A MULTI-DISCIPLINARY APPROACH OF RAILWAY STATION DEVELOPMENT

Gert-Joost Peek, Technische Universiteit Delft, Real Estate & Housing, g.j.peek@tudelft.nl

Erik Louw, Technische Universiteit Delft, Onderzoeksinstituut OTB, e.louw@tudelft.nl

Inhoudsopgave

Samenvatting

Een multidisciplinaire benadering van de herontwikkeling van stationslocaties

Binnenstedelijke stationslocaties zijn interessante locatie voor herontwikkeling waar vele betrokken partijen vanuit even zovele doelen hoge verwachtingen van hebben. De basis voor deze verwachtingen ligt in de combinatie van het knoop- en plaatskarakter van de locaties. Ze zijn goed bereikbare knooppunten in vervoersnetwerken wat ze als plaats in de stad potentie geeft voor de concentratie van allerlei verblijfsactiviteiten. Het bivalente karakter van de stationslocaties maakt dat ze beschouwd kunnen worden als zelfstandige locaties, maar ook als onderdeel van verbindende netwerken. De kruising van de primaire focus (knoop/plaats) en de secundaire focus (locatie/netwerk) leidt tot een viertal ideaaltypen, dat staat voor vier disciplinegebonden discoursen over de meerwaarde van de (her)ontwikkeling van deze knooppunten.

Het eerste ideaaltype van de *OVerstapmachine* (*connector*) combineert de primaire focus van de knoop en de secundaire van de locatie. We vinden deze benadering bij ontwerpers van stations die zich doel stellen overstappen zo soepel mogelijk te maken. Het tweede ideaaltype van de *verbindingschakel* (*transportation node*) combineert de primaire focus van de knoop en de secundaire van het netwerk. We vinden deze benadering bij vervoerskundigen en -planologen die zich doel stellen de prestaties van het totale vervoersnetwerk te optimaliseren. Het derde ideaaltype van de *ontmoetingsplek* (*meeting place*) combineert de primaire focus van de plaats en de secundaire van de locatie. We vinden deze benadering bij stadssociologen die zich doel stellen de (mogelijke) rol van het station in het leven van stedeling te beschouwen. Het vierde ideaaltype van het *stadscentrum* (*urban centre*) combineert de primaire focus van de plaats en de secundaire van het netwerk. We vinden deze benadering bij stadseconomen en stedebouwkundigen die bij de herontwikkeling van de stationslocatie vooral naar de stad als geheel kijken.

De combinatie van deze vier ideaaltypen verklaart de mogelijke synergie die van de herontwikkeling van binnenstedelijke stationslocaties wordt verwacht, maar kan ook leiden tot antagonisme-effecten wanneer de nadruk te zeer op één van de ideaaltypische benaderingen wordt gelegd. In dit paper worden de mogelijke synergie- en antagonisme-effecten verder toegelicht aan de hand van de casus stationsgebied 's-Hertogenbosch. Hierbij was de inzet van de twee belangrijkste partijen, NS en gemeente, voornamelijk gericht op de locatie als respectievelijke *verbindingsschakel* en als *stadscentrum*. De benaderingen van *OVerstapmachine* en *ontmoetingsplek* speelden een meer ondergeschikte rol, maar werden niet vergeten. Deze multidisciplinaire benadering van de herontwikkeling zien we als een belangrijke verklaring voor het succes van het Bossche stationsgebied.

1.   Introduction

Stations have a bivalent character, as they are nodes in networks of transportation and places in the city (Bertolini, 1996b: 76, Bertolini & Spit, 1998: 9). The combination of accessibility and the potency for concentration of urban activities make them favoured locations for developing into structuring nodes of the network city (Bertolini & Dijst, 2000: 41). 'For instance […] a high level of accessibility may provide the critical mass of demand for the development of particular activities. In turn, a high density of activities may induce the necessary support for the development of transportation networks' (Bertolini & Spit, 1998: 9). But the combination of node and place is also accountable for the long and complex process of (re)development in which, at the same time, needs to be dealt with both transportation and urban development issues (Bertolini & Spit, 1998: 17).

