

# 5

## Migration Technology and Public Responsibility

*Albert Meijer*

### Using powerful technologies responsibly?<sup>1</sup>

As stated in many other parts of this book, information systems are crucial for implementing migration policies. Information systems play a key role in the admissions procedure as well as in tracing illegal aliens. In addition, these systems are of great importance for the cooperation among the different administrative levels, different countries and different organizations involved in these policies. The features offered by information technology are deployed in many ways. According to the proponents of the use of information technology, this technology contributes to the effectiveness and legitimacy of migration policies. They also argue that information systems can facilitate an objective assessment of asylum requests and improve the coordination among the various parties involved.

However, it also appears that the use of these technologies is not without risks. The most significant risk is that using technologies can affect the precision with which individual decisions are taken and actions carried out. Opponents of the use of information technology emphasize that migrants who have been wrongly registered may not be dealt with correctly and therefore run into problems. The incorrect use of information from these systems when tracing migrants can lead to them being treated wrongfully. Furthermore, if the information provided by migrants is insufficiently protected, third parties will have access to extremely sensitive information.

Beyond the debate between proponents and opponents of the use of information technology in migration policies, lies a fundamental debate about the instruments governments should be allowed to use in the

implementation of migration policies. Winner (1986: 52) stresses: 'What appears to be merely instrumental choices are better seen as choices about the form of social and political life a society builds, choices about the kinds of people we want to become.' An analysis of the choices involved in the implementation of information technology in migration policies is needed to feed a debate about these choices. This chapter aims to contribute to these choices by highlighting new patterns of government responsibility.

Information systems give governments access to powerful resources and it is essential that they use these resources responsibly – both to deploy all the available features properly and to minimize risks. The creation of guarantees for correct usage is paramount here. Of course, a responsible approach does not only mean that governments need to be careful in their use of technology but also careful with regard to *not* using technology. Responsible usage means ensuring that new technology is used if it can help to ensure that better decisions are taken. The theme of responsible use of technology is a key theme in the philosophy of technology, and various philosophers have warned against irresponsible use of technology. More specifically, Winner (1977) calls our attention to the risk of 'technics-out-of-control' and Galbraith (1968) warns us of the danger that technology will develop its own logic which may run counter to the intentions of the users and the common interest.

This chapter explores how exactly the use of information technology affects government responsibility. This will not be a legislative exploration of responsibilities but rather an organizational and administrative analysis. Thus, it is not so much an analysis of the formal rules as an account of what actually happens in practice.<sup>2</sup> It should also be said that this chapter does not claim to be exhaustive: a comprehensive exploration of this issue demands a whole book and not just one chapter. The aim of this chapter, therefore, is to generate critical questions regarding government responsibilities for using information technology.<sup>3</sup>

In each member state, many parties are involved in implementing migration policy and each party has its own responsibilities. The diversity is enormous. To enable an analysis of mechanisms and patterns, this chapter will focus on the Netherlands. A case study of the Netherlands will highlight mechanisms and patterns which will arguably also exist, in some form, in the other member states. The objective of this analysis is to stimulate more responsible practices of technology use in line with Winner's (1986) argument that technology criticism is not about

rejecting technology but rather about stimulating better technological practices.

### **Responsibility: administrative interpretation**

The concept of 'responsibility' is one that is often and easily used in discussions about politics and administration. Members of Parliament often emphasize that the relevant minister is responsible and, if something is unclear, the responsibilities require a crystal-clear definition. An unambiguous definition of responsibilities is generally regarded as an essential prerequisite if a government is to function both effectively and legitimately.

In fact, however, the concept of responsibility can embrace a multitude of opinions. It is an 'essentially contested concept' in that there are many ways of interpreting it, all of which could be plausible, but which do not always tolerate each other well (Bovens 1990: 29). I will use the concept 'responsibility' to evaluate whether governments use technology in the proper manner. Responsibility is regarded here as a combination of a task and a virtue (Bovens 1990: 34, 40–7).<sup>4</sup> An example of interpreting 'responsibility' in this way is a statement such as: the Justice Minister bears his responsibility for migration policy well. This means it is clear the minister is responsible for migration policy and, what is more, this minister takes his tasks and duties seriously.

Does a particular authority have sufficient information about what is happening in order to assume its responsibility? Does the authority have the means to shoulder this responsibility? My empirical focus here differs from the legal perspective in which the emphasis is on the liability that becomes an issue whenever laws or rules are not obeyed. A legal interpretation of responsibility is not necessarily a guarantee for responsible actions in complex organizations if the latter pay no attention to all the possibilities for acting in a responsible manner. If one takes things from a cybernetics point of view, therefore, one can stipulate extra conditions. 'Acting responsibly' also implies that it may be possible to influence how an organization acts and that there is sufficient information available to know how and when action will be taken. Control instruments and information sources are important additions to the legal perspective on responsibility.

When exactly can one say that technology is being used responsibly? First of all, there are the demands arising from the responsibility to perform tasks. Strom demonstrates how a parliamentary democracy can be regarded as a succession of delegations: from voter to parliamentarian,

to public administrator, to public sector employee (Strom 2000). In order to analyse the political, administrative and public sector responsibilities, it is important to look at the three links, namely, parliamentarians, public managers and public sector employees and to investigate their responsibilities.

- *Political responsibilities.* It is the responsibility of those who are chosen by the people to represent the interests of the people ('acting for the people') and in addition to take decisions for the general good ('standing for a particular idea'). They should relate to technology in such a way that it is deployed in the interests of the people. Furthermore, the decisions taken on technology should be made carefully.
- *Management responsibilities.* Public managers are responsible for ensuring an adequate implementation of decisions: the technologies should be used in such a way that they lead to the desired effect. What is more, undesirable side effects should be prevented.
- *Responsibilities of public sector employees.* Public sector (or government) employees are required to make the right decisions about using technology in individual cases. These considerations should be based on general rules laid down by those politically responsible. These general rules should be applied in specific situations and should also do justice to the characteristics of the individual situation.

Even if tasks are clearly assigned at these three levels, the question still remains as to whether public officials then interpret these tasks in the proper manner. The following criterion is crucial:

- *A serious and autonomous interpretation of performing one's role.* Using technology responsibly means doing so in the way that is expected of someone performing the duties of a public servant or someone in a particular position. In order to be able to use technology responsibly, the acting public servant or organization needs to have a certain amount of autonomy and to act according to their own observations and norms. Public sector employees and organizations should have a level of autonomy that matches the role they have been given, as defined by legislative rules.

Dutiful behaviour implies more than a serious and autonomous interpretation of performing one's role. In addition, the following criteria apply to 'responsibility as a virtue' (Bovens 1990: 40–7):

- *Adequate perception of and attention to any possible violation of standards.* The use of technology should be accompanied by an awareness of the possible dangers and by a consideration of conflicting norms and interests. Will the technology lead to undesirable results for the individual? The possible consequences of using technology and more especially the consequences for others should be taken into account.
- *Assessment of behaviour using a consistent code.* Technology can only be used responsibly if a moral code (and not an emotion) is used as the ground rule. Anyone should be able to assess the manner of using that technology and to find it understandable. Naturally, these codes apply mainly to the behaviour of public managers and public sector employees.

