

Extranets in International Public Organisations



EVD
internationaal
ondernemen en samenwerken



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Anyway good luck with your Master thesis, it's an important issue.

Kind regards,

Ludo H.E. Ham

H. Consul

Santa Cruz de la Sierra

Bolivia

succes met je MA!

vriendelijke groet,

Jeroen Kelderhuis

ASII/Hoofd Economische, Pers en Culturele Zaken

HMA Teheran

Succes met je scriptie!

Mien Vink, Consulaat Assistente

Botswana

Laat maar weten als je nog meer vragen hebt, en succes met de scriptie!

Groetjes,

Ella (van Gool)

NBSO San Mateo

Ik wens u succes met uw studie en kijk uit naar het resultaat van het onderzoek.

Met vriendelijke groet,

Christel Nolte

Economische afdeling

Nederlandse Ambassade te Canberra

Looking forward to hearing about the results of this evaluation, as well as on the plans for improvement, and wishing you best success with your graduation, I remain

Violeta Cozianu

Officer - Economic and Environmental Affairs

Royal Netherlands Embassy

Bucharest, Romania

Veel succes met uw onderzoek.

Hans-Roel Riphagen

Embassy of the Kingdom of the Netherlands

Economic Department

London

Succes met je onderzoek.

Barbara Vaartjes

Nederlandse ambassade Nigeria

Preface

With this thesis I will finish my Masters of International Public Management and Policy at the Erasmus University in Rotterdam. After 6 years of studying in Rotterdam and in Almería (Spain), I will no longer be a student.

I had a really good time as a student, with a lot of friends, partying and having a good time. But of course with a lot of hours spending in the university library also in the exam period. Looking back, I enjoyed my study of Public Administration, although it was not my first choice of study when I graduated my VWO. I started with a study of Informatics & Economics, but this didn't work out well for me, so I quit.

But my interest in informatics stayed, so I followed courses in this field at the public administration faculty. And it was for me clear that this would also be the subject of my final master thesis. Informatics is a very wide conception, so I started to look for a subject within informatics to write my thesis about.

Then, I was offered an internship at the Agency for International Business and Cooperation (EVD) to do a research about their extranet, called Hermes. The EVD wanted to improve this extranet and needed a student to conduct an users-research to find out what the needs of the users (employees of Dutch missions all over the world) are and make recommendations about improvements. This was just what I was looking for!

I enjoyed my time at the EVD, it was very nice to do research here, and I learned a lot about working for the government and working in an international environment. For this research I had to contact people all over the world.

I sent a questionnaire with questions about the extranet to 358 missions in 168 countries and received a lot of response from the missions. Based on the answers of the questionnaire and the literature I read about extranets I will do recommendations to improve the extranet.

So, that's in brief why I write my thesis about extranets in international public organisations. I hope you will enjoy reading this thesis as much as I enjoyed writing it!!

Rotterdam, 21th of August, 2006

Summary and Conclusions

In this thesis I will answer the following central question: *How can international public organisations optimise the use of their extranets and improve it to link it up better with the needs of the users?*

Via subquestions I will come to an answer of the central question. The questions will be answered by means of:

- a literature study of different theories about different characteristics of extranets
- interviews with employees involved in the extranet of the agency for International Business and Cooperation (EVD) and the Directorate-general Foreign Economic Relations (DG BEB),
- a users-research of Hermes, the extranet of the Agency for International Business and Cooperation (EVD), Directorate-general Foreign Economic Relations (DG BEB), the Ministry of Foreign Affairs and Dutch missions (embassies, consulates, etc.) abroad.

Based on these types of research conclusions can be drawn:

What is an extranet?

An extranet is a secured network accessible for a private group of authorised users who do not belong to one organisation, to exchange information and facilitate communication across borders, using world wide web technology. In this thesis the case of Hermes, the extranet is described, Hermes is a secured network for a private group of authorised users from different ministries.

Hermes can be seen as an extranet according to the multiple organisations model, because it is an extranet used by different organisations. These organisations are different parts of the ministry of Economic Affairs: the EVD and DG BEB, and the ministry of Foreign Affairs including the Dutch missions abroad.

What can an extranet mean for an international public organisation?

The EVD, where I did an internship, can be described as a professional organisation, because professional organisations represent craftsmanship, employees know their job and it is hard to verify their job by non-craftsmen.

The EVD has specific information and methods to help entrepreneurs, and other governments all over the world. An extranet can play a role in a professional organisation by the exchange of specific information that is needed to perform or store this information in a database where different users have access to.

The EVD is a public organisation. The public sector is performing tasks because of shortcomings of the market. There are four market failures: production of public goods, external effects, unequal distribution of goods and services and monopolies and cartels.

An extranet can be useful by the production of public goods, because it can gather information about the needs of the clients and can make predictions about the demands of the clients, when they place orders on the extranet. An extranet can support equal treatment of people. When applying for a subsidy for example, everybody has to fill out a form on the extranet with their data, so the procedure of gathering the data of the applicants is unbiased and free from human mistakes.

Another advantage of an extranet is that it is secured and only authorised users have access, so it is suitable for confidential matters as well. In the public sector organisations can deal with information, that can influence markets or positions of companies. This can lead to monopolies and cartels, and the public sector is there to prevent this.

For international public organisations there is also the advantage of collaboration at a distance by an extranet. International public organisations with partners abroad can access the extranet anytime and anywhere.

Besides that an extranet can help perform the tasks of organisations in the public sector an extranet has other advantages. Advantages of an extranet are:

- stimulate collaboration
- give information about the users
- timeless time and space of flows (access anytime and anywhere)
- only access for authorised users
- equal treatment
- speed is a possible advantage of an extranet for an organisation, but for Hermes does this not count. According to the answers the users gave in the users-research, Hermes does have a slow connection.
- financial benefits, the collaboration on the extranet and the sharing of information and documents can also have financial benefits, like the saving of print costs.

An extranet is also an instrument for knowledge management, because extranets have associative characteristics, are multimedial, are interactive and personalise the knowledge management process.

Hermes can personalise the process of information collection by a notification function, it also has associative characteristics in its search engine, but the other characteristics need to be improved. Hermes is multimedial, but not a lot of different media is used, this function can be expanded.

The arise of knowledge consists of a couple of phases: Registration, interpretation, experience, and application. Hermes can be used for this process of the arise of knowledge as well, although it is not used for the first phases from the arise of knowledge, registration, interpretation and experience.

So, only the last phase of the arise of knowledge Hermes is used for, the application of the knowledge. The users can find the knowledge on the extranet and use it to perform their tasks.

What do the users expect of an extranet?

Expectations of users of an extranet can be found out by means of an users-research. From the users-research it showed that the users expect the extranet to provide them with useful information to do their job, this is called professional knowledge. Hermes has professional knowledge like the sector specials with information about the development of different economic sectors. But the users do not only expect professional knowledge of an extranet, they also expect some nice-to-know information, like a subscription to the financial newspaper.

The questionnaire also showed that the users want to use Hermes as a communicationtool. From interviews with employees of the EVD and DG BEB it seems that they expect Hermes to work efficient and effective. Another employee of the EVD said that she expected Hermes to be an instrument for knowledge management.

What are the causes of problems with an extranet?

There are some areas that can cause problems with extranets, these problem areas are:

1. Design, the graphic design of an extranet is how the extranet looks, the structure of the menus, the lay out and how the different applications form a whole. In the case of Hermes the lay out does not cause problems, it received a low mark, and can be improved.
2. Data, or the content of the extranet is very important, the users judge extranets mainly on its contents. Hermes does not have translations of the information, most of the information is in Dutch, this does cause problems for users how do not speak Dutch. It also seemed from the research that the users think the data is not up-to-date, complete and practical useful, this causes problems as well.

3. Costs, in the case of Hermes a weight out have to be made about what to spend on the different parts. A discussion about who will pay for the costs is not necessary, because the EVD is the executive organisation and will pay all the costs of Hermes.
4. Control, for a good functioning extranet it is important to have a clear control structure, Hermes falls under the control of the EVD, because the EVD is the executive organisation of the Ministry of Economic Affairs. Within the EVD is not a clear control structure, units will not take their responsibility for the different forms of control to control Hermes.
5. Security, is needed to keep unauthorised users out and make sure the information on the extranet is save and confidential. Because of the delicate information the Ministry of Foreign affairs handles, security must be good. There are some security issues involved with the connection of the missions to the extranet and internet.
6. Functioning, or practical problems, The users-research of Hermes showed that most practical problems users experienced were with the log on to Hermes, their passwords expire very often. Another practical problem the users mentioned was a problem with the internet connection, this can have a relation with the security issues of the Ministry of Foreign Affairs mentioned before.

How can international public organisations optimise the use of their extranets and improve it to link up better with the needs of the users?

To meet the needs of the users, the organisation(s) need(s) to find out what the needs of the users are, this can be done by an users-research for example. I did an users-research by means of a questionnaire. I sent the questionnaire to users of the extranet in order to find out what they think of their extranet and what kind of applications they need to have on the extranet as well.

It can be important to involve users in the process of improvement of the extranet, because when users get informed and are asked for their opinion, it can create sympathy with the users and they might use the extranet more often and for more purposes. This can optimise the use of the extranet.

Another way to keep the use of the extranet optimal is to make sure the users know what the extranet can do and how they can benefit from it. It is important to inform the users and try to influence there mental models and attitude towards technology and the extranet. To make them have a positive attitude towards the extranet. The users of Hermes have a negative attitude towards Hermes.

To use the extranet optimal, the content of the extranet should be good, the data, information and applications should be of good quality. Data and information on the extranet should be findable with a well functioning search engine.

The data on Hermes was valued with low marks in the users-research and need to be up-to-date, complete and of good quality. The EVD should make a clear control structure and make someone, or a unit, responsible for the content of Hermes. To make sure the information has a good quality.

It is important to pay attention to the languages that are used at the extranet. An international organisation, like the EVD, has to deal with users with different languages, the extranet, Hermes, should act on this by providing information in different languages or in an international language, like English or Spanish so that all the users can understand the information.

Frustrations by users can come from access procedures, for example when there are problems with the log on to the extranet, or when the password expires within a couple of weeks. This is happening with Hermes, the users have to ask the EVD for a new password every couple of weeks, this causes frustrations by the users and the employee of the EVD who is in charge of the passwords of Hermes. Hermes has to change the passwords often because of safety reasons, but it can also be made possible that the users can change the password themselves without the interference of the EVD.

Other frustrations can come from bad lay out colours, or an unclear structure of the menus on the extranet. Hermes' lay out and menu structure have received reasonable marks from the users. Improvements can be made, this also a way to show that there have been some changes. When users see a new lay out when they enter Hermes, they can see immediately that something about Hermes has changed.

A recommendation for internal communication of Hermes can be to make Hermes more interactive. The missions want to get informed about what other missions do and want information about projects of the EVD, DG BEB and other missions. The interactive functions of an extranet can play a role in this by means of applications like a message board or a newsgroup or some other communication tool where users can put messages, reports or information about their projects and events, like a report of a Queensday celebration at an embassy for example, with pictures of the party.

To communicate with each other outside the extranet, users need each others contact data. An extranet is a good place to store this kind of information. All the users have access, and when the extranet is linked to the database with the data of all employees it stays up to date as well.

A recommendation for the external aim of client support of Hermes is that the users need professional information to support clients, this can be information like EU-information, information about subsidies and financial aid for entrepreneurs. This information could be added to a FAQ-list or the link to the website of the EU can be added to the list of links. The current professional knowledge that can be found on Hermes need to be expanded with this information.

Users also answered in the questionnaire that they are interested in projects of the other users at the EVD, DG BEB and at other missions. If this information is shared on the extranet the users can inform their clients about these projects and clients might benefit from this or deliver a contribution to the projects.

If an extranet is used as an instrument for knowledge management, the extranet should have the characteristics to support knowledge management: multimedial, by means of an messageboard with texts and images for example, interactive by means of an chatroom for example, associative characteristics in a search engine for example, and personalise the process of knowledge management by a notification function for example.

These characteristics of an extranet support the different phases of the arise of knowledge: registration, interpretation, experience and application. Hermes does not have the functions to support these phases. For the registration phase, where data is gathered from events and experience, Hermes should have a place where this data can be saved, preferable in a closed user group, when the data is confidential.