A multifarious array of both node- and place-based actors crowd round the station area redevelopment process. The objectives of these actors are diverse and their expectations are often very high. All participants in the redevelopment process see their own opportunities and have a distinct view on the way in which others can assist in achieving their goals (Majoor, 2006). The bivalent character of the station area and its resulting possible synergies raise the expectations of the participants. This makes them interdependent, so that capitalising on the synergies asks for collaboration, which is hard to achieve and maintain when the actors involved operate from such different perspectives.

In section two of this paper we provide an overview of four main disciplinary approaches to the (re)development of railway station areas. All approaches or perspectives need to be accounted for in order to exploit the synergies. Such a multi-disciplinary approach asks for collaboration in order to develop an integrated solution for the location and create synergies between these approaches. In section three we identify possible synergies and antagonisms between the four approaches. We will analyse the reinforcing and possible threatening interrelations of the approaches in section four in a case study on the redevelopment of the station area of the city of 's-Hertogenbosch. In section five we draw some conclusions.

2.   Four disciplinary approaches

As stations are viewed as nodes and places, the disciplinary approaches are categorised by these primary focuses. The focus of the station as a node can be found within the transportation discipline. The focus of the station as place corresponds with the urban planning and real estate discipline. Subsequently, a division can be made according to a secondary focus. As station areas are nodes within the network city, they can be viewed as separate locations, but also as part of all connecting networks. Based on these primary and secondary focuses we distinguish four disciplinary approaches (table 1), which are not theories as such but logic combinations of arguments with a similar theoretical of practical background. They may be interpreted as a kind of discourses (Hajer, 2000: 17-20) on the (re)development of railway stations and its local effects.

Table 1   Four disciplinary approaches to railway station (re)development

Primary focus\Secondary focus	Location	Network
Node	*Connector*	*Transportation node*
Place	*Meeting place*	*Urban centre*

The four approaches lead to four ideal types of station areas. In these types certain features, valued within a specific discourse, are emphasized while others, considered of less importance, are ignored. So, these ideal types are constructions and are not found in reality (Zijderveld, 1988: 45). We use them as comparison to reality, as perspectives to analyse the possible synergies and antagonisms between these different perspectives on railway station (re)development.

The first approach typified as *connector* combines the focuses of primarily the node and secondarily the location. We find this approach with engineers and architects when confronted with the design brief of a station. They view the station and it surroundings as a connector (Spek, 2003): a build environment connecting the present transportation modes. The aim is to make the connections as smooth as possible. Transferring should be safe, reliable, fast, hassle-free, comfortable and pleasant, this corresponding with the demand characteristics of the traveller (Peek & Hagen, 2002). Travellers experience transferring as more - up to three times

more - time consuming than it is in reality (Waard, 1989, Wardman, 2004). The design of the connector should lower this transfer resistance. In this perspective the station area is spatially defined by all possible transfer routes connecting transport modes. The area could be whimsically shaped, depending on the situation of the stops, and extend to multiple levels and include outer and inner space as well as public and private spaces. Within this area all transferring takes place (Spek, 2003: 11-12).

The second approach typified as *transportation node* combines the focuses of primarily the node and secondarily the network. We find this approach with transportation and traffic planners. They view the station as a node characterised by its hierarchical position within transportation networks it is linked to. They aim at optimising the overall efficiency and effectiveness of these networks. In this perspective the station's area of influence is spatially defined by its accessibility. For every transportation network the distance or the number of stops in reach off a particular station within a certain period of time can be determined. Considering road networks, travel time, length and density of the network determine the catchment area. These supply depending variables could be extended with demand depending variables like the chance and extent of congestion. The actual dimensions of the area largely depend on the period of time that is chosen which could result in a substantial area of influence.

