Mapping the market: a portfolio approach for informed deliberation of urban development strategies
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4 Validation of the portfolio approach

Everyone designs who devises courses of action aimed at changing existing situations into preferred ones
Herbert Simon

4.1 Introduction

The aim of this chapter is to identify how to methodologically validate the portfolio approach, and to see what type of research should be conducted on the instrument itself. The developed research product is inherently and constantly intertwined with the manner of conducting research. The portfolio approach is the outcome as well as the object of the research. It is developed in the context of its application, whereby the application of the tool itself has to be analysed as well.

Figure 4.1: ‘Fokke & Sukke know what science is about: …very impressive, colleague… but does it also work in theory?’

Since the portfolio approach can be seen as a Planning Support System (PSS), I will begin this chapter with a short introduction of planning support systems, by describing their substance and their limited application in practice. This will clarify the challenge faced by the portfolio approach, with the so-called rigour-relevance dilemma in a central position. I will try to tackle this dilemma, through utilising the research approach of design sciences. In the remainder of the chapter I will elaborate on this concept and the resulting research design.
4.2 PSS: the science of ‘modelling through’?

The aim of the portfolio approach is to give insight into the real estate dynamics of the city, which in the end should increase the chances that public intervention plans and strategies are effective and efficient. This requires a shared knowledge base among practitioners regarding the location of development opportunities. The portfolio approach on the one hand provides data and maps about the city’s market dynamics, but equally important are the ideas about the way in which to use this information as input for strategic deliberation, particularly in workshops. The portfolio approach, i.e. the portfolio concept and its application, can be seen as a PSS. According to Geertman and Stillwell (2004), a PSS forms the framework in which three sets of components are combined: the specification of the planning tasks and problems at hand, including the assembly of data; the system models and methods that inform the planning process through analysis, prediction and prescription; and the transformation of basic data into information which in turn provides the driving force for modelling and design (through a cyclic process). (Geertman and Stillwell, 2004, p. 293)

Although predicting and (rigid) prescribing is not explicitly part of the portfolio approach, I will consider it as a PSS. In fact, a strong focus on predicting and prescribing may in fact be responsible for the limited use of PSS in practice. In the words of Klosterman:

PSS must not be seen as a radically new form of technology that will replace the software tools planners currently find at their desks. Instead, it must take the form of an information framework…1. (Klosterman, 1997, p. 51, original emphasis)

Over the years many different PSS were developed. In particular, with the introduction and development of computer-based information, they evolved from electronic data processing in the 1960s, to management information systems in the 1970s, to decision support systems in the 1980s, and finally to planning support systems in the 1990s (Klosterman, 1997). Tools were developed for an array of topics: environmental issues, land use, water management, transport, and many more.

So far, PSS have not been fully embraced by practitioners in planning, as shown by numerous authors: Lee (1973; 1994), Klosterman (1997), Uran and Janssen (2003), Geertman and Stillwell (2003; 2004) and Couclelis (2005). The technical possibilities for collecting, analysing, mapping, and representing just about any geographical phenomenon in the field have exploded in the past decades (and are continually expanding). This produced a large and increasing number of PSS developed worldwide, as demonstrated in an inventory made by Geertman and Stillwell (2003) (see also Brail and Klosterman [2001]). Still, the same authors found that only

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1 Klosterman’s description of PSS continues here: ‘…that integrates the full range of current (and future) information technologies useful for planning’. However, I do not agree that every PSS should meet this condition.
very few of these tools (except prototyping) were actually continually used in daily planning practice. It seems that more than thirty years after Lee’s seminal ‘requiem for large-scale models’ (1973), in which he proclaimed the end of these kinds of models, there is still a lot of work to be done:

To say that the models are not yet ready to submit to any performance evaluation, and to fail to offer any plans for when and how and on what grounds the models might be evaluated, is not acceptable even for a research effort. Modelers emphasize that the models are ‘operational’, as if that meant the same thing as practical. (Lee, 1994, p. 36)

The increasing technical possibilities of tools, i.e. more processing power to apply more sophisticated algorithms that are able to process more and increasingly complex data, may result in models that are better suited to represent the highly complex reality of modern day life. They can be very inspiring and useful models in an educational sense and they can provide planners (and others) with an image and possibly even a better understanding of these complexities. However, they are weak in assisting planners in their daily practice of making decisions, which is why most of them remain on the shelf.

One of the reasons mentioned for this widespread lack of adoption of PSS is that practitioners are unfamiliar with the possibilities of PSS (Vonk et al., 2005). In order to bridge the gap between PSS and practitioners, the obvious recommendation is to give more publicity to the development of tools. Undoubtedly, there is a lot to gain by making the availability of tools more visible to the possible users, but this is merely bridging the gap from the supply side. It is precisely this supply-driven approach to introducing PSS that is problematic and should be blamed for their meagre application in practice (Geertman and Stillwell, 2004). The increasing availability of data and information seem to drive many of these tools; also, theoretically speaking, decision-making could be based on these enormous amounts of information. But, as the previous chapter illustrated, Simon (1957) demonstrated that this can never be achieved in practice, nor is it the focus of the practitioners’ needs. As discussed in Chapter Three, ‘scientific’, explicit, or codified knowledge is merely one of the informational inputs into decision-making processes (see Innes, 1998). Logical-rational processes of deciding between alternatives based on proper analysis of information are still present, but seem fit only for relatively simple problems (see Christensen, 1985). But despite the awareness of complicated decision-making processes being iterative, power-laden, and rational only to a certain degree, many of the tools still seem to aim towards a rather rational, technocratic way of planning, instead of addressing these messy complexities. As this criticism notes:

PSS should take seriously its users and leave them with the feeling that they have been taken seriously. Although this sounds very much like a statement of the obvious, experience suggests that this is not always the case. (Geertman and Stillwell, 2004, p. 306)

This is why, in order to become valuable in the planner’s daily practice, PSS require more social shaping; they need to be developed much more from the user’s perspec-
tive (Ottens, 2006; Te Brömmelstroet, 2009). It seems that it would be much more fruitful to start building the bridge from the demand side of the practitioners.

**4.3 Design sciences: searching for technological rules**

The logical step forward is to shift the focus away from a supply and towards a demand oriented PSS. This may require a step back, i.e. it would imply quite a different view of developing PSS, and maybe also a different view of planning science in general. Similar to geography research, many PSS identify and map all kinds of geographical patterns, often by collecting, processing and analysing quantitative data. Geographers aim to draw conclusions based on the patterns, the regularities and the factors behind them; usually the intention is to test, to build or to contribute to existing knowledge theory. Most of them will try to some extent to generalise upon their conclusions, while at the same time accounting for contextual differences and other contingencies. Although there are increasing pressures on social scientists to produce results that can be also used outside of the academic community, one can still say that their primary objectives lie within this community. In other words, in most cases rigour is often considered more important than relevance.