For the next phase, the interpretation phase Hermes should provide the users with some software programme to process the data and give the users the chance to work together on the data, like a closed user group for confidential data or a groupware function. For the phase of experience Hermes needs a function to discuss the data and information, like a chatroom, a newsgroup or other interaction tools. Hermes does already have a function to publish the knowledge and users can find the knowledge by a search engine to use it.

When an extranet is used for knowledge management, it is also important to change the behaviour of the users towards collaboration. Orlikowski (1992) says that "the competitive individualism –which reinforces individual effort and ability, and does not support cooperation or sharing of expertise- is counter-cultural to the underlying premise of groupware technologies" (Orlikowski,1992;367). When users are not willing to cooperate or share knowledge and information, knowledge management cannot take place.

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1.Extranets in public organisations

1.1.Introduction

In the 1960s government agencies were the leaders and innovators in computer usage. In fact, perhaps surprisingly, in the early days of computer technology government agencies in both America and Britain were innovators in information technology development. During the 1950s and 1960s many governmental organisations were using information technology to the maximum capabilities known in either private or public sector. (Margetts, 1999;31)

Governments couldn't keep up with their role as innovators and in the 1970s they lost their role as innovators; By the end of the 1970s, however, departments across both countries began to lose their role as innovators in information technology development.

Nowadays, in the public sector organizations are starting to catch up with ICT-applications. ICT can be used for different aims in an organisation. Van der Ploeg and Veenemans (2001) give three aims of ICT; as an instrument for teamwork, as a mean for communication and as a help for the decisionmakingprocess. These aims can be reached by means of an extranet, for example.

An extranet is a secured network accessible for a private group of authorised users who do not belong to one organisation, to exchange information and facilitate communication across borders, using world wide web technology.

Organisations who use ICT-applications can be connected with other organisations or with users outside the organisation by an extranet. Organisations use extranets for example to provide the users of the extranet with information or give their clients the opportunity to place orders online, at any time in any place.

In this thesis I will aim at international public organisations, because this lies in the field of my study, the Masters of International Public Management and Policy at the Erasmus University in Rotterdam.

An example of an international public organisation who is using an extranet are the United Nations, they have an extranet called iSeek. This extranet consist of links between the intranets of local duty stations of the UN, there are eight duty stations all over the world. An employee of the UN can log on to the extranet and have access to the intranets of for example UNOG, the UN Office in Geneva, and the UNON, UN Office in Nairobi. On the extranet is also information of the employees of the UNDP (United Nations Development Programme) and UNICEF.

This thesis is useful for the management and other employees of (international) public organisations who are using an extranet or are planning on developing and using one. And of course, for everyone else who is interested in extranets in (international) public organisations.

In the first chapter I will describe the problem analysis and the central question of this thesis: *'How can international public organisations optimise the use of their extranets and improve it to link up better with the needs of the users?'*. And the sub questions which will help me to answer this central question. A theoretical framework will be presented with different theoretical aspects that will be explained in other chapters.

The second chapter is about international public organisations, the characteristics and tasks of organisations in the public sector are mentioned. This chapter is also about different types of organisations and international organisations.

In the third chapter a definition of an extranet will be given. I will also point out the advantages of an extranet for organisations in the public sector, different functions of an extranet and the technical elements to build one.

In the fourth chapter problem areas, like data, control and security to which attention should be paid when developing and implementing an extranet are described.

The fifth chapter will cover a functional aspect of an extranet: the sharing of knowledge. In this chapter more about knowledge management will be explained and the role an extranet can play in knowledge management.

In the sixth chapter of this thesis I will describe the case of Hermes, the extranet of the Agency for International Business and Cooperation (EVD), Directorate-general Foreign Economic Relations (DG BEB), the Ministry of Foreign Affairs and Dutch missions (embassies, consulates, etc.) abroad. This extranet was set up to improve the information provision and communication between the parties. I did an internship at the EVD in The Hague for a couple of months to do research about the users of this extranet and do recommendations for improvements of Hermes, the extranet. The results of this research can be found in chapter seven about the empirical part.

The final conclusions and recommendation will be given in the eighth chapter. I will draw conclusions from my literature study about extranets, the interviews and the users-research of the users of Hermes and will do recommendations to the EVD about their extranet, Hermes.

1.2.Problem analysis

In this thesis I will describe the case of Hermes, the extranet of the Agency for International Business and Cooperation (EVD), Directorate-general Foreign Economic Relations (DG BEB), the Ministry of Foreign Affairs (BuZa) including the Dutch missions (embassies, consulates, etc.) abroad.

The EVD wants better service for its target groups; Dutch businesses, foreign businesses in emerging markets and developing countries, public-sector organisations in emerging markets and the Dutch government. Therefore it is important to have missions abroad to work efficient, effective and cooperative, the extranet, Hermes, can play an important role in this. For example for the exchange of information and to register clients.

According to the DG BEB, the missions do not use Hermes optimal, that is why they assigned the EVD to do a research about the use of Hermes. And why the EVD wants to optimise the use of Hermes by missions, embassies and the ministries. They would like to know what the users of Hermes think of it and what can be changed about it so that it will be more useful for the users all over the world.

In this thesis I will look at different features of extranets; advantages, problem areas, needs of users of different extranets and extranets in other (international) public organisations. I will also have a look at extranets as an instrument of knowledge management.

Based on this general knowledge about extranets, interviews and a users-research of the users of Hermes, I will do recommendations to the EVD to improve their extranet, Hermes.

1.2.1.Central question

This thesis has a central question, the central question focuses on the use of extranets in international public organisations. The central question which I will answer in this thesis is the following:

How can international public organisations optimise the use of their extranets and improve it to link up better with the needs of the users?

1.2.2.Sub questions

In order to answer the central question of this thesis, a couple of sub questions are formulated:

1. What is an extranet?
2. What can an extranet mean for an international public organisation?
3. What do the users of an extranet expect of an extranet?
4. What are the causes of problems with an extranet?

These questions and the central question will be answered by means of different methods of research:

- a literature study of different theories about different characteristics of extranets
- interviews with employees of the agency for International Business and Cooperation (EVD) and the Directorate-general Foreign Economic Relations (DG BEB),
- a users-research of Hermes, the extranet of the Agency for International Business and Cooperation (EVD), Directorate-general Foreign Economic Relations (DG BEB), the Ministry of Foreign Affairs and Dutch missions (embassies, consulates, etc.) abroad.

1.3.My internship at the EVD

In order to do research about an extranet in an international public organisation I did a three months internship at the Agency for International Business and Cooperation, the EVD in The Hague. The main task of the EVD is to support parties in the field of international entrepreneurship and cooperation, in and outside The Netherlands.

To perform this task properly the EVD is in contact with a network of Dutch missions all over the world. To provide these missions with information and tools to perform their tasks (which will be described later on) an extranet, called Hermes, was set up. In the third chapter of this thesis this case of Hermes will be presented.

Hermes is now used for a couple of years and according to the Directorate-general Foreign Economic Relations (DG BEB) it needs some adjustments. Therefore they assigned the EVD to do a research to find out how Hermes can be improved.

An employee of the EVD made the following setup for this research. The research will be done in a couple of phases:

Phase 1: interviews are held with EVD-employees to gather some information for a users-research by missions abroad (January 2006)

Phase 2: develop an users-research (determine the type of research, the researchobjects, etcetera) (first quarter 2006)

Phase 3: start with users-research to get recommendations (second quarter 2006)

Phase 4: Based upon this, a decision will be made to "Go" or "No-Go" If "Go" start with improvements (third quarter)

Phase 5: new form and contents of Hermes

My contribution lies in the second and third phase, I will develop and conduct the users-research by Dutch missions all over the world. The users-research should give more insight in the information-requirements of the users. Information requirements can be described as; "a detailed description of the information needs which the system have to meet; find out who what information needs when, where and how" (Laudon & Laudon, 2002; 346)

So the users-research should find out what the needs are about the extranet and the information on the extranet . Based on an analysis of the information requirements and other

needs of the users the goals of the extranet can be defined and the functions which the extranet has to meet can be determined.

1.4.Theoretical framework

In order to answer the research questions, theory will be sought and used from several sources. The theories will cover the following subjects:

1. International public organisations; I will focus on extranets in international public organisations, so, I will explain what the public sector is, and what the tasks are of organisations in the public sector and why. I will also described different types of organisations. This is described in chapter two.
2. Extranets; in order to answer questions about an extranet I need to define what an extranet is and what the advantages, functions and technical elements of an extranet are. This is described in chapter three.
3. Problem areas; I will find problem areas of extranets in different literature and explain why these are problem areas. Such as : control (it is important to make clear what parts of the extranet should be controlled and how) ,and information (I will find theories about information requirements of the information users of an extranet need). This is described in chapter four.
4. Knowledge management; an extranet is an instrument to share information and develop and share knowledge between organisations. This is described in chapter five.

2. International public organisations

2.1. Introduction

In this paragraph I will explain what international public organisations are. International public organisations are international organisations who are operating in the public sector. The public sector consists of different powers and has special tasks.

2.2. The public sector

The public sector is formed by different powers, Rosenthal (1996) says the public sector is formed by the government, semi-governmental organisations and private organisations with a public task.

The government and other powers in the public sector perform tasks that other parts of society cannot perform. The economical science calls this market failures. Wolf (1988) mentions four shortcomings of the market: the production of public goods, external effects, unequal distribution of goods and services, and monopolies and cartels.

The production of public goods

Public goods are goods who are indivisible and non-exclusive. Indivisible means that the consumption of a person of a certain public good does not hinder the consumption of another person of the good. For example, the air we breath.

A good is non-exclusive when clients cannot be left out of consumption by the producers. For example when the municipality places a road, no one can be left out of the use of this road, it is a public road, so everybody can use it. "Defence and the Deltaworks in The Netherlands are good examples of public goods" (Ringeling, 1993; 95).

Non-exclusiveness can also lead to unwilling clients, these are citizens who are not voluntarily clients of the service of the public organisation. An example of unwilling clients are the taxpaying citizens, these are the unwilling clients of a tax department.

For market parties it is hard to produce these goods, because it is hard to set a price for these goods. And besides that no individual will pay a price, because he or she cannot be left out of the consumption of the good. That is way the public sector produces these public goods. For organisations in the private sector it will also be harder to deal with the unwilling clients, they do not have the repercussions the government has, for example to put a persons under budgetary supervision when one does not pays his bills.

External effects

Not all costs and benefits of the production or the consumption of a good can be represented in the price of the good. We call this the external effects, there is a distinction between positive and negative external effects. "The consumption of education and housing generate positive effects. The consumption will lead to more wisdom and health in a society, then when there was less education and bad houses" (Ringeling, 1993;95). A negative external effect is for example, air pollution of a factory. The costs of the pollution are not represented in the price of the products the factory produces.

The generation of external effects is a reason for the government to intervene in market transactions. That is way the government stimulates the consumption of one good and discourages the consumption of another good. These goods are called 'merit goods'. The government stimulates sports, because it will make the people in the society more healthy. The government discourages smoking, because this is bad for the health of the people. The government can do this by subsidies and advice about the goods.

There are not much market transactions who do not produce external effects, that is way the governments has to choose on what good to intervene.

Unequal distribution of goods and services

The marketmechanism can lead to unequal distribution of services and goods, some citizens get a lot and get rich, others get less or nothing. That is why the government has to

intervene. The government can aim at “a decrease of the inequality in the society, and aims for a more justified distribution of the incomes in the society and tries to prevent citizens from having not enough money that is needed for the minimum living standards” (Ringeling, 1993; 96).

Monopolies and cartels

The market can have temporary shortcomings because of monopolies or cartels (agreements about prices between different producers of a product) or bad and partial information about the quality of goods and about the prices. The government tries to take away the shortcomings and make sure the market is balanced again. This can be done by legislation and advice for clients.

These reasons for public sector tasks create some functions of the government. Mayntz (1985) distinguishes a couple of functions of the government: the regulation of relations between society and her environment, the regulation of relations between members of the society, the organisation of the governmentsystem itself and the production of goods and services by the government and other public organisations and the steering of the societal development. A characteristic of the government is the external focus, it is not about the government itself but the tasks are aimed at the society. The government can not perform all these tasks by herself, so, she passes some tasks to other organisations in the public sector.

