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DOI

[10.3828/tpr.2014.38](https://doi.org/10.3828/tpr.2014.38)

Publication date

2014

Document Version

Final published version

Published in

Town Planning Review

[Link to publication](#)

Citation for published version (APA):

Tan, W., Bertolini, L., & Janssen-Jansen, L. (2014). Identifying and conceptualising context-specific barriers to transit-oriented development strategies: the case of the Netherlands. *Town Planning Review*, *85*(5), 639-663. <https://doi.org/10.3828/tpr.2014.38>

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Wendy Tan, Luca Bertolini and Leonie Janssen-Jansen

Identifying and conceptualising context-specific barriers to transit-oriented development strategies: the case of the Netherlands

Transit-oriented development strategies (TODS) are widely embraced. However, their implementation remains challenging. Institutional barriers play a key role here, and the literature provides an overview of the most important ones and ways of overcoming them. Yet, application of such insights remains elusive, due to the context-specific nature of barriers. As a first and necessary step to cope with the implementation challenge of TODS, this paper proposes an approach to identify barriers within a given context. The approach is applied to a hypothesis-generating case, the Netherlands. The findings indicate a vicious cycle of mutually reinforcing formal and informal barriers hampering implementation. The approach could be useful for cities elsewhere that face similar implementation difficulties.

Keywords: transit-oriented development, institutional barriers, implementation challenges, context-specificity, vicious and virtuous cycles

Transit-oriented development strategies (TODS) aim for transit and land use integration by ‘concentrating urban development around stations in order to support transit use, and develop transit systems to connect existing and planned concentrations of development’ (Curtis et al., 2009, 3). TODS promise to counter urban sprawl and car dependence whilst promoting economic development and are embraced by practitioners from many cities and regions, even though evaluation and proof of such claims are not yet definitive (Al-Dubikhi and Mees, 2010; Bertolini, 2000; Madanipour, 2001; Næss et al., 2011). Many of these efforts, however, experience difficulty during implementation (Ayres and Pearce, 2004; Clifford et al., 2005; Curtis, 2008; Næss et al., 2011; Marsden et al., 2011). There is an abundance of literature on the barriers to the implementation of sustainable transport (Banister, 2004; Hull, 2010; Vigar, 2000). However, a systematic analysis of these barriers, in relation to TODS, is lacking (Marsden et al., 2011; Paulley and Pedler, 2000).

Successful TODS implementation exists when metropolitan areas move away from a car-oriented, sprawling development path towards a more transit-oriented and compact development, whereby success is not absolute, but rather a relative measure and can translate into different outcomes in different contexts. TODS are

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by nature extremely complex planning endeavours embedded in a dynamic institutional context (Pflieger et al., 2009). Implementation barriers and opportunities are thus context-specific, which impedes simple learning across different contexts. Given these constraints, the ‘copy and paste’ approach to the transferral of lessons learnt elsewhere proves inadequate (Renne, 2008; Vigar, 2000). There is no ‘one size fits all’ problem or solution. Rather, context-specific barriers need to be identified, in order to then look for context-specific ways of overcoming them. However, in the literature there is surprisingly little discussion on how to achieve this contextualisation of problems and solutions, which is a significant knowledge gap. This paper aims address this gap by focusing on the first step of the process: the identification of barriers. An approach will be proposed and tested through application –namely, the case study of TODS implementation in the Netherlands.

TODS implementation difficulties are experienced in the Netherlands, despite the numerous national, regional and local policies implicitly supporting TODS within a supposedly strong planning system with a multitude of regulations and programmes (VROM-Raad, 2009; Needham, 2005). The difficulties experienced by practitioners could be attributed to the changing planning context of trying to adapt to new forms of collaboration under less than ideal financial and political circumstances (Janssen-Jansen et al., 2012). This makes the Netherlands an interesting case for our inquiry because in comparison to cases abroad, such as those in the United States, Australia, Asia and elsewhere in Europe, it is likely that some context-specific barriers exist in the Netherlands requiring targeted interventions beyond the scope of conventional national planning practice or internationally acknowledged ‘best practices’ (Cervero, 1998; Curtis et al., 2009; Dittmar and Ohland, 2004).

Thus, the central question to be addressed here is how to identify context-specific barriers to TODS implementation. A four-step approach combining deductive and inductive research processes is proposed and applied to the ‘hypothesis-generating case’ (Lijphart, 1971, 692) of the Netherlands. This results in a conceptual model illustrating the interaction and relation of barriers. Whether the approach can be useful in other cases experiencing difficulty in TODS implementation is discussed in the conclusion. The institutional context and complexities of the case will be introduced next, followed by a description of the methodology for identifying barriers and their application.

The case of the Netherlands

Property development around transit nodes, ‘Knooppuntontwikkeling’,¹ has seen increased popularity within local, regional and national government as a Dutch

1 Knooppuntontwikkeling (literally, ‘nodal development’ in Dutch) usually refers to transit nodes, rather than infrastructure (road) nodes.

version of TODS (Provincie Noord-Holland and Goudappel Coffeng, 2010). So far only individual projects, such as the station areas of Amersfoort or 's-Hertogenbosch, have been regarded as successes (Bruil and Bruil, 2004; Peek, 2006). Yet, TODS on a metropolitan scale still face implementation challenges (Programmabureau StedenbaanPlus, 2010).

Increased road usage, decreased transit usage and marginal emission reductions have been observed in the Netherlands (Jorritsma et al., 2010). Contrary to policy claims of striving for balance in private and public transportation, modal split from 1995 to 2007 has hovered around 46 to 48 per cent in terms of number of trips per person per day for car-based mobility, whilst transit usage stayed between 4.5 and 5 per cent in the same period (CBS, 2010). Consequently, many policymakers are pessimistic about the effectiveness of current TODS policies in deterring increased congestion and decreasing car dependency (Francke, 2010).