The third approach typified as *meeting place* combines the focuses of primarily the place and secondarily the location. We find this approach with sociologists contemplating the role of the station area within the life of city-dwellers. They view the station and it surroundings as 'heterotopia' (Hajer, 1996): a modern market place where people are still confronted with urban life in all its multiplicity. The combination of accessibility and public space offers opportunities for planned as well as unplanned encounters of individuals. The contrasts in use of a station area are well depicted by the heterogeneity of the area's populations. The absence of a dominant social-cultural group creates an environment where many different individual paths may cross and interrelate; people meet at station areas for business or pleasure or just suddenly bump into each other, people observe and are seen and they are confronted with marginal groups like homeless, streets artists and unemployed youth, sometimes to their amusement and sometimes to their annoyance (Bertolini, 2004, Boelens et al., 1999: 28). In

this perspective the station area is spatially defined by all spaces in the vicinity of the station in which people can meet. Most obvious meeting places are hotel lobbies, coffee shops, cafés or pubs, restaurants and conference rooms, but meetings may also take place while waiting at the platform or bus stand, browsing though magazines in the bookshop or examining the timetable. Creating meeting space in and around a station asks for flexibility and programmatic complexity in order to deal with the dynamics of use (Nio, 2000: 124). Spaces used for transfer in peak hours could be meeting places in off-peak times. In this approach it is the use of space for individual encounters and collective events that defines the station as a place that offers the experience of urbanity (Boomkens, 1999: 70-71).

The fourth approach typified as *urban centre* combines the focuses of primarily the node and secondarily the network. We find this approach with urban economists and city planners in search of locations to stimulate the urban economy. The theory that drives the redevelopment of station areas as an economic development tool lies in its transit ability to provide higher densities and to create lively centres. From its position within the – urban – network stations areas are a focal points for urban regeneration: locations offering space for an array of urban functions, like offices, shops, dwellings and all sorts of urban amenities. Furthermore, an attractive station area not only allows for more housing, business, and leisure to occur at such locations, but it also encourages such dense development by providing a transportation catchment area. Essentially, a transit centre provides a scarce source of land that accommodates dense, mixed-use development. Through this kind of land use economies of scale and diversity may be achieved, which lead to a more differentiation in terms of urban activities and functions that with institutional support frameworks leads to a relatively stronger and more robust urban constellation (Rodenburg et al., 2003). The diversity at the scale of a railway station area greatly resembles the urban environment advocated by (Jacobs, 1961) with its cultural variety and social interaction, and better known as Jacobs's externalities or synergy effects.

3.   Possible synergies and antagonisms

The tensions between the station area as node and as place and, simultaneously, between the perspective of a stand-alone location and of a location with the urban networks, results in possible synergies, but they may also lead to negative effects or antagonisms as Bertolini &

Spit (1998: 9) indicated: '[..] dense patterns of use can make a location's transport infrastructure difficult to expand and adapt. In the same vein, optimization of a station's accessibility by all modes may have negatively effect its liveability, and thus its attractiveness'. Nevertheless these complex node-place and location-network interactions are the core of railway station redevelopment. We explore these interactions by combinations of our four ideal typical approaches. First of all we consider the possible positive interactions which might lead to synergy. Achieving these synergies asks for well balanced attention to all approaches. Secondly, we focus on antagonistic effects which might occur when one approach dominates the others. This results in optimizing only one approach without achieving potential synergy between them.

Table 2   Possible synergies of approaches to railway station development

Focus	Location	←┃→ Synergy ←┃→	Network
Node	*Connector*	Transfer quality	*Transportation node*
↕ Synergy	Intensity	*'place of buzz'*	Centrality
Place	*Meeting place*	Spatial quality	*Urban centre*

Table 2 shows the possible synergies between the four approaches to railway station development. The ideal types of *connector* and of *transportation node* reinforce each other in respect of transfer quality. While the *connector* is aimed at lowering the transfer resistance, the *transportation node* aims for an even distribution of travellers leading to an efficient and effective exploitation of transportation networks. Both improve the transfer quality. Looking at the station an even distribution of travellers helps to match the transfer facilities to the travellers needs by reducing peak and off-peak differences. At network level a smooth transfer helps connecting the transportation networks of different scale level and contributing to the performance of the whole system.