The government has a couple of instruments to intervene in the private sphere to influence decision-making of the citizens, so that the decisions synchronise the policy goals of the government. These instruments of influence are: information, financial incentives and regulations.

Information, or, ‘de preek’ (the sermon) as it is called as well, can have different forms. One of those forms is planning. A plan can be used to rearrange and steer societal relations and the relations between government and society. Disadvantages of planning are that they are not binding, not flexible and not detailed enough.

Another form is a nota, this looks like a plan, but a nota is aimed at the government itself. It forms a communicationtool for the ones who are involved in the policy development in a certain field. The involved parties can collaborated on a nota by means of an extranet with functions for collaboration, like groupware.

A third form is giving information and advice. This can be about different actions or regulations the government is doing or planning to do. The government can do this by commercials on radio or television for example or by spreading the information by internet or extranet. It is important to notify the citizens so that they know what the government is doing and so that they can act according to the new regulations or action of the government.

2.3. International organisations

An organisation is, according to Robbins (1997) “a formal structure of two or more people, with a planned coordination and a common goal. The structure is characterised by hierarchical relations and a certain degree of distribution of tasks”.

Next to private organisations, there are public government organisations, these can be categorised in different categories. “Wilson gives a classification of government organisations. Government organisations, the organisations in the public sector, can be categorised in four categories: production-organisations, procedure-organisations, professional organisations and the ‘struggling’ organisations “(Ringeling, 1993; 150). These categories are based upon the degree in which you can determine the output and outcome of the organisations. For organisations in the public sector this can be hard to determine, in the private sector outcomes and outputs are more clear.

Production organisations

Production organisations are organisations that produce (public) goods. It is clear what they do and there is a relation between their activities (production) and the results (goods) of the activities.

Examples of production organisations are trade unions and social services of the municipality, where the activities and the consequences are clear.

Procedure organisations

Procedure organisations produce procedures. The activity, the production of procedures, is clear, but the result of these procedures is not clear. It can be hard to measure or see if a procedure has the intended effect or not.

An example of a procedure organisation is the police department. The input and activities are clear, but it is hard to say things about the effects and the consequences of these activities. Some outputs can be measured, like the number of summons the police has given to citizens, but the effects of these summons for society is not clear, and cannot be measured.

Professional organisations

Professional organisations represent craftsmanship. The employees know their job, it is hard to verify their job by non-craftsmen. Only the judgment of the results is important.

Examples of professional organisations are environmental organisations. The outcomes of environmental policies can be measured, like the pollution of water, but the degree in which this outcome is caused by the policy of the government or if there is some other cause, is hard to determine. The environmental policy is developed by experts and professionals.

'Struggling' organisations

Within these organisations the products and the results are unclear. These organisations struggle with their activities and the consequences of these activities.

Example of 'struggling' organisations are organisations that perform tasks in the economic policy field. It is hard to determine what activities shall be done to decrease the unemployment rate and if the activity has this result.

When these organisations are international organisations, it means that more than one country is involved. An organisation is operating in different countries, like when it has different offices in different countries. Or it has relations in different countries. An international organisation is active in an international environment, this means different countries, different languages and different cultures.

There are a couple of types of international organisations; IGOs, intergovernmental organisations, or interstate organisations, these are organisations between states or governments. There are also INGOs, the international non-governmental organisations. "According to the UN Economic and Social Council, 'Every international organisation which is not created by means of inter-governmental agreements shall be considered as a non-governmental organisation'. This suggest a distinction between intergovernmental organisations (IGOs) and international non-governmental organisations (INGOs, sometimes shortened to NGOs)" (Archer, 2001;35/6). IGO's belong to the public sector, INGO's can be part of the public sector, when they perform a public tasks, otherwise they belong to the private sector.

Examples of international public organisations are: the world trade organisation (WTO), United Nations (UN) and the world health organisation (WHO).

2.4. Summary

The public sector is formed by different powers: the government, semi-governmental organisations and private organisations with a public task. The government and other powers in the public sector perform tasks that other parts of society cannot perform, because of four shortcomings of the market: the production of public goods, external effects, unequal distribution of goods and services, and monopolies and cartels.

The government has instruments to influence its citizens. One instrument of the public sector to influence citizens is the sermon, or information and advice.

In this chapter a definition is given for an international organisation. An organisation is a formal structure of two or more people, with a planned coordination and a common goal. There are different types of public organisations like production organisations, procedure organisations, professional organisations and struggling organisations.

An international organisation is operating in more than one country. There are different kinds of international organisations: NGO's and INGO's.

3.An extranet

3.1.Introduction

This chapter starts with a brief history of networks, like internet, intranet and extranet. Further, all the ins and outs about extranets, like technical elements, models and advantages, will be described. First, the differences between extranets and intranets or the internet will be described.

3.2.Internet, intranet or extranet

The value of information in an organisation is changing and with that the role of ICT in an organisation as well. Lips, Bekkers and Zuurmond (2005) describe the classical diffusion model of Nolan to describe the development in the role of ICT and information through the years.

It consists of three phases which all are presented by an S-curve, this means a period of weak grow, followed by exponential grow and a flattened part. The t-value of the end of each phase is the value of the starting point of a new phase. The three phases are; the data-processing-phase, the information technology (IT)-phase and the network-phase.

The data-processing-phase

In the first phase automation of processes in the organisation is described, existing tasks are automatized. The role of information and ICT is supportive and does not cause changes to the fundamentals of the organisation. This phase was between 1960 and 1985.

The information technology (IT)- phase

In the 1980s the second phase came up, computers, smaller than the large mainframes, from the former phase, were able to do calculations and got more power. The environment of organisations was changing. Information technology can be used for different activities in the organisation and tasks in the organisation can be combined. Activities are structured around process of the organisation. This leads to Business Process Redesign (BPR), a transformation of process-aimed methods.

The network-phase

The aim of processes goes beyond the boundaries of the organisation. In this phase the organisation changes internal and it changes the connections with the environment. Organisational boundaries are shifting and are becoming semi-permeable, cooperation between organisations is changing just as the whole value chain is changing.

A central point in this phase is the distribution of information by all kinds of networks, like internet, intranet and extranet.

These different types of networks in the third phase started to develop in the 1990s. There are different definitions for these types of networks.

Mouritz, Van Seumeren and Van der Wees give some definitions;

Internet, they define as “the public part of the world wide network” , an intranet is “an on internet-protocol based local network. The intranet is not linked to the internet and is not a part of it. Intranet is and stays a local network that belongs to one organisation”. An extranet they define as “a network that is not a part of the internet and that is accessible for a private group of people who belong to different organisations and the clients and relations have access to”.

Laudon&Laudon 2002, agree with them and give more or less the same definitions: “an intranet is an internal network based on internet- and www-technology and standards”. An extranet they define as follows: “an extranet is an intranet that is available for authorised users outside the organisation” (Laudon & Laudon, 2002; 26).

Cuijpers and Hengstmengel go a bit further and say that with an extranet other organisations do not only have access to the extranet but, they say that the intranets are linked together in an extranet: “An extranet is the linking of intranets of a couple of organisations to exchange information across borders, like orders of suppliers” (Cuijpers & Hengstmengel, 1997; 137).

Pedley (1999) gives also some definitions for intranets and extranets. By intranet he means “the integration of an organisation’s information assets and communication facilities into a single, widely accessible networked environment using Internet-based technologies, such as e-mail, news groups, file transfer protocol (ftp) and world wide web technologies” (Pedley, 1999; 11).

By extranet he means “An extension of a corporate intranet using world wide web technology to facilitate communication with its suppliers and clients. An extranet allows clients and suppliers to gain limited access to a company’s intranet in order to enhance the speed and efficiency of their business relationship” (Pedley, 1999; 35).

Based on the former definitions I will formulate my definition for an extranet. An extranet is a secured network accessible for a private group of authorised users who do not belong to one organisation, to exchange information and facilitate communication across borders, using world wide web technology.

The users of an extranet can be categorised in three groups:

1. employees from (one of) the organisation(s) who own(s) the extranet
2. clients of the organisation(s) who own(s) the extranet
3. partners from the organisation(s) who own(s) the extranet

3.3.Key technical elements to build an extranet

To build an extranet some technical elements are needed. Because there are similarities between extranets, internets and intranets, most technical components are in general the same as for an internet or an intranet. The key technical components to build an extranet are:

- A computer network: There can be made use of an existing LAN (local area network) or WAN (wide area network) to make connection to an extranet.
- A server machine and software: on the servers the network operating system will run and control how computers share resources and/or software in the network will take place. The users will give the server requests in a network, which will be handled by the server.
- TCP/IP standards: this is the particular system for transferring information and data over a computer network. The Transmission Control Protocol (TCP) is responsible for turning data into a package and reassembling them at the destination, while the Internet Protocol (IP) handles getting the packages to their proper destination.
- User workstations: desktops with web browsers installed for users, to make it possible to view the online pages of the web servers.
- Firewalls: this is a collection of computers, software, routers, and services that together enable the connection of the network while maintaining its security and integrity with other networks (Guengerich & Graham, 1997; 2). A firewall can also be seen as a check for outgoing or incoming data transfer beyond the organisation’s border, like internet access and e-mail, for virus and access.
- Applications that run on servers: this can vary between different extranets. It all depends on the demands of the users, examples are security applications, applications for interaction and communication.
- Search engines: these should be available for keyword searches of databases of links to webpages or extranetpages. They are needed to facilitate the user to search for documents, information, forms, etcetera. (Cyberspace Center, 1997).

3.4. Models of extranets

Extranets exist in different forms and with different methods of access to the extranet. Bort and Felix (1997) give three models of extranets, these models are: the secured intranet model, the specialized application model, and electronic commerce model.

The secured intranet access model

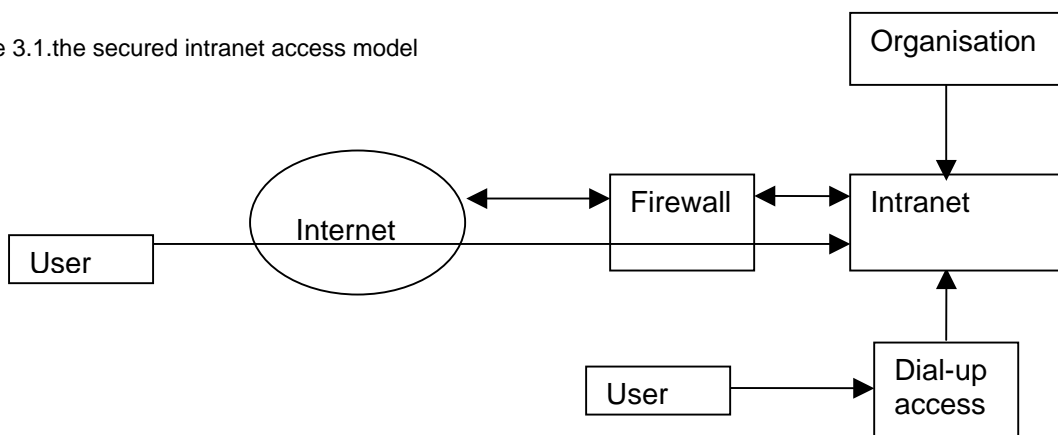
With the secured intranet access model of an extranet application, the partners gain the ability to log directly onto an organisations intranet to perform specific tasks. This is possible through the internet (and a firewall) or a direct connection.

This model requires a high level of security planning and a lot of trust in the partners, because on an organisations intranet can be delicate information of the organisation.

Because the (authorised) users have access to the intranet of the organisation, the intranet becomes an extranet. It meets the criteria in the definition of an extranet in the former chapter: it is accessible for a private group of authorised users who do not belong to one organisation, to exchange information and facilitate communication across borders.

The secured intranet access model can be seen in the figure below.