I will use this normative model to analyse the use of technology in migration policies. Are tasks defined in such a way that the political-administrative system can use the migration technology in a responsible manner? Can those involved interpret the tasks they have been entrusted with in a proper manner? Through interviews and document study, I have investigated the problem areas associated with (1) the use of technology in one policy-implementation agency, (2) the use of a technological system in the chain of responsible organizations and (3) technological systems that facilitate international collaboration. In all these situations, I will assess changes in political, management and civil servants' responsibilities. On the basis of the findings I will describe shifts in patterns of government responsibility. This analysis does not pretend to be exhaustive and only focuses on one member state. This chapter will, however, show which problems can arise and thus demand the attention of government, politics and society to prevent the risk of 'technics-out-of-control'.

### **Responsible use of technology in policy implementation agencies?<sup>5</sup>**

The Dutch Immigration and Naturalization Service (IND) is a large administrative government organization that deals with large numbers of requests from aliens. INDIS is the IND Information System which processes these requests. The system comprises various components such as a database with information about all aliens and the Decision Support System (DSS) which contains knowledge about all formal rules and regulations concerning requests from aliens.

First of all, I would like to consider the political responsibilities for INDIS. Are these interpreted properly? A responsible manner of using ICT demands that political decisions be taken with care to avoid technology being deployed in a careless or incorrect way. Recent events at the IND indicate that political responsibilities are not always met. In 2005, the Dutch Court of Audit was very critical about the use of information technology within the IND, stating that systems were not well coordinated and that databases were contaminated (Netherlands Court of Audit, 'Immigration and Naturalization Service IND', Dutch House of Representatives, Year 2004–05, 30 240, nos. 1–2). This critical report did not come as a surprise to the IND: 'In the years previous to that report, the IND had got themselves into difficulties. There was nothing new in that report from the Court of Audit' (Interview IND, 8 April 2008). The problems that occurred in 2004 were, according to the IND and also to the Court of Audit, mainly due to political decisions with regard to transferring tasks from the police to the IND (Interview IND, 8 April 2008; interview Netherlands Court of Audit, 11 March 2008). All the information from the police was transferred to the IND in just two nights. The IND received boxes full of information from the police and had to take on another new and heavy task. 'Our system could not cope with this and neither could our method of thinking' (Interview IND, 8 April 2008). This just goes to show that political decisions, taken with insufficient consideration of the problems of implementation, lead to irresponsible use of technology. In a strongly politicized area such as migration policy, this is certainly not surprising. The interviewees at the Court of Audit: 'We also looked at the implementation of new information systems. We noticed that warnings of incorrectly functioning systems were ignored. When one is under political pressure, one has to carry on' (Interview Netherlands Court of Audit, 11 March 2008).

Political pressure as a reason for using technology irresponsibly and with insufficient regard for the consequences of certain choices is a given fact in the literature on crisis situations. Romzek and Dubnick described in a classic article how the Challenger space shuttle disaster could be ascribed to political pressure on NASA to carry out sufficient launches (Romzek and Dubnick 1987). The emphasis on the number of launches was more important than professional quality and this led to warnings about possible problems with the launch being ignored. The political pressure on the IND has not led to such visible disasters but the insidious influence was enormous and led to many problems in implementing migration policy.

An aspect directly related to political responsibility is the responsibility held by civil service management. The expansion of information systems over the years had led to information-management problems within the IND. The present facilities consist of many different databases that are not directly linked to each other. The Dutch Court of Audit report also demonstrated that the IND made incorrect estimates regarding the implementation of information technology; this was probably due to the reorganizations that were taking place (Dutch House of Representatives, Year 2004–05, 30 240, nos. 1–2; Interview Netherlands Court of Audit, 11 March 2008). A new system was put into place while the underlying data structure was still incomplete. ‘The new system was like a Ferrari on a muddy road’ (Interview IND, 8 April 2008). A link was also made to the Municipal Basic Data Administration even though insufficient information about the underlying coding was available. These findings indicate that management responsibilities could not be exerted properly since technological possibilities were overestimated and the difficulties of implementing such systems underestimated.

At the bottom level of public sector organizations, officers within the IND take decisions – within limited discretionary powers – about requests from aliens to be admitted to the country.<sup>6</sup> The role of INDIS, or more specifically the Decision Support System (DSS), in this decision-making is important. Officially, the DSS simply advises the decision-processing officers, but in practice it has a controlling nature. ‘The advice indicated by the DSS is often compelling. You are immediately placed in the correct decision pathway. The decision-processing officer is then presented with the question: do you wish to deal with this matter in the DSS? Everyone then says “yes”.’ The official decision is also made using INDIS/DSS. The DSS even has some influence on the recording of transcriptions of interviews and of minutes. ‘The minutes are written using information from the dossier but they also coincide with the questions that will be asked by the DSS’ (Interview IND, 8 April 2008). The decision-processing officers are not familiar with the structure of the DSS: ‘Decision-processing officers have never seen the decision tree. The DSS has seven levels and is rather complicated’ (Interview IND, 8 April 2008). The use of such systems raises questions with regard to the responsibility held by individual public servants. Are they able to take decisions in a responsible manner if they do not know how the decision has been made? Van den Hoven talks in such cases of ‘epistemic dependence’ (Van den Hoven 1998), meaning that users of the system are not so much dependent on technological systems for their behaviour as for their observations. They can no longer think outside the system.

Bovens and Zouridis indicate – in a theory that can also be applied to the DSS – that the responsibility of the individual for performing tasks is being replaced by the responsibility of the ‘system level bureaucrats’ (Bovens and Zouridis 2002). These researchers believe that problems arise if the new responsibilities are insufficiently embedded in the task. One wonders whether there really is a problem in this case. The DSS is basically made up of ‘aliens circulars’, which are changes to the legislation and thus come under parliamentary control. At least 50 are produced every year. By directly linking the decision tree to parliamentary control, the responsibility of the ‘system level bureaucrats’ would seem to be clearly defined. In practice, however, this link is not always straightforward. Certain legal forms of reasoning are unsuitable for incorporation into a decision tree. Systems developers then have to take the initiative to make the legislation more precise, to fit in with the system. The task responsibility of these system-level bureaucrats is then raised to a higher level and can interfere with the task responsibilities of parliamentarians.

There is another, more optimistic, way of looking at how migration policy is implemented at the level of the individual: systems can provide a guarantee that expertise is present in the organization. At the beginning of the twenty-first century, the IND had to take on several hundred new employees to deal with additional tasks. This meant that, for a while, employees with relatively little expertise were issuing the decisions (Interview Netherlands Court of Audit, 11 March 2008). That led to problems, but these could be solved to a certain extent by using information systems. In other words, knowledge can be stored in a system and technology can guarantee an adequate implementation of a policy.

