



FINAL REPORT  
ON THE WEALTH EFFECTS OF  
DIFFERENT METHODS OF FINANCING  
ELECTRONIC DATABANKS

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## 0. EXECUTIVE SUMMARY

Over a 6-month period Berenschot, in cooperation with NEI, has made an extensive study of the consequences of opening up access to public sector electronic databanks.

The starting point of our study was the Ministry's aim that public sector information should be accessible as broadly and easily as possible and at the lowest possible cost for those wishing to make use of this information. In this study we have focused on determining how various forms of pricing would affect the accessibility of public sector databanks. We have examined the consequences of these forms of pricing to determine their effect on wealth in qualitative and quantitative terms. In addition, we have examined how various policies have been put into practice. In this connection we have paid particular attention to the advisory report of the Social and Economic Council (SER) and the Directions issued by the Prime Minister on public sector involvement in commercial activities.

The hypothesis underlying this study was:

*Providing open access to (electronic) public sector databanks boosts wealth.*

The study concerned the following four databanks:

- the Rotterdam Large-scale Base Map (GBKR) of the Municipality of Rotterdam;
- the Current Elevation Model of the Netherlands (AHN) of the Survey Department of the Directorate General for Public Works and Water Management;
- the Top-10 Vector Databank (TVB) of the Netherlands Topographical Agency;
- the General Databank of Legislation and Regulations (ADW) of the Ministry of the Interior and Kingdom Relations.

In the final report we have described on a case-by-case basis the main effects of the various pricing scenarios (zero price, marginal cost price and full cost price). A more detailed description of the cases is given in the annexes to this report.

In studying the cases we have, where possible, taken a broader perspective and tried to identify more general characteristics of the cases in order to be able to make pronouncements of more universal validity.

In this executive summary we have described the main results of our study:

1. In a number of organisations the public function is not recorded in an act of parliament or a formal decree. This creates uncertainty about the distinction between the public function and commercial activities.
2. At present, the prices charged for access to the three geographic databanks lie between the marginal cost price and the full cost price. As a result, third parties are subsidising the performance of a public sector function. We refer to this as cross-subsidisation.
3. Customers have indicated that they would have no difficulty accepting a full cost price or a marginal cost price, but would object to an intermediate price. This could distort competition.
4. The price that has the greatest effect on wealth at micro level in all four case studies is the marginal cost price. This is a price that is higher than the price payable for information under the Freedom of Information Act, where such information is provided in consideration of payment of the costs of a postage stamp or diskette. For the purposes of the study, marginal costs include all costs attendant on the provision of information from the databanks. This also therefore includes promotional, staff and technical costs.
5. The marginal cost price and the zero price entail higher costs for the core function authority and lower costs for customers (in comparison with higher prices). This increased financing burden for the public sector can result in a tax increase.
6. The three geographic organisations engage in commercial activities, which entail a risk of market distortion. This is why:
  - the public function should be regulated by law; it is anyway necessary to define the public function in order to be able to determine whether an activity comes within this function;
  - pricing should be transparent;
  - it should be realised that the present pricing method distorts the market the most.
7. The market has a great need of clarity; postponement of clear choices about the core function and pricing lead to postponement of investment, which is disadvantageous to the entire market.

8. Extrapolation from the quantitative effects shows that substantial extra wealth could possibly be created if electronic access were provided to all public sector databanks. However, this conclusion can only be very tentative, because no research has been done into the 30,000-40,000 public sector databanks and the four case studies cannot therefore be regarded as representative.
9. The democratic process is influenced to a limited extent by the pricing of access to databanks that are intended mainly for professional users. There is a technical barrier (in the form of the requisite equipment and know-how) for non-professional users. Substantial investments would be necessary in order to surmount these barriers. However, it is very doubtful whether members of the public would be interested in consulting such databanks.
10. Making public sector databanks accessible to third parties could aid transparency and hence improve the efficiency of the public sector, particularly if the databank were elevated to the status of standard. In the case of the professional databanks such as the geographic databases, pricing has only a limited effect on the degree of transparency.
11. On the basis of our contacts with customers, the size of the geographic markets would seem to be much smaller than the NLG 400 million suggested in previous studies.
12. The expectation of market participants is that linking together the various public sector databases could open up extra markets. It would be important in this connection to provide clear guidelines for use.
13. There is price discrimination. From an economic perspective price discrimination is not intrinsically wrong. It can help to maximise economic wealth effects.
14. There is no form of pricing that has only advantages. The form to be preferred depends on the priorities. The democratic process and the economic effects can evidently be at odds with one another. The marginal cost price is the most advantageous in terms of promoting economic wealth, whereas the zero price is most advantageous to the democratic process.
15. The research method can be used as a checklist for public sector bodies to make choices about defining the public function and commercial activities.



16. The study has been confined to a single database of each of the four organisations. In the case of the Netherlands Topographical Agency (TDN), however, this is the organisation's basic databank. As a result, changes in connection with the databank may possibly affect the entire organisation. The possible consequences fall outside the scope of this study.

In drawing the conclusions described here, we have endeavoured as far as possible to make pronouncements that are of general validity. We would refer to our report and to the annexes for an explanation of the underlying theories (economic and otherwise), points of view and descriptions and conclusions of the case studies. The chapter on the conclusions and recommendations in this report contains a further explanation of the conclusions and a step-by-step plan that is applicable to every databank.

## 1. INTRODUCTION AND QUESTION

### 1.1 ACCESSIBILITY OF PUBLIC SECTOR DATABANKS

On 26 April 2000 Mr Van Boxtel, the Minister for Urban Policy and the Integration of Ethnic Minorities, presented a policy report entitled 'Towards optimum availability of public sector information' to the Lower House of the Dutch Parliament.<sup>1</sup> The report sets out the government's position that under the rules of the Freedom of Information Act (*Wet openbaarheid van bestuur - WOB*) access to public sector information should be available to third parties at no more than the additional cost of providing the information. It is also noted that this policy can have substantial financial, organisational and qualitative consequences for the managers of approximately 10% of the government databanks.

In order to obtain more information about such effects, the Ministry of the Interior and Kingdom Relations commissioned Berenschot to study, in cooperation with the Netherlands Economics Institute (NEI), the effect on wealth of various forms of financing access to electronic databanks.

This subject is as fundamental as it is complex. It is *fundamental* because the public sector has (electronic) databanks whose general accessibility and availability to third parties would have a great influence on the functioning of democracy and can make a substantial contribution to national wealth. It is *complex* because the government databanks are very different in terms of their design, nature, target group and manner of financing and it is by no means easy to predict how the provision of open access to them will affect wealth.

### 1.2 THE KEY QUESTION

The position taken by the Ministry is that public sector information should be accessible as broadly and easily as possible and at the lowest possible cost for those wishing to make use of this information.

For the purpose of the study, it is of particular relevance to examine the impact of different forms of pricing on the accessibility of public sector information.

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<sup>1</sup> 'Naar optimale beschikbaarheid van overheidsinformatie', Tweede Kamer, 1999-2000, 26387, no. 7.

We have sought to determine the impact of these pricing forms by examining the effect on wealth, financing, the dividing line between the public and private sector and the organisational aspects of public bodies.

The hypothesis underlying this study is:

*Providing open access to (electronic) public sector databanks has wealth effects.*

### 1.3 THE FOUR CASE STUDIES

Given the breadth and complexity of the present question, it was decided to carry out the study in relation to four existing databanks:

- the Large-scale Base Map of Rotterdam of the Municipality of Rotterdam (GBKR);
- the Current Elevation Model of the Netherlands (AHN) of the Survey Department of the Directorate General for Public Works and Water Management;
- the Top-10 Vector Databank of the Netherlands Topographical Agency;
- the General Databank of Legislation and Regulations of the Ministry of the Interior and Kingdom Relations (ADW).

In each of these four cases we have provided:

- a theoretical explanation of the effect of the different forms of financing on wealth;
- a description of any tipping points at which the economic value to society can be increased by changing the form of financing;
- recommendations for criteria on the basis of which a suitable form of financing can be found for a databank or a political decision can be taken on the different interests involved.

In this report we have confined ourselves, however, to a summary of the description of the cases and the main conclusions. For a full description of the cases we would refer the reader to the annexes.

In studying the cases, we have, where possible, broadened the scope of the study and attempted to identify general characteristics of the cases so that it is possible to divide the market by reference to categories of features.

## 1.4 FURTHER STRUCTURE OF THE REPORT

The present study of the effect on wealth is fairly unique in terms of its extensiveness and is based on detailed economic models. We have described these models in the annexes. This description also demonstrates the complexity of a study of this kind. There are different effects at micro, meso and macro level, which influence one another. We have described the main effects of the different forms of pricing (zero price, marginal cost price and full cost price) on a case-by-case basis.

In addition to the impact on wealth, we have examined how various policies have been put into practice. In this connection we have paid particular attention to the advisory report of the Social and Economic Council (SER) and the Directions of the Prime Minister concerning commercial activities.

The executive summary (chapter 0), which precedes this chapter, lists the overall conclusions. Chapter 1 outlines the question under consideration and the design of the study. In chapter 2 we explain our approach and procedure. Chapter 3 describes the evaluation framework, together with the perspectives and the effects we have examined. The results of the four cases are set out separately in chapters 4 - 7. Chapter 8 contains some final remarks and a few recommendations.

## 2. APPROACH AND PROCEDURE

### 2.1 PROCEDURE

This study is the product of cooperation between the Netherlands Economics Institute (NEI) and Berenschot. In view of the nature of the study, it was concluded that combining the expertise available in the two organisations would create value-added for the customer.

Prior to the actual study, we developed a research framework<sup>2</sup>. Carrying out our research on the basis of such framework forms an essential part of our procedure. The function of the framework is to provide clarity in advance about how we divide up the central research question into manageable sub-questions for operational purposes. In addition, the framework makes clear in advance by reference to what methods and techniques and on the basis of what information sources we answer the research questions. The framework has been adopted by the client.

### 2.2 METHODS AND INFORMATION SOURCES

In answering the research questions we have made use first and foremost of various documents and other written material. A list of them is included in the annexes.

Second, we have held discussions with key figures in the four organisations involved in the case studies. A list of the interlocutors is included in the annexes.

Third, we sent out a questionnaire to the customers and potential customers of the four cases studies. The results of this questionnaire form an important input for our analysis and findings.

Finally, we held talks with a number of competitors of the Netherlands Topographical Agency (TDN).

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<sup>2</sup> Research framework case study organisations, Utrecht, 29 August 2000.

## *Questionnaire among customers*

The customers and potential customers of the four cases studies are all businesses and institutions which are in contact with the organisations that form the subject of the case studies.

We first sent an invitation to approximately 100 customers, inquiring whether they wish to participate in a group meeting where the interactive group system would be used. However, as the overall response was low for various reasons, we decided to send out a questionnaire to the customers. The questionnaire was sent to approximately 500 current and potential customers. In the end, 103 customers completed the questionnaire and returned it to us. The questionnaire is included in the annexes.

- Accordingly, the total response to the questionnaires was approximately 20%.

## 2.3 RELIABILITY OF OUR STATISTICAL RESULTS

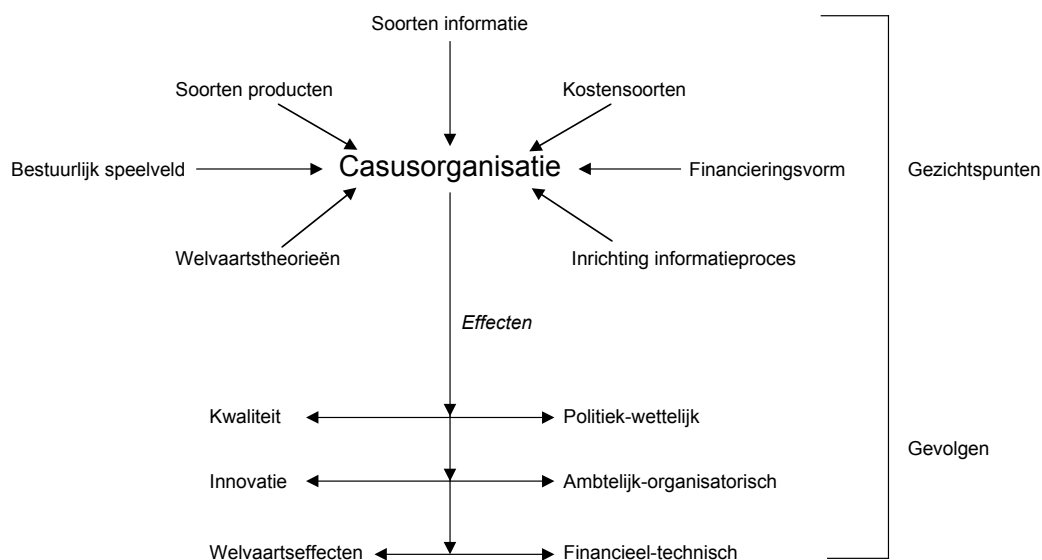
The statistical results had been counted on the basis of various methodological assumptions as is customary in the case of a quantitative exercise of this kind. The aim of the assumptions is to ensure that the study is practicable. Naturally, this produces specific statistical results which probably differ from the actual figures. The statistical determination of the effects on wealth should therefore be regarded merely as an indication of the order of magnitude of these effects. We do, however, believe that the figures provide a sufficiently robust basis for pronouncements on them.

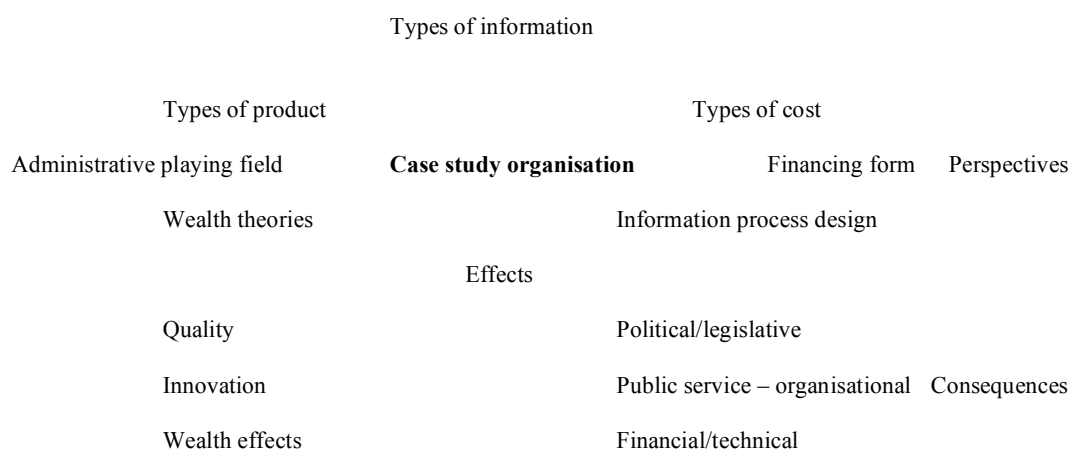
## 3. EVALUATION FRAMEWORK: PERSPECTIVES AND CONSEQUENCES

In this chapter we describe the evaluation framework and the perspectives from which we have examined the four cases. We also indicate what consequences we have examined.

### 3.1 EVALUATION FRAMEWORK AND CONSEQUENCES

In our study we have evaluated the cases by reference to a number of perspectives and their consequences. This is shown in the following figure.





The figure shows that we have examined the databanks of the organisations concerned from different perspectives and evaluated their effect on wealth, quality of service and innovation. We have also assessed what this means in political and legislative terms, in terms of the organisation of the public service and in financial terms. We have described these perspectives below.

### 3.2 CATEGORIES OF INFORMATION AND BASIC PRICING

In his letter<sup>3</sup> to the Lower House of Parliament on the ‘Electronic Government Action Programme’, Mr Van Boxel, the Minister for Urban Policy and Integration of Ethnic Minorities, divided public sector information into the following three categories:

- *Basic information essential to the proper functioning of democracy.* This includes (national and international) laws and court judgements relating to the Netherlands and public documents of representative bodies. It is intended that this information should be capable of being consulted free of charge by the citizens and that the medium itself should be made available at cost price.
- *Information under the Freedom of Information Act (WOB).* This category consists of information of the public body which relates to policy that is being prepared, decided upon or implemented. It includes electronic databanks of the public sector and information emanating from them. It does not include databanks that have no connection with the administrative

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<sup>3</sup> Letter of 20 April 2000, Lower House, 1999 – 2000 parliamentary year, 26387, no. 7. This is the policy report ‘Towards optimum availability of government information’.

activities of the authority concerned. The price is determined by the costs of producing the medium, by which is meant the postage stamp, diskette, etc.

- *Other information.* This category consists of information which is regulated separately in legislation and information unconnected with administrative activities (research reports and catalogues). There are no restrictions on the price that can be charged for such information other than those indicated in the specific legislation concerned.

### 3.3 PRICING

- Our study is based on an evaluation of three forms of pricing: zero price, marginal cost price and full cost price. For our purposes, zero price is the same as provision free of charge. Marginal cost price means that the customer pays a price that is equal to the costs of provision. In other words, the (fixed) costs of the data infrastructure not taken into account in this price. This is different from full cost price. Here, the total number of products that will be sold is first estimated, after which all costs (fixed and variable) are divided among these products. This gives the full cost price.

In our study we have examined the present situation as regards costs, revenue and pricing. We have also asked existing and potential users of the public sector information about their possible actions in response to the different prices.

