Station area developments in Tokyo and what the Randstad can learn from it

Chorus, P. R. W. E.

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Despite that there is a general awareness in the Randstad that land use and transport developments should be coordinated, this is often not the case in practice. The development of station areas are a typical example of this. Within station areas transport and land use developments are often poorly aligned which largely explains the slow progress of station area development projects in the Randstad. There are, however, examples where transport and land use developments at stations are more integrated. Tokyo is one of these examples. This research explores whether the Randstad could learn from Tokyo with regard to the development of station areas. In learning from Tokyo three themes are further articulated and explored:

The integration between transport and land use developments at stations, as this will give insight on what to do. Private sector and government roles in planning these developments, as this will give insight on how to do it. Transferring institutional features from one country to another, as this will give insight into what could be learnt from a different context (i.e. from Tokyo to the Randstad).

Together these themes result in the central question underlying this research: “What are the driving forces behind the development of station areas in Tokyo, and to what extent can similar forces be activated in the Randstad?”

The goal of this research is twofold: 1) to draw general lessons from station area developments in Tokyo and 2) to explore how these lessons could be applied to station area development projects in the Randstad.

**Theoretical framework**

The theoretical framework is structured around the three themes mentioned above. The first theme (i.e. the integration between transport and land use developments) is explored through the node-place model of Bertolini (1999). According to this node-place model each station consists of a node and a place value. The node value represents the transport services available in a certain location, while the place value represents the intensity and diversity of activities in a certain location. The node-place model assumes that there is a balance between the node and place functions and where this is not the case the stations will show a strong tendency to move towards a more balanced state. In this research the node-place model is used to gain insight into the development dynamics of station areas in Tokyo. More specifically, it is used as an explorative tool to find out which transport and land use factors are responsible for structuring station area developments and to what extent.

The second theme (i.e. private sector and government roles in planning) is explored through the notion of market-conscious planning. In traditional government-oriented planning regulations play an important role in coordinating land use changes. In many cases, however, these regulations seem to impede rather than stimulate such changes resulting in rigid and less efficient markets. A market-conscious approach to planning on the other hand, seeks to find ways in which the government can help markets function better. One possible ways of doing this is to leave the initiative and freedom
of planning to the private sector, while at the same time confronting them with strict requirements. In this research it is explored how a market-conscious approach to planning plays a role in developing integrated station areas in Tokyo and to what extent it could play a role in the Randstad.

The third theme (i.e. transferring institutional features from one country to another) is explored through the concept of institutional transplantation and learning. Both Japan and the Netherlands differ significantly when comparing their cultural, spatial, socio-economic and political background. This makes it difficult to adopt and transplant ideas between the two countries. Crucial to a successful transplant is that actors should be given enough freedom to adapt models according to their own liking and that the starting situation should be acknowledged and taken into account when taking a model and adjusting it to one's needs. In addition, attention should also be paid to the learning capacities of a city or country. The latter seems to be particularly important for determining the extent to which a city or country can actually learn. In this research the concept of institutional transplantation is used to explore what instruments, policies, processes and roles regarding station area developments in Tokyo can be transplanted to station area developments in the Randstad, and to what extent.

Methodological framework

To address both goals of this research two forms of research are used. Explanatory science is used to identify the driving forces behind station area developments in Tokyo, while design science is used to assess the potential of activating these driving forces for station area developments in the Randstad. The focus of explanatory science is on understanding problems with the objective of describing and explaining something. It is used in this research to describe and explain how station area developments in Tokyo are planned. In particular attention is paid to the roles of the public and private sector in the development process and to the planning instruments used by the public sector to encourage private sector investments. The focus of design science is on solving problems with the objective of improving something. It is used in this research to gain knowledge on how to improve the planning of station area developments in the Randstad. Central to design science is that the new knowledge generated should be both tested in practice and grounded in theory. For this the experiential learning cycle of Kolb and Fry (1975) can provide a useful framework. In the experiential learning cycle new knowledge is generated in a continuous flow in which the ‘observation of and reflection on concrete experiences’ leads to the ‘forming of abstract concepts’. These are then ‘tested in new situations’ and eventually result in the adaptation of existing practices, i.e. ‘concrete experiences’. The experiential learning cycle has been used to structure both the explanatory science part of this research (part two: chapters 4 to 7) and the design science part of this research (part three: chapters 8 to 12) and to link them up. In the descriptive and explanatory part of this research the learning cycle was applied as follows (see figure 1). Field work was carried out in Tokyo from 2005 till 2007 to experience firsthand how station area developments are planned in Tokyo (‘concrete experience’). In addition, interviews were held with several actors involved in station area development projects in Tokyo and documents were analysed
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('observation and reflection'). In this way the driving forces behind station area developments in Tokyo could be identified ('forming abstract concepts').