### **Responsible use of technology throughout the chain of organizations?<sup>7</sup>**

Establishing responsibilities for the use of technology at the level of the policy-implementation agency poses many questions, but shaping the responsibilities for technology used in the whole chain of organizations is even more complicated. The chain of responsibility for Dutch migration policy is large and complex. A lack of management and coordination can lead to various types of problems such as missed deadlines (Interview Netherlands Court of Audit, 11 March 2008). When Court of Audit employees were interviewed, they indicated this could mean that one organization had to compensate for the errors made by another: ‘The IND is tackled about the errors made by others who use



the information provided by municipalities and posts abroad' (Interview Netherlands Court of Audit, 11 March 2008).

An essential technology for bringing about collaboration within the policy chain is the Aliens Information Interface (Dutch abbreviation: BVV) (see also Chapter 4 by Van der Ploeg and Sprenkels in this book). Any discussions about responsibility and technology in the chains of organizations will mainly be focused on this facility. Questions regarding responsibility can refer to decision-making about technological systems as well as their use. Both aspects are discussed here. I will also specifically address collaboration with private parties because this type of collaboration raises questions regarding the interpretation of public responsibility for technology.

The aim of the BVV is to make it easier to exchange information about aliens.<sup>8</sup> Information exchange is, after all, only possible if an alien has an identity that remains the same. If someone has more than one identity, the system cannot function. The focal point in the BVV is therefore the unique aliens number that all aliens are allocated when they first come into contact with the government in order to obtain a work or study visa, during an asylum procedure, or if arrested as an illegal person. This means that four organizations can enter an alien's details in the BVV: the Ministry of Foreign Affairs, the IND, the Royal Military Police and the Aliens Police. Various organizations in the chain can request information from the system. The BVV can be represented as shown in Figure 5.1.

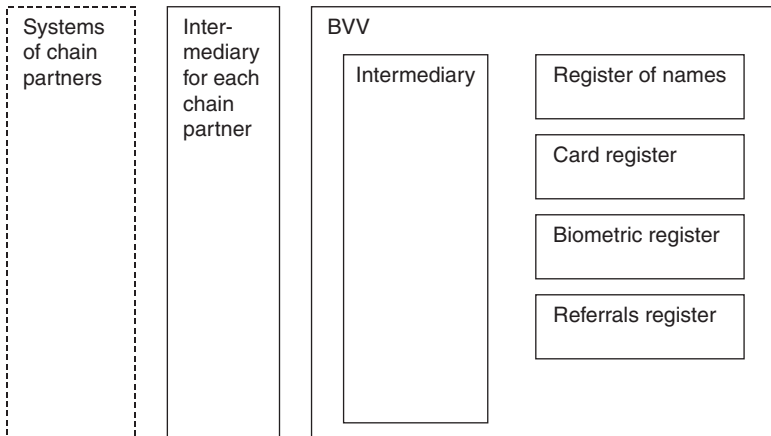


Figure 5.1 Aliens Information Interface (BVV)

The development of the BVV can be regarded as an attempt to use technology in a responsible manner. For example, the National Ombudsman noticed in 2002 that the chain partners all used their own registration systems and that these were not linked to each other. This meant there could be no automatic check of any erroneous personal details (National Ombudsman 2003).<sup>9</sup> The National Ombudsman concluded this was one of the reasons so many citizens had complained. The BVV was a reaction to this conclusion and a manner of solving the collaboration problems.

Chain collaboration raises questions about the division of political and management responsibilities. Which politician is able to take responsible decisions about collaboration within the chain? Which administrator within this complex collaborative situation is able to interpret their responsibilities adequately? In this cooperation, we see complexity both in the number of actors involved and in the multi-level aspects of governance. The coordination of collaboration for alien affairs centres around the Coordination Group for Alien Affairs (CGV). The principal members of the CGV are the Ministry of Foreign Affairs, the Central Agency for Reception of Asylum Seekers, the Royal Military Police, IND, Aliens Police, Seaport Police Rotterdam and the Dutch Repatriation and Departure Service. The partners are the Council for the Judiciary, Legal Aid Council and the Custodial Institutions Service. The coordination group is a consultation group but also a steering group for large computerization projects. 'There is no single rule regarding decision-making. It is mainly a question of common interests. Computerization deals, by its very nature, with common interests' (Interview Ministry of Justice, 22 April 2008). Because decisions have to be taken at different levels, it becomes increasingly complex. In addition to the above-mentioned strategic level, decision-making also takes place at functional and operational levels. At the functional level, the chain partners within the Steering Group for Chain Computerization consult each other; operational management is the responsibility of the Facility Organization of the Dutch Police Force.

This complexity involved in decision-making and in shaping the BVV raises the question as to what extent the parties involved have sufficient insight into the choices made about the BVV. Or is the link between technical matters at an operational level and the management choices made at a strategic level too complex? It is possible to discover the consequences of various actions by monitoring the quality of the information system. The quality of the BVV is checked by regular trend reports on the

quality of the information. An auditing process has also been agreed: the correct application of the protocol is audited every two years. This form of monitoring and auditing allows attention to be paid at a systematic level to the consequences of breaking the norms.

When there is collaboration on using technological systems within a policy chain, the implementation of migration policy can also lead to problems for the responsible managers. The following example clearly demonstrates the dilemmas posed by collaborating on technical systems. The Dutch Court of Audit noticed that the length of time required to process requests from aliens was being insufficiently monitored because each chain partner was only concerned with their own timing. 'Then, the municipality front offices were removed and this had a positive effect. Now [the IND] are in charge.... An advantage of this change is that more expertise is present at the enquiry desks, which is better for dealing with difficult cases. A disadvantage of the front offices being removed from the municipalities is that travelling time has increased. Some people now have to travel [a long distance] for matters previously dealt with by their own municipality.... This can be regarded as a considerable deterioration in service' (Interview IND, 8 April 2008). In this example, the pros and cons of working in chains are clear: working in a chain can lead to coordination problems but the integration of functions into one single organization leads to a lack of flexibility.

One specific question that arises for members of a chain is the involvement of private parties, in, for example, various aspects of granting visas at the diplomatic posts abroad. In the future, all the personal details of those requiring a visa will be entered into the system, even for short-stay visas. This leads to a discussion of outsourcing in its various gradations; extensive forms can lead to resistance. 'Parliament is not in favour of this. One gets the idea that a travel agency in Lagos can enter data into the BVV' (Interview Ministry of Justice, 22 April 2008). The only alternative is to send Dutch personnel to all the posts, and that would be too expensive. This is the problem of shifting responsibilities for public tasks over to private parties. The Dutch Scientific Council for Government Policy states that an adequate combination of guarantees is necessary when public tasks are transferred to private agencies. The question in this case is whether, in light of the distance, there can be sufficient guarantees against inadequate implementation of the public tasks related to migration. Can a Dutch minister ensure that private parties in faraway countries use IT in migration policies correctly?

## **Responsible use of technology in international collaboration?**<sup>10</sup>

Due to the Schengen Treaty, a great deal of coordination on migration policy takes place between the member countries. The development and use of information systems is one way of streamlining and enhancing this collaboration. However, the use of these systems does raise questions about responsibilities that are partly to do with European decision-making and partly with the character of new technologies. This chapter contains discussions of the most important European systems and, with these as examples, of the issue of responsibility and technology.

