



NORA explained

Brief explanation of the Dutch Government Reference Architecture [NORA]

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List of contents

1. Introduction	3
2. NORA: context	4
2.1. Government organisations wrestle with e-service provision	4
2.2. Intensification of collaboration between government organisations	4
2.3. Administrative developments towards a framework for e-government	5
2.4. Help with entering into collaboration agreements	5
2.5. Is NORA compulsory?	6
2.6. How does NORA come into being?	6
3. NORA: practical application	8
3.1. NORA for information architects and IT professionals	8
3.2. NORA for administrators	8
3.3. Adoption of NORA: working with a growth strategy	8
3.4. What are the advantages of using NORA?	9
3.5. Supplementary instruments for promoting cohesion	10
3.6. Who owns NORA?	11
4. NORA: what does it entail?	12
4.1. Principles: how e-government works	12
4.1.1. Fundamental principles	12
4.1.2. Derived principles	13
4.2. Models: the summary charts	14
5. Publisher's imprint	18



1. Introduction

Increasing pressure is being put on organisations to perform better with fewer resources. This applies to both the business world and the public sector. It is possible to breach the paradox of performing better with less manpower and less money by greater collaboration, working more intelligently and making optimum use of IT. This development has been given a boost by 'Andere Overheid', the Dutch central government programme to improve the service to residents by reducing bureaucracy and increasing the decisiveness of government. Using IT for better service provision and more efficient government is also sometimes called 'electronic government' or in short: e-government.

Almost all government organisations are busily engaged in contributing to e-government. In so doing it is important to establish principles concerning the way in which it is possible to collaborate, to link processes smoothly to one another and exchange data. These principles are to be found in the Nederlandse Overheid Referentie Architectuur (NORA) [Dutch Government Reference Architecture] .

NORA is intended for professionals, such as management advisors, information managers, architects, process and systems designers and IT specialists. Using NORA makes it easier for these professionals to advise their administrators and managers. In this document we look at the implementation of the Dutch electronic government from an administrative perspective and show how NORA can be used in this process.

This brochure sets out the context, content and use of NORA in concise form. This is done in two parts. The first part contains the how and why of NORA and discusses how it can be used in an organisation. The second part contains a brief summary of what NORA involves.

When you have read it you will be able to assess the value of NORA for an organisation and will understand how the architects in an organisation can use NORA to achieve the goals of e-government.



2. NORA: context

2.1. Government organisations wrestle with e-service provision

Government organisations are having to cope with changes. For a start, private citizens and businesses are becoming more emancipated and demand better service from government organisations. Also, arrangements are being made within government itself. The Dutch government wants to act decisively, efficiently and customer oriented. These objectives are partly achieved by national programmes. However, it is the individual government organisations themselves that have contact with private citizens and businesses. They will have to make the difference.

To do this they need to take increasing account of the use of shared tools, such as the basic registries and DigiD¹. Use of shared tools means that there is more and more collaboration within government.

Designing this collaboration and ensuring that their choices fit in with e-overheid overall raises questions in many government organisations:

- What e-government building blocks can I use to introduce the WMO [Social Support Act]?
- How can I collaborate in the area of exchanging data?
- How can I streamline provision of information to my customers?
- Can I use DigiD for my online WOZ [Valuation of Immovable Property Act] application?

These are all questions which may crop up in government organisations. They are at the same time the very problems that need to be solved in order to be able to meet the objectives relating to e-government.

2.2. Intensification of collaboration between government organisations

Collaboration and mutual service provision are key words when it comes to solving problems. Government organisations are becoming increasingly more dependent on data provided and managed by other organisations. A local council becomes the supplier of GBA [Local Council Personal Records Database] data and is at the same time a user of DigiD services. Therefore an organisation may become a supplier of services and data which have to be used, whether or not compulsorily, by other organisations.

Governments operate to an increasing extent in information chains. Examples of the kinds of chains of service provision that have arisen are: digital customer files in the SUWI [Structure for Implementation of Work and Income] chain, electronic court records in the justice chain and the development of an universal workplace for central government organisations. These are all initiatives which require intelligent collaboration between government organisations. These forms of collaboration were often set up in the past as bilateral co-operative associations.

In order to record data once and use them many times, these arrangements will need to be of an increasingly multilateral nature. So, an organisation will use data that are also used by others, and vice versa.

¹ DigiD stands for Digital Identity and is a system shared between cooperating governmental agencies, allowing to digitally authenticate the identity of a person who applies for a transaction service via internet.