### 3.4 FORMS OF FINANCING

In our study we distinguish between the following three forms of financing:

- financing from public funds: payment by government on the basis of a fixed fee determined by reference to an approved budget or on the basis of delivered performance;
- financing by charging the full cost to customers;
- a mix of the other two forms of financing.

The following table shows the different forms of financing and their sources.

FORM OF FINANCING	SOURCE OF FINANCING		
	PUBLIC SECTOR BODY	OTHER AUTHORITIES	MARKET
Financing from public funds	✓	✓	
Financing by customers		(✓)	✓

- In this table we have distinguish between public sector bodies and other public bodies in order to show who pays and how. For example, the public sector body (i.e. the four organisations involved in the case studies) receive resources for financing the data infrastructure (all parts of the infrastructure) on the basis of a budget fixed in advance or on the basis of a given performance. This remuneration is paid from public funds.
- Other public sector bodies and market participants may also pay for products and services. Once the prices that are paid exceed the costs of provision, they help to cover the fixed costs. This then constitutes financing by customers, in which connection we distinguish between financing by other public bodies (which we then treat as financing from public funds) and by market participants.

The mixed form consists of financing from public funds and financing by market parties. Finally, we would point out that we do not regard payment of the costs of provision (or less) as a form of financing, because they do not help to cover the fixed costs.

### 3.5 PRICING, FINANCING AND CATEGORY OF INFORMATION ARE INTER-RELATED

In his letter on the categories of information (i.e. basic information essential to the proper functioning of democracy, information under the Freedom of Information Act and other information) the Minister also makes pronouncements about the relevant pricing (see section 3.2). These pronouncements relate to the provision of an end product. In his letter the Minister does not make any explicit pronouncements about the provision of access to the databank itself, under which third parties would obtain de facto access to the same databank as the public body concerned. Nonetheless, we have assumed the purposes of this study that the same guidelines apply here as for the delivery of an end product.

Access can be provided in two ways: the first is logging in to the databank directly, which requires all kinds of security measures to prevent, for example, changes to the databanks. The second, safer way is to provide the databank on a



CD-ROM. This makes greater demands on the capacity of the customer and on the updating of the information.

The methods of financing are related to the pricing systems. After all, if the public sector considers, for example, that basic information essential to the proper functioning of democracy should be capable of being consulted free of charge and should be provided at the cost of provision, this means that maintaining the data infrastructure, including making it available in practice, should be financed from public funds. The same applies to access to information under the Freedom of Information Act. In the case of the 'other information' category, matters are different: here all forms of financing are possible.

The financing situation can change at the moment when commercial activities are permitted and rates are applied which exceed the full cost price (see section 3.8.2 on the Directions issued by the Prime Minister).

We have shown the connection between the different types of information, pricing and financing in the following table:

CONNECTION BETWEEN TYPE OF INFORMATION, PRICING AND FINANCING <sup>4</sup>				
Type of information	Concerning	Pricing of an end product, including access to the databank <sup>5</sup>	Financing	Conditions
Basic information essential to functioning of democracy	Laws Court judgments Public documents	Consultable free of charge Provision at cost of producing the medium	Public funds	No restrictions on re-use, whether for commercial purposes or otherwise
Information under the Freedom of Information Act	Information of an administrative authority relating to policy which is being prepared, decided upon or implemented. Also databanks (and information from them) connected with the administrative information.	Cost of producing the medium.	Public funds	Re-use is restricted only if the Copyright Act, the Databanks Act or the Data Protection Act is applicable.
Other information	Information regulated separately in laws. Information unconnected with administrative action (research reports and catalogues).	Dependent on the specific law. No maximum price	Mixed form	Re-use is dependent on the specific law, specific agreements and the Copyright Act, the Databanks Act or the Data Protection Act.

<sup>4</sup> ‘Towards optimum availability of public sector information’ policy; letter from Mr Van Boxtel, Minister for Urban Policy and Integration of Ethnic Minorities, to the Lower House of Parliament, 20 April 2000 (Lower House, 1999-2000 parliamentary year, 26387, no. 7).

<sup>5</sup> The Minister does not make any explicit statements about this in his memorandum. In our study we have assumed that the same guidelines are applicable.

## 3.6 INFORMATION PRODUCTION PROCESS AND TYPES OF COSTS

- The following table shows the various steps in the information production process. This shows what parts of the public sector information process are carried out by the public sector itself and what parts by or in cooperation with other organisations.

Process steps	Step performed by			
	Private individual	Business	Other public organisations	Public sector (organisation) <sup>6</sup>
1. Delivery and collection of basic data				
2. Storage, management and maintenance				
3. Processing for the purpose of delivery				
4. Delivery (products or services)				
5. Use				

We have divided the process steps into the supply and collection of basic data, storage, management and maintenance of data, processing for the purpose of delivery, delivery itself and the use of the information.

The division of the production process into these steps is of importance because it enables us to study more precisely the limits of the government function. This can be done, for example, from the perspective of the advisory report of the Social and Economic Council and the Directions issued by the Prime Minister concerning the rules governing public sector involvement in the market.

The first two steps are necessary in order to produce the first unit, and the third and fourth steps are necessary in order to be able to make copies. The costs of the first two steps are fixed or sunk costs.<sup>7</sup> Only a single unit is required for the public sector, namely the databank. Part of the costs of the processing and provision is fixed (e.g. the costs of removing confidential information from the original databank) and part is variable (e.g. the costs of each provision of information).

<sup>6</sup> In this table we have used ‘public sector (organisation)’ to mean the organisation involved in the case study concerned.

<sup>7</sup> Variable costs are costs that vary according to the number of units produced. Fixed costs are independent of the production scale, but are necessary for the production. If the production is ended, the fixed costs no longer exist. Sunk costs generate revenue over a long period, but can never be recovered. Such costs do not disappear when production ceases.

## 3.7 TYPES OF PRODUCT AND SERVICE

In our study we distinguish between three types of product or service. First of all, there are the end products which are delivered on the basis of the public sector databank. We have divided these into two types: standard products and customised products made at the request of third parties.

The third type concerns access to the databank itself, which enables third parties to carry out their own processing and produce their own end products. In our study we have confined ourselves to the 'delivery of access to the databank' product.

## 3.8 THE PLAYING FIELD

In this section we describe successively the Cohen framework, the Directions of the Prime Minister, the advisory report of the Social and Economic Council and the proposed policy of the Ministry of Economic Affairs. These relate to commercial activities by public sector organisations. At the end of this section we describe the playing field from which we have viewed the four cases.

The basic premise of the Cohen framework, the Directions of the Prime Minister concerning the involvement of central government organisations in open commercial activities, the advisory report of the Social and Economic Council and the outline report on market and government is that public sector organisations should, in principle, confine themselves to their public function and should not engage in activities in the open market or compete unfairly with commercial organisations. They should not be engaged in commercial activities except where it can be shown that wealth can be boosted more in this way than if the activities were carried out by market participants. In order to decide on commercial activities it is important to determine what is in the public interest and what public functions are involved. If it is demonstrated that it is desirable for a government organisation to engage in commercial activities, they should be assigned to a separate legal entity under private law and also recorded in legislation.

### 3.8.1 The Cohen framework

In its final report (27 February 1997) the Cohen working group mainly concentrates on organisations that have exclusive or special market rights (which it terms OEMs). These are organisations that carry out a public function pursuant to a government decision and for this purpose have an exclusive or special

position, whether temporarily or permanently, in terms of rights of market access or funding.

The Cohen working group notes that these OEMS are increasingly competing with companies that do not have market rights of this kind. This is possibly giving them an unfair competitive edge and creating the risk that their public function will be adversely affected. This may occur, for example, through the leakage of public funds. As the working group points out, ‘When government bodies operate on open markets in the course of or in addition to their public function they should proceed on the basis that they are in the same competitive position as private-sector businesses engaged in the same market.’

The working group has developed two ‘remedy routes’ against unfair competition. The first is an indication of the conditions on which commercial activities take place in competition with third parties. This produces the basic rule that commercial activities should be separated and disposed of in a legal, organisational and financial sense. The second route is to generate competition for the public function of the OEM. If the exclusive position of the OEM in respect of its public function is ended, this also prevents inequality in other markets in which the OEM undertakes commercial activities.

In so far as operations of a public body impinge on commercial activities, the Cohen working group formulates the following four exceptions:

- the market activity is inseparable from the exercise of the OEM’s public function;
- commercial activities in the area of production and transfer of know-how, in so far as the quality of the activities is superior to that of available market alternatives and/or creates value-added for the exercise of the public function; the working group believes that putting this exception on an operational footing will be difficult, and advocates that standards be developed in practice;
- commercial activities in order to utilise the residual capacity which occurs because an indivisible technical and/or operational minimum capacity is inevitable for the performance of the public function.
- commercial activities from the perspective of a serious and disclosed decision to create competition for the public function.

## 3.8.2 The Directions issued by the Prime Minister

On the basis of the Cohen framework the Prime Minister issued the ‘Directions for the performance of commercial activities by central government organisations’.<sup>8</sup> These directions apply only to government ministries and services and agencies associated with them, but they also serve as a signal to other government organisations and public bodies.

The basic premise is that a part of the central government may perform commercial activities only subject to strict conditions. Such activities may be performed only if they have been commissioned by law, result from international obligations or come within the following two exceptions: ‘commercial activities inseparable from the performance of the public function’ or ‘the use of residual capacity<sup>9</sup> for the performance of commercial activities’. However, an explicit decision should be taken by the responsible minister.

The directions also lay down guidelines as to the situations in which commercial activities are permitted. The price should be based on the full costs of production, increased by a number of (notional) levies and the mark-up usual in the market concerned. The resources deployed should be transparent in administrative terms. It should be noted that no distinction is made in these directions between different types of information, as is done in the policy document ‘Towards optimum availability of government information’.

There is also an explicit guideline for the use of data, namely ‘data collected for the performance of a public function may be used for the performance of commercial activities only if these data are accessible to everyone on the same terms’. Furthermore, personal data protected under the Data Protection Act may not be used for commercial activities. An exception to this rule applies where the use is permitted by or under the law.

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<sup>8</sup> These Directions came into force on 1 July 1998.

<sup>9</sup> Residual capacity is the difference between the capacity needed in order to discharge the government function, less the actual utilisation of this capacity. An example often used is that of a military aerodrome, which needs to be of a minimum size but is not always in use for military purposes.

### 3.8.3 SER advisory report

The advisory report of the Social and Economic Council (SER) is based on the Cohen framework. It tightens up some aspects of the framework, for example the obligation to have a statutory basis for non-public activities. At the same time, it also deals with other parts at a more abstract level. For example, the remedy routes explicitly described in the Cohen framework have been included in determining the effect on wealth.

The coalition policy accord makes provision for the rules governing the commercial activities of the public sector to be laid down by law. The accord states, ‘Rules governing the commercial activities of the public sector itself shall be laid down. They should be incorporated in legislation to ensure that they can be enforced by the parties concerned.’

On the basis of this provision, the Social and Economic Council was requested to prepare an advisory report on 24 February 1999. The recommendations of this report have been endorsed by the government. The report of the Social and Economic Council provides that any market operation must comply with rules. Under the statutory provisions there are three rules governing access to commercial activities for public bodies:

- *A public body or an enterprise that has ties with the public sector is barred from engaging in commercial activities as long as they have no statutory basis.* This means that there must be a formal decision of a public body that requires the explicit consent of a democratically elected body. To be judged a sound socioeconomic decision, this should comply with the following requirements:
  - it should be clear what public objective the proposed commercial activity is intended to achieve;
  - there should be a cost-benefit analysis of the proposed commercial activity, taking account of the impact on the market position of the various parties that have a direct interest (private-sector businesses and customers, citizens and consumers); the decision on costs should be based, as far as possible, on the figures and should relate to the total effect of the commercial activity on wealth;
  - steps should be taken to ensure that the commercial activity of a public body or an enterprise that has ties with the public sector cannot result in abuse of market dominance;

- it must be indicated that, where applicable, the use of data of the relevant public body for the commercial activity is not permitted or that such data should also be available to third parties; personal data may be used only with the prior consent of the person concerned;
- public bodies and enterprises that have ties with the public sector have an obligation to give notice of the proposed decision to enterprises that may be affected by it; as a corollary, public bodies and enterprises that have ties with the public sector have an obligation to notify the proposed decision to the independent regulator.
- *The socioeconomic impact must be assessed.* Implementation of the commercial activity is permitted if it is evident in socioeconomic terms that the commercial activity may, on balance, help to create wealth. The activity must then be hived off to a separate legal entity under private law.
- *Situations in which there is a clear mixing of functions.* In other words, a public body may not grant a licence and at the same time carry out a commercial activity closely related to it.

In the view of the Social and Economic Council, this three-part proposal should also apply to existing commercial activities. It considers that a transitional scheme would be conceivable for this purpose.

The Council is not in favour of what it terms a ‘bagatelle provision’ (i.e. an arrangement for very limited activities) or of an arrangement for temporary and one-off activities.

As regards foreign public bodies or enterprises that have ties with the public sector, the Council recommends that the government raise this matter within the EU.

The third main issue arising from the request to the Social and Economic Council for advice concerns the rules of conduct. In its recommendations the Council deals separately with the Competition Act (*Mededingingswet*) and the proportionate attribution of costs. The Council endorses the position taken in the request for advice, namely that public bodies should be barred from compelling enterprises that have ties with the public sector to act in contravention of the Competition Act.

The Council is also in favour of proportionate attribution of costs and the passing on of costs by public bodies and enterprises connected with the public sector in the price of the commercial activity. If investments in respect of public activities can also be utilised for commercial activities, arm's length prices should be charged. In this connection, the passing on of costs and pricing should take place as in the case of a normal 'enterprise'.

The Council endorses the proposal that the Netherlands Competition Authority (NMa) should be entrusted with enforcement of the new rules of conduct. The Council recommends that an independent regulator be appointed to enforce the accession rules.

### 3.8.4 Future policy

At present, the Ministry of Economic Affairs is preparing legislation that will weaken the requirements specified in the advisory report of the Social and Economic Council. The essence of the draft legislation is that public bodies that are (or wish to be) engaged in commercial activities must demonstrate that there is scope for this. In other words, that there is a gap between the need for certain services and the services actually provided and that this gap is not covered, or only partially covered, by third parties. The relevant public body should demonstrate this gap. This is simpler than investigating the effect on wealth.

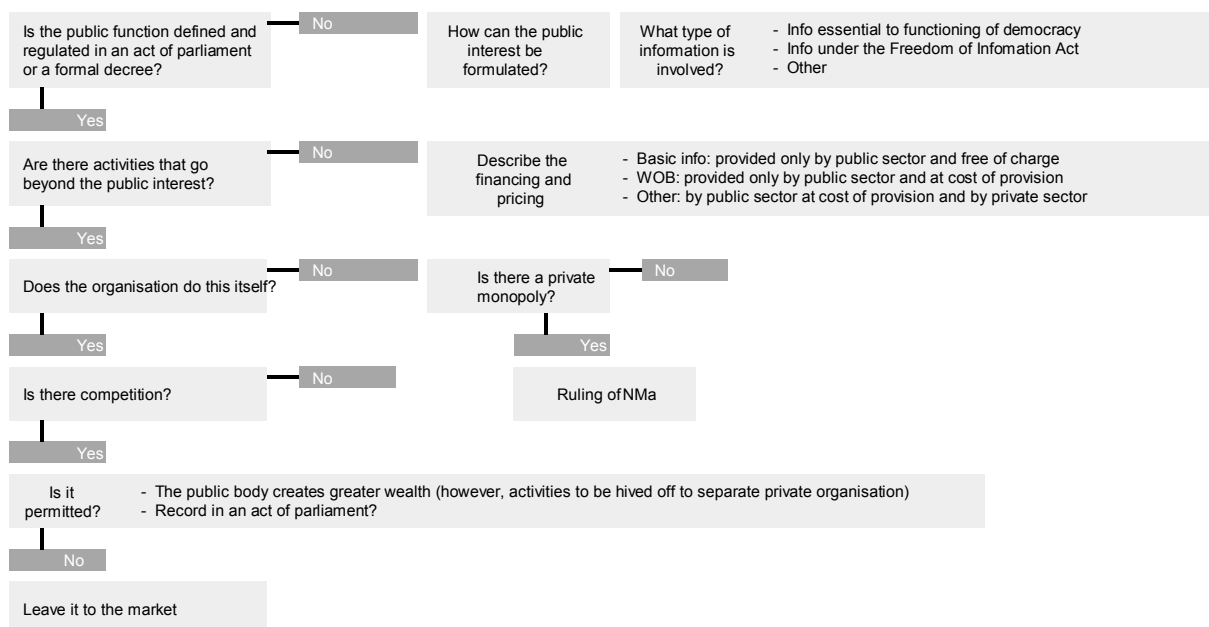
### 3.8.5 The playing field

In our study we have defined the (political and administrative) playing field as the Directions issued by the Prime Minister and the advisory report of the Social and Economic Council. It does not, therefore include either the Cohen framework, which we regard as the predecessor of these two sets of guidelines, or the future policy, which is not yet in force.

## 3.9 METHOD OF ANALYSING CASES

The following diagram shows the steps we take in analysing the cases from the perspective of the political and administrative playing field.

### Method of analysing cases



In studying the individual cases we have in each case ascertained first of all whether there is a public interest and public functions and, if so, whether they are regulated in an act of parliament or formal decree. We have then described to what category of information the case study relates. We have examined whether there are commercial activities and, if so, how they are financed and priced. Finally, we have examined whether there are reasons for permitting commercial activities and whether they are properly regulated.