The Schengen Information System (SIS) was developed to support the implementation of the Schengen Treaty of 1985 (Kroon 1997). This treaty provided for the discontinuation of internal border controls between the member countries and raised the question of how the controls at the external borders could be coordinated. That is why the SIS was developed and in 1995 implemented. The SIS consists of a large database in Strasbourg, with separate systems in the member states. In the Netherlands, the National Police Services Agency manages the N-SIS register. The SIRENE Office is responsible for daily data-traffic exchange. The N-SIS and the SIS are linked up permanently.

The SIS contains entries which enable the detection of goods (especially stolen or missing vehicles and stolen identity documents) and persons. The Schengen countries enter these data but there are no specific criteria on who/what should be entered except the broad provisions in Articles 95–100 of the Schengen Implementation Agreement. In general, for persons, this refers to: persons who should be arrested and extradited, aliens who should be refused admission, missing persons, persons sought in relation to criminal procedures (witnesses) and persons who should be allowed admission as part of discreet checks (e.g. drug smuggling). In other words, the SIS mainly contains data on aliens who should be refused admission by the border-control officers. In the Netherlands, this system refers to the entry 'ONGEW' (declared undesirable according to Article 67 of the Aliens Act) or to 'OVR' (undesirable alien). When visas are requested at the external border, a check is made of whether the alien has been entered as ONGEW or OVR and, if this proves to be the case, he/she is generally refused admission to the country (Aliens Circular 2000 (A), 9.2.1 and 9.2.2).

At present, the successor of the 1995 version of the SIS is being developed, SIS II. It is basically a modernized version of the old SIS and will be

more accessible for a larger number of states. One important difference is that biometric data are being added to SIS II, to be ready for identification and verification. Another difference is that links will be made between different entries, for example between persons and goods.

The SIS has led to a great deal of discussion and criticism among academics, refugee organizations and others. Moreover, the Dutch National Ombudsman has received various complaints about the system and its effects, and various cases have been brought to court. Tables 5.1 and 5.2 present an overview of these cases.

It is clear that registrations in the SIS can lead to problems.<sup>11</sup> One might take the view that this number of cases is not particularly high, considering the extremely large number of registrations and the amount of processing. The conclusion would then be that the use of the SIS leads to relatively few problems. Another interpretation is, however, that this is just the tip of the iceberg and that most of the cases involving problems with the SIS do not reach the National Ombudsman or the Administrative Court for one reason or another.

The EU Visa Information System (EU VIS) is currently under construction. Since the Schengen Treaty, the policy relating to visas has become one of the most harmonized of EU matters. All the countries have the same visa, and a uniform policy and a uniform issue (sticker in the passport) were already in place. A uniform system of registration would then make this system watertight and it would prevent 'visa shopping'. In June 2008, the Agricultural Council agreed to the wording of the Council Regulation,<sup>12</sup> but the European Parliament has still to agree to this Regulation. There is still political discussion, particularly on data protection and the use of personal details. The design of EU VIS has largely been thought out. It contains personal details, visa information and biometric characteristics (fingerprints). The European Commission requested the development of the system and a private party did the development work. EU VIS, although meant to resemble the SIS, will have a much larger database. All the countries have their own information intermediary to link the system to national systems.

Which questions about responsibility are raised by the SIS and EU VIS? A well-known problem for those assuming political responsibility for European decision-making is the complexity and the multitude of parties involved. This problem has certainly arisen in making decisions about the EU VIS through a 'co-decision' procedure which requires the approval of both the Council (in this case the Justice and Home Affairs Council) and the European Parliament. The initiative to create the EU

Table 5.1 Matters relating to the SIS handled by the National Ombudsman

<b>Report</b>	<b>Complaint</b>	<b>Role information system</b>	<b>Decision</b>
1997/304	Information from IND not correct	Necessary information was inaccessible	Allowed. Request for Provisional Residence Permit took too long
1998/164	Wrongfully entered in OPS and arrested	Incorrect registration in OPS and SIS	Allowed. Data should have been removed
1999/300	Not informed soon enough about entry in SIS	Entry in SIS prevented accused from travelling	Allowed: information too limited
1999/420	CRI refused to remove registration from SIS	Requester believed registration to be unlawful	Proper. Registration is not the responsibility of CRI
2002/078	Granting of Provisional Residence Permit refused	Incorrect name entered in OPS	Allowed: incorrect information entered and insufficient checking
2002/087	Granting of Provisional Residence Permit wrongfully delayed	No entry in SIS	Allowed: information too limited
2003/023	Time required to grant Provisional Residence Permit; no information from SIS	Requester wished to see information in SIS	Procedure to obtain information from SIS carried out correctly
2003/388	Delay to granting Provisional Residents Permit; not well informed	Entry in SIS done in Germany	Dismissed: correct procedure. Allowed: information provision
2007/199	Held by Military Police too long	Linking of information with the wrong person	Dismissed: correct procedure. Allowed: information provision

OPS = Investigation Registration System; CRI = Criminal Investigation Information Service.

Table 5.2 Cases at the Administrative Court relating to the SIS

Court case	Request	Role information system	Decision
LJN: AW2424	Remove entry in SIS	Entry in SIS	Allowed
LJN: AA6557	Remove entry in SIS	Entry in SIS	Dismissed
LJN: AR7219	Remove entry in SIS	Entry in SIS	Italy decides
LJN: BB6132	Spain appealed against request to remove entry from SIS	Entry in SIS	Dismissed
LJN: AU3548	Remove entry in SIS	Entry in SIS	Dismissed
LJN: BA1316	Remove entry in SIS	Entry in SIS	Dismissed
LJN: AR3286	Unlawful arrest at Schiphol	No entry in SIS, but arrested	Allowed
LJN: BA3547	Accused wants to remain in the Netherlands, despite SIS entry	Entry in SIS	Dismissed
LJN: AT9961	Unlawful arrest	No entry in SIS, but arrested	Allowed
LJN: BA3169	Remove entry in SIS	Entry in SIS	Dismissed
LJN: BA2132	Remove entry in SIS	Entry in SIS	Allowed
LJN: AW2427	Remove entry in SIS	Entry in SIS	Allowed
LJN: AA5370	Remove entry in SIS	Entry in SIS	Dismissed
LJN: BC3296	Entry to the Netherlands unlawfully refused; in transit	Entry in SIS	Allowed

VIS came from the Commission and this was subsequently discussed in both the Council and the EP. Prior to the discussion in the Council, there was a discussion in the Netherlands to determine the country's standpoint; a working group was set up to look at the financial consequences and to decide which organizations would be affected by the proposal. The working group's standpoint was discussed by the relevant ministers. During the meeting in Brussels to decide on the EU VIS, the Ministry of Foreign Affairs supplied the spokesperson, but representatives of Foreign Affairs, Justice (Immigration Policy directorate) and the IND were also present. Before the meetings, preliminary consultations took place in which the Royal Military Police and the director of the Immigration Coordination Department at the Justice Ministry were also present. Prior to meetings of the Council working group, Foreign Affairs prepared instructions that were presented to the departmental heads. This meant there was no political involvement during the discussions on the EU

VIS (except where there were points at issue between member states or ministries). However, all topics for the Justice and Home Affairs Council were discussed in a General Consultation of the Dutch House of Representatives in order for parliamentarians to give their views to the Justice Minister. Within the Council, the proposal was discussed in the Council Visa Working Group and, parallel to the decision-making in the Council, decisions were taken in the European Parliament. By means of contact among those involved, a proposal was sought which was acceptable to both parties. This complex decision-making process raises the question: who can take the final decision in a responsible manner?