One could discuss to what extent this should be considered a problem (see Markusen, 1999; Martin, 2001); however, when making a PSS, the emphasis must be at least as much on relevance as on rigour. However, it seems that many tool scientists, while designing a PSS, strive for rigour in a way that does not at all fit the relevance of the objective (Te Brömmelstroet, 2009). Since many are (educated as) scientists, often using the same (quantitative) methods and techniques as other social or natural scientists, this is quite an explicable phenomenon. Moreover, there are authors who argue that this is also related to the idea that academic respectability is supposedly achieved more through rigour than through relevance (Argyris and Schön, 1989; Flyvbjerg, 2001; Simon, 1969). Despite the high sophistication of these tools, their limited use in practice casts a shadow over their utility. More attention needs to be devoted to relevance; the pressing question is to what extent this comes at the expense of rigour. This is the classic rigour-relevance dilemma, as sketched by Argyris and Schön (1989):

> If social scientists tilt toward the rigor of normal science that currently dominates the departments of social science in American universities, they risk becoming irrelevant to practitioners’ demands for usable knowledge. If they tilt toward the relevance of action research, they risk falling short of prevailing disciplinary standards of rigor. (Argyris and Schön, 1989, p. 612)

In order to find a possible way out of this dilemma, I will discuss Van Aken’s (2004) conceptualisation of design sciences. Van Aken’s starting point is the field of academic management research and the notion that this field is suffering from a utilisation problem. Similar to the gap between PSS and practitioners and the recommendation to communicate PSS better, there is a gap between academic management research and management practice. There are calls to bridge the gap by improving communication between researchers and practitioners also in this field. According to Van Aken, rather than a matter of poor communication, the problem lies in the nature of
the products that researchers deliver and the type of science. Management is about solving problems (‘prescription-driven research’), and therefore the orthodox notion that science is fundamentally about understanding a problem (‘description-driven research’) only achieves half of the desired result (Ibid.):

In management one needs next to description-driven research programmes also prescription-driven research ones in order to develop research products which can be used in designing solutions for management problems. By this I do not mean the actual application of scientific knowledge to solve a specific managerial problem – this is the domain of practitioners – but the development of scientific knowledge to solve a class of managerial problems, in other words, the development of abstract knowledge. (Ibid., p. 220)

These types of research, i.e. aimed at solving problems, are formulated by Van Aken as design sciences, and they fundamentally differ from the two other types of sciences: the formal sciences, such as philosophy and mathematics, and the explanatory sciences, which include natural sciences and major parts of the social sciences. Particularly the differences between the design sciences and the explanatory sciences (also referred to as prescriptive versus descriptive research) can be related to the problem of utilisation. Table 4.1 presents Van Aken’s summary of the main differences between solution-driven, prescriptive research programmes and the more orthodox descriptive forms of research (a dichotomy which obviously is not this strict in reality).

Table 4.1: The main differences between description-driven and prescription-driven research programmes

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description-driven research programmes</th>
<th>Prescription-driven research programmes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant paradigm</td>
<td>Explanatory sciences</td>
<td>Design sciences</td>
</tr>
<tr>
<td>Focus</td>
<td>Problem focused</td>
<td>Solution focused</td>
</tr>
<tr>
<td>Perspective</td>
<td>Observer</td>
<td>Player</td>
</tr>
<tr>
<td>Logic</td>
<td>Hindsight</td>
<td>Intervention-outcome</td>
</tr>
<tr>
<td>Typical research question</td>
<td>Explanation</td>
<td>Alternative solutions for a class of problems</td>
</tr>
<tr>
<td>Typical research product</td>
<td>Causal model; quantitative law</td>
<td>Tested and grounded technological rule</td>
</tr>
<tr>
<td>Nature of research product</td>
<td>Algorithm</td>
<td>Heuristic</td>
</tr>
<tr>
<td>Justification</td>
<td>Proof</td>
<td>Saturated evidence</td>
</tr>
<tr>
<td>Type of resulting theory</td>
<td>Organization Theory</td>
<td>Management Theory</td>
</tr>
</tbody>
</table>

Source: Van Aken, 2004, p. 236

To be clear, this distinction should not be confused with the one between basic and applied science, where the knowledge generated by basic science is applied in practice. The aim of design sciences is not simply to apply knowledge generated by explanatory science, but to generate new knowledge (Van Aken, 2005; see also Koen, 2003). Examples can be found in disciplines such as engineering or medicine, where professionals utilise existing laws in physics or biology to create new knowledge, as
they try to find solutions to problems. So, in contrast to explanatory sciences, design sciences do not focus on the *explanandum*, rather they focus on the *mutandum* (Van Strien, 1997; see also Simon, 1969). This is crucial. It means that the object of research is not some existing natural or social phenomenon, but something that is created by the researcher, a design in progress.

**Technological rules**

Central to design sciences is the notion that the researcher should search for what Bunge (1967) calls the *technological rule*. Building on Bunge, Van Aken defines a technological rule as

>a chunk of general knowledge, linking an intervention or artefact with a desired outcome or performance in a certain field of application. The ‘general’ in this definition means that it is not a specific prescription for a specific situation, but a general prescription for a class of problems. On the other hand a technological rule is not a universal law, its use being limited to a certain field of application.* (Van Aken, 2004, p. 228, original emphasis)

Instead of universal laws or specific solutions, technological rules provide classes of solutions for classes of problems: ‘if you want to achieve Y in situation Z, then perform something like action X’ (Van Aken, 2005, p. 23). Action X, which is the technological rule, can consist of a single act, a series of acts, a system, tool, program, or instrument (which can be more algorithmic or more heuristic).

However, in order to tackle the rigour-relevance dilemma, it is essential that technological rules are *tested* in practice, in addition to being *grounded* in theory. Without proper testing, they remain recommendations that are the result of descriptive research, the core of the abovementioned utilisation problem. The researcher thus has to apply the technological rule in his field and find out whether the proposed rule actually works in practice. On the other hand, without grounding technological rules, they are little more than practical rules of thumb. Grounding technological rules means that the researcher not only finds* whether* something works in practice, but that he/she understands *why* this is the case, and consequently connects these practical findings with wider, available theories. For example, medicine should be grounded in biology, engineering in physics, and management in organisation theory (Van Aken, 2004).

### 4.4 Planning research as a design science

Similar to the management field, also planning research is often assessed as suffering from an utilisation problem, mostly referred to as the ‘theory - practice gap’. Among many others, this was prominently observed by Van Lohuizen (1977): 

>For some years now, there is a certain unease in the world of spatial planning about planning research. Science and policy realise they need each
other, but they cannot find each other (p. 7, translation by the author).