### 3.10 THE CONSEQUENCES

In the study we have looked at the consequences of applying the guidelines that constitute the playing field (i.e. the Directions of the Prime Minister and the advisory report of the Social and Economic Council) to the four cases and at the effect of the different forms of pricing on wealth. These two angles of approach are to some extent interconnected. The advisory report of the Social and Economic Council indicates that commercial activities are permitted subject to certain conditions. For example, there must be a socioeconomic assessment showing that the commercial activity can, on balance, help to create wealth.

In order to be able to assess whether these commercial activities boost wealth to a greater extent if carried out by the public sector than by the private sector, it is necessary to examine the effect in both situations. The present study confines itself to one of the situations.

We have examined the effects on wealth in the existing situation and not, therefore, in the situation where they are possibly organised differently.

In our study we have looked at the consequences of applying the playing field criteria and the different forms of pricing. The following types of consequences occur:

- theoretical effects on wealth at micro, meso and macro level in the case of various forms of pricing (zero price, marginal cost price and full cost price);
- consequences for the information customers;
- consequences for the data managers in political and legislative terms, in terms of the organisation of the public service and in financial terms;
- consequences for the target group: possible broadening of the group.

### 3.11 THEORETICAL EFFECTS ON WEALTH

The theoretical effects on wealth at micro, meso and macro level in the case of the different pricing forms play an important role in our study. In chapter 4 we have described in more detail the theoretical effects. Below we have indicated what matters we have examined.

Pricing	Microeconomic effect	Mesoeconomic effect	Macroeconomic effect
Zero price			
Marginal cost price			
Full cost price			

This table shows that we have in each case examined what the different economic effects would be of the different pricing forms.

## 3.12 Consequences for the information customers

The consequences are examined in relation to the four cases for the following categories of customer:

- Internal customers of the government agency or ministries concerned. Internal customers are other parts of a ministry, and other ministries or agencies. All of these customers constitute part of the legal entity known as the State of the Netherlands. In the case of the Top-10 Vector Databank (TVB), for example, the Ministry of Defence is the main customer. In this study we refer to this as the core function authority.
- Other parts of the central government. These are legal entities whose status is directly linked to the public sector.
- Other tiers of government, i.e. municipalities, provinces and autonomous administrative authorities.
- Private sector customers (business and consumers).

## 3.13 CONSEQUENCES FOR THE DATA MANAGERS

The consequences for the data managers can be divided into the following categories:

- Political/legislative consequences: what do the results of the study signify for the legislation of the ministries concerned?
- Consequences for the organisation of the civil service: does requesting a higher price provide a quality incentive or lead to a different organisational culture? Must extra investments be made in order to simplify information and make it accessible?
- Financial consequences: if the financing can no longer be arranged through the budget, what is the position on the capital market and how can continuity be assured?

## 3.14 BROADENING OF THE TARGET GROUP

The assessment involves doing justice on the one hand to the basic principles of the Directions issued by the Prime Minister and the advisory report of the Social and Economic Council and, on the other, to the underlying notion that as much



public sector information as possible should be made available to the public. The political wish to broaden the target group must be viewed in the light of the financial consequences, this being ultimately a matter for political choices.

## 4. SUMMARY AND CONCLUSIONS IN RESPECT OF ROTTERDAM LARGE-SCALE BASE MAP

In this chapter we have summarised the results of the case study of the Rotterdam Large-scale Base Map (GBKR) and drawn conclusions from them. At the end of this chapter we give three tables showing the different effects of the pricing forms at micro, meso and macro level.

### 4.1 ABOUT THE GBKR

The Rotterdam Large-scale Base Map (GBKR) produces standard map sheets to a scale of 1:1000 or 1:500. The large-scale base map forms the mathematical base map for all positionings. The maps are supplied for property purposes, infrastructure projects, transport projects and so forth and are available in analogue and digital forms. They are produced by the Survey and Property Information Department of the Rotterdam Municipal Public Works Agency. The customers use the maps in the course of their own work. There is no competition.

We estimate the annual costs of the GBKR at NLG 5.1 million and the annual revenue at NLG 5.2 million, of which NLG 2 million comes from customers outside the municipal organisation.<sup>10</sup>

### 4.2 IMPORTANCE OF THE GBKR

The importance of the GBKR is determined by the need for a standard for geometric positioning. Each of the other three large municipalities in the Netherlands has a comparable department, as do many small municipalities (albeit often in the form of a cooperative arrangement).

### 4.3 THE MUNICIPALITY AS MARKET PARTICIPANT?

We have come to the conclusion that there is a public interest involved. However, this interest is not regulated by law (only indirectly through approval of the municipal budget). The position regarding this social interest is clouded by the fact that deliberate efforts are being made to reduce the municipal financing.

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<sup>10</sup> These figures are the costs projected by the Municipality of Rotterdam for 2000.

## 4.4 UNCLEAR ASPECTS

We have come to the conclusion that various aspects are unclear. First of all, the description and delimitation of the public function are unclear. There is no statutory basis in the form of an act of parliament or a formal decree regulating the public function. Accordingly, it is unclear where the public function ceases and commercial activities start. As far as any commercial activities are concerned, it should be noted that they too are not recorded or communicated.

What is also unclear is the pricing. This is dependent on the use to which the customer will put the information, which is contrary to the Directions issued by the Prime Minister. Under these Directions only a single fixed price, namely the full cost price plus a mark-up for profit and (notional) levies, is permitted. It follows that different prices may not be charged for the same product. The study shows that the (average) price used lies between the marginal cost price and the full cost price.

## 4.5 THE GBKR IS SUBSIDISED BY THIRD PARTIES

The study shows that the municipality itself bears 75% of the overall costs of the GBKR. The other 25%, i.e. NLG 1.1 million, is financed by third parties. It follows that there is cross-subsidisation.

## 4.6 PRICING INFLUENCES WEALTH EFFECTS

In the study we have examined the wealth effects of the different pricing forms. One of them concerns the economic effect. The following table shows the changes in relation to the present situation. For this purpose, we have assumed that the present turnover is approximately NLG 2 million.<sup>11</sup>

PRICING	CHANGE IN TURNOVER COMPARED WITH PRESENT SITUATION	
	AMOUNT	CHANGE
Full cost price	- NLG 0.02 million	- 1%
Marginal cost price	+ NLG 0.08 million	+ 4%
Zero price	NLG 0.00 million	0%

<sup>11</sup> By 'economic effects' we mean the effects which we have been able to quantify at micro level. It follows that not all of them boost wealth, nor do they all boost wealth at micro level.

The table shows that only a marginal cost price produces a positive economic effect. Both full cost price and zero price produce a (limited) negative effect.

#### 4.7 OTHER PRICING FORMS SHIFT THE BURDEN

Changing the pricing would influence the burden of expenditure. In the case of a price rise, the amounts sold would decrease, but the turnover per product would increase. The study shows that a full cost price would result in a reduction of the expenditure of the core function authority to the detriment of the customers. A marginal cost price and a zero price would increase the expenditure of the core function authority. This change is shown in the following table.

FORM OF PRICING	CHANGE IN THE FINANCING BURDEN COMPARED WITH THE PRESENT SITUATION	
	FINANCING BURDEN	CHANGE
Full cost price	- NLG 0.2 million	- 5%
Marginal cost price	+ NLG 1.1 million	+ 35%
Zero price	+ NLG 2.0 million	+ 63%

This table shows that if a zero price is applied the expenditure borne by the Municipality of Rotterdam would increase by around 63% compared with the present situation. If a full cost price were charged, this would shift the burden to the customers.

#### 4.8 INFLUENCE OF GREATER ACCESSIBILITY ON THE DEMOCRATIC PROCESS

Reduction of the price would lower the barriers to the use of the GBKR. Theoretically, this would benefit the democratic process. The converse is also true: raising the price to the level of the full cost price would throw up more barriers and adversely affect the democratic process.

The GBKR is a databank that requires investments and knowledge on the part of the users if they are to be able to make full use of it. These are barriers to accessibility. To abolish these barriers additional provisions would be necessary. This is not something that we have examined in more detail. Our conclusion is therefore that the accessibility of a public sector databank which is intended mainly for professional use has only a limited impact on the democratic process.



## 4.9 INFLUENCE OF GREATER ACCESSIBILITY ON EFFICIENCY IN THE PUBLIC SECTOR

We have come to the conclusion that a lower price would result in greater use of the same information. This would enhance transparency and hence contribute to better and more efficient decision-making. It should, however, be noted that the influence on transparency would be limited. What is possible, however, is that a higher price would result in the use of other information, which would adversely affect transparency.

## 4.10 INFLUENCE OF GREATER ACCESSIBILITY ON ENTERPRISE IN THE PRIVATE SECTOR

The GBKR case has shown that a lower price could boost turnover and perhaps result in a larger number of users. Nonetheless, the number of private-sector customers is at present limited and the use of the GBKR requires investments and specific knowledge.

## 4.11 CONSIDERATIONS RELATING TO PRICING

The study reveals that each form of pricing has advantages and disadvantages. We have shown this in the following table.

FORM OF PRICING	ADVANTAGES	DISADVANTAGES
Full cost price	Less financial burden on the core function authority Tax reduction possible	Costs passed to private sector Limited decline in effect on wealth Less use of the databank Less transparency and hence reduced public sector efficiency Reduced accessibility and hence (limited) adverse effect on the democratic process
Marginal cost price	Greatest economic boost <sup>12</sup> Transparency somewhat increased Limited effect on the democratic process	Increasing financial burden and hence: tax increase possible.
Zero price	Increasing use Transparency somewhat increased Limited effect on the democratic process	Largest financial burden and hence: tax increase limited decline in effect on wealth

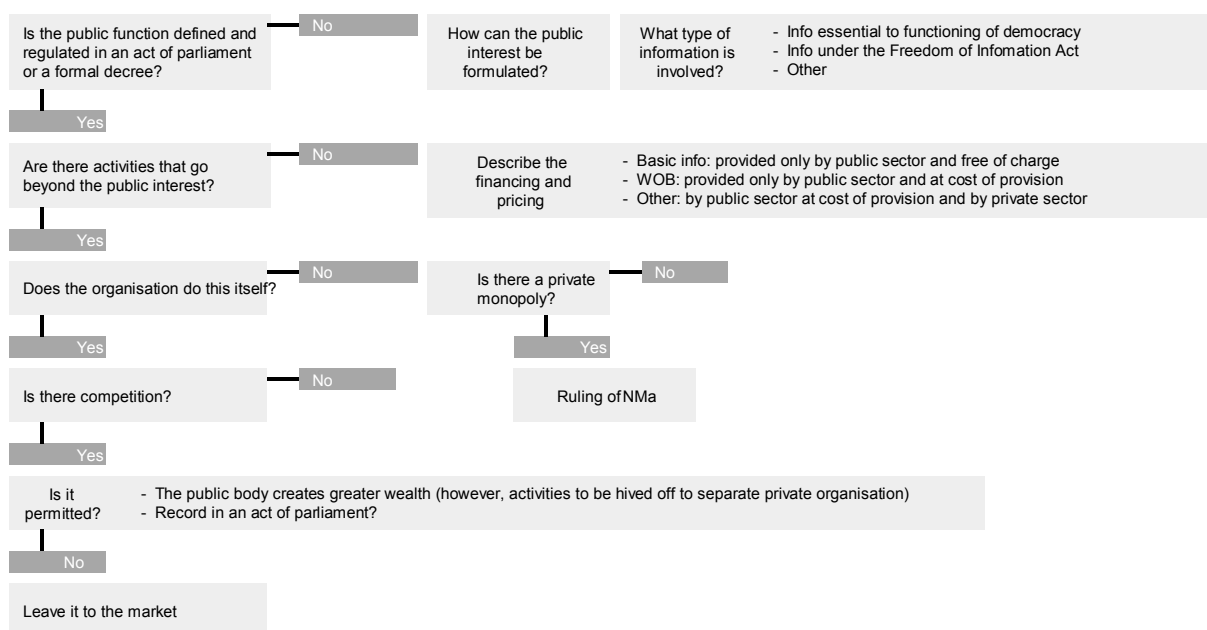
The table shows that the pricing which applies to information supplied under the Freedom of Information Act (i.e. slightly above zero price) is less favourable than applying the marginal cost price. The same is true of the application of a full cost price in cases where the Directions of the Prime Minister concerning commercial activities are applicable.

<sup>12</sup> By 'economic effects' we mean the effects which we have been able to quantify at micro level. It follows that not all of them boost wealth, nor do they all boost wealth at micro level.

## 4.12 APPLICATION OF THE PLAYING FIELD CRITERIA TO THE GBKR

In the study we examined the various aspects of the playing field criteria by means of an analysis as shown in the following diagram. On the basis of this analysis we have drawn a number of conclusions.

### Method of analysing cases



The public interest element of the GBKR is not explicitly regulated in an act of parliament or a formal decree. Nonetheless, the GBKR clearly serves a public interest. This follows from the municipal functions in the area of planning, infrastructure, transport projects and so forth. We have classified the GBKR information as coming under the Freedom of Information Act.

There are activities that go beyond the implementation of the public function and are carried out in consideration of payment. Price discrimination occurs in this connection. By this we mean that different prices are charged depending on the identity of the user.

The prices for third parties are above the marginal cost price. This pricing is contrary both to the policy on information supplied under the Freedom of Information Act (price slightly above the zero price) and to the Directions issued by the Prime Minister (full cost price plus mark-up).

There is no competition, nor is it expected that this will materialise since the establishment of a databank of this kind requires a substantial investment. It is, however, possible that market participants could produce comparable products on the basis of the GBKR for particular aspects of the information.

It is not evident from this study whether more wealth would be created than if the GBKR were to be operated by a private party.

#### 4.13 LESSONS TO BE LEARNED FROM THE GBKR

There are 20-30 comparable municipal databanks in the Netherlands. We have not examined to what extent these databanks could be combined within a single large-scale base map databank and whether this might perhaps be of interest to market participants. We do not exclude the possibility that some of our findings may also prove to be applicable to the other large-scale base map databanks.

In addition, the GBKR case study shows that greater accessibility of databanks intended mainly for professional users would create more economic wealth if a marginal cost price were applied and would also contribute, to a lesser extent, to the democratic process.

To increase accessibility for private individuals, it would be necessary to have supplementary provisions to remove the barriers created by the need for investments and knowledge. This would require additional financial resources. In addition, a strong increase in use could result in unforeseen extra costs. If a zero price were to be applied, this could quickly result in a situation amounting to open-ended financing.



## 4.14 TABLES

EFFECTS AT MICRO LEVEL FOR THE ROTTERDAM LARGE-SCALE BASE MAP						
	EFFECT ON PRICE	EFFECT ON DEMAND	NEW CUSTOMERS	EFFECT ON COSTS	EFFECT ON QUALITY	EFFECT ON ORGANISATION
<i>Zero price</i>	Price 100% lower.	Increase of approx. 23%. Increase in subsidy results in loss of wealth. The quantified effect on wealth is virtually nil.	Effects are probably positive Creates opportunities for new and relatively small firms. However, the barrier to the use of the GIS databank is not removed.	Fixed costs (development and maintenance costs) are assumed to be invariable. Marketing and distribution costs are assumed to be constant, marginal costs. They change in relation to the quantity sold.	Expected that the effects may possibly be negative (not demonstrated in the study).	If the same resources are available, no effect is expected.



<i>Marginal cost price</i>	Price reduced by approx. 60%.	Increase in demand of approx. 10% Quantified increase in wealth: NLG 84,000.	Effects are possibly positive. Creates opportunities for new and relatively small firms. However, the barrier to the use of the GIS databank is not removed.	Idem.	Expected that the effects may possibly be negative.	Idem as above.
<i>Full cost price</i>	Price increased by approx. 10%.	Decrease of approx. 2%. Quantified loss of wealth: NLG 21,000.	Effect is neutral.	Idem.	Expected that the effects may be neutral. This closely reflects the present situation.	Effect is neutral.



EFFECTS AT MESO LEVEL FOR ROTTERDAM LARGE-SCALE BASE MAP					
	EFFECT ON DUPLICATION	EFFECTS ON DERIVATIVE PRODUCTS			TRANSPARENCY
		<i>Present products</i>	<i>New products</i>	<i>Impact on quality</i>	
<i>Zero price</i>	There are few, if any, alternative products. A zero price will not therefore help to avoid duplication.	The price reduction will probably be passed on in the price of derivative products.	Effects will probably be positive. Usually developed by current producers. Also creates opportunities for new and relatively small firms.	Possibly a negative effect on wealth. depends on the quantity of resources available. If the quality of the product is lower, the customers will have to incur extra costs in order to raise the quality to an acceptable level.	Transparency will be enhanced as everyone will have the same data. However, specialised equipment will be needed for this purpose.
		<i>Knock-on effects:</i> usually leads to shifts in wealth, unless the markets for derivative products are distorted (price not competitive). Effect on wealth generally expected to be small.			