Figure 1  Experiential learning cycle as applied in the experiential science part of this research

In the design science part of this research the learning cycle was applied as follows (see figure 2). A series of focus groups and focused-group interviews was organised in which the applicability of the driving forces identified in Tokyo were tested in a number of Dutch case studies ('testing in new situations'). From the discussions in the focus groups and focused-group interviews the aspects of the Tokyo approach were derived of which the participants believed could have potential in the Randstad. These aspects were further explored through some additional interviews held with actors involved in station area developments in the Randstad ('observation and reflection').
Understanding the driving forces behind station area developments in Tokyo

The development of station areas in Tokyo was analysed on three different levels:

1) Network level
A node-place model application was carried out to gain insight into the development dynamics of 99 station areas. More specifically, it was used to explore which transport and land use factors are responsible for structuring station area developments in Tokyo, and to what extent. In addressing the first question, correlation analysis was used to reveal the combination of node and place values that seemed to be the most powerful force in shaping station area developments. The highest correlation, and thus the strongest influence on structuring station area developments in Tokyo, was found by comparing the node values “proximity to CBD” and “number of train connections” with the place value “workforce”. In addressing the second question, three cases of station area developments were further analysed to find out whether the development path identified by the node-place model was unfolding or not and why. The analysis revealed that two cases seem to develop, at least in absolute terms, in line with the development path expected by the node-place model, while one case demonstrated a different development pattern. The latter was caused by factors falling outside the scope of the node-place model such as government policies and subsidies or local conditions.
2) Corridor level

The development patterns, as identified by the node-place model, were further analysed by focusing on railway corridors. These patterns were explored in two different ways: 1) by looking at how the development patterns related to the position of a station in the node-place model, and 2) by looking at how the development patterns related to the position of a station in the railway corridor. The corridor analysis revealed that a certain hierarchical development pattern can be distinguished when plotting the densities assigned to the areas directly bordering the stations in the node-place model. In general the following applies: the higher the position of a station in the node-place model, the higher the density of the areas directly bordering the stations. Within a railway corridor the highest densities are assigned to the stations at the beginning and end of the line with some additional relatively high densities assigned to stations in between the line. Furthermore also a certain pattern can be distinguished when plotting the functional profiles of stations in the node-place model. In general, stations with an intermediate position in the node-place model tend to be the most multifunctional ones, while the stations located at the top and the base of the node-place model tend to be relatively monofunctional (office and housing focused respectively). Within a railway corridor relatively monofunctional stations are situated at the beginning and end of the line, and stations with more diversified functions are to be found in the middle of the line.

3) Station level

Three examples of station area developments in Tokyo were analysed to demonstrate how station area developments are planned in Tokyo. The case studies were to demonstrate how market-conscious planning works in practice and, in particular, how planning conditions the market. The incentive systems, which allow the existing Floor Area Ratio-values to be relaxed, play a pivotal role in this. Each case study represents a particular period in planning and describes the workings of a planning incentive considered illustrative for that period and the role the public and private sector played in this. What the case studies have demonstrated is that since the 1960s the role of the Japanese government in planning has significantly reduced, while the involvement of the private sector increased. However, this increased involvement of the private sector does not mean that the government is less influential in steering developments. On the contrary, as the case studies have demonstrated, the incentive systems seem to offer the government a powerful tool in securing their own interests and those of the private sector. This is because the government is through certain pre-established conditions still capable of influencing a desirable development outcome. In turn, a developer is given a reward (usually an additional building volume) of which the exact size depends on the extent to which a developer fulfils these conditions. The idea is that in the end both the government and the private sector should benefit from this.

With the help of this analysis the driving forces behind the development of station areas could be identified, thereby giving an answer to the first part of the central question underlying this research.
**Summary**

**Assessing the potential of the Tokyo approach for the Randstad**

The description and explanation of station area developments in Tokyo provided ideas about how to improve the planning of station area development practices in the Randstad. Consequently, the applicability of these ideas was explored to find out whether they could work in the Randstad, and if so why and if not why not. The potential of the Tokyo approach was assessed in two steps.

First a number of focus groups and focused-group interviews were organized in which the applicability of the Tokyo approach was tested in a number of Dutch case studies. The aim of this was to see if and how the Tokyo approach could improve the planning and development of station area development practices in the Randstad. In total two focus groups and two focused-group interviews were held. The focus groups were asked to discuss a specific railway corridor, while the focused-group interviews were based on a particular railway station. As for the railway corridor: one case concerned a railway section in the South Wing of the Randstad, while the other concerned a railway section in the North Wing of the Randstad. The cases selected for the focused-group interviews were derived from the discussions held in the railway corridor focus groups. The participants attending the focus groups and focused-group interviews were members from the public and private sector who were involved in transport and/or land use development matters. Before and after each focus group and focused-group interview a questionnaire was handed out to the participants. They were required to answer two questions initially without having (new) knowledge about the way station area developments in Tokyo are planned. The first question asked participants about their image of Tokyo and station area developments. In the second question they were asked whether they believed the Randstad/Netherlands could learn from station area developments in Tokyo. At the end of the focus group/focused groups interview, after the participants had learnt (more) about how station area developments in Tokyo are planned, they were asked again to answer the two questions.