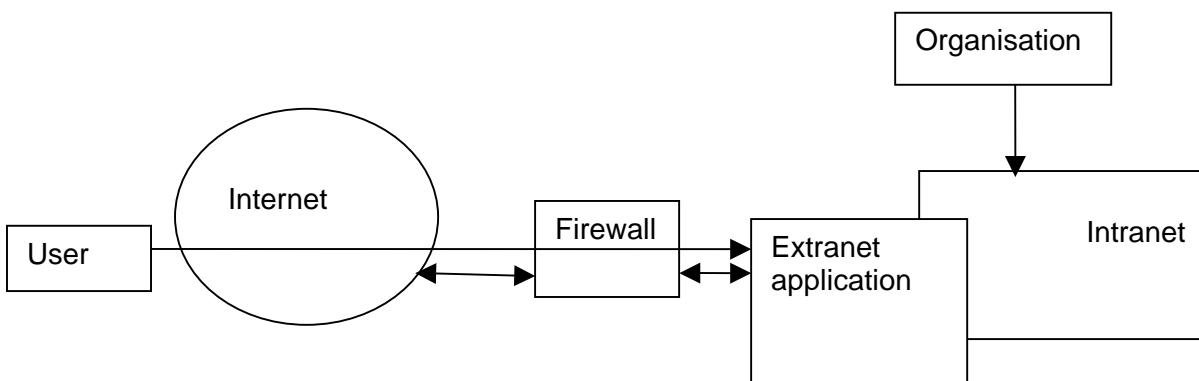
Figure 3.1. the secured intranet access model



The specialised application model

With this model the extranet is an application developed specifically for a partner or for a category of partners. Employees may be able to access the extranet from their intranet, but partners would have limited access to the intranet from this extranet site. The users of this extranet are employees from the organisation and partners from outside the organisation. The specialised application model can be seen in the figure below.

Figure 3.2. the specialised application model

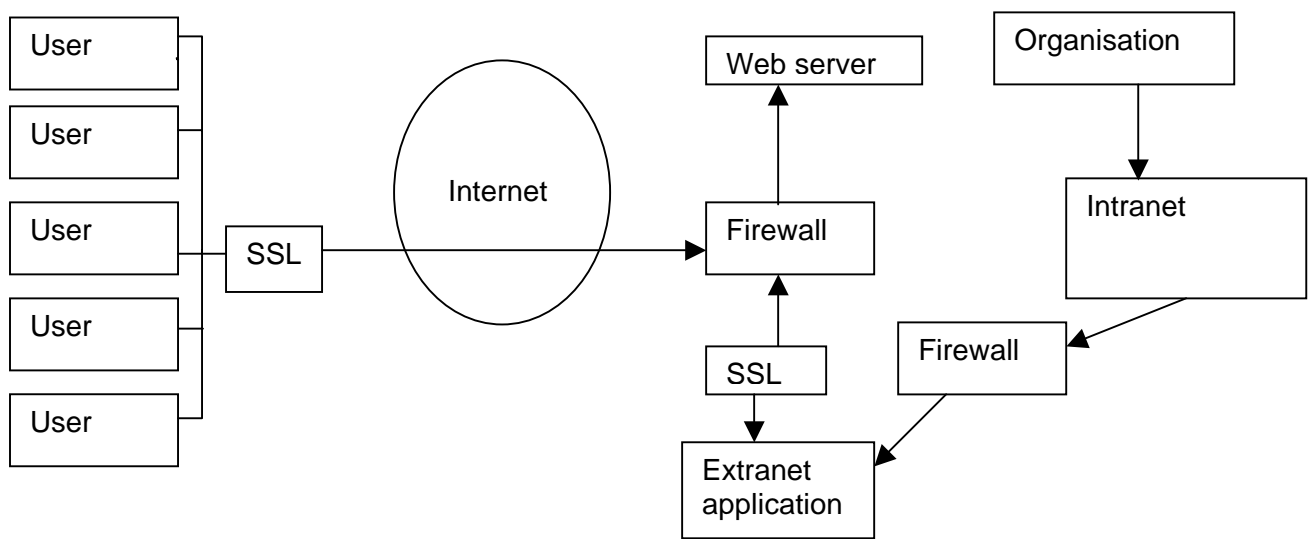


The electronic commerce model

This model uses electronic commerce techniques to serve users from a specific partnersegment, including similar security architecture and transaction processing. It may be used when partnersegments contain hundreds of companies. It may involve commerce transactions, such as order entry, or it may not. It is typically capable of transactionlike operations, even if that transaction is not a sale.

In this model a secure sockets layer (SSL) is used to provide a private and reliable connection between two communicating applications. SSL is the basis of the encrypted communications between a browser and an internet server, so that this link is authenticated and secured. More about encryption and security can be found in chapter 4.6.Security. The electronic commerce model can be seen in the figure below.

Figure 3.3.the electronic commerce model

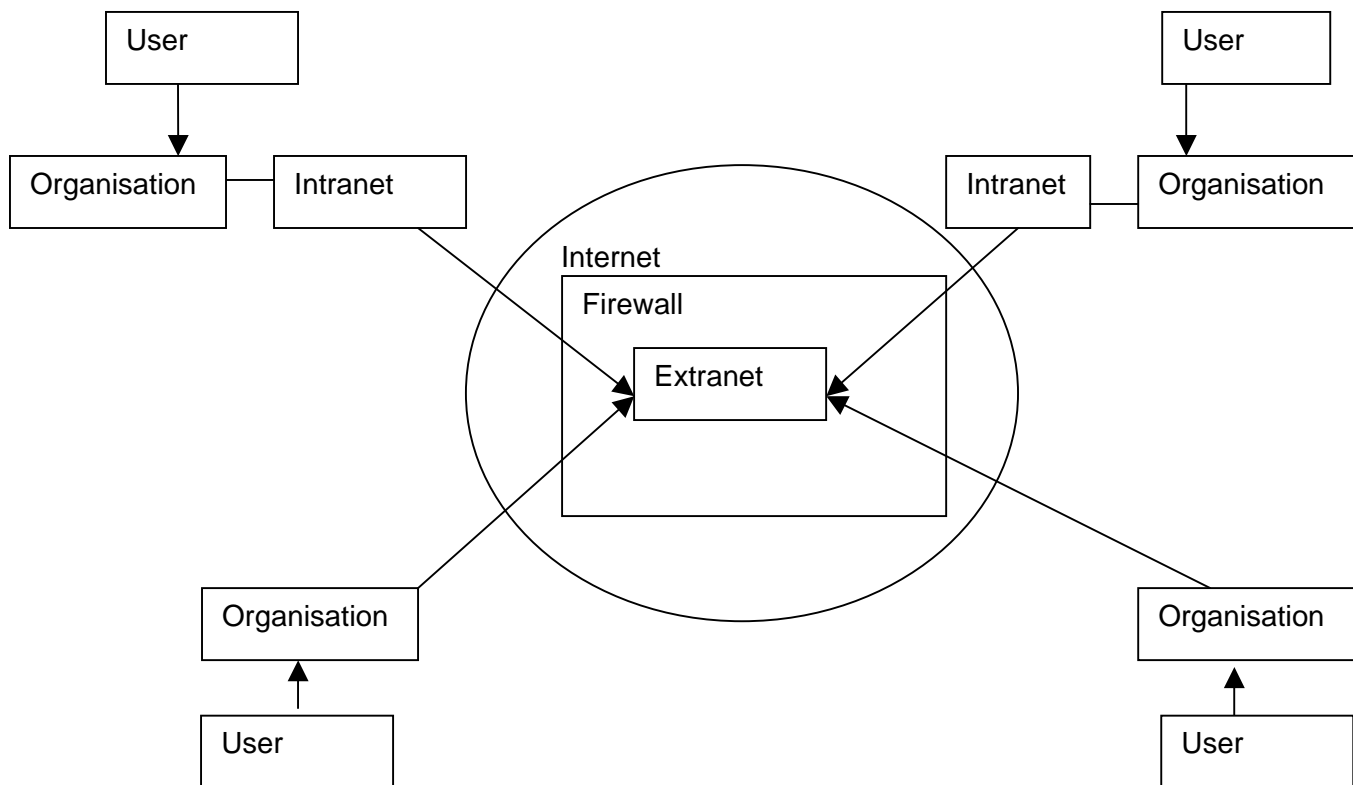


Multiple-organisations model

The models of Bort and Felix concerns one organisation with users from outside the organisation. It is also possible that different organisations share an extranet, the users are the employees of these organisations and/or their clients. Figure 2.4. shows the construction of an extranet of multiple organisations. The users can have access through a firewall to the extranet or an access via the organisations intranet and a firewall. I will call the model of an extranet of multiple organisations the multiple-organisations model.

A disadvantage of an extranet of multiple organisations is perhaps that, when more organisation are involved problems can occur when the organisations have different opinions about the content or form of the extranet. The multiple-organisations model can be seen in the figure below.

Figure 3.4. Multiple-organisations model



3.5. Functions of an extranet

Now we know all about the models and technical elements of an extranet, it is time to get to know the functions of an extranet. An extranet can have different applications and therefore perform different functions within an organisation or outside the organisation, with different users. An extranet does not have to have all the functions below, but these are possible functions an extranet could perform:

- Publication of information: Information can be placed on the extranet by the organisation(s) that own(s) the extranet or by the users of the extranet.
- Access to information sources: The extranet can give the users access to all kinds of information sources like a database, users can use this database to find information, documents and other files.
- Access and edit data collections: An extranet can contain for example the contact data of the employees of the organisation(s) or the users. It is possible that users can edit this data to keep it up to date.
- Deliver information: One can subscribe himself or herself to a service that sends information about certain subjects to his or her email, or one can get notified when new messages or information is posted on the extranet. So one can deliver information via the extranet.
- Exchange of messages (e-mail): With this application one can send and receive email messages within or outside the organisation.

- Discussion groups and newsgroups: Extranets can create a forum where users can have discussion about different subjects and give reactions and opinions. The reactions on the forum can be read by all the users.
- To chat: The extranet can have a space where users can “meet” each other, like a chatroom or a messenger, and have conversations.
- To make phone calls: An extranet can have the application to make phone calls all over the world via the extranet, like Skype.
- Video conference: An extranet can also have an application for video conferencing, like CUSeeMe. With an application for video conferencing users can see each other by webcams who are connected to the extranet and have a meeting.
- Electronically message board where users can posts messages that others can read. These messages can consist of text, images, pictures and sounds.
- File transfer: Besides information it is also possible to transfer software programs via the extranet. One can get software from the extranet and install it on his or her computer.
- Closed user groups: Within the extranet certain private groups can exist that are only accessible by a certain group of users. This can support the internal communication within the group about confidential information for example.
- Specific search engines: An extranet can have a specific search engine to search information more specific than standard search engines.
- Groupware: An extranet can also be used for groupware. “Groupware are computer based systems that support groups of people engaged in a common task or goal and that provide an interface to a shared environment” (Pedley, 1999; 39). Groupware is meant to support projects of more people working on documents together. A groupware can also contain a shared agenda, so that it is easy to see everyone’s agenda and plan meetings.
- Group decision make systems: With this system it is possible to organise brainstorm sessions, users can also react anonymous. This contributes to an interactive way of making decisions. An example of this can be a poll, where a question is asked and users can vote for different answers.
- Transactions: An organisation can have their clients order products or services by means of an extranet. A lot of organisations have an extranet where clients can get a password and become authorised users, so they can log on to the extranet and order products online or fill out forms to receive a service. For example the social housing organisations in Rotterdam, they have an extranet together called woonnet Rijnmond, users can log on to this extranet and apply for a house or an apartment to rent. This is an example of a one-stop shop, at one “shop”, the extranet, one can see and apply for all the houses of all the social housing organisations. Next to one-stop shop there are non-stop shops, like automatic continuation of subsidies for rent, this means that one does not have to fill out a form for subsidies for rent anymore, but it can be received every month automatically.
- An extranet can also contain information about clients, for example if a couple of organisations who have the same clients share an extranet it is possible to have an application for client registration management (CRM) on the extranet.
- Instrument for knowledge management: Besides that an extranet is a tool with a lot functions that can help organisations, it is also an instrument for knowledge management.

3.6. Advantages of an extranet for international public organisations

The utility of an extranet is almost the same as the utility of internet or an intranet; it is fast, easy, and it has low costs in use. An extranet has advantages for organisations in the public sector, these are described in this paragraph.

Stimulate collaboration

An advantage of an extranet is that clients or partners outside the organisation have access to specific relevant information. An extranet can stimulate doing business, for example if users can look at the stock and place orders on the extranet. One can choose the right moment to place the orders and the organisation can adjust their stock to this. Extranets can also stimulate collaboration by applications like groupware or functions that enhance interaction, like newsgroups and chatrooms.