EFFECTS AT MESO LEVEL FOR ROTTERDAM LARGE-SCALE BASE MAP					
	EFFECT ON DUPLICATION	EFFECTS ON DERIVATIVE PRODUCTS			TRANSPARENCY
		<i>Present products</i>	<i>New products</i>	<i>Impact on quality</i>	
<i>Marginal costs</i>	There are few, if any, alternative products. A marginal price will not therefore help to avoid duplication.	The price reduction may possibly be passed on in the price of derivative products.	Effects may be positive. Usually developed by current producers (usually larger companies)	Idem as above, only to a rather lesser extent.	See above.
		<i>Knock-on effects:</i> usually leads to shifts in wealth, unless the markets for derivative products are distorted. Effect rather smaller than in the case of zero price. Effect on wealth generally expected to be small.			
<i>Full costs</i>	There are few, if any, alternative products. In all probability, no fresh duplication will occur as a consequence of a full cost price.	Will result in an increase in the price of derivative products.	Development of new products is very unlikely.	If quality improves as a consequence of a change in price, customers will need to invest less in improving the product.	If customers start looking for products that are inferior but suitable for their own purposes, this may adversely affect the market. At present prices, the effect is expected to be very small.
		<i>Knock-on effects:</i> usually leads to shifts in wealth, unless the markets for derivative products are distorted (price not competitive). Effect on wealth generally expected to be small.			



EFFECTS AT MACRO LEVEL FOR ROTTERDAM LARGE-SCALE BASE MAP				
	GOVERNMENT BUDGET	EMPLOYMENT	TRADE WITH ABROAD	DEMOCRATIC PROCESS
<i>Zero price</i>	Direct effect already taken into account at micro level. The higher contribution by the municipality would probably lead to increased taxation, which would in general disrupt the market.	Owing to the small effect at micro and meso level and the tightness of the labour market, the effect on wealth would be negligible.	Negligible effect. This is because there are no foreign customers and few derivative products are sold. The impact on the competitive position of Dutch companies in relation to abroad would be minimal.	Positive effect. Availability at zero price could be of importance to the use of the data by citizens and members of parliament. Access to exact data can be of importance in relation to the information available to municipalities when forming policy.
<i>Marginal costs</i>	Direct effect already taken into account at micro level. The higher contribution by the municipality would probably lead to increased taxation, which would in general disrupt the market. Effect smaller than in the case of a zero price.	Owing to the small effect at micro and meso level and the tightness of the labour market, the effect on wealth would be negligible.	Idem.	Positive effect. The same advantages (only to a slightly lesser extent) as in the case of provision at zero price.
<i>Full costs</i>	Direct effect already taken into account at micro level. The reduced contribution by the municipality would probably result in a reduction of taxation. This often boosts wealth.	Owing to the small effect at micro and meso level and the tightness of the labour market, the effect on wealth would be negligible.	Idem.	No effect. Could mean that the data are available only to large market participants.

## 5. SUMMARY AND CONCLUSIONS IN RESPECT OF THE CURRENT ELEVATION MODEL OF THE NETHERLANDS

In this chapter we have described the results of the study of the Current Elevation Model of the Netherlands (AHN). At the end of the chapter we have included tables showing the effects at the different economic levels.

### 5.1 RESEARCH RESULTS ARE GENERAL

The AHN is a databank that is currently being developed. Accordingly, many of the research results are based on assumptions. The research results have therefore been formulated in general terms.

### 5.2 ABOUT THE AHN

The AHN provides very accurate information (in 3-dimensional form) about the elevation of the land mass of the Netherlands. Elevation information is essential to good water management. This is true not only in respect of water nuisance (flooding etc.) but also in order to deal effectively with parching of the soil (due to falling water table). In addition, the AHN can be used, among other things, to compute noise nuisance when building roads and motorways, calculate earthmoving volumes and prepare initial studies for routes, water courses and urban development plans (with 3D visualisations).

### 5.3 THE IMPORTANCE OF THE AHN

Although the function of the AHN is not laid down by law, there can be no doubt as to its importance. This is evident, among other things, from the identity of the partners who cooperate in the AHN (i.e. the Directorate General for Public Works and Water Management, the provinces and water control corporations). One of the functions of the Survey Department (MD), which is regulated by Royal Decree, is updating the information on Amsterdam Ordnance Level (NAP). The determination of the Amsterdam Ordnance Level takes place in conjunction with that of the AHN. Despite the importance of the determination of these data, the partners have to negotiate every new step they take.

The AHN makes use of advanced techniques such as laser altimetry. It is also oriented very strongly to providing a service to the general public (dealing with questions about the elevation of gardens etc.). There are commercial activities on a limited scale (8% of the turnover comes from deliveries to third parties).

We have defined its social importance as public safety in respect of high water and greater efficiency and quality of infrastructural activities. In view of the high cost of establishing a databank of this kind, it is unlikely that private organisations would achieve this. Given the public interest element, it is therefore a public sector function.

The study shows that public bodies are the main customers. At present, the turnover generated from deliveries to private sector organisations amounts to approximately NLG 0.8 million.

Although the AHN information is required by government for all kinds of purposes, the priorities of other public bodies seem to lie elsewhere. This is evident from the fact that the pace of development of the AHN is slowed by inadequate financing. This raises the question of whether the importance of the databank should not be reaffirmed, and a decision then taken on the desired pace of development and its financing. Consideration could be given to the idea of putting the databank and its financing into the hands of a public body. If the burden of financing were to be shifted in this way, it would be logical for the present budget of the other participants to be reduced by the same amount.

#### 5.4 THE AHN IS SUBSIDISED BY THIRD PARTIES

The study shows that the cost of providing information to third parties amounts to approximately NLG 1.3 million. As against this, these customers pay NLG 2.1 million. They therefore contribute NLG 0.8 million to the other costs of the AHN. This is therefore cross-subsidisation.

#### 5.5 FORMS OF PRICING INFLUENCE WEALTH EFFECTS

In the study we have examined the effects of the different forms of pricing on wealth. One of them concerns the economic effect.<sup>13</sup> In order to quantify the wealth effects, we have assumed that the present turnover is approximately NLG 2.1 million and that the costs of providing the information are approximately NLG 1.3 million.

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<sup>13</sup> By 'economic effects' we mean the effects which we have been able to quantify at micro level. It follows that not all of them boost wealth, nor do they all boost wealth at micro level.

The following table shows the changes in relation to the present situation.

PRICING	CHANGE IN TURNOVER	
	AMOUNT	CHANGE
Full cost price	- NLG 1.2 million	- 57%
Marginal cost price	+ NLG 0.11 million	+ 5%
Zero price	- NLG 0.14 million	- 7%

The table shows that only a marginal cost price produces a positive economic effect.

## 5.6 OTHER FORMS OF PRICING SHIFT THE BURDEN

Changing the form of pricing influences the expenditure burden. In the case of a price rise, the number of products sold decreases but the turnover per product increases. The study shows that a full cost price results in a reduction in the financing burden for the core function authority to the detriment of the customers. A marginal cost price and a zero price result in an increase in the burden of the core function authority. This change is shown in the following table.

FORM OF PRICING	CHANGE IN THE FINANCING BURDEN IN RELATION TO THE PRESENT SITUATION	
	FINANCING BURDEN	CHANGE
Full cost price	- NLG 1 million	- 125%
Marginal cost price	+ NLG 0.8 million	+ 100%
Zero price	+ NLG 2.1 million	+ 263%

As the AHN is a databank in the course of development, the financial position is not yet stable. This is why the financing costs have been computed on the basis of the same amounts used to quantify the economic effects. These figures result in a cross-subsidy of NLG 0.8 million.

## 5.7 INFLUENCE OF GREATER ACCESSIBILITY ON THE DEMOCRATIC PROCESS

Reduction of the price would lower the barriers to the use of the AHN. Theoretically, this would benefit the democratic process. The converse is also true: increasing the price to the level of the full cost price would raise the barriers and adversely affect the democratic process.



The AHN is a databank that requires investments and knowledge on the part of the user if he is to derive maximum benefit from it. These are barriers to accessibility. To abolish these barriers additional provisions would be necessary. This is not something that we have examined in more detail. Our conclusion is therefore that the accessibility of a government databank intended above all for professional use would have only limited influence on the democratic process.

## 5.8 INFLUENCE OF GREATER ACCESSIBILITY ON PUBLIC SECTOR EFFICIENCY

We have come to the conclusion that a lower price would result in greater use of the same information. This would enhance transparency and hence contribute to better and more efficient decision-making. It should, however, be noted that the influence on transparency would be limited. A higher price might result in the use of other information, which would impair transparency.

## 5.9 INFLUENCE OF GREATER ACCESSIBILITY ON ENTERPRISE IN THE PRIVATE SECTOR

The AHN case has shown that a lower price could boost turnover and perhaps result in a larger number of users. Nonetheless, the number of private sector customers is at present limited and the use of the AHN requires investments and specific knowledge.

## 5.10 CONSIDERATIONS RELATING TO PRICING

The study reveals that each form of pricing has advantages and disadvantages. We have shown this in the following table.

FORM OF PRICING	ADVANTAGES	DISADVANTAGES
Full cost price	Less financial burden on the core function authority Tax reduction possible	Costs passed to private sector Decline in economic wealth effects Less use of the databank Less transparency and hence reduced government efficiency Reduced accessibility and hence (limited) adverse effect on the democratic process
Marginal cost price	Greatest economic boost <sup>14</sup> Transparency somewhat increased Limited effect on the democratic process	Increasing financial burden and hence: tax increase possible.
Zero price	Increasing use Transparency somewhat increased Limited effect on the democratic process	Largest financial burden and hence: tax increase decline in economic wealth effects

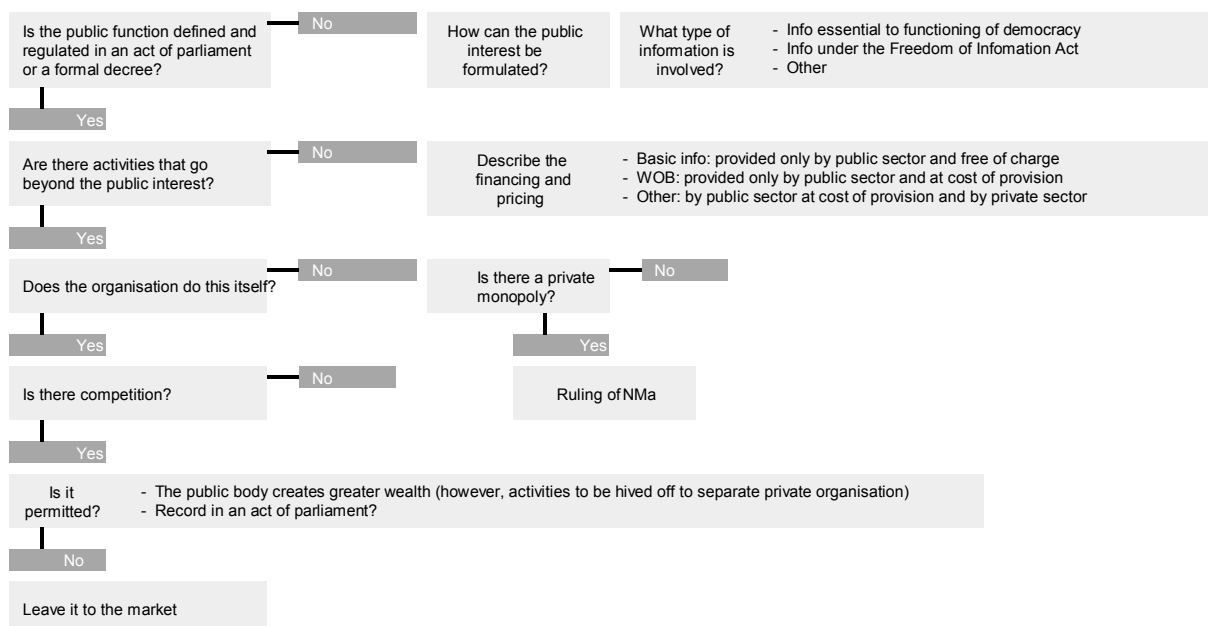
The table shows that the pricing which applies to information supplied under the Freedom of Information Act (i.e. slightly above zero price) is less favourable than applying the marginal cost price. The same is true of the application of a full cost price in cases where the Directions of the Prime Minister regarding commercial activities are applicable.

<sup>14</sup> By ‘economic effects’ we mean the effects which we have been able to quantify at micro level. It follows that not all of them boost economic wealth, nor do they all boost economic wealth at micro level.

## 5.11 APPLICATION OF THE PLAYING FIELD CRITERIA TO THE AHN

In the study we analysed the various aspects of the playing field as shown in the following diagram. On the basis of this analysis we have drawn a number of conclusions.

### Method of analysing cases



The public function of the AHN is not explicitly regulated in an act of parliament or a formal decree. Nonetheless, the AHN clearly serves a public interest. We have defined this as promoting public safety with regard to high water and the efficiency and quality benefits for infrastructure activities. We have treated the AHN data as information under the Freedom of Information Act.

There are activities that go beyond implementation of the public function and are carried out in consideration of payment. Price discrimination occurs in this connection. By this we mean that different prices are charged depending on the identity of the user.

In fact, there are three types of price: free, marginal cost price and more than marginal cost price. This pricing is contrary both to the policy on information supplied under the Freedom of Information Act and to the Directions issued by the Prime Minister.

There is no competition, nor is it expected that this will materialise since the establishment of a databank of this kind requires a substantial investment. It is, however, possible that market participants could produce comparable products on the basis of the AHN for particular aspects of the information.

It is not evident from this study whether more economic wealth is created than would be the case if the AHN were to be operated by a private sector firm. It should be noted that transferring a databank to a single private sector firm would itself give rise to problems since this could constitute a monopoly.

## 5.12 LESSONS TO BE LEARNED FROM THE AHN

It is worthwhile considering whether a databank that is used by many public bodies for policy issues in various fields could be usefully converted into a databank elevated to the status of standard. This would help to minimise discussions about the information used, thereby enhancing efficiency and improving the quality of decision-making.

In addition, the AHN case study shows that greater accessibility of databanks that are intended mainly for professional users creates more economic wealth if a marginal cost price is applied and also contributes, to a lesser extent, to the democratic process.

To increase accessibility to private individuals, it would be necessary to have supplementary provisions to remove the barriers created by the need for investments and knowledge. This would require additional financial resources. In addition, a strong increase in use could result in unforeseen extra costs. If a zero price were to be applied, this could quickly result in a situation amounting to open-ended financing.

Where two or more public bodies are involved in the development of a databank, delays may occur. There is a risk in this connection that the parties may seek to prevent 'free riding' behaviour by introducing (undesirable) price barriers.



## 5.13 TABLES

EFFECTS AT MICRO LEVEL FOR THE CURRENT ELEVATION MODEL OF THE NETHERLANDS						
	EFFECT ON PRICE	EFFECT ON DEMAND	NEW CUSTOMERS	EFFECT ON COSTS	EFFECT ON QUALITY	EFFECT ON ORGANISATION
<i>Zero price</i>	Price 100% lower.	Increase of approx. 67%.  Loss of wealth due to increase in subsidy. On balance a loss of wealth of NLG 140,000.	Effects would probably be positive.  Creates opportunities for new and relatively small firms. Technical knowledge required in order to use product may be a barrier.	Fixed costs (development and maintenance costs) are assumed to be invariable.  Marketing and distribution costs are assumed to be constant, marginal costs.  They change in relation to the quantity sold.	Effect may possibly be negative if collaboration ceases.	Effect may possibly be negative. This pricing could result in the termination of the collaboration. It should be noted that the nature of the work and the inherent challenge of technical innovation are strongly oriented towards maintaining quality. This would be on the premise that the same resources remain available.
<i>Marginal cost price</i>	Price reduced by approx. 40%.	Increase of approx. 27%.  On balance an increase in wealth of NLG 110,000.	Effect may possibly be positive.  The barrier to the use of the AHN databank continues to exist.	Idem.	Effect may possibly be neutral.	Approximates to the present situation.
<i>Full cost price</i>	Price increased by approx. 100%.	Decrease of approx. 67%.  Loss of wealth of NLG 1.2 million.	The product would be less attractive to new customers.	Idem.	Effect may possibly be positive. Effect on quality cannot be determined.	Effect may possibly be positive.



EFFECTS AT MESO LEVEL FOR CURRENT ELEVATION MODEL OF THE NETHERLANDS					
	EFFECT ON DUPLICATION	EFFECTS ON DERIVATIVE PRODUCTS			TRANSPARENCY
		<i>Present products</i>	<i>New products</i>	<i>Impact on quality</i>	
<i>Zero price</i>	There are no alternative products. A zero price would not therefore help to avoid duplication.	The price reduction would probably be passed on in the price of derivative products.	Effects would probably be positive. Usually developed by current producers. Also creates opportunities for new and relatively small firms. Barriers to use of AHN would continue to exist.	Wealth effects possibly negative. Customers may possibly receive a poorer quality product. If so, they would have to incur extra costs to improve the product.	Small positive effect. Everyone has the same information. Technical barriers to use of AHN continue to exist
		<i>Knock-on effects:</i> usually leads to shifts in economic wealth, unless the markets for derivative products are distorted. Slightly smaller effect than in the case of a zero price. Effect on economic wealth generally expected to be small.			
<i>Marginal cost price</i>	There are few, if any, alternative products. A marginal price would not therefore help to avoid duplication.	The price reduction would probably be passed on in the price of derivative products.	Effects may be positive. Usually developed by current producers. Also creates opportunities for new and relatively small firms. Barriers to use of AHN continue to exist.	Idem as above, only to a rather lesser extent.	Small positive effect. Everyone has the same information. Technical barriers to use of AHN continue to exist.
		<i>Knock-on effects:</i> usually leads to shifts in economic wealth, unless the markets for derivative products are distorted. Effect on economic wealth generally expected to be small.			