As a second step in assessing the potential of the Tokyo approach some additional interviews were held with actors involved in station area development projects in the Randstad. These interviews were structured on a number of hypotheses focusing on incentives and barriers for station area developments. The hypotheses were derived from the discussions held in the focus groups and focused-group interviews and from the results of the questionnaires. The hypotheses were divided into two categories: 1) incentives for station area development and 2) barriers for station area development. As this research focuses on the driving forces behind station area developments, the emphasis was put on the incentives rather than the barriers. Fifteen hypotheses were generated from the focus groups and focused-group interviews, of which 10 concerned incentives and 5 concerned barriers for station area development. These hypotheses formed the core of the interviews. Prior to the interviews, each interviewee was asked to give their opinion on the hypotheses and send their answers to the researcher. For this they could choose from five possible answers: 'highly agree', 'agree', 'neutral', 'disagree' and 'strongly disagree'. During the interview, the interviewee was asked to
comment on his/her answers. At the end of the interviews he/she was asked if there were any additional barriers or incentives for station area development. The objective of these interviews was not to verify whether the hypotheses posed were true, as the actors were a selected group related to specific cases, making it, because of case-related differences, precarious to draw any general conclusions. Instead the aim was to come up with a new and refined version of the hypotheses based upon the responses of the interviewees.

This together with the results of step 1 provided the basis for answering the second part of the central question underlying this research.

**What the Randstad can learn from station area developments in Tokyo**

The participants of the focus groups, focused-group interviews and interviews identified several elements of the Tokyo approach which they believed to be applicable to the development of station areas in the Randstad. These elements, i.e. the applicable lessons, include the coordination of functional programmes between station areas, regulating densities as a means to create scarcity, a preferential planning treatment for the development of inner city areas, planning incentives for triggering private sector investments, more focused land use regulations, and the prominent role of regional governments in coordinating functional programmes at the sub-regional level. These are all aspects that are currently lacking in the Randstad. Interestingly, the participants mainly focused on the means (i.e. instruments, regulations) of stimulating station area developments, while less attention was paid to the roles that the different tiers of government and the private sector could play.

Some of these elements, such as the coordination of functional programmes between station areas and the more prominent role regional governments can play in this, could be relatively easily translated into the Dutch context as they do not require substantial changes. Other elements might require more fundamental changes. For example, a preferential planning treatment could entail the lifting of existing land use regulations for which national government approval is required. The planning incentives, in particular the Floor Area Ratio bonus, form a special category to translate into the Dutch context as this instrument could come into conflict with European regulations (in particular with the rules of public procurement), as complementary rules-setting is not allowed by European law. Consequently, local or regional governments (i.e. a province) in the Randstad cannot, unlike Tokyo, impose conditions on private developers in addition to the rules set in land use plans.

In addition, the researcher reflected upon some additional elements of the Tokyo approach not addressed by the participants, but considered worthwhile exploring in future research in the Randstad. These elements include government planners taking into consideration market mechanisms, the strong steering role of the government in a market-conscious planning system, private developers willing to carry out public interests, strategic planning by public and private actors, railway companies pursuing an integrated corridor strategy, an insight into the socio-economic characteristics
of households and companies, and the negative aspects of the market-conscious planning style pursued in Tokyo/Japan. These aspects focused, in contrast to the lessons identified by the participants, more strongly on the roles that the public and private sector could play in the development of station areas in the Randstad, and the kind of land use and transport planning that would be needed to make this possible. The additional elements brought forward by the researcher are harder to transfer, i.e. they require substantial changes in the way public and private sectors act and interact in the Randstad. For example, it would take time to raise market-awareness among public actors, as for many years active land policies did not make this a necessity. Consequently governments need to enhance their understanding of the market in order to increase the effectiveness of their policies. This will take time. In a similar way, Dutch railways (NS) need to get accustomed to thinking (i.e. making an integral area strategy) and acting (i.e. implementing this strategy) corridor wise. Regarding the former, there is an increasing awareness among public and private actors that the corridor could be a useful level for coordinating transport and land use developments. However, whether NS will actually act on the corridor level remains to be seen. Unlike Tokyo, there seems to be no incentive for NS to coordinate its transport and land use activities more strongly, which basically is the main driver behind pursuing an integral corridor strategy. The annual fare increases provide NS with a steady source of income. Therefore, NS seems to be less forced, in contrast to Tokyo railway operators, to become engaged in other side businesses to increase its profit margins. Furthermore, the fact that NS is not considered a real estate company by politicians and the public could also make it difficult to carry out an integral corridor strategy.

Last but not least some negative aspects of the market-conscious planning approach followed in Tokyo/Japan were mentioned. They are the uncertainty associated with negotiable restrictions on land uses, the lengthy negotiations that are needed regarding the future contributions of private developers, and that outcomes are not always beneficial for the public good and are often not well integrated with their surroundings. One should be aware of these shortcomings as they could limit the potential of the Tokyo approach for the Randstad, as identified by the participants and the researcher.