More recently, Sanyal (2002) also commented on the issue:

This became evident (...) as we assembled a group of city and regional planners (...) and asked them which planning theory did they use as they grappled with conflicting interests? None of the planners mentioned any planning theory they had found useful. Instead, each had developed his/her own guidelines for action through learning by doing on the job, as we say. (p. 120)

According to Alexander (1997; 2003), theory and practice can be linked either by a translation process from theory and basic science into applicable technologies and methods, or in a more indirect manner by what Alexander calls ‘enlightenment’, whereby theory slowly trickles down to the practitioner:

planning theory could never be ‘relevant’ for planning practice in the sense [Sanyal] and his would-be practitioner students wanted it to be. This is because many planners still see their practice, in its link between knowledge and technology, as something like engineering or medicine. In such fields theory and basic science are made accessible and useful for practice through a ‘translation’ process, which converts them into technologies and technical skills and methods. But in areas related to social policy, which include planning, the kinds of knowledge that are relevant are not amenable to ‘translation’ like this. (Alexander, 2003, p. 181)

But following scholars like Schön (1983), one could argue that the ‘guidelines’ in Sanyal’s quote can be regarded as ‘theories in use’. Based on experiences in different cases, practitioners do make generalisations, although not in the form of universal laws (Schön and Rein, 1994). If these types of generalisations are seen as (planning) theories, then theory can be relevant for practitioners in a more direct manner – ‘in the sense Sanyal and his would-be practitioner students wanted it to be’.³

If one regards planning research as essentially different from disciplines such as engineering and medicine, then perhaps enlightenment is the only way to bridge the theory-practice gap (although this is such an ambitious effort that it is questionable whether it ever could be bridged). I would argue that, in spite of the messy social environment in which planning takes place, the planning discipline is indeed to a significant extent similar to engineering or medicine. The implication for research is that, following the medical analogy by Van Lohuizen (1977), diagnosis should serve therapy; thus research should aim at generating possible solutions.

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² Original language quote: ‘Al enkele jaren heerst er een zeker onbehagen in de wereld van de ruimtelijke ordening over het planologisch onderzoek. Wetenschap en beleid beseffen elkaar nodig te hebben, maar kunnen elkaar niet vinden’.

³ The exception would be if one defines theory as something abstract and universal by definition, for example Flyvbjerg’s (2001) claim that it is impossible to draft social science theory due to the impossibility of excluding context.
In light of the utilisation problem sketched above, the research concept of design science and the search for technological rules almost seems tailor-made for the field of planning, if it involves prescriptive types of planning research. Therefore, the central thesis in this chapter is that, by and large, planning research, but particularly planning support research, should indeed consist of looking for field-tested and grounded technological rules. Solution-oriented planning researchers should look for useful (often heuristic) instruments, tools, strategies, or models that match the practical needs of practitioners. Technological rules should be developed and tested in and with practice; at the same time, they should be properly grounded in theories that can demonstrate why an instrument works. Technological rules in planning should thus be grounded in theories of planning itself, geography, sociology, political science, knowledge management, and other fields.

Action research
To a large extent most of what I mention above is already known as ‘action research’. Indeed, action research has some essential overlap with design sciences, as for instance demonstrated by Argyris and Schön (1989):

*Action research* takes its cues – its questions, puzzles, and problems – from the perceptions of practitioners within particular local practice contexts. It bounds episodes of research according to the boundaries of the local context. It builds descriptions and theories within the practice context itself, and tests them there through intervention experiments – that is through experiments that bear the double burden of testing hypotheses and effecting some (putatively) desirable change in the situation (p. 612-613, original emphases).

Both design sciences and action research are focussed on finding solutions in close cooperation with practitioners, and both types of research take place through iterative cycles. Like design science, ‘good’ action research requires not only practical results in the specific cases of intervention, but a certain degree of generalisation as well (Eden and Huxham, 1996). Still, at least partly due to the origins of action research as a method of facilitating social change and empowering ‘the client’, often the emphasis is more on the element of ‘action’ rather than the ‘research’ part. Hence, transferring the knowledge obtained from the context of intervention and research to other contexts, or to the more general domain, often receives less attention (Argyris and Schön, 1989; Baskerville and Wood-Harper, 1996; Eden and Huxham, 1996; Stringer, 1999; Van Aken, 2004). The technological rule on the other hand is explicitly intended to be used in other contexts as well. The main difference thus lies in the nature of the research product; actually, one might even regard design science as a strand of action research. However, the explicit aim to find technological rules compels researchers to abstract from ‘thick descriptions’ and provides them with a more tangible research product to strive for.

Technological rules in planning
In the field of planning there are some ideas similar to Van Aken’s technological rule; in particular I would like to highlight the contribution of Needham (2000b;
2004). Building on Van Aken, Needham proposed to regard spatial planning as a design discipline. Spatial planning should be seen as the process of designing spatial policies. Needham, however, speaks of a design discipline, not design science. Although the idea of planning as a design discipline has very plausible merits, it appears to aim more at coping with the rigour-relevance dilemma in planning practice rather than addressing it in planning research.

Albeit not explicitly expressed, much of the planning research already aims at finding technological rules. There are examples of researchers in planning who propose specific practical rules in practical situations, suitable for addressing certain types of problems. One of the first and best known examples in planning of applying the design science approach in practice is the work of John Friend and his fellow researchers, and particularly their introduction of the ‘theory of strategic choice’ (Friend and Hickling, 1987). A substantive, more recent example would be Savitch and Kantor’s (2002) proposed ideal types of strategies for cities to balance a competitive urban economy with equity goals in the face of globalisation. Another example is Christensen’s heuristic concept of how to deal with uncertainty in planning, an approach dependent on the type and complexity of the planning issues at hand (Christensen, 1985). Nevertheless, with the exception of the work of Friend c.s., most of these technological rules are the result of observation rather than participatory research. They develop recommendations with hindsight based on explanatory research, instead of testing prescriptions in and with practice.

In order to get a better image of the extent to which the search for grounded and tested technological rules is (de facto) part of current planning research, I scanned four journals looking for contributions featuring grounded and tested technological rules: the Journal of the American Planning Association, Planning Practice & Research, Planning Theory and Practice, and the Journal of Planning Education.

4 'JAPA is interested in manuscripts that examine historical or contemporary planning experience, broadly defined, in domestic or global contexts, and that do at least one of the following: contribute to the theoretical and conceptual foundation of planning; improve the link between planning and successful policy implementation; advance the methods used in planning practice and planning research; explain empirical relationships important to planning; interpret noteworthy physical, economic, and social phenomena that have spatial dimensions; or analyze significant consequences of planning approaches, processes, and contexts.' (see JAPA website: http://www.planning.org/japa)

5 ‘Planning Practice & Research (PP&R) has established itself as the source for information on current research in planning practice. It is intended for reflective, critical academics, professionals and students who are concerned to keep abreast of and challenge current thinking. PPR is committed to [among other mentioned points] bridging the gaps between planning research, practice and education, and between different planning systems’ (see the publisher’s website: www.tandf.co.uk/journals/titles/02697459.asp).