But to collaborate openness is needed, so all the users have to share some information on the extranet. This can cause problems if there are organisations who do not want to share information or if users are competing with each other. Orlikowski calls this competitive individualism. "The competitive individualism –which reinforces individual effort and ability, and does not support cooperation or sharing of expertise- is counter-cultural to the underlying premise of groupware technologies" (Orlikowski, 1992; 367).

Collaboration for public sector organisations can also be seen as a threat to their independency. Duivenboden and Lips (2002) say that if public organisations work together at a one-stop shop, or share an extranet on which clients can get services, it causes problems with the autonomy and responsibility of an organisation. Collaboration can be a threat for the independency of an organisation. An example is the CWI (Centre for Work and Income) that takes care of the social security sector, and made the labour exchange lose their right to exist.

For organisations in the public sector an extranet can be useful for an organisation who delivers services, when the clients can make appointments via the extranet one can make an appointment when it is not so busy, for example an appointment at the city hall.

Or the extranet can be a means for the government to collaborate with the citizens and social organisations. "More attention should be paid to the mobilisation and creativity and the involvement of citizens, social organisations and other organisations by current social problems" (Bekkers&Thaens, 2002; 329). An extranet can play a role to strengthen this involvement.

If partners from different countries are collaborating and have to have meetings to make decision, for example, an extranet can play a role as well. Meetings can be held via chat or video-conference application on the extranet in stead of people flying over from all around the world to be in the same room to meet.

Collaboration by means of an extranet can be very useful for organisations in the public sector who produce notas. The notas are for internal use, if the partners of a policy field who the nota concerns are linked with each other by an extranet, it is easy to share information about the nota or produce the nota together.

Another way an extranet can be useful is to stimulate the cooperation of unwilling clients. The government or another organisation in the public sector has to deal sometimes with unwilling clients, clients who do not choose to be clients. An example of this is a tax department, this department has a lot of clients who are not voluntarily clients and tax payers. Clients will not do a lot of effort to cooperate, so if the tax department has an extranet on which the citizens can log on to and simply fill out some data, it will be a lot easier than fill out all kinds of papers and send them by mail. Making things easier for the citizens will help the tax department to get more cooperation from their unwilling clients.

Information about the users

The use of an extranet will also provide the organisation with the possibility to gather information about the needs of the users of the extranet and make predictions of the demands of the users. If every user orders a unique product and out front nothing is clear about the demands of the users, it could mean that companies have a large remainder of products, which can lead to loss. With the information an extranet can provide about the users who visit the extranet a prediction can be made so that the company will have less chances of producing or provide to much products. Or in the case of a municipality for example, one can pay more attention to a specific item, that is searched for a lot with the search engine on the extranet. This advantage counts for production organisations in the public sector. To adjust their activities to the demands of the clients.

An extranet can also provide users with a private space for each user with specific data concerning the user. The users can log on to the extranet, and can see his or her data about former orders and information or documents that he or she saved on this private space at the lasts visit for example.

The Lower Colorado River Authority (LCRA) has an extranet. LCRA plays a variety of roles in Central Texas: delivering electricity, managing the water supply and environment of the lower Colorado River basin, developing water and wastewater utilities, providing public recreation areas, and supporting community and economic development. For LCRA's wholesale clients, LCRA provides a secure extranet through which a customer may access customer specific data concerning itself. Use of the secure extranet portion of the site requires additional information to be collected in order to restrict and control access to customer specific information to only those users employed by the customer or a key account. (www.lcra.org)

But the organisation(s) who own(s) the extranet need to be careful with the information about users. Users could experience the gathering of information about them as a threat to their privacy and will be reserved with the use of the extranet if their data is not handled with care.

An extranet can not only be used to have information about the needs of the users, but also to get other information about the users. Extranet can hold statistics about the use or saves the actions of the different users. This can be useful for a public organisation when things go wrong. The data the extranet has saved can be useful in an investigation about a wrong procedure for example. Actions can be checked when needed. The government can show afterwards how she acted in a certain circumstance, by showing the data of the extranet, this causes more transparency in government actions.

Timeless time and space of flows

An advantage what an extranet has over an internet is that "an extranet empowers its users with a quick, flexible method of obtaining organisational data and information" (Szuprowicz, 2000; 6). Quick, because the users do not have to search the internet for information, but can find it quickly on the extranet where the information the users need is provided. And flexible because the access of the extranet is not tied down to time and place, this also counts for internet, but the combination of quick and flexible access for users outside an organisation is specific for an extranet.

Orders can be placed at any time and specific information (for example information that is more specific than the information that can be found on a website) can be found from any location. Castells calls this timeless time and space of flows.

Timeless time he defines as follows: "The use of new information and communication technologies in a relentless effort to annihilate time. On the one hand, time is compressed

(as in a split second global financial transaction, or in the attempt to fight 'instant wars'), and on the other hand, time is de-sequenced, including past, present, and future occurring in a random sequence (as in the electronic hypertext or in the blurring of life-cycle patterns, both in work and parenting)" (Castells, 2000; 13/4).

Castells means by this that one do not have to worry about time when doing transactions, transactions by extranet can be done daytime and nighttime, at any moment, the dimension of time divergence over the world does not count anymore, and things can be done so much faster.

But, if for the transaction a reaction is needed from an user or an employee, you still have to wait till daytime. Computers can run 24 hours a day, people cannot. So, for a reaction you still have to wait for the other person to respond.

Castells defines space of flows as follows: "The space of flows refers to the technological and organisational possibilities of organising the simultaneity of social practices without geographical contiguity" (Castells, 2000; 14). This means that social practices, like dominant functions in our societies, such as transnational production networks, financial markets etcetera are organised around the space of flows. It does not matter where parties are located, technological (an extranet) and organisational possibilities made it possible that place does not play a role anymore. But a technological infrastructure is required that operates from certain locations, so that the parties have access to the extranet, this is the only territorial dimension of space of flows. So, according to Castells, time and location do not matter anymore.

Access anytime and anywhere is a great advantages for public organisations in the healthcare sector. In this healthcare sector more and more organisations, like hospitals and medical centres, are using the EPD (electronic patient dossiers). Especially in Norway this is used often, because the people there travel a lot. If they need medical assistance when they are away from home, they can go to a hospital and the hospital can log on to a central database (this database can be on an extranet, because the access is secured) where the medical record of the patient can be found. Doctors everywhere can look into the dossiers of the patient and provide the right medical assistance.

Only access for authorised users

Another advantage of an extranet is that the group of users who have access is not that big and unauthorised users do not have access. In the case of one organisation who has an extranet for its clients, one has to deal with a group of clients who will do business on regular bases and buy the same products, or use the same information or applications in the extranet. This is the case with the extranet of the UN, for example, all the users who enter the extranet are connected to a UN-office.

One has to deal less with whimsical behaviour of surfing consumers. So, the chance that hurtful or discriminating texts will be placed on the forum or another interaction part of the extranet is little. One will be confronted less with other disadvantages of internet like porn, racism and unsolicited commercial e-mail (UCE). This can save time and money, because you do not need a controller who sees if everyone uses the forum or another interaction part of the extranet according to the rules.

Discussion on an extranet will be of a good quality for the users because in a selected group of users, for example the users of the UN extranet iSeek, with the same interest, they know what they are talking about. They will not be bothered by people who are just surfing and passing by on the website and place useless information in the discussion.

An example of cooperation between different countries all over the world, who collaborate at any time and at any place is OLISnet, the extranet of the OECD (Organisation for Economic Cooperation and Development). The OECD groups 30 member countries sharing a commitment to democratic government and the market economy. With active relationships with some 70 other countries, NGOs and civil society organisations, it has a global reach. Best known for its publications and its statistics, its work covers economic and social issues from macroeconomics, to trade, education, development and science and innovation.

The OECD plays a prominent role in fostering good governance in the public service and in corporate activity. It helps governments to ensure the responsiveness of key economic areas with sectoral monitoring. By deciphering emerging issues and identifying policies that work, it helps policy-makers adopt strategic orientations. It is well known for its individual country surveys and reviews.

The OECD produces internationally agreed instruments, decisions and recommendations to promote rules of the game in areas where multilateral agreement is necessary for individual countries to make progress in a globalised economy. Sharing the benefits of growth is also crucial as shown in activities such as emerging economies, sustainable development, territorial economy and aid.

A key element of this work is promotion of intergovernmental cooperation through secure online networks, which involves working with OECD Delegations in Paris and ministries in national administrations. Some 40,000 experts from national administrations participate each year in the work of 200 or so OECD Committees and working parties, and use the OECD's Extranet (OLISnet) as their primary information source and interaction environment in support of this activity.

OLISnet is a unique channel to all OECD Committee information - including the OECD website, it is a free service for over 15,000 registered users in 2,000 Ministries world-wide.

On the extranet the following committee information can be found: meeting agenda's and documents, committee guide, statistics, event services, publications, personalised services, discussions groups, advanced search service, OECD website, contacts and telephone numbers.

The OECD's Committee information service is today used by over 16,000 government officials. The service provides secure internet access to the full range of OECD Committee information - work-in-progress, event details, document archive, publications and statistics.

As one of the world's largest and most reliable sources of comparable statistical, economic and social data, there are few areas of government activity that are not addressed in some way by one of the OECD's Committees. National delegates use OLISnet to interact with the Secretariat in preparation for Committee meetings. Other policymakers use the service to research the OECD information banks - including publications, statistics, document archive and committee work-in-progress. (<http://www.oecd.org>)

Because an extranet is used by authorised users it does not have to look 'glossy' and attractive, because the parties are already doing business and do not have to be convinced by a nice website, with nice colours, flash movies, sounds and other features who will attract users. This can also be a moneysaving advantage. This does not mean that no attention has to be paid to the lay out of the extranet, it still needs to be clear and well structured, otherwise users can get dissatisfied and may not use the extranet anymore, more about the lay out is discussed in paragraph 4.2. about the design of an extranet.

But the advantages of reaching only one group of authorised users, can also be a disadvantages. If you also want to reach unauthorised users you need a public website as well. This means the control over a public website and a private extranet. This can cause extra work and costs.

An example of an extranet that is used for discussion is the extranet of the Council of the Baltic Sea States (CBSS). The CBSS is an overall political forum for regional intergovernmental cooperation. The members of the Council are the 11 states of the Baltic Sea region as well as the European Commission.

The CBSS was established by the region's Foreign Ministers in Copenhagen in 1992 as a response to the geopolitical changes that took place in the Baltic Sea region with the end of the Cold War. Since its founding, the CBSS has contributed to ensuring positive developments within the Baltic Sea region and has served as a driving force for multi-lateral cooperation.

The CBSS is a flexible, demand-driven and result-oriented forum for regional cooperation. As Mr. Kofi Annan, the Secretary-General of the United Nations has remarked: "The CBSS plays a key role in helping to underpin a stable, democratic, prosperous and undivided Europe". To this end, the CBSS identifies political goals, creates action-plans, initiates projects and serves as a forum for the exchange of ideas concerning regional issues of common interest. The CBSS is responsible for overall co-ordination of intergovernmental cooperation in the Baltic Sea Region in accordance with the organisation's Terms of Reference.

The Council of the Baltic Sea States continues to demonstrate success in a number of fields such as: removing regional economic barriers to trade and investment, improving nuclear and radiation safety, confidence building through the promotion of democracy and human rights, facilitating cross border cooperation (as a project partner of the INTERREG III B-Project Baltic Euroregional Network, a joint endeavour of the CBSS, or Nordic Council of Ministers and other partners), transforming curricula and teaching methods at the three main universities in the Baltic States and at Kaliningrad State University by ways of the EuroFaculty Programme, and finally, contributing input to the EU's policy frameworks for Northern Europe such as the Northern Dimension. At the initiative of the Russian Presidency, the CBSS extranet was launched in September 2003. This section of the website provides restricted access, to the members of the CSO and three main Working Groups to agendas, minutes, working plans and other documentation related to the working bodies. All formal communications of the Chairmen to their Working Groups - the so-called Transmissions - are also archived on the extranet. The extranet counts about ninety authorised users. This tool has a lot of development potential and after 18 months of use, it should be considered now to extend the extranet to other CBSS working groups and also extend the publishing possibilities of files by the users so that the interactive dimension of the extranet is put in use (www.cbss.st).