Attempts at TODS

Two distinct directions for land use and transport integration around transit have developed in the Netherlands since the 90s. The first direction, which is TODS at the national level, consists of high profile, costly and large-scale station area redevelopment in the guise of national 'key projects', characterised by complex public-private partnerships and significant grants from the national government (Van der Wouden et al., 2009). Beside the implementation difficulties it faces, this direction does not benefit a metropolitan system-wide improvement for sustainable mobility, as it only focuses on a few select station areas (VROM, 2006).²

The second direction, TODS at the regional level, is a more collaborative approach, with numerous stakeholders seeking to concentrate and accommodate growth around railway station areas to avoid sprawling developments. Mostly 'soft' executive agreements between authorities are used with this approach, instead of 'hard' contracts (BPZ, 2007; Stadsregio Arnhem Nijmegen, 2011). Two well-known TODS in this direction are the urban regional corridor development programmes of the Stedenbaan programme (SB) in the Rotterdam-The Hague metropolitan area and the Stadsregiorail programme (SRR) in the metropolitan area of Arnhem-Nijmegen (see Figure 1). Both TODS have experienced institutional complexities that are part and parcel of the integration of land use and transport planning (Geerlings and Stead, 2003).

TODS at the local level are embedded within the national and regional levels. The conflicts and nuances between these levels will be addressed next.

2 A total of six station areas – Amsterdam Zuidas, Arnhem Central, Breda, Den Haag Central, Rotterdam Central and Utrecht Central – feature in this scheme across the whole country.

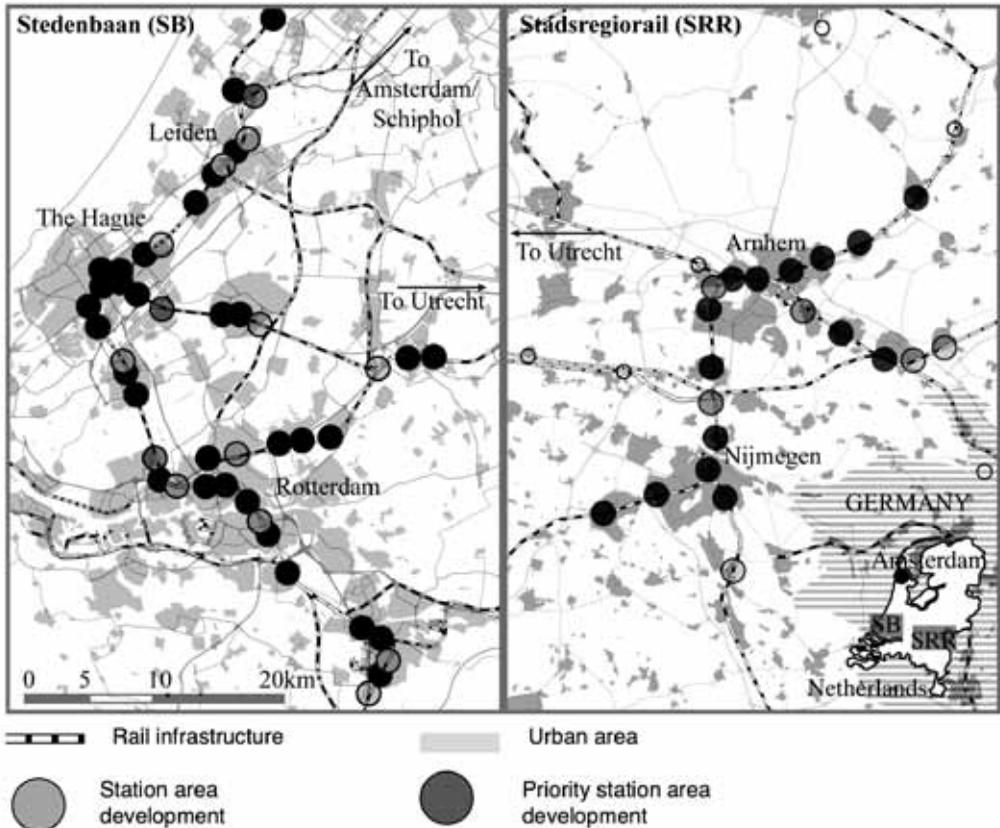


Figure 1 Map of Stedenbaan (left) and Stadsregiorail (right).

Source: Authors, based on OpenStreetMap.

Implementation challenges

Co-ordination between the conventional divergent sectors of land use planning and transport, across multiple levels of authorities from various levels of scale and a sufficiently responsive market condition is required for TODS implementation (Curtis et al., 2009). The decentralised unitary state that exists in the Netherlands with a deep-rooted need for consensus is a key feature of its policy context. This results in a multi-levelled system of co-governance consisting of a multitude of stakeholders (Van der Valk, 2002). Stakeholders from various scale levels (national, provincial, regional and local) and oft-opposing sectors (land use and transport), each with their own different set of agendas, jurisdictions and power are at play. Fragmentation is compounded by a set of conflicting policy instruments alongside fluctuating policy goals. Inconsistency

of goals and, correspondingly, strategies between stakeholders in opposing sectors seem to trickle down through all levels of governance. This leads to unsatisfactory compromises of ambitions (Majoor, 2008).

Some of these conflicts are inherent in the structure of planning law. In general, national authorities dictate infrastructure plans on roads and railways through the national Trajectory Act (VenW, 1993) or, more recently, with national or provincial zoning plans. Municipalities have limited power to object to these plans that they are then tasked with implementing. On the other hand, the provision of local public transport services (subway, trams and buses) occurs through concessions as directed by regional authorities (provinces and/or city regions). These are funded through a general national transportation budget (BDU or *Brede Doeluitkering*), which is beyond the jurisdiction of the regional and local governments increasingly tasked with implementation (IenM, 2012; VenW, 2004). Achieving the transit aspect for TODS alone requires complex agreements between numerous public agencies, in addition to commercial parties such as transit providers (BPZ, 2007). This often results in a strong focus on coordinating the transit policies, while ignoring the logics from the development perspective (Janssen-Jansen and Smit, 2013).

Moreover, Dutch land use and national transport policies have changed directions frequently over the last forty years, thereby complicating the development of coherent strategies (Needham, 2005). National transport policies first tried to restrict road infrastructure development for the benefit of public transportation and sustainable mobility and were then redirected to advance economic growth through improving accessibility (VenW, 2004; 2005; VROM et al., 2006).