6 ‘Planning Theory and Practice (PT&P) provides an international focus for the development of theory and practice in spatial planning and a forum to promote the policy dimensions of space and place. (…) It publishes original articles and review papers from both academics and practitioners with the aim of encouraging more effective, two-way communication between theory and practice. The Editors invite robustly researched papers which raise issues at the leading edge of planning theory and practice, and welcome papers on controversial subjects’ (see the publisher’s website: www.tandf.co.uk/journals/titles/14649357.asp).
These journals were selected due to their explicit aim (see the footnotes) to publish research that is relevant for practitioners and to bring together practice and academia. Scanning recent issues of these journals revealed that explicitly tested and grounded prescriptions are the exception. The majority of contributions (over 85% of the scanned articles) consisted of explanatory analyses of physical and social phenomena, policy analyses, or theoretical contributions. Most of these contributions offered recommendations for policy or further research. This type of research more or less merges into a category of articles that offer theory-grounded prescriptions, but that have not (yet) been tested in practice. Some of them involve ‘instructions’, for instance how to enable walking as a travel mode or how to develop more sustainable transport links (Zandvliet et al., 2005). The latter is a characteristic example that features a framework for transport policy. The authors developed a method for measuring the contribution that a specific transport link makes to either economic or environmental sustainability. This resulted in a framework of ideal typical intervention options that effectively match the policy goal. Following Van Aken (2005), these examples can be seen as the results of descriptive research that is translated into ‘prescriptions’, but which have yet to be tested in practice. In the end, there was arguably only one article (out of the 99 articles scanned) that engaged in the full reflective cycle resulting in the reporting of a grounded technological rule that was actually used and tested in a practical case (see Cervero, 2006). Cervero proposed a tool that provided a more direct and useful insight into the relationship between land-use and transport, a tool that was developed and tested in three case studies.

It appears that the majority of articles scanned may take planning practice as a starting point and even as its destination, but the researchers themselves are not actually involved in the design process of finding solutions; at least they do not report of it in peer-reviewed journals. For a large part, this is only logical and not necessarily problematic. There is a clear need for explanatory and/or theoretical contributions, and I certainly do not aim to judge a whole academic discipline here. Nonetheless, if the aim of planning research is to help improve planning practice (see the mission statements of the scanned journals), then one can argue that research aimed at (de facto) finding grounded and tested prescriptions should at least to some extent be part of it.

Returning to PSS, considering the utilisation problems sketched earlier, the call for technological rules seems more urgent. The earlier analysis of the reasons behind the sparse application of PSS in practice (Lee, 1973; 1994; Klosterman, 1997;

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7. The Journal of Planning Education and Research (JPER) is a forum for planning educators and scholars (from both academia and practice) to present results from teaching and research that advance the profession and improve planning practice. The journal covers planning theory, planning pedagogy, and planning practice. It also encompasses disciplines drawn upon by planners such as urban geography, welfare economics, interest-group politics, policy analysis, as well as other subjects used in the planning classroom (see the publisher’s website: http://jpe.sagepub.com/).


9. Whether or not something was counted as a grounded and tested technological rule in the scan is a matter of arbitrary judgement sometimes.
Geertman and Stillwell, 2004) can be related to the difference between prescriptive and descriptive research. One can argue that much of the research that drafts PSS, although declaratively intending to help practitioners, still has too many of the characteristics of traditional descriptive research (see Table 4.1). In other words, the research often neglects the volatile context of its application and hence delivers products that are too generic. This means that the research is no longer really solution-oriented, and it seems that the characterisation of ‘old-fashioned’ model-builders still holds true to a certain degree:

Model-builders were often more interested in scientific questions than in practical and professional uses of their models. The time available to apply such models was absorbed by ever more detailed refinements, or simply spent bashing the models into a shape that might produce “reasonable-looking results”. (Batty, 1994, p. 10)

Furthermore, tools are mostly developed for instead of with the users and are also technology-driven (see Harris, 1994; Wegener, 1994, both in a theme issue dedicated to Lee’s 1973 article). Many models seem to consist of algorithms based on a quantitative analysis of a problem. Instead, PSS should be the result of more solution-driven research that would take place in the intended context and would look for saturated evidence of a grounded, useful heuristic technological rule.

4.5 Grounding as evaluating

The fact that PSS have only limited application in practice can be related to the type of research that develops them. Solution-driven or demand-driven research requires a much closer (and a more qualitative) look at the research object. In order to design tools useful in practice and to assess their functionality, it is essential that researchers not only look at the tools they develop, but more closely at their relationship with the users. In other words, one has to ground a tool during its application, in order to see and understand how the tool interacts with its user.

According to Pawson and Tilley (1997), such evaluation requires a different research question. Evaluation is easily thought of as something one does after a programme is implemented. Indeed policy programmes are often evaluated in this way, i.e. with the well-known classical experimental design. Here, the influence of a variable is measured by the difference in effect between an experimental group and a control group. Any differences are attributed to the influence of the testing variable. However, this way of evaluating raises two key problems. First, unlike research that takes place in a laboratory, experiments in the social world are more difficult to control and manipulate. Often certain variables cannot be simply removed or added in order to analyse their influence. For example, to raise energy prices just to see how people will react is simply unethical. Experimenting with the application of an instrument such as the portfolio approach faces the same problem. One cannot remove essential characteristics of the instrument just to test their importance. Such deliberate ‘failure’ of applying the tool is not an option, as it would cause a group of

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10 There are of course also ex-ante and mid-term evaluation.
participants to waste precious time (Kemp and Van den Bosch, 2006). In some instances, however, one can look at other, ‘supposedly failed’ applications.

The second reason for not applying the classic experimental design is that it does not provide any insight into the why or how dimensions of the workings of a variable, a tool, a model or a programme. Pawson and Tilley therefore argue that tools should not be simply assessed by the question ‘whether they work’, but by ‘what it is that makes them work’. Accordingly, it is crucial to evaluate the designed intervention, program, tool, or instrument during its application. This idea is not restricted to the design sciences; it should also be applied in explanatory research. Hedström and Swedberg (1996) made a similar but more general claim that researchers should try to unravel social mechanisms. It means that black-box explanations must be opened as much as possible. For this, Pawson and Tilley (1997, p. 58) apply a basic realist formula: mechanism + context = outcome.

This equation contains the methodological building blocks for testing instruments, tools, or models in planning. That is, ‘an action is causal only if its outcome is triggered by a mechanism acting in context’ (Ibid., p. 58). An important addition to this equation by Denyer et al. (2008) is the element of intervention. For design scientists, the intervention is the trigger that should set the intended mechanism in motion. Similar to Pawson and Tilley’s equation, this produces the so-called ‘CIMO-logic’: Context, Intervention, Mechanism, and Outcome. Instead of serving as just the initial trigger, interventions may also be needed at various points during the application of the mechanism.

4.6 Validating the portfolio approach

In order to properly test and understand the assumed usefulness of a tool (or any theory, for that matter) all parts of the above equation (context, intervention, mechanism, and outcome) must be taken into careful consideration. How this applies to the portfolio approach will be described in this section.