Equal treatment

An extranet application will treat everyone the same way. For the government or another public organisation it is important to treat the same people the same way, that is righteous. And the citizens expect that of the government. So, when a public sector organisation is using an extranet, for example, to apply for subsidies. On the extranet everybody has to fill out the same form to apply for the subsidy. There is no civil servant there, who may be biased, to fill out the form and ask the question. The extranet can not approve the subsidy, this still has to be done by a civil servant, but the procedure of gathering the data about the applicant is unbiased, thanks to the extranet.

But the citizens who do not own a computer and do not have access to the extranet still have to fill out forms at the city hall with a civil servant, they do not benefit from this advantage.

Speed

Speed can also be an advantage of an extranet in relation to the internet, because less people will probably use it at the same time. When a lot of people use the same connection to internet or an extranet at the same time, it can cause a slower connection.

An extranet will also speed up the process of information provision because the production and distribution time are minimal. The information only has to be placed on the extranet instead of making a paper version of the information and send that to clients or partners.

Financial benefits

As said before an extranet has low costs in use, but the costs to build, implement and control an extranet are high, so are there real financial benefits of an extranet who compensate all the costs?

There are some financial benefits like that it can reduce the printing costs of documents and the general paper consumption. Users of the extranet can get the documents from the extranet in stead of ordering a hard copy of it. If the users of the extranet received the documents before by mail, the costs of the postage will be reduced as well. An extranet can also offer organisations cheaper means of communication, for example a discussiongroup on which discussions can take place or a chatroom is cheaper than making a phone call. Or if the extranet offers the application to visual communication, such as video training or video conferencing. This is, as said before, easier and cheaper than when there is a meeting and people have to fly in from all over the world.

But you do not know if these financial benefits compensate the costs, and what the actual financial benefits of an extranet are for the organisation. According to Lips, Bekkers and Zuurmond (2005) financial benefits of an extranet, or another information provision system are hard to determine. They give a couple of reasons for this: One reason is that the margin of the investment is not clear, this occurs when there was not a clear weight out between the new and the old system and what the new system had to improve of the old, and what the goal was of the new system. This makes that there are no measurements possible.

Another reason is that the effects of an investment show after a while, it takes time for users to get used to a system and use it optimal. And it is also hard to decide whether the benefits who are measured are a result of the investment or are they caused by something else.

Further do Lips et al (2005) note that public benefits cannot be expressed in money. This is the most important reason, because of the character of most public organisations the benefits of information provision cannot be expressed in money. The most public organisations deliver public services, like clean air (by digital emission registration) or a fair distribution of assets and income (by expert systems by the tax department). These values are also benefits of extranets but are not expressed in money, but do count and are important benefits.

An example of saving money with an extranet is that of the Chicago Wilderness coalition (CW), an alliance of more than 160 public and private organizations working together to protect, restore, study, and manage natural ecosystems of the Chicago region. Coalition activities include informing and involving the public in the promotion of biodiversity in the Chicago region, as well as providing a range of services to coalition member organizations. Cost-effective management of communications initiatives is critical to a non-profit organization such as CW. The coalition uses the internet to provide information and services to the public and its member organizations. Chicago Wilderness chose Argonne National Laboratory's Environmental Assessment Division (EAD) to redesign and expand its existing public and member Web sites to enhance its online services. The CW members' extranet provides members with useful information about CW activities and meetings and provides them with access to important CW publications. CW's bimonthly members' newsletter is available online, and members are notified of new issues by e-mail.

The CW has done an evaluation about its extranet and the benefits. The benefits from the extranet which the evaluation came up with are: expanded content and services, improved usability, reduced communications costs, reduced publishing costs and reduced website maintenance costs.

The new CW public and member extranet sites offer expanded content and services while improving site usability. The public and member extranet Web sites have provided CW with a low-cost method for communicating with the public and the coalition's numerous member organizations. The sites provide the public and coalition member organizations access to important educational material and publications, and help raise awareness of the coalition's initiatives and activities. Electronic publishing of the coalition's newsletter and effective use of e-mail communications avoid substantial paper-based publishing and communication costs. The availability of web-based administrative tools designed for use by non-technical persons puts control of the sites' content in the hands of CW staff while greatly reducing maintenance costs (www.ead.anl.gov).

3.7. Summary

The development of ICT and networks through history can be illustrated by the classical diffusion model of Nolan. This model consist of three phases: The data-processing-phase, the information-technology-phase and the network-phase. Internet, intranets and extranets were developed in the last phase.

An extranet is accessible for a private group of authorised users who do not belong to one organisation, to exchange information and facilitate communication across borders, using world wide web technology.

To build an extranet some technical elements are needed: a computer network, a server machine and software, TCP/IP standards, user workstations, a firewall, applications to run on servers and search engines.

Extranets exist in different models, like: the secured intranet model (were partners log on to organisations intranet), the specialized application model (were partners have a specific developed extranet application as a part of the intranet of the organisation) and electronic commerce model (with electronic commerce techniques to serve a specific partner segment, including similar security architecture and transaction processing). And a multiple organisation model, where multiple organisations own an extranet together.

The advantages of an extranet for the public sector are:

- Stimulate collaboration between partners
- Give information about the users
- Timeless time and space of flows

- Only access for authorised users
- Equal treatment
- Speed
- Financial benefits

4. Problem areas

4.1. Introduction

In this chapter I will point out some problems that can occur with extranets. The problems can be categorised in different problem areas, because problems with information systems can be caused by different factors. Laudon & Laudon (2002) give four problem areas with information systems. An extranet performs the function of information system as well, besides that it can have other functions, for example as a communication tool. But the problem areas for information systems, are also suitable for extranets.

Problems who can lead to failing systems can be categorized in the four categories of Laudon and Laudon (2002): design, data, costs and functioning (I prefer to call this category "practical problems"). I would like to add two problem areas to these problem areas: control and security, because these are important aspects of an extranet and they can cause problems when not executed properly as well.

4.2. Design

The graphic design of an extranet is how the extranet looks, the structure of the menus, and how the different applications form a whole.

A problem with the design of the extranet can be with the interface of the extranet, the interface of the extranet is the part with which the users communicate, the users give assignments to the interface to work with the system. It is possible that the interface can cause confusion, when it is unclear where to fill out data or how to work with the interface.

The procedures for the online document search can be complicated so that users get frustrated, for example, when the user has to fill out a lot of search criteria before the search starts. Or when there is too much outcome of the search. Another possibility is that the layout of the website is bad and discourages its users to use the system. A bad layout has for example colours who do not match, like a purple background and blue texts. The text is hard to read, because of the wrong colour combination.

Cuijpers and Hengstmengel (1997) point out the importance of a clear and recognisable structure around the different parts of the extranet. If this does not happen a lot of information cannot be found anymore on the extranet and the functionality of an extranet decreases.

It is important that the design of an information system is compatible with the structure, culture and goals of the organisation. "An information system is seen as a failure if the design is not compatible with the structure, culture and goals of the organisation" (Laudon & Laudon, 2002; 380).

In the past, when designing an information system lots of attention was paid to the technical aspects. Often is the technical part of the information system perfect, but the organisation paid only attention to this and not to the organisational aspects. As a result the system was not compatible with the structure, culture and goals of the organisation and this caused some problems, it can cause tensions, conflicts and instabilities within the organization.

When an extranet is owned by multiple organisations, it is hard to match it with the missions and goals of all the organisations. The extranet should match in this case with the common elements the organisations share and where the extranet is used for.

It might be hard to determine a layout when multiple organisations are involved if they all want to match the layout of the extranet with their own website or organisation logo. This can cause some struggles about the appearance of the extranet.

An extranet should be designed so that it is accessible for users from outside the organisation or for the users from the different organisations. So organisational jargon or actions who may not be known by others are not appropriate in an extranet.

4.3.Data: Information requirements

Every organisation produces information with her activities, in most cases data and information is just a spin off of the primary process of the organisation. But the primary process of an organisation can be the production of information, for example when an organisation provides information as a service. Almost all executive organisations in the public sector are very information-intensive, for example the tax-department. Here, a lot of information is handled of citizens, their income and expenditures. For this kind of organisations the goal of information management is three folded, it intervenes in different areas;

1. the primary process (the service delivery itself);
2. the secondary process (management information);
3. the future of the organisation (strategic planning).

Cuijpers and Hengstmengel (1997) give reasons for a successful intranet, these factors also count for an extranet. The success depends on the quality of the content, or the data of intranet or extranet. This means that how the users value the content and that the content is up-to-date. For this reason it is important that there is someone held responsible for the content of the extranet.

When this does not happens, problems can occur. There can also be problems with the data that is provided by an extranet, Laudon & Laudon (2002) mention the following problems with data; Data can be inaccessible, inconsistent, ambiguous or wrong. Other problems with data can be that the data can be used in wrong applications, data can be missing or not matching the needs of the users. Or the data is in the wrong languages, the data and information of extranets used in international organisations need to be in widely used languages, that all users can understand.

To provide the data and information the users need, some insight in the information-requirements of the users is needed. Information requirements can be described as: "A detailed description of the information needs which the system have to meet; find out who what information needs when, where and how" (Laudon & Laudon, 2002; 346).

So to set up an extranet the organisation(s) should find out what the needs of the users are about the extranet and the information on the extranet . Based on an analysis of the information requirements and other needs of the users the goals of the extranet can be defined and the functions which the extranet has to meet can be determined.

But not only is it important what kind of data the users want, but also the way they want to receive this information is important. Do the users appreciate it when you send them information, for example the users receive an e-mail when there is a new item on the extranet, this is called information-push. The technology used for this is called push-technology. "Push technology automates the search and retrieval function based on user defined criteria. A push application will automatically search a database for specific information and deliver it when and where the user directs: usually straight to their desktop" (Pedley, 1999; 48). This can save a user time to search and can be very useful, but some will say that it creates more problems than it solves, for example you can get so much information that you will suffer an information overload. When there is more information available, the use of it decreases, this is called the information-paradox. If you receive to much information, the advantage of an information push is gone, because you still need to search relevant information in the information that is sent.

Delivery methods of information are: web site subscriptions (if you subscribe to a website you are sent a notification when the site is up-dated) or by channels (you can subscribe to a channel that offer ready-made content, for example; screen savers, rolling tickers, flashes, onscreen alerts and channel viewers).

It is also possible that the user prefers to get his information himself, there is a lot of information on the extranet and the user will see for himself what he needs, this is called

information-pull. The user will “pull” the information and applications he or she needs from the extranet and uses it.

4.4. Costs

Another problem area are the costs of an extranet. A lot of different costs are involved by an extranet, and a weight out need to be made about how much to spend on different types of costs of the extranet.

An organisation needs to make decisions about these costs, and about in- or outsourcing parts of the extranet, this will differ in the costs. When the wrong decisions are made about this and parts are neglected for example an extranet can have some problems.

As said before, there are a lot of different costs involved with an extranet, Bort and Felix (1997) give a list with types of costs: Equipment, security, development, training, management, support, and taxes.

Equipment

These are the costs for the equipment that will be needed to set up an extranet such as a separate server for the extranet, and an additional phone line or cable. There are costs for the workstations for the employees of an organisation and other material to build a computer network.

Also costs for different kinds of software needed can be made. Kinds of software that will be needed are: Web server software, document management software, software licenses of specialised client software or costs if the extranet requires new development tools such as database integration tools.

Security

Costs can be made to purchase additional firewalls, or to hire outside security consultants to audit or assist in the development of a secure system, or maybe costs have to be made to purchase other types of security products.

These costs need to be made to achieve the six goals of security: Confidentiality, authentication, non repudiation, integrity, access control and availability. These goals will be explained further in paragraph 4.6. about security.

Development

Development costs depend on whether the extranet will be developed with in-house developers or will the development be sourced out , and if the extranet will be developed with contracted resources or not.

Training

Training is important for users to use the extranet and for developers or programmers to design the extranet. Costs can be made if programmers need training classes or significant training time to build the extranet. Or if the users need training to use the extranet the right way. These trainings can be provided by outside consultants who assist with the development and training.