The ideal types of *meeting place* and of *urban centre* have a mutual positive effect means of spatial quality. The concentration of urban activities leads to a more vibrant environment around the station and heightens the chance of sudden encounters and urban events, while the addition of meeting places strengthens the position of the station area as centre in the urban network and creates a corresponding urban feeling.

The ideal types of *connector* and of *meeting place* are complementary concerning intensity. The intensity of use is among others influenced by the smoothness of the transfer as well as by the presence of a pleasant atmosphere and dedicated meeting places. This presence might lead to more travellers in off-peak hours helping to maintain a certain presence of people and so preserving a safe environment, especially at night. A smooth transfer makes the station a preferred place to meet.

The ideal types of *transportation node* and of *urban centre* both influence the centrality of the station area. The more connections a station has and the faster these connections are, the more central it is located within the transportation system. This centrality is to be capitalized by property development. Subsequently the concentration of real estate leads to a more central location within the urban network and creates demand for travelling. Private railway companies in Japan combine these approaches by developing residential areas near new rail lines and so ensure themselves of an increase in property value in the short term and a steady stream of travellers in the long term (Mizutani, 1999: 300).

An ideal station area should be a combination of all four ideal types (Uum & Boer, 2003: 20) creating a 'quality of space' that matches the criteria set by Florida (2002: 215) in order to contribute to a 'Creative City'. The tensions between node and place cloud in the same time lead to a number of negative effects turning the station area as possible *'place of buzz'* (Storper & Venables, 2002) into an urban manhole.

Table 3   Possible antagonisms of approaches to railway station development

Focus	Location	←→ Antagonism ←→	Network
Node	*Connector*	Coupling of linear and nodal infrastructures	*Transportation node*
↕ Antagonism	Accessibility & identity	Embeddedness & commerce	Positioning & environmental impact
Place	*Meeting place*	Function mix	*Urban centre*

Table 3 shows the possible antagonisms between the four approaches to railway station development. The ideal types of *connector* and of *transportation node* could have a mutual

negative effect by means of the coupling of linear and nodal infrastructures. The ways in which these infrastructures are coupled are of great influence on the transfer quality. Hiddink en Van Twist (2003) present an overview of possible managerial arrangements of nodes. First, they observe an 'uncoupled model' in which the management of node and line infrastructure are independent, like air- or seaports. Second, they perceive a 'node-service model' in which the transportation service provider manages the node. This model is most common for the management of railway stations. Third, there is an 'integrated model' in which node and line infrastructure are owned and managed by the same company. We find this model in metro systems and private Japanese railway companies. The models differ in possibilities for creating synergy from the coupling of node and line infrastructure. However, in most cases the choice of model is not so much motivated by possible synergies but rather by the national and international policies with regard to privatisation and open markets.

The ideal types of *meeting place* and of *urban centre* could lead to synergy threatening interrelations with regard to function mix. The pursuit of multifunctionality in order to create a livable, attractive and secure environment for meeting and public transport and long-term property exploitation prospects could be in strained relation with short term profitability. From a development perspective offices and retail are most desired functions in and around stations. When a redevelopment program largely dependents on property revenues it will be difficult to realise multifunctional ambitions, certainly because non-residential functions are also required shielding the tracks. A large chare of offices subsequently makes the execution of the total program largely dependent on the dynamics of real estate markets (Bertolini & Spit, 1998: 215, Koppenjan & Ham, 2002: 447).

