Dutch train station redevelopment and the implementation of area development plans

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Abstract: This thesis studies the implementation of urban redevelopment linked to station redevelopment. Three case studies are examined using a deductive approach and a process of desk research followed by interviews. These case studies are urban redevelopments around rail stations of intermediate importance whose infrastructure is being improved. Although such redevelopments are increasingly common in the Netherlands, they remain seldom addressed by international literature regarding rail/urban links. Therefore this thesis studies the relevance of international theories regarding land-use/transport coordination in the case of Dutch stations of intermediary importance. The focus on land-use/transport coordination leads to a focus on theories such as TOD, but also on the theoretical frameworks of stakeholder networks and stakeholder collaboration. Therefore this thesis examines the extent to which practice in the Dutch institutional and cultural context behaves like in international theory. Finally, recommendations for practice are given.

Keywords: Station Redevelopment, Station Area Redevelopment, Urban Transformation, Transit-Oriented Development, Stakeholder Network Management, Stakeholder Collaboration

1. Introduction

1.1. Background

Peter Calthorpe's seminal work *The Next American Metropolis* (1993) introduced the idea of Transit-Oriented Development (TOD), in which linking public transportation and walkable city design leads to improvements in urban quality of life and economic activity. TOD was then implemented and studied in North America and across the world. It has become increasingly clear that although there can be timescale issues and delays, new stations and infrastructure can catalyze urban development, energise the local property market and improve the local economy (Loukaitou-Sideris et al, 2012). This is contingent on successful implementation through achieving coordination of many heterogeneous stakeholders (often through shared visionmaking) and avoiding the false idea of transport/land-use coordination as something stable and not a *"perpetually evolving misalignment"* (Gallez et al, 2013). Public policy is often needed to achieve this coordination, and to facilitate reshaping existing urban fabrics when purely market-based solutions struggle to be implemented (Cervero & Landis, 1997). Although Calthorpe focused on the creation of new neighborhoods around transport infrastructure, others have shown that this pattern can function when existing stations are redeveloped too (Bertolini & Spit, 1998).

Existing stations are redeveloped and are expected to foster redevelopment of the surrounding area: this situation is increasingly common in the Netherlands. Roberto Cavallo writes in *Stations as Nodes* (2019, p.45) that *"Dutch cities are currently flourishing and attracting more and more people and activities [...] the demand of housing in the main cities is running sky high. With regard to railway nodes, higher frequencies of transportation, the accommodation of different flows of traffic [...] is requiring stations and station areas to be repositioned and to transform towards much strongly integrated and interactive public (transportation) poles in their urban context"*. This thesis examines the implementation of links between redevelopment of train stations of intermediate importance (ie, which are not international hubs) and redevelopment of their surrounding areas, in the Dutch context.

1.2. Research problem statement

In the Netherlands, the currently ongoing High Frequency Rail Transport Programme (PHS) involves redeveloping seven rail corridors across the country to allow for a higher

frequency of intercity trains. Many stations need redevelopment to accommodate increased train frequency and the transformed rail infrastructure. Many of these operations are already underway (ProRail Network Statement 2022, 2020) and are accompanied by redevelopment of the station area. Indeed, all three case studies examined in this thesis concern stations being redeveloped to increase intercity rail frequency, and their accompanying station area redevelopments. This situation falls within a gap in the existing research. The links between redevelopment of stations and their surrounding areas have been studied previously in various countries. However, they generally focus on the creation of entirely new stations and neighbourhoods, or on the redevelopment of major international rail hubs and their surroundings (see for example Bertolini, 1998; Bertolini, 2015). Furthermore, their focus is not on how these projects went from being policy visions to being successfully implemented. Therefore the widespread redevelopment of intermediate stations in the Netherlands does not quite match existing research. Possible issues include diminishing infrastructure returns, high land prices, as well as specific difficulties achieving the all-important stakeholder coordination to implement TOD in the Dutch context (Pojani & Stead, 2014a).

This research will examine the implementation of urban redevelopment plans situated near Dutch train stations of intermediate importance (i.e. stations with multiple lines but that are not national hubs and do not carry international trains) which are also being redeveloped. To achieve this, three such case studies will be conducted and compared. The relevance and explanatory usefulness (in this situation) of existing international theories will thereby be examined.

1.3. Research aim and research question(s)

This research examines how redeveloping a train station of intermediate importance can facilitate implementation of nearby urban redevelopment plans, in a Dutch context. This will be achieved through three case studies. As these case studies are stations of intermediate importance, they do not carry international trains and are not national-scale hubs. Additionally, they are not part of local rapid transit systems and they are more important than local commuter stations (who generally have only one line and/or no express/intercity trains). This thesis studies the redevelopment of these station areas, which involve some national-scale stakeholders but also many important local stakeholders who shape each project. This thesis examines links between station redevelopment and urban redevelopment, and the scale of the case studies leads to a focus on stakeholder networks. This research aim leads to several sub-questions:

- What are the challenges of implementing Transit-Oriented Redevelopment in the Netherlands? Focusing on project implementation means that this thesis also aims to learn about the specific challenges of implementing urban redevelopment in the Dutch context. The nature and scale of the case studies leads to a focus on project-scale challenges. Therefore, there is a focus on stakeholder networks, and on stakeholder conflict or collaboration.
- Which organizational tools are used to bypass these challenges? Due to the scale of the case study redevelopments selected, relevant organisational tools will focus on stakeholder networks management, stakeholder cooperation and/or collaborative planning. This means that this thesis will examine ways in which stakeholder dialogue, cooperation and consensus-seeking are facilitated. This will most likely be done through new forums for discussion, specific meetings and/or shared policy creation process. In practice, this will include studying links between rail redevelopment stakeholders and urban redevelopment stakeholders.
- How appropriate are theories based on foreign contexts about linking transit and urban projects to the reality of the Dutch context? To what extent can existing theories such as Transit-Oriented Development (developed in the USA) or the five dilemmas of station area development (Bertolini, 1998) be considered relevant and useful in this context? These theories were after all empirically verified in a different situation.

This thesis examines links between station redevelopment and urban redevelopment, and the scale of the case studies leads to a focus on stakeholder networks, their management, and stakeholder collaboration.

1.4. Scientific and societal relevance of the proposed research

There are currently many redevelopments of rail stations of intermediate importance in the Netherlands. Furthermore, they are often near (or associated with) urban projects. However, the literature review shows that existing theories regarding links between urban development and rail, such as Transit-Oriented Development, mostly rely on very different case studies. Many of those case studies involve development of a new station, rather than redevelopment of an existing one: see for example the Laguna West TOD in California (Quinn, 2006), the San Francisco BART (Cervero, 1997), or Euralille (Moulaert, 2001). And even in cases where station

redevelopment is studied, it is generally a regional or international hub such as Basel Euroville or King's Cross station (Bertolini, 1998). This thesis seeks to address this gap in the literature, and expects to identify points of tension and challenges specific to this context such as stakeholder coordination issues (possibly linked to Dutch planning culture or national rail stakeholders). It is possible that some aspects of those theories may prove imperfectly adapted to this Dutch context. Therefore, this thesis can be used to increase understanding of the Dutch situation, but also to test the relevance of the theoretical framework in this situation. Furthermore, this thesis may add to the theories it examines by suggesting alterations to their applicability criterion.

The societal relevance of this thesis is linked to the methodological recommendations for practice which will be formulated once the analysis is complete. The case studies chosen are typical of a widespread situation in the Netherlands: redevelopment of an existing station of intermediate importance and of its area. Pojani & Stead (2015) refer to examples in Zaandam, Delft and Arnhem, and Roberto Cavallo describes this situation as widespread in *Stations as Nodes* (2019). This focus on intermediate station redevelopments leads to a focus on stakeholder networks and stakeholder management, as these are the issues and tools most relevant to the scale and nature of the case studies chosen. Tools such as national legislative and/or financial instruments and innovations are effectively outside of the scope of the case studies. Therefore the methodological recommendations will mostly concern stakeholders and stakeholder management at the scale of a station area redevelopment. All three case studies are involved in a national-scale project: the High Frequency Rail Transport Programme (PHS) rail frequency increase project led by ProRail (and therefore by the Ministry of Infrastructure and Water Management). However this project does not directly affect station area redevelopment, and so the case studies are at the scale of a neighborhood redevelopment. Furthermore, this PHS project is associated with many Dutch station redevelopments and station area redevelopments. However, this commonplace situation is quite different from the usual case studies used to study rail/urban interactions in other countries, such as TOD case studies. Therefore this thesis will allow for the formulation of recommendations to public or private stakeholders coordinating station area redevelopment in the Netherlands. The scale of the case studies lead to a focus on stakeholders, making this thesis especially relevant to practitioners involved in stakeholder management or single-project issues. Indeed, the methodological recommendations given at the end of this thesis are most useful to such practitioners.

This thesis will be of interest to Dutch planners who wish to redevelop a rail station and/or its area. It will also be useful to other stakeholders using a nearby station redevelopment as an opportunity for their own urban projects. It could also be useful to stakeholders designing or improving mechanisms for stakeholder dialogue and cooperation in the context of Dutch rail/urban interfaces.

2. Literature review and theoretical framework

2.1. Critical review of the academic literature and policy context

2.1.1. The specificity of (re)development near train stations

The literature shows that developments around train stations benefit from high accessibility. A train station is an opportunity to enact land-use policies favoring economic growth due to the high accessibility of the area. Increased investor confidence due to the presence of a train station also helps enact such policies (Lambert, 2016). Redevelopment of a train station can be a similar opportunity, if it brings a significant improvement in accessibility or investor confidence. Furthermore, developments around train stations are especially suited for various policies seeking to solve urban issues by restructuring urban life (for example, by building housing with less parking to fight congestion, or by building affordable housing in an area from which jobs are accessible, to resolve economic issues). The literature regarding the specificity of developments around train stations is often focused around interregional stations (see Yin, Bertolini, & Duan, 2015 or Bertolini, 1998) or around the creation of new stations to revitalize existing areas. There is a comparative lack of literature about the renewal of existing stations of intermediate importance. However, some of the literature (Triggianese, Cavallo, Baron, Kuijper, 2019) suggests that such a renewal will be needed to make existing stations and their immediate surroundings adapt to new modes of transport, like increased demand for bike parking, vehicle-sharing, or Mobility as a Service (MaaS).

Another issue affecting the literature is that definitions of what is ‘local’ to a station can vary (see Andersen & Landex, 2008 and Gunn et al, 2017). A station’s immediate surroundings and its entire catchment area include different stakeholders: larger resident groups, different commercial stakeholders, etc. Projects will focus on different types of technical, economic and social issues depending on which stakeholders are considered. Issues most relevant to a station’s direct surroundings are intermodality, public/private ownership of space, security, and commercial activity. A station’s whole catchment area is most often used when discussing wider economic impact, as well as responses to larger urban issues such as air pollution or congestion. Furthermore, Dutch planners sometimes have an unusually wide definition of a station’s area (Pojani & Stead, 2015). This is because the travel times of locals reaching the station are determined using cycling speed instead of walking speed. Therefore, the definition of what is ‘local’ to a train station is especially important in examining implementation of local

projects. It is also relevant when facilitating cooperation between stakeholders. This leads to another limitation of much of the literature: it is often divorced from practical considerations of implementation, be they legal, economic or organisational. This is especially significant among texts which study the potential benefits of associating urban development and rail development. Nevertheless, authors who do study the implementation of such projects (such as Loukaitou-Sideris, Cuff, & Higgins, 2012) say that positive impacts of a station's presence require coordination between stakeholders and sectors, as well as a significant change to the station and to what it represents for the area.

2.1.2. Implementation issues due to lack of coordination, developer reluctance

Theoretical discussions of station area developments and their benefits (such as TOD) often do not include implementation issues. Some of these discussions (Hale, 2012) give practical guidelines to evaluate a policy and acknowledge that failure can occur, but too often the practicalities of under-achieving projects are not examined. The aforementioned necessary pre-planning and multi-sector coordination is often studied, but generally only when it comes to coordinating public policy (Gallez, Kaufmann, Maksim, Thebért, Guerrinha, 2013). Nevertheless some texts do directly address the issue of selecting and negotiating with developers. Yin, Bertolini, & Duan (2015) identify *"secondary zones"* and *"tertiary zones"* in which market factors inhibit private developers and prevent development objectives being met without public sector intervention. In these zones, the promise of profits due to the station's proximity no longer outweighs the high land prices and significant technical constraints associated with stations. Peek & Louw (2008) studied the integration of land-use investment and rail policy using Dutch examples, but acknowledged that their method resulted in a lack of effective data about antagonisms between developers during negotiations. Pojani & Stead (2014a) directly study the difficulties of implementing TOD in the Netherlands. They conclude that while planners may be convinced of the value of developing near a train station, other stakeholders are not. Pojani & Stead give multiple explanations for the reluctance of developers: risk vs profitability, a cultural tendency towards methodological conservativeness, etc. Overall, developers and local community stakeholders are identified as a source of underachievement for station area redevelopment policies.

2.1.3. Specific Dutch policy context

Despite the fact that land-use and transport integration has been an official objective of national policy since the 1970s, it has not been fully implemented. Tools such as the Dutch

Multi-Year Programme for Infrastructure, Spatial Planning and Transport (MIRT) are held back by informal networks and political practices. There is a persistent financial and managerial mismatch in the importance given to mobility and land-use which impedes MIRT (Van Geet, Lenferink, Arts, Leendertse, 2019). On a national level, although some instruments favor intensification around train stations, they are counterbalanced by transport and housing policies which favor regional separation of functions and sprawl. Furthermore, in regional plans intensification is often not linked to transportation policy. Although intensification around existing stations is a goal, new transportation and new land-use mostly remain separate (Duffhues, Bertolini, 2016). Dense urbanisation around train stations is favoured. However, there are generally no policies regarding urban development linked to train station redevelopment. Furthermore, principles such as Transit-Oriented Development are largely absent, or merely associated with possible urban expansion and not with the redevelopment of existing areas (Pojani & Stead, 2014a). Focused Transit-Oriented development projects are generally linked to individuals spreading knowledge and not on overall policy changes (Pojani & Stead, 2014b). In the Netherlands, TOD takes two forms. On the national scale, there have been six TOD projects in important Randstad hub stations such as Amsterdam Zuidas. At a regional scale, an increasing number of more collaborative projects are being run, with less government attention (Pojani & Stead, 2014b). These regional-scale projects have a harder time obtaining cooperation and being implemented. This is because the structure of Dutch planning law separates elements of land-use competency and transport infrastructure competency between stakeholders who function at different scales (Pojani & Stead, 2014b). For example, infrastructure plans are directed through national or regional zoning plans, while local land-use is generally the municipality's purview. Similarly, local transportation such as buses and some passenger trains are regional concessions. Although the province implements this, it uses funding decided in the national transportation budget.

This review of the literature shows that although much has been written about opportunities and risks of urban development around train stations, the implementation of such developments is often unexamined. This is especially the case when it comes to redeveloping existing stations and their neighborhoods. This is compounded by a focus on major train stations (high-speed rail, international hubs, etc) rather than on stations of intermediate importance. Additionally, the impact of several new modes of transport on the space

surrounding stations is rarely discussed, nor are the stakeholder negotiations necessary to dedicate land to them.

2.2. Brief introduction to relevant theoretical frameworks

2.2.1. Network governance theory

The literature showed that successfully implementing a station area redevelopment which benefits from land-use and transport integration requires coordination between diverse stakeholders. Furthermore, due to the Dutch institutional context, it is impractical for a single stakeholder to operate hierarchically over all others. Instead, diverse stakeholders must collectively work towards the success of the redevelopments. To examine this, we will refer to network governance theory. The stakeholders involved in the successful implementation of station area redevelopment can be considered a network. Kickert, Klijn and Koppenjan (1997) codify scattered literature regarding network governance.

- It is used to create change in an institutional environment in which top-down public control is impractical or ineffective.
- This is achieved by understanding the network of actors involved.
- This is done by examining the means, interdependencies and cognitive/perceptive frameworks of each stakeholder, as well as the extent and nature of the network's closedness to outsiders.
- This allows a better understanding of the dynamics within the network.
- Such an understanding can be used to foster more effective dialogue and cooperation between stakeholders or to improve efficiency.
- It can also activate stakeholders who should be more involved (or who should join the network if they are currently excluded).

This theoretical framework not only contains the aforementioned useful lines of inquiry, but also has explanatory power: it can explain why stakeholder co-operation fails (for example when interactions stagnate, are blocked, lead to unforeseen consequences, or are negatively influenced by institutional characteristics). It can show the importance of each actor's awareness of interdependencies and costs. It can also examine links between perceptions and coordination (Klijn, E-H, Koppenjan, 2006).