2.3. Administrative developments towards a framework for e-government

At the beginning of 2007 a document was drawn up by the director for Innovation, Information & Organisation of the Ministry of Home Affairs & Kingdom Relationships, sketching the administrative framework of e-government. This memorandum shows a model that will play a role in consultations at an administrative level. This model is 'translated' in NORA detail by detail into an architecture template which has already enjoyed wide acceptance in the Dutch e-government *community* for some time.

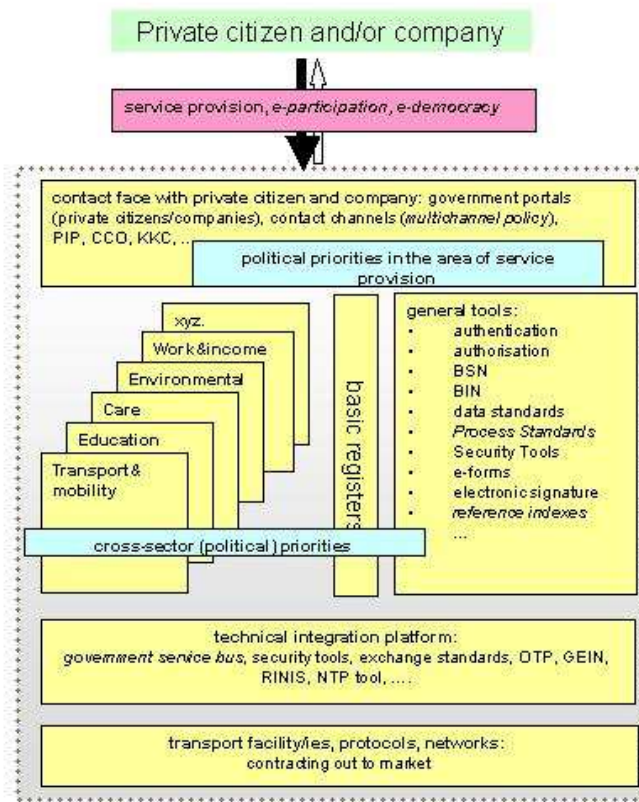


Figure 1: administrative framework of e-government

A great deal of hard work has been done at an administrative level on the development of a joint policy framework for the further development of e-government. Government organisations are developing new initiatives to bring e-government closer. These include the local councils in the report "Vision for shared service provision in 2015" and the pamphlet: "e-government agenda for local councils up to and including 2010" dated February 2007. In this pamphlet a model is used that is derived from the model by the IIOS [Innovation and Information Policy for the Public Sector] director of the Ministry of Home Affairs. The model is discussed in the "Steering Group for IT and Government", which represents the country, the provinces, local councils and water boards at an administrative level. The model continues to build on the so-called "Administrative Statement" by these parties.

2.4. Help in making arrangements for collaboration

NORA has been developed to give government organisations a hand in designing these multilateral arrangements. NORA contains models and principles showing how e-government works. By using these models and principles as criteria for developments within its own



organisation, an organisation can guarantee that its developments fit in with developments in e-government as a whole.

NORA sketches the framework for designing these arrangements. NORA does not say anything about the content of the government service provision. As an example, a comparison can be made with road traffic. The requirement of users is that this infrastructure enables effective and efficient transport. A principle implicit in this is that there is a road system of national, regional and local roads and there are traffic rules (for example we all drive on one side of the road and not just anywhere). This is a typical principle that would be included in NORA. Where exactly the roads are and the fact that we have agreed that we all drive on the right is a decision that the governments have made among themselves. If we carry this analogy through to the world of electronics, we can see that NORA contains guidelines for the exchange of data on a national and sectoral scale and guidelines for the definitions of reports and data. NORA does not contain any elaboration of the infrastructure or the contents of the reports that government organisations exchange.

As a reference architecture NORA may be seen as the translation of national and sectoral criteria for policies into principles for organising the national and sectoral infrastructures. So NORA does not prescribe how government organisations should behave. NORA does describe how they can collaborate successfully.

NORA is therefore subsequent to policy and can be regarded as a framework or touchstone for new developments in e-government.

2.5. Is NORA compulsory?

NORA does not have legal status. Organisations work with NORA on a voluntary basis. NORA is now regularly 'translated' into more specific reference architecture, for the core departments, for example. Using the principles taken from NORA enables better cohesion and collaboration.

A growing number of organisations within the Dutch government are making active use of NORA, in various degrees of adoption. In a number of cases this has led to the adoption of NORA in the policy frameworks of the organisation. A document like NORA can ultimately continue to exist only if there is wide support not only in terms of content but also in terms of administration.