Outcome

The preferred outcome of the approach is twofold. First, the approach should provide a framework for generating shared knowledge about neighbourhood developments. In the end, this should improve the chances of developing more effective and more efficient intervention strategies on urban, district- or micro-level, using this improved insight into the city’s market dynamics. It is assumed that this is easier when information on these dynamics is used to produce a shared knowledge among the relevant actors in the planning process. Consequently, one can assume (following e.g. Healey, 1997b; Innes, 1998) that such shared knowledge increases the chances of successful collective action. Secondly, it is also hypothesised that the shared knowledge gained with the help of the portfolio tool may change the way in

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11 Interestingly, the experimental design method can be problematic in natural sciences as well. ‘How many experiments in natural science use experimental/control-group logic? Do we understand the action of gravity on a falling body by observing the motion of a cannon ball dropped from a leaning tower and comparing it with the motion of one which remains atop?’ (Pawson and Tilley, 1997, p. 57)
which actors in the process think about the planning issues at hand and also that it will stimulate them to change their actions accordingly.

It should be noted that the mechanisms found in social science, and particularly those in the case of applying programmes or instruments, do not have the same predictive value characteristic of many mechanisms that derive from natural sciences. That is, social mechanisms in the end consist of the actions of individual people. No program or tool designed to change the way people think or act collectively or individually can guarantee that the desired change will in fact take place:

Potential subjects will consider a program (or not), volunteer for it (or not), co-operate closely (or not), stay the course (or not), learn lessons (or not), retain the lessons (or not), apply the lessons (or not). (Pawson and Tilley, 1997, p. 38)

The outcomes are the tangible evidence of the supposed mechanism and a number of possible outcomes can be examined, as identified by Rouwette et al. (2002). At the individual and group level, one can consider the positive and negative reactions by users, the communication in the group, the generated insights among users, consensus building, and demonstrated levels of commitment. Another outcome is related to the tool itself, particularly whether and in which form it is used after the initial application.

**Intervention**

There are a number of interventions that characterise the portfolio approach and that should set the mechanism in motion. As part of the iterative design process, some of the interventions that are part of the portfolio approach were adapted during the research in order to make the instrument more effective. Next to these general adaptations to the approach, some specific interventions were sometimes changed to fit the specific circumstances of a workshop case. In any case, two main interventions remained the same every time. First, there were workshops organised, in order to generate the intended strategic discussion on the city, the area or the specific issue. The second main intervention was to provide input for the workshops in the form of the portfolio maps, which provided explicit information about the entire city’s market dynamics (or selected parts). Both interventions consist of important, more specific characteristics: the way that workshops are organised, and the type of explicit information that influences how the interventions set the hypothesised mechanism into motion. The following provides a list and description of some of the key characteristics (albeit these may be adapted to specific cases):

With respect to the organisation of the workshops, two main interventions are distinguished. First, there is the choice of who to invite to the workshop. If explicit knowledge about the city’s real estate dynamics is to be combined with more tacit information on the same matter then obviously this requires the participation of knowledgeable people. Furthermore, the workshops should consist of participants representing a multitude of parties. The strategic position of neighbourhoods is a complex matter, determined by a plethora of influences. It can be examined from different viewpoints, both in terms of analysis, ambitions and interests. The idea is to find out how these viewpoints correspond or vary across the relevant ac-
tors, which is why representatives of different municipal agencies, but also housing associations and private developers, are invited. Particularly the latter two categories of participants can provide planners with more sophisticated and current insight into why and under which conditions certain areas become attractive for investment.

The second intervention in terms of the workshop organisation concerns the structure. The structure should reflect the main line of reasoning behind the research project, i.e. that municipal planning strategies can become more explicit and effective with the help of additional insight into the strategic positions of urban neighbourhoods. So ideas about possible intervention strategies are grounded in the ambitions of the municipality. In turn, these ambitions can be formulated more realistically when there is an understanding of the current position and the opportunities for a city, area or neighbourhood. Hence, the workshops in general follow this order. First, by introducing the so-called portfolio maps the position of neighbourhoods is analysed collectively. The driving forces behind these developments are identified and analysed; sometimes the focus is more on trends in past development, while in other cases the attention is focused more on the future. Then, possible ambitions are discussed, which is followed by a discussion of strategies. At each step, tacit and explicit information are combined.

With respect to the information presented in the portfolio approach, the main intervention concerns the distinction of two dimensions, i.e. performance and potential. An important characteristic of the original Growth-share matrix was that it distinguished the products’ strategic position by looking at two dimensions: their current position and their potential. This distinction was translated into the portfolio approach and it can be argued that these are two powerful characteristics, useful for straightforward representation of the position of neighbourhoods as discussion inputs. Furthermore, to use price and price increase as a proxy for the neighbourhoods’ ‘performance’ and their development respectively would mean that a lot of characteristics are reflected in these indicators. Regardless of all the information that cannot be grasped by these two variables, they still provide a lot of useful information at a glance.

**Mechanism**

Mechanism refers to the ‘internal’ hypothetical mechanism of the portfolio approach, including several independent variables and their effects. Together or by themselves, these variables form a mechanism. In contrast to descriptive research, in prescriptive research these variables are deliberately manipulated through direct researcher interventions (Van Aken, 2004). To the researcher these are manipulable elements that should set the preferred mechanism in motion, although Pawson and Tilley (1997) remind whether a mechanism takes place in the end remains a matter of people deciding themselves whether or not to cooperate (which is why they refrained from using the term ‘variables’).

It has been argued that the overall aim of achieving more explicit planning strategies can be stimulated by generating a shared knowledge base about strategic positions of urban neighbourhoods and possible ambitions and strategies. This means that one of the most important mechanisms that should be set in motion is a process of learning. Application of the portfolio approach should thus facilitate a
process of information and knowledge exchange and generation. As was discussed in Chapter Two, in order to generate shared knowledge, it is crucial to integrate different types of information and knowledge. It is particularly important to make a distinction between experiential and explicit knowledge (see Nonaka and Takeuchi, 1995; Nonaka, 1994; Innes, 1998). In terms of knowledge generation, the main hypothesised mechanism is that in the portfolio workshops shared knowledge about neighbourhoods and their potential is generated through a process of integrating explicit and tacit information and knowledge. The explicit information consists mainly of the neighbourhood’s position as indicated by the portfolio maps, and the experiential knowledge is brought in by participants in the workshops. The cases should demonstrate to which extent this mechanism can be held responsible for the different outcomes.