2.2.2. Formal and informal stakeholder interactions

The theoretical framework of network governance requires the study of individual stakeholders, but also requires the study of the formal and informal interactions between stakeholders. According to the literature, implementation of Dutch TOD is held back by informal practices which constrain desired behaviors or enable less desired behaviors (Pojani, Stead, 2014b; Van Geet, Lenferink, Arts, Leendertse, 2019). Therefore this thesis will examine informal rules and practices. It will use the framework regarding informal institutions created by Helmke and Levitsky (2004). They define informal institutions as socially shared unwritten rules which are created, communicated and enforced outside of official channels. Their framework studies informal institutions based on how they interact with formal institutions and shared policy goals. Informal institutions are said to be complementary, accommodating, competing or substitutive of formal institutions. This typology is ordered from the most functional interaction which furthers shared goals (complementary institutions) to the least functional interactions which inhibit formal goals (substitutive institutions). Informal institutions sometimes emerge in reaction to formal institutions that they seek to avoid, shape or benefit from. However informal institutions can also be a deliberate part of a stakeholder's strategy and/or of network management strategies. For example, in the Dutch province of North Brabant, land-use and transport integration strategies rely on informal institutions to create a climate of collaboration around shared goals and to transfer knowledge resources. This allows for agile and flexible network management, although the final project design can be more opportunistic than precisely pre-planned (Van Geet, Lenferink, Busscher, Arts, 2021).

2.2.3. Collaborative planning

The limited relevance of coercion and hierarchical relationships between redevelopment stakeholders is clear not only in the literature but also in the case study interviews. Therefore, the theoretical framework of collaborative planning becomes increasingly interesting for this thesis. Collaborative planning focuses on establishing a preliminary dialogue involving all relevant stakeholders and allowing them to speak as equals, to establish shared goals and methods. This often requires facilitation by a coordinating stakeholder such as an involved municipality (who need not have formal authority over involved actors but who does need legitimacy). Once the process is underway it can create a virtuous circle in which stakeholders become more involved and proactive towards shared goals. Collaborative planning theory shows that stakeholder collaboration and consensus-seeking remains constrained by formal rules which favor propertied interests and can impede methodological innovation (Healey,

1999). However, giving everyone an equal voice during the discussion phase helps to establish shared priorities. It also builds shared knowledge and understanding, creates opportunities for creative synergy, and develops the capability for smoother future cooperation (Healey, 1999). Nonetheless, several issues remain. The stakeholders who should be included must still be identified, and conducting the preliminary discussions necessary for collaborative planning still has a cost in time and money. Furthermore, the freedom of the initial negotiations allows for innovation and unexpected synergies. However it makes predicting the outcome of the process harder and can make some stakeholders hesitate to dedicate the time and effort needed to fully participate. On the other hand, the stakeholder group created by the collaborative planning process can become an important part of local institutional arrangements, and its coordinators can become an integral part of the process even beyond their role as dialogue facilitators (Richard, 2002).

2.2.4. Bertolini's Five Dilemmas

Station redevelopment is necessarily interdisciplinary, as it involves both the transport network itself but also public and private stakeholders involved in the surrounding neighbourhood. The concerns of these stakeholders can vary greatly, not only in type but also in implementation. Therefore, another model is used to better comprehend the obstacles and different priorities which affect cooperation between the stakeholders of the station/rail network, and the stakeholders of the surrounding urban redevelopment project. It is Bertolini's five dilemmas (Bertolini, 1998). The dilemmas Bertolini identifies are a way of sorting common problems to better understand major issues.

- Firstly, there is a **spatial** dilemma as space is required by travellers, but also by inhabitants and businesses.
- Secondly, there is a **temporal** dilemma as the construction and operation of mobility infrastructure does not have the same calendar and timescale as "normal" urban development.
- Thirdly, there is a **managerial** dilemma which must be negotiated before the station's completion: is the newly (re)created space public or private? Who manages the created space(s), or how will cooperation be fostered?
- Fourthly, there is a **financial** dilemma as the high cost of land and construction next to a train station means that everything must either be subsidized or profitable despite these costs.

- ➢ Fifthly, there is a **functional** dilemma: many urban functions would benefit from proximity to a station, so a choice must be made (and stakeholders capable of making such a choice must be identified). Resolving these dilemmas requires interdisciplinary cooperation.

2.2.5. Transit-Oriented Development

Despite these possible obstacles to linking urban redevelopment to redevelopment of a rail station, there is another theory which explains the potential advantages of such a project: Transit-Oriented Development (TOD). It studies the link between a railway station and its urban area. It shows that railway stations can have impacts on the surrounding area such as increases in land prices, increases in economic development, changes in the type of houses and/or commercial activities near the station, etc. Although it rarely focuses on redevelopment of existing stations, it acknowledges redevelopment through the idea that there are limits to the impact of station development. For example, there are diminishing returns as infrastructure improves (Fernald, 1999). However, different types of development can help in different ways. For example, adding cycle accessibility to a station that doesn't have cycle accessibility does bring added-value. However simply increasing the frequency of trains on the existing line would bring less value. In the Netherlands, planners like the idea of TOD (Pojani & Stead, 2014a), but developers and community representatives can be less enthusiastic. For developers, building too close to the train station is an extra risk and technical constraint. It means higher land prices, which discourages starting a new project once anticipation has already begun to increase prices. Furthermore, Dutch developers favor methodologically conservative methods which involve lengthy negotiation times, consensus-seeking and a desire to preserve existing urban elements (such as the Randstad Greenheart or a general feeling of "coziness", *gezelligheid*) - all of which impede TOD implementation (Pojani & Stead, 2014a and 2015). This is linked to general inertia, overly lengthy negotiation times, ambiguous decisions formulated in such a way *"as to make everybody happy,"* and unwillingness to experiment with new approaches. Furthermore, while planners themselves can be attached to the idea of TOD, this varies enormously city by city and generally remains disconnected from actual policy (let alone implementation).

2.2.6. Four Disciplinary Approaches

To better understand the concerns and objectives of the station's stakeholders, it is necessary to better understand the importance of the station. To achieve this, another model is used: Peek and Louw's four complementary disciplinary approaches to station design (Peek &

Louw, 2008). It focuses less on the link between rail and urban areas, and more on the station itself. These four ideal disciplinary approaches are that of the station as a **connector**, the station as a **transportation node**, the station as a **meeting place** and the station as an **urban center**. All four can shape and direct the development or redevelopment of railway station areas. Each can deliver good station design, but to achieve added value/synergy all four approaches should be linked (deployed at once, in an integrated way despite their possible antagonistic effects).

2.3. Operationalisation of theoretical concepts

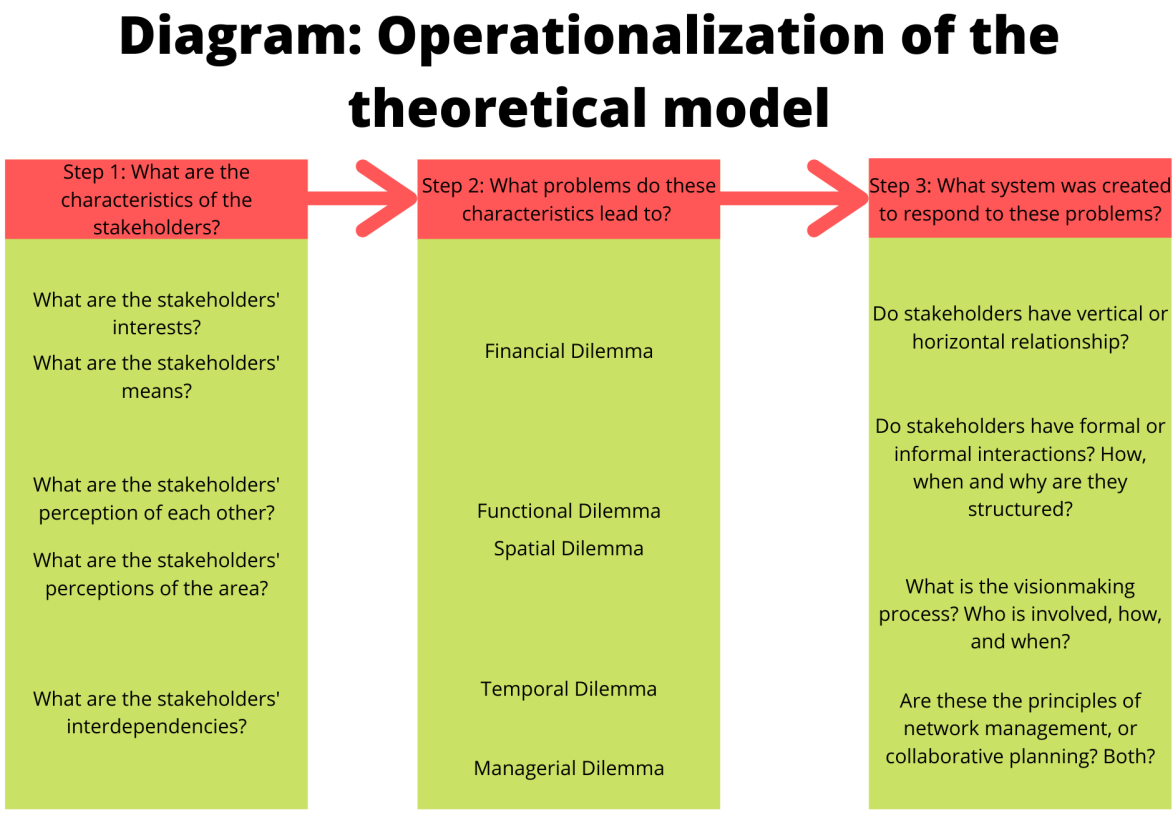

Figure 1: Operationalization of theoretical framework Source: Adam Souami, 2021

An overall conceptual model of station redevelopment and associated urban redevelopment can be established. The literature review shows that there are potential benefits to such linked redevelopments. However, successful implementation of linked redevelopments is difficult because of the spatial, temporal, managerial, financial and functional obstacles to successful cooperation between stakeholders. This includes both rail stakeholders and the

stakeholders of the urban area (planners, developers, residents, local businesses, etc). Public policy is required to achieve urban objectives in such a situation (Cervero, 1997). The public policy itself must be visionary, responsive to local realities, and foster coordination (Gallez, 2013). This thesis must therefore examine each step of the overall conceptual model, seeing how it is implemented in this context and attempting to explain any differences or obstacles.

This leads to a focus on:

- identifying stakeholders' policies or goals,
- on recognizing key issues and problems,
- and finally on how stakeholder dialogue and cooperation are fostered.

Each case study will identify urban redevelopment projects in the station's area, focusing on those which are explicitly described as linked to the station's redevelopment. The stakeholders of these redevelopments will be examined (developers, local planners, neighborhood association, etc) as well as those of the station redevelopment itself (ProRail, NS, the province as a transport stakeholder).

The first major focus (identifying stakeholder policies and goals) involves understanding the characteristics of each stakeholder. What are the means and competencies of each stakeholder? What are their interests and goals? What are their perceptions of the project, the area, and each other? How is each stakeholder involved in the project, and how are they involved or dependent on each other? Which planning policy documents (development agendas, municipal policies, zoning plans…) relate to the project and which stakeholder created them? How are planning policies linked to the station itself? How relevant is this to the stakeholders of station area urban redevelopment projects? In what way do existing policies interact with the station's stakeholders? Were they involved in the creation of relevant planning policy, or in the station redevelopment process, even in an advisory manner?

The second major focus (recognizing key issues and problems) involves explicitly identifying the main elements of each project, focusing on possible bottlenecks or conflicts. In practice, this means examining the projects through the lens of Bertolini's five dilemmas, answering the following questions:

- Who is paying?
- What is being done?
- When is each step happening, and to what extent are they coordinated?

- What areas are allocated to each function?
- Who is managing each function and/or area?

Answering these questions should allow for identification of relevant key issues, which can then be linked with the previously identified stakeholder characteristics.

The third major focus (fostering dialogue and cooperation between stakeholders) requires a study of the organisational means used to let stakeholders respond to the issues. This involves studying the vertical and/or horizontal stakeholder relationships and structures established in response to previously identified concerns and goals. This will require study of how developers, public bodies and/or transit stakeholders can direct each other and discuss cooperation and/or coordination. In practice this means studying what instruments exist or were created to steer the stakeholder network or foster cooperation. I am especially interested in the role of developers, and in cooperation between Dutch transport planning stakeholders and land-use planning stakeholders. Several obstacles were recurrent during the literature review, and will be focused on here: differences in project timescales between developers and rail stakeholders, methodological conservatism by developers, lack of confidence in the project as a whole leading some stakeholders to minimize their investment in time and money, increasing land prices near a rail station affecting the redevelopment business case, and the risk that focusing on improving intermodality may harm integration into the local urban fabric.

3. Methodology

3.1. Research Strategy

This thesis focuses on explaining a commonplace situation examined through three **case studies**. A case study is *"a research strategy in which one or several cases of the subject of study are examined in an everyday, real-life setting"* and is generally associated with a holistic approach making heavy use of qualitative methods (Van Thiel, 2014). This indeed corresponds to the methodology chosen for this thesis. The research questions are to be answered through case studies to allow for a more detailed and in-depth examination of key elements while properly understanding and taking into account their context. Although relevant quantitative data will be searched for and examined during the initial exploratory phase, **qualitative methods** will be used extensively. This is because qualitative methods will allow for easier holistic understanding of the whole case study, and because formal and informal stakeholder interactions as well as stakeholder perceptions are expected to be important.

The theoretical model and scale of the case studies leads to certain expectations in terms of research question operationalisation: stakeholder interactions and management are expected to be crucial. Therefore there will be a focus on understanding the decision-making of each stakeholder and relating them to one another without seeking to identify a "correct" position. A **constructivist research paradigm** (Guba & Lincoln, 1994) is adopted in this thesis.

A **deductive approach** will be used because the situation examined through case studies is also examined through the lens of existing theories. This will allow for reflection on the theories themselves and on their relevance to this situation.

3.2. Research methods, data collection and data analysis

The complexity of the issue of land-use/transport coordination as well as its limited initial transparency leads to the use of sequential multiphase mixed methods research, allowing each step to improve the next (Saunders, Lewis, Thornhill, 2015). The research will be sequential to allow for an initial exploratory research using qualitative and quantitative methods to better understand the situation and better design future research steps. This will involve examination of relevant public documentation as well as exploratory interviews to better understand the case studies and refine further methodology through more relevant interviewee selection and

questioning. This is in effect a triangulation approach (Van Thiel, 2014). This initial exploratory research will be mixed methods: it will also examine quantitative data because although such data will be limited, it is expected to reveal interesting information regarding the means and obstacles faced by stakeholders as well as the overall evolution of the station area. However it is not expected to be sufficiently explanatory: qualitative methods are more appropriate to truly understand the perceptions and interactions of the stakeholders (Saunders, Lewis, Thornhill, 2015). Stakeholder interactions are expected to be especially important to answering the research questions. This is why a final explanatory research using qualitative methods focusing around in-depth interviews will be implemented.

This thesis will focus on three case studies: one in ‘s-Hertogenbosch, one in Ede-Wageningen, and one in Zwolle. These case studies seem representative of a wider trend of station redevelopments in the Netherlands, linked to PHS rail frequency increases and infrastructure improvements. They were chosen because they fit neatly into the research gap being examined, because they explicitly link station redevelopment with one or more nearby urban redevelopment projects, and because they are each in a different province. Some stakeholders and issues are shared by all case studies: the national-scale PHS project affects all three, mainline passenger rail is a national concession in the Netherlands, and rail infrastructure is managed nationally by the Railinfratrust. The shared characteristics of the case studies should improve their comparability. However the fact that the case studies are in different provinces means that local contexts but also local public and private stakeholders will vary. This will allow for more varied data gathering and comparative analysis.

Examination of the case studies will begin with an initial exploratory phase. In this phase policy documents will be examined and exploratory interviews will be conducted to identify all relevant stakeholders. Interviewees for the exploratory interviews are selected to improve comparability, and should each be from the municipality in which their case study takes place. This will also allow for the creation of a rough timeline of events for each case study. This will also facilitate identification of key stakeholders for future interviews. Next, a desk study of available demographic and economic data will be conducted, to see if any significant shifts appear to be correlated with the station redevelopment project and/or associated urban redevelopment project. This is unlikely, but could prove a useful confirmation element and/or something whose interpretation by stakeholders can be analyzed. After the exploratory interviews and desk study, another phase of interviews will be conducted to collect further data. Interviewees will be selected using information from desk study and exploratory interviews.