<i>Full cost price</i>	There is a chance that alternative products would be developed.	The price increase would probably be passed on in the price of derivative products. Consequently, fewer derivative products may be sold.	Effect is hard to predict.	Effect would probably be positive. There would be extra resources to improve the quality of the AHN. As a result, customers may possibly need to invest less in the quality of the databank.	Small negative effect. Different types of information may possibly be used in conjunction with one another. This would create communication problems.
		<i>Knock-on effects:</i> usually leads to shifts in economic wealth, unless the markets for derivative products are distorted. Effect on economic wealth generally expected to be small.			



EFFECTS AT MACRO LEVEL FOR CURRENT ELEVATION MAP OF THE NETHERLANDS				
	GOVERNMENT BUDGET	EMPLOYMENT	TRADE WITH ABROAD	DEMOCRATIC PROCESS
<i>Zero price</i>	Direct effect already taken into account at micro level. The higher contribution by the participants would probably lead to increased taxation, which would in general disrupt the market.	Owing to the small effect at micro and meso level and the tightness of the labour market, the effect on wealth would be negligible.	Negligible effect. This is because there are no foreign customers and few derivative products are sold. The impact on the competitive position of Dutch companies in relation to abroad would be minimal.	Positive effect. Availability at zero price could be of importance to the use of the data by citizens and members of parliament. Access to exact data can be of importance in relation to the information available to government when forming policy. Accessibility remains difficult.
<i>Marginal cost price</i>	Direct effect already taken into account at micro level. The higher contribution by the participants would probably lead to increased taxation, which would in general disrupt the market. Effects are smaller than in the case of a zero price.	Owing to the small effect at micro and meso level and the tightness of the labour market, the effect on economic wealth would be negligible.	Idem.	Positive effect. The same advantages (only to a slightly lesser extent) as in the case of provision at zero price.
<i>Full cost price</i>	Direct effect already taken into account at micro level. The reduced contribution by the participants would probably result in a reduction of taxation. This often boosts economic wealth.	Owing to the small effect at micro and meso level and the tightness of the labour market, the effect on economic wealth would be negligible.	Idem.	No effect. Could mean that the data are available only to large market participants.

## 6. SUMMARY AND CONCLUSIONS IN RESPECT OF THE TOP-10 VECTOR DATABANK

The case study of the Top-10 Vector Databank (TVB) of the Netherlands Topographical Agency (TDN) has shed light on various matters. They have been summarised in this chapter. At the end of this chapter we have included tables showing the economic effects.

### 6.1 ABOUT THE TOP-10 VECTOR DATABANK

The Top-10 Vector Databank contains all topographical data of the Netherlands to a scale of 1:10,000. The databank is used to produce staff maps (scale 1:50,000) for the Ministry of Defence. In this respect, the Top-10 Vector Databank can be regarded as an 'intermediate product'. A condition imposed by the Ministry of Defence is that the maps of some areas should be updated every four years, others every six years and some every eight years. In order to comply with this condition, TDN has decided to update the Top-10 Vector Databank in a 4-year cycle. This involves the remapping of a quarter of the Netherlands each year on the basis of the existing databank.

This is a databank which we have classified as information available under the Freedom of Information Act (WOB) and which is used, not only by the Ministry of Defence, but also by other public bodies (together accounting for approximately 90% of the deliveries to third parties) and private sector organisations.

The customers use the databank either to carry out their own functions or for delivery to third parties, possibly after processing the data. The study shows that there is a limited market and a limited number of competitors. Outside TDN there is no databank comparable to the Top-10 Vector Databank. The competitors operate, wholly or partially, on the basis of the Top-10 Vector Databank.

We estimate the annual costs of the Top-10 Vector Databank at NLG 10.8 million and the annual revenue at NLG 12.2 million.<sup>15</sup>

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<sup>15</sup> These are the figures for 1999.

## 6.2 THERE IS A NEED FOR THE TOP-10 VECTOR DATABANK

TDN provides access to this databank to third parties (customers outside the Ministry of Defence) in exchange for payment. The study showed that there is a need for the Top-10 Vector Databank among various public bodies and private sector organisations. One example is the Dutch Council for Geographic Information (RAVI). As part of its retrenchment programme, the Ministry of Defence (under former Defence Minister Voorhoeve) concluded a contract in the early 1990s with the other customers of the Top-10 Vector Databank, in which the parties agreed that the total annual expense of updating the databank would be borne equally by the Ministry and by the other customers (represented in RAVI). In other words, each would bear half the costs (i.e. NLG 4.5 million) of the total annual updating operation.

It should be noted that some customers are convinced that there are private sector organisations that would be equally capable of updating the original databank, possibly more cheaply than TDN.

## 6.3 UNCLEAR ASPECTS

We have come to the conclusion that various aspects are unclear. First of all, the description and definition of the public function are unclear. There is no statutory basis in the form of an act of parliament or a formal decree regulating the public function. Accordingly, it is unclear where the public function ceases and commercial activities start. As far as any commercial activities are concerned, it should be noted that they too are not recorded or communicated.

Where government goes beyond its core function activities, it must observe financial transparency. The case study of the TOP-10 Vector Databank shows that there is great uncertainty about the costs and revenues. Despite carrying out much research work and making many inquiries, we were unable to unearth completely reliable information.

Another unclear aspect is the pricing. The price which third parties (customers from outside the Ministry of Defence) pay for access to the Top-10 Vector Databank depends on the area and the number of uses to which the customer will put the information. Since the product (i.e. access to the Top-10 Vector Databank) is the same for all users, this manner of pricing is contrary to the Directions issued by the Prime Minister.

Under these Directions only a single fixed price, namely the full cost price plus a mark-up for profit and (notional) levies, is permitted. It follows that different



prices may not be charged for the same product.<sup>16</sup> The study shows that the (average) price used lies between the marginal cost price and the full cost price. Customers have indicated that they would have no objection to a full cost price or a marginal cost price, but that they do object to a price that lies between them. They argue that this could distort competition.

The private sector customers have indicated that it would be desirable to have a clear policy on the Top-10 Vector Databank. They would like to have clarity about what will happen to the databank and about pricing. In this way, businesses that are active in this sector can formulate a policy and make the necessary investments. If government policy is unclear, investing poses a risk for businesses. In addition, the private sector customers have indicated that if changes do take place they wish to have a transitional period, so that they have sufficient time to reposition themselves.

#### 6.4 THE TOP-10 VECTOR DATABANK SERVES A GREATER PUBLIC INTEREST

The study shows that the operation of the Top-10 Vector Databank involves marketing activities. The extent of these activities depends on how the public function is defined. As this is not regulated in an act of parliament or an explicit decree, we have examined the consequences of both the narrow definition (only the Ministry of Defence) and the broad definition (Ministry of Defence plus other public bodies). In the case of the narrow definition we have interpreted commercial activities as including all deliveries to third parties, i.e. other public bodies and private sector organisations. In the case of the broad definition, commercial activities consist only of deliveries to private sector organisations. In this case, the turnover is only limited. The Top-10 Vector Databank meets a need which can be understood in the light of the increasing number of spatial issues. Consideration could therefore be given to defining the public function more broadly and regulating it by means of an explicit decree. This would create a situation in which a public sector databank exists containing information which is necessary for the performance of the public function and which can also be used by private sector organisations. It would therefore be worthwhile considering granting access to this databank to private sector organisations.

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<sup>16</sup> We would point out here that in the opinion of TDN the product should not be described as access to the TOP-10 Vector Databank, but as a right to the use of data. The price which a customer pays for the rights depend on the nature of the area and the number of uses to which the information will be put. In this sense, third parties pay the same price for the same use.



Simply prohibiting TDN from engaging in commercial activities could mean that no products are delivered to third parties. This would result in a loss of wealth compared with the present situation. The underlying assumption is that there are no market participants who could be expected to develop or modify this Top-10 Vector Databank.

## 6.5 THE TOP-10 VECTOR DATABANK IS SUBSIDISED BY THIRD PARTIES

The costs of updating the Top-10 Vector Databank in order to comply with the requirements of the Ministry of Defence amount to NLG 9 million. The contract between the Ministry of Defence and the Dutch Council for Geographic Information (RAVI) provides that these costs should be borne equally. This amount of NLG 4.5 million has been discounted in the price which the RAVI members, including various government bodies, pay to TDN for access to the Top-10 Vector Databank.

We have estimated the extra costs of delivery to customers outside the Ministry of Defence at approximately NLG 1.7 million. The customers are currently paying NLG 7.2 million and are therefore contributing more than the extra costs which they cause. Accordingly, they are subsidising the Top-10 Vector Databank. We have called this (reverse) cross-subsidisation.

## 6.6 FORMS OF PRICING INFLUENCE WEALTH EFFECTS

In the study we have examined the effects on wealth of the different forms of pricing (zero price, marginal cost price and full cost price). One of them concerns the economic results. This is shown in the following table.

CHANGE IN TURNOVER		
FORM OF PRICING	AMOUNT	CHANGE
Full cost price	- NLG 3.5 million	- 48 %
Marginal cost price	+ NLG 0.7 million	+ 10 %
Zero price	+ NLG 0.2 million	+ 3 %



Each form of pricing influences the sales, namely the numbers purchased and the turnover (number of products multiplied by the price). A lower price results in more sales and reduced turnover and vice versa. The table above shows the net effect.<sup>17</sup> The reduction of the present price to the marginal cost price would have a reasonably positive effect on economic wealth, and a further reduction to the zero price would produce a smaller increase. We would observe in this connection that we have focused on the Top-10 Vector Databank. The costs and revenue of the products derived from the Top-10 Vector Databank have been disregarded in the above analysis. Examples are the licence to use TOP25raster, copyright on the use of fragments, royalties from atlases, local tourist authority maps, Royal Dutch Touring Club (ANWB) maps, Falk maps, Teleatlas and the TDN maps 1:10:000 and 1:25.000. If a zero price or marginal cost price were to be charged for the Top-10 Vector Databank, the revenue from these derivative products would be significantly lower or even nil.

Raising the price to the full cost price would reduce turnover by almost 50%. In other words, charging the marginal cost price would produce the greatest economic wealth effects.

## 6.7 OTHER FORMS OF PRICING SHIFT THE BURDEN

Changing the form of pricing shifts the financing burden between, for the most part, other public bodies and the core function authority. The study shows that reducing the price to the marginal cost price or even to the zero price would increase the burden for the Ministry of Defence and reduce the burden for the other public bodies and private sector customers. Raising the price to the full cost price would have the reverse effect.

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<sup>17</sup> By 'economic effects' we mean the effects which we have been able to quantify at micro level. It follows that not all of them boost wealth, nor do they all boost wealth at micro level.

The shifts are shown in the following table:

PRICING	CHANGE IN THE FINANCING BURDEN FOR					
	CORE FUNCTION AUTHORITY		OTHER PUBLIC BODIES		PRIVATE SECTOR PARTIES	
Full cost price	- NLG 3 million	- 65%	+ NLG 2.7 million	+ 42%	+ NLG 0.3 million	+ 42%
Marginal cost price	+ NLG 2.6 million	+ 57%	- NLG 2.3 million	- 35%	- NLG 0.3 million	- 42%
Zero price	+ NLG 7.4 million	+ 161%	- NLG 6.7 million	- 103%	- NLG 0.8 million	- 111%

If the price were increased to the level of the full cost price, the financing burden for the core function authority would decline by approximately 65%. This decline would likely be at the expense of other public bodies. In overall terms, the ‘public’ financing burden would decrease slightly, which could in principle result in a reduction in taxation.

If the present price were lowered to the level of the marginal cost price or to the zero price, the financing burden for the core function authority would increase to 161%. This shift would result in reduced costs for other public bodies. Nonetheless, the ‘public’ financing burden would increase; other things being equal, a tax increase would then, in principle, be necessary,.

Such a shift would raise the question of the reallocation of public funds. In other words, the core function authority would have a larger budget available and other public bodies would have a smaller budget. This is an issue that should not be dealt with at the level of individual cases, because it is of a more fundamental nature. We will return to this subject later.

#### 6.8 INFLUENCE OF GREATER ACCESSIBILITY ON THE DEMOCRATIC PROCESS

Removing price as a barrier to access to the Top-10 Vector Databank would theoretically aid the democratic process. The citizen would have access to the files used for planning decisions and would therefore be able to have a say in them. However, this is indeed theory, because in practice investments are needed in systems (in particular GIS Information Systems) and specific knowledge is required in order to be able to use the Top-10 Vector Databank. It is provided in the Freedom of Information Act (WOB) that information should be supplied voluntarily in an understandable form.

No announcements are made about the information on request. In order to make a real contribution to the democratic process, the public sector should provide facilities to make the information understandable. This requires investment.

A zero price or a price slightly above this (in accordance with the guidelines of the Freedom of Information Act) could mean that many citizens would make use of the accessibility of the information. In the short term, this could mean that more costs are incurred than previously anticipated. Since the core function authority is to finance the full costs, this creates a de facto situation of open-ended financing.

Our conclusion with regard to the Top-10 Vector Databank is that pricing would have no influence on the democratic process and that this is due to the nature of the information (i.e. information geared to professional users rather than to consumers).

## 6.9 INFLUENCE OF GREATER ACCESSIBILITY ON EFFICIENCY IN THE PUBLIC SECTOR

We have come to the conclusion that reducing the present price to the level of the marginal cost price or zero price would benefit transparency. In other words, it would become more attractive for more parties to make use of the same information, albeit to a limited extent. It should be noted, incidentally, that the converse would apply if the present price were to be increased to the level of the full cost price.

As regards public sector efficiency we would observe as follows. A clear and accepted databank could serve as a standard, thereby making administrative and civil service consultation more efficient. Much time has been spent in the past in determining the correct areas in order to prepare planning decisions since use was made of different maps. A single geo-information file that is used as standard would benefit transparency and could in the future substantially reduce the length of the protracted advance consultations between different parties. This would promote public sector efficiency.

In the case of the Top-10 Vector Databank this means that faster updating in accordance with the requirements of RAVI would be desirable. It follows that the public function should be defined (and recorded) more broadly than at present and that an updating of this kind should be regarded as a public sector function.

## 6.10 INFLUENCE OF THE GREATER ACCESSIBILITY ON ENTERPRISE IN THE PRIVATE SECTOR

The case of the Netherlands Topographical Agency (TDN) shows that reducing the price to the level of the marginal cost price or the zero price could benefit



industry. New firms would enter the market. Nonetheless, the number would remain limited because of the relatively high level of investment required in geo-information systems and the need for specific expertise. We would also expect an increase in new products. It is evident from a number of interviews that new products would be created at the moment when different public sector databanks can be interlinked. However, we have not researched or quantified these effects.

Research shows that the marginal cost price would generate the most economic wealth (see previous sections on this point). We estimate the increase to be at least 10%.

A zero price would probably result in a number of new market entrants, but a number of existing customers might also drop away. This is based on the expectation that a zero price would result temporarily in inferior products, which would squeeze better products out of the market. Some customers have already indicated that a zero price for the Top-10 Vector Databank could result in 'dumping' operations by other public bodies. It is therefore desirable that clear agreements on this subject be made in the new policy.

## 6.11 CONSIDERATIONS RELATING TO PRICING

The study reveals that each form of pricing has advantages and disadvantages. We have shown this in the following table.



FORM OF PRICING	ADVANTAGES	DISADVANTAGES
Full cost price	Less financial burden on the core function authority Tax reduction possible	Costs passed to private sector Decline in effect on economic wealth Less use of the databank Less transparency and hence reduced public sector efficiency Reduced accessibility and hence (limited) adverse effect on the democratic process
Marginal cost price	Greatest economic boost <sup>18</sup> Transparency somewhat increased Limited effect on the democratic process	Increasing financial burden and hence: tax increase possible.
Zero price	Increasing use Transparency somewhat increased Limited effect on the democratic process	Largest financial burden and hence: tax increase possible

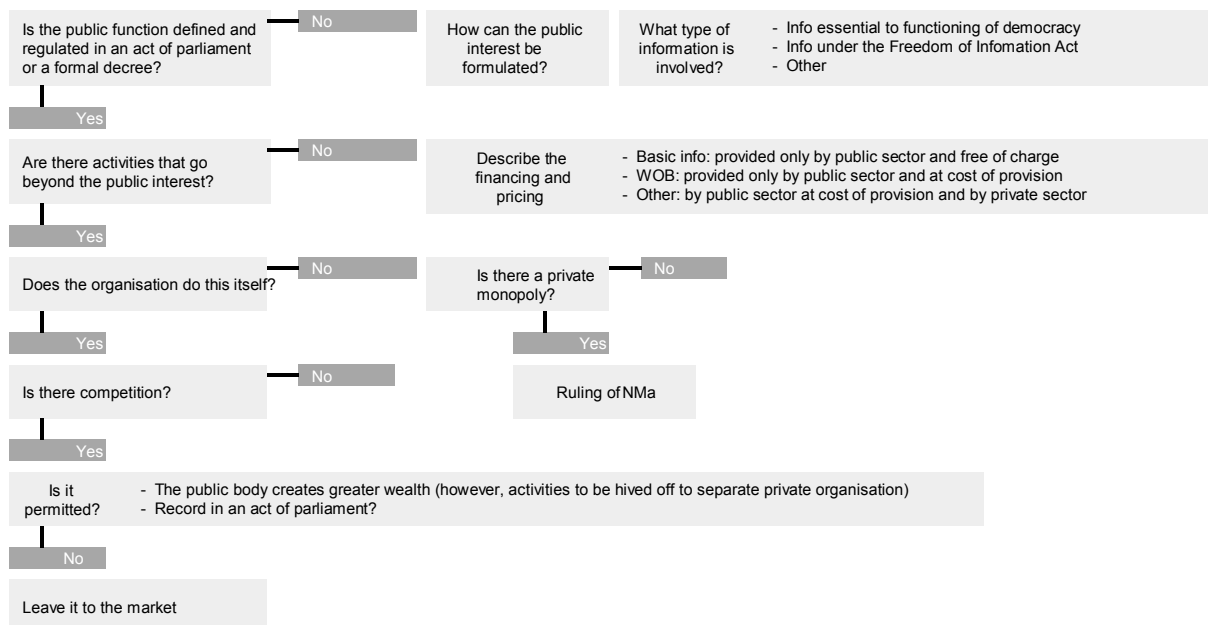
The table shows that the pricing which applies to information supplied under the Freedom of Information Act (i.e. slightly above zero price) is less favourable than applying the marginal cost price. The same is true of the application of a full cost price in relation to the Directions of the Prime Minister regarding commercial activities.

