Interactive planning of infrastructure: the changing role of Dutch project management

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Abstract. The mode of planing for infrastructure has changed in the Netherlands. As elsewhere, a hierarchic mode of planning has been replaced by regulatory relationships among stakeholders. The authors present a lens through which some of these changes are brought into focus: the new form of cooperation, called 'interactive planning', is characterized in terms of 'political space', 'architecture', and 'action mechanisms'. The discussion is focused on four projects in which the transition to a new planning mode occurred while the project was being developed. The authors also revisit the implementation of interactive planning.

1 Introduction

In the process of reaching decisions on the provision of major infrastructure, concerns about safety and environmental impact may be secondary to economic considerations—but they are important nevertheless. It should therefore not come as any surprise that plans to develop 'dry' infrastructure (road and rail connections) and 'wet' infrastructure (seaports and waterways) are often fiercely contested and evoke major social and political objections. This resistance usually results from the fact that the development costs—such as collateral damage to nature, the landscape, and residential environments—are not paid by those who reap the direct benefits (that is, profits). The planning of new infrastructure clearly involves more than solving a technical–organizational problem. It challenges those who have to manage such a project to reach a degree of consensus—not only on the definition of the problem, but also on the range of viable solutions—within a given administrative and social context.

In the Netherlands, the responsibility for the planning of infrastructure lies with the Ministry of Transport, Public Works and Water Management—specifically, with its planning agency (the Directorate General for Public Works and Water Management, the 'Rijkswaterstaat'). Until very recently, this agency had a very centralistic mode of operation: plans were devised and elaborated in detail by technicians within the organization. These plans were revealed to outsiders only after all the choices had been made. Although regional and local authorities (that is, provinces and municipalities) play important roles in the field of spatial planning, they found themselves in a dependent position. A powerful actor is one who holds the purse strings, and in this case that was the national planning agency. The provinces and municipalities are financially incapable of initiating projects on their own, or even of participating in national initiatives on equal terms. Likewise, the process was not opened up to the general public and civil organisations until the authorities had sifted through all of the alternatives. Thus, the public was invited to take part only once the authorities were able to present them with a concrete proposal deemed suitable for public consultation.

The main features of this traditional approach are as follows:

(a) The planning agency initiates infrastructure projects and is formally responsible for the implementation process and the outcomes of the projects.

(b) Each project is narrowly defined and sectoral in nature. Only those interests falling directly under the jurisdiction of the agency (the so-called 'dry' and 'wet' infrastructure) play a significant role in the project.

(c) Within the planning agency, the appointed project manager is responsible for the entire operation. Therefore, he or she is the pivot around which all the interactions with other parties revolve.

(d) The role of project manager is allocated on the basis of presumed technical, organizational, and legal expertise, as well as on the basis of the financial resources that are made available to implement the project.

(e) Each project is thought out in detail and elaborated within the agency itself before being made public. Subsequently, the project manager is charged with generating support for the project—specifically among those public actors who would have to play a role in its implementation.

(f) The main reason for the communication with citizens, businesses and civil organizations is to transfer expertise and information and this communication is intended to convince the others that the best possible solution has been selected.

Obviously, some caveats apply to this compilation of characteristics of traditional project management. This is just a model—in practice, it has been worked out in many variations. But certain features are persistent. These include the rather hierarchical position of the planning agency, in its relationship to other authorities as well as within its broader social environment; another persistent feature is the rather dominant role of expert knowledge. The planning agency applied technical knowledge and attempted to imbue others with a sense that the project was desirable. At the same time, the agency defended its choice of specific solutions on the grounds of solid technical argument.

This approach allowed the agency to deal effectively with recurrent physical threats—the frequent breaches of dikes and the inundations in floodplains—and, later, with the construction of roads and rail connections (De Jong, 1998, page 311). But such an approach is no longer deemed acceptable. Nowadays, local authorities no longer allow the planning agency to construct transport routes across their territory, or initiate other public works, without prior consultation and permission. Citizens, businesses, and civic organizations alike want to be consulted about ways in which the problems related to infrastructure can be solved, and they insist on a careful evaluation of the anticipated benefits compared with the possible detrimental effects on the quality of the environment. In response to these demands, some trials have recently been conducted with 'interactive planning'—drawing relevant stakeholders into the planning process at an early stage. This change in planning mode, discussed at length below, is part of a 'communicative turn in planning', which started in the 1990s (Healey, 1997; Hillier, 2002). As yet, little is known about the process of institutional redesign associated with these changes. In this paper, we present a lens through which this process may be analyzed. With the aid of this lens, we can also clarify some issues about the implementation of interactive planning. We base our analysis on four cases in which stalemates were broken by interactive planning.

2 Towards interactive planning

Two specific problems are frequently brought up in relation to the classical planning of infrastructure projects (Korsten et al, 1996; Teisman, 1997; Woltjer, 2000; WRR, 1994). The first is red tape: the proliferation of regulations which slow down the

decisionmaking process. Time-consuming procedures are often considered to be a problem because infrastructure works are, generally, needed urgently, whereas elaborate decisionmaking procedures tend to preclude rapid action. The advocates of building such projects almost always bring up this point; obviously, the opponents do not see it as a problem. The long duration of the planning process is often blamed on the regulatory system, which is seen as convoluted—it allows for too much consultation and too many options for stakeholders to raise objections and appeal decisions. The slow process of decisionmaking also results from conflicts of interest, both among players in the public sector and between authorities and nongovernmental organizations.