Interviewee selection will first aim to develop case study comparability by including people from the similar stakeholders in every case study. For example, interviews should be conducted with someone from the municipality's project team, with someone from developers involved in a station area redevelopment, and with someone from a relevant rail network stakeholder. These stakeholders are identified as being important in the standard Dutch context, and can therefore be expected to be relevant in each case study. However if exploratory interviews suggest one of these stakeholders is much less relevant than expected in a certain case study, interview order may vary. For example in some case studies the rail network stakeholder interviewed is ProRail, while in others it is NS. From then on, the snowball method will be used to find and select further interviewees. Interviewee selection will prioritise those who have been involved in the project for as long as possible, as well as interviewees in a decision-making role. Ideally, interviewees should be in roughly equivalent posts in each case study to keep improving comparability. These interviews and their analysis will be the core of this thesis. The analysis of these interviews will occur in several stages. First, there will be a thematic analysis. Then discourse analysis will be used to best understand each stakeholder's positions, goals and relationships. Taguette (an Open Source alternative to Atlas.ti) will be used to code the interviews and facilitate thematic cross-referencing. Initial coding will focus on identifying the characteristics of each case study and stakeholder, and will include a focus on Bertolini's five dilemmas and how they were (or were not) addressed (see Appendix n°2). Then, a second coding phase will allow for a better typification of stakeholders to study stakeholder networks and their impact upon the stakeholder cooperation systems in each case study. It will also allow for identification of obstacles faced and (if possible) overcome, as well as analysis of which theories are most and least relevant to the case studies. (see Appendix n°3).

3.3. Validity and reliability of the research

Reliability refers to "replication and consistency" (Saunders, Lewis, Thornhill, 2015), which is guaranteed not only by the non-invasive nature of the interviews, but also by how widespread station redevelopment is and has been in the Netherlands. This makes it possible to select other station areas being redeveloped in the context of the PHS and replicate the process there. Internal validity of the research design is upheld by the chosen methodology, and by the number of case studies (3) which allows for cross-referencing of facts and framings to facilitate necessary distance from the interviewee's position during data analysis. This is also facilitated by the use of a constructivist research philosophy. Furthermore, the initial triangulation step of

the research should increase research validity by decreasing the relative importance of any one stakeholder's perspective on events, even before analysis in the thesis and deliberate attempts to avoid any one biais. The substantial theoretical backing of the conceptual model also contributes to the internal validity of the research. External validity refers to generalisability of findings (Saunders, Lewis, Thornhill, 2015) and even should the case studies prove to be a black swan event for an element of one of the theories, conclusions are likely applicable only within the Dutch context. After all, this thesis examines the conditions of the applicability of these theoretical frameworks in the Dutch institutional and cultural context. However it is possible that this thesis may suggest changes to the applicability criterion of these theories.

4. Case Studies

a. Dutch context: rail network structure

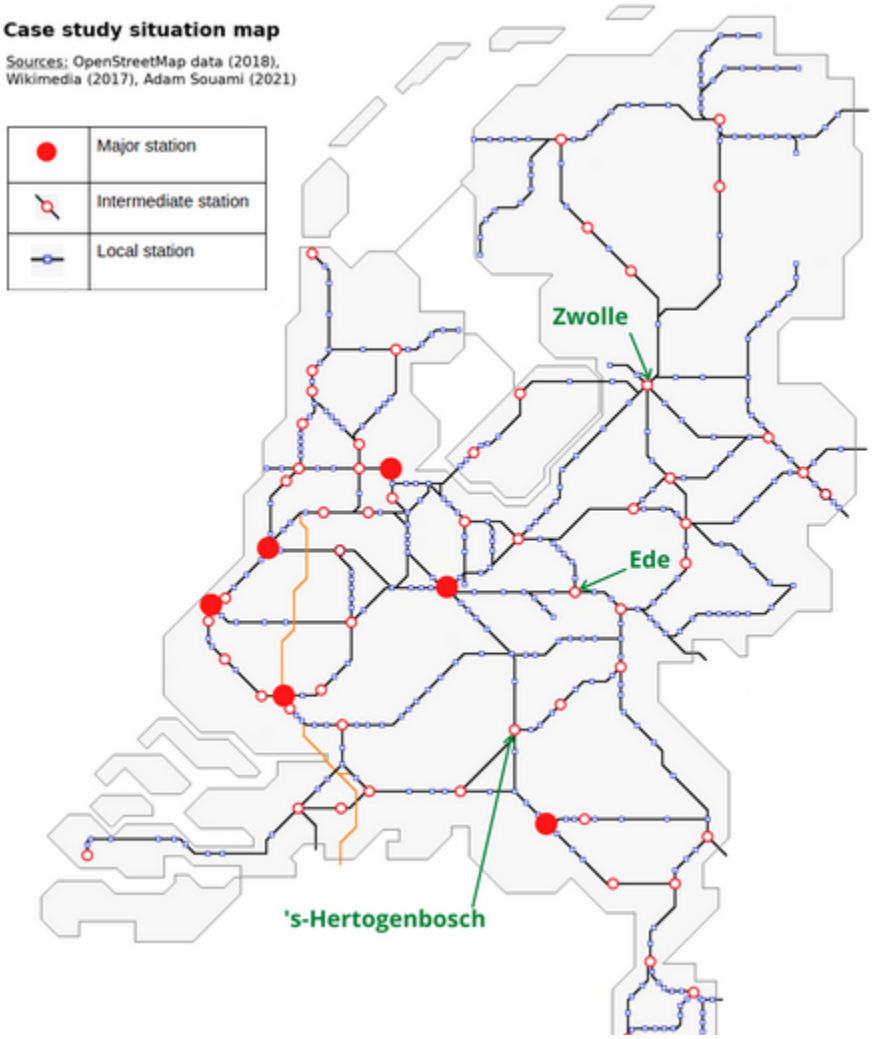

Figure 2: Case Study Situation Map

Figure 2 shows the position of the Zwolle, 's-Hertogenbosch and Ede case studies in the Dutch overall rail network. We can see that the Dutch network has 6 major stations with over 50 000 daily passengers (2015 ridership figures), each of which is a rail hub and a network hub. Most of these stations are in the Randstad: Amsterdam, Rotterdam, Utrecht, Den Haag, Leiden (Schiphol Airport is not included due to its specific nature). These stations are often near other stations of similar size, which are not quite major stations but which also have over 40 000 daily riders and are also significant local and regional hubs (see Amsterdam, Rotterdam). However

these major stations alone do not structure the entire network: we can also see that around a third of stations are intermediate stations, where multiple lines meet in a transportation hub whose area of influence may not be national and international but certainly does impact its province. The case studies are such intermediate stations. Zwolle is a significant transportation hub with a little over 40 000 daily passengers, which is quite large for a Dutch intermediate station (most are between 10k and 30k). It is the link between the northern lines and the Randstad, and interviews will also show it is a significant economic hub for the province. ‘s-Hertogenbosch has a similar number of daily passengers, and is also a province-level transportation hub. The Ede-Wageningen station which was studied in the Ede case study has about 18 000 daily passengers, and is on the eastern doorway to the Randstad between Arnheim and Utrecht. All three stations have existed since the 19th century, having been rebuilt and modernised several times.

b. Dutch context: station and station area redevelopments

There have been 6 redevelopments of nationally significant station hubs led by the Dutch government (Pojani & Stead, 2014b). However in most cases redevelopment of a Dutch station and its area is not a project that any one stakeholder can completely direct due to limited legal power and/or ownership. Instead there are multiple stakeholders whose specific characteristics such as legal powers, legitimacy and ownership of key land or infrastructure make them relevant to such projects anywhere in the Netherlands. Referring to the theoretical framework of network management established previously, we can consider these stakeholders to be a network: to understand the whole, it is necessary to understand the characteristics of each stakeholder as well as their interdependencies. Although each case study will have its specificities, the nature of the Dutch institutional context creates commonalities to be examined here. In the Netherlands, two key stakeholders in station redevelopments are nationally determined: the state-owned passenger rail operator and station commercial concession holder Dutch Railways (NS) and the Railinfratrust which owns the country’s rail infrastructure. The relevant part of the Railinfratrust is ProRail, which is tasked with the maintenance and extension of said infrastructure under the management of the Ministry of Infrastructure and Water Management. Furthermore, as rail stations are often transport hubs the province is involved in station redevelopment. It grants funding and concessions for regional bus and train services. In the station area, redevelopment will involve the municipality, developers and landowners and the local population. Their involvement is affected not only by the local context but also by the

legal framework which determines the competencies and legal recourse available to each stakeholder. A more detailed study of each stakeholder follows.

i. ProRail

ProRail has significant power over the station itself. ProRail owns the actual rail infrastructure and has a national-scale view of its evolution. Therefore, any new project which would affect this infrastructure (the layout of tracks, access tunnels, etc) must involve ProRail as both the (land)owner and the infrastructure planner. ProRail also hears the needs of all stakeholders who rely on train infrastructure. This includes stakeholders not involved in a specific station but who could be indirectly impacted. ProRail also establishes project calendars while taking these wider issues into account[1]. For example in all three case studies ProRail was involved not only as the infrastructure owner but also because it (and through it the Ministry) had a national-scale vision for the whole PHS rail frequency increase project. ProRail will also bear the maintenance costs of any new infrastructure, and must therefore consider the financial viability of changes in a more long-term perspective. As a stakeholder, ProRail is focused upon the functioning of the infrastructure itself and is generally not involved in development concerns for the station area such as housing, attractivity, etc.

ii. NS

NS (Nederlandse Spoorwegen): Another key station redevelopment stakeholder is NS. While NS does run passenger trains, ProRail's ownership of the infrastructure makes it the key stakeholder for that concern. However NS holds the concession for the economic exploitation of the station, for example with shops on the platform. This means that if a station redevelopment would impede NS' right to economically exploit the station NS can take legal action, which could delay the project. Therefore, keeping NS "on board" and cooperative with the redevelopment is relevant to other stakeholders despite NS' limited power to influence station design or run stations. NS is therefore also concerned with the station's attractivity and intermodality, which impact the ridership of the transportation service NS runs, as well as the customer base of the shops to which NS rents station space. Furthermore, NS sometimes owns significant land near train stations and can therefore be involved as a landowner and/or developer in the station area redevelopment.

[1] Source: Interviewee n°9 - ProRail

iii. Provinces

The province is also involved in redevelopment of stations and possibly of station areas. It is involved in station redevelopment as part of its transportation role: it grants concessions for regional transport and funds infrastructure. It can be involved in wider area redevelopment as part of its land management competencies. For example if the redevelopment aims to increase housing supply or affect the area's sustainability, this can touch on the province's competencies. It can also be involved as part of its economic competencies if the redevelopment focuses on growth or attractivity. The province also possesses democratic legitimacy and must act in the public good. It does not unilaterally act as a project leader in municipal-scale projects. Instead, it acts as a financier or participant in a multiscalar project. It is therefore used to working alongside municipalities and developers.

iv. The municipality

The municipality is naturally a relevant stakeholder in any large redevelopment project happening within its city. This includes station area redevelopments. The goals of a municipality are hard to generalise, since so many issues are relevant to them: local economic development, housing supply, local environment and sustainability, mobility networks, attractivity and image, etc. However the competencies of a municipality are fixed by law, leaving municipalities with a selection of possible roles and strategies within a stakeholder network depending on how much financial risk and effort the municipality is willing to undertake. Dutch municipalities have the power to establish zoning plans, to approve development plans, and can negotiate about modifying zoning or granting exceptions for a specific redevelopment plan. Municipalities are responsible for the creation and future maintenance of the public spaces, infrastructure and utilities made necessary by an area redevelopment. Municipalities can negotiate for developer obligations to obtain private participation to these costs. However, rezoning cannot be directly conditioned to developer obligations. This gives developers the option of refusing outright if they are willing to displease the municipality. In that case, developers are only required to pay a small package of non-negotiable developer obligations for infrastructure which is directly on their land. On the other hand, if the municipality accepts financial risk it can implement an active land-use and redevelopment policy. In such a situation it buys the land (or preempts or expropriates it for a project shown to be in the public good). It can therefore act as a landowner to get more negotiating power over developers. The municipality also possesses more legitimacy than most other stakeholders. This is because while it can lack technical expertise and experience, the municipality represents a democratic process with the aim of serving the public good. This is

also linked to the municipality's relationship to its population and ability to conduct public participation processes. Dutch municipalities therefore possess both legal and financial tools to shape area redevelopment projects, but the construction itself operates through developers and other contractors.

v. Developers

Developers are an important stakeholder in redevelopment projects, as it is often they who design nearby buildings and lead the implementation of area plans in their specific areas. They are private actors whose main objective is to make a profit through the realization and sale/exploitation of private areas. In some cases, they may also aim to improve their image through a prestige project or to preserve a positive relationship with another stakeholder such as a municipality. Their key means of action are financial, but they also possess technical expertise such as knowledge of construction or markets which they can leverage during negotiations with other stakeholders.

vi. Landowners

Landowners: Unless another stakeholder is already the landowner, landowners are also relevant to redevelopment projects. Often they simply aim to make a profit, and negotiate to obtain the best possible price for their land. The announcement of a station redevelopment project can make them increase their prices. However in some cases they can be unwilling to sell. In that case they require either persuasion (from stakeholders such as developers or municipalities) or the use of means such as expropriation. The means and perceptions of landowners can vary widely depending on their nature, as they can be anything from banks or investment funds to residents who happen to live in the area.

vii. Locals

Local residents are also relevant to redevelopment projects. Dutch law mandates participation processes, and grants locals the ability to challenge a development plan in court, possibly delaying or even cancelling a project. Furthermore, residents also possess in-depth knowledge of their local area and have their own concerns and priorities. They can be disunited or lacking in technical and financial expertise. However, they sometimes self-organise into neighborhood associations or pressure groups. This allows for more united positions to be taken in participation processes and discussions with the municipality and developers. Additionally, the role of local residents often varies depending on their individual characteristics. Some may have

little time for involvement in urban projects, while others may instead have significant time and personal wealth to dedicate to organising and influencing events. The emergence of a leader or policy entrepreneur among residents can transform their role. Although residents have very limited financial influence in the whole project, they can bring valuable input and/or pose a significant obstacle to a redevelopment project. Therefore while the degree of public participation and citizen control can vary between bottom-up control or simple education and information without ability to influence decision-making, it is standard practice to involve local residents in some manner.

In practice, this situation creates a stakeholder network in which many stakeholders have the capability to slow or halt a project they do not like, and are often unconcerned by many of the issues relevant to other stakeholders. Therefore it is in everyone's interest for such blockages to be avoided, while requiring all stakeholders to be at least moderately satisfied with the project and willing not to oppose it. Allowing straightforward power dynamics such as "who bought the land first" or "what can be forced through in the existing zoning" is both risky and sub-optimal in terms of possible profits. This also risks some stakeholders having their interests ignored. Some form of dialogue is evidently worthwhile. Some stakeholders seem well-positioned to initiate or coordinate a process of dialogue between stakeholders. Stakeholders such as the municipality and the province have significantly wider concerns than others, appropriate legal powers and competencies, as well as democratic legitimacy: they are therefore ideally placed to (help) manage this stakeholder network. However we shall see that the specific arrangement of stakeholders as well as their perceptions of each other vary depending on the case study.