The ideal types of *connector* and of *meeting place* could conflict in the fields of accessibility and identity. An exclusive orientation on the connector could lead to stations designed as grey efficient transfer machines. These 'non-places', as Augé (1995) calls them, have no identity and are almost totally lacking in social and historical significance. There are exclusively programmed for a friction free and disciplined transport of large groups of people and are all but meeting places. An exclusive orientation on the meeting place could, on the other hand, lead to a station where marginal groups of society assemble. Their presence could discourage travellers, especially elderly, women and single travellers, from using the station. How to

combine the character of the station as a place to come in contact with the fringe of society and as a safe and secure transfer environment is a opportune question regarding present discussions around electronic ticketing, controlled access and locale branding of stations (Peek, 2001, 2002, Pronk, 2005).

The confrontation of the ideal types of *transportation node* and of *urban centre* could lead to antagonistic effects regarding positioning and environmental impact. Seen from the perspective of the transportation node stations could best be positioned in such a way that the ideal layout of the infrastructure network is least effected. Stations are autonomous constructions situated outside the city surrounded by open space for future infrastructure developments and parking. Some French TGV-stations resemble this approach (see for instance Valance TGV: Tiry, 2001). Such a positioning has little to offer in respect of the station as urban centre. Conversely, the exclusive positioning of the station as urban centre, within the heart of the city and closed in by buildings filled with a multifunctional program, leads to suboptimal infrastructure layout, consider for instance all termini in cities like London and Paris, and limits future infrastructure expansions. Similar conflicts arise considering the environmental impact of the rail infrastructure. While heart-to-heart connections between cities by rail compete best with transport by car, environmental legislation limits the possibilities of concentrating multifunctional program next to the tracks (Uum & Boer, 2003: 13-14, Schutte-Postma, 2004: 300).

The last series of antagonistic effects could arise from the confrontation of the ideal types of *connector* and of *urban centre* and have an effect on all approaches. These deal with the embeddedness of the station in its surroundings and commerce. From the perspective of the connector a rather autonomous and closed structure could very well guaranty the transfer quality. Graham & Marvin (2001) speak of autonomous isles in the city and signal a 'desperate need, in particular, to imagine ways of weaving secessionary and global network spaces into the finer-grained fabric of the urban spaces […] that surround them' (Graham & Marvin, 2001: 414). On the other hand a close interweaving of local pedestrian and bike routes with the stations' internal logistics, as can be observed in many Dutch railway stations, leads to discussions about access level restrictions. The embeddedness of stations in the city is also threatened by the space around the station that is occupied by all access and egress

modes. In line with the goals of the connector bus station, parking and bicycle sheds are conveniently located close to the stations entrance, forming large field of asphalt full of busses and cars and hampering pedestrian connections to the surrounding urban fabric. Solutions are dynamic bus stations and underground parking.

Pedestrian flows attract commercial activities which could grow into attractions by themselves in line of the ideal type of the urban centre. Still, the dependence of retail outlets on passengers flow bears the danger that people shopping disturb travelers who are not interested in shops, but instead just want to get to the train. To avoid these conflicts a clear spatial division is advised.

4.   The station area in 's-Hertogenbosch

Our case study is the station area of 's-Hertogenbosch. In the 1990s a new station was build and the former adjoining industrial estate De Wolfsdonken was transformed into a mixed use called Paleiskwartier. This former industrial estate is situated on the west site of the railway station, while the city centre is on the east site of the station. In the Netherlands this redevelopment is seen as highly successful, both as an example of public-private partnership and urban design (Nijkamp et al., 2002).

The original industrial estate was developed in the 1950s. During the 1980' signs of physical deterioration began to appear. Also vacancies in various manufacturing buildings and nuisance by prostitution induced the municipality to take action. In 1986 it published a plan to update the industrial estate. This plan was never implemented. Eventually three driving forces set the redevelopment in motion.