The complexity of implementing European policy also raises questions about the responsibilities of the administrators and public employees. An important issue here is decontextualization: disconnecting the context in which information is entered into systems from the context in which it is used. In the case of the SIS, the entries to allow detection raise questions. Entry of data is often done in one country (context) and used in another context. The link between contexts is limited: the SIS contains no information other than personal details and registrations with reference to the Article in the Schengen Implementation Agreement on which the registration is based. A national government decides to include an entry using its own criteria and these differ per country. Furthermore, the countries do not know what the others' criteria are. The context of use is often the border control. If a match is found in the database entries, this may be why an alien is refused admission at the external border, but the meaning of the registered entry differs per country. A country that refuses admission can in theory ask for extra information from the country responsible for registering the person, but this does not happen in practice. This means that decontextualization causes the Dutch government to rely on information of which the meaning is unknown.

Another point related to the complexity of implementation is the sharing of administrative responsibilities. In the Netherlands, the entries in the SIS are managed by the National Police Services Agency (general management) and the responsible authorities (specific registers). For example, the IND is responsible for managing the register with Article 96 entries. 'One then wonders who exactly is responsible for the quality of the information, as the responsibilities of the Police and the IND overlap partly' (Interview IND, 15 May 2008). In the case of the EU VIS, too, there are issues regarding the distribution of responsibilities; for this system, a central control organization will be set up



and managed in Strasbourg, but the system will be filled with data in the various participating countries.<sup>13</sup> This problem is partially a repeat of the earlier mentioned problems of sharing responsibilities in policy chains. Four different authorities grant visas (Foreign Affairs Ministry, IND, Royal Military Police and the Seaport Police), and in order to carry out its monitoring function, the police force may also view the EU VIS. In addition, the EU VIS is used by Schengen member countries and thus also, within countries, by a multitude of organizations. At the moment, it is not clear how to guarantee that identification and verification take place in the same way everywhere. 'In fact, I don't know how they are going to do this. Perhaps the European Commission will supply a manual, but I've heard nothing so far' (Interview IND, 6 May 2008). There is a measure of standardization in the use of the form in which the reasons for refusing a visa request have to be filled in. However, there is no standard form for indicating why a visa *can* be granted. The numbers are simply too great in the case of the EU VIS to allow contact to be made with the relevant country. An IND employee said about the use of the SIS: 'In implementing policy you have to rely on the information supplied by other countries' (Interview IND, 15 May 2008). On the other hand, the police trade union recently said that since the Eastern European countries joined the EU, there is not much confidence in how other countries deal with the SIS (Smits 2007).

Specific questions about responsibility become an issue when migration policy tasks are contracted out to others. Various levels of outsourcing can be distinguished, such as making appointments with people who wish to request a visa and carrying out administrative procedures required for the implementation of certain steps such as taking fingerprints. In fact, the procedure can never be completely covered by outsourcing. 'Ultimately, a civil servant has to sign somewhere.' An important barrier for the EU VIS is that it is linked with discussions about the Council Regulation that enables embassies to take fingerprints. This regulates the possibility to use outsourcing – third parties taking fingerprints – and there is a lack of agreement on this. The questions about outsourcing are, of course, not new. At the Dutch Embassy in Moscow, a private company, VFS, is already recording fingerprints (Interview IND, 6 May 2008). Certain parts of the visa procedure have been outsourced to VFS.<sup>14</sup> Technological development is therefore not necessarily related to outsourcing, but technology does seem to be making it increasingly easy to use outsourcing because it is now easier to control processes remotely.

## Shifting and complex responsibilities

The discussion of responsibility and technology at three different levels – policy-implementation agencies, chain of organizations and international collaboration – has demonstrated that the practice is richly variegated. In this account, I will evaluate all the practices that have developed and are still developing using criteria that I introduced earlier, namely a serious and autonomous interpretation of performing one's role, an adequate perception of and attention to any possible violation of standards and an assessment of behaviour using a consistent code.

Firstly, the findings of the analysis have shown that 'serious and autonomous interpretation of performing one's role' is a problem. To follow up on what Bovens has said, I would like to make this clear by considering a number of *shifting responsibilities* (Bovens 2000). These responsibilities shift on three levels, which is why the interpretation of responsibilities is a problem:

- *Political responsibility.* The political responsibility for choices about migration policy is increasingly becoming a problem because choices that are in fact political ones are being made in a technical arena. As the rules in technical systems increase their influence, politics moves from formal political arenas into systems design. During the development of the DSS, for example, the designers noticed it was possible – in some cases – to set up a good link between system development and formal political control. The discussion of European collaboration has also shown how this can lead to increasing interdependence between countries. The complexity of the political decision-making pathway (involving information, interests, rules and the people who take action) leads to a situation in which it becomes difficult for the parliamentarians to carry out the tasks they have been given: taking responsible decisions about European information systems. Migration policy is becoming increasingly European in character, and this problem leads to the fundamental question: how should political responsibilities for technology be interpreted in a united Europe?
- *Management responsibility.* Even within organizations it is possible to see a shift of control towards the system developer. Managers are insufficiently able to understand the complexity of technological systems and thus cannot direct (with any degree of responsibility) the actions of system developers. In addition, the responsibility is

shifting from the organization that was given the responsibility to a network of organizations. Information plays a key role in migration policy, and information collection and exchange takes place in a network of organizations. The organization that has been granted responsibility is often unable to discover the origin of the information. Because of the large number of links between information systems, one small error during data entry can have enormous consequences. The networks create a complexity that makes it extremely difficult for managers to keep sight of the desirable and undesirable effects of deploying technology in migration policy. Referring to this, Thompson talks of the 'problem of many hands': the multitude of people involved makes it extremely difficult to make sensible decisions (Thompson 1980).

- *Public sector employee responsibility.* In the discussion of the IND as a policy-implementation agency, we saw that the responsibility is shifting from the decision-processing officer to the one who built the system. The officer taking decisions has to do so using systems which he/she does not understand and cannot possibly be expected to do so. The fundamental problem here is that public servants are less and less able to use their own judgment in individual situations. They find themselves in a limited 'epistemic space' that has been constructed by technology; the space for individual applications disappears as a result. Public servants have to look through a 'technological lens' in order to view a specific situation, while unable to estimate to what extent this lens is distorting the situation. The shifting of responsibilities can be characterized as a movement from an individual level (the decision-processing officer) to a system level (the algorithm). This means that mechanisms for social sorting become less personal while, at the same time, these mechanisms also become more difficult and more abstract. The responsibility also shifts from the decision-processing officer to the person who enters information into the system. This information is then used to take decisions even though the background of this information may be insufficiently clear. In particular, the use of international systems such as the Schengen Information System leads to situations where the distance between entry and usage of this information is too great because the person entering the data is in another country with another political and legislative context. The decision-processing officer often has few possibilities to verify this information and just has to assume that it is accurate.