Actor	Interests	Means	Interdependencies
ProRail	Rail network quality. Overall PHS project. Long-term network financial viability	Owns the rail infrastructure National-scale network vision	Existing NS station concessions Intermodality involves other stakeholders
NS	Financial interest in commercial exploitation of station (and sometimes its area) Runs passenger trains	Has commercial exploitation rights Can own station area land	Is affected by ProRail / Municipal / Provincial changes to station access and services
Provinces	Transport competency Housing competency Economic competency	Grants concessions Funds infrastructure Democratic legitimacy	Mostly acts as a partner and financier
Municipality	Transport Housing Development Environment specific local concerns, etc	Zoning Development permits Project funding Can act as a developer Democratic legitimacy	Dependent on developers and/or landowners and/or transport stakeholders to fund or implement projects Mostly local-scale powers
Developers	Profit motive Keep good work relationships	Technical expertise Project implementation	Can rely on landowners, municipal permits
Landowners	Profit motive or desire to keep their land	Property rights	/
Locals	Can vary wildly	Local democracy Ability to self-organize, variable expertise	Limited direct power

Table 1: Summary of the relevant Dutch institutional context

The above table summarises the key characteristics of relevant stakeholders in the Dutch institutional context. As shown above, stakeholders are interdependent and have a shared interest in avoiding conflict, while also not having existing leadership structures encompassing all stakeholders. At this scale, the municipality is ideally placed to attempt to coordinate the other stakeholders and/or facilitate collaboration between them.

c. Zwolle: Economic development through visionmaking and coalitions

i. Overview and timeline

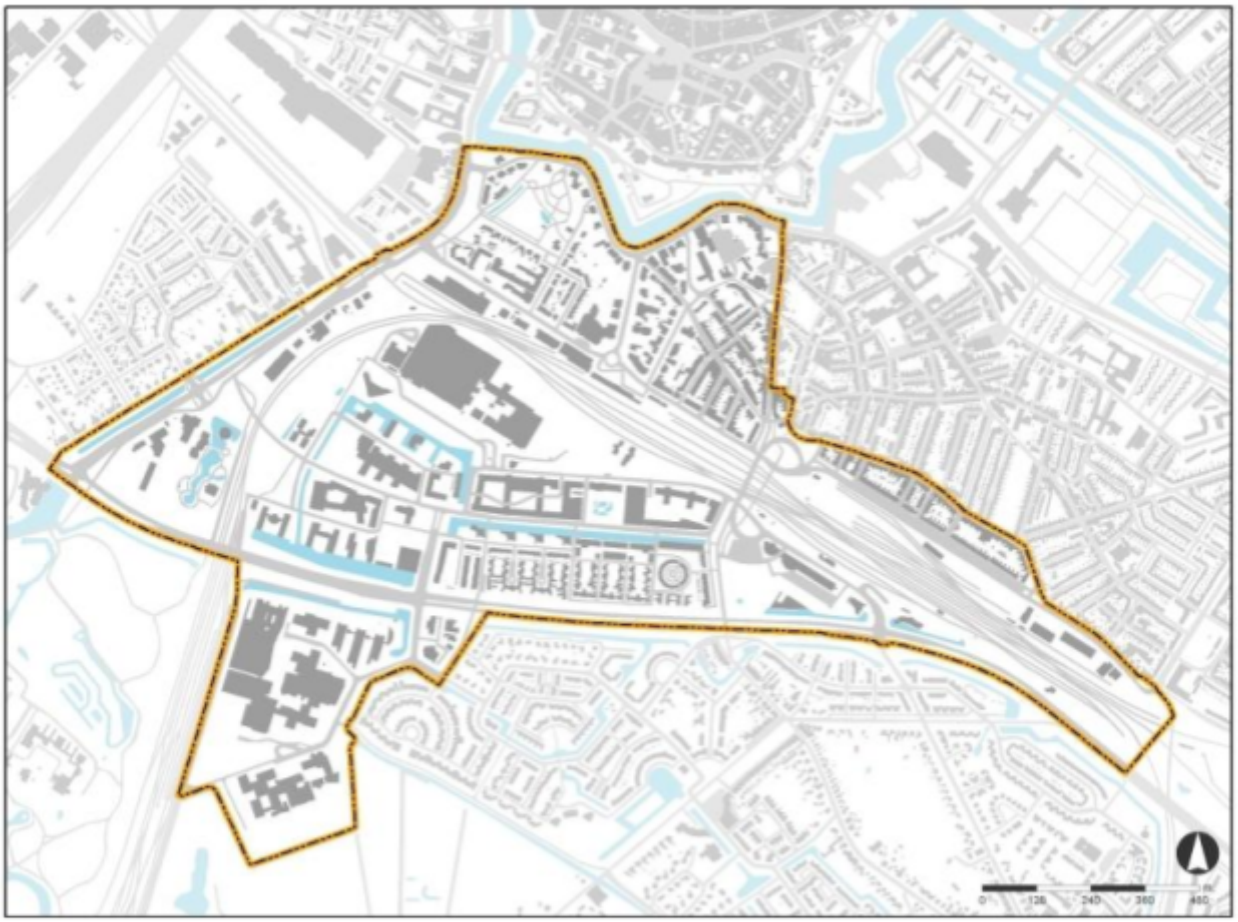

Figure 3: Map of the Spoorzone Zwolle
Source: Municipal documentation, retrieved 21/01/2021

The first case study is the Spoorzone Zwolle [“Zwolle Railway Zone”], a 100 hectares station area redevelopment around the Zwolle station pictured in Figure 3. The Zwolle station is being redeveloped in the context of the PHS rail frequency increase project. The station area is being redeveloped to achieve economic, logistical and housing objectives. Zwolle is the engine for regional economic growth, and the Spoorzone aims to be an engine for Zwolle’s economic growth[2]. Even before the PHS project, the station of Zwolle was reaching its limits in terms of passenger numbers, but also in terms of intermodality. To avoid blockages and handle the high number of buses, the bus station area required four people routing buses and helping

[2] Source: Interviewee n°1 - Municipality

passengers navigate[3]. To resolve this issue, the municipality and the province needed to relocate the bus infrastructure to the other side of the station. It was this need which kickstarted thoughts of a redevelopment project, almost fifteen years ago[4]. The financial cost of redevelopment led to an increase in its scope. This linked the redevelopment of the station and its immediate surroundings to the redevelopment of the wider station area. The area around the Zwolle train station was a significant brownfield redevelopment opportunity. It was mostly an industrial estate owned by Dutch Railways (NS)[5] as well as offices and some houses owned by private owners. The cost of new bus platforms, more bike parking and a bus bridge were too high for the municipality and the province to immediately fund in the post-crisis context[6]. However, although the municipality could not benefit as a landowner, since it owned little land near the station, redeveloping the whole area allowed for the obtention of more subsidies and participation from developers. This was also seen as an opportunity to transform the area's role within the city, creating a new urban center linking the historical center with transport and bringing economic growth. A twofold visionmaking process was implemented by the municipality (with some involvement by the province). It aimed to create a more precise and consensual plan for the area[7].

Firstly, an informal group of relevant private stakeholders was created to foster discussion and create a shared vision: the Friends of Hanzeland. This group included the municipality, private developers, but also the Windesheim university of applied sciences. The Friends of Hanzeland met regularly to discuss the possible redevelopment of the station area. They even went to visit other cities such as Paris and London. This resulted in a shared vision of the Zwolle Spoorzone as a center of innovation. It aimed to create new offices and apartments adapted to young professionals in a location with high accessibility, near a university, and near the Zwolle city center[8]. This vision was completed in 2017, and was then approved by the city council in 2018[9]. It became a part of the municipal Ontwikkelingskader and led to compatible changes in wider municipal vision and planning documents[10]. There was a second component to this visionmaking process: while the Friends of Hanzeland were meeting, the municipality also ran a separate public participation process focused on dialogue with

[3] Source: Interviewee n°1 - Municipality
[4] Source: Interviewee n°1 - Municipality
[5] Source: Interviewee n°4 - NS
[6] Source: Interviewee n°1 - Municipality
[7] Source: Interviewee n°1 - Municipality
[8] Source: Interviewee n°2 - Developer
[9] Source: Municipal website "Visie Op Hanzeland", retrieved in May 2021
[10] Source: Interviewee n°2 - Developer

inhabitants[11]. The municipality coordinated public information and questionnaires. Monthly "Spoorcafés" were organised in which residents could share their expectations for the area and could be informed of the project's evolution. Residents could also give their opinions and suggestions regarding specific elements, and could react to the interventions of larger groups such as the national cycling association. Some residents were selected to be part of the jury which chose the design for the bus bridge or urban square. The design of this process by the municipality was helped by a team of experts sent by the national government for a year, called the O_team.[12] This team recommended an approach without a single master plan, and which *"[started] with the most important places in the area, start processes here, and make the final result be the result of the process"*.[13] They also organised workshops for municipal planners and the Friends of Hanzeland, and invited architects and planners to educate and help.

Secondly, the implementation of the Spoorzone's redevelopment started after this long concertation and dialogue phase - although the Spoorcafés still continue. Now that the Ontwikkelingskader is set, the Friends of Hanzeland no longer meet. Instead, a system of coalitions was created. As agreed during the previous phase, the municipality stated that they would not respond to the development plans of individual owners[14]. Instead stakeholders such as landowners, developers and the university grouped themselves into several coalitions. Each coalition organises itself as it wishes, some with binding financial agreements and others on a more voluntary basis.[15] Although each coalition must follow the agreed-upon principles of the vision now enshrined in voted-upon municipal documentation, there is still discussion between the coalitions.[16] The municipality still helps coordinate discussion between coalitions and has a project manager in the coalitions, but it has stepped back[17] and lets private stakeholders organise themselves to redevelop the area. This system allows both private stakeholders and the municipality to remain flexible (for example the municipality made allowances for specific projects, such as Interviewee n°2's project to create a restaurant in its new community building for entrepreneurs) while requiring coordination and preserving an overall structure. There is not only a shared vision for the area, but also specific rules such as developer contributions[18] towards infrastructure and public spaces. There are also rules regarding the type of housing

[11] Source: Interviewee n°1 - Municipality
[12] Source: Interviewee n°1 - Municipality
[13] Source: Interviewee n°1 - Municipality
[14] Source: Interviewee n°2 - Developer
[15] Source: Interviewee n°1 - Municipality
[16] Source: Interviewee n°2 - Developer
[17] Source: Interviewee n°1 - Municipality
[18] Source: Interviewee n°1 - Municipality

which can be created. New housing must be in line with the area's stated desire to attract educated young entrepreneurs and synergise with the university (and soon-to-arrive new higher education). It must also include 30% of social housing and 40% of housing appropriate for middle-class people as part of the "inclusive city" goal[19].

Today, much of the area has been redeveloped and the project continues. Although quantitative data is not yet available, some economic impact is already visible, with the creation of successful entrepreneur areas such as bij hanz[20] or perron038 which does research and development for internationally-operating companies[21]. As the project advances, the informal nature of stakeholder relationships which previously greatly relied on friendships and shared vision is replaced by a more formal project management framework. This is the case within the municipality and within individual coalitions[22]. It can also be linked to a change in the internal functioning of NS, the largest landowner in the area who previously effectively operated as a coalition by themselves. NS brought in a new project manager three years ago to apply project management methods which proved successful in Utrecht station redevelopments.[23] This shift towards a more formal organisation and more structured stakeholder interactions intends to increase efficiency and has pushed stakeholders to take decisions faster[24]. However, it can cause strain for some stakeholders who feel less included in decision making when NS discusses issues such as car transit for a P&R directly with the municipality and is less invested in the slower process of dialogue between coalitions[25].

ii. Analysis

The stakeholder network is in many ways similar to the general Dutch institutional context described earlier. However, stakeholder analysis underscores key characteristics of the stakeholders involved in this case study. The following examination will focus on the municipality of Zwolle, private developers involved in station area redevelopments, and NS. This is because the other relevant stakeholders mentioned above differ little from the Dutch baseline.

The municipality of Zwolle aims to use the station's redevelopment to turn the brownfield sites in the Spoorzone into an urban center and an economic growth pole. The municipality's

[19] Source: Interviewee n°1 - Municipality
[20] Source: Interviewee n°2 - Developer
[21] Source: Interviewee n°1 - Municipality
[22] Source: Interviewee n°2 - Developer
[23] Source: Interviewee n°3 - NS
[24] Source: Interviewee n°3 - NS
[25] Source: Interviewee n°2 - Developer

involvement in the station itself is not unusual. However, these goals for its area led the municipality to activate stakeholders by creating the friends of Hanzeland. They also caused the municipality to act as a coordinator and facilitator to the resulting area redevelopment stakeholder network. Nonetheless the municipality's involvement with these projects is shaped by its reliance on indirect means of influencing their implementation. The municipality did not accept the upfront costs of an active land policy. Therefore, during discussions with stakeholders such as developers or NS it must rely on its zoning competency and ability to refuse development plans[26]. Nonetheless, the municipality's role as a coordinator and facilitator in the area's coalitions system also allows for more informal influence. It shapes the vision for the area held by other stakeholders and influences their project plans.

Although the profit motive of developers in this project is not unusual, their relationship to the municipality is structured by the area's specificities. The need for rezoning and the municipality's rejection of non-coalition development plans make developers dependent on some level of municipal approval[27]. This is even true when developers own the land. This creates interdependency between developers in the context of coalitions[28] (especially as it is difficult for them to put pressure on each other, leaving dialogue as a preferred solution). It also created interdependency between the developers and the municipality. This relationship is facilitated by the cooperatively created area vision, as well as by the convergence of each stakeholder's economic interest in seeing the area become a vibrant, economically thriving urban center[29]. This coincides with the municipality's goals for the area. Both public and private space share an overall objective. However NS does not fit so neatly into this relationship.

NS is a key stakeholder in the Zwolle case study, and a multifaceted one. NS owns a large brownfield site near the station. It acts as both a landowner and developer in the project. It aims to redevelop the site, satisfying its existing renters while also benefiting financially and transforming the area into something more attractive. However NS is still a state-owned transportation stakeholder, and so it also focuses on the redevelopment of the station and its intermodal networks as a mass transit infrastructure. This can explain the aforementioned issue of the P&R. The P&R near the station is desired by NS but would bring more cars into the station area which some developers envisioned rather as a pedestrian and green space

[26] Source: Interviewee n°1
[27] Source: Interviewee n°1
[28] Source: Interviewee n°2
[29] Source: Interviewee n°2

attractive to entrepreneurs[30]. This spatial dilemma can be explained by vision differences. Developers participated in the area vision's creation and consider the accessibility increase created by the station's redevelopment to be useful. However, they do not have NS' vision of the station as a transportation hub with a wide catchment area. There is a difference in the nature and scale of their perspectives: NS focuses less on the economic revitalization of the station's immediate area, and more on the utility of a P&R to the wider transport network and to station users who do not live near it[31]. This is compounded by the nature of NS' involvement in the Zwolle Spoorzone: although NS is involved in the coalition system, its brownfield site is large enough for NS to be effectively considered a whole coalition by the municipality. It therefore has limited need for dialogue with other developers in its day-to-day operations (although some dialogue is used to coordinate between coalitions[32]). Therefore important elements of NS' project such as the placement of the P&R are negotiated directly between NS and the municipality. As NS is not dependent on the developers in the other coalitions, those developers have limited influence (and no direct involvement in discussions) to push for change to NS' project[33]. This causes possible strain on the coalition system organised by the municipality.

The temporality of NS' involvement in the coalition system is also relevant to understand the stakeholder network. The municipal website's documentation lists NS Vastgoed as having been part of the Friends of Hanzeland network which created informal relationships and a shared area vision. However, interviewee n°3 from NS said that *"the station developer [...] has been in Zwolle for many years"*, but NS was involved in the wider Spoorzone plans *"not the first three, four years"*. Furthermore NS' approach to the area redevelopment changed recently: *"3 years ago we said "now we are going to make the plans", and we did, we organised it"*[34] and *"[then] I came, because I did the plan in Utrecht. So we copied that process here to Zwolle, and we have now the results"*[35]. This suggests that although NS Vastgoed was invited into the Friends of Hanzeland, NS' involvement in the Friends of Hanzeland did not reach the right people within its internal structure. Therefore when the redevelopment of the land NS owned in Zwolle was prioritized internally, new personnel sent in to run the project had not been part of the informal relationships created by the Friends of Hanzeland. When this happened, the advancement of the Spoorzone's projects was already starting to transform the informal nature

[30] Source: Interviewee n°2
[31] Source: Interviewee n°3
[32] Source: Interviewee n°3
[33] Source: Interviewee n°2
[34] Source: Interviewee n°3
[35] Source: Interviewee n°3

of stakeholder relationships. It was replacing them with more structured project management frameworks both within coalitions and within the municipality. The coalitions system was coordinated and facilitated by the municipality and aimed to facilitate discussions and shared visionmaking between stakeholders. It fostered informal exchanges which could be considered a complementary informal structure using Helmke and Levitsky's framework (2004). However NS' new approach includes its own stakeholder management processes run by NS. It aims to increase speed of decision making. It considers the previous system's processes inefficient and lacking transparency[36]. This bypasses the informal exchanges involved in the functioning of the coalitions, but does not destroy them. They risk becoming what is effectively an informal competing structure (in Helmke and Levitsky's framework). Their theoretical model highlights not only the benefits of complementary informal systems, but states that competing informal structures can cause new inefficiencies and conflicts. This makes governing harder, affecting the whole network but especially the network's facilitator. It is however entirely possible (and arguably expected) that if the speed benefits of NS' new approach do generate negative externalities, those could affect other stakeholders such as developers and not NS itself. Indeed, in this light NS' new model and attempts at network governance can be understood as a way to sidestep the preexisting system. After all, that system benefited developers who were more involved from the start but cost NS time and money. Still, in practice both the coalition model and NS' model are coexisting. The municipality is involved in NS' project as normal while still facilitating coalition coordination. Nonetheless NS' use of its own stakeholder management and project management system apply pressure to the coalition system to change and formalize faster. It effectively represents a challenge and criticism of the coalition system. This shows that the network governance system set up by the municipality through the Friends of Hanzeland and ensuing coalition system is struggling to include all stakeholders. It is therefore suffering from strain as the project evolves. This thesis cannot predict what decisions will be made by the municipality regarding its management of the Spoorzone project's stakeholder network. However it seems likely that their approach (both formally and in informal discussions) will evolve in response to this and will aim to keep coalitions coordinated.

Overall, we can say that the case study is shaped by three key dilemmas (see Table 2 below). The system originally set up by the municipality to face these challenges strongly relies on shared vision and complementary informal relationships to coordinate heterogenous yet often interdependent stakeholders whose characteristics shaped the Friends/coalition system.