Between 1985 and 1990, several real estate agents showed an interest in developing offices on the Station Square and on the west side of the station. These initiatives failed but it alerted the municipality to reconsider its policy to update the estate. This, together with the municipal spatial policy to strengthen the economy of the cramped city centre, led to the redevelopment of the whole 200 hectare site west of the station. This site includes a disused sports field, a former barracks and the industrial estate De Wolfsdonken. This second driving force, which was presented in a municipal policy document in 1987 had the following goals: (1) redevelopment of the station area (east and west of the station itself) from low to high quality

land uses; (2) provision of space for large offices that have to leave the city centre; and (3) improvement of the accessibility of the city centre and the area itself.

The third driving force was Dutch Railways, which was drawing up plans to adapt the station to a new ambitious timetable for the 21st century for which a new platform had to be built and the track layout should be altered. Initially Dutch Railways had no plans to built en new station building.

Around 1990, the redevelopment initiatives were concentrated on both sides of the station. At that time, only one third of De Wolfsdonken was covered by the plans, which mainly contained ideas about the extension of the city centre to the railway station and levelling out the station as a physical barrier for further expansion of the city centre to the west. At this time the redevelopment area west of the station was known as La Gare.

In 1988, an agreement was signed between Dutch Railways and the municipality to redevelop the station. It was agreed that the municipality would pay for a bridge over the railway tracks to connect the Station Square at the east side of the station and the proposed redevelopment at the west side of the station. Actual construction of the new station did not commence until 1995. In the meantime, redevelopment of De Wolfsdonken had accelerated. The first office building and an apartment block were built in La Gare in 1991, and it had been decided to build a regional court of justice there. Together with increasing demand in the office market and the new emphasis of national spatial policy on using land in city centres more intensely, this resulted in the whole area of De Wolfsdonken becoming a redevelopment area from 1992. In this year still 2,240 peopled worked at the site.

In 1994 the municipality published its first planning document for the whole area west of the station. In 1996 the urban design masterplan for Paleiskwartier was published with the goal of creating an area with a high level of urban design. Also a feasibility study was carried out. Although a masterplan is not a statutory planning document, in practice it is used as a kind of preliminary or draft land use plan. In 1998, a public-private company called Paleiskwartier BV was established, the participants of which being the municipality, a developer and two investors. This company operated as a land and property developer for the remaining two-

thirds of the former De Wolfsdonken (Paleiskwartier 2nd phase). In 2005, the redevelopment is well under way, and over 50% of the proposed property development was completed (Table 4). La Gare has been completed, and at the Station Square there is space for only two more small offices to be built. The development is expected to be completed in 2010.

Table 4   Property programme towards 2010

	Station Square*	Paleiskwartier 1st phase (La Gare)*	Paleiskwartier 2nd phase
Surface (hectares)	8	10	18
Offices (m²)	10,300	91,000	110,600
Other commercial functions (m²)	6,800	6,300	32,700
Dwellings (Number of)	16	307	1,200

*   Completed

From the above it is obvious that the prime focus of Dutch Railways was on the station as a transportation node. Initially they only wanted to alter the track layout. Only in 1995 when Dutch Railways was split up in various companies, the unit concerned with the stations developed an interest in the development of various station services (shops and cafés etc.) that is linked to the approach of connector, providing for a smooth and pleasant interchange. Spatially this approach is limited to the station building itself.

The prime focus of the municipality was on the development of the site in the context of the urban centre approach. The initiatives to redevelopment of the Station Square and Wolfsdonken were meant to improve the competitiveness of the city centre and improve the economic performance of the city. However, this was partly a response to initiatives from actors in the commercial real estate sector. Had the municipality agreed with these initiatives, the outcome of the development should been very different.

The redevelopment of the station area and Paleiskwartier is extensively analysed in a book by Bruil et al. (2004). They distinguishes three events which where decisive for the successful development of the whole area. These events where recognised after analysing the public decision processes, with Kingdon's model of policy formation in mind (Kingdon 1995). Kingdon distinguished three processes or streams: (1) a problem stream in which problems are defined and rise to a sufficient level of urgency that they find a place on policymakers'

agenda; (2) a policy stream in which alternative policy solutions are developed and selected through consensus within the political community; and (3) the political stream in which consensus on political issues is developed in the broader political environment through coalitions building. Each stream is affected by its own institutional structures, but they also interact.