There are a number of ways of achieving this: the standardisation forum, representing administrators at all levels of administration and the business world, has made a positive recommendation on the use of NORA within Dutch government. The standardisation board has taken up this advice.

Architects of various organisations advise their administrators positively on the use of NORA and in so doing are working on wider support for NORA. For instance, the architecture committee of the 'manifesto group' is working on putting NORA into practice in the domain of the big executive agencies.

2.6. How does NORA come into being?

A reference architecture like NORA is of value only if its content is up to date and answers to modern ideas and if the principles are known and acceptable to and implementable by those taking part in e-government.



In order to ensure that NORA meets these conditions, regular consultations are held with delegated architects from the various administrative levels, executive organisations, sectors and the business world. Structural talks are held with, among others:

- The e-government architects at ICTU [Implementation of Information and Communication Technology];
- The architecture board of the manifesto group;
- The National Government Architects (ROA);
- Architects from provinces;
- Architects from local councils;
- Suppliers and consulting firms via ICT-office;
- Sectors, such as education and public order and safety.

As a result of developments, the discussions and review commentary the NORA architects periodically gather up the proposed changes to NORA. They process them into written proposals and discuss them at the various consultations.

Attempts are made to formalise the various consultations further. This guarantees that making decisions about the content of NORA also has wide formal support within the professional group. NORA can count on growing administrative support for this.

- The NORA models fit in seamlessly with the accepted administrative models of electronic government, as described at the beginning of 2007 by, among others, the VNG [Dutch Association of Local Councils] and the DIOS [Directorate of Innovation and Information Policy for the Public Sector] director of the Ministry of Home Affairs;
- In April 2007 the standardisation board accepted advice from the standardisation forum supporting the continuing development of NORA;
- In April 2007 NORA version 2.0 was presented to the Secretary of State for Home Affairs, Ms Bijleveld-Schouten;
- In its annual report for 2006 ACTAL [advisory board to governments] argued for making NORA compulsory.



3. NORA: practical application

3.1. NORA for information architects and IT professionals

NORA was primarily written for IT professionals. These may be, for example, information and enterprise architects or information managers.

Professionals use NORA to design the information provision of their own organisations. They can use NORA in various ways:

- Transforming NORA into a reference architecture specially for the organisation;
- As a framework when setting up a project start architecture (PSA);
- The templates taken from NORA can be used as a means of communication within the organisation;
- NORA can help as a framework for decision-making;
- As the basis for a framework of standards for audits;
- As a means of communication when drawing up an information plan;
- One can use NORA as an instrument for purchasing, for example as a framework for drawing up specifications.

3.2. NORA for administrators

It is useful for administrators to know that NORA exists and to see that people work with it within their own organisations. Programmes and projects carried out as part of electronic government should be in line with NORAS's organisational principles. Administrators can help in this by ensuring that NORA is taken into account during preparation and implementation of projects. This gives administrators greater certainty that the result of the project will fit into e-government overall. This brings cohesive service provision a step closer to private citizens and companies.

Contractors of projects in the domain of electronic government should check to what extent account is taken of the principles from NORA in designing these projects, or to what extent use is made of a (sectoral) reference architecture.

Administrators of Dutch government organisations should ask about using NORA:

- If their organisation is involved in designing collaboration with other government organisations;
- If their organisation is involved with projects in which their service provision to private citizens and companies is being modernised or adapted;
- If their organisation is involved in setting up or modernising its own architecture.

They can contribute to the development of NORA by ensuring that:

- Their architects use NORA;
- NORA is adopted as the criterion in their policy frameworks;
- Their organisation makes active contributions to the development of NORA by encouraging their architects to respond to NORA.

3.3. Adoption of NORA: working with a growth strategy

In practice it appears that everyone is generally agreed that collaboration is important and supports the general criteria of, for example, lowering administrative costs. However, it is also a fact that The Netherlands has great decentralised administrative responsibilities. This administrative responsibility and the accompanying administrative freedom are taken into account in classifying the principles.



If an organisation formally accepts NORA as a framework, this does not mean that it has to follow every single one of the principles. As we said earlier, the principles in NORA are of different statuses. Naturally, ‘de jure’ principles are observed by every organisation in The Netherlands. By endorsing NORA it is also committed to the relevant ‘de-facto’ and ‘e-government principles’. Observing the ‘Advice’ principles is at liberty.