[36] Source: Interviewee n°3

However, not everyone has the same vision. The vision of the station as a transportation hub and the vision of the station as an urban center have implementation differences which are becoming relevant, especially as different stakeholders such as NS and developers are thinking at different scales. Thinking of the station area as an economic development hub leads to different land-use priorities than thinking of the station as a transportation hub in a regional network (example: Park&Ride placement). Furthermore, the original framework coordinated by the Zwolle municipality must now face what is effectively a challenger as the municipality struggles to keep NS invested in the coalitions framework.

	How it manifested in this case study
Temporal Dilemma	The calendars of the area redevelopment and of the PHS project are not immediately linked, which reduces the importance of the temporal dilemma. However the issue of calendar coordination between stakeholders remains significant, as we can see that NS prefers a faster pace than the developer coalitions.
Managerial Dilemma	Although project management is important in this case study, the future management of the newly-created areas is not in question, and is not considered an issue. Therefore the managerial dilemma as defined by Bertolini is not relevant here.
Financial Dilemma	While project funding did require multi-stakeholder participation, the potential issue of high land prices and technical constraints making station area construction financially unviable is not relevant to this case study due to the expected return of investment brought by the innovation-focused business area, as well as by the use of old brownfield sites.
Functional Dilemma	Some stakeholders view the station area primarily as a transportation hub, while others view it first as the center of an innovation-focused economic development area with high accessibility. When these two functions conflict in the station area (and all stakeholders cannot agree on which to prioritize for they have different perspectives and goals), we see the relevance of the functional dilemma. The P&R placement is an example of this.
Spatial Dilemma	The spatial dilemma is relevant to this case study, and is often linked to the aforementioned functional dilemma. For example, the possible change in bridge placement which would favor accessibility but impact some businesses shows that immediate spatial choices prioritizing certain users must be made. This is also made visible by the focus on municipal residents in the participation process (instead of all station users).

Table 2: Summary of the case study through Bertolini's 5 Dilemmas

d. ‘s-Hertogenbosch: An early stage project where shared vision is key

i. Overview

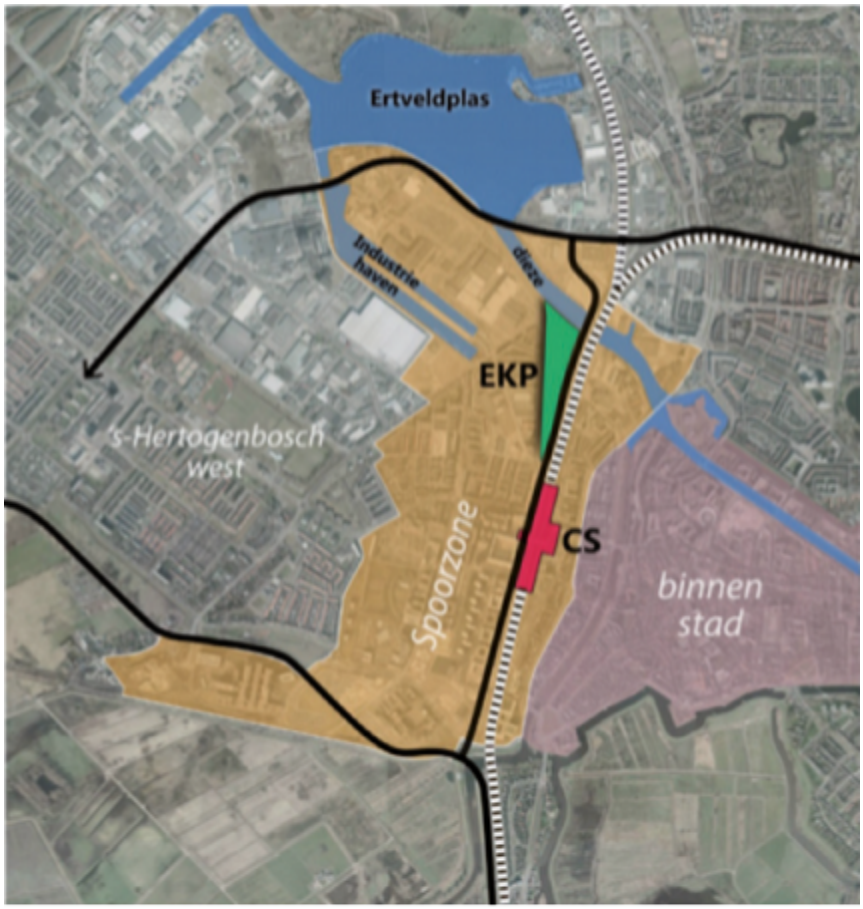

Figure 4: Spoorzone ‘s-Hertogenbosch Map
Source: Municipal documentation, retrieved 21/01/2021

The second case study is the ‘s-Hertogenbosch Spoorzone. It is an area redevelopment kickstarted in 2017 by the station’s redevelopment in the context of the PHS rail frequency increase project[37]. The station’s redevelopment involves not only redeveloping the platforms to handle increased use, but also transforms the entrances to the station. The Spoorzone project aims to use this opportunity to make the station a center connecting the east and west sides of the city, to redevelop nearby ex-industrial sites (visible in Figure 4 above), and to develop a new approach to mobility in the area. These ideas are not new to the municipality. However, the redevelopment of the station is a financial opportunity as well as a practical opportunity. As the

[37] Source: Interviewee n°5 - Municipality

municipality worked to create a unified Spoorzone project and vision, it has worked to ensure this is recognized as an opportunity by other stakeholders who could participate and finance the project. This includes the province, the Ministry of Infrastructure and Water Management, etc[38]. The creation of the Spoorzone vision was a process involving public participation with the locals (including residents' associations in the nearby Boschveld area and elsewhere). It deliberately avoided creating a top-down precise land-use plan and instead focused on creating a shared vision taking local concerns into account, while still benefiting from the station's redevelopment. This was achieved through meetings to hear the concerns and priorities of residents, and thematic meetings focused around themes chosen by the municipality such as mobility or sustainability. The municipality also created videos and documents to show and share the emerging vision. At first this mostly included people from the west side of the tracks, but about a year ago it began to include more residents from the eastern side as the participation process expanded.[39] Local businesses were also included through the entrepreneurs association Spoorzone ("Ondernemersvereniging Spoorzone").

The resulting vision is not limited to objectives relating to the redevelopment of the station's immediate area to better connect both sides of the rail line and increase attractivity, but also includes goals for the area such as increasing housing creation through brownfield redevelopment near the station. Such goals are to be achieved while taking the proximity of the redeveloped station into account. New projects were incentivised to pay attention to mobility and their relationship to the surrounding area. For example these were key topics discussed with developers during the tender process when the municipality gave a tender for the nearby EKP [Expeditie KnoopPunt, "postal Expedition Node Point"] site's redevelopment[40]. New projects in the Spoorzone explicitly target *"the dynamic people of the city"*. They are those who want to live *"the busy city life"* and who likely use more public transport and fewer cars than other groups[41]. Indeed, the EKP redevelopment (whose developer was chosen by the municipality in the context of the Spoorzone) includes a mobility hub with car-sharing to make it easier for inhabitants to avoid owning a car. The municipality's strategy for the Spoorzone was complicated by the pre-existing projects near the station, which already had their own objectives and were often well underway. The municipality aims to coordinate existing projects with the Spoorzone vision through a process of dialogue[42]. The program manager for the Spoorzone

[38] Source: Interviewee n°5 - Municipality
[39] Source: Interviewee n°5 - Municipality
[40] Source: Interviewee n°6 - Developer
[41] Source: Interviewee n°6 - Developer
[42] Source: Interviewee n°5 - Municipality

said that the Spoorzone project *"was a train that we stepped on and the train was riding. The only thing we did was make it bigger [...], much more known, [...] for getting money, for positioneering. The only thing we did was make themes, themes for mobility, themes for sustainability…"*. For example the existing Public-Private Partnership Paleiskwartier was already ongoing since 1998. Its own vision and objectives were not always compatible with the Spoorzone's new objectives. The example of office building parking shows how older projects may expect more car-focused infrastructure than the new Spoorzone vision, which is conscious of the station's proximity[43]. The municipality aims to discuss these issues with existing project managers, but also with residents and local economic stakeholders. This is facilitated by the existence of business associations formed by the municipality in the 1970s and run freely by local businesses. It has a municipal observer on the board, providing oversight and both formal and informal information sharing.[44] This allows the municipality to communicate with local businesses just as easily as it runs participation processes for residents, and facilitates discussion among local businesses so that they can share concerns among themselves and/or adopt common positions during dialogue with the municipality. The business association has been especially involved in dialogues concerning the accessibility of the Spoorzone. It has also been very concerned with car accessibility, car parking, and restricting important road traffic.[45] In such cases, raising awareness and spreading the Spoorzone vision can be effective, as well as negotiation when existing projects must request alterations to the municipal zoning plan. The Spoorzone focuses here on public spaces and on the relationship towards public space, because this is important to create a changed identity for the area and because it is where the municipality can most directly affect existing projects.

Today, the project continues after a recent decision by the Ministry to increase the importance given to the station redevelopment in 's-Hertogenbosch. This is largely because of the importance of the redeveloping station as an opportunity and gateway to a changing city[46]. This leads to additional funding, potentially allowing for more ambitious and impactful changes to the station and its immediate area. It is therefore more visibly important for existing projects to adapt to the increasingly important transformation of the Spoorzone area.

[43] Source: Interviewee n°6 - Developer
[44] Source: Interviewee n°7 - Entrepreneurs' Association
[45] Source: Interviewee n°7 - Entrepreneurs' Association
[46] Source: Interviewee n°5 - Municipality

ii. Analysis

Examining the characteristics of the ‘s-Hertogenbosch Spoorzone stakeholder network allows for greater understanding of the functioning of the project. The station stakeholders themselves have the competencies and interests described earlier in the overall Dutch context. However, unlike in the Zwolle case study, NS is not a major landowner in ‘s-Hertogenbosch. Therefore in this case NS is mostly focused on the operation of its shops in the station and on bike and/or bus parking next to the station[47], and not on the wider area redevelopment. Meanwhile ProRail remains focused on rail infrastructure. Because it sets the local needs of the overall PHS rail frequency increase project which kickstarted everything else, ProRail has not only significant influence over the station redevelopment but also indirectly over the Spoorzone project as a whole. Interviewee n°5 from the municipality even said that although ProRail has a *“narrow vision”* focusing on the station infrastructure: *“the real power of making [the Spoorzone] a success and working on it as a whole? We have now the experience that ProRail is for us the most important partner”*. This is because while ProRail is not directly involved in wider area redevelopments, its infrastructure changes provide a clear basis and impetus for an area vision.

The ‘s-Hertogenbosch municipality aims to ensure that the station redevelopment goes well and provides good infrastructure. It also wants to guarantee that this infrastructure integrates with the city, and that the city adapts to the accessibility and connectivity increase brought by high-frequency rail service. To achieve these goals, the ‘s-Hertogenbosch municipality secures funding for the station redevelopment from other public stakeholders such as the province. It also seeks to collaboratively create a shared station area vision and coordinate local stakeholders in seeing it fulfilled. To create the Spoorzone area vision the municipality initiated a number of discussions and brainstorming sessions with local stakeholders. This aimed to cooperatively create the area vision and take into account the needs and preferences of users. Although the station area already included existing projects with their own visions and goals, the redevelopment of the station represented an obvious opportunity and change in the local context to justify the creation of a new vision. The municipality deliberately fostered this point of view during the vision creation process to get local stakeholders on board and enthusiastic, as well as to secure funding[48]. The area vision created shows that the municipality views the ‘s-Hertogenbosch station not only as a transportation hub but also as an urban center which shapes the area’s demographics and mobility habits. We can

[47] Source: Interviewee n°5 - Municipality
[48] Source: Interviewee n°5 - Municipality

see that the municipality's efforts to make the Spoorzone vision a reality now involve coordination of local stakeholders. Part of this effort consists in transmitting to all local stakeholders the vision of the station as an urban center.

This is also visible in the role played by developers of station area redevelopments in the local stakeholder network. While they are not involved in the station redevelopment directly, their own projects are within the area of the station. The role of developers is unchanged. However, their relationship with the municipality is affected by the municipality's new vision for the area. For projects in the station area which were already ongoing, the municipality aims to induce changes to public spaces and car/bike parking. This is therefore a part of discussions between municipality and developers. It can also be relevant should developers still need to ask the municipality for planning permission or a rezoning. That gives the municipality the opportunity to press. Developers remain key to shaping projects and bring their own expertise in new projects like the EKP site (see for example how SDK-Vastgoed changed how St-Joost was integrated into the EKP site). However, the municipality is open about the importance it gives to mobility and sustainability issues. These were for example key to selecting the winner of the EKP-site tender[49]. Indeed, the municipality chose a developer who also thought the expected residents of a station area redevelopment were *"the dynamic people of the city"*[50]. They are those who want the benefits of urban density and whose everyday mobility focuses on bikes and public transportation. The relationship between developers and municipality is smoother when both share a similar area vision, and when possible the municipality selects developers who do. For example the creation of a mobility hub facilitating car-free living was initiated by the EKP site developer. It was then supported by the municipality as it is consistent with the Spoorzone vision.

In the 's-Hertogenbosch case study, local residents and businesses are more organised than what was described in the overall Dutch context. Here there is a preexisting system of local residents' associations with representatives who dialogue with the municipality (such as in the nearby public-private partnership Paleiskwartier[51]) as well as a structured system of entrepreneurs' associations[52]. This allows for the involvement of locals outside of the meetings organised by the municipality to create the vision or to hear feedback about specific projects. Locals are involved in a number of issues. However, discourse analysis of interview n°7 shows

[49] Source: Interviewee n°6 - Developer
[50] Source: Interviewee n°5 - Developer
[51] Source: Interviewee n°5 - Municipality
[52] Source: Interviewee n°7 - Entrepreneurs' Association

that there is a key difference in how they view the area and how the municipality views the area. There is a repeated focus on car traffic in response to open-ended questions. There is a suggestion of additional *"green parking"* instead of the proposed reduction of existing car parking. There is a rhetorical approach focusing on emergency vehicles and wide-area traffic flow externalities which is used in discussions with the municipality. This rhetoric is used despite the fact that a concern about on-street parking is what was first candidly mentioned during the interview. These elements show that although this stakeholder also acknowledges the importance of the area's accessibility, car accessibility is still considered essential. There is a desire to preserve car accessibility of businesses and offices, which may clash with the municipality's vision of the station area as a place where other modes of transportation are dominant. Residents and businesses cannot easily compel the municipality to change a project, but it is in the municipality's interest to operate through dialogue and avoid direct confrontation. Therefore this opposition in terms of vision translates to recurring discussions about the practicalities of each project, proposals and counter-proposals seeking to frame themselves as not only superior for cars but for the area's safety and useability as a whole. This further demonstrates the importance of coordination and ensuring the area vision is shared by all. If the vision is not shared, the solutions each stakeholder offers to wider issues will differ, potentially leading to negative externalities on a wider scale. This can be seen in the municipality's focus on making sure the entire Spoorzone area is adapted to non-car forms of mobility. It can also be seen in the focus of the entrepreneurs' association on the wider traffic implications of making the station area less car-centric. What the municipality describes as *"[making] space for living and meeting and students and campus development"* can be considered an obstacle to existing movement patterns. The difference in vision and priorities between the municipality and some local stakeholders leads to continuing discussions. Therefore the municipality's current role as a coordinator of nearby projects also involves ongoing area vision discussions not only with potential funding-granting stakeholders such as the province or the ministry, but also with local businesses.

Overall, we can say that the 's-Hertogenbosch stakeholder network shows the importance not only of shared area vision to face the dilemmas of station area redevelopment (see table 3 below), but also of shared vision regarding the nature and impact of a station. However it also shows the potential that such shared visions represent in terms of stakeholder collaboration. For example, the mobility hub created on the EKP site at the initiative of a

developer who had expertise in such things shows that even without top-down coordination, shared vision and goals creates what is effectively cooperation.