Applied to our case study the policy stream is the municipality's policy to strengthen the city centre. In itself a policy stream is not enough to implement the policy. What is needed is an interaction between these streams in which policy entrepreneurs couple the three streams to produce the policy outcomes they desire. Such an interaction is called a window of opportunity and is created by a change in the problem or political stream. In the remainder of this section we will focus on the three policy windows as found by Bruil (2004) and analyse how our four disciplinary approaches were used in these policy windows.

The first policy window was created around the decision of the municipality to subsidise the new railway station. As indicated above Dutch Railways had to adapt the track lay-out along the station due to plans for a new timetable. The municipality however saw an opportunity to redevelop the station *and* the Station Square. To achieve this, the municipality proposed to invest €2.2 million into the station under three conditions: (1) Dutch Railway has to built a new station building; (2) the bridge that connects the platforms has to cross all the railway tracks to the area on the west side of the tracks; and (3) this bridge has to be 15 meters wide and the old platform roof construction is preserved. The board of Dutch Railways accepted this offer and conditions.

The municipal decision to invest (or subsidise) in the railway station seems straightforward, but in fact it is embedded in the *urban centre* approach of the municipality, while at the same time using a policy window which found its origin in the *transportation node* approaches of Dutch Railways. Dutch Railways was only interested in increasing the efficiency of the station as a node in their network. To achieve this only platform and track layout had to be altered. The municipality however, was interested in a new station building, a new Station Square and a way to remove the railway as a physical barrier between the city centre and the west side of tracks that includes the area De Wolfsdonken that was planned to be redeveloped. A direct link between De Wolfsdonken and the city centre via a new railway station would

remove the barrier and enable the municipality to push forward her *urban centre* approach. In Kingdons' terms the *transportation node* approaches of Dutch Railway opened a policy window for the municipality to implement its' *urban centre* approach and to redevelop De Wolfsdonken as an extension of the city centre. By optimising the scope of the station redevelopment for the Dutch Railways seen from the perspective of the *connector*, this actor was willing to invest in the station.

The second window of opportunity was the municipality's decision *not* to grant a building permit for an office building to a developer who wanted to built the first office building at the west side of the station in 1987. The Alderman for spatial planning was pleased with the plan of the developer, because it was an incentive for the economic redevelopment of the area. The highest civil servant for spatial planning however disagreed because it would endanger the premature plans of the municipality: an investment now would probably increase land values, which could endanger these plans. Also the proposed office building could interfere with the plans for the bridge over the railway tracks, which were under discussion at the same time. The civil servant convinced the alderman not to adapt the land use plan, which was necessary to grand the building permit.

Although it seems that the refusal to grant the building permit closed a window of opportunity, in fact it kept an emerging and larger window open. Granting the building permit seem logical and would create a immediate success for the urban centre approach in the form of a short term profitable real estate project. However, the changes to create more sustainable synergies between the various approaches would probably have been lost because it reduced the changes to level out the railway as a physical barrier. In the long run this would prevent synergy between the *transportation* and *urban centre* approaches in the form of capitalization by property development. Also synergies between *meeting place* and *urban centre* favoured, because it kept open opportunities for spatial quality related to mixed-use developments. So, not granting the building permit prohibited the antagonism between *meeting place* and *urban centre* from happening.

This second window of opportunity also influenced the political stream. After the municipality refused the building permit the developer abandoned its initiatives for property development of the site. The municipality informed another developer about this, who then bought the land. This later developer was well known to the municipality and was to become

the developer of three buildings in La Gare and one of the shareholders in the public-private company Paleiskwartier. In a sence the refusal of the building permit paved the way to public-private coalition building in the property development of the whole site.