Context
The extent to which the mechanism described here is in itself suitable for producing the preferred outcome is the core theme of my investigation. A lot depends on the context in which this mechanism is set (see e.g. Flyvbjerg, 2001; Sayer, 1984). Habits, traditions, culture, power structures, and all sorts of contingencies can intervene with the functioning of the mechanism in different ways. Some contextual factors are identified beforehand, setting the stage for application of a tool: ‘we are in situation Z, where we want to achieve Y’; whereby, ‘Z’ provides the context where ‘Y’ is to be achieved. There are however other contextual factors that emerge during application of the tool and may hamper the realisation of the intended outcome. This does not necessarily mean that something is wrong with the mechanism (Bhaskar, 1975). Apart from the notion that one might not perceive the mechanism, it is also possible that dominant power structures may hamper the process. Yet the ‘problem’ may also be that the supposed value of insight into market dynamics is simply less relevant for some planners, for instance because they operate in more centrally planned cities or countries. The latter is an example of a contextual factor that can limit the generalisability, or rather the transferability, of the tool’s application. Context determines and for a large part overlaps with the domain of the tool’s application. Evaluation should lead to an understanding of the various elements of context. In terms of the technological rule (i.e. ‘if you want to achieve Y in situation Z, perform something like action X’) it means that the researcher should be able to give a specification of the ‘Z’.

4.7 Hypotheses within more general assumptions
This section will look at the hypotheses that underlie the functioning of the portfolio approach, as well as some general assumptions that provide the wider domain for this. First, however, it is important to briefly consider what the testing of hypotheses means in this research, and in planning research in general.

Rittel and Webber (1973) characterised planning problems as wicked problems, which are essentially unique problems. The methodological implication is that for understanding and explaining wicked problems ‘there is no rule or procedure to determine the “correct” explanation’ (Ibid., p. 166). Rigorous experimentation and the crucial testing of hypotheses in a ‘Popperian’ manner are not possible. Instead,
planners and planning researchers can only choose explanations that are plausible, despite their inevitably arbitrary nature. By their wickedness, explanations are relatively difficult to refute, and alternative explanations can be given relatively easily. It should thus be emphasised that searching for evidence of the hypotheses about the portfolio approach means searching for plausible explanations. Likewise, any conclusions about these hypotheses are conclusions based on plausibility, not on a crucial test.

In the end, evaluation of the portfolio approach, particularly the way that interventions should initiate the mechanism described above, implies testing the main hypothesis that a shared knowledge base about the positions of urban neighbourhoods in the city’s property market, their driving forces, possible ambitions and strategies – by means of the portfolio approach – increase the chances that deliberation of planning strategies and action is better informed. Although action is beyond the boundaries of the approach, it is assumed that that ‘better’ knowledge leads to ‘better’ action. The portfolio approach should thus contribute to the knowledge required to take such action. This is the more general hypothesis about how the portfolio approach contributes to strategic planning. This hypothesis can be assessed by testing more specific hypotheses.

There are some more general assumptions that underlie these hypotheses that have to be mentioned. These are assumptions based on evidence that can be found throughout the literature. Unless there is great dispute about the validity of these assumptions, it is not necessary to prove them in this research. Instead, they could be seen as general (paradigmatic) views or frameworks within which the portfolio approach is developed. They are related to how the portfolio approach (or any planning tool) works, both in terms of process and content.

More general assumptions
The first of these assumptions underpinning the portfolio approach is the view that planning is basically a social process. This stands in contrast to a modernist view of planning as a mere technical-instrumental activity. Following Healey et al. (1999):

We understand planmaking practices as social processes through which a range of people in diverse institutional relations and positions come together to determine plan-making processes and to develop contents and strategies for the management of spatial change. (p. 342)

Most planning researchers will find themselves working within this general notion of planning as a social process. The questions what these social processes look like, how successful they are, and how, with and by whom they are organised, are objects of debate within this widely accepted approach.

Subsequently, the portfolio approach builds upon the assumption that with respect to the process of planning, it is assumed that the generation and exchange of knowledge and information on substantive patterns, interests, stories, experience and other issues requires an open, face-to-face process. Apart from discussions concerning the paradigmatic status of communicative planning and the extent to which it is successfully practiced in reality, it is assumed that knowledge building in planning processes generally benefits from an open, communicative environment where
different stakeholders are able to make their interests and viewpoints heard. Shared knowledge among stakeholders may lay the fundaments for forms of collective action. Consequently, an ensuing assumption is that such a process requires a certain structure in meetings, workshops or discussions. A useful discussion on alternative solutions would initially require a shared analysis of the situation and some form of agreement regarding the ambitions: ‘first things first’. A shared analysis and joint ambitions could then accumulate into the potential preferred next steps of action.

A more substantive assumption was discussed in Chapter Two. It is the assumption that the changing context of planning increases the need to gather and analyse information and knowledge about the market dynamics of neighbourhoods in the city. This can generate more insight into the development opportunities of urban areas, thus contributing to the quality of discussions and to possible solutions. Many scholars describe how processes of rescaling have changed the way (local) governments do, could or should operate in this new context (e.g. Castells, 1996; Albrechts and Mandelbaum, 2005). A very important aspect of this context is (at least the perception of) an increased influence of the private sector in many ways. Accordingly, it is assumed (at least in the portfolio approach) that discussion should to a significant extent involve the ‘market dynamics’ in the city, and how these dynamics shape the constraints as well as the opportunities for public ambitions and interventions. Evidence of these assumptions is provided by authors such as Dicken (1994), Savitch and Kantor (2002), or Swyngedouw (2005b). Notwithstanding the debates about the role of urban planning and local governments, few scholars deny the importance of taking market dynamics into account.

**Hypotheses**

Building on the assumptions above, there are some more specific hypotheses about the portfolio approach. Following the approach of design science, there are two types of hypotheses: (1) the straightforward hypothesis that the instrument works and (2) hypotheses about how the instrument is believed to work. Specifically speaking for the portfolio approach, this leads to the following hypotheses.

The first hypothesis is that the portfolio approach is a useful approach for generating knowledge about neighbourhoods’ positions in the property market, opportunities and possible intervention strategies. Essentially this is the simple statement that the approach succeeds in providing a collective learning process; or even shorter -- the portfolio approach works. Portfolio tools for strategic planning in business have been widely used, and they have received both praise and criticism in literature. However, the proof that it is useful in planning has to be found in empirical findings, by testing and applying the instrument in practice. Here, the observations made during the workshops by the researcher and other organisers, in combination with questionnaires and interviews, have to provide information about the validity of the portfolio approach.

The second hypothesis concerns how the approach works. It hypothesises that the portfolio approach works, because of a specific combination of content and process aspects. Building on the notion that knowledge generation takes place by integrating different types of knowledge, the portfolio approach is believed to work because it provides a framework that supports this integration. In terms of process, it is believed that the portfolio workshops are a platform where explicit and experi-
ential knowledge can be integrated in order to generate knowledge about the city and its neighbourhoods. In terms of content, the portfolio approach is believed to provide a concise overview of the dynamic positions of urban neighbourhood, by making a distinction between property values and their rates of increase. This provides useful information for strategic discussion and possibly also for the generation of knowledge.