However, an organisation will not succeed in putting into practice all the principles that apply overnight. We refer to different phases of adoption of NORA. In practice, adoption of NORA means that the following activities are undertaken at an organisation:

Phase I	Cognisance	Architects and information managers at the organisation know of the existence of NORA.
Phase II	Forming general opinions	Architects and information managers at the organisation are familiar with what NORA entails and have given general feedback.
Phase III	Analysis	Architects and information managers have charted what needs to be done to be able – in time - to comply with NORA.
Phase IV	Implementation	Architects and information managers take NORA into account when giving advice internally. Linking up one’s own architecture documents with NORA.
Phase V	Embedding	The organisation’s Administration pursues complying with NORA - in time - as its policy. The decision to link up to NORA (directly or indirectly) has been announced and this has been recorded as policy in a report, policy plan or memorandum.

By choosing a growth strategy and not a big bang implementation of NORA disinvestments are prevented. Taking it step by step also ensures that it is not just an exercise on paper where the architecture is too far removed from everyday practice.

An increasing number of organisations are adopting into their established Information provision (IV) policy frameworks stating that NORA is an important framework for pointing the way at the start of projects and that the organisation preferably endeavours to work out the decisions that it takes in conformity with NORA. Examples of this are the Ministry of Education, Culture and Science, the manifesto group and the VNG.

3.4. What are the advantages of using NORA

If an organisation utilises the principles in NORA, it has the following potential advantages:

- By utilising standard building blocks the organisation incurs fewer costs for its own IT development. This saves time and money.
- Because a service-orientated approach is used, the only arrangements an organisation makes are about the services they supply outside their own organisation. They decide themselves how to organise this internally and they keep their autonomy in this respect.

But NORA cannot solve every problem:

- NORA is not a substitute for policy memoranda like “On the way to Electronic Government”.



- NORA is not an instrument for planning projects intended to bring e-government closer. NORA is not a national information plan.
- NORA is not a document in which comments can be found on the nature of new generic building blocks, or the order or speed at which they are developed in the context of electronic government. So NORA does not contain any road maps for the introduction of basic tools within government organisations
- NORA is not a monitor of the progress of current projects
- NORA does not contain a summary of example projects
- Neither is NORA a “manual on architecture”. NORA is not a clear-cut manual for operating architecture. For this one needs to refer to the many manuals which have been published on working under architecture.

In short, there will still always be things which an organisation must tackle itself. Working under architecture is something that must be carried out with understanding and step by step.

3.5. Additional instruments for promoting cohesion

As well as NORA itself, which primarily contains principles related to content, work is carried out at the Knowledge Centre and ICTU on a number of instruments which make working under NORA architecture easier and more accessible. These instruments make it easier for architects and information managers to apply NORA².

Summary charts: Understanding how e-government fits together

The e-government summary charts. This is a set of graphic reproductions of the way e-government works (see <http://www.e-overheid.nl/atlas/overzichtskaarten>). The charts give an accessible picture of the way the different building blocks are linked. These charts are used in many new projects to reproduce the way one's own situation should initially be positioned. This has happened in areas including education, the sector of public order and safety and various e-government building blocks. Using this shared imagery makes it easier for administrators and architects to communicate about reciprocal ideas;

Project start architecture: Guaranteeing completeness of a project

The template for project start architecture (PSA). This template gives a fully structured summary of all the aspects an architect needs to think about when starting up a project. Use of this template at the organisation guarantees that all the aspects of a project are thought about.

The PSA template is included in NORA as an appendix. It can also be downloaded at http://www.e-overheid.nl/data/files/architectuur/PSA_architectuur.doc.

Do-it-yourself test for comparing with NORA

NORA includes an appendix with a brief checklist with which it is possible to check to what extent an organisation is working in conformity with the principles of NORA.

Survey by means of the e-government planning survey

Individual organisations need up-to-date planning data on central e-government building blocks. With these they can plan and design their own projects in context. This planning is revised once a quarter and presented to the Lower House twice a year. See <http://www.e-overheid.nl/atlas/planning/>

² Alas, almost all sources referred to in this paragraph are in Dutch



A brief explanatory description of the e-government building blocks

Various central building blocks and basic registries have been developed. At <http://www.e-overheid.nl/atlas/bouwstenen/> there is a concise description of the different central building blocks.