#### 6.12 APPLICATION OF THE PLAYING FIELD CRITERIA TO THE TOP-10 VECTOR DATABANK

In the study we examined the various aspects of the playing field by means of an analysis as shown in the following diagram. On the basis of this analysis we have drawn a number of conclusions.

<sup>18</sup> By ‘economic effects’ we mean the effects which we have been able to quantify at micro level. It follows that not all of them boost economic wealth, nor do they all boost economic wealth at micro level.

### Method of analysing cases



The public function is not defined and recorded in an act of parliament or a formal decree. This function can be defined either narrowly or broadly, and we have treated the information as falling within the category of information under the Freedom of Information Act. According to the limited definition, the public function is updating the Top-10 Vector Databank in a cycle of 4, 6 or 8 years for the core function authority, i.e. for the Ministry of Defence. Providing access for the RAVI-affiliated organisations to the Top-10 Vector Databank can therefore be described as a commercial activity. According to TDN, the extra costs amount to NLG 1.5-2 million and the extra revenues to NLG 4.5 million. There is therefore cross-subsidisation by third parties.

We have concluded that the price lies between the marginal cost price and the full cost price and depends on the scope of the area and the number of purposes for which the information will be used by the customer. From the perspective of the Freedom of Information Act, access to the Top-10 Vector Databank should be provided to third parties at a price just above the zero price (cost of provision).

During the study, various respondents indicated that there are private sector organisations, including large engineering consultancies, which might be able to carry out the four-year yearly updating of the Top-10 Vector Databank more efficiently than TDN. We have not examined this in more detail, but this point



does have a bearing on the fundamental question of whether the work should be done by TDN itself or outsourced. However, we would make two observations in this connection. First, if the market were to carry out these activities, this would call into question TDN's right of existence. After all, why would there then be a need for TDN's original Top-10 Vector Databank?

Second, 90% of the RAVI-affiliated organisations are lower-tier government bodies and 10% are private sector firms. From this perspective it would therefore seem justified to define the public interest in the Top-10 Vector Databank more broadly. This would also be in keeping with the current debate on the need for a single authentic core geographical databank. If TDN's core function were to be defined in terms of the broader definition of the public interest, the Top-10 Vector Databank would have to be updated every four years. In that case, TDN could no longer really be said to be engaged in commercial activities.

Whether the narrow or the broad definition of the public function is used, there is no competitor with a comparable databank. However there are market participants who make comparable products on the basis of the Top-10 Vector Databank. We have not examined the desirability of having commercial activities carried out by TDN from the point of view of wealth.

## 6.13 LESSONS TO BE LEARNED FROM THE TDN CASE STUDY

It would be worthwhile considering whether a databank that is used by many public bodies for policy issues in various fields could be usefully converted into a databank elevated to the status of standard. This would help to minimise discussions about the information used, thereby enhancing efficiency and improving the quality of decision-making.

In addition, the Top-10 Vector Databank case study shows that greater accessibility of databanks that are intended mainly for professional users creates more economic wealth if a marginal cost price is applied and also contributes, albeit to a lesser extent, to the democratic process.

To increase accessibility for private individuals, it would be necessary to have supplementary provisions to remove the barriers created by the need for investment and knowledge. This would require additional financial resources. In addition, a strong increase in use could create unforeseen extra costs. If a zero price were to be applied, this could quickly result in a situation amounting to open-ended financing.



## 6.14 TABLES

EFFECTS AT MICRO LEVEL FOR TOP-10 VECTOR DATABANK						
	EFFECT ON PRICE	EFFECT ON DEMAND	(NEW) CUSTOMERS	EFFECT ON COSTS	EFFECT ON QUALITY	EFFECT ON ORGANISATION
<i>Zero price</i>	Price 100% lower.	Increase in present demand of approx. 65%. Positive wealth effect of NLG 0.2 million.	Effects would probably be positive. Customers would lose exclusivity. Possible increase in sales. Existing customers may perhaps leave because cheaper alternatives are made by other suppliers. Creates opportunities for new and relatively small firms, as it would no longer be necessary to incur high initial costs. However, use would require technical expertise, which constitutes an entry barrier.	Fixed costs (development and maintenance costs) are assumed to be invariable. Marketing and distribution costs are assumed to be constant, marginal costs. Ministry of Defence would pay approx. NLG 7.4 million more. As against this, other public bodies would pay approx. NLG 6.7 million less and private customers approx. NLG 0.7 million less.	Effect may possibly be negative.	Effect unknown.

EFFECTS AT MICRO LEVEL FOR TOP-10 VECTOR DATABANK						
	EFFECT ON PRICE	EFFECT ON DEMAND	(NEW) CUSTOMERS	EFFECT ON COSTS	EFFECT ON QUALITY	EFFECT ON ORGANISATION
<i>Marginal cost price</i>	Price reduced by approx. 50%.	Increase by approx. 35%. Positive wealth effect of NLG 0.7 million.	(Effects possibly positive.) Possible increase in derivative products. As the costs rise, use would be limited to the relatively large companies.	Ministry of Defence would pay approx. NLG 2.6 million more, whereas other public bodies and private customers would pay approx. NLG 2.3 million and NLG 0.3 million less respectively.	Effects possibly negative.	Effects unknown.
<i>Full cost price</i>	Price increased by approx. 80%.	Decline by approx. 50%. Loss of wealth of NLG 3.5 million.	Entry to the market would become less attractive.	Ministry of Defence would pay approx. NLG 3 million less, whereas other public bodies and private customers would pay approx. NLG 2.7 million and NLG 0.3 million more respectively.	Effects possibly positive. More money might possibly be available for quality improvements.	Effects unknown.



EFFECTS AT MESO LEVEL FOR TOP-10 VECTOR DATABANK					
	EFFECT ON DUPLICATION	EFFECTS ON DERIVATIVE PRODUCTS			TRANSPARENCY
		<i>Present products</i>	<i>New products</i>	<i>Impact on quality</i>	
<i>Zero price</i>	There are few if any alternative products. A zero price would not therefore help to avoid duplication.	It is unlikely that the present customers would pass on the reduced price to their customers.	A positive effect for the present customers would be that there would no longer be any cost in purchasing the databank. As a result, possible investments could be made in product development (lowering of the breakeven point).  In addition, the high initial investment of purchasing the databank (termination of entry barrier) would create opportunities for new and smaller businesses to develop new products.	Effect is possibly negative.  Customers may possibly receive a poorer quality product. If so, they would have to incur extra costs to improve the product.	Positive. Everyone would have the same information.  Entry barrier would remain high.
		<i>Knock-on effects:</i> usually leads to shifts in wealth, unless the markets for derivative products are distorted (not a competitive price).  Effect on economic wealth generally expected to be small.			
<i>Marginal cost price</i>	There are few if any alternative products. A marginal cost price would not therefore help to avoid duplication.	It is unlikely that the present customers would pass on the reduced price to their customers.	Idem as above. However, the effect would be smaller.  The higher the costs, the more use will be confined to relatively large companies.	Idem as above. However, the effect would be smaller.	Positive. More parties would have the same information.  Entry barrier would remain high.
		<i>Knock-on effects:</i> usually leads to shifts in wealth, unless the markets for derivative products are distorted.  Effect is slightly less than in the case of a zero price.  Effect on wealth generally expected to be small.			
<i>Full cost price</i>	There are few, if any, alternative products of comparable quality. No further duplication is therefore likely to occur as a result of a	The increased price would probably be passed on to the customer in the price of derivative products.	Development of new products very unlikely.	Quality of Top-10 Vector Databank may possibly be improved. This would mean that customers themselves need to spend less on upgrading it.	Small negative effect.  Different types of information may possibly be used in conjunction with one another.

# Berenschot



	full cost price.				Owing to high exit barrier, little decline expected.
		<i>Knock-on effects:</i> usually leads to shifts in economic wealth, unless the markets for derivative products are distorted. Effect on economic wealth generally expected to be small.			



EFFECTS AT MACRO LEVEL FOR TOP-10 VECTOR DATABANK				
	GOVERNMENT BUDGET	EMPLOYMENT	TRADE WITH ABROAD	DEMOCRATIC PROCESS
<i>Zero price</i>	<p>Direct effect already taken into account at micro level. Mainly a shift in economic benefits from the Ministry of Defence to lower-tier authorities.</p> <p>The higher contribution by the participants would probably lead to increased taxation, which would in general disrupt the market.</p>	<p>Owing to the small effect at micro and meso level and the tightness of the labour market, the effect on wealth would be negligible.</p>	<p>Negligible effect. This is because there are no foreign customers and few derivative products are sold. The impact on the competitive position of Dutch companies in relation to abroad would be minimal.</p>	<p>Limited effect. Perhaps a positive effect on the democratic process, but the necessary investments and specific knowledge form barriers for users in general. Increase in tax possibly necessary owing to increased financing. No effect on the labour market in the present economic circumstances owing to the tightness of the labour market..</p>
<i>Marginal cost price</i>	<p>Direct effect already taken into account at micro level. Mainly a shift in economic benefits from the Ministry of Defence to lower-tier authorities.</p> <p>Idem, only to a slightly lesser extent.</p>	<p>Owing to the small effect at micro and meso level and the tightness of the labour market, the effect on economic wealth would be negligible.</p>	Idem.	Idem.
<i>Full cost price</i>	<p>Direct effect already taken into account at micro level. Mainly a shift in economic benefits from lower-tier authorities to the Ministry of Direct.</p> <p>The reduced payment by the public sector would probably lead to reduced taxation and disruptions of the market. This would yield a limited increase in wealth.</p>	<p>Owing to the small effect at micro and meso level and the tightness of the labour market, the effect on economic wealth would be negligible.</p>	Idem.	Idem.

## 7. SUMMARY AND CONCLUSIONS IN RESPECT OF THE GENERAL DATABANK OF LEGISLATION AND REGULATIONS

In this chapter we describe the results of the study concerning the General Databank of Legislation and Regulations (ADW). Tables showing the main economic effects are included at the end of the chapter.

### 7.1 ABOUT THE LEGISLATION DATABANK

The present Legislation Databank contains all legislation and regulations and their history which should be published under the terms of the Publication Act (*Bekendmakingwet*). In addition, it contains the amendments to each section and hyperlinks between acts of parliament, sections of acts and parliamentary papers. Wolters-Kluwer has arranged the development and operation of the Legislation Databank. The Ministry of the Interior and Kingdom Relations has now decided to operate the Legislation Databank in house and is holding negotiations on this with Wolters-Kluwer<sup>19</sup>. We have classified the Legislation Databank as a databank containing information essential to the functioning of democracy.

The customers include parts of the public sector, the private sector and private individuals. The Legislation Databank was sold by means of user licences costing NLG 1,500 per user per year. A few market participants have a databank that is comparable in some respects.

The information we have obtained in this case is very limited. As a result, we have able to make only general estimates and draw only broad conclusions. Kluwer has indicated that the annual costs of the Legislation Databank are at least NLG 5 million. In view of the negotiations being conducted about this databank, we are inclined to take all unsubstantiated financial data with a pinch of salt.

### 7.2 PROVISIONS FOR ACCESSIBILITY

As a consequence of the public function of the databank, society should have access to the acts of parliament and to the amendments. This means that the public sector should arrange for this to be possible. The question that arises in this connection is to what extent this function should be fulfilled. This depends on how accessibility is defined.

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<sup>19</sup> It has now become known (10 January 2001) that the contract for the Legislation Databank will be awarded to SDU. As our study was based on the present situation, we have not taken account of this new development in our description and analysis.

Does it involve only the provision of access to the information and should people consulting the databank themselves find their own way around? Or should they be assisted in this through the provision of a good search system? Should the public sector provide the information in the desired form, for example by providing a custom-made service?

Regardless of the reply to these questions, the public sector considers that basic information essential to the functioning of democracy should be public and be as accessible as possible<sup>20</sup>. In this context, accessibility is defined as information that is findable, available, usable, affordable, reliable and clear.

How these aspects are implemented depends on the user. After all, a professional law firm will find its way around the legislative material more easily and be less likely to be deterred by the costs of searching than the average member of the public. We assume that the accessibility of basic information essential to the functioning of democracy should at least be geared to the needs of the professional user and should at most be geared to the needs of individual members of the public.

This means that there should be a simple search system and probably also a help desk which can advise users on where and how they should search. A comparison with Statistics Netherlands (CBS) is relevant here. The costs of provision should not constitute an obstacle.

### 7.3 LEAVE THE EXTRAS TO THE MARKET

How much should be left to the private sector depends on the scope of the function and the definition of accessibility. We would define the area for the private sector as all extra operations which are not strictly necessary for accessibility (a kind of ‘plus package’). We are thinking in this connection of theme-based compositions and updating services. In the present situation there is sufficient reason for private-sector firms (in addition to Kluwer, also SDU, Elsevier and various smaller companies) to deliver such products. This means that there would be competition in the public sector were to engage in these activities. This is why such activities should be left to private-sector firms, which should have access to the databank (without being able to make amendments to it).

This would give all private-sector firms equal opportunities. Nonetheless, we expect that the investments required in order to be able to use such databanks

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<sup>20</sup> ‘Towards accessibility of public sector information’ (Naar toegankelijkheid van overheidsinformatie), policy framework for increasing the accessibility of public information by means of information and communication technology – Ministry of the Interior, June 1997.

would be so large that only a limited number of private sector firms could operate them at a profit.

#### 7.4 THE LEGISLATION DATABANK APPEARS TO BE SUBSIDISED BY THIRD PARTIES

Kluwer has indicated that the costs of the basic infrastructure amount to approx. NLG 5 million. The core function authority, i.e. the ministries, contribute NLG 3 million to this. The other costs are financed by lower-tier government bodies and market participants. We have called this cross-subsidisation.

#### 7.5 WEALTH EFFECTS IN THE CASE OF THE PROPOSED ZERO PRICE

In view of the decision that has been taken, we have studied only the consequences of the zero price. Owing to the lack of reliable data, these are mainly qualitative consequences.

A zero price would lead to a substantial gain in wealth, since more businesses would be able to make use of the Legislation Databank more easily. In addition, the financing burden of the core function authority would increase by approximately NLG 2 million. This would amount to an increase of almost 70%. The financing burden of lower-tier authorities and private-sector participants would decline by NLG 2 million.

#### 7.6 INFLUENCE OF GREATER ACCESSIBILITY ON THE DEMOCRATIC PROCESS

Removal of price as a barrier to access to the Legislation Databank would aid the democratic process. A condition is, however, that there should be good support for private users so that the information is comprehensible and easily accessible.

Initially, a sharp increase in the extent of consultation could result in more costs than anticipated. This would create a situation of open-ended financing.

#### 7.7 INFLUENCE OF GREATER ACCESSIBILITY ON PUBLIC SECTOR EFFICIENCY

A zero price would make it easier for the persons concerned to use the same information. However, it would be a condition that this information is comprehensible for everyone and capable of being used by them. In principle, this would result in greater transparency, thereby enhancing the efficiency of decision-making processes.

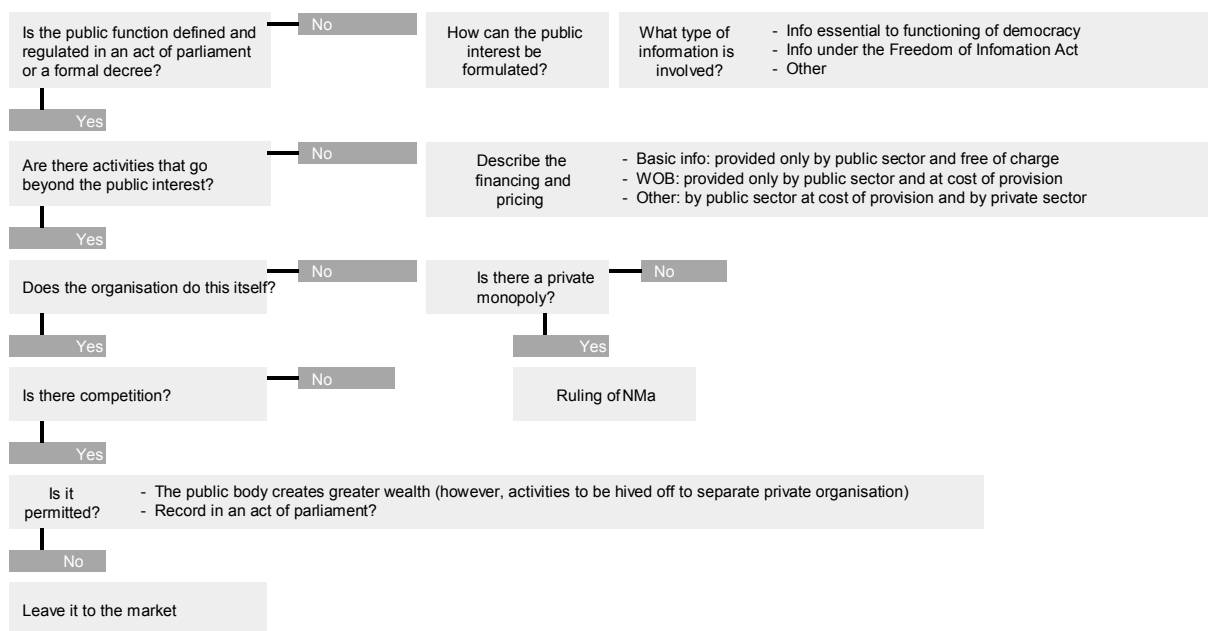
7.8 INFLUENCE OF GREATER ACCESSIBILITY ON ENTERPRISE IN THE PRIVATE SECTOR

We expect that a zero price could produce a substantial gain in wealth.