	How it manifested in this case study
Temporal Dilemma	The temporal dilemma is not relevant to this case study: because many projects were preexisting, it is impractical to attempt to coordinate them with the station calendar.
Managerial Dilemma	The managerial dilemma as defined by Bertolini is not (yet) relevant here.
Financial Dilemma	The issue of project funding is very important in this case study. Indeed, it was a large part of the municipality's early focus. However the issue of funding nearby redevelopments does not appear to be especially problematic, as developers answered the EKP tender and preexisting projects continued.
Functional Dilemma	The functional dilemma is relevant to this case study. The municipality's efforts to create and share the area vision did address this dilemma, and the station's immediate area has a clear mobility focus. However in the wider station area, the issue of tradeoffs between wider car network quality and quality of life for locals is partly a functional dilemma. The functional dilemma impacted relationships between local businesses (and preexisting office projects) and the municipality.
Spatial Dilemma	The spatial dilemma is relevant to this case study. The functional dilemma in the wider station area has spatial implications. Tradeoffs between allocating space to car mobility and to living and meeting is a spatial dilemma. However the station itself is mobility-focused and preexisting concessions (such as NS' commercial exploitation concession) minimise possible conflict over space allocation there,

Table 3: Summary of the case study through Bertolini's 5 Dilemmas

e. Ede-Wageningen: A station and area with separate managements

i. Overview

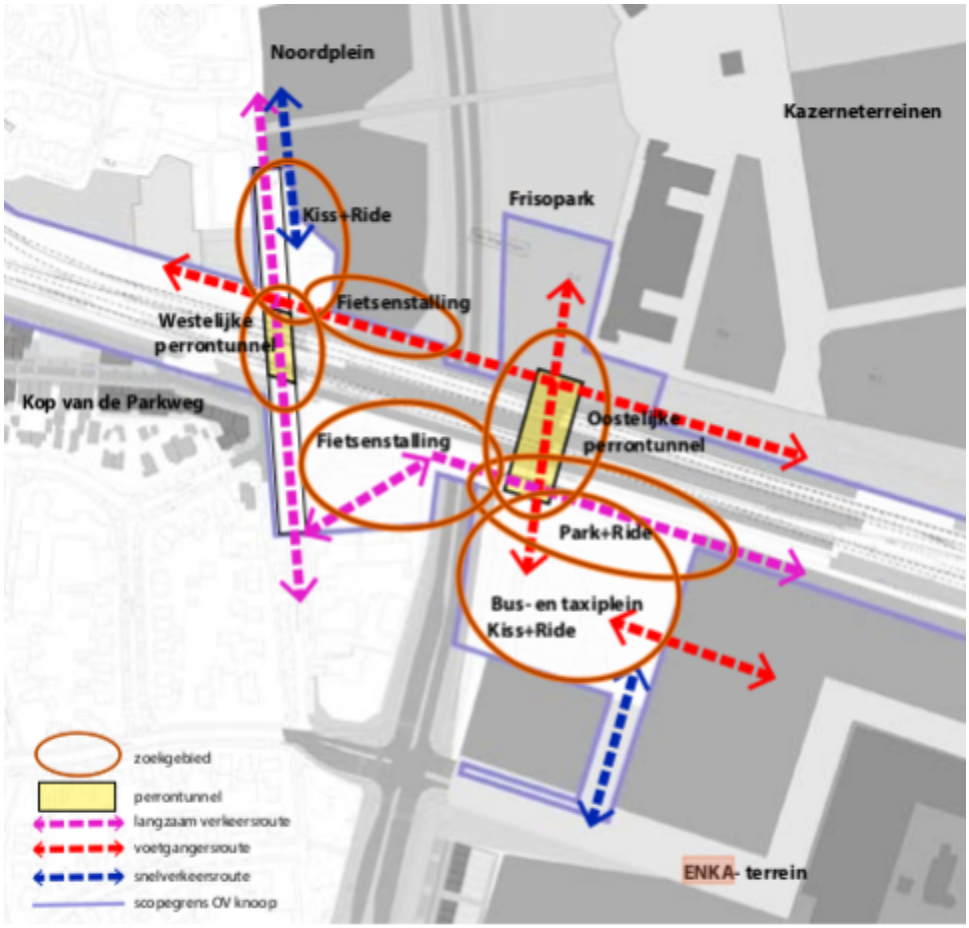

Figure 5: Map of the Ede station redevelopment, with names of nearby redevelopments and emphasis on accessibility and intermodality changes
Source: municipal documentation, retrieved 21/01/2021

The third and final case study was the Spoorzone Ede-Wageningen. The station is being redeveloped in the context of the PHS rail frequency increase. It has several brownfield sites in its immediate area. The impetus behind this project dates back to the 1990s, when a plan to create a high-speed train line between the Netherlands and Germany was considered. This plan called HSL-East would have passed through Ede and required infrastructure and station changes, adding tracks and platforms. Around the same time, nearby land became available for redevelopment as the military planned to leave their barracks, the ENKA factory near the station left, etc. This created an opportunity to redevelop the station and its area, to better connect both

sides of the rail line, and to make the station a more important center in the city's urban fabric (see figure 5 above for the current incarnation of these connection goals).[53] The HSL-East plan was abandoned in the 2000s for financial reasons. However, the municipality's desire to redevelop the station and its area remained. Nearby redevelopments proceeded apace despite delays to the station's redevelopment, and the Veluwse Poort project office coordinated these projects until 2019 when they were split into individually managed projects[54]. Around 2006 or 2007, the station redevelopment project began taking shape within the municipality but also within other stakeholders such as the province and even the national government. The state secretary of transport had granted 40 million euros for the project after being shown the opportunity[55], to be matched by the province and municipality. The station redevelopment itself finally started in late 2008/early 2009 and initially hoped to reach completion in 2017. A plan was agreed upon in 2012, but later had to be modified to integrate the PHS rail frequency and speed increase project in the early 2010s. This led to further calendar changes. Discussions between the municipality, the participating public and NS about the placement of the new access tunnels led to another delay and redesign.[56] Difficulties finding contractors within the budget limits in 2018 have led to further delays and changes to the plans, and while the west side of the station was completed in 2017 the rest of the redevelopment is still ongoing.[57]

This eventful project timeline can partly be explained by the goals of the project. Funding was obtained before a project or goals were decided upon, based on initial vague plans to exploit the anticipated opportunity[58]. The opportunity was undeniable, and these initial intentions were instrumental in obtaining the cooperation of other stakeholders such as the province. The province was also interested in improving the connection between the north and south sides of Ede, as well as improving regional bus and train networks in the area. Therefore it was part of this project from the start, and participated financially each time the scope and funding of the project had to be expanded[59]. However these redevelopment intentions were originally not linked to a concrete project, and as the plans for the rail network made by the Ministry of Infrastructure (and by extension ProRail) changed, the Spoorzone in Ede had to change too. Goals were collaboratively set between stakeholders: the goals of the station's redevelopment were cooperatively decided between the municipality, the Ministry (and ProRail), the province,

[53] Source: Interviewee n°8 - Municipality
[54] Source: Interviewee n°12 - Municipality
[55] Source: Interviewee n°8 - Municipality
[56] Source: Interviewee n°8 - Municipality
[57] Source: Interviewee n°8 - Municipality
[58] Source: Interviewee n°8 - Municipality
[59] Source: Interviewee n°10 - Province

and NS. The goals are to improve transportation and intermodality in and around the station, to better connect both sides of the tracks, to make the station an architectural landmark, and to connect the nearby redevelopments around the station through active mobility infrastructure[60]. There is a shared vision of the station as a functional mobility hub, with increased housing in its immediate area[61]. These shared goals allow the project team (which includes members from the municipality, ProRail and NS) to work as one towards those objectives and decide on their implementation, minimising the consequences of stakeholder evolution (new elections, internal policy changes) over the timescale of the project[62]. The project team facilitates cooperation between key station stakeholders and minimises external influences from other stakeholders who were not deliberately included (such as nearby private developers or concession-holders). For example, interviewee n°9 said that *"It's very important with [...] big projects, where the decisions are made. [...] The more decisions have to be made externally, the less control and the more time you get"*. The project team reports 3 times a year to the Bestuurlijk Overleg ["Executive Council"] which includes the Ministry, the province and municipal aldermen. The Bestuurlijk Overleg can change the objectives of the project team if needed. It is where public participation plays an indirect role. Public participation is mostly handled by the municipality. In 2009, it started the process to set the bestemmingsplan for the project. This allowed local residents and businesses to be heard. It led to some practical changes to the project such as altered positioning of access tunnels[63]. However, there was no wide Spoorzone vision creation process outside of the landmark and intermodal connection goals of the station redevelopment itself. Some nearby projects such as the SOMA and AZO redevelopments were directly affected by the new access tunnels to improve links between both sides of the tracks[64]. The southern parts of the ex-military brownfield site redevelopment were created with lower mandatory parking quotas because they are in the immediate vicinity of the station[65]. However although the municipal website currently describes the nearby redevelopments as being station area redevelopments building new housing in anticipation of the station redevelopment, in practice this was generally not a goal during their construction[66]. For example, the ENKA ex-industrial site was redeveloped into housing with 1.7 parking spots per home. This is far more than the

[60] Source: Interviewee n°8 - Municipality
[61] Source: Interviewee n°10 - Province
[62] Source: Interviewee n°8 - Municipality
[63] Source: Interviewee n°8 - Municipality
[64] Source: Interviewee n°8 - Municipality
[65] Source: Interviewee n°12 - Municipality
[66] Source: Interviewee n°8, n°12 - Municipality

province would have recommended if they had been involved and had known it was so close to a train station[67].

The redevelopment of the area around the station was organised as a series of projects coordinated by the municipality. The station redevelopment was largely kept separated from these other projects to ensure private developers could not put pressure on the relatively inflexible[68] station redevelopment's calendar to obtain concessions from the municipality[69]. Nonetheless, there were indirect financial links between nearby redevelopments and the station redevelopment. Nearby redevelopments were coordinated by the Veluwse Poort project office. This was a group of municipal planners and project managers. They worked closely together to coordinate nearby redevelopments. They used the profits from some redevelopments to pay the upfront costs of others (including the station redevelopment)[70]. However their focus was not on issues of mobility. Unlike in other case studies, these redevelopments near the station were not built for inhabitants expected to use public transit more than cars. Instead, they focused on sustainability and urban quality while building housing and developing new urban areas. The station redevelopment *"wasn't part of the conversation at all"*[71]. It is however true that redevelopments closer to the station have more mixed functions (more shops, more creative activities and spaces, an area focusing on care for the elderly, etc). The World Food Center project right next to the station did have less parking. Nonetheless, this is mostly because these redevelopments are closer to the city center and not because of a deliberate goal to intensify around public transportation infrastructure[72]. There was no wide Spoorzone vision incorporating elements relating to transit-oriented development or adaptation to the presence of a nearby train station, and so these projects did not prioritize it[73]. They often acted as if the station redevelopment had no impact on the creation of a new urban area mere minutes away[74]. Developers are unaffected by the proximity of the station[75], although it is credited for the high demand for housing in the area[76]. Interviewee n°8 even said that now, *"you can say that Ede-Wageningen is a suburb of Utrecht"*. The Veluwse Poort project office was shut down in

[67] Source: Interviewee n°10 - Province
[68] Source: Interviewee n°9 - ProRail
[69] Source: Interviewee n°8 - Municipality
[70] Source: Interviewee n°12 - Municipality
[71] Source: Interviewee n°12 - Municipality
[72] Source: Interviewee n°12 - Municipality
[73] Source: Interviewee n°8 - Municipality
[74] Source: Interviewee n°12 - Municipality
[75] Source: Interviewee n°13 - SMINK
[76] Source: Interviewee n°8 - Municipality

2018[77] because it functioned in such a closed manner that it was disruptive for the rest of the municipal project managers. The redevelopments around the station were then made into individual projects with no more or less coordination than any projects within a single municipality. There were no changes to their goals[78]. Descriptions of the Ede-Wageningen station redevelopment as the engine of the wider area redevelopment are not entirely inaccurate. However, claims that these redevelopments were designed to complement the station and be part of station-focused mobility reflect today's attitudes and project results more than the original redevelopment goals.[79]

ii. Analysis

To better understand and explain the organisational choices of the Ede-Wageningen station and station area redevelopments, it is useful to examine the specificities of their stakeholder network. This is achieved by studying how their perceptions and goals differ from the general Dutch institutional context described earlier. The key differences are in the idiosyncrasies of the municipality and the province, as in this case national-scale stakeholders such as ProRail differ only minimally from the overall description provided earlier.

Interviews show that the perceptions of the municipality of Ede focus on the temporal and financial dilemmas of station area redevelopment[80]. This high awareness of the need for funding from many stakeholders and of the risks of calendar incompatibility between stakeholders has significant explanatory power regarding the stakeholder interactions and project structure chosen in Ede. For example, this awareness of temporal dilemmas explains the creation of a project team uniting people from the municipality, ProRail and NS to decide cooperatively how the project should be implemented with minimal outside interference. Interviewee n°8 said that *"If you are running a project which is hugely paid by public money (which we are doing) and [...] you're at the same moment negotiating with highly commercial parties like developers? Then you're in trouble. What happens when you make a railway project is that you have a calendar which is very strict. You have to take a railway out of use for a certain period [...]. And when you have a very commercial party somewhere which can put influence in your calendar, you have a problem"*. Therefore, the municipality kept the station redevelopment separate from the station area redevelopments. It organised those as separate

[77] Source: https://www.kazerneterreineninede.nl/nieuwsoverzicht/nieuwe-website/ (retrieved 2/06/2021)
[78] Source: Interviewee n°12 - Municipality
[79] Source: Interviewee n°8 - Municipality
[80] Source: Interviewee n°8, Interviewee n°12 - Municipality

projects under the Veluwse Poort office. The municipality's awareness of the financial dilemma of station redevelopment manifested in other ways, for example through the project design chosen. Internally, the Veluwse Poort project office allowed for the profits of one project to be easily reallocated to another. These redevelopments allowed the municipality to fund its share of the station redevelopment budget[81]. The financial dilemma of station redevelopment was also important to the creation of the station project team, as through this team three different stakeholders decide together how money will be spent. Financial issues are also a negotiation topic during project extensions or revisions, and more generally they serve as a way of formally ensuring some level of cooperation, since all stakeholders are aware of their financial interdependency to fund the project[82]. Furthermore, the project team must ask the Bestuurlijk Overleg for additional funding whenever a stakeholder asks the project team for additional features. Therefore the financial dilemma serves as a shield against the risk of recurring project changes as each of the stakeholders who created the project team change internally over time.

The perceptions of the Ede municipality are important to understanding how the municipality related to the projects and their other stakeholders. For example, the decision to separate the station redevelopment project from the rest of the Veluwse Poort office reflects the municipality's perception of the nature of these redevelopments. Using Peek and Louw's framework of approaches to station design, we can say that although the Ede municipality viewed the station as a transportation hub, it did not consider the station itself an urban center. There is no special municipal "station area vision" including the station and all the nearby redevelopments like in the Zwolle case study. The design and functions of redevelopments here vary depending on the proximity of the city center and not of the station and its mobility hub[83]. Because of these perceptions, the municipality did not consider station and transportation stakeholders (ProRail, NS, the Province) relevant to the redevelopments around the station. Therefore they were not involved in the Veluwse Poort office. Similarly, the private stakeholders of these developments (such as developers) were not explicitly involved in the station redevelopment. Nonetheless, some locals may have participated in both participation processes separately. Another key perspective is the municipality's self-image: although Ede is a city, in many ways it continued to consider itself a village[84]. This manifests through concerns that the new neighborhoods being redeveloped would not sell[85], as well as through a failure to predict

[81] Source: Interviewee n°8 - Municipality
[82] Source: Interviewee n°8 - Municipality
[83] Source: Interviewee n°12 - Municipality
[84] Source: Interviewee n°8 - Municipality
[85] Source: Interviewee n°12 - Municipality

the attractivity that the area as a whole would have due to its proximity to Utrecht. Although the municipality was aware of the financial dilemma of station redevelopment, it did not fully anticipate the effects of the station redevelopment on the nearby redevelopments. Indeed, today Ede is only twenty minutes away from Utrecht for the many commuters who moved into the new housing of the station area redevelopments. Interviewee n°8 said that although *"Ede is a suburb of Utrecht"* is being marketed now, it was not originally planned when new housing was built next to the redeveloping station : *"Not understanding what could happen [...] [Ede is] a big city, but their way of being things is like they're still being a village. [...] It wasn't intended to be like that. There was a financial part to be like that going back, but it wasn't marketed to be like that"*. Therefore these new developments were built while considering the preferences of Ede's current residents (regarding parking, for example[86]) and not those of the new arrivals who were often already from big cities. However the absence of a perception of the station as an urban center does not mean that there was no focus on the station's impact on its area: the municipality does view the station as a connector, and there was an effort to improve connections between both sides of the track through new tunnels[87].

Another important stakeholder to examine in order to understand the stakeholder network of the Ede case study is the province of Gelderland. The province is involved as a source of funding for the station redevelopment and as a transport stakeholder who delivers concessions and organises regional networks. However, its competencies also include environmental and housing issues[88]. In this case, although the province is not part of the project team it is a part of the Bestuurlijk Overleg and is therefore formally involved in the project's goals and oversight[89]. Nonetheless the Bestuurlijk Overleg is not involved in day-to-day decision making of the project team. The province delivers concessions for trains and buses which stop in Ede-Wageningen station and is responsible for organising regional transport networks. Therefore the province is kept informed of project team decisions which directly affect its concessions[90] through what is effectively an informal complementary system (to use Helmke and Levistky's framework). This is generally done through emails or phone calls, which are more flexible than the scheduled meetings of the Bestuurlijk Overleg. The Bestuurlijk Overleg set overall project goals, but this system allows the province to give more detailed information regarding its infrastructure requirements to the project team as needed. The province

[86] Source: Interviewee n°12 - Municipality
[87] Source: Interviewee n°8 - Municipality
[88] Source: Interviewee n°10 - Province
[89] Source: Interviewee n°8 - Municipality
[90] Source: Interviewee n°10 - Province

communicates with its concession-holders, collects and analyses their information regarding their needs, and transmits it to the project team without requiring the project team to open a dialogue with each concession-holder[91]. The province generally does not hold formal meetings with every concession-holder: there is instead a complementary informal coordination process through individual reports and discussions with representatives of the province. Examining the role of the province in the station redevelopment project shows that the formal structure established by the municipality does not try to be all-encompassing, and is in many ways a framework to coordinate the associated informal functioning and relationships of each stakeholder.