Likewise, national land use policy first started by expanding away from the Randstad to concentrate on urban nodes with adjoining compact suburbs (Van der Cammen and de Klerk, 2003). Later on, land use policy emphasis shifted to urban growth management, with pressure on provinces and municipalities to co-ordinate their plans (VROM et al., 2006). National attention then returned to the Randstad metropolitan region, before diverting to pursue liveability, safety and accessibility within compact city regions, together with energy policies, attention to cultural historical values and more (IenM, 2012; VROM, 2008). The strong focus and continuity over a long period of time that is required for the implementation of TODS (Curtis et al., 2009) is compromised by this constant fluctuation between different policy goals and concepts.

Societal pluralism contributes to this 'messy' institutional and political context. Goals and objectives mutate during the implementation phase, due to either lack of continuity or commitment (Pressman and Wildavsky, 1974). The internationally renowned ABC location policy to discourage car use is an example of such a policy implementation mismatch, when most firms gravitated towards locations with more parking capacity, thereby encouraging car use, instead of deterring it (Rietveld, 2004; Schwanen et al., 2004).

The above combinations of factors are not conducive to TODS implementation. The sheer amount of policies in place without implementation on the ground indicates that conventional solutions of funding mechanisms and policy co-ordination are insufficient and perhaps not well matched to existing barriers. Identification of context-specific barriers is therefore needed, thereby making this an interesting case for our central research question of how to identify these barriers. A method for this inquiry will be introduced next.

Identification of barriers: method and findings

Solutions to implementation stalemates are expected to be more effective when targeted to the specific barriers present within a specific context and are identified by the actors and stakeholders involved (Ostrom et al., 1993; Pauley and Pedler, 2000). Practitioners tend to selectively adopt innovations based on a match with their 'own view and interest' as perceived through their 'own senses' (Wolman and Page, 2002, 493). The involvement of actors and stakeholders in the discovery process should therefore be central when identifying barriers.

A combination of inductive and deductive processes is thus proposed (see Figure 2). The deductive process starts with theoretical concepts from the literature analysis used to guide the process of obtaining observations and findings from actors and

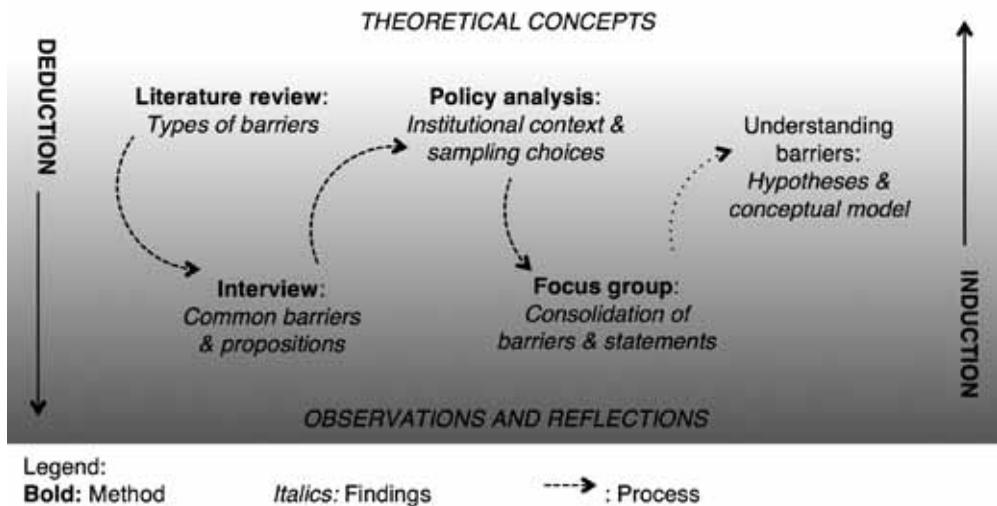


Figure 2 Schematic framework of the four-step approach with deductive and inductive processes of various methods and findings.

Source: Authors.

stakeholders through policy analysis, interviews and focus groups. An inductive process then followed, whereby the observations and findings iteratively helped to refine theoretical concepts, in order to develop a conceptualisation of the critical barriers (Bryman, 2004).

Four research methods: literature review, interviews, policy analysis and focus groups, have been used concurrently to identify barriers leading to an initial understanding of barriers (see Figure 2). The four methods, their findings and how they contribute to each other are presented next. For the sake of clarity, Figure 2 and the four steps are shown in a linear order to depict the main direction of analysis. However, the research was conducted with overlaps and iterations between steps. For instance, policy analysis played a role in multiple steps.

Literature review

The approach begins with an analysis of land use and transport integration strategies in relation to implementation barriers within literature. Most existing literature covers specific barriers, such as neighbourhood protest, lack of financial resources and market demand to general prejudices against TODS (Dumbaugh, 2004; Hess and Lombardi, 2004). Clifford et al. (2005) abstracted barriers to sustainable development (land use and transport integration) as legal (L), financial (FI), political/cultural (PC), institutional/territorial (IT) and practical/technological (PT) barriers. Here, institutional/territorial refers to organisational divisions (Clifford et al., 2005, 17), instead of institutions from the sociological perspective, whereby institutions are defined as: 'institutions are the humanly devised constraints that structure political, economic and social interaction ... consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct), and formal rules (constitutions, laws, property rights)' (North, 1991, 97). This broader definition can be applied to barriers as well. In fact, all barriers have an institutional component, except for those that are not man-made, of which there are few practical examples when it comes to TODS implementation. In this paper, deviating from Clifford et al. (2005), we consider all five types as having an institutional aspect, in the sense of North (1991, 97), and therefore as institutional barriers.

Many scholars have identified these institutional barriers as the most crucial to overcome (Banister, 2005; Rietveld and Stough, 2004). These institutional barriers continue to plague efforts to integrate land use and transportation policies (Ayres and Pearce, 2004; Hull, 2010). A further distinction can be made between formal and informal institutional barriers. Formal institutional barriers are legal, financial and practical impediments within formal institutions that manifest as regulatory guidelines, documentation and policies. Informal institutional barriers are obstacles stemming from political and cultural attitudes, such as, for instance, those generated

by organisational and territorial divisions. The types from Clifford et al. (2005) were based on barriers illustrated by practitioners from several EU cities and regions and offer the necessary actor perspective that is important for this paper. These five types (L, FI, PC, IT and PT) were therefore used to categorise barriers within data from the interviews and focus groups.