Route planner

The e-government Route Planner is the guidebook and gives support when planning e-government for and by individual organisations. It gives introductory information for each project, so that local councils or provinces can easily find their way around. What is it all about, what is the aim of the projects? And also, what kind of role do provinces or local councils play and what roughly are the results and consequences for them? The time dimension of each project is charted. This means one knows as accurately as possible what phase the project has reached, how the various phases in the project have been planned and what specific milestones and products are to be expected. The e-government Route Planner consists of a route planner for local councils and a route planner for provinces. The route planner for water boards is being prepared.

<http://www.e-overheid.nl/praktijk/routeplanner/>

E-government Map

The E-government Map shows which local councils, provinces and water boards are involved in setting up electronic government and how far they have got with it. The website currently focuses in particular on the progress of a number of building blocks of e-government.

<http://www.e-overheid.nl/praktijk/landkaart/>

Good practices architecture

Good practices are practical examples selected by the Architecture program, which link up with the architecture principles, as described in the Dutch Government Reference Architecture (NORA).

<http://www.e-overheid.nl/atlas/goodpractices/>

Questions: Please contact the e-government service desk

+31 (0) 70 888 76 98, info@e-overheid.nl

The service desk is intended for all questions about the website and about matters involving the content of e-government.

3.6. Who owns NORA?

The first version of NORA was developed in 2006 by the ICTU architecture programme, commissioned by the ministries of Internal Affairs and Economic Affairs. The activities of the architecture programme have been taken over by the Knowledge Centre since September 2006. The Ministry of Internal Affairs is the contractor for this ICTU programme.

Knowledge Centre is not the owner of NORA, but takes care of the continuing development of NORA. As contractor, the Ministry of Internal Affairs is the formal owner of NORA. The content of NORA is determined by the process of interaction described in 2.6.



4. NORA: what does it entail?

As previously mentioned, NORA contains models and principles. This chapter describes these models and principles in outline.

4.1. Principles: how e-government works

NORA principles are derived from the requirements and wishes placed on the government by those around it. These requirements and wishes are translated into fundamental principles. They are again elaborated into derived (detailed) principles. This paragraph describes how these principles relate to one another.

4.1.1. Fundamental principles

The fundamental principles arising from NORA are based on a broad set of criteria of different interested parties in e-government.

- Private citizens, on the basis of the service code for private citizens;
- Companies, on the basis of, among other things, requirements drawn up by VNO-NCW [Dutch business association];
- European guidelines, on the basis of the European Interoperability Framework (EIF, version 1.0³);
- The government itself, on the basis of policies of the ministries of Internal Affairs and Economic Affairs.

Taking the requirements and wishes of these four branches gives rise to a solid administrative basis for the content of NORA.

These sources contain scores of criteria. Criteria which partly overlap, though. They are summarised in NORA into 20 fundamental principles.

As well as a number of fundamental principles, a fundamental approach to design has also been opted for in NORA: The Service-orientated Architecture (SOA).

These fundamental principles are shown below in abbreviated form. After that the SOA is briefly explained.

A high quality of service provision aimed at by:

1. offering service provision via the Internet;
2. but still using the existing channels such as post and telephony;
3. making sure that customers can easily find services;
4. supplying, in collaboration with others, services that are logical for the customer;
5. making use of unique identification numbers such as BSN (for citizens) and BIN (for companies)
6. designing checks as part of the primary process;
7. a transparent and accessible complaints and grievances procedure.

Lightening of the administrative load by:

8. requesting data once and where possible reusing them;
9. taking administrative costs for citizens and companies into account when designing government services;

³ EIF version 2.0 is currently being prepared



10. drawing up reciprocally consistent, checkable and maintainable rules.

Transparency aimed at by:

- 11. showing how government service provision processes should be operated;
- 12. demonstrating the status of current service provision processes;
- 13. periodically giving public account of the quality of service provision;
- 14. giving access to general government information such as legislation and issuing rules;
- 15. allowing people to see what decisions organisations are taking and the data used for this.

Proactive service provision aimed at by:

- 16. attending to government customers proactively for relevant services.

Aim at an integral and reliable government by:

- 17. being organised as part of an integral government;
- 18. using data which are accurate, up-to-date and safeguarded according to legal standards.

Aim at improvement of the efficiency of the government by:

- 19. using generic components and shared tools;
- 20. standardising and optimising internal management.

Fundamental approach to design: Service-orientated Architecture

NORA opts for a service-orientated architecture as a fundamental approach to design. Choosing this approach helps to achieve co-operation between government organisations for the reciprocal supply of described and transparent services.