7.9 APPLICATION OF THE PLAYING FIELD CRITERIA TO THE LEGISLATION DATABANK

If we assess the case of the Legislation Databank by reference to the playing field and the analysis table, we obtain the following picture:

Method of analysing cases



There is a special situation because until recently the Legislation Databank was in private hands. The method of analysing cases shown above is therefore applicable only to a limited extent.

The public interest is recorded in the law. It concerns the clarity of legislation and regulations. This is of crucial importance to the functioning of democracy. This

information is therefore classified as basic information essential to the functioning of democracy.

The advent of the Internet and the increase in electronic facilities in society is providing the State with the possibility of allowing the general public electronic access to its legislation and regulations.

In this context it is understandable that the State should review once again the ownership of the Legislation Databank by Wolters-Kluwer Rechtswetenschappen B.V. The government is taking the position in this context that it should itself have control of this databank.

From the perspective of the playing field, the substantive aspect of accessibility should be defined, as should the limits of the accompanying service. All products and services which result from this should be delivered free of charge. The government should finance this basic data infrastructure.

Special products and services (a kind of 'Plus Package') should be left to the market. Market rates can be charged in this connection. It is necessary for this purpose that the databank should be accessible for private sector parties.

## 7.10 LESSONS TO BE LEARNED FROM THE LEGISLATION DATABANK

The Legislation Databank case shows that it is perfectly possible to contract out an entire government databank to a market participant. Although this may have advantages, it also has various disadvantages. For example, in the case of the Legislation Databank, what has occurred in practice is that a private monopoly has been created, due in part to the provision in the Kluwer contract that the public sector may not cooperate on the development of another general databank of Dutch legislation and regulations.

The aim of the policy is to make available free of charge information essential for the functioning of democracy. This makes extra demands on accessibility and may perhaps raise the costs. The case study of the Legislation Databank shows that the core function authority has been left to the tender mercies of a private monopolist and has little information about the costs charged for this.

Although we have not studied this, we assume that the outsourcing of a core government databank of this kind is possible subject to other conditions, but that at the same time a strict system of supervision should be created.

## 7.11 TABLES

EFFECTS AT MICRO LEVEL FOR THE GENERAL DATABANK OF LEGISLATION AND REGULATIONS						
	EFFECT ON PRICE	EFFECT ON DEMAND	NEW CUSTOMERS	EFFECT ON COSTS	EFFECT ON QUALITY	EFFECT ON ORGANISATION
<i>Zero price</i>	100% lower.	Unknown, but demand probably much higher than current demand.	Positive effect. Above all, less affluent parties could then use the databank.	Unknown.	Unknown.	Unknown.

EFFECTS AT MESO LEVEL FOR THE GENERAL DATABANK OF LEGISLATION AND REGULATIONS					
	EFFECT ON DUPLICATION	EFFECTS ON DERIVATIVE PRODUCTS			TRANSPARENCY
		<i>Present products</i>	<i>New products</i>	<i>Impact on quality</i>	
<i>Zero price</i>	Hard to predict at present. We suspect that some duplication would disappear. Complementary databanks could perhaps continue to exist.	Lowered price might possibly be passed on.	Positive effect creates opportunities for new and relatively small firms to make derivative products.	If new legislation databank were of inferior quality, customers would have to invest more make up for loss of quality.	Positive effect. Clear information, more efficient coordination and decision-making processes.
		<i>Knock-on effects:</i> usually leads to shifts in wealth, unless the markets for derivative products are distorted (no competition price). Effect on wealth generally expected to be small.			



EFFECTS AT MACRO LEVEL FOR THE GENERAL DATABANK OF LEGISLATION AND REGULATIONS				
	GOVERNMENT BUDGET	EMPLOYMENT	TRADE WITH ABROAD	DEMOCRATIC PROCESS
<i>Zero price</i>	Direct effect already taken into account at micro level. Mainly a shift in economic benefits from the central government to the Legislation Databank customers. The higher contribution by the participants would probably lead to increased taxation, which would in general disrupt the market.	Owing to the small effect at micro and meso level and the tightness of the labour market, the effect on wealth would be negligible.	Unknown.	Positive effect. The Dutch legislation and regulations are accessible (free of charge and easy access) for citizens.

## 8. FINAL OBSERVATIONS AND RECOMMENDATIONS

In this chapter we have gathered together the conclusions from the previous chapters and drawn overall conclusions from them. In addition, we have fulminated a number of final observations.

### 8.1 PRESENT SITUATION: ABOVE ALL, INFORMATION UNDER THE FREEDOM OF INFORMATION ACT

In our study we have examined in particular the four databanks and access to them. For this purpose, the granting of access to the relevant databank is defined as the product. We have classified the information in the databanks as either information essential to the functioning of democracy (Legislation Databank) or as information under the Freedom of Information Act (other). The third category of information, namely other information, is not represented in this study.

### 8.2 PRESENT SITUATION: UNCLEAR DIVISION BETWEEN PUBLIC FUNCTION AND COMMERCIAL ACTIVITIES

In order to determine whether there are commercial activities and, if so, to what extent, it is necessary to define the public function. The study showed that there are public interests involved, but that in the case of the Rotterdam Large-scale Base Map (GBKR) and the Top-10 Vector Databank (TVB) the public function is not defined in an act of parliament or a formal decree. In the case of the Current Elevation Model (AHN) the public function is not explicitly defined, but can be inferred from the duties of the participating partners (Public Works and Water Management Department, provinces and water control corporations). By contrast, the public function of the Legislation Databank (ADW) is laid down in the Publication Act and in the coalition accord of 1998.

We came to the conclusion that if the public function of the databank is not defined, this results in a less clear definition of the government function, as a result of which it is less easy to provide a clear definition of commercial activities. Despite these unclear limits, we noted that there are commercial activities (sometimes of a limited nature), which we defined as modification of the databank and the provision of access to the modified databank by the core function authority to third parties. This modification to the databank for third parties is most visible in the case of the Top-10 Vector Databank.

In the case of the Rotterdam Large-scale Base Map customers frequently receive an update of the CD-ROM databank on the basis of their subscription. Customers of the Current Elevation Model receive a CD-ROM containing the databank if they have a user licence. In the case of the Top-10 Vector Databank customers receive updates of the databank on CD-ROM if they have bought a user licence. In general, the customers are end users.

In the case of the Netherlands Topographical Agency (TDN) and to a lesser extent the Current Elevation Model (AHN) customers process the information from the databank supplied to them and thus deliver products to third parties. In order to use the databanks, investments have to be made in the equipment for processing the data and specific knowledge is required. This applies above all to the Top-10 Vector Databank, the Rotterdam Large-scale Base Map and the Current Elevation Model and, to a lesser extent, the Legislation Databank.

There is limited competition or no competition. We suspect that this is connected with the high costs involved in establishing a data infrastructure of the kind present in each of the four case studies.

None of the commercial activities is, in fact, explicitly recorded and, furthermore, the provision of information by the Netherlands Topographical Agency is not always clear as regards the commercial activities.

### 8.3 PRESENT SITUATION: DIFFERENT PRICE POLICY AND CROSS-SUBSIDISATION

The pricing differs. The price is close to the marginal costs in the case of the Current Elevation Model, between the marginal cost and the full cost in the case of the Rotterdam Large-scale Base Map and the Top-10 Vector Databank and above the full cost in the case of the Legislation Databank. The price policy too varies. The Rotterdam Large-scale Base Map and the Top-10 Vector Databank allow their price to depend on the use of the databank by the relevant customer. Fixed prices are, in principle, charged for the Current Elevation Model, but if a custom-made service has to be provided this is done on the basis of a specific price calculation. In addition, a distinction is made between categories of customer, and this too affects the price. Licences are granted in the case of the Legislation Databank, but our study did not show precisely how the licence fees are calculated.

We came to the conclusion that the costs of the databanks are financed from funds allocated to the core function authority and from contributions by other public bodies or private sector firms or organisations. These contributions vary from organisation to organisation. The contribution is almost 40% in the case of the Large-scale Base Map of Rotterdam and approximately 50% in the case of the Top-10 Vector Databank. The Current Elevation Model is financed by three government bodies, which can together be regarded as the core function authority. In the case of the Legislation Databank, the financing by other public bodies and private organisations is approximately 40%. The latter is a form of notional financing because there is a transitional situation, in which the databank of a private sector firm will pass to the public sector. On the assumption that the core function authority should fund the public function itself, this constitutes cross-subsidisation: i.e. third parties are funding part of the cost of maintaining the databank and thus subsidising the public sector in the discharge of its functions.



8.4 POSITIVE WEALTH EFFECTS ARE THE LARGEST IN THE CASE OF THE MARGINAL COST PRICE

The study shows that there will be (net<sup>21</sup>) positive wealth effects<sup>22</sup> in the case of the Large-scale Base Map of Rotterdam and the Top-10 Vector Databank if a marginal cost price is charged for granting access to the relevant databank. We have not been able to demonstrate any wealth effects in the case of the Legislation Databank owing to the lack of financial data, but it would seem logical to suppose that here too there will be positive effects because of the larger number of users. In the following table we have indicated the change in economic wealth in the case of the different pricings.

CHANGES IN WEALTH COMPARED WITH THE PRESENT SITUATION				
PRICING	GBKR	AHN	TVB	ADW
Full cost price	- 1%	- 57%	- 48%	Unknown
Marginal cost price	+ 4%	+ 5%	+ 10%	Unknown
Zero price	0%	- 7%	+ 3%	Unknown

This study shows that even where a full cost price is charged the wealth effects will be negative. This also applies to the zero price, albeit to a lesser extent. The use of a marginal cost price produces the most wealth effects.

Direct wealth effects can therefore be advocated for a marginal cost price. In the case of a price below the marginal cost price (e.g. a zero price), the offeror incurs costs that are not covered by revenues. Nor are these costs entirely offset by the increase in the consumer surplus. This is because in the case of a price lower than the marginal cost price there are customers for whom the value of consumption is lower than the production costs. This can be regarded as waste and is an inefficient use of resources which results in a social wealth loss. (The costs are not covered by the ‘wealth benefits’).

In other words, at the micro level a marginal cost price is optimal in terms of the effect on economic wealth.

<sup>21</sup> We always refer to net wealth effects. In our calculations we have discounted all wealth effects between organisations, i.e. both the positive and the negative effects.

<sup>22</sup> By ‘economic effects’ we mean the effects that we have been able to quantify at micro level. It follows that not all of them boost wealth, nor do they all boost wealth at micro level.

The marginal cost price is the optimal price because everyone who is willing to pay it receives the product at the lowest possible price.

The provision of products at a lower price than the marginal cost price can be defended only if it is assumed that maximising the use of the databank would have social benefits. These benefits become visible at meso and macro level.

The marginal cost price can therefore be regarded as the best price. It is possible to take a decision by means of the step-by-step plan described below. This plan is applicable to each databank.

#### STEP-BY-STEP PLAN FOR EACH DATABANK

1. Decide on the core function:
  - What is the core function? Is it regulated by law?
  - What is delivered to third parties?
2. Attribution of the costs to the core function and to third parties:
  - The costs attributed to the core function are the fixed costs of developing and updating the databank, and the costs of providing information to the core function authority.
  - The costs which can be attributed to third parties are the marginal costs for third parties, i.e. all costs that are connected with the provision of information to third parties (incl. staff costs, material costs, etc.).
3. Determination of the price for third parties:
  - There are three possibilities:
    - (a) the present price is higher than the marginal cost price
    - (b) the present price is equal to the marginal cost price
    - (c) the present price is lower than the marginal cost price.
  - In the case of (a), lower the price to the marginal cost price. This changes the financial flows: more financing by the core function authority. Or reduce the price still further (see c).
  - In the case of (b), keep the price equal to the marginal cost price. Or reduce the price still further (see c).
  - In the case of (c), raise the price to the marginal cost price.
  - This changes the financial flows: less financing by the core function authority. Or reduce the price still further if there are advantages at meso and macro level.  
Advantages of a lower price (i.e. lower than the marginal cost price) at meso and macro level can consist of:
    - positive influence on democracy
    - positive influence on the decision-making process (efficiency).Disadvantages of a lower price (i.e. lower than the marginal cost price) at meso and macro level can consist of:
    - higher taxation: leads to disruptions of the market.

(N.B. Effects on organisation and quality of the databank)

## 8.5 WEALTH EFFECTS: LOWER PRICE OF GEOGRAPHIC INFORMATION WOULD HAVE A LIMITED INFLUENCE ON ACCESSIBILITY

Removing price as a barrier to access to the databanks examined in this study would, in theory, make a positive contribution to the democratic process. Citizens would thus have access to databanks which are used for, say, planning decisions, thereby enabling them to have a say in the decision. The practice of these case studies shows that this is, indeed, theoretical, because investments are necessary in systems (particularly GIS information systems) and specific knowledge is required in order to be able to use the databanks. The Freedom of Information Act (WOB) states that information provided by an authority of its own volition should be in a comprehensible form. However, nothing is said about information provided on request. In order to be able to make an actual contribution to the democratic process, the public sector should arrange for facilities that make the information comprehensible. This requires investment.

A zero price or a price slightly above this (in accordance with the guidelines of the Freedom of Information Act) could mean that many citizens would make use of the availability. This could mean in the short term that more costs are incurred than previously anticipated. Since the core function authority finances the full costs, the financing is, de facto, open-ended.

As regards the three geographic case studies, we came to the conclusion that pricing has little if any influence on the democratic process owing to the nature of the information. This information is intended mainly for professional users and not for consumers.

## 8.6 WEALTH EFFECTS: LOWER PRICE OF GEOGRAPHIC DATABANKS WOULD HAVE A LIMITED INFLUENCE ON BETTER DECISION-MAKING

Making public sector databases accessible in such a way that all public bodies have access to the same information would speed up and improve decision-making and thus make it cheaper too. The study shows that much time is spent in ascertaining similarities and dissimilarities in the information that forms the subject of debate or negotiation between different public bodies and other organisations.

If there were to be a single accepted databank, this would mean that all parties could use this information and conduct discussions and negotiations with one another on the basis of the same information. A lower price would promote increased use and hence enhance the efficiency of policy preparation and implementation. This effect would be maximised in the case of the zero price, because demand would in that case be the largest.



A full cost price would reduce demand and hence have the opposite effect. We have, incidentally, come to the conclusion that the positive effect on transparency would be limited, particularly in the case of the three geographic databanks.

## 8.7 WEALTH EFFECTS: A LOWER PRICE CREATES OPPORTUNITIES FOR ENTERPRISES

In all four cases a lower price would offer opportunities, particularly for existing enterprises. However, the study shows that the market is relatively small (the need for GIS information is limited). As a result, a lower price would create opportunities for starters and small businesses only to a limited extent. There are substantial obstacles to entry to the market, particularly for this category of business, in the form of the required systems and knowledge. This applies in any event to the Rotterdam Large-scale Basic Map, the Current Elevation Model and the Top-10 Vector Database, but not – or to a lesser extent – to the Legislation Database. The effect on new customers is the largest in the case of the zero price.

## 8.8 WEALTH EFFECTS: A LOWER PRICE COULD ADVERSELY AFFECT THE CORE FUNCTION AUTHORITY

A lower price would also have disadvantages. The study shows that reducing the price to the level of the marginal cost price or the zero price would increase the financing burden of the core function authority. We have shown this in the following table.

CHANGES IN THE FINANCING BURDEN OF THE CORE FUNCTION AUTHORITY COMPARED WITH THE PRESENT SITUATION				
PRICING	GBKR	AHN	TVB	ADW
Full cost price	- 5%	- 125%	- 65% (- 23%)	Unknown
Marginal cost price	+ 35%	+ 100%	+ 57% (+ 22%)	Unknown
Zero price	+ 63%	+ 263%	+ 161% (+ 58%)	Unknown

In the case of the Top-10 Vector Databank (TVB) we have also been able to determine all the changes in the aggregate financing burden borne by all public bodies. These are shown in brackets. The differences are due to the fact that other public bodies are paying customers of the Top-10 Vector Databank.

The table shows that charging full cost price would lower the financing burden and that the burden would rise in the case of the marginal cost price and zero price. This could result in higher taxation.

The study shows that other public bodies are often the most important customers. Changing the pricing would shift the financing burden. For example, charging the full cost price for the Top-10 Vector Databank would reduce the expenditure of the Ministry of Defence by NLG 3 million and increase the expenditure of other government bodies by NLG 2.7 million. We will deal with this in the following section.