Interviews

Twenty-two open, in-depth interviews³ were carried out. The sampling consisted of expert stakeholders from various levels of scale (local, urban agglomeration and national), sectors (land use, transport or both) and organisations (private or public). These experts featured in key policy documents or held key roles in relevant organisations, as informed by the literature review and policy analysis. A minimum of one interview per sampling category was achieved (see Table 1). Collection of interview data ceased when recurring viewpoints occurred with additional interviews and saturation was achieved (Bryman, 2004).

Table 1 Selection of interviewees per category.

Scale/Sector	Land Use	Transport	Both
National	#1016, #1017	\$1014, #1015	\$1009
Provincial/Regional	#1002, #1012, \$1018	#1013	\$1019, \$1020, #1021
Urban Agglomeration	#1005, #1008	\$1003, #1006, #1010	#0901, \$1008
Municipal/Local	#1004	#1011	#1001
Type: # - Public or \$ - Private Stakeholders			

Source: Authors.

Interviewees were asked to describe in detail their role in relevant projects and were given full freedom and anonymity to relate any experiences deemed relevant from their own perspective, with minimal prompting during the open interview.⁴ This method triggers narration of personal experiences, allowing for externalisation of tacit knowledge. Story-lines, verbal cues and emotional emphasis are all monitored (Wagenaar, 1996). Interviewees were not asked explicitly about barriers, in order to broaden the scope of current

³ List of interviewees can be found in the Appendix at the end of this paper.

⁴ Interviews were conducted in Dutch to ensure comfort and ease of narration. Anonymity was guaranteed to allow these gatekeepers a chance to speak freely, instead of 'toeing the party line' of their organisations.

understanding. For example, a question about barriers would lead to what the interviewee presupposes was a barrier, instead of the actual barrier and related processes (see Table 2).

Interviews were transcribed and analysed through a system of substantive coding and categorising using analysis software.⁵ The categories were informed by the concurrent literature review. A short excerpt in Table 2 serves as an example of codes (left column, underlined) generated from the transcription and eventual coding into initial categories (right column).

Table 2 Example of an excerpt with codes (left), notes (middle) and categories (right).

Translated excerpt from Expert 1001	Field notes	
	Prompts (P) Emotions (E)	Initial code categories
<p>'...This is all in all a <u>complex</u> event. The complexity comes from the parties that are involved. Activities generated by the residential development and industrial terrain means that there is now demand for more project leaders...My role is to think up these kind of things. Getting people <u>enthusiastic</u> and to believe in the development concept. Eventually, take the necessary steps and consequently get the <u>other parties</u> (transport infrastructure authority, planning authorities from all levels) interested to bring this project further. This is the only way to move forward. My role is to cultivate enthusiasm, to <u>generate belief</u>, making <u>support</u> possible for <u>financing</u> and <u>implementation</u>...Visionary is an extreme term but I try to think of many things (methods) of making <u>other parties</u> interested. Look, (Dutch saying) <u>waiting for handouts is something we do too much</u>. There's too much...too much authorities (from which) we <u>need money from</u>. We try now to set things in motion ourselves, using the <u>profit to ensure quality (spatial)</u>...It never comes from others. You have to think it up and dare to do. To dare is one of the biggest problem. <u>When we signed (contract) for the station, no one thought a station would be realised</u>...'</p>	P: Why is it complex?	Complexity (process) Complexity (other stakeholders)
	P: Why enthusiasm?	Need for enthusiasm Belief in project Multitude (stakeholders) Interest in project
	E: Laughter	Need for enthusiasm Belief in project Support (financial) Support (implementation)
	E: Exasperation/Laugh	Multitude of stakeholders Interest in project
	P: using profit to ensure spatial quality? Please elaborate (not in excerpt)	Spatial quality Financial instrument Leadership/Vision Taking the lead Belief in project
E: Pride in voice	Support (implementation)	

Source: Authors.

5 HyperResearchTM – a qualitative data analysis software (QDAS).

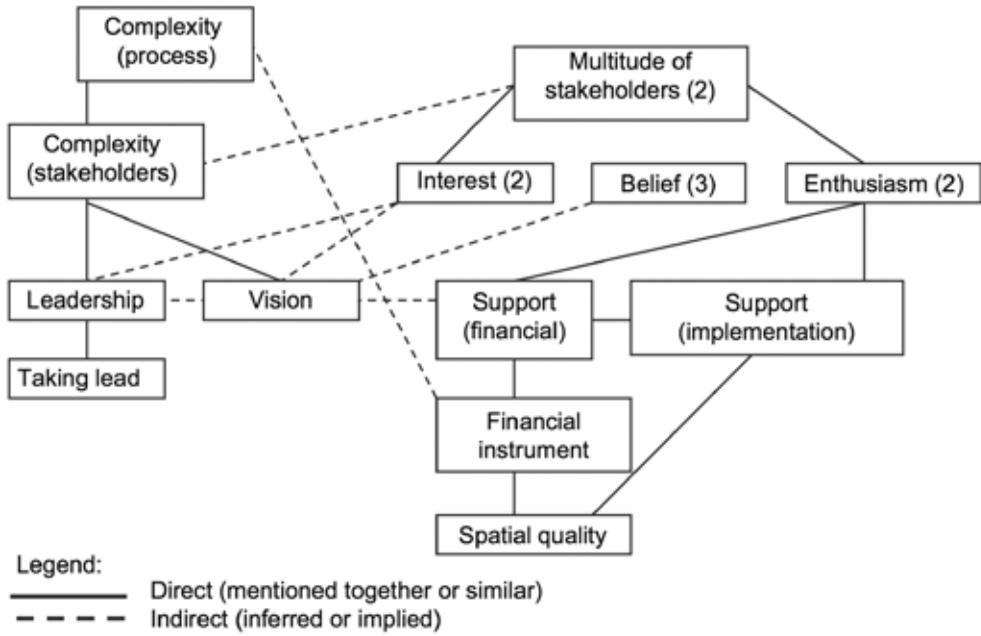


Figure 3 Code-categories map derived from excerpt in Table 2.
 Source: Authors.

More than 1,500 unique substantive codes were found during coding. Continuing with this example, code categories as related by the interviewee or frequently mentioned together were: complexity of process, complexity from other stakeholders, multitude of stakeholders, need for enthusiasm, belief/interest in the project and support (financial/implementation). Axial coding was then used to relate and link these initial categories to form code-category maps (see example in Figure 3). This process observes the frequency of categories and their mutual proximity.