This approach was chosen because it greatly reduces complexity in collaboration between organisations. This approach also makes it possible to reuse the services. It encourages open architectures. Because open and transparent arrangements are made, it is clear to everyone what they are getting or supplying. It also ensures that no information has to be given about the inside of the organisation.

4.1.2. Derived principles

The fundamental principles of NORA are then further elaborated into derived or detailed principles. There are around 130 derived principles. These principles are classified in a so-called metamodel or architecture framework⁴. In this framework the principles are classified into various categories, for example: processes, services, reports and data.




Classifying principles in this way means they are easy to understand as a whole. This gives architects and information managers a good start when organising the information management in their domain.

Not all principles are of the same weight

The principles in NORA are of different statuses. Some rely on legal pronouncements, others are intended as advice. When allotting this status, account is taken of the independence of Dutch government organisations. Principles concerning internal management are purely advisory. Principles concerning the use of generic building blocks or mutual collaboration are given a higher status.

⁴ Architecture for Electronic Government, van den Dool, Keller and Wagenaar , 11-2002 version 2.0

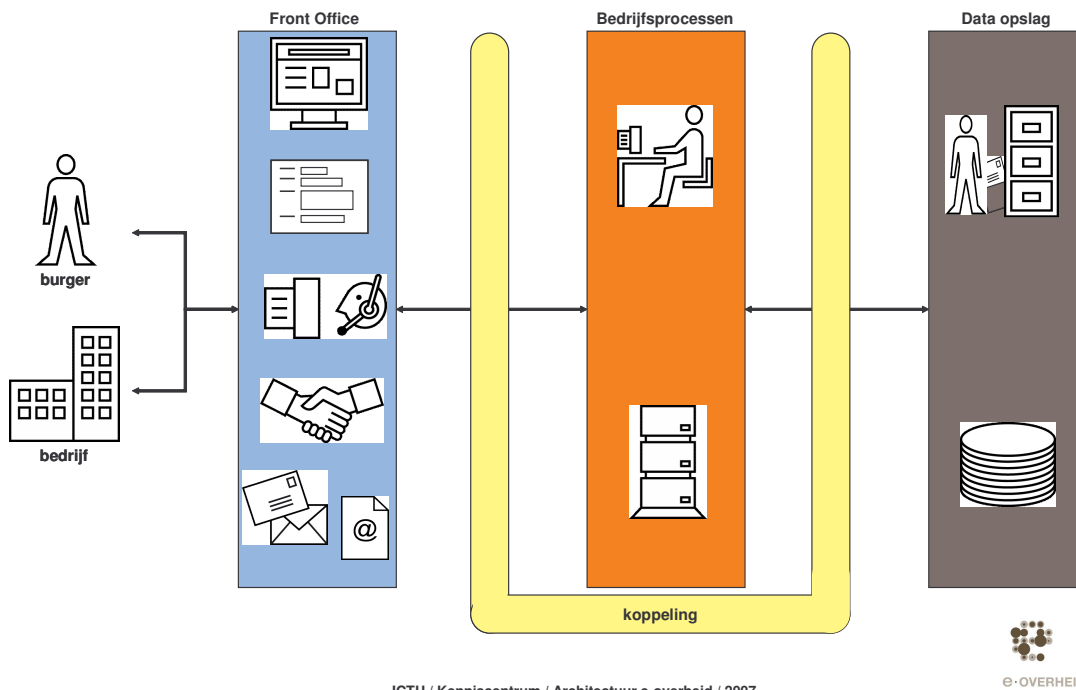


Status	Explanation
De jure 	These principles result directly from existing legislation and issuing of rules or decisions by the Cabinet or the Standardisation Board.
E-government principle 	It is desirable to follow these principles because these principles focus on the mutual collaboration needed to achieve Electronic Government.
Internal principle 	An internal principle is aimed at the maintenance of the internal information of government bodies. Following this advice is desirable, but not essential from the point of view of achieving Electronic Government.

Not all principles are equally relevant for all organisations. A principle concerning the use of DigiD is, of course, of value only for organisations who do actually offer services over the Internet for which this type of authentication is required.

4.2. Models: the summary charts

The models give an idea of how e-government works. The models are intended as talking points, which architects can use to make clear to their colleagues and their clients how building blocks fit together and what this signifies for their own organisation. These models are also called the summary charts of e-government.





Dutch	English
Front Office	Front Office
Bedrijfsprocessen	Business Processes
Dataopslag	Storage of Data
burger	citizen
bedrijf	company
koppeling	link

Figure 2: the summary chart on the business set-up of a government organisation

In the figure a business set-up of a government organisation has been chosen with a separation between the front office, which has contact with customers, a section where the work processes are carried out and the storage of data. Within e-government we can increasingly see that processes still at first carried out on paper and by hand are now being done electronically.