Beforehand it must be stressed that, although the instrument is intended to increase the chances of attaining ‘better’ collective action, it can only provide an environment for collective learning. Whether this is followed by (collective) action remains a matter of many other conditions and cannot be simply regarded as the automatic next step. Thus, one should be careful not to make rash statements about the relationship between the instrument and the outcomes. This is why the black box must be opened by means of realistic evaluation, for it might be the case that collective action is in fact not the result of the above mechanism, or otherwise, that the mechanism does indeed work, yet without eventually leading to collective action. Bearing in mind the qualification above, the next section will discuss the methodological implications of the case studies.

### 4.8 Research as experiential learning

The main purpose of the portfolio approach is to generate a process of collective learning among planning actors about the city and its neighbourhoods. However, in design science research is a learning process as well. Useful instruments can be developed by testing them and applying them in practice. Also it should be further evaluated during and after the process, in order to understand how to improve it. So rather than a ‘one-way’ research strategy of deduction or induction, the research proceeds through a cycle of *experiential learning*, which is based on the work of educational theorists Kolb and Fry (1975), building upon the pragmatist ideas of Dewey in particular. Based on the notion that different types of knowledge exist (discussed in Chapter Two) learning takes place through an iterative sequence of hypothesising, active experience, observation and reflection, theorising, and finally followed again by hypothesising.

Similar to the SECI-model and the Growth-share matrix, the concept of the learning cycle has been criticised for being too simplistic and short on empirical evidence (e.g. Jarvis, 1987). The critics argue that learning takes place in different manners and that in reality learning does not follow the different stages a neatly and sequentially as depicted in the scheme, contrary to the views of Dewey (1933).

The criticisms may be justified in terms of how learning actually takes place. But this seems less of a problem when the learning cycle is used as a framework for organising one’s research. It conceptualises how the research goes through different stages. The scheme in Figure 4.2 depicts the learning cycle, combined with the specificities of the research process of the portfolio approach. Related to one of the criticisms of Kolb’s learning cycle, it should be acknowledged that in reality the research process does not run as neatly through the cycle as depicted in the scheme. Different stages may succeed each other after days or weeks, or may be completely by-passed (Kolb, 1984). It is both possible to theorise about observations made on
Validation of the portfolio approach

the spot and those made afterwards, as demonstrated for example by Schön's concept of reflection in action (Schön, 1983).

**Figure 4.2:** The learning cycle, with the specificities of the portfolio approach research added in italics

![Learning Cycle Diagram](image)

The portfolio research starts with the observation made by the Amsterdam Physical Planning Department (based on experience) that more insight is needed into the dynamics of neighbourhoods in the urban property market. Reflecting on this notion resulted in the cooperative research project, which led to the second stage of forming an abstract concept, i.e. the idea that identifying the neighbourhoods' positions in an urban portfolio might be a useful approach. In the next stage of the cycle, the first version of this portfolio approach was tested and applied in a workshop. During and after application, the researcher observed and reflected upon what was said and done, how the approach functioned and the type of outcomes generated. Also, the participants' reactions about their experiences provided additional input for these observations. Following Yin (1994), I used a number of operational measures that indicate whether and how the hypothesised mechanism is realised, searching for evidence of various outcomes: new individual or shared insights, changing behaviour, the commitment to take (collective) action, and other concrete results. This stage of observation is followed by a stage of further theorising about the mechanism of the tool. This is where the technological rules are grounded, answering the following questions: Why did certain interventions lead to certain outcomes? To what extent can this be attributed to context? How does this relate to existing theories about planning processes and comparable instruments?

Crucially, the research does not end here, with a conclusion or recommendations about improving application. Instead, a better understanding can lead to an adapted version of the approach, which is then tested in the same, a similar or a different case. Only repeated testing can generate the proper understanding of the mechanism and of the role of context. Moreover, it has to be assessed whether any proposed adaptations of the instrument actually did yield improvements. It is clear that the learning cycle should be administered several times, until a certain level of 'saturated evidence' of the mechanism is gained (Eisenhardt, 1989; see also Van Aken, 2005). Figure 4.3 illustrates what this experiential research cycle looks like. As
can be seen, the emphasis of research shifts back and forth from working with practitioners to more abstract conceptualisation in the ‘scientific domain’ (Straatemeier et al., forthcoming).

Two types of testing can be distinguished. First, the portfolio approach is tested in workshops, i.e. the experimental setting aimed primarily at testing and developing the approach. From these workshops emanate certain observations and reflections, which further result in theorising and adaptation of the instrument. In Figure 4.2, this is represented as the dotted line running from left to right. Secondly, after a number of workshops, the emphasis in the workshops shifts from testing the approach towards actual application in practice. Yet paradoxically, this is what makes ‘real’ field testing possible. In the scheme, this is represented by the cycle running through the ‘concrete experience’ stage.

**Figure 4.3:** Different steps of the experiential learning cycle placed in between planning research and planning practice. O&R = Observation and Reflection, FAC = Forming Abstract Concepts, TNS = Testing in New Situations, CE = Concrete Experience

![Diagram](source: Straatemeier et al., forthcoming)

The exact moment when it is possible to speak of ‘real’ practice is open to discussion. ‘Real’ application in ‘real’ practice can always go together with an implicit evaluation of the approach and consequently produce adaptations. At the same time, workshops aimed primarily at testing the approach can lead to useful substantive results with ‘real’ outcomes. In such cases, the atmosphere of experimentation may even contribute to achieving substantive results. The conclusion for the portfo-
The portfolio approach is that the line between experimentation and practice can be blurred, and that this is not problematic; on the contrary, it can yield very productive results.

**Research design**

The empirical evidence is collected during the stages of observation and reflection. A strategy of triangulation is used to analyse whether, how and under which conditions the portfolio approach does work. It means that, as Table 4.2 illustrates, different research methods are used, accompanied by different types of evidence. First, there is literature that provides evidence regarding the more general assumptions about how instruments such as the portfolio approach function. This concerns ideas about the functioning of parts of the mechanism, for example planning processes. More specific ideas about the portfolio approach are tested by means of documentation, observation, interviews, questionnaires, and by following the practical application of the approach.

<table>
<thead>
<tr>
<th>Research methods</th>
<th>Type of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature study</td>
<td>Scholars’ claims and dismissals</td>
</tr>
<tr>
<td>Participatory observation and</td>
<td>Participants’ statements and behaviour before, during and after the workshops</td>
</tr>
<tr>
<td>documentation</td>
<td></td>
</tr>
<tr>
<td>Interviews &amp; questionnaires</td>
<td>Statements about the portfolio approach and its application</td>
</tr>
<tr>
<td>Tracking the use of the instrument</td>
<td>Why the demand for this type of tool?</td>
</tr>
<tr>
<td></td>
<td>Adaptations made to the approach</td>
</tr>
<tr>
<td></td>
<td>Continuation of the approach</td>
</tr>
</tbody>
</table>

Source: author

**The role of the design scientist**

Any research carries the risk of bias. Due to personal bias or other pressures, researchers may (consciously or unconsciously) work towards conclusions that fit their hypotheses. One may focus on observations that fit with explanations one is already looking for, and overlook observations that point in the opposite direction. The relationship with a (financing) client can also play a role, as researchers may feel pressured to deliver results that fit the client’s expectations or worldview.