The highest code-category frequency and proximities resulted in nine⁶ commonly recurring barriers in the form of the following Interview Propositions (IP₁–IP₉):

- (IP₁) sensitivity to market movements and trends makes planning and demand of TOD vulnerable;
- (IP₂) complexity of rules and regulations occur, due to sectoral differences in goals and priorities;
- (IP₃) unclear who should take the lead/responsibilities, and there is a lack of vision, commitment and belief;
- (IP₄) high initial investments are necessary and profit is not visible in the short term;

6 The barriers were numbered randomly and not in any particular order or priority.

- (IP5) locating and collating of subsidies and funding is at times unclear and a difficult process to streamline;
- (IP6) a culture of public transport is missing and this reflects in the quality of developments, as well as the lack of urgency;
- (IP7) fragmentation of the sectors leads to fragmentation and complexity in rules and regulations, limiting and preventing private stakeholders from contributing;
- (IP8) a lack of governance at corridor and node level, due to unclear responsibilities and roles; and
- (IP9) passive and inconsistent attitude towards involving private stakeholders from public authorities.

These were later used and refined during the focus group discussions.

Policy analysis

Analysis of policy documents relating to land use and transportation planning from the last four decades in the Netherlands was conducted. For example, land use and transport planning policy documents, evaluation reports and instrument guides from all levels of scale were reviewed for their objectives, goals and implementation instruments (Korteweg, 2007; VenW, 2004; 1993; OECD, 2007). The main findings were presented earlier on in this paper as the policy context and conflicts for the case of the Netherlands. The policy analysis helped to relate the literature review to the Dutch context and ground the findings from the interviews and focus groups and helped to structure the interview sampling and prompts.

Focus groups

Two focus group sessions were held, with twenty four expert participants in total. Interviewees were avoided as participants. Again, at least one participant per expert sampling category (see Table 1) was achieved per focus group.

The focus groups were asked first to individually rate the nine barrier propositions derived from the interviews (IPs)⁷, indicate whichever they thought most critical in their personal opinion and substantiate their choice in writing. Participants were asked if all barriers were identified and whether they were recognisable or experienced. The collection of interview propositions turned out to be solid. Focus group participants indicated high initial investment (IP5) as the most critical barrier with a score of 56 per cent, followed by unclear responsibilities (IP3) and passive attitude towards private parties (IP9) at 46 per cent each (see Figure 4).

7 The barriers were ranked on a scale from 1 to 10, with 10 being the most crucial on both the local and regional scale. With a total of twenty-four participants, the highest score achievable would be 480.

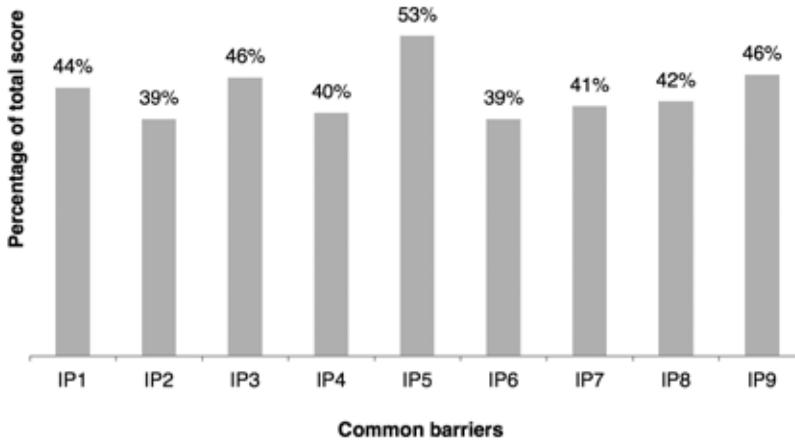


Figure 4 Results of poll during focus group sessions on most critical barriers, based on interview propositions (IP1–9).

Source: Authors.

Participants then reconvened and were guided by a moderator in a group discussion on which was the most critical barrier and why. The discussions were then further refined into five Focus Group Statements (FS1–5):

- (FS1) there is a need to make a strategic choice and differentiation in priority for projects from all levels of scale;
- (FS2) complexity in stakeholders involved and difference in timelines for different sectors/stakeholders need to be acknowledged;
- (FS3) more consensus is needed between stakeholders, and there seems to be a lack of leadership roles;
- (FS4) the directive role and authority of diverse stakeholders needs to be consolidated; and
- (FS5) agreement on the culture of indifference regarding public transport needs to be recognised.

From the discussions, it emerged that much confusion persists for stakeholders as to their mutual responsibilities: whom and when to approach if one wanted to initiate implementation. A culture of indifference with respect to transit was also emphasised; blame was assigned in particular to the national authorities for not having a clear priority in funding or commitment.

Researchers observed the discussions, taking notes of new information raised and intra-group dynamics. Observations indicated that participants were generally agreeable and receptive of each other's viewpoints.

Findings

An iterative approach between theoretical concepts, and observations and reflections was used for the identification of institutional barriers (see Figure 2). From the literature review, barriers were understood as five types (L, FI, PC, IT, PT). These informed theoretical coding of the interviews and focus group data. The frequency and interrelation of interview codes were used to identify nine common barriers and their surrounding dynamics (IP1–9). The barriers identified at this stage are: sensitivity to market trends, complexity of rules and regulations, unclear responsibilities, high initial investments, difficulties in funding, missing public transport culture, sectoral fragmentation, lack of governance and passive attitudes to private parties. Findings from the policy analysis helped validate the interrelation and provenance of barriers mentioned and identified participants for both the interviews and focus groups. Propositions were then further refined. The poll confirmed the selection of common barriers and indicated that difficulties in funding, unclear responsibilities and passive attitudes towards private parties (IP₅, 3 and 9) scored highest with participants as the most critical barriers. Focus group discussions resulted in statements on the need for a strategic choice and priority, complexity of stakeholders and sectoral differences, a need for consensus and lack of leadership, consolidation of roles and agreement on indifference to public transport (FS1–5).