While the municipality of Ede viewed the station as a transport hub and connector, the province views it also as an urban center. Interview n°10 shows that if the province had been more involved with nearby redevelopments, it would have pushed for more consideration of the station's impact on factors such as parking requirements in nearby buildings, etc[92]. However the separation between the station project and the Veluwse Poort office was an obstacle in these circumstances. Indeed, it seems that the separation between the station project and the station area redevelopment projects contributed to the limited "station area vision". This is because the only stakeholder who had such a vision at the time was the province, which was focused on the station project. Although the province was involved in the station project it does not get involved in every municipal redevelopment project unless it is called to. Nonetheless, interviewee n°12 (from the municipality) suggested that this has changed : *"Nowadays you're more looking at it like it's a public transportation node. It's important for the future to concentrate our development more around poles like this. That could have or may have different decisions in it, like higher density, things like that. But ten years ago that wasn't part of the conversation at all, in my opinion as I see it developed".*

Overall, we can say that the examination of the specificities of the stakeholder network is useful to analyse the Ede-Wageningen station case study. We can see that stakeholder awareness of key dilemmas (summarised in table 4) shaped the project, as well as municipal perspectives regarding the nature of a train station. This results in the creation of a formal cooperation framework for the station redevelopment alone (the project team, the Bestuurlijk Overleg). It allows for effective cooperation between the most important stakeholders in the

[91] Source: Interviewee n°10 - Province
[92] Source: Interviewee n°10 - Province

station redevelopment project. This organisational model effectively maintained project continuity, despite changes in elected officials and institutional context. The station project team and the Veluwse Poort team are both “insulated” from these changes. This framework enabled significant cooperation between the station stakeholders who regard the station as a transit hub (buses, trains, bikes) and the station as a connector (tunnels, entrances). However this formal framework is not all-encompassing: it is accompanied by complementary informal interactions, and the continuity it favors in terms of staffing and objectives facilitates the creation of more flexible and informal working relationships where relevant people know each other. This framework is also not all-encompassing because it avoids involvement with the wider area redevelopments to insulate the station calendar from private developer calendars. What wider area redevelopment coordination there is, is achieved through the municipality (in particular through the old Veluwse Poort office). The municipality considered the station a connector and transportation hub with a small immediate area of influence and not an urban center in and of itself worthy of a wider station area vision. Therefore the Veluwse Poort office had other main goals, and this structure contributed to the limited exploitation of the opportunity a station redevelopment represented for nearby projects (for example in terms of parking, in terms of commuter attraction, etc).

	How it manifested in this case study
Temporal Dilemma	The temporal dilemma is very important to this case study. This is mostly because awareness of the risk it posed was an important factor in selecting a project structure. However the 2018 calendar alteration (and the opportunity - not just constraint - it was in terms of project redesign) show that the temporal dilemma is still important, affecting what can and cannot be done.
Managerial Dilemma	Although project management is important in this case study, the future management of the newly-created areas is not in question, and is not considered an issue. Therefore the managerial dilemma as defined by Bertolini is not relevant here.
Financial Dilemma	Funding the station redevelopment and making nearby redevelopments financially viable were important concerns in this case study, and achieving this was one of the goals of the project structure chosen. The financial dilemma also served to further insulate the project team from mid-project goal changes.
Functional Dilemma	The lack of an explicit wide station area vision led to a reduced importance of the functional dilemma in this case study.
Spatial Dilemma	The lack of a station area vision and the separation of the station redevelopment and station area redevelopment into two separate projects led to minimal spatial dilemma.

Table 4: Summary of the case study through Bertolini’s 5 Dilemmas

5. Cross-case Analysis

5.1. Visionmaking: collaboration, cooperation and/or coordination to create a shared vision *of* the station and *for* the station area

All three case study analyses highlight the importance of visionmaking to the project's success. In each one, shared vision was key to ensuring all stakeholders would cooperate and make the project function by creating shared goals. This is entirely consistent with the theoretical model regarding TOD implementation and land-use/transport coordination (notably Gallez et al, 2013). In every case study the municipality launched the initial visionmaking process. In Ede, the station's visionmaking process focused on the station redevelopment itself and mostly involved station and transportation network stakeholders. The station and its immediate surroundings (tunnel bypasses, entrances and exits, intermodality) were the object of the station's visionmaking and citizen participation. Therefore despite the otherwise ambitious area redevelopments in Ede, the municipality's vision of the station as a transportation node instead of an urban center led to limited wider area land-use/transport coordination. Meanwhile the 's-Hertogenbosch case study shows that without interdependencies or shared interests, a cooperative visionmaking approach can struggle to create a shared vision among other stakeholders. Here, the vision was collaboratively created with residents, but involving other stakeholders such as developers and businesses required a shift towards coordination and persuasion. This heralded its future challenges: 's-Hertogenbosch's wishes for cooperation with nearby developers and business stakeholders, but sometimes still struggles to share the same vision of the station as an urban center and transportation node which transforms mobility in the Spoorzone. Indeed, part of the process was convincing other stakeholders that the station would affect the whole area and that the Spoorzone redevelopment project was important and realistic. By contrast the Zwolle case study shows that a deliberate visionmaking process which seeks to include all appropriate stakeholders can be effective in creating a shared vision, but also in fostering informal relationships and confidence that overall interests are shared. In the case of Zwolle, this was done not only through public dialogue but also by inviting relevant stakeholders in the municipality's plans to turn the Spoorzone into a thriving innovation center (university, developers) to join the Friends of Hanzeland. Here, collaborative visionmaking was able to involve more stakeholders. This was likely because the visionmaking process benefited from the nature of its goals. They went beyond station-related mobility and included economic goals which could create shared interests among public and private stakeholders. However the

current issue of the P&R's placement which divides some developers from NS suggests that not all elements of the shared vision were perceived in the same manner by all stakeholders, despite its initial successes. Visionmaking must also create a shared vision of what the station is and which perspectives on its issues are important - here we see the importance of Peek and Louw's four approaches to station design (Peek & Louw, 2008), which must be shared by all to avoid such issues. The 's-Hertogenbosch and Zwolle case studies show that making sure station and station area stakeholders share an area vision is insufficient. Successful implementation of the station area vision requires a shared vision of what the station is and what impact it has on its area.

5.2. Stakeholder frameworks: flexibility, formal and informal interactions, evolving with the project itself

The current transformation of Zwolle's cooperation framework described in part 4.2. shows that a good project structure must be capable of evolving as the project evolves. As projects advance, informal functionings are phased out to be replaced by more structured project management methods. The nature of the stakeholder management framework created does matter beyond the initial visionmaking. This is the case regardless of whether the emphasis is on facilitation of network management or on collaborative planning. Indeed, while an informal structure focused on friendships and shared interests smoothed by regular dialogue was sufficient for the early stages of Zwolle's Spoorzone planning, the details of project implementation led to different issues being focused on and encouraged more formal and structured relationships to take precedence. Furthermore, Ede's handling of the province's involvement with the station redevelopment outside of its goal-setting supervisory position in the Bestuurlijk Overleg shows that the formal framework to stakeholder relationships does not need to be all-encompassing. Complementary informal structures (Helmke and Levitsky, 2004) can be effective in maintaining flexibility and responsiveness. Indeed, a general trend across all three case studies is that interdependencies facilitate the creation of cooperation. This notably includes the interdependencies from the separation of property rights, concessions, exploitation rights and regulatory rights. Nonetheless, it is best to include all stakeholders to some extent, and to have them all willingly participate and accept the system. The situation with NS in Zwolle shows that obstacles to wider stakeholder cooperation can arise when a stakeholder only participates in the system as much as they are forced to by their interdependencies. Indeed, Zwolle's current transformation of stakeholder relationships and current criticism of the coalition

system by NS (who prefers its own system) show that even a flexible cooperation framework may have to be transformed to keep up with the evolution of the project's implementation and of the relationships between its stakeholders.

5.3. The search for flexibility and participation: between top-down planning and collaborative planning

The theoretical frameworks of stakeholder collaboration and even collaborative planning did prove relevant. Although all three case studies include a structure facilitating stakeholder cooperation and some degree of network management by the municipality, it cannot be said that these case studies are examples of strong top-down planning. The 's-Hertogenbosch municipality worked to spread the idea of the redevelopment and to transform existing projects. Zwolle municipality initiated the creation of the Friends of Hanzeland and subsequent coalition network. And the municipality of Ede was in the station's Bestuurlijk Overleg and was the only (limited) architectural, financial and functional coordination between the station redevelopment and the Veluwse Poort area projects. However in all cases there was a desire to limit top-down planning and to remain flexible, open to the ideas and needs of other stakeholders. This manifested through cooperative visionmaking at the start of projects and through subsequent concertation processes which resulted in changes to the projects (moving tunnels in Ede, altering plans for incoming traffic in 's-Hertogenbosch, etc). Such collaboration is not restricted only to local residents. For example in Zwolle, stakeholders such as developers or the university participate in the area's planning through the coalition system. Indeed, collaborative planning was associated with the use of relatively unusual methodologies (big visionmaking processes with participatory media creation in 's-Hertogenbosch, the Friends of Hanzeland in Zwolle). This fits the theory, which stated that stakeholder collaboration and consensus-seeking go hand-in-hand with methodological innovation (Healey, 1999). However although these case studies were definitely not directive top-down planning, some aspects of collaborative planning are not fully implemented. Healey (1999) described collaborative planning as deeply linked to place-making, involving local residents. In Ede, place-making was often separate from the station due to the separation of project offices. In 's-Hertogenbosch and Zwolle, place-making after the initial visionmaking (such as negotiations with developers for public-facing architecture or design) often no longer directly involved residents. In these case studies, unless the municipality is considered the direct voice of all local residents (and regular meetings to hear residents were indeed organised in all case studies) involvement of locals decreased notably

after initial vision-making. In practice, collaboration with residents was often municipal-only, or separated from wider stakeholder meetings. The municipality was often an intermediary. Therefore although these case studies were absolutely not top-down planning and were deliberately participatory, the collaborative planning framework is only partly relevant. This was most likely done for practical reasons, as involving more stakeholders in collaborative planning has a cost in time and money (Richard, 2002) and it can be more efficient to use the principles of collaborative planning with different stakeholders at different times of the project, letting coordinators (such as the municipality) establish continuity and ensure previously voiced concerns are not forgotten (Richard, 2002). To develop land-use/transport coordination, flexible cooperation frameworks were created and collaboration was fostered, especially during visionmaking stages.

5.4. Facing Bertolini's dilemmas

Bertolini's "5 dilemmas" model (Bertolini, 1998) predicts that five main issues will be obstacles to station and station area redevelopments. The three case studies confirm that the functional, spatial and temporal dilemmas are indeed relevant in the Dutch context, and significantly affected local stakeholder networks and projects. Relevant stakeholders were initially aware of these dilemmas, and although local planning culture led to significant differences between the case studies, the overall nature of their responses to these dilemmas shared key characteristics. As initially expected, they are handled through the creation of shared vision to foster cooperation, collaboration and/or management of stakeholders by creating shared goals. Then a project structure is chosen to further minimize these dilemmas and ensure all stakeholders remain favorably involved as the project progresses, taking into account local stakeholder network characteristics. See the Friends and coalitions in Zwolle, the separated insulated project offices in Ede, the municipal-led coordination and project alteration in 's-Hertogenbosch. These frameworks aim for flexibility and participation of all stakeholders, and complementary informal relationships further develop these aspects. However the other two dilemmas fit less neatly into this model.

The managerial dilemma was not relevant in any of the case studies. The issue of who is responsible for spaces created and of whether or not these spaces are public did not appear to be a source of tension in Zwolle, 's-Hertogenbosch or Ede. This seems to be because responsibilities and ownership are already relatively clearly defined between stakeholders, generally because of preexisting concessions or legal competencies. Even the creation of public

areas by private stakeholders was done through normal developer obligations and buyback agreements, without creating situations of uncertainty.

The relevance of the financial dilemma is less straightforward to assess. The financial dilemma does not refer to the difficulty of funding the station redevelopment itself. Instead, it refers to the issue of high land prices around stations negatively impacting the business case of station area redevelopment projects. All three case studies addressed this issue in a different way. In ‘s-Hertogenbosch, the municipality transforms decades-old ongoing projects such as the Paleiskwartier, and buys land from other public entities whose sole objective is not maximum profits (see the EKP site bought from the postal service). Similarly, in Ede the municipality’s active land policy was facilitated by the availability of affordable military land. In that case study, the municipality bought land long ago before its value increased, and obtained developer obligations based on the expected value increase. It later began selling this land to customers who desired the station’s new attractivity (Utrecht being 20 minutes away), and helped fund the rest of the area’s projects thanks to this financial gain. When such risk-mitigating strategies are not possible, private stakeholders can be left to take the risk and opportunity, as was the case in Zwolle. In this case, the developers must be confident in the added value to be brought by the redevelopment to make the business case appealing despite high costs and potential station-related technical constraints. Deliberate efforts to create confidence in the project can be undertaken, although these efforts take different forms in different case studies. In Zwolle, the municipality openly planned to turn the Spoorzone into an economic hub focusing on innovation and involved private stakeholders in the project creation. In ‘s-Hertogenbosch, the municipality held information sessions to convince locals and other stakeholders of the important impact that the station redevelopment would have upon the area. And in all three case studies, the significant infrastructure changes of the PHS project promised significant accessibility increases for the station as a whole, to be further improved by station redevelopments transforming intermodality, bike parking, etc. In all three cases, we can see that the Dutch institutional context was used to minimize the threat of the financial dilemma.

5.5. The issue of the infrastructure’s added value to the area

Another issue from the theoretical framework (Fernald, 1999) was the possibility that the added value brought by new mobility infrastructure would have little impact in a station redevelopment. The literature review shows that during a station redevelopment, it is possible for improvements to accessibility to be too minor to truly affect the accessibility of the area as a

whole and foster the hoped-for advantages of land-use/transport coordination and TOD. This could have cast doubt upon the relevance of the lessons of previous successful station developments (especially TOD, which was used in the theoretical model). However, this issue did not prove relevant in the Dutch context. It was resolved by the nature of the PHS' rail frequency improvements. The PHS is a national-scale project, and its station redevelopments were more than changes to station entrances and intermodality. They promise improvements to the regional and national network, improving accessibility significantly (see Ede now being described as a suburb of Utrecht). All three case studies involved significant accessibility improvements and decreases in effective distance due to changes to the tracks reducing wait times and improving maximum passenger numbers. The project's nature and national-scale goals helped avoid the issue of insufficient local impact, but this was also facilitated by transparency and clear official communication regarding the project, for example in ProRail documentation. Indeed, all this helped further raise land and housing prices, making the station area redevelopments in Ede and Zwolle sell profitably even right after the financial crisis.

6. Conclusions and recommendations

6.1. Conclusions

This thesis examined three case studies in which a Dutch station and station area were redeveloped in the context of the PHS rail frequency increase. It studied the difficulties faced by each project and the means used to address them, as well as the applicability of theories developed in other countries' contexts. First, a theoretical model was constructed from available literature regarding transit-oriented development in the institutional contexts of other countries, stakeholder management methods in general, and studies of land-use/transport coordination in the Netherlands. A constructivist research paradigm was used in this thesis. Then, case studies were chosen to provide comparability. They are also sufficiently different in terms of station area vision to allow for comparison and analysis of the impact of different stakeholder goals. Sequential multiphase mixed methods research was used to research these case studies, starting with examination of policy documents, available project documents and a few exploratory interviews. Once each case study was better understood, an interview process was put into place to interview key stakeholders (in similar positions whenever possible to increase comparability). Then the snowball method was used to find further contacts whenever relevant to each case study's specific stakeholder network. Analysis of these case studies used a deductivist approach, coding the interviews in a two-step process for better analysis and performing discourse analysis where relevant. This process led to a number of findings, answering the research questions as follows:

- Research question n°1: What are the challenges of implementing Transit-Oriented Redevelopment in the Netherlands?