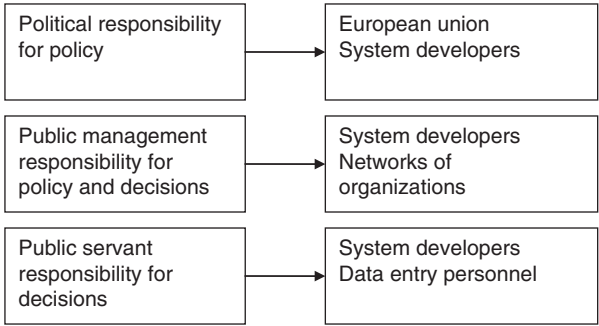


Figure 5.2 Shifting responsibilities

The whole picture of shifting responsibilities is represented in Figure 5.2.

These shifts take place in order to increase the effectiveness of migration policy. Large numbers of collaborating organizations are necessary to make the development and use of complex European information systems a success (Kroon 1997). These shifts do, however, make one wonder about the responsible usage of technology, which is why this is a dilemma for governments and parliamentarians.

Secondly, the analysis at the three levels has shown that an adequate perception of and attention to potential breaks with the norm is a problem. Various reasons for not being able to meet this criterion have been offered in this analysis. One group of reasons can be placed under the heading of *increasing complexity*. The complexity of migration policies is growing because of the use of technology. A good example of this can be found in the decision trees in INDIS which cannot be understood by decision-processing officers (or only after a great deal of effort). It should be noted that the link between decision trees and Aliens Circulars is a good way of coupling the interpretation of these systems and political supervision. In addition, the complexity is increasing because technology makes it easier to form new collaborative ventures. Administrative complexity has thus increased considerably both in the form of collaboration within the chain and of collaboration internationally. This enormous complexity means that governments are no longer able to see the consequences of this use of technology. It thus becomes clear that the criterion 'adequate perception of and attention to potential breaks with the norm' cannot easily be achieved: increasing complexity seems to be necessary for an effective migration policy but at the same time raises questions about a responsible use of technology.

Another set of reasons for not being able to meet the criterion of adequate perception of and attention to any potential breaks with the norm is *political pressure*. I have demonstrated that, particularly at the level of the policy-implementation agency, political pressure has led to problems in the design of information systems and in policy implementation that is supported by information technology. Responsible use of information technology in migration policy requires a political system that recognizes the possibilities offered by technology, but also the limitations. There should be awareness of both the potential and the limitations of the technology when political decisions are taken. This is difficult because it requires political autonomy to be limited but it is absolutely essential if technology is to be used responsibly and without all manner of problems developing. Nevertheless, the description shows that recently more attention has been given to the implementation of policies and the accompanying use of technology. More recently, the necessary degree of political restraint can be observed more clearly.<sup>15</sup>

Thirdly, can one speak of behaviour based on a code that can be assessed and which is consistent? In fact, one could assume that information technology offers many possibilities here. Codes have been developed at national level – for example, for entering information into the SIS – but these are not publicly available. Much more of a problem is the use of codes for international collaboration as they either do not exist (EU VIS) or are inconsistent. The development of clear, checkable codes is a necessary development if the use of technology is to be responsible; and does not cause the same problems as the other two criteria. Guaranteeing responsible entry of information by using a clear coding system should be an important point of discussion. The system developed for entering information in the National Schengen Information System (N-SIS) is an example of how such a guarantee can be specified.

The evaluation of large-scale computerization in migration policies only seems to result in criticism, but it should be pointed out that this critical assessment is mainly based on the fact that the new ‘migration machine’ is challenging the old system of responsibilities. The migration machine does not only have a dark side; it also offers all sorts of possibilities for enhancing the effectiveness and efficiency of migration policy, as well as to ensure justice at an individual level. The complexity of technology reflects the complexity of the policy system in which the machine is used. Policy efforts over the past few years have focused on further developing this complex machine. There also appears to be more

empirical support for the positive effects: effectiveness and efficiency, better coordination and independent evaluation. The negative effects such as wrongful registration, infringement of privacy and unlawful treatment seem to be relatively limited. However, shaping responsibilities adequately seems to have been given a lower priority. It is precisely in the area of migration policy that the interpretation of political and public service responsibilities is of extra importance, because the target group is one which cannot put up much opposition. Migrants often have a weaker position than citizens in terms of their relationships to governments, even if one just takes into account the lack of voting rights. They have some legislative possibilities to express any disagreements but their political influence is limited because they are not part of the electorate. When asked why the information systems set up by the Social Insurance Bank work better than those of the IND, the Court of Audit employees who were interviewed stated the following: 'The Social Insurance Bank has far more customers; if there are problems, then 20 to 30 per cent of the country citizens have a problem too. That is why the Social Insurance Bank has ICT specialists test new systems many times. A system must and will work properly. This demand is the result of huge pressure from outside, but it costs a great deal of money to do things well. The Court of Audit knows about this from previous research carried out on the Social Insurance Bank' (Interview Court of Audit, 11 March 2008). Furthermore, it should be noted that the administrative logic used by organizations such as the above-mentioned Social Insurance Bank cannot be applied to migration policy just like that; there are greater and more far-reaching differences between 'customers'.

### **Uncontrollable machine?**

The shifts in political and management responsibilities can have enormous consequences. Because of these shifts, individual migrants have less understanding of why a decision has been taken. The information used by decision-processing officers comes from anonymous information systems. The complaints the National Ombudsman receives from migrants demonstrate how difficult it is for them to get to grips with the migration machine. But these shifts also have important consequences for Dutch citizens. There are only limited possibilities for exerting one's influence by voting or protesting. Decision-making in Brussels and the decisions made by system developers are completely outside a citizen's

field of vision and influence. The migration machine would seem to be uncontrollable, and Winner's dystopia of 'technics-out-of-control' seems to come near.

Modern information technology is an enormous challenge to the present-day political and administrative system which – as Frissen so aptly phrased it – goes back to the era of the steam engine (Frissen 1998). Such challenges mainly involve the growing complexity and the shifting of responsibilities towards the implementing personnel who are physically a long way from the decision situation. Shifts in task responsibilities make it difficult to deal with technology in a sensible manner. Winner (1977: 284) speaks of 'manifest social complexity': 'The technological society contains many parts and specialized activities with a myriad of interconnections.' Nobody is capable of forming a coherent, rational picture of the whole. In this situation, the concept of responsibility becomes 'as slippery as a squid in a fish market' (Winner 1977: 302) and hence the notion of moral agency dissolves in technological complexity (Winner 1977: 303).