The second problem is a matter of perceived lack of quality. This results from two closely related issues: the quality of the decisionmaking process, and the quality of the plans themselves. With regard to the process, the main issue is organizational fragmentation (a number of public agencies may share the relevant jurisdiction, but there is insufficient coordination among them), whereas the problems that need to be solved demand a shared commitment. This results in insufficient impetus to rally administrative and social support: there tends to be limited room to debate the benefits of and the need for projects, the empowerment of stakeholders remains inadequate to given them a real say in the content of the decisions, and the various policy alternatives are not taken seriously. Many stakeholders are therefore convinced that the technical planners generally force through decisions on infrastructure. This also leads to problems with respect to the content of a plan: proposed solutions are contentious, or at the very least suboptimal: they tend to serve a single interest (the economic one), and pay too little attention to other interests. The aims of innovativeness and sustainability are then poorly served by the selected solution (which consequently also diminishes the economic, technological, and ecological benefits).

In the 1990s an effort was made to address these problems. This involved the elaboration and application of two distinct approaches. First, project legislation was developed. This special legislation was intended to expedite the process of decision-making; hence, it became known as 'fast-track legislation'. To speed up the stages of preparation, decisionmaking, and implementation, decisions were linked hierarchically and in parallel; the time frame for each step was shortened; and various legal safeguards were combined. Second, interactive forms of planning were devised. Interactive planning may be defined as a style of policymaking in which a variety of methods of communication and process support are mobilized to serve a pluriform group of stakeholders involved in a policy network in their attempts to reach consensus on an approach to a project (De Bruijn et al, 1998; Glasbergen, 2002). In practice, then, the public and private parties involved in interactive policymaking proceed through rounds of consultation and negotiation to develop and adopt a plan and, subsequently, to implement it. In addition, this form of planning is characterized by agreement among the different stakeholders on their mode of interaction and their strategies to reach agreement. The legal form of the interactions is therefore considered to be less important. Participation of stakeholders (comprising, in addition to the initiator of the project, other authorities, nongovernmental organizations, and citizens) is an essential element of interactive planning.

3 The changing institutional context of planning
Recently, interactive methods have been adopted for various infrastructure projects. Technical planners have been keen to cooperate with stakeholders who are in any way committed to a project (Driessen and De Gier, 2001; Driessen et al, 2001; Woltjer, 2000; 2002). Consequently, technical planners are no longer perceived as the sole 'owners of the problem', or orchestrators of the infrastructure projects but,

rather, as partners in a coalition of stakeholders. This change has been taking place simultaneously on several fronts.

First, an increasing number of infrastructure-related activities which had traditionally been entrusted to the national government are being decentralized to lower level authorities: not only the provinces, but also metropolitan areas, have been charged with important tasks and responsibilities.

Second, there is a noticeable change in the way in which infrastructure issues are perceived. This applies specifically to questions of mobility. Traffic and transportation issues are no longer interpreted in isolation but are seen from the broader perspective of 'livability' at the regional level; this perspective also has economic and ecological dimensions.

Third, the idea is gaining ground that the market should play a more important role in spatial development projects. For instance, it is felt that the concept of market discipline should be adapted to suit infrastructure policy and that new forms of public – private cooperation should be designed for the development and implementation of projects as well as for their management.

Fourth, it should be noted that the social context in which projects are being developed has become more dynamic. The projects have become politicized in the sense that they are points at which different civic interests meet. This implies that the authorities are confronted not only with a multitude of divided, often conflicting, social interest groups and organizations, but also with assertive individuals who insist on being involved in a project.

Many of these developments have not yet fully crystallized, but their effects are already showing. They are affecting the traditionally independent mediation function of the planning agency, which is charged with balancing the legal and financial constraints. This agency now has to operate more effectively in a changing institutional system. In other words, the agency will have to operate efficiently within a more interdependent administrative context. It will have to respond to much broader questions than before; deal with potential contributions by nongovernmental organizations; and address a variety of social demands the effects of which on the projects are still not clear.

4 Understanding institutional redesign
The institutional redesign activities going on in the administrative and social context of planning are complemented by efforts to redesign the planning process itself. This parallel track deals with regulatory relationships, which are being 'redesigned' in an effort to get a 'bogged-down' planning process up and running again. In this regard, Healey refers to the development of 'negotiated networks' and 'collaborative networks' (Healey, 2000). However, her discussion remains abstract and normative: she does not delve into implementation issues and sidesteps the intricacies of putting institutional redesign into practice. To do so would require a conceptual framework. This is where we try to make a contribution in the present paper namely, by proposing a method that brings the issues into better focus. Our framework may be used to characterize the constituent elements of the new forms of interaction, but also to interpret the relationship between the processes taking place through interactive planning and the resulting outcomes of the project. As a starting point, we take the view that each issue in the field of infrastructure constitutes its own administrative and social context. This context can be perceived as a 'political space'. A political space consists of a constellation of actors (which obviously includes actors from formal political structures) who are mutually connected and linked to an issue defined as a problem by a public agency. Within a political space, perceptions, opinions, and interests are exchanged in a more