There is now a large collection of summary charts of this kind available. The imagery used (the colours and symbols) and the connecting narrative are widely used in government. This makes reciprocal communication within government organisations and mutually among government organisations easier.

The figure below shows the link between a number of the most important building blocks of e-government. Then a brief explanation of some building blocks is given:

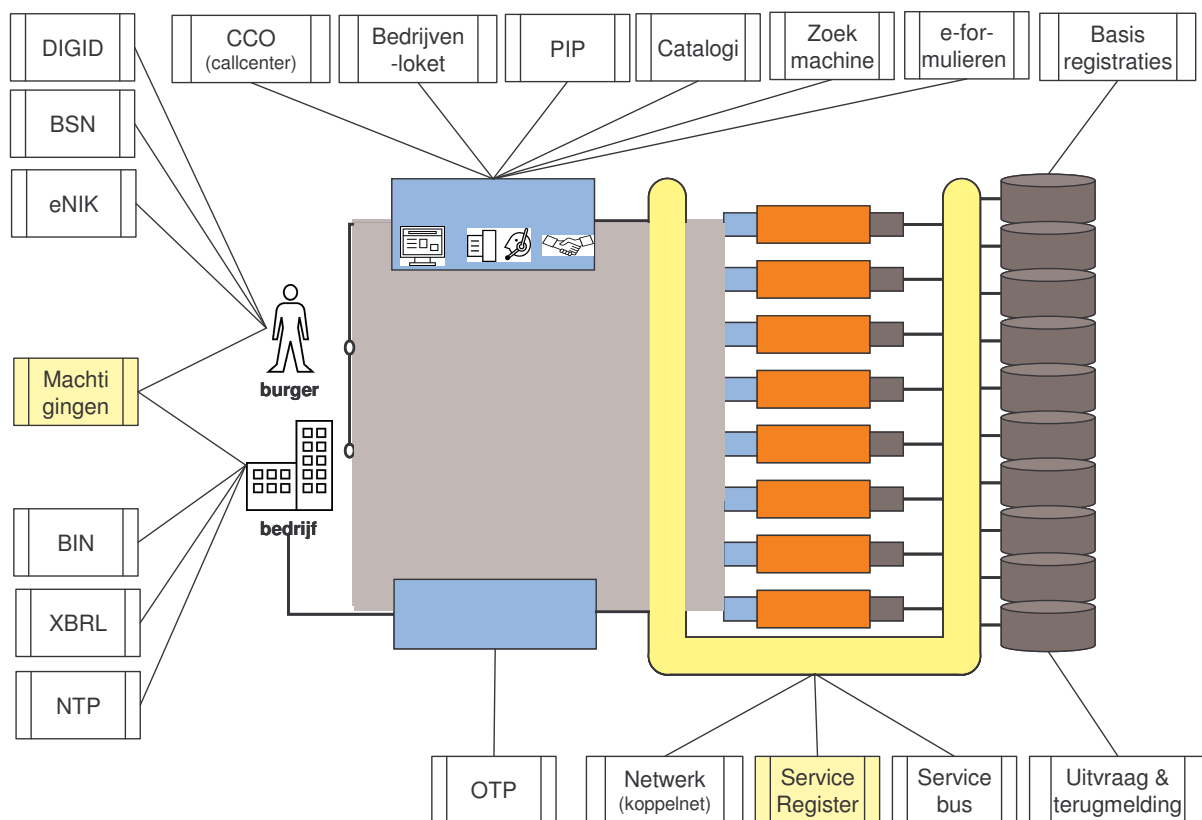


Figure 3: summary of the most important e-government building blocks



There is a complete summary of the building blocks in NORA.

Dutch	English
callcenter	call centre
Bedrijvenloket	Front Office for Companies
Catalogi	Catalogues
Zoekmachine	Search Engine
e-formulieren	e-form
Basisregistraties	National Registers
Machtigingen	Authorisations
burger	citizen
bedrijf	company
Netwerk (koppelnet)	Network (link network)
Service Register	Service Register
Servicebus	Service Bus
Uitvraag & terugmelding	Interrogation & Feedback

Service bus: At the level of the system, linking mechanisms (“link network”) are designed to ensure fast, safe and reliable exchange of information between websites, government organisations and basic registries. In this way in principle all government organisations can collaborate with one another and supply services to private citizens and companies. Some of these (groups of) separate organisations have also been reproduced in the model. They act as models for the 1500 to 2400⁵ organisations in the public domain. A number of tools of this kind are already operational, such as RINIS, Suwinet, Gemnet, and the national switchover point in the care industry. The reciprocal links among government organisations are for the most part in the hands of the government itself or administered on its behalf by private IT companies. Access to this network is usually restricted to governments or specific sections thereof. These existing networks will be linked to a national connecting network which meets the requirements for the proposed infrastructural basis of electronic government. In the sketch of the basic architecture this infrastructure is indicated by (service) buses. The service buses (the yellow curve in the summary charts) constitute the internal electronic motorways of the government.