In design science, the researcher not only tests hypotheses, but explicitly aims at designing something that works in practice. Such personal involvement, as in action research, increases the risk of bias, since the researcher tests and evaluates a self-made design: naturally he or she wants it to work. Although the risk of bias, as in any research, can never be fully excluded, there are a number of ways to address it.

First and foremost, the researcher has to be conscious of the issue. He or she should question observations and findings at all times. Secondly, as noted earlier, the evaluation of the design should explicitly delve deep and unravel its mechanism. Opening up the black-box and making explicit how the instrument supposedly works, following Pawson and Tilley (1997), compels the researcher to look for possible flaws in the explanation. It allows other researchers to do the same.
dition, as much as possible, testing and evaluating the design should be done in conjunction with other researchers and stakeholders: the intended users and possibly more neutral observers.

According to Van Aken (2004), testing a design ideal typically should be divided into two phases of testing: ‘α-testing’ and ‘β-testing’. In the first phase of α-testing, when the design is still in development, the researcher takes part in the testing process. When the researcher is sufficiently convinced of the functionality of the design β-testing commences, with third parties testing the developed instrument. Not only does this allow for the testing of the design in other contexts, it also allows for more objective testing, similar to replication research (Van Aken, 2004).

In this research, the presumed working of the portfolio approach is made explicit as much as possible by looking at the mechanism. The approach is evaluated by using the research methods presented above: literature study, participatory observation and documentation, interviews and questionnaires, and tracking the use of the instrument. So far, there was only limited real β-testing. The portfolio approach was applied in several workshops without the intervention or the presence of the researcher, but these are not included in this research. Although there was positive feedback, the applications and findings were not sufficiently observed and documented in order to evaluate them with sufficient rigour.

4.9 Multiple case study

In order to test and evaluate the mechanism of the portfolio approach, the research is executed in multiple case studies. Following Yin, the application of the portfolio approach in Amsterdam is thus seen as an investigation of ‘a contemporary phenomenon with its real-life context [where] the boundaries between phenomenon and context are not clearly evident’ (Yin, 1994, p. 13). However, as I mentioned earlier, the object of study is not an existing phenomenon, but rather a design that is being developed and tested (Simon, 1969). The approach was first applied and tested for internal validation (Eisenhardt, 1989; Yin, 1994). This is what Eisenhardt (1989, p. 540) calls within-case analysis. However, development of the portfolio approach and the understanding of its mechanism are based also on differences between the workshops in Amsterdam. This makes the evaluation of the approach also a cross-case analysis. Still, there are also some contextual factors such as culture, planning style, or tradition that could not be altered and could not be separately tested for their possible influence within Amsterdam. For instance, the local planning department was always heavily involved in the organisation of all the workshops in Amsterdam. Furthermore, it might be that the element of location, or the type of city and the way it is subdivided in different neighbourhoods, may influence the mechanism as well. Therefore, in order to increase the external validity (Eisenhardt, 1989; Yin, 1994), I also tested and applied the approach in Rotterdam.

Rotterdam was selected for two main reasons. The first reason for selecting Rotterdam is a pragmatic one, i.e. because the city administration showed interest in applying the portfolio tool. This made the application of the tool much easier in terms of finding useful contacts and collecting data, but more interestingly and importantly, it also enabled the organisation of workshops (as it simplified the logistical aspects). Although important, this alone does not provide sufficient grounds for
selecting Rotterdam. It is accompanied by the important fact that Rotterdam is comparable to Amsterdam in terms of size and that it is part of the same Dutch planning context. It is interesting to look at the differences within these constraining fixed factors. Rotterdam has a considerably different lay-out, both in spatial and socio-economic terms. Amsterdam has a historical and also economically vibrant city-centre. The city has a service-based economy and manages to attract a large number of young and highly educated inhabitants. As a result, Amsterdam has a heated housing market with high housing prices. Rotterdam on the other hand has a more industrial-based, less dynamic economy, with a housing market that is considerably more relaxed than Amsterdam’s (Aalbers, 2006). The city has a functionalist centre that was rebuilt after heavy WWII bombings. As a result, the patterns of stronger and weaker neighbourhoods through the city can be expected to be different from Amsterdam. I expected to see this reflected by different, more fragmented patterns in the portfolio. It is also interesting to see whether this influences the type of discussions during the workshops. Rotterdam’s overall weaker economic position in the national and international economy raises the question how this influences the city’s general intervention strategies and in particular its attitude towards the private sector (and vice versa). Importantly, in terms of this research, it also provides a different context for assessing the usefulness of the portfolio approach.

The approach was applied in six workshops in Amsterdam and in two workshops in Rotterdam. This may seem very lopsided, like an uneven comparison between two cities, but application in Rotterdam served to test the influence of the differences between the cities. The approach was developed and applied in Amsterdam in six workshops, so it was not necessary to conduct as many workshops in Rotterdam. Table 3 provides an overview of the two cities and their sub cases, as well as the applied research methods. Appendix II provides more details about the survey questionnaire.

**Table 4.3: The multiple case study featuring eight cases**

<table>
<thead>
<tr>
<th>City</th>
<th>Workshop</th>
<th>Research methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amsterdam</td>
<td>Neighbourhood: Holendrecht, 2 workshops</td>
<td>Participatory observation &amp; documentation, interviews</td>
</tr>
<tr>
<td></td>
<td>Neighbourhood: Chassébuurt</td>
<td>Participatory observation &amp; documentation</td>
</tr>
<tr>
<td></td>
<td>City-wide: Creative city</td>
<td>Participatory observation &amp; documentation</td>
</tr>
<tr>
<td></td>
<td>City-wide: 50,000 new dwellings</td>
<td>Participatory observation &amp; documentation</td>
</tr>
<tr>
<td></td>
<td>City-wide: Analysis with particular focus on the Zuidas &amp; Amsterdam-Noord</td>
<td>Participatory observation &amp; documentation, questionnaire</td>
</tr>
<tr>
<td></td>
<td>Regional portfolio workshop</td>
<td>Participatory observation &amp; documentation</td>
</tr>
<tr>
<td>Rotterdam</td>
<td>Area: Oud Zuid</td>
<td>Participatory observation &amp; documentation, questionnaire, interview</td>
</tr>
<tr>
<td></td>
<td>City-wide: Gentrification</td>
<td>Participatory observation &amp; documentation, questionnaire, interview</td>
</tr>
</tbody>
</table>

The next chapter will describe and analyse the eight cases where I applied the portfolio approach, as within-case analyses. These illustrations should provide internal
validity about the portfolio approach. By applying a cross-case analysis in Chapter Six, the uncovered differences and similarities between the cases will provide further understanding about the mechanism and the context-specific aspects of the approach.