Management

Decisions here need to be made about if resources will be assigned to ongoing management of the extranet and how many that will be in terms of working hours and equipment. And if the extranet software will be upgraded when new versions become available and how often these upgrades are planned.

Support

Costs for support are made if the organisation hires a third party to perform the installation of client software. Or if the organisation offers support for the extranet application, such as a

helpdesk, and how many helpdesk resources will be dedicated to extranet support in terms of working hours and equipment.

Taxes

The costs here depend on if the extranet will have depreciable components and how much any capital expenditure will depreciate.

Besides the weight out about what to spend on what aspect of the extranet decisions also need to be made about who will pay for the costs. Costs can be divided between different organisations that participate or different departments within an organisation. It is also possible to let the departments or people that are responsible for the different parts of the extranet pay for their part. In the next paragraph it is said that there are different levels of control with different people or departments responsible for each level, this could be related to the costs. It can be hard to find a way of dividing the costs between organisations, departments and users that keeps everybody satisfied.

The cost aspect can be seen wider than only financial, there are also the costs that cannot be expressed in money. These are the trouble an employee has to use the extranet, for example, one can look at the skills an employee needs to work with the extranet, or the efforts an employee has to make to work with it, like using another computer, because not all workstations have access. Or an employee have to perform a lot of actions to get what he or she wants.

Another cost is time, it is possible that the extranet is not functioning as it should be, for example, the data is not delivered fast and efficient, this can be caused by a bad functioning computer. Or if tasks are interrupted, this will lead to redoing the tasks and will cause delays or deadlines who will not be met.

4.5. Control

Control is another aspect one should pay attention to when having an extranet. Extranets should be maintained 24 hours a day, otherwise problems can occur, like wrong or out dated data on the extranet or unauthorised users who try to get access and break in, so it should be clear who controls what component of the extranet.

Components that should be controlled, according to Jonkeren, Petit and Staring are: people, information, technical parts (technical parts are all the parts of the technical infrastructure to develop, use and control the extranet, like workstations, servers, security filters and cables), software (these are the programs needed to control, develop and use the extranet, like development tools, control tools, browsers and security software) and procedures.

People

The people who need to be under control are different employees of the organisation(s) who own(s) the extranet and other users of the extranet:

- The employees who design, build and support the extranet and the extranet applications;
- The users who use the extranet as a tool for their daily tasks;
- The employees who take care of the provision of the information on the extranet in a efficient, effective, consistent and reliable way.
- The employees who take care of the functioning of the hardware and software, that are needed to use the extranet.

Information

The requirements of the information on the extranet are described in paragraph 4.3. about data and information requirements. For the control of the information it is important to have clear meta-information. Meta-information is information about the information on the extranet, it can contain the following aspects:

- Information about the information, like the title, the date of the creation, the type of information: Image, text or sound.
- Information about the owner or provider of the information: The name and function, and contact information, for example.
- Data for the control of the information, like the type of information, the name, the size or the date when it was posted on the extranet.

Procedures

The last component that should be under control, according to Jonkeren, Petit and Staring are the procedures. These are the procedures for the control of the extranet, some rules and procedures for different tasks who need to be executed are written down. This is called business rules. These procedures are useful tools for the employees to see how certain actions should be done, in what order, by what method, with what instruments etcetera.

These are the components that should be controlled by using an extranet. These components are controlled by different types of control. Jonkeren, Petit and Staring also give a model of control, for optimal control of an extranet. This model consist of three levels of control: control of content, control of form and technical control.

Control of content

The control of content contains three roles; the information-owner, the information-controller, the information-provider. The information-owner is the one who is responsible for the quality of the information, like the completeness, topicality and the correctness of the information. The information-owner should also deliver the meta-information with the information. The information-provider is the one who creates and provides the information, and who has to complete, actualise and change the information on regular basis.

The information-controller is the one who performs the operational actions for the information-owner, like controlling the information on quality aspects like completeness, topicality and the correctness. The information-controller guards the living up to the publication procedure, and stimulates the use and provision of the information.

Extranets can be seen as interorganisational information systems, these are systems that cross organisational boundaries. An economic view of control of content in interorganisational information systems, like an extranet of multiple organisations, leads us to property right theory, this provides an analysis of individuals with respect to assets under the assumption bounded rationality. Bounded rationality refers to the fact that you can not know everything and cannot formalise all behaviour in contracts that encompass future contingencies.

Property rights are defined as: "The sanctioned behavioural relations among men that arise from the existence of goods and that pertain to their use. These relations specify the norms of behaviour with respect to goods that each and every person must observe in his daily interaction with other persons, or bear the cost of non-observance" (Homburg, 2000; 54).

So, because of bounded rationality there will always be 'incompleteness' of contracts, implying that there will always be residual rights not covered in a contract, ownership is the institution that allocates the residual rights. This situation occurs when one organisation fully owns the central database that is used by other organisations in the extranet and contributes in the costs of the system through an agreed-upon lease contract. This separation of ownership and actual use has consequences for the behaviour with respect to information assets. The more the sense of ownership is diminished, the less intense incentives will be. A symptom of lack of incentives is poor data quality, resulting from underinvestment in human capital and technical capital.

This happens when one organisation owns the extranet and users from outside that organisation use the extranet and have to put data on the extranet as well. Because those

users do not own the extranet they might not add information to it and might not be willing to invest otherwise in the extranet.

Control of form

By applying extranets, it is possible for organisations to open their processes to clients, suppliers and other business partners. In information management theory there is an assumption that the cooperation between the participating organisations will be more successful, if the interorganisational information systems are more integrated.

Integration can be defined as follows: "The standardization of data definitions and data structures through the use of a common conceptual scheme across a collection of data sources. Information has to be packaged for all the partners, which requires the joint design of data definitions, formats, relationships and search patterns" (Homburg, 2000; 50). Integration and a common data structure are needed to collaborate on an extranet.

The question of what data structure to use can cause an organisational-political struggle and ownership disputes, and shows that the use and development of interorganisational information systems are complex and intriguing processes in which economic and political forces play a role.

In political organisations theory, for example, the resources dependence theory, which says that organisations live in a complex world and need information and other external resources to attain their goals. That is why organisations join interorganisational information systems with partner organisations, in order to access this information and external resources.

Political organisation theory gives the ways each organisation strives to optimise its self-interests. "According to political organisation theory, each organisation strives to optimise its self-interests by minimizing their dependence on other organisations and maximizing the dependence of other organisations on themselves. Standardization can be used as a strategy by powerful organisations to deliberately affect the dependence between organisations in a favourable way" (Homburg, 2000; 52).

The control of the form is about the image, the accessibility and the consistency of the information of the extranet. It is important to find a good balance in the control of the form, too much control of the form can lead to bureaucracy, overhead and offence. But on the other hand, if there is not enough control of the form, information might not be found anymore or will not be recognised anymore.

Control of form will take place on three levels: Strategic, tactical and operational level. On the strategic level there is a council with representatives of all relevant departments, they make the standards of the presentation of the information, like the structure of the texts and the colours used.

On the tactical level there is a team that can be approached with questions of the information-controllers, information-owners, information-providers and the users of the extranet. This team also advises the council on strategic level and guards the living up to the rules of the standards of texts and colours.

On the operational level there is a form-controller, who supports the information-providers and information-controllers by the creation of the information, guards the consistency of the total supply of information, and delivers statistical information about the use of the extranet to the team on the tactical level.

Technical control

The technical control is about controlling the technical parts and the software and keep them optimal conform the requirements of the extranet. The employees of the technical control inform and advice users about the possibilities of the extranet, they develop the extranet and follow workshops and seminars to stay up-to-date. They also repair components that are not functioning and are guarding the used capacity of the extranet and report this.

These tasks of technical control are usually performed by the ICT-department of an organisation.

4.6. Security

Security is an important issue, because the organisations does not want unauthorized users to access the extranet, or incorrect information to be sent to the users, nor does the organisation want to frustrate the user before he or she is able to access the extranet. But also do the users expect their extranet to be save, they want information from reliable sources and expect that the (personal) data they fill out in forms on the extranet will be taken care of with respect.

With the security of an extranet (and an intranet as well) some tensions will come up. Jonkeren, Petit and Staring (1999) describe the tensions between: Transparency and security of the access of information, costs and benefits and the third tension between flexibility and security.

Transparency and access security

An extranet has the advantage of making information accessible and to share information between different partners in an easy way. If there is not so much security, users have a quicker access to the information, which will lead to more efficiency and effectiveness.

But, on the other hand, an organisation does not want to share all its information with everybody. For example, with a specialised application model, on the intranet, to what some users have access, the information is different than the information accessible on the extranet. On the intranet some 'secret' internal information of the organisation may be accessible that the organisation does not want to share with the other organisations and users of the extranet.

So, it is important to find a good balance between the transparency and the access security to information. For a governmental organisation or another organisation in the public sector this might cause more tension than for other organisations, because the government should operate transparent so that the people can control them. But, on the other hand, the government also has information that should not be public (yet) and that has to be secured. For example, information about markets that can cause imbalances of the market.

The public sector deals with matters that are confidential. Matters who can have impact on national level or global level, that is why it is important it stays confidential. An extranet is a good place to store confidential documents or exchange confidential documents, when the security is good.

The extranet can also be used to inform other organisations in the public sector about a new policy that should stay confidential, that can be reason to place it on an extranet.

The public sector can also have information or prepare a policy that can have impact on markets. When private sector organisations should know about this information, they could take advantage of it and may manage to get a monopoly position in the market. The government is there to prevent this. So, it is important that this information should stay confidential. Especially for that kind of information security must be good when it is on an extranet.

Costs and benefits

The costs of the security of an extranet have been discussed earlier in this chapter (in paragraph 4.4). The benefits of the security of an extranet are hard to express in money, for example that access is only for authorised users, this means that the information on the extranet comes from reliable sources (the authorised users). This is a benefit from the security of the extranet, but is hard to express in money.

The tension between the costs and the benefits is that the costs should not exceed the benefits of an extranet. The costs and benefits will be different for each organisation. A good riskanalysis will give more insight in costs and benefits of security for the organisation.

Flexibility and security

Organisations exist nowadays in an environment that is dynamic and is getting more and more complex, organisations need to be flexible and adapt quickly to their environment. The information systems of an organisation need to be flexible as well to change synchronically with the organisation. Organisations will be added or deleted as users from the extranet, applications will be added and changed. The security of the extranet has to adapt to new situations. The development and testing of new security aspect will take some time, and that will decrease the flexibility, but on the other hand security contributes to the reliability of the extranet.

The security of computer systems has six goals:

1. confidentiality: Verifying that information is private and therefore accessed only by intended recipients.
2. authentication: Identifying an individual or computer to ensure that the person attempting to access a given area is a member of the appropriate group, or is listed on an access list.
3. non repudiation: Ensuring that people cannot deny their electronic actions.
4. integrity: Verifying that information received is the information that was put there by the originator.
5. access control : Verifying that the resources are under the exclusive control of the authorised parties and ensuring that the person attempting to access has the authority to do so.
6. availability: Ensuring that data and server resources are up and running when needed, and that any downtime was not caused by a security-related incident. If goals one through five have been achieved, availability will be a natural result. (Bort & Felix, 1997;30)

Extranet satisfy security concerns by using encryption, authorization, and integrity checks (Keogh, 2000;217). Encryption techniques make sure that the organisation knows from who the information is and that the information received is the same as the information that was sent, without unauthorised persons having access to the information.

There are different encryption techniques like symmetric and a-asymmetric encryption. Symmetric encryption means that the sender of the information has encrypted the information with a private key. The receiver also has a private key to decode the message.

Asymmetric encryption techniques use private and public keys. The information is encrypted with a private key and can be decoded by the receiver with a public key. It is also possible to encrypt with a public key and decode the received message with a private key. This can be used when users place information on the extranet, only the users with the right key to decode the message can decode and can read the information.

Authorization requires the user to use a unique ID and password to access the extranet (Keogh, 2000;217). The user has to identify himself or herself before getting access to the extranet. This keeps unauthorised users without password and an unique ID out, they will not be able to access the extranet.

Integrity checks consists of logics written into a program to ensure that the interaction with the customer makes sense. It is about making sure that the information received is the right information and comes from the right sender, not from someone who is pretending to be someone else.