Service register: where e-government will increasingly be based on government organisations working together on the basis of services it will be necessary to establish a register of existing services, in order to prevent duplications. Without a register, reuse of services will leave a lot to be desired. Besides, at times a tool will be needed which allows servers to find services on the government network themselves, without human intervention. This tool could find a place linked to the government service bus.

Interrogation and feedback: since in time the number of national basic registries will increase, a need is developing for a common interrogation and feedback mechanism. The advantages of this are that government organisations have to make only one request for a ‘package’ of information and that the common interrogation tool collects this information by way of service from several basic registries and presents it as a package to the organisation which originally requested it. In reverse, changes in the situations of private citizens, cars, houses or companies may result in the need to ‘revise’ several basic registries. If the changes are delivered to a central point, several basic registries can be revised from here.

Government Transaction Portal (OTP): information flows between companies and government are exchanged electronically via one portal (the Government Transaction Portal) in a standardised manner, according to a limited number of protocols and technical facilities,

⁵ Depending on the definition.



both via fixed lines and via the Internet. There is one delivery point for different data for several government organisations: if it's included in OTP, it's included in the government. Buyers of OTP services are companies and government institutions affected by the legal duty of information of companies to the government. Companies can choose to make direct use of the services of OTP or to use the services of an intermediary to connect to the OTP.

Authorisations: Private citizens and companies often have themselves represented by third parties when in contact with the government. For example, an elderly person may have his/her application for social support submitted by a family member or people may have their tax returns dealt with by a tax consultant or a company may have its wages administration contracted out to a service provider. In these kinds of situations it must therefore also be clear via electronic communication that 'third parties' are authorised to act on behalf of private citizens or companies. Work is being done on a first version of a register in which authorisations can be recorded. This register may grow into a register with more national effect for recording and checking authorisations.

Basic registries: A fundamental development within e-government is denoted by 'streamlining basic data'. The idea of this is that certain data are requested from private citizens and companies once only. They are stored nationally in basic registries and made available to all government organisations. Using basic registries means that the data can be unambiguously controlled and the reliability and integrity is increased and, among other things, the administrative costs are thus reduced. The use of basic registries ensures that the government can be of faster and better service to private citizens and companies.

e-forms: for requesting services and communicating with the government. The forms are linked to the associated work processes of a variety of government organisations. More and more frequently it will in this case be possible to produce the forms on the private citizen's or company's display screen already partly filled in. Data are retrieved for this from the basic registries, for example. This is in the spirit of the principle of 'once-only interrogation and multiple use of data. Naturally it is then necessary for a user of a form to log on with the aid of the service number for private citizens (BSN) or the number for companies and institutions (BIN) and for an authentication check subsequently to take place based on the different options of DigiD.

PIP: an important tool which is being developed is the 'Personal Internet Page'. Every private citizen is given his or her "own" page on the Internet for dealing with matters with various government organisations. The advantages are convenience, understanding and tailoring messages and information services to personal preferences and settings. It is also possible to make the contact more custom-built. This means that a great number of government organisations will connect to the PIP.

Combined catalogues: a building block supplied by the programme advies.Overheid. Combined catalogues is a collection of the catalogues of services of government organisations and therefore a reference to services of government organisations.

Search engine: If government information is uniformly made accessible (see above), it is possible for the right information to be found quickly and specifically with the aid of a search engine. Therefore a search engine is being developed which once again can be used by all government websites. A first version of this is available at www.overheid.nl Via this resource numerous documents, information on permits, subsidies, legislation and issuing rules, other official publications and also other (government) websites and their range of services are opened up in the public domain.



5. Publisher's imprint

For comments on or additions to this dossier please contact the Knowledge Centre via info@e-overheid.nl or +31 (0) 70 888 7698. More information about NORA (in Dutch) can be found at <http://www.e-overheid.nl/>.

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