or less formally structured manner in order to make arrangements about complex social issues. The planning of infrastructure projects may be interpreted as an activity that is meant to structure (that is, apply an architecture to) and service (that is, select mechanisms for) that space. The concept of 'architecture' helps focus attention on the structure of the project management. It refers to the definition of the position and role of the planning agency in relation to the position and roles of other stakeholders. An important variable is the centrality of the planning agency: is it the project leader, the project driver, or one of the many participants? A change in the architecture often implies a 'reframing' of the problem definition in such a way that room is created for additional actors who might contribute in identifying and defining alternative creative solutions (Schön and Rein, 1994). The concept of 'action mechanisms' refers to the working methods applied within that structure to stimulate stakeholders to cooperate. Action mechanisms may concern the content—for instance, the definition of the problem—and/or the process—for example, facilitating a dialog, a transaction, or unilateral decisionmaking. The first of these is known as 'substantive management'; the last as 'process management'. Along with structural management, which is aimed at the architecture, these forms of management constitute the political spaces.

5 The reality of interactive planning
We used this conceptual model to analyze four cases in which new forms of interactive planning were applied. In these cases, new partnerships emerged among public and private sector actors. Our analyses are based on a content analysis of documents and interviews with all of the parties involved in a project (Van der Arend et al, 2002). The cases concern the following issues:
(a) the improved utilization of an existing national expressway (the A12);
(b) the selection of a site to deposit dredging sludge;
(c) the extension of the national expressway—(the A4); and
(d) the reconstruction of a regional highway (the N44).

5.1 The improved utilization of the A12 national expressway
The ease of accessibility of The Hague, the seat of government of the Netherlands, depends to a large extent on the A12 national expressway. Its final 30 km stretch, before entering the city, is marked by many access and exit ramps, and the intensity of traffic in this area has increased dramatically in recent decades. This is partly thanks to the enormous increase in the volume of vehicular traffic, and partly to the proliferation of new urban development locations around The Hague. Much of the traffic is 'destination traffic' which enters the city in the morning and leaves at night. As a result of the higher volumes, congestion has become a big problem.

Efforts to improve this road segment ended in a stalemate around 1998. Until then, the approach taken by the planning agency was a clear example of the traditional model of project management: the agency saw itself as the owner of the problem and, on the basis of its technical and legal expertise, it formulated a classical solution (that is, road widening). However, this approach failed, partly because of public resistance, but also because of a budget problem at the Ministry of Transport, Public Works and Water Management. In a time of budgetary constraint, the ministry gives priority to infrastructure projects for which preparations are already well underway and which are highly feasible. The A12 project is not one such. The decision to move ahead with ongoing projects is precisely what has jump-started the process. Though not deliberately, it has created a new political space: by stepping back, the ministry created opportunities for other parties to take the initiative—and so they have. The government authorities of the metropolitan area of The Hague took the initiative and

developed a new architecture for interaction among the parties. They organized a public dialog and a series of workshops involving local politicians and private businesses from the region—parties with a clear stake in the problem and its resolution. The consultations among these parties resulted in a new definition of the problem— one no longer focused on the problem of insufficient road capacity (which had resulted in the proposed solution of widening the road), but on the underutilization of existing capacity (which resulted in the proposal to improve utilization). Along the way, the scope of the problem had been broadened so that it now concerned more than the accommodation of automobile traffic, as it also covered alternatives for modal split: public transport, automobiles, and bicycles. This implied that attention was no longer exclusively focused on the road segment in question, but had shifted to embrace the traffic and mobility issues of the entire region. By redefining the problem, the debate on the classic dilemma— asphalt or the environment—was sidetracked. Environmental organizations that had previously opposed the plans now supported the revised approach.

At the same time, the role of the planning agency changed from one of orchestrator of the infrastructure project to one of partner in the wider regional consultations on issues of mobility and livability. Also, the business community in the region chose to play an innovative role: its main interest was to secure good facilities for mobility and, thereby, to ensure the accessibility of business sites. In the framework of the project, the planning agency made subsidies available for individual firms to work out a mobility plan. These plans dealt with a wide range of issues: the introduction of flexiworking; car pooling; bike-repair facilities; subsidies stimulating employees to purchase bicycles; rewards for foregoing a claim on a parking space at work; etc. Measures like these had also been used by firms elsewhere, but in this instance the main thrust was to work out a set of coordinated initiatives that could be implemented in a concerted action by local firms.

Another crucial element in the project is the fact that a smart link was laid between the government agencies, where the plans were developed, and the business community. At one of the consultations a 'godfather' was appointed to serve as a contact between the project and the private sector. This honor was given to the director of the public transport company in the region. He played an important role as a catalyst. Not only did he keep the relevant firms informed about the development of the project, but he also called these firms to task with respect to their responsibility for the region's accessibility. One of the key mechanisms in play was social control. Companies were reminded that they might be lagging behind other firms in the development of mobility plans, and they were told that others expected a more proactive stance from them.

This project may be seen as a restricted interactive process, in the sense that it was intended to promote the cooperation of public authorities with the private sector. Civic organizations and individual citizens were kept informed through a public relations center. Despite this limited inclusiveness, opposition to the project did not arise. The case also shows that it is easier to obtain public financing for innovative plans which enjoy broad support than for projects that replicate traditional solutions and are supported only by the planning agency. Because of the interactive approach, the stakeholders could jointly set priorities for the expenditure of public funds for infrastructure. The project is currently being implemented.