The focus groups provided an efficient and effective way to validate and triangulate barriers culled from the literature review, interviews and policy analysis phases. This approach granted an insider's view of the roles and interactions amongst the stakeholders within the reality of TODS implementation in the Netherlands.

Understanding barriers

Formal and informal institutional barriers were observed and distinguished in the findings. Both types of barriers and their mutual relationship will be discussed below using representative quotes⁸ to illustrate the hypothesis generating process.

Formal institutional barriers

The formal barriers identified are complexity in governance, exacerbated by a multitude of stakeholders with differing perspectives and a lack of clarity of the roles each play, in addition to the availability of financial resources.

⁸ The interviews were conducted and transcribed in Dutch. The quotes shown here are translations. After each quote, the attribute of the interview or focus group participant is listed according to their level of scale, organisational type and sector, if the information is available. Interview participants are identified by their unique code number. Focus group participants are identified only by their group number.

Participants discussed the roles of respective stakeholders in both interviews and focus groups. Mostly, accusations were made towards stakeholders with power to decide on resource allocation. On a more optimistic note, self-criticism by participants on their own restricted capacities always accompanied those accusations:

(On integral TOD development) ... You have to put it all in one hand (one responsible sector), the stations are now with the market (parties) and infrastructure rests with the authorities ... I don't believe in it. There are two models (market or authorities led) ... (you have to) leave it to the market or (authorities) take the leading role ... Now we are doing both ... development (around stations) are left to the wind, no one takes responsibility for it and just let whatever happens. The network we try to control ... so ... we're actually mixing up two different (directions) models. (1019, Urban Agglomeration scale, Private stakeholder in Land Use and Transport sector)

Governance and coordination from national authorities, provinces, city regions and municipalities are essential (who is going to take the lead?). (Group 1, Local scale, Public stakeholder in Land Use sector)

Most narratives focused on the lack of clear roles or processes in an unnecessarily complex system with a multitude of stakeholders. These then contributed to differing visions and less political will and commitment. The fragmentation of administrative responsibilities is exacerbated by a strictly compartmentalised financial division system that encourages competition, instead of integration:

... if you think about it, it all belongs together ... (national financial authorities) is actually the owner of the transport provider (as major shareholder), (infrastructure authority) belongs in a sense to the national transport authorities ... the regional, local and provincial authorities get policy directives and goals from national authorities (co-ordination) ... division of (concession rights and funding) money comes also from the national authorities ... why must it then be so difficult to co-ordinate everything ... you only have one level in charge at the end ... (1009, National scale, Private stakeholder in Land Use sector)

There is a complicated division key for the amount of money a regional stakeholder gets annually to spend on their public transport infrastructure ... it depends on the size of the region, existing infrastructure ... etc ... This means that certain regions get more than others and that makes the development of new infrastructure much easier if you already have an extensive network. (1006, Urban Agglomeration scale, Public stakeholder in Transport sector)

Private stakeholders indicated confusion regarding the amount of different authorities they have had to deal with. This led to some innovative market-led initiatives not being realised.

Informal institutional barriers

Informal barriers are identified to exist as the inability to bring ideas to fruition, signalled through lack of commitment or ambition. The mismatch between long-term ambition and short-term gain is partly responsible. The preference for automobiles in policies and by policymakers is also an informal barrier and also due to existing practice culture, perception and framing. The findings did reveal deep enthusiasm for TODS from the stakeholders involved. However, many confessed that, in reality, the policy ideas often outweigh the eventual actions:

We had a concept (to integrate services, public transport and road transport at a local/regional node). We took this message shopping, hoping for collaborators to help start or carry on the initiative. Unfortunately, ... unable to (start) despite all the enthusiasm ... this is not our core business. We were a small transport provider ... had legal and financial obligations to our board of directors. Most of stakeholders we approached ... at least those that we knew ... were interested, but could not or did not want a leading role. (1003, Urban Agglomeration scale, Private stakeholder in Transport sector)

... we are also unsure of our role in this phase, especially after the new land use policy bill. We would like to investigate if we could mean something ... even a sort of accumulative role for knowledge ... however, we also have a short life span, we will not exist after 2011 and what happens then? (1016, National scale, Public stakeholder in Land Use and Transport sector)

Stakeholders who are perceived to inhabit dominant positions over resources or power bases have been assigned blame for perpetuating indifference for transit. A stakeholder from the dominant position corroborated this '... how can we maintain that we find public transport to be an important objective when most of our budget actually goes towards building roads?' (1015, National scale, Public stakeholder in Transport sector). Those with decision-making power are also blamed for being opportunistic, looking towards short-term results, instead of standing behind a long-term goal, and vision for spatial quality:

... (on involvement of private stakeholders on station development) we do nothing with that ... (on the role of the national authorities) ... around key projects (high speed rail stations), the initiative (from national authorities) comes together. It does not always work like that. If there is a need for something new (development), comes mostly from the municipalities. The municipality brings (ideas forward) during administrative discussions ... we will only take the initiative on if the capacity of the station is too little. We are very functional in this. If the station is too small, the platforms are too small...or if the station is too old ... then we think something else should happen (development). (1015, National scale, Public stakeholder in Transport sector)

Public stakeholders displayed a passive approach in processes involving private stakeholders:

Yes (hesitantly) ... We are open to what market parties have to offer but we are cautious ... and make our own evaluation...because it is our money that goes in ... negotiate opportunistically ... invest where there results is to be had ... public money ... tax money ... we have to look for the multiplier to ensure that it becomes a success and we have to be careful with it. (1005, Urban Agglomeration scale, Public stakeholder in Land Use and Transport sector)

... (the authorities) brought it to the market/private stakeholders ... trying to get us to build and bring in money ... the only thing that they still do from the authorities is to say ... 'market (private stakeholders) ... you can do what you want ... but only within this tiny space' ... the authorities do not want to pay for it anymore, the market has to pay for it but they cannot decide what they can create or what they actually want to create ... (1003, Urban Agglomeration scale, Private stakeholder in Transport sector)

The findings indicate a lack of urgency and knowledge sharing within and between stakeholders. There is consensus on a clear preference for other modes (namely, for automobiles) in terms of resource allocation.