## 8.9 CONSIDERATIONS WHEN SHIFTING THE FINANCING BURDEN

The study shows that the activities in question are financed not only by the organisation forming the subject of the case study but also by other organisations. The latter category consists to a large extent of other public bodies. In other words, the relevant databanks are financed mainly from public funds, to some extent directly and to some extent indirectly. In fact, the activities therefore result in the circulation of public funds. This could be a reason for reducing the budget of the other public bodies and increasing the budgets of the relevant organisations by the same amount, plus the residual amount.

This is an issue that should not be dealt with at the level of the individual case studies, since it is of a much more fundamental nature. The question is whether central government would itself be prepared to undertake the financing of government databanks that could help to create greater wealth and improve decision-making and democracy. This would therefore require a willingness on the part of central government to invest in society and to pay more for this than is at present the case. The decision facing central government is therefore whether to pay more itself or to allow the financing burden to be borne partially by lower-tier public bodies (i.e. the municipalities etc.).

## 8.10 TIPPING POINTS FOR PRICING

The question facing the government is therefore what price must be charged for the use of government databanks. In the case of information essential to the functioning of democracy, the basic principle is maximum access to the databank. In other words, the zero price is charged, irrespective of any adverse effects. The choice in the case of information provided under the Freedom of Information Act is between the marginal cost price and the zero price.



As the previous sections show, each form of pricing has advantages and disadvantages.

PRICING	ADVANTAGES	DISADVANTAGES
Full cost price	Lower financing burden for the core function authority. Tax reduction possible.	Costs passed on to private sector. Limited decline in economic wealth effects. Less use of the database. Less transparency and hence reduced public sector efficiency. Reduced accessibility and hence (limited) negative influence on the democratic process.
Marginal cost price	Greatest effect on economic wealth <sup>23</sup> . Transparency somewhat improved. Limited influence on the democratic process.	Increasing financing burden and hence: Tax increase possible.
Zero price	Increasing use. Transparency slightly improved. Limited influence on the democratic process.	Largest financing burden and hence: tax increase: limited decline in economic wealth effects.

The advantages and disadvantages apply to a greater or lesser extent to the cases examined here. The databases examined here are intended mainly for professional users and require specific expertise and investments in systems. This applies above all to the three geographic databanks and, to a lesser extent, to the Legislation Databank.

*Further considerations relating to the choice between the marginal price and the zero price*

A zero price means that the cost of providing the information is borne not by the users but by the organisation providing the information (not only the costs of, say, a postage stamp or CD-ROM, but also all costs connected with the provision of data to third parties, including staff costs, equipment costs, helpdesk, etc.).

As demand increases, the organisation concerned is faced with higher costs in the case of a zero price. Initially, this can result in an open-ended arrangement, if the increase in demand exceeds the (budgetary) expectations. However, as more information becomes available about the scope of the market, it becomes possible to make a better estimate of the costs.

<sup>23</sup> By ‘economic effects’ we mean the effects which we have been able to quantify at micro level. It follows that not all of them boost wealth, nor do they all boost wealth at micro level.

The estimate of costs is more difficult to make in cases where the fall in price exceeds that of the present situation. Where the decision is between the marginal cost price and the zero price, the amount of the marginal costs plays a role.

The amount of the marginal costs has three effects:

- Where a zero price is applied, the higher the marginal costs the greater the problem of open-ended financing can become.
- The greater the difference between the marginal cost price and the zero price, the greater is the difference in demand between the zero price and the marginal cost price. This is also evident from the results of the survey.
- The higher the marginal cost price, the greater will be the difference in the direct effects on wealth in relation to the zero price.

It should be noted that the drop in demand in the case of a higher marginal cost price will be smaller if the users consist mainly of businesses and public bodies. This category of user is more prepared than members of the public to pay a higher price.

When a decision is taken on whether to charge a zero price or marginal cost price, the calculated 'wealth yield' can play a role. This percentage relates the quantified direct wealth effects to the additional financing burden borne by the public sector.

This percentage is influenced among other things by the extent to which third parties presently contribute to the cost of maintaining the databank and the price elasticity (i.e. the extent to which demand for the databank increases at a lower price). A high price elasticity (i.e. a large increase in demand in the case of a fall in price) results in greater wealth effects. A high contribution by third parties towards the costs of maintaining the databank results in a lower 'wealth yield'.

In summary, the decision on the price to be introduced depends on:

- the type of databank;
- the difference between the marginal price and the zero price;
- the type of customers (private individuals, businesses, other public bodies);
- the extent to which demand for the database can be estimated (if this is not possible, the open-ended effect will occur in the case of the zero price);
- the price elasticity;
- the extent to which third parties presently contribute to the costs of maintaining the databank;
- market distortion effects.

## 8.11 WEALTH EFFECTS: NO INFLUENCE ON EMPLOYMENT

The situation with regard to employment is the same in all the case studies. The labour market is at present very tight. This means that an increasing demand for staff can be met only if they are withdrawn from production capacity elsewhere. Otherwise they would merely be a shift in wealth. We have therefore come to the conclusion that there would be no effect on employment.

## 8.12 WEALTH EFFECTS: OTHER CONCLUSIONS

There are few if any alternative products for the Rotterdam Large-scale Base Map, the Current Elevation Model and the Top-10 Vector Databank. It follows that the form of pricing has no bearing on the exclusion of alternatives. As regards the Legislation Database, it is expected that some alternatives may disappear and that complementary databases may perhaps continue to exist.

The customers of the Rotterdam Large-scale Base Map and the Current Elevation Model would probably pass on any reduction in price (in the case of a zero price and a marginal cost price) to their own customers in the price of their derivative products. The customers of Top-10 Vector Databank have indicated that they would probably not do this. Competitors of the Top-10 Vector Databank have indicated that they wish to have a transitional period if changes take place in respect of accessibility and pricing. The purpose of such a period would be to enable them to reposition themselves.

Where two or more public bodies are involved in developing a databank, as is the case with the Current Elevation Model, delays can occur. There is a risk in this connection that the parties may seek to prevent 'free riding' behaviour by introducing (undesirable) price barriers.

Moreover, a zero price is transparent, assuming that everyone is aware of its existence. Various customers have indicated that they prefer transparency in general. It emerged from a number of interviews that a marginal cost price or a full cost price provides greater clarity than a price that lies between them. This is because there is then a partial subsidy and hence a risk of distorting competition.

The private customers have indicated that clarity regarding the policy of the Netherlands Topographical Agency (TDN) is desirable. They wish to know what will happen to the databank and what price will be charged. In this way businesses active in the sector concerned can decide on a policy and make the necessary investments. If the policy of the public sector is unclear, investing becomes a risk for these companies. In addition, private sector customers have indicated that they wish to have a transitional period if changes occur, so that they have sufficient time to reposition themselves.

Finally, the Legislation Database case study shows that it is quite possible to outsource public sector databanks, but that this can result in a private monopoly. It is therefore necessary to make explicit agreements so that the public sector can easily achieve its policy changes (such as judging a zero price for the benefit of the democratic process).

## 8.13 FREEDOM OF INFORMATION ACT IN RELATION TO THE RESULTS

The policy on achieving ‘optimal availability of public-sector information’ distinguishes between three categories of public-sector information. Information essential to the functioning of democracy (Legislation Database) and information made available under the Freedom of Information Act (Current Elevation Model, Top-10 Vector Databank and Rotterdam Large-scale Base Map) can be found in the four case studies.

The policy also indicates that the information essential to the functioning of democracy should be provided free of charge. This corresponds to the zero price in our study. Information under the Freedom of Information Act should be supplied at the cost of making the medium by which the information is provided. The costs of marketing and time actually spent are not passed on. The price to be charged for the provision of information under the Freedom of Information Act should be higher than the zero price but lower than the marginal cost price which we have applied in our study. The costs of marketing and the allocation of time are discounted in the marginal cost price.

In addition, only current information can be obtained under the Freedom of Information Act and it is not therefore possible to take out a subscription to the database in order to be sure of obtaining up-to-date information at all times. How do these two principles (pricing and only current information) relate to the results of the study? This is answered below.

### 8.13.1 Pricing of information under the Freedom of Information Act

The price of information supplied under the Freedom of Information Act is (much) closer to the zero price than to the marginal cost price. The wealth effect of the pricing of information under the Freedom of Information Act will therefore be virtually identical to the wealth effect of the zero price. This also applies to the shift in financing.

### 8.13.2 Provision of information under the Freedom of Information Act

The Freedom of Information Act distinguishes between information supplied on request and information supplied by a public body of its own volition. The latter relates to the provision of information in the interests of the effective functioning of democracy.



The supply of information from the Current Elevation Model, the Rotterdam Large-scale Base Map and the Top-10 Vector Databank would not therefore seem to come within this category. This means that the Freedom of Information Act does not provide a basis for the proactive provision of information (or access to information) or hence for subscriptions to up-to-date databases.

## 8.14 FEASIBILITY OF WEALTH EFFECTS

We have calculated the wealth effects mentioned in our study by reference to different prices. In this way we may possibly create the impression that the price is the only determinant of these effects. The basic premise in this connection is that everyone is aware of the existence of the relevant databanks, that everyone has actual access to them and that the information is geared to their needs. Here, the analogy of the marketing Ps<sup>24</sup> applies. It follows that:

- Steps should be taken to publicise the public sector databanks and their features. This can be achieved by means of promotional and publicity campaigns.
- The quality of the databanks should be geared to the needs of customers and potential customers. Examples of such needs are comprehensibility, reliability, clarity of presentation, consistency and accuracy.
- The databanks should be actually accessible. This may mean that access is possible through the Internet and that simple search and select functions are available.
- There should be sufficient service, for example a helpdesk which can help customers to find the information they need.
- Depending on government policy (which may vary from period to period) and the formulated objectives, for example with regard to the democratic process or economic growth, the public sector will be obliged to be involved with one or more of these aspects. Information campaigns and accessibility appear to be relevant in any event.

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<sup>24</sup> Marketing uses the four Ps:

- Product – the properties of the product or service.
- Price – the pricing applied.
- Promotion – the promotion of the product concerned.
- Place – the distribution of the product or the manner in which the product is supplied to the customers.

## 8.15 COMPARISON OF THE SETS OF BASIC PRINCIPLES

Our study centres around three sets of basic principles: the policy on optimal availability of public-sector information, the Directions issued by the Prime Minister and the Freedom of Information Act. We have outlined a number of characteristics in this section.

### *Policy on 'optimal availability of government information'*

The policy on 'making electronic databases accessible' is technically possible. The democratic value is limited in cases where the information is in databases that require specific technical facilities and knowledge in order to be able to use them. This occurs where access is granted to databases such as the geographic databanks (Rotterdam Large-scale Based Map, Current Elevation Model and Top-10 Vector Databank). If the democratic value of these databanks were to be maximised, this would require extra government facilities such as a help desk or a (map) printing press. A zero price and, to a lesser extent, a marginal cost price also have a positive effect on the democratic process.

In terms of economic wealth effects, charging a marginal cost price (and, to a lesser extent, a zero price) produces the greatest effect in relation to the present situation and within the existing system. In this connection, the quality of the information should meet the wishes of the customers. However, the consequence of this choice is that the full costs of the desired data infrastructure are borne by the core function authority,<sup>25</sup> even if the databank is useful and necessary for other public bodies too. The debate on whether or not the burden of financing should be shifted from other public bodies to the core function authority also plays a role here.

The drawback of a zero price and, to a lesser extent, a marginal cost price is a possible increase in tax as a result of reduced income from third parties. In addition, there is a risk that certain incentives for the staff of the core function authority will disappear, thereby reducing job satisfaction. It should, incidentally, be noted that the disappearance of market incentives could perhaps be offset by other incentives such as the number of times the databank is consulted, sufficiently innovative resources, and better occupational terms of employment, such as the social status of the work and opportunities for personal development. Finally, experience shows that services that are provided free of charge are often regarded by the customers as being of inferior quality.

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<sup>25</sup> On the assumption that government wishes to promote a knowledge-based economy, this willingness should exist.

Consideration could also be given to standardising as far as possible the mutual exchangeability of comparable databanks so that it is easier for third parties to combine information. Our study shows that the combining of databanks could possibly generate (more) new products, thereby helping to boost wealth.

The policy is therefore to encourage the provision of access to public sector databases to third parties, preferably at a zero price.

### *The Directions issued by the Prime Minister*

In accordance with the Directions issued by the Prime Minister, public sector organisations may provide market services (if they are permitted) at full cost price, plus a mark-up for a reasonable profit and for (notional) levies. This mark-up is intended to ensure that the price is in keeping with the market rate. As a consequence of this guideline, the provision of such services would have less effect on wealth than if a zero price or a marginal cost price were to be charged in the same circumstances. Moreover, a full cost price may be an obstacle to the entry of new firms into the market and therefore to accessibility. On the other hand, such pricing can possibly reduce the demands on public funds. The directions are intended, among other things, to prevent undesirable market distortion owing to the actions of public bodies. This pricing is a relative obstacle to accessibility and leads in the case of the four case studies both to reduced wealth and to a reduced financing burden for the core function authority.

### *Information under the Freedom of Information Act*

The price charged for information supplied under the Freedom of Information Act is equal to the costs of provision<sup>26</sup>. This is a price close to the zero price. This encourages accessibility, but has less positive economic effects than a marginal cost price. Although the Freedom of Information Act does promote passive access to government databanks, it does not encourage the proactive provision of information.

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<sup>26</sup> In this situation the cost of provision are defined as the cost of a postage stamp or an information carrier. This price is therefore very close to the zero price.

## 8.16 RECOMMENDATIONS

- Our first recommendation relates to the formulation of the public function. The study shows that various public bodies other than the core function authority have a need of one of the databanks. An analysis of these needs and the databanks used is necessary in order to be able to determine how the existing databanks can be deployed more widely for the performance of public functions. On this basis it would be possible to define the reviewed public function more widely. It is therefore necessary to lay this down in an act of parliament or an explicit decree.
- If it is necessary to modify a databank in order to make possible a broader public function, this should be considered. In practice there will often be databanks that have already been modified in order to fulfil the criteria of other public bodies.
- We also considered that a government body which attaches importance to promoting a knowledge-based economy could reflect this by making available financial resources to encourage the streamlining of accessibility. By streamlining we mean promotional activities designed to raise the profile and promote use of databases, strengthen the service provided in this connection, for example by organising a helpdesk or incorporating search systems, and also by enhancing the exchangeability of the different databanks. This can be done, for example, by encouraging more standardisation. In this debate, we would not be in favour of an arrangement whereby these financial resources are provided centrally and at the same time the funds of the lower-tier government bodies are reduced by the same amount.
- Making available government databases would encourage other public bodies to make products at a low cost (e.g. city maps) and to offer them at a low price or even free of charge. At a local level this could distort competition. It is therefore important for the debate on accessibility to be carried on in the light of explicit guidelines for commercial activities by all public bodies.

ANNEX

RESPONDENTS AND  
LITERATURE CONSULTED

## RESPONDENTS

### LIST OF INTERLOCUTORS

- Mr Bastiaansen, Teletlas.
- Mr Bieling, Andes.
- Mr H. Flier, Legislation Records Division, Ministry of the Interior and Kingdom Relations.
- Dr H.M. Fijnaut, director, Survey Department, Directorate General for Public Works and Water Management.
- Mr S.M. Gerritsen, Netherlands Topographical Agency.
- Mr Guikers, Bridgis.
- Mr Mollema, Wegener-Suurland-Falkplan.
- Mr F. Smit, RA, director, Netherlands Topographical Agency.
- Mr L.A. Smit, head of the Survey and Property Information Department, Rotterdam Municipal Works.
- Mr J. Teunissen, head of Systems, Survey and Property Information Department, Rotterdam Municipal Works.
- Mr P.M.H. Waters, Coordinating Policy Assistant, Public Sector Information Policy Division, Ministry of the Interior and Kingdom Relations.
- Mr W. Wouters, Survey Department.

### GUIDANCE

Guidance in the carrying out of the study was provided by a committee, which also had the function of advising the NEI and Berenschot on the approach to be adopted to the study and monitoring whether it had been carried out in accordance with the requirements. The committee met twice. It consisted of the following persons:

- Dr H.M. Fijnaut, Ministry of Transport, Public Works and Water Management, Directorate General for Public Works and Water Management.
- Mrs A. Kappelhof, Ministry of Transport, Public Works and Water Management.
- Mr B. Kok, Dutch Council for Geographic Information (RAVI).
- Mr J.W. Lintsen, Ministry of the Interior and Kingdom Relations.
- Mr J.W. Osinga, Ministry of Housing, Spatial Planning and the Environment.
- Mr C.J.C. Prevo, Municipality of Rotterdam.
- Mr F. Smit, RA, Topographical Agency, the Netherlands.
- Mr L.A. Smit, Municipality of Rotterdam.
- Mr G. te Wechel, Association of Netherlands Municipalities.

- Mr P.M.H. Waters, Ministry of the Interior and Kingdom Relations.

It was also decided, together with Berenschot and the Netherlands Economics Institute (NEI), to establish a sounding board group. This group discussed all the documents before sending them to the committee. The sounding board group also discussed any problem areas. It consisted of the following members:

- Mr J. Boudestijn, Ministry of the Interior and Kingdom Relations.
- Mr J.W. Flier, Ministry of the Interior and Kingdom Relations.
- Mr J.W. Flohil, Ministry of Finance.
- Mr P.M.H. Waters, Ministry of the Interior and Kingdom Relations.

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