5.2 The selection of a site for a dredging-sludge depot

Over time, a large amount of contaminated sludge has been deposited in the beds of Dutch rivers. Regular dredging keeps the rivers navigable. Because the contamination is moderate to severe, the sludge has to be carefully stored in specially constructed depots. In the early 1990s a new location had to be selected for a depot to hold the

sludge dredged from the rivers in the southwest of the country. Initially, the planning agency tackled this assignment in its traditional way. A technical planning exercise, in which multicriteria analysis was used, was carried out within the organization itself, and the outcome was subjected to an environmental impact analysis (EIA). However, stakeholders and residents in the designated region raised objections to the selected site, arguing that environmental aspects had been given too much weight in the evaluation of the alternative sites, whereas the impact on the landscape had been given too little attention. In the ensuring legal challenge, the court sustained the objections, though it approved of the technical quality of the EIA.

Subsequently, the planning agency decided to adopt a new strategy. A new political space was created, opening up opportunities for other interested parties to exert their influence. The process started all over again, with an open planning process. Let us consider three aspects of its new architecture. First, by appointing a new project leader, it was made clear to all parties that the project was off to a new start. Second, because of the inclusion of municipalities in the project team, the planning agency was no longer the only owner of the problem. Third, the question of where to store the sludge was discussed frequently, and in various forms, with other stakeholders. This helped to create mutual trust. The interactive planning process was part of a new EIA that was based on an inventory of interests and an assessment of these interests by the actors themselves. This made it possible to consider a much larger set of alternative sites than before (see table 1).

Table 1. Relationship beteen environmental impact analysis (EIA) procedure and the open planning process.

Time	Phases	EIA procedure	Open planning process
April 1997	Prephase	Inventory of interests Weighing of interests Defining EIA criteria Draft starting memorandum	 Public meetings Workshop Public meetings
June 1998	Formal EIA	Starting memorandum Defining site characteristics Choice of site	Information evening Workshop Public meetings
January 2000	After phase	Formal EIA decision Licensing procedure	Formal appeal Formal appeal

Several mechanisms in the new approach to the issue have proved to be significant:
(a) striving toward openness in communication channels as well as direct contact between civil servants and the public at large;
(b) mutually reinforcing an awareness that difficult trade-offs are involved, and that no solution will ever be perfect;
(c) putting the outcomes of the multicriteria analysis into perspective while taking the views and assessments of the parties involved very seriously.
Obviously, the EIA was used to rally administrative and public support for the outcome of the process. To give the EIA report a broader basis, several workshops were held, providing all stakeholders with the opportunity to share their ideas on how to resolve the issue. The result was that the project was carried out in stages. First, it was decided that just some of the sludge could be dumped at a new site, where the facility would fit better into the landscape. By deciding to search for a place to store a smaller amount of sludge, alternative sites came into the picture. For instance, a portion of the sludge could be dumped in an existing hole. This solution would relieve the pressure

and take care of the problem for the coming decade. Then, after a number of years, a new site-selection project would be initiated to find a solution for future sludge-storage problems. Looking back at this project, there was a general feeling that relying on commonsense and a program of consultations created a broader basis for support than would have resulted from the application of a technical multicriteria analysis. Indeed, technical multicriteria analyses are always subject to criticism.

5.3 The extension of the A4 national expressway

For decades, the idea of extending the A4 national expressway by approximately 20 km through the open area between the cities of The Hague and Rotterdam called Midden – Delfland, in itself valuable as a landscape, had been contested. This extension was considered necessary in order to improve access to the two cities and to relieve the traffic pressure on the nearby parallel expressway. For years, the planning agency kept working on plans for the construction of the road, but civic organizations, individual citizens, and local authorities kept resisting the plans because the construction would damage the last remaining piece of open space between the two cities. At the end of the 1990s the province of South-Holland, where the area is located, came up with a new initiative. It decided to take action not only because the decision process had become bogged down; it was also obvious that something had to be done to relieve the congestion on the roads connecting the two cities. To launch its initiative, the new actor took an entirely different strategy from the ones that had been deployed before. A new political space was created. The starting point was an open dialog with all interested parties from the public and the private sectors. All options were open at the onset of the dialog; this had been facilitated by defining the issue in much broader terms than before. The discussion was no longer focused on the question of whether or not the road could be constructed, but on how to improve the spatial quality of the area as a whole and how a possible extension of the A4 would contribute to that aim. For instance, the aims of discouraging drivers from using other roads as shortcuts, improving the natural amenities of the area, bolstering the deteriorating agriculture of the area, reducing congestion on connecting expressways, and strengthening the recreational opportunities in the area were now linked to the construction of the new road segment. In fact, the central focus of the project shifted toward improving the spatial quality of the area— extending the route of the A4 was now just one of the options instead of being the main thrust. Because the discussion had been dragging on for over thirty years, the plan was approached with some caution. The new approach was not supposed to lead to a decision on whether or not to build the road. Rather, the approach called for the preparation of a regional development plan setting forth the conditions under which the road could be built. Ultimately, it would be up to the Minister of Traffic, Transport and Water Management to make the decision.

