name of better transport equity. How could TOD prevent gentrification of station areas? How to redistribute land values in TOD processes? How to empower local communities in the TODs implementation?

Questions more related to the actual geographical structure of the metropolitan area and the network shape are also relevant. How to plan and implement a regional TOD? How could TOD reduce commuting distances in London, keeping a high job density centre? In this sector, public bodies have a crucial role. The GLA in coordination with TfL and Network Rail should define a comprehensive plan, at the regional scale to identify public land ownership and future developments around stations, incorporating TODs into long-term planning tools. GLA should also provide resources, expertise and certainty to reduce risks investments and provide station areas development opportunities.

The case examined in this chapter is an output of a combination of desk based research and field research. The latter consisted in qualitative analysis of expert interviews conducted during eight months, starting in September 2017.

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