Mutually reinforcing barriers

Financial barriers were emphasised in the literature (Banister, 1998; Clifford et al., 2005). The interview propositions and focus group polls show that the lack of financial resources as a common, recognised and critical (if not most significant) barrier for our participants (see Figure 4). However, the focus group statements and narratives in the findings suggest that further distinction is necessary. For several stakeholders, the real issue here is not so much the lack of funds, but rather the lack of priority and coordination in investment decisions:

Daring to (take the lead) was one of the biggest issue. The municipality (board of directors) was asked to have the courage to help us communicate the possibility of realising (the station) ... that it will happen ... The city region and province queried us over whether we would even have the money (for the station) ... we pleaded with the board to not say (that we had none at that moment) but to tell that it will happen and believe in it as well ... this is not blackmail or a bluff, but rather to convince the rest with some quality ... in beginning we send around information packages to inform and convince everyone else that this will happen. This is how we started (metaphor over drops of water on stone) to wear away at the impossibility ... a tiny drop at a time. Now no one doubts if the project will happen but now they talk about the money instead ... (1001, Local scale, Public actor in Land use and Transport sector)

... simply put ... it's almost always about money. Shortage of funds ... but that's not all. It is just as much about (for example) co-ordination of programs (and objectives).. Not the same (program) everywhere! You cannot have the same everywhere at the same time ... you have to ask yourself how many shops you really need at what cost to other locations? This requires programmatic co-ordination between developments. It's not always about money, but about these sorts of things. It's about things ... what is the (spatial) quality? How does the commuter/consumer experience the quality? What do you need to pay attention to ... (1002, Urban Agglomeration scale, Public actor in Land use and Transport sector)

Only stakeholders with decision-making power over financial resources and budgets on the national level and from the transport sector disagreed. They experienced frustration at being unable to meet every request, due to overwhelming demand on their resources from other stakeholders:

... it (public transport) is important, everyone within the ministry says so. If you look closely, you can tell how important it is by the money we spend on it ... that is not a huge proportion compared to what we spend on roads. At the end of the day, everyone wants money for their development. We have only so much we can give. (1015, National scale, Public actor in Transport sector)

Other implicit issues that hinder the channelling of resources also surfaced. Focus group participants indicated awareness that financial resource availability originates elsewhere, rather than the lack of funds:

... those responsible for the problems and leading role on the nodes do not involve the right parties on time, leading to lack of development. There is a need for a corporative action, communal recognition, and agreement to the problem at hand. Only then will the money follow. (Group 2, Provincial/Regional scale, Public stakeholder in Transport sector)

... money and cooperation requires most attention ... between all the players in the field, not just the existing organisation. Who is doing what? Imagine if there is money? What then? How does that run with the planning? (Group 1, Provincial/Regional scale, Private stakeholder in Transport sector)

... division of costs is the biggest issue in finding a solution ... (Group 2, Local scale, Public stakeholder in Land use and Transport sector)

Findings indicate the lack of financial resources as a highly deceptive symptom of biased resource distribution, rather than as a legitimate and independent barrier for the Netherlands. This is an example of the inherent relationship between formal and informal barriers. The perception of the lack of financial resources itself outweighed the actual lack of financial resources, masking the distribution bias of formal policies and policy goals. Participants exhibited awareness of the cause and effect of these barriers.

Towards a conceptual model

Critical institutional barriers and their dynamics have been specifically identified and explored through the four-step approach. Findings suggest that critical barriers do not occur independently of each other. Relationships between these formal and informal barriers were observed.

Formal barriers of institutional complexity, fragmentation leading to lack of clarity in roles and responsibilities result from a composite of factors. The complexity due to the multitude of stakeholders and different timelines in the various sectors of land use and transport within the different levels of scale requires consensus and consolidation of roles for implementation. This is achieved only when strategic choices are made and priorities are differentiated. These choices are, however, influenced by the informal institutions of the norms, beliefs and values of the planners and policy-makers operating within planning practice.

The indifference in planning practice can be attributed to a lack of urgency and differing perceptions between stakeholders. On the other hand, a culture of indifference towards public transport from users and providers represents a rearguard fight for parlaying ideas and visions into action. The basis for negotiations and setting of priorities, ability to distinguish long-term goals from short-term gains, are also missing through the lack of consolidation of stakeholder roles and responsibilities. These shortcomings have repercussions on the formal institutions, enacted through plans and policies set by those within these practice cultures.

The above dynamics between formal and informal barriers have manifested as a vicious cycle. Given the effort, time and costs needed to realise TODS implementation, the necessary and strategic choice is not always apparent and uncertainty by practitioners and policymakers is understandable (Bartholomew, 2007; Curtis, 2008; Hull, 2008; Filion and McSpurren, 2007). Findings indicate that stakeholders are not sufficiently attracted or motivated to invest their efforts or resources, despite policy ambitions. This represents a non-conducive context to TODS implementation in the Netherlands. There seems to be a self-reinforcing negative feedback loop ensuring production and provision of transport infrastructure and spatial development detrimental to implementation (see Figure 5, left). Based on positive examples elsewhere, a reverse and therefore virtuous cycle also seems possible (Cervero, 1998; Curtis et al., 2009; Dittmar and Ohland, 2004). Therefore, a shift towards a more conducive institutional context where barriers are lifted by the introduction of incentives for TODS implementation is hypothesised (see right hand side of Figure 5).

On the basis of this discussion, two hypotheses can be identified. The first hypothesis is that self-reinforcing vicious and virtuous cycles of formal and informal institutional barriers play a key role in hampering or enabling implementation of TODS. The second, more implicit, hypothesis is that in order to move away from barriers,

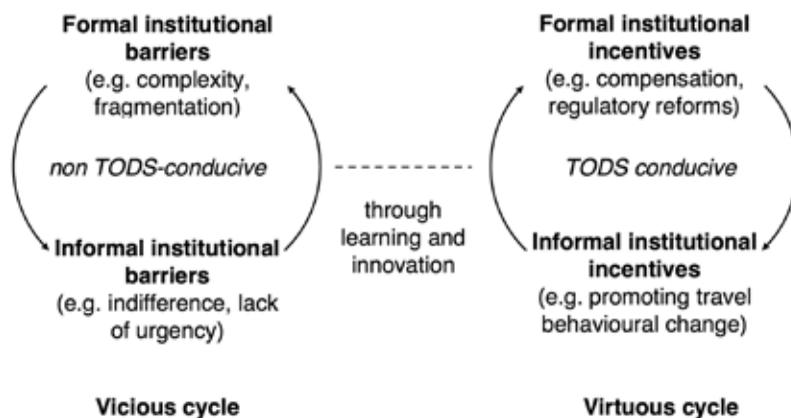


Figure 5 Conceptual model on the dynamics between formal and informal barriers (left), leading towards the possible lifting of barriers (right).