The architecture of the project was worked out in a pragmatic way: anyone who wanted to participate was welcome to join in. The exact roles of the actors were specified as the plan evolved. Professional interest groups came to play a key role, alongside public and private sector agencies. The task of project coordination was assigned to a steering committee representing various public agencies. A communication plan, adopted at an early stage of the planning process, formed the basis for the activities of the steering committee. This plan consisted of three elements:
(1) an analysis of opportunities and risks for the project, along with appropriate actions to ward off the threats or to take advantage of the chances;
(2) a structure detailing the allocated responsibilities and the role of external communication;

(3) an analysis of the power relations in terms of allies, opponents, and adversaries, but also including an answer to the question of who was supposed to take which action.

Although this description may suggest otherwise, with respect to its contents it was a very open communication plan. It strongly emphasized the need to take all stakeholders seriously, and reiterated the necessity to respect the standpoints of the opponents. The actions seemed to be primarily intended to encourage many stakeholders to participate in the project by anticipating their positions and needs for information. The goal was to make sure that all actors remained involved. The opponents were specifically invited to participate too. The inclusion of opponents helped to resolve a classical political dilemma: whether to oppose the project and be excluded from the process, or to join in and become co-opted as a supporter.

The role of the planning agency in this project was severely curtailed. It was reduced to being just one of the participants—welcome only because it had some necessary technical expertise. Advice was provided to the steering committee whenever it was requested. Decisions were made within the provincial organization, where the final decisions were left to the politically responsible functionary. In contrast to the previous situation, the planning agency was working under strong external political leadership. Meanwhile, an agreement was reached among the relevant administrations, a social support base had been created, and the perspective on the implementation of the plan appeared to be realistic. A comprehensive quality plan had been prepared for the Midden – Delfland region, stipulating the conditions under which the A4 could be built. The plan now has the support of many, though not all, civil organizations. Part of the reason for this change in attitude is the realization that ultimately the spatial quality of the region would suffer far more from doing nothing than from carrying out the existing plans, including the construction of the A4.

5.4 The reconstruction of the N44 regional highway
Highway N44 connects The Hague to Leiden, and even though it had been built to the standards of an expressway (two lanes in each direction, separated by a barrier), it is classified as a regional highway—with commensurate speed restrictions. Yet, although the road forms a crucial link in the national system, providing access to The Hague from the north, it runs right through the suburban village of Wassenaar. This village has expanded significantly in the past few decades; at the same time, the traffic intensity on the road running through it has increased greatly. This has resulted in an array of problems: backed-up traffic; drivers looking for a cutoff; the nuisances of traffic noise and exhaust fumes; safety hazards; and the barrier effect of the road. In the mid-1990s the issue of improvement of highway N44 was selected for an experiment in interactive planning. The planning agency remained the initiating party in this experiment. Yet it also collaborated closely with the regional authority (that is, the Stadsgewest Haaglanden) and the municipality of Wassenaar. Together, these three parties constituted the project team, and its leadership was entrusted to the municipality.

The new approach was based on the following principles: taking the wishes of road users and local residents into account; jointly coming up with innovative ideas and solutions; stimulating the experts to develop novel solutions; creatively applying new technical means; and 'learning by doing'. The entire process was structured in three stages: the 'voice stage', the 'agora stage', and the 'action stage'.

During the *voice stage* the stakeholders were challenged to contribute to a joint formulation of the problem. Three separate groups of stakeholders were identified and invited to participate: road users, nearby residents, and other interest groups. Over the course of three meetings, interactive sessions were held with 100 participants in all, divided into thirteen subgroups. The method of holding group discussions gave all

members the opportunity to voice their views. After completing an inventory of the issues and discussing these, the results were combined and prioritized. The resulting list of core issues was then put to the local population in a telephone survey to determine the extent to which they were in agreement. The results were discussed with traffic engineers and spatial planners. Neither of these two consultation rounds resulted in significant changes in the definition of the problem or in the priority ranking of the core issues. The entire set of issues was then prepared for the local administration so that the authorities would be able to formulate the task for the next stage.

The *agora stage* ('agora' is the Greek word for 'meeting place) was intended to muster all the available creative potential to come up with ways to address the issues identified in the preceding, voice stage. A set of possible solutions was generated during a series of sessions chaired by an outside moderator. Roughly sixty persons took part at this stage. The techniques of brainstorming and the formulation of analogies were applied. Draftsmen elaborated the ideas in the form of designs and situation sketches. Technical experts from various disciplines also attended these inter-active sessions. The explicit aim was to maximize creativity. The resulting solutions were then presented to the local population in a written survey. The final outcome was a list of desired and undesired alternatives. The most favored solution to emerge from the round of interactive sessions had hardly any opponents and was subsequently selected as the most desirable and most feasible by the local administration.

In the subsequent *action stage* this solution was fully elaborated, and the represen-tatives of the stakeholders made sure that their constituencies would accept it. After another critical review by experts and interested parties, a definitive decision was reached on the project and implementation began.

This interactive process is a prime example of citizen participation whereby indi-viduals strengthen their commitment to the project as they become more intensively involved. Two action mechanisms were crucial to the process. First, the interactive sessions, in which the local administration played a central role, were particularly effective in stimulating a change in attitude. Second, a strategy of close supervision was followed, entailing a step-by-step approach, with deadlines. This was the only way to deal with the great diversity typical of citizen participation and with the complexity of the technical design process.

As in the case of the A4, this planning project links interactive planning to political decisionmaking. Local politicians proved to be less comfortable with this process than were the technical planners. Initially, their attitudes ranged from skeptical to moder-ately positive. By the end of the process, the politicians were by and large content with the process that had resulted in a broadly supported solution, but they remained uncomfortable about their own greatly diminished role.