The challenges will probably increase rather than decrease in the future. A recent Dutch study about the future effects of various technologies can be used to reflect on the future of applying information technology to migration policy (Teeuw *et al.* 2007). The report highlights the increasing epistemic dependence. The report mentions a number of times that the degree of dependence information systems require in terms of obtaining information about 'the world' continues to increase. It also indicates that there will be more polycentric governance in the sense that there are more and more links to all sorts of other systems. The report also shows that the technological complexity of systems continues to increase and that is why it is becoming even more difficult for decision-makers to take responsibility for the development of information systems.

This discussion of trends demonstrates that many of the problem areas discussed in this chapter will only get more urgent in the future. The image arises of a machine that is out of control: the system functions but no one understands it any more, neither can anyone regulate it in a responsible manner. To find an answer to the problem, it will be necessary to think about a re-evaluation of the responsibilities. This will require a clear vision of the responsibilities for large-scale policy implementation to be set out in detail.

A source of inspiration for seeking solutions for a policy system out of control is to think about complexity. The complex links between

information systems cause responsibilities simply to evaporate. The problem of too many people being involved has become even more extreme: no one is responsible for the outcomes any more. This is a problem if viewed from the classical point of view of responsibility. Sharing out responsibilities *ex ante* is, after all, a way of guaranteeing that there is control over the system. The arguments against this could be that a lack of *ex ante* responsibility is a characteristic of advanced technical systems: the choice of advanced technologies always leads to more complex systems without clear responsibility structures. The question is, then, how it can be ensured that the controls over the system are sustained. *Ex post* guarantees, where responsibilities take form after the event rather than beforehand, would seem to be a possible solution. This solution can be embedded in a more general incrementalist approach to policy change (Lindblom 1959): small steps are taken and each step is carefully evaluated.

The possibilities for *ex post* guarantees can be further investigated in order to obtain an answer to this increasing complexity. A crucial factor here is learning from one's experiences. The fact that SIS I was not sufficiently evaluated before SIS II was developed is definitely a missed opportunity (Brouwer 2008: 527). On the other hand, the distribution of responsibilities for evaluating the EU VIS could well be an important opportunity for *ex post* guarantees. Furthermore, error detection appears to have a very limited role in the use of systems (including the design of information-system chains) at the moment. It should be clear to whom errors can be reported. This regulatory authority should also check the functioning of the system regularly. It is possible to check the quality of information systems by comparing them. It is important that someone is responsible for the quality of the information. This responsibility should not lie with the technical department but with the department responsible for the subject matter. American companies make a distinction between a Chief Technology Officer and a Chief Information Officer.<sup>16</sup> At the level of the public servant, this type of guarantee of responsibilities can be made more explicit by including competing information in the decision-making process.

The increasing complexity of techno-policy systems that focus on implementing legislation relating to aliens also results in the situation becoming increasingly opaque for those involved. The many links between organizations and systems make it very difficult for external parties to understand how it all works. What information is entered into the system by whom and when? Which considerations and analyses have been used in the process? In theory, this does not have to be a



problem, as the functioning of the system can be tested in terms of the output. Does the system result in actions and decisions that comply with the law? There are mechanisms for output control and they are in the form of internal and external complaints procedures and the possibility to appeal. The lack of transparency in the system means, however, that these output controls remain extremely important and can even be used to make adjustments to the system in some way. Complaints and appeals can play a key role in the *ex post* guarantee of responsibility.

This chapter has shown how the use of information technology in migration policy is associated with growing complexities and substantial shifts in the actual way in which responsibilities are allocated. Technology plays an important role in shifting responsibilities because information is increasingly being decontextualized, combined and reassembled in order to be used in trading and decision situations. A high degree of fragmentation is the price one pays for dealing with the international complexity of migration policy. In addition, technological systems create a form of system coercion against which it is very difficult for human actors to offer resistance. As a result, new practices have arisen in migration policy. In many cases, the institutional framework has not yet adapted to this situation, which means a conflict arises between technological practice and the rules that hark back to the steam age or perhaps, rather, the old customs booths. Governments and parliamentarians are faced with the difficult task of looking for a new way of interpreting responsibilities in migration policy, one that suits modern information technology. The answer to the question as to who is the boss of the border-control officer in his/her booth is no longer sufficient. We must now ensure a correct interpretation of our responsibilities for the complex international information system with which the border-control officers work and on which they base their decisions.

## Notes

1. This chapter builds upon the same empirical work as Meijer (2009) but the data and arguments are analysed and structured differently within the context of this book.
2. This empirical analysis comes from a qualitative investigation consisting of interviews with employees at the IND, Netherlands Court of Audit and the Justice Ministry. A large number of documents were also studied. In addition, there was a systematic analysis of complaints investigated by the National Ombudsman and court proceedings at the Council of State.
3. The distribution and specification of responsibilities in migration policy can be analysed in many ways. This chapter deals only with the responsibilities

for the manner of using information technology. The discussion about responsibilities for implementation is much broader and leads to important questions. An interesting point is, for example, the description Walters (2006: 194) gave of the responsibility of truck drivers in relation to illegal immigrants who hide in their trucks. Such cases are not considered in this chapter because they have nothing to do with responsibility for managing information technology.

4. Bovens (1990: 32, 33) distinguishes in addition to 'responsibility as a task' and 'responsibility as a virtue' another three types of responsibility: 'responsibility as liability', 'responsibility as cause' and 'responsibility as power'. The focus on 'responsibility as task and virtue' means that the question of whether governments are liable ('was the minister responsible for the failure of the implementing organization?') is not so important here.
5. This section contains material from interviews with the IND (15 October 2007 and 8 April 2008) and the Netherlands Court of Audit (11 March 2008). Also the following documents were studied: Dutch House of Representatives, Year 2004–05, 30 240, nos. 1–2; IND 2008; Appendix to the letter of 3 November 2006 (DDS 5444981/06/SCV) from the Minister for Immigration and Integration and the Minister of Foreign Affairs, Report on Immigration Chain for the period May–August 2006 (October 2006).
6. Theoretical research has shown that decision-processing officers at the IND deal with this discretionary freedom in different ways. Public employees mainly differ in the way they deal with information supplied for asylum requests (Mascini 2004).
7. This section was written using interviews with the IND on 6 May 2008. Also the following documents were studied: National Ombudsman (2003), Ministry of Justice (n.d.).
8. The BVV will also be linked to the European information systems. The chain partners now have access to SIS I. The BVV is the national interface with the European chains (EU VIS, Eurodac and possibly SIS II). In future, people requiring visas (even on short-stay) will be allocated an aliens number.
9. National Ombudsman (2003) is a public report of research initiated internally into the implementation of tasks related to admitting aliens and carried out by different government organizations (especially the Immigration Services of four police forces, the Secretary of State for Justice and the Minister of Foreign Affairs). The report is available at: [www.ombudsman.nl/rapporten/grote\\_onderzoeken/vreemdelingendiensten/rapport\\_vreemde\\_lingendiensten.pdf](http://www.ombudsman.nl/rapporten/grote_onderzoeken/vreemdelingendiensten/rapport_vreemde_lingendiensten.pdf).
10. This section contains material from interviews with the IND on 15 October 2007 and 8 April 2008 and with the Netherlands Court of Audit on 11 March 2008. In addition, the following documents were studied: Aliens Circular 2000 (A) (about entries for detection purposes), Schengen Implementation Agreement (1990); draft regulation VIS (PE-CONS 3630/07). Nicole Kroon's thesis (1997) was also used. There was also research into statements made by the National Ombudsman and the Council of State with reference to European information systems. A search was performed on the National Ombudsman website ([www.ombudsman.nl](http://www.ombudsman.nl)) on the term 'SIS' (31 March 2008). Similarly on the website Rechtspraak.nl ([www.rechtspraak.nl](http://www.rechtspraak.nl)) (9 April 2008).