Source: Authors.

processes of learning and institutional innovation are needed (Bertolini et al., 2012; Marsden and Stead, 2011). This conceptualisation goes beyond current literature where barriers and possible solutions are identified, but does not focus on how to identify barriers in a specific context and their interrelationships, and not with a view on the process and time needed to alleviate them (Clifford et al., 2005; Paulley and Pedler, 2000). The two latter points are contributions that are relevant beyond this particular case. In the literature, barriers have been presented as independent and context-generic, rather than as interrelated and context-specific, as in our approach, identification and analysis. The usage of formal and informal institutional incentives to achieve a conducive institutional context can be found, but the literature is not explicit on how the process of achieving such context occurs or can be replicated (Marsden et al., 2011; May, 2013). Next, the approach is reflected upon, and the originality of the findings, the conceptual model and possible next steps are discussed.

Conclusion

A dual contribution to the existing literature has been made. First and most importantly, an approach to identify barriers to TODS in a given context has been developed and applied. The systematic combination of deductive and inductive processes in four steps led to context-specific and robust findings that crucially included the local stakeholders' perspective. This is an approach that can be replicated in other

contexts, provided that there is sufficient access to an expert population of stakeholders and background information. Furthermore, the approach, identification and analysis led to the recognition and eventual conceptualisation of formal and informal barriers reinforcing each other and determining how conducive a context is to TODS implementation. The conceptualisation leads to the possibility of the breaking of this vicious cycle of formal and informal barriers, provided that there is a conducive context for TODS implementation.

The focus groups provided an efficient and effective way to validate and triangulate barriers culled from the literature review, interviews and policy analysis steps of the approach. This approach granted an insider's view of the roles and interactions amongst the stakeholders, the sampling population, within the reality of TODS implementation and planning processes in the Netherlands. The conscious choice to feature rich, descriptive quotations as findings retained the stakeholder's perspective in the identification and understanding of institutional barriers.

The findings not only identified the barriers, but also gave a more nuanced view on the processes in the Netherlands, in light of the changing planning context, and beyond superficial views of an international planning 'best practice'. This was carried out by the untangling of the issue from the perspective of the stakeholders, such as the frustration at formal regulations perpetuating a lack of motivation. Implicit relationships between relevant stakeholders were also uncovered, contrary to the strict hierarchical separation in the formal levels of governance. In addition, the process of understanding these barriers to TODS implementation provided a systematic discovery process that can be shared beyond organisational boundaries and could help develop shared awareness between stakeholders. Although the findings presented seem subjective due to representative quotes, these were tempered through validation, confirmation and reflection on multiple sources from the four-step approach.

The current literature focuses more on formal institutional barriers (Rietveld and Stough, 2004; Banister, 2004; 2005; Marsden et al., 2011). However, in the identification within the Netherlands, important processes leading to informal barriers have been observed as taking place outside the purview of formal institutions. Formal and informal barriers appeared entangled in a vicious cycle of self-reinforcement. Based on the conceptual model and the hypothesis of a possible shift towards a virtuous cycle based on examples elsewhere, it stands to reason that learning and institutional innovation are preconditions required to achieve the desired spatial and mobility patterns of TODS, especially when adaptation to changing responsibilities and context is required of the stakeholders involved. This would be a development for the current literature more focused on the end state than the process of shifting away from a vicious cycle and towards a virtuous cycle (Cervero, 1998; Curtis et al., 2009).

In order to be validated and generalised, these hypotheses need to be further explored and tested. The first hypothesis – that is, the key role of self-reinforcing

vicious and virtuous cycles – can be verified through foreign cases that have demonstrated their ability to lift barriers similar to those experienced in the Netherlands through the application of incentives. The second hypothesis – the requirement that processes of learning and institutional innovation move away from barriers – can be tested against the reconstruction of the process with a shift from a vicious to a virtuous cycle in those cases. The treatment of these comparative case studies will utilise historical institutional analysis and in-depth interviews with relevant stakeholders to retain the spirit of the approach used above.

Appendix

List of interviewees

Expert 0901: Urban Agglomeration scale, Public stakeholder in Land Use sector.

Expert 1001: Local scale, Public stakeholder in Land Use and Transport sector.

Expert 1002: Provincial/Regional scale, Public stakeholder in Land Use and Transport sector.

Expert 1003: Urban Agglomeration scale, Private stakeholder in Transport sector.

Expert 1004: Local scale, Public stakeholder in Land Use and Transport sector.

Expert 1005: Urban Agglomeration scale, Public stakeholder in Land Use and Transport sector.

Expert 1006: Urban Agglomeration scale, Public stakeholder in Transport sector.

Expert 1007: Urban Agglomeration scale, Public stakeholder in Land Use and Transport sector.

Expert 1008: National scale, Private stakeholder in Land Use and Transport sector.

Expert 1009: National scale, Private stakeholder in Land Use sector.

Expert 1010: Urban Agglomeration scale, Public stakeholder in Transport sector.

Expert 1011: National scale, Public stakeholder in Land Use and Transport sector.

Expert 1012: Provincial/Regional scale, Public stakeholder in Land Use sector.

Expert 1013: Provincial/Regional scale, Public stakeholder in Land Use sector.

Expert 1014: National scale, Public stakeholder in Land Use and Transport sector.

Expert 1015: National scale, Public stakeholder in Transport sector.

Expert 1016: National scale, Public stakeholder in Land Use and Transport sector.

Expert 1017: National scale, Public stakeholder in Land Use sector.

Expert 1018: National scale, Private stakeholder in Land Use sector.

Expert 1019: Urban Agglomeration scale, Private stakeholder in Land Use sector.

Expert 1020: Urban Agglomeration scale, Private stakeholder in Land Use sector.

Expert 1021: Provincial/Regional scale, Public stakeholder in Land Use and Transport sector.

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