6 The creation of new political spaces

This empirical analysis shows that new political spaces for the resolution of public issues were created in each of the cases. The traditional model of project management defines such a created political space as a hierarchical structure of relations among the actors involved. Within that structure, technical knowledge is applied as a core action mechanism. This political space is relatively isolated from the administrative and social context. Such a context would be primarily defined as a task-oriented one, which implies that its contribution to the development of the project is evaluated from the perspective of the particular interests of each of the organizations involved. With regard to the relationship with the administrative context, the contacts are generally derived from formal legal responsibilities. Civil rights and obligations are highly formalized and apply to individual actors; each citizen is equal before the law. This notion, among

others, forms the basis for the legally defined options for participation and appeals. The formal features of the traditional model were retained in the newly created political spaces in each of the cases, though they took on a subordinate character. A new architecture was created that offered room for new action mechanisms. Other organizations assumed the leadership role that used to be the domain of the national planning agency. Previously, the agency could justify keeping leadership in its own hands on the basis of its primary responsibility for infrastructure. The traditional hierarchy has since been upset, and the cooperation among the public agencies involved has become more symmetrical. In addition, the social context, with respect to organized interests as well as to individual citizens, is offered a greater or lesser role in the development of the project. In order to change the architecture, the problem definition needs to be broadened, which often means 'reframing' it. Reframing creates room to engage additional actors in the search for creative solutions. Another important consequence of reframing is the implied recognition that technical knowledge is not the only basis on which to identify solutions. Expertise is explicitly linked to knowledge based on experience and the perceptions that are available in the context of the project. This implies that the potential contribution of learning processes and negotiation processes will increase. Each of the cases shows that it is possible to create appropriate specific 'action mechanisms'. The selection of any specific action mechanism depends in part on the issue in question, but also on features of the context within which it needs to be resolved. Controversial issues require a different approach from those that are politically neutral. The characteristics of the field of potential stakeholders are also relevant: for example, the question of whether civic organizations or individual citizens, or both, express an interest in the issue. The case of the restructuring of the A12, for instance, activated the regional private sector; in the example of the storage of dredging sludge, the legally required EIA was made part of an open planning process; the communication plan played a crucial role in the case of the A4; and in the example of the N44, citizen participation was organized in stages and linked to structured interaction with experts. In each of the cases, stalemates were broken through open communication. But before that could happen, the activities had to be programmed; there was clearly a need for a planning timeline with discrete decision points, including room for the necessary political decisions to be imposed on the participants. This condition meant that there was only limited scope for discussion.

7 Reflection on the cases

Interactive planning increases the amount of complexity and uncertainty *within* the project compared with the amount found in traditionally implemented projects. This applies first and foremost to the content of the projects. By opening up the planning procedures to interested parties at an early stage, the planning process attracts a greater range of socially diversified interests and perceptions. Second, the relationship of interactivity to the procedures, legality, and the positions of the staff members may require clarification. This uncertainty results in part from the novelty of interactive planning. At the same time, setting up an interactive process is itself an activity that reduces the level of uncertainty and complexity—specifically with respect to the interaction patterns that used to take shape around hierarchically and centrally managed projects. Interactive planning implies a concentration of the interactions around a project and also facilitates them, puts them on a timeline, and links them to formal decisionmaking procedures. The overall coordination of these activities is known as 'interactive management'. This form of management applies not only to the process but also to the formulation of its contents. The question of interactions must be worked out and put in its proper place; the actors must be supplied with information—sometimes

they even need training; and the interactions must be directed toward a specific type of output. In short, this task involves much more than a good communication policy. Interactions may be capricious and unpredictable; that is why diversity is an important characteristics of interactivity.

From a methodological point of view, interaction must not be seen as a unique event, but as a process. Moreover, it is a process that must be flexible—especially with respect to the potential inclusion of different stakeholders. It is not only about *who* gets involved, but also *how* they are involved. One should realize that civic organizations may have a material and/or emotional interest in the project, but their relation to the project is necessarily different from what the authorities might prefer from a functional point of view. Public involvement in interactive processes is always without commitment. The cases reveal that this lack of commitment may be a given, but also that it does not necessarily have a negative effect on the process. Trust is much more crucial. To be able to invest in trust requires respect for the standpoints of opponents and their interests. It also requires reflection on one's own motivations for being among the participants in a development process. Aiming for consensus and the construction of broad support may be legitimate goals for a project manager, but not necessarily for the participants. Trust also implies accepting that some participants will be involved in the project only up to a point, and will not fully commit themselves—as was seen in the case of the A4. Project leaders must be able to deal with this type of uncertainty, which mostly occurs within the process. This does not necessarily affect the implementation of the process itself; clarity about the timeline of the planning may be essential for the effective completion of the process.

Diversity is also expressed in the fluctuating intensity of public involvement in the cases. In principle, actors from all domains of society may participate in interactive planning. Among the investigated cases, one or more of the following social sectors were represented: professional civic organizations; other public authorities; businesses; individual citizens; and ad hoc advocacy groups and organizations of residents. People from these groups participate because it is in their own interest: they have a *stake* either in the completion of the plans of the initiator (usually one or more government authorities) or in the area that is affected by the plan. The project management makes an appeal to them on the basis of this interest, and this interest, in turn, informs their role in the process. The individuals who participate in an interactive process are therefore not involved as voters or as taxpayers (that is, in accordance with their individual, constitutional, standardized relationship to the public authorities), but as residents (road) users, recreational visitors, farmers, property owners, or entrepreneurs (in short, according to a specific, sometimes collectively defined, differentiated relationship to the public sector). Sometimes participants are invited to become involved because of their specialized knowledge concerning the plan or the area, but even then they are supposed to contribute their expertise, and therefore their involvement is again based on their specific relationship to the issue.