11. The SIS has the closest relationship with the affairs of the National Ombudsman and the Administrative Court. No cases for the Ombudsman were found in the other information systems; for the Administrative Courts, four were found for Eurodac and one for INDIS.
12. The EU VIS is in fact a subject for the Justice and Foreign Affairs Council, but documents may also be approved by another Council than that of Justice/Foreign Affairs, provided no further discussion on the content is necessary.
13. Draft Regulation of the European Parliament and the Council concerning the visa information system (VIS) and the exchange of information about short-stay visas with other member states (2004/0287, PE-CONS 3630/07).
14. More information: [www.vfsglobal.com](http://www.vfsglobal.com). This is a large international company that organizes administrative procedures for a large number of countries. The website states the following: 'VFS Global serves diplomatic missions by managing all the administrative and non-judgmental tasks related to the entire lifecycle of a visa application process, enabling diplomatic missions to focus entirely on the key tasks of assessment and interview.'
15. In interpreting political responsibility, the guidelines of the Netherlands Court of Audit can be of help (Dutch Court of Audit 2007). The Court states politicians should be realistic; in other words, ICT is not a 'quick fix' for any problem, political deadlines can be deadly for a project, there is always a gap between policy and implementation in the ambitions of ICT organizations, reconsiderations during implementation are often unavoidable and an exit strategy prevents people muddling through. The Court also states that to get to grips with ICT projects, it is imperative the minister is fully involved in discussions with both the Dutch House of Representatives and the ICT supplier. Also important: decision-making takes place in phases, decisions are taken using well-founded plans, projects are evaluated in terms of the whole project portfolio and reconsideration remains possible.
16. Guarantees for the quality of information are, in practice, more related to technology than to the subject matter. For example, the SIRENE Office (Supplementary Information Request at the National Entry) guarantees the technical quality of information in the SIS. The content is however less strictly controlled. SIRENE does not look at this aspect. This can be ascribed to a technological way of viewing information; it is regarded as 'bits' with a certain format and not as semantic symbols that can reduce uncertainty (Interview IND, 15 May 2008).

## Bibliography

- Bovens, M. (1990) *Verantwoordelijkheid en organisatie: beschouwingen over aansprakelijkheid, institutioneel burgerschap en ambtelijke ongehoorzaamheid* (Zwolle: Tjeenk Willink).
- Bovens, M.A.P. (2000) 'De vierde macht revisited. Over ambtelijke macht en publieke verantwoording.' Inaugural address, Utrecht University.
- Bovens, M. and S. Zouridis (2002) 'From Street-Level to System-Level Bureaucracies: How ICT is Transforming Administrative Discretion and Constitutional Control', *Public Administration Review*, 62(2): 174–83.

- Brouwer, E. (2008) *Digital Borders and Real Rights: Effective Remedies for Third-Country Nationals in the Schengen Information System* (Leiden and Boston: Martinus Nijhoff Publishers).
- Dutch Court of Audit (2007) *Lessen uit ICT-projecten van de overheid. Deel A* (The Hague).
- Dutch House of Representatives (Year 2004–05), 30 240, nos. 1–2.
- Frissen, P.H.A. (1998) *De virtuele staat. Politiek, bestuur, technologie: een postmodern verhaal* (Schoonhoven: Academic Service).
- Galbraith, J.K. (1968) *The New Industrial State* (New York: The New American Library).
- Hoven, J. van den (1998) 'Moral Responsibility, Public Office and Information Technology', in I.Th.M. Snellen and W.B.H.J. van de Donk, *Public Administration in an Information Age: A Handbook* (Amsterdam: IOS Press).
- Immigration and Naturalization Service (2008) *De IND belicht. Jaarresultaten 2007* (The Hague).
- Kroon, N. (1997) *Europese informatiesystemen: grensverleggen? Een verkenning naar barrières in de bouwfase van het Schengen Informatie Systeem en het Social Security Network* (Delft: Eburon).
- Levitt, S. and S.J. Dubner (2005) *Freakonomics: A Rogue Economist Explores the Hidden Side of Everything* (New York: William Morrow/HarperCollins).
- Lindblom, C.E. (1959) 'The Science of Muddling Through', *Public Administration Review*, 19: 79–88.
- Mascini, P. (2004) 'De wisselvalligheid van de twijfel: ongelijkheid in de uitvoering van het asielbeleid verklaard', *Amsterdams Sociologisch Tijdschrift*, 31(1): 113–46.
- Meijer, A.J. (2009) 'Complex Responsibilities: An Empirical Analysis of Responsibilities and Technological Complexity in Dutch Immigration Policies', *Public Management Review*, 11(6): 771–90.
- Ministry of Justice (n.d.) *Kila en Kali en het PIL* (The Hague).
- Ministry of Justice (2006) *Naar een modern migratiebeleid. Notitie over de herziening van de reguliere toelating van vreemdelingen in Nederland* (The Hague).
- Mulder, R. de (1998) 'The Digital Revolution: From Trias to Tetras Politica', in I.Th.M. Snellen and W.B.H.J. van de Donk, *Public Administration in an Information Age: A Handbook* (Amsterdam: IOS Press).
- National Ombudsman (2003) *Onderzoek Vreemdelingendiensten*. Report no. 2003/160 (The Hague).
- Romzek, B. and M. Dubnick (1987) 'Accountability in the Public Sector: Lessons from the Challenger Tragedy', *Public Administration Review*, 47(3): 227–38.
- Smits, H. (2007) 'Politie bezorgd over Schengen', *Financieel Dagblad. Economie & Politiek*: 4.
- Strom, K. (2000) 'Delegation and Accountability in Parliamentary Democracies', *European Journal of Political Research*, 37(3): 261–89.
- Teeuw, W., A. Vedder, B. Dorbeck-Jung, B. Custers, E. Faber and R. Leenes (2007) *Impact of Converging Technologies on Future Security Applications* (Enschede: Telematica Instituut).
- Thompson, D.F. (1980) 'Moral Responsibility of Public Officials: The Problem of Many Hands', *The American Political Science Review*, 74(4): 905–16.
- Walters, W. (2006) 'Border/Control', *European Journal of Social Theory*, 9(2): 187–203.

- Winner, L. (1977) *Autonomous Technology: Technics-Out-Of Control as a Theme in Political Thought* (Cambridge, MA: MIT Press).
- Winner, L. (1986) *The Whale and the Reactor: A Search for Limits in an Age of High Technology* (University of Chicago Press).
- WRR Dutch Scientific Council for Government Policy (2000) *Het borgen van publiekbelang* (The Hague).