The third window is a classical example in the true sense of Kingdon's model. It was the coupling of streams which leads to the decision to move the various court offices in the city centre to one building in La Gare. This 40.000 sq meters building is now flagship project of the site. Due to a reorganisation and expansion the courts needed more office space. Staying in the city centre was not possible and a new office in La Gare was not an inviting option, because in the early 1990s' La Gare was not an appealing building site, having a rundown industrial estate and streetwalking next door. This wasn't the standing the courts wanted. However, the site was an office location that fitted in the national governments policy on building new offices near railway stations. This policy known as ABC-location policy is an example of coordinated transport and land use policies and aimed at settling employment with high passenger transport profiles at public transport nodes (A-locations) and employment with high freight profiles at sites highly accessible for road transport (C-locations). The municipality used this national policy which was founded in the rationales behind the transportation node and urban centre approach, as an argument to persuade the Ministry of Housing, Spatial Planning and the Environment to build the new court building in La Gare.

In this case the municipality used a national policy stream in its advantage handling the problem of relocating the court offices. However the large amount of floor space demand created its own problems. The existing urban design plan had to be altered because land assembly for the building could not be completed in time. Therefore a square that was planned as urban entrance space for the Westside access of the station had to be relocated. In its turn this diminished the possibilities for mixed-use development around this square and therefore a reduction in the functional mix and urban quality. This antagonism effect weighted up against the securing of a flagship project on the site. This gave way to a re-branding of the area. The location of the Palace of Justice (court buildings) in the area put the area on the map as the premium location in the local office market and it even resulted in renaming the redevelopment area Paleiskwartier: Palace quarter.

For the redevelopment La Gare the designation of the area as an A-location had another side effect. The ABC-location policy also contains regulation about the number of parking places

that are allowed in an area. According to this policy in the station area of 's-Hertogenbosch only 10 places for 100 office employees were allowed. Although the municipality always has mitigated this parking standard, some firms decided for this reason not to settle in La Gare. So in this sense the policy to integrate transport and spatial planning had a temporarily antagonism effect on the development of La Gare.

5.   Conclusions

In this paper we introduced four disciplinary approaches to railway station (re)development in which the bivalent character of stations is identified. We applied these approaches to the redevelopment of the station area in 's-Hertogenbosch in the Netherlands. Our multi-disciplinary approach shows that in an ideal situation combining the approaches can generate synergy effects, but also that these combinations may have antagonism effects which prevent synergies to happen. This particularly is the case when too much emphasis is given to a certain approach and the others are neglected. In our case study we identified both effects. The emphasis was on the development of the railway station as *transportation node* and the station area as an *urban centre*. The station as a *connector* and *meeting place* were additional to these approaches but were never left out of consideration.

What the 's-Hertogenbosch case clearly illustrates is that the approaches are linked with actors in the transport and spatial planning arenas. Dutch Railways was clearly linked with the *transportation node* approach, while the municipality was linked to the *urban centre* approach. The real estate branch of Dutch Railways only played an instrumental role in this last approach. The success of the 's-Hertogenbosch station area redevelopment is mainly due to the fact that these to approaches collided at a particular time and a particular space in which several policy windows could be opened. Also the entrepreneurial attitude of the municipality could prevent some antagonism effects.

What is also evident in our case study is that the beneficial effect of the *transportation node* approach was only short lived. Its main influence was during the initial phase of the redevelopment in the form of investments in the station and its immediate surroundings in La Gare. This provided a threshold level to make the development of the whole site viable to sustain on its own feet. The current development of Paleiskwartier 2nd phase continues more

or less independent from the station area itself. Its success is however irrevocable linked the policy decisions made in the footsteps of the *transportation node* and *urban centre* approaches. In general it can be assumed that a combination of these approaches is essential for a viable station area development, because this puts station area in a broader spatial context and scale, than the *connector* and *meeting place* approaches, which are site specific.

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