These forms of diversity need to remain limited to what may be termed an 'instrumental perception of interactivity'. From this perspective, the effectiveness of public policy is perceived to be problematic. The interactive approach results from the necessity or desirability of introducing an alternative approach to reactivate a project that has become bogged down. The planning agency could not make any progress without some form of involvement of (part of) the relevant civic sector. Crucial to this involvement is the introduction of 'learning processes', through dialog, and of 'exchange', through negotiations. Learning processes are meant to facilitate the exchange of knowledge and the improvement of understanding (learning), whereas negotiations are ultimately meant to offer alternatives to be acted upon (exchange)

(Driessen, 1998). Within the context of interactive planning, both processes are subordinate to and incorporated in the usual decisionmaking procedures. These decisionmaking procedures are meant to give the policy decisions their legitimacy. Therefore, a realistic (that is, implementable) plan must eventually be made. Transparency of the process proves to be essential for the planning agency. The size and the composition of the group of participants and the degree of reciprocity among the people involved must also remain manageable. Interactivity is clearly not pursued because of any intrinsic motivation to reform the formal procedures of democracy. Rather, interactive planning is meant to restore democratic structures. The fundamental question of how open and interactive the process ought to be was not considered in any of the cases. If the outcome appears to be widely supported, and the solution is technically feasible, both the process and the results are judged to have been positive. In this respect, interactive management is closely linked to integrative negotiations (Stout and Hoekema, 1994; Susskind and Cruikshank, 1987), alternative dispute resolution (Glasbergen, 1995), and mediation (Susskind et al, 1999).

8 Conclusions

Each infrastructure issue constitutes its own specific administrative and social context, described above as a 'political space'. The political space for the completion of infrastructure projects in the Netherlands has changed drastically in recent years. The emphasis has clearly shifted to interactive planning, which has resulted in a variety of new cooperative relationships among authorities, civil organizations, and the public. A new model of project management is gradually emerging, and it has the following features:

(a) Infrastructure projects are managed by the organization that considers itself to be the owner of the problem in the context of a broadly defined problem relating to the overall restructuring of an area. This organization is not necessarily the government planning agency.

(b) The involvement of the planning agency in the project is based on a specific aspect of an issue, is sometime cosponsored by other authorities, and relies on expert knowledge. The planning agency does not have to be the project leader.

(c) A project is broadly defined and is comprehensive. In addition to the interests that directly reflect the responsibilities of the planning agency, attention is also paid to the interests connected to policy on the environment, nature conservation, and space.

(d) From the outset, project management is open in its administrative and social context. Many problem definitions and options for solutions generated by a broad range of participants, including nongovernmental organizations, are discussed in an interactive process.

(e) Within a project, the knowledge of experts is linked to the practical knowledge and perceptions of nonexperts. The communication pattern is symmetrical.

To a large extent, this model can be recognized in the cases described above. We may conclude that its application has led to the resolution of stalemates in the course of project development. In each instance, it proved crucial to widen the issue and, at the same time, to connect it to a more interactive format for the project. Each project resulted in the formulation of a plan more quickly than had previously been the case. Many of the stakeholders expressed their satisfaction with the quality of the process: the organizational fragmentation had been eliminated, and the project development had become more of a cooperative venture. The solutions are now less disputed: they meet the requirements of a wider range of interests, and most of the participants feel the solutions are more sustainable. Ultimately, it is unthinkable that the planning of new infrastructure and the adaptation of existing infrastructure could take place without at least some measure of interactivity.

From the point of view of a public agency, interactivity needs to be functional—by, for instance, contributing to the progress of the projects. But functionality means different things to different parties in an interactive process. Thus, functionality is determined less by strict regulation, even though clearly defined decision points and timelines are important, than by the ability to build trust. The distrust of planning agencies commonly observed in civil society is not only the result of 'past mistakes' in a given project. It is also part and parcel of, and stimulated by, a widely shared sense that the agencies of the public sector tend to ignore the interests of stakeholders (especially the less powerful ones) in the design and implementation of activities. A public agency or a project team can only gain the trust of the stakeholders if it is seen as the 'positive' exception to the rule. To achieve that trust, the project management has to ensure that its processes are open, transparent, and symmetrical such that they facilitate:

(a) participation of all stakeholders in the project and the dissemination of information on the project to each participant;
(b) respect for the goals of the participants;
(c) clarity about mutual goals;
(d) a broad definition of the problem that meets the expectations of all stakeholders;
(e) the curtailing of the dominance of special interests;
(f) equal treatment for experts and laymen;
(g) clear separation of dialogs and transactions (decisions).