The original goal of identifying key relevant obstacles to land-use/urban coordination was achieved. The theoretical framework suggested that while station redevelopment was an opportunity to redevelop the station area, stakeholder coordination would be a significant stumbling block in practice. Dutch planning culture, although consensus-oriented, was expected to struggle to obtain the required multi-sector stakeholder cooperation without requiring so many concessions as to make implementing TOD ineffective. Indeed, the main obstacles identified in the case studies are related to this. Starting a station area redevelopment project requires activating stakeholders, spreading awareness of the opportunity represented by station

redevelopment and its importance for the area (vision for the station and vision of the station). It also requires overcoming both financial and practical obstacles. Financial issues relating to project funding are linked to difficulties obtaining funding from stakeholders (see the process in ‘s-Hertogenbosch) or to the costs of the stakeholder management process (see the 2018 difficulties caused by the upwards price evolutions during the long timescale of the Ede project), with the financial dilemma of rising land prices being either entirely avoided or left to private stakeholders willing to face the initial costs. This was facilitated by the nature of the Dutch PHS project area redevelopments, as well as by the communication favored by Dutch national rail stakeholders. Coordination issues are often linked to the different calendars and timescales at which various stakeholders operate - and even in Ede where developers were deliberately kept separate from the station redevelopment to avoid clashes between developer calendars and the slower timescales of rail stakeholders, the Bestuurlijk Overleg still has to avoid such issues between public stakeholders. Other key obstacles to station redevelopment are the functional and spatial dilemmas: the need to allocate space near the station between different uses, and to travelers, residents or businesses. In the case studies, facing these dilemmas also came down to issues of stakeholder coordination and dialogue. In the Netherlands, it is the municipality who directly takes charge of making all this stakeholder cooperation/management happen, but the municipality must do so alongside other relevant stakeholders: the province, local residents, rail stakeholders, developers…

- ➢ Research question n°2: Which organizational tools are used to bypass these challenges?

Analysing the case studies revealed how stakeholders solved these problems. Considering the scale at which the issue was studied, stakeholder interactions were instrumental in obtaining the broad-spectrum involvement necessary to achieve such multi-sector projects. One key tool was the creation of shared vision to facilitate stakeholder cooperation, collaboration and/or management by creating shared objectives. The Ede case study showed that several things matter to the success of such land-use/transport coordination: awareness of key dilemmas, explicit visionmaking for the area, and a vision of what a station itself is. It also showed that local planning culture significantly affects all these things. The ‘s-Hertogenbosch case study shows that while awareness of the opportunity created by a station’s accessibility increase is important, if all stakeholders do not have the same vision of what a station is to its area there can still be difficulties. Successful implementation of land-use/transport coordination requires not only shared goals, but also a shared vision of what

the station is and of what impacts it has on its area. The Zwolle case study also shows this, and shows that these concerns remain relevant even following a concerted effort to create an initial shared vision. It is a continuous issue, a concern that must be preserved as stakeholders evolve. The Zwolle and Ede case study analyses also show that a formal cooperation structure can benefit from complementary informal systems which allow for more flexibility. Indeed, all three case studies avoid top-down planning and start with a flexible, collaborative goal-setting process instead of a detailed plan for the area. Informal relationships and exchanges are useful to achieve this. However tensions may occur if these informal relationships do not remain complementary to formal processes. We also see that the nature of the stakeholder network (the interdependencies, means, goals and perspectives of each stakeholder) has a significant impact upon the processes created to facilitate stakeholder cooperation. Indeed, their effectiveness is linked to their ability to take into account local context and local needs.

- ➢ Research question n°3: How appropriate are theories based on foreign contexts about linking transit and urban projects to the reality of the Dutch context? To what extent can existing theories such as Transit-Oriented Development (developed in the USA) or the five dilemmas of station area development (Bertolini, 1998) be considered relevant and useful in this context?

The final aim of this thesis was to verify the applicability of the theoretical elements originating from other countries to the Dutch institutional context. The overall concepts of transit-oriented development and land-use/transport coordination are of course applicable. The frameworks of network governance and collaborative planning proved useful to understand the relationships between stakeholders and the means used to foster them, although not all stakeholders can collaborate on the project during later implementation phases. However, not all the elements of the theoretical framework proved relevant to the Dutch setting. For example, Bertolini's five dilemmas were not all equally threatening to land-use/transport coordination. Although the temporal, functional, spatial, and financial dilemmas were very relevant to the case studies, the managerial dilemma was less problematic. The managerial dilemma (who is responsible for spaces created, are they to be public or private, etc) is less of an issue here. We can suppose that it is because responsibilities and ownership are already formally divided between stakeholders, often through preexisting concessions and/or charters (see NS and ProRail in the station itself, or the province's role in the station's immediate area). Furthermore, the shift towards the privatisation of public spaces near stations noted in some of the international literature did not appear relevant to the case studies. Indeed, the management of

Dutch public spaces is customarily handled by the municipality (although developer obligations can be used to build them). Within stations, responsibilities are already formally set between different sections of NS and ProRail. We can also speculate on how much of this is due to clear legislation and how much of it is due to Dutch planning culture - especially with regards to the absence of privatisation of public space in these case studies.

Literature relating to Transit-Oriented Development suggested that diminishing infrastructure returns might render TOD ineffective, and that pushback against station area intensification/density could be an obstacle. Neither issue was relevant in this Dutch context. Firstly, the case studies are station area redevelopments linked to PHS program station redevelopments, and so their infrastructure improvements are significant. They are also part of national-scale improvements. This is further emphasized by the communication and transparency of key Dutch institutions involved in the project such as ProRail or the Ministry of Infrastructure and Water Management. Secondly, the Netherlands is already relatively accepting of density in urban centers, and the redevelopment of existing stations meant the redevelopment of areas which are already relatively dense. The ongoing housing crisis in the Netherlands also limits opposition to housing construction. It is true that land-use/transport coordination in the Ede case study was impeded by a planning culture whose *"way of [doing things] is like they're still [...] a village"*[93], but that can be linked to the age of the project as the current planning culture has changed[94].

Peek & Louw's framework of approaches to station design was used extensively during analysis. In the case studies, sharing a vision of what a station's role is proved as important as having a vision for the area redevelopment as a whole. Peek & Louw's description of stations as urban centers, transportation nodes and connectors did prove relevant to the case studies. However their description of the station as a meeting place was not relevant. This may be linked to the size of the stations studied, or because no improvements to this aspect of the station are central to either case study, or because while the station constitutes an urban center structuring its area it is not considered a meeting place. Indeed, while Dutch stations have NS' shops near the platforms, these are aimed at travelers and not at residents. Station areas of the case studies include pedestrian plazas and shopping access, but the station entrances appear to focus on the needs of travelers (even in Ede where tunnels were built to allow locals to bypass the obstacle of the tracks).

[93] Source: Interviewee n°8 - Municipality
[94] Source: Interviewee n°9 - ProRail

Finally, some elements of the theoretical framework specifically addressed station and station area redevelopments in the Netherlands. For example Pojani and Stead (2014a) suggest that Dutch TOD is impeded by informal practices and by developer reluctance in the face of financial risk. The main obstacle they describe is methodological conservatism with lengthy negotiation times, consensus-seeking and a desire to preserve existing urban elements. While the case studies do show that slow consensus-seeking processes can be an issue, they also show that some of these concerns appear less relevant now. For example ‘s-Hertogenbosch appeared to easily find developers to develop the EKP site near the station. Indeed, the developers speak of the station’s proximity as an asset, attracting a population which desires accessibility and urban intensification. Furthermore, none of the case studies included informal practices which impeded TOD - informal practices were instead relied upon to complement formal stakeholder arrangements and allow for more flexibility.

6.2. Contributions

Overall, the contributions of this thesis were threefold:

- The examination of case studies revealed different systems implemented to face similar challenges, further expanding the methodological recommendations at the end of this thesis. As some aspects of the theoretical framework proved less relevant in the Netherlands, this suggests that the applicability conditions of these theories could be reworked. For example, the low relevance of the managerial dilemma in these case studies suggests that it is less fundamentally linked to station redevelopments themselves than the other dilemmas, and may have more to do with common institutional arrangements and planning cultures. Similarly, the effective use of collaborative planning methods even in cases where place-making was not desired and in meetings where not all stakeholders could be present suggests that the role of the coordinator/facilitator within collaborative planning could be expanded in the fashion of network management theory.
- The study of three new Dutch case studies in the context of the national PHS system may prove useful to other researchers or to planners. The example of successful modes of stakeholder organisation could inspire others, just as the Friends of Hanzeland in Zwolle went to visit other cities during visionmaking to see what had been done there.
- The thesis is an examination of which TOD obstacles are most relevant in the Dutch institutional context and which obstacles are less problematic to Dutch stakeholder

networks, which is an addition to the theory and allows for practical recommendations to be formulated below.

6.3. Critical reflection on the theoretical model

Having used the theoretical model and confronted it with the case studies and analytical process, several criticisms of the model and of the theories themselves can be made.

- The theoretical model included multiple theories relating to stakeholder interaction: stakeholder collaboration, network management, etc. However, in this situation, considering the powers available to Dutch municipalities and provinces, the actual implementation of these theories are sometimes quite similar. For example, the concept of network management is interesting and useful in its explanatory power. Nonetheless, its implementation is quite similar to that of stakeholder coordination. The theoretical importance of these distinctions is significant, but for the purpose of studying the implementation of area redevelopment plans it may have been more relevant to clearly describe the management < coordination < cooperation < collaboration (ordered from most vertical to most horizontal) typology of stakeholder relationships which was effectively used in this thesis. This would have had less theoretical relevance, but may have simplified the descriptions of the case studies themselves.
- Bertolini's 5 dilemmas are an excellent model to understand the issues facing station redevelopment, but they can be less appropriate when used to identify and evaluate the implementation of such redevelopment. In practice, the signs of a functional dilemma and the signs of a spatial dilemma are deeply interlinked. The model seems more suited for planning new projects than for identifying points of tension in existing ones.7
- The managerial dilemma of Bertolini's 5 dilemmas proved non-relevant to these case studies. While the other dilemmas of the model are related to the technical constraints of a station area redevelopment and of making heterogenous rail and land-use stakeholders coordinate, the managerial dilemma does not fit this mould. Instead, it stems from potential managerial conflicts which are avoided here by clear ownership lines and explicit maintenance/usage obligations and rights. This suggests that perhaps the managerial dilemma should not be included alongside the 4 others, as it has less to do with direct or indirect practical difficulties of station development and more with issues of legislation or planning culture.
- The relevance of collaborative planning theory to the Dutch case studies was noted to be limited. Although many of its principles are useful to describe the initial collaborative visionmaking of the case studies, the aspects of place-making and the continuous equal

involvement of all stakeholders are limited. However, in hindsight it seems like a complete use of collaborative planning may not be a desirable thing for a station and station area redevelopment project. Lack of decisiveness and speed during implementation can worsen the temporal dilemma. Successfully convincing all stakeholders to share goals and or participate financially may be more difficult if they feel they lack all control over the pursuit of their own goals. The issue of legitimate participation in collaborative planning can also be difficult: weighing the voices of private developers against those of residents is difficult when designing public spaces, and involving locals in the construction of private areas destined for sale to different demographics may be difficult. The difficulties regarding the placement of the P&R in Zwolle are an example of an issue stemming from different visions, which would be difficult for cooperative planning to resolve. Indeed, the Dutch system of collaboration followed by cooperation between more separated stakeholders during implementation has its advantages.

6.4. Limitations, further research, and recommendations for practice

Naturally, this thesis must acknowledge several limits. Firstly, although initial interviews were selected for ease of comparability, use of the snowball method and the focus on specificities of each case study revealed in exploratory interviews led to different stakeholders being interviewed between the case studies. This may somewhat limit final case study comparability. Secondly, the unavailability of quantitative data was an obstacle to studying financial dilemmas and land price evolutions. Qualitative data was used, but in some cases the success or failure of economic development objectives is hard to assess before completion of the project. Thirdly, although all three case studies are linked to the PHS project, no interview with the Ministry was obtained and so the PHS project itself was not examined. However interviews with ProRail members involved in the case studies suggest that the PHS project does not concern itself with the station area redevelopments it catalyses, unless they affect its infrastructure. These limitations open the door to further study, seeking quantitative data to better understand the finances of each stakeholder, or seeking interviews to examine these redevelopments from the perspective of the PHS project managers.

The chosen topic focused on the redevelopment of stations of intermediary importance. This means that some other Dutch situations were not included in the thesis: for example, national policy and financial instruments did not prove relevant at this spatial and temporal case study scale. Instead, stakeholder networks and stakeholder management proved especially

important and were focused on. Similarly, the role of metropolitan authorities in transit/land-use coordination was not examined here, because although metropolitan authorities are very important in major cities like Amsterdam they are not relevant at the scale of the case studies. This means that attempts to generalize this thesis to the wider Dutch context will require further research.

Two of this thesis' findings could lead to further research to investigate them more specifically. Firstly, additional study may be relevant to see if ongoing changes to station area mobility/intensification in planning culture and the acceptance of financial risk by developers (especially visible in the Ede and 's-Hertogenbosch case studies) are signs of a wider trend. Secondly, the lack of relevance of the managerial dilemma in these case studies could be investigated. To what extent is it due to Dutch planning culture and/or to preexisting laws and commitments? Is there really a Dutch reluctance to privatize public space in stations or station areas?

This thesis has shown that Dutch planners and developers are aware of the potential benefits and risks of station (re)development, and that there is awareness of international projects. However, more in-depth research could be implemented to see to what extent this translates to knowledge of specific planning theory. Further research could be conducted to see if there is theoretical backing, and if so if it is Dutch theory or international theory.

Finally, recommendations for practice can be drawn from the study of the means used in Zwolle, 's-Hertogenbosch and Ede to facilitate stakeholder cooperation and project implementation. Firstly, it is important to activate stakeholders and get everyone involved in the project. This includes spreading awareness of the importance of a station for its area, and of the opportunity that station redevelopment represents for a station area redevelopment. Secondly, a flexible and cooperative visionmaking process is needed to foster stakeholder cooperation and facilitate formal but also informal exchanges and relationships. Making sure that every stakeholder shares an awareness of multiple approaches to station design (station as an urban center, as a connector, as a transportation hub, etc) will ease the implementation of this vision. Thirdly, it is important that whatever framework is created for cooperation, collaboration and/or stakeholder management remains flexible and adapts to the evolutions of the project.

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8. Appendix

Appendix n°1: Interviews

Reference	Case study	Body (Position)	Name
Source 1	Zwolle	Municipality (Senior designer, planner)	Henk Snel
Source 2	Zwolle	CityDeveloper-S (Developer)	Thijs van Dieren
Source 3	Zwolle	NS (Senior Sales Manager, Area Developer)	Chantal Snelling-Berg
Source 4	Zwolle	NS (Senior Developer)	Earde Jepma
Source 5	‘s-Hertogenbosch	Municipality (Spoorzone Program Manager)	Sonja van der Beek
Source 6	‘s-Hertogenbosch	SDK Vastgoed (Development Manager)	Mike van de Kar
Source 7	‘s-Hertogenbosch	Spoorzone Entrepreneur’s Association (Chairman)	Willemijn van den Bouwhuijsen
Source 8	Ede	Municipality (Coordinating project manager)	Peter van Kleunen
Source 9	Ede	ProRail (Project Manager)	Berry Vandenhout
Source 10	Ede	Province (Regional coordinator mobility)	Carl Bieker
Source 11	Ede	Municipality (Junior Project Leader)	Else van Leeuwen
Source 12	Ede	Municipality (Project Manager)	Jan van den Brink
Source 13	Ede	SMINK (Technical Advisor)	Leo Kap

Table 5: Interviewee Reference

Appendix n°2 : Exploratory coding

The initial coding aimed to facilitate understanding of each case study's main issues, allowing for improved interview questionnaires and subsequent re-coding. It was as follows:

Stakeholder analysis

- Stakeholder goals
- Stakeholder role

Case study - preliminary exploration

- Stakeholder collaboration
- Project calendar, timeline
- Stakeholder conflict

Bertolini's 5 Dilemmas

- Temporal Dilemma
- Spatial Dilemma
- Financial Dilemma
- Functional Dilemma
- Managerial Dilemma

Appendix n°3 : Analysis coding

Stakeholder analysis

- Stakeholder means
    - Means: Formal
    - Means: Informal
- Stakeholder goal
    - Goal: Mobility focus
    - Goal: Housing focus
    - Goal: Business focus
- Stakeholder role
- Stakeholder perceptions
    - Perception of another stakeholder
    - Perception of the area redevelopment
    - Perception of the station
        - Station as a connector
        - Station as a transportation hub
        - Station as a meeting place
        - Station as an urban center

Coordination of stakeholders (by a stakeholder wishing to direct/activate the network)

- Formal means
- Informal means
    - Complementary
    - Accommodating
    - Competing
    - Substitutive

Cooperation between stakeholders

- Formal means
- Informal means
    - Complementary
    - Accommodating
    - Competing

        - Substitutive
- **Issues faced**
    - Spatial dilemma
    - Temporal dilemma
    - Managerial dilemma
    - Financial dilemma
    - Functional dilemma