It must be recognized that the goals of the actors from civil society are bound to differ from those of the project management. The process of project development must allow the civil participants enough room to specify and elaborate their positions. Therefore, it is often necessary to broaden the issue beyond the immediate interests of the authorities. The participants should be able to identify with the definition of the problem. In this respect, it should be kept in mind that the goals of all stakeholders must be clear. This does not preclude the acceptance of a certain amount of non-committal involvement, because the goals of different interest groups can and will vary. One implication of this divergence is that the importance of consensus and support is relative. To build support and consensus may be the goal of the project management, but the other participants may not necessarily share this goal. It may be more important to try to reach agreement on the nature of the problem and its possible solutions. To reach such agreement, it is necessary to prevent the domination of the process by specific interests. An additional task for the planning agency is to ensure that both technical and other forms of knowledge are given equal respect and judged on their merits. Interactive planning should be mutual: it is not intended as a forum in which citizens and civic organizations are taught to reach decisions in the same way as the technical planners. In general, the general public does not hold technical knowledge in high esteem, and decisions that are based purely on scientific considerations or on a sophisticated design tend not to convince the civil sector of the benefits of the project. From this perspective, technical knowledge is but one of the resources for the development of a project, no more than that, and should be treated accordingly. Finally, it should be emphasized that an interactive project will lead to political decisions, either gradually in various stages or at the end; this goal orientation gives the interactive planning process its specific character. Interactivity that results in shared insights increases the chances of reaching political consensus, though this outcome is not guaranteed. Political decisionmaking is grounded in a different and separate responsibility. Nevertheless, the political parameters have to be a clear at the outset of the process.

References

De Bruijn J A, Ten Heuvelhof E, In't Veld R, 1998 *Procesmanagement: over procesontwerp en besluitvorming* [Process management: about process design and decisionmaking] (Academic Service, Schoonhoven)

De Jong M, 1998, "Rijkswaterstaat (1798 – 1998): na 200 jaar Frans model klaar voor een omwenteling?" [Directorate General for Public Works and Water Management 1798 – 1998] *Beleid & Maatschappij* **25** 311 – 322

Driessen P P J, 1998, "Concluding remarks: the scope of co-operative management", in *Co-operative Environmental Governance: Public – Private Agreements as a Policy Strategy* Ed. P Glasbergen (Kluwer, Dordrecht) pp 251 – 268

Driessen P P J, de Gier A A J, 2001, "Sturing van grote ruimtelijke inrichtingsprojecten" [Governing huge planning projects], in *Duurzaam ruimtegebruiks* [Sustainable land use] Eds P P J Driessen, F C M A Michiels, E-J Molenaar (Boom, The Hague) pp 43 – 70

Driessen P P J, Glasbergen P, Verdaas C, 2001, "Interactive policy-making: a model of management for public works" *European Journal of Operational Research* **128** 322 – 337

Glasbergen P (Ed.), 1995 *Managing Environmental Disputes* (Kluwer, Dordrecht)

Glasbergen P, 2002, "The Green Poldermodel: institutionalising multi-stakeholder processes in strategic environmental decision-making" *European Environment, The Journal of European Environmental Policy* **12** 303 – 315

Healey P, 1997 *Collaborative Planning: Shaping Places in Fragmented Societies* (Macmillan, London)

Healey P, 2000, "Towards a more place-focused planning system in Britain", in *The Governance of Place: Space and Planning Processes* Eds A Madanipour, A Hull, P Healey (Ashgate, Aldershot, Hants) pp 265 – 286

Hillier J, 2002 *Shadows of Power: An Allegory of Prudence in Land-use Planning* (Routledge, London)

Korsten A F A, 1996, "Technisch-complexe projecten: een verkenning" [Technically complex planning projects: an exploration], in *Grote projecten: besluitvorming & management* [Huge planning projects: decisionmaking and management] Eds J A de Bruijn, P de Jong, A F A Korsten, W P C van Zanten (Samsom Tjeenk Willink, Alphen aan den Rijn) pp 22 – 105

Schön D, Rein M, 1994 *Frame Reflection: Toward the Resolution of Intractable Policy Controversies* (Basic Books, New York)

Stout H D, Hoekema A J (Eds), 1994 *Onderhandelend bestuur* [Negotiating governments] (Tjeenk Willink, Zwolle)

Susskind L, Cruikshank J, 1987 *Breaking the Impasse: Consensual Approaches to Resolving Public Dispute* (Basic Books, New York)

Susskind L, McKearnen S, Thomas-Larmer J (Eds), 1999 *The Consensus Building Handbook* (Sage, London)

Teisman G R, 1997 *Sturen via creatieve concurrentie: een innovatie-planologisch perspectief op ruimtelijke investeringsprojecten* [Governing via creative competition] (Katholieke Universiteit Nijmegen, Nijmegen)

Van der Arend S H, Glasbergen P, Driessen P P J, 2002 *Partner in de regio: ervaringen met interactive planvorming en regionale samenwerking van Rijkswaterstaat, Zuid-Holland* [Partner in the region] Ministry of Transport, Public Works and Water Management, The Hague

Woltjer J, 2000 *Consensus Planning: The Relevance of Communicative Planning Theory in Dutch Infrastructure Development* (Ashgate, Aldershot, Hants)

Woltjer J, 2002, "The 'public support machine': notions of the function of participatory planning by Dutch infrastructure" *Planning, Planning Practice and Research* **4** 427 – 453

WRR, 1994 *Besluiten over grote projecten* [Decisionmaking about huge planning projects] Netherlands Scientific Council for Government Policy (SDU uitgeverij, The Hague)