For example a small business that buys 10 reams of paper every month is unlikely to order 100 reams one month, so the extranet ordering program would flag the order and bring it to the sales representative's attention (Keogh, 2000;217). There it can be checked if the order is right or that someone is pretending to be the organisation who places orders, or if someone from the organisation who places the order has made a mistake.

4.7. Functioning: Practical problems

Another problem of an extranet can be with the functionality that can be caused by practical problems like a disfunctioning internet connection or problems with the power supply. If an organisation suffers from problems with the (internet) connection or the power supply and can because of this not have access to the extranet, the extranet is not used optimal. Because the organisation without the access to the extranet will work around it and will use other methods to get their information, such as using the phone. This can be problematic if you are trying to contact someone in a different time zone, when it is night when you have daytime for example.

4.8. Summary

There are some problem areas to which attention should be paid when using an extranet. Problems can occur with the graphic design of the extranet, this is how the extranet looks, the structure of the menus, and how different application form a whole. This should be clear and not cause frustration by the users.

Another problem area is the data, the success of an extranet depends on the quality of the content, the data and the information of the extranet. Problems occur when data is inaccessible, inconsistent, ambiguous, wrong, or in the wrong language.

To provide the data and information the users need, some insight is needed in the information requirements of the users. These requirements do not only concern what kind of information, but also the way the users want to receive the information.

With an extranet a lot of costs are involved: Equipment, security, development, training, management, support, taxes and non-financial costs. These are different costs, a weight out should be made about how much to spend on the different types of costs and who will pay for the costs.

It is important to control the extranet, when this is not a clear structure, problems can occur. The components who should be controlled are: people, information, technical parts, software, security and procedures.

There are three levels of control: Control of the content (by the information-owner, the information-controller and the information-provider), control of the form (on strategic, tactical and operational level), and technical control (of the technical parts and software).

Security is a problem area as well. Security can cause some tensions between transparency and security of the access of information (what information is accessible, and what is not), costs and benefits (costs should not exceed benefits) and flexibility and security (data should be up-to-date and changes quickly, the security has to adapt quickly).

Security of computer systems has six goals: Confidentiality, authentication, non repudiation, integrity, access control and availability.

Extranet security needs encryption (make sure that the organisation knows from who the information is and that the information received is the same as the information that was sent, without unauthorised users having access to it), authorisation (an unique ID and password for each user) and integrity checks (to check if the interaction make sense, checks information and sender of the information).

Another problem area is the one of the practical problems, these can be caused by disfunctioning internet connection or problems with the power supply, for example.

5. Knowledge Management

5.1. Introduction

Knowledge management is important for the government and the public sector. If knowledge is well used and spread among society it has benefits for everybody. With knowledge, wise decision can be made by public sector organisations, so that society benefit from it. But spreading knowledge is also an important job of the public sector, a well educated society has much benefits, for the economy for the country, but also for the well being of its citizens.

Extranets can support the provision and the search for knowledge, a lot of organisations see an extranet or an intranet as an instrument to support their knowledge management.

There are a lot of definitions of knowledge management, like the definition of Van Gurchoom and Van der Meulen (1997). They say knowledge management is the action or process “that aims at steering and the control of knowledge, aimed at the missions, goals and strategies of the organisation”(Jonkeren et al., 1999; 43).

Cuijpers and Hengstmengel say that “knowledge management encloses the activities who an organisation undertakes to realise that: The best knowledge, on the right place, in the right time, against minimal costs available is” (Cuijpers & Hengstmengel, 1997; 63).

Knowledge management, they say, encloses three important aspects;

- To organise processes for knowledge sharing.
- To stimulate the behaviour and attitude of employees in the field of knowledge sharing.
- To deliver the instruments to support the other two elements.

An extranet can do that, and is an instrument for knowledge management. An extranet has the ability to organise the processes for knowledge sharing, by application for discussions (like a newsgroup or forum), and a database where documents and information can be saved.

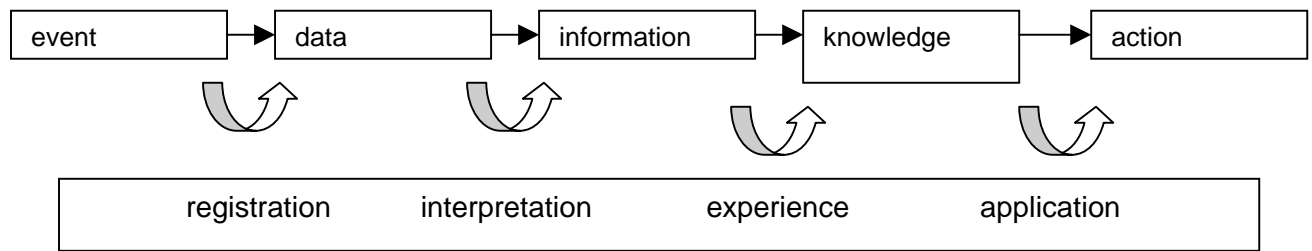
An extranet can stimulate the behaviour and attitude of its users. For example by sending them a notification when new files are added to the database or when there are new messages on the forum. This notification function makes sure the users get informed and makes them come and use the extranet again to use the new information.

An extranet can influence the behaviour also by giving access only to people who behave well. A punishment of bad behaviour on the extranet (like placing texts who are discriminating) is to draw in the password and ID of the user. This count as a warning for other users to behave.

5.2. Knowledge

Before I explain why an extranet can be used for knowledge management it is important to define what knowledge is. Knowledge can be seen as a product of data and information. Information comes from data, data are just facts who arise in events and actions. When meaning is given to the data it turns into information. When the information is used and applied it turns into knowledge. This knowledge can be used by another action. Jonkeren et al give a scheme for this process of the arise of knowledge, see figure 5.1.

Figure 5.1. the arise of knowledge



Registration

Registration, or absorption, as it is called as well contains the process from getting data from events and experiences. At everything we do, every experience we have, new data is gathered.

An extranet could be used in this phase to store the data in a database on the extranet, for example data from a research, where users are involved can share the data from the research via the extranet.

Interpretation

In this phase the data is translated into information. Meaning is giving to the data. Data consist of plain facts, like numbers or words. When one interprets the data it is giving meaning. When meaning is giving to data, information is created.

Users can use an extranet in this phase to work together to process the data, this can take place with groupware functions or in closed user groups when the data is confidential. Users can use the file transfer function of an extranet to share the software that is needed to process the data.

Experience

In this phase of experience generation takes place. Generation means the development of new knowledge. Information and existing knowledge are combined to develop new products and insights. The development of new knowledge means cooperation, exchange ideas and test new designs, an extranet can be used for this, because of the interaction application and the easy way to exchange ideas and have discussions in a newsgroup or in a chatroom. Cooperation can take place by means of groupware functions.

If groupware functions are used to develop new knowledge by collaboration it is important that different users from different organisations collaborate. This can cause problems, because some users are not willing to collaborate with others. As said before, in the third chapter, Orlikowski calls this competitive individualism. "The competitive individualism – which reinforces individual effort and ability, and does not support cooperation or sharing of expertise- is counter-cultural to the underlying premise of groupware technologies" (Orlikowski,1992;367). When users are not willing to cooperate or share knowledge and information, knowledge management cannot take place. So, it is important that in this phase collaboration takes place and that in the last phase of the application users share their knowledge and make it available on the extranet.

In her study about groupware implementation Orlikowski (1992) describes the implementation of Notes and she finds out that "people's mental models and organizations' structure and culture significantly influence how groupware is implemented and used" (Orlikowski,1992;362). This means that people act towards technology on the basis of their understandings, feelings and norms of it. When people are confronted with new technology these frames and references often need to be changed. Users have to get used to the functions of the extranet, and to cooperate with others. In the beginning users could use the functions of an extranet as an individual productivity tool, with which work can be done at home, instead of a tool to collaborate with others. With training and information mental models can change and users can get familiar with the functions of an extranet, so that the use of the extranet will be optimised.

Application

Application is the last phase of the arise of knowledge. With the new knowledge actions can take place like diffusion and exploitation. Diffusion is to make the knowledge available on the extranet for the members of the organisation and the other users. It is important to let the users know that the knowledge is available and where it can be found on the extranet, this can take place by means of a notification function on the extranet, that notifies the users when new information is added.

This also requires the willingness of the users to share the knowledge with others. Some users maybe a bit reserved to do this, because they might not know who the other users are who are going to read and use the knowledge.

Exploitation is the use of the available knowledge, the users of the extranet use the knowledge and propagate this to the outside world again. Users can search the "new" knowledge with a search engine and use it to perform their tasks.

In general we can distinguish two approaches in knowledge management: The stock-approach and the flow approach (Jonkeren et al; 1999;45).

The stock-approach

This approach says that knowledge is objective transferable and can be stored in computer files and exchanged by networks (Jonkeren et al., 1999;45). This means that knowledge has no subjective elements and can be interpreted only one way that is the same for everybody uses the knowledge.

The flow-approach

This approach says that subjective elements, like intuition, feelings and interpretations, intervene with the transfer of knowledge. When subjective elements are added to the knowledge, knowledge is not objective transferable anymore. Knowledge cannot be separated from the owner. The emphasis of knowledge management by information technology is on communication and transfer of information in stead of storage of information.

Within an organisation different types of knowledge can be distinguished: The professional knowledge, business rules and process knowledge (Jonkeren et al, 1999; 47/8)

The professional knowledge

Professional knowledge is the knowledge with a direct relation to the job the knowledge-owner has. Without this knowledge he or she cannot perform his or her task. Professional knowledge is stored in documents, like books, reports and journals in libraries or archive rooms of organisations. This kind of knowledge is called explicit knowledge, it is formal, transferable and documented.

Extranets can also be a place to store this information. This has the advantages that it can be exchange quick and easy between different users of the extranet and it can be accessed 24 hours a day from different locations. And no space is needed for an archive room or a library, only virtual space on the extranet is needed.

Business rules

This is information about the missions and actions in the organisation. It is about procedures inside the organisation. This kind of knowledge is saved in regulations and prescriptions, manuals, and guides. This kind of knowledge can also be saved in extranets and exchanged, but most of the manuals will be specific for one organisation, so it will not be useful for others. General regulations and prescriptions can be used by similar organisations and will be useful to exchange by an extranet.

Process knowledge

This is knowledge about how things are made and produced and also why. Norms, feelings and experiences are attached to this kind of knowledge. The employees keep this knowledge about how they work and why they work that way to themselves. It is implicit knowledge, or tacit knowledge, this means that it is not expressed in words. That makes it hard to save it somewhere and to exchange it.

Knowledge management is a goal of the extranet of the Canadian International Development Agency (CIDA). This is Canada's leading agency for development assistance. It has a mandate to support sustainable development in developing countries in order to reduce poverty and to contribute to a more secure, equitable, and prosperous world.

The CIDA works with Partners in Canada and abroad:

- the government, civil society (non-governmental organizations, community groups, institutions, associations), and the private sector of developing country partners
- Canadian governments at all levels, churches, unions, professional associations, youth, academic organizations, volunteer-sending agencies, businesses, and industrial organizations
- through multilateral relationships with United Nations agencies, international non-governmental organizations, international financial institutions, research organizations, and other donor agencies

These partners are connected by an extranet which is an useful tool for the exchange of information about the different programs of the CIDA and stimulates cooperation between the partners. (www.acdi-cida.gc.ca) And a platform to share knowledge between the partners.

5.3. The importance of an extranet for knowledge management

An extranet can play an important role as an instrument for knowledge management. Jonkeren and others (1999) give four reasons why extranets are important for knowledge management. Extranets have associative characteristics, are multimedial, are interactive and personalise the knowledge management process.

Extranets have associative characteristics

This means that extranets can make relations during a search process that were not meant to be in the first place. This can lead to new insights, this serendipity called secondary information value. An example of a function of an extranet that has these characteristics is a specific search engine.

Extranets are multimedial

This means that the knowledge can be showed by different media, for different organs of sense. Knowledge on the extranet can be seen, read and heard, by means of documents, movies, pictures and images. This makes it easier for people to learn and remember the knowledge. An example of a function of an extranet that is multimedial is a messageboard where users can posts messages that consists of texts, images and sounds for example.

Extranets are interactive

This means that with an extranet the user can combine different media, at any time in any place. And via the extranet users can interact with each other and discuss the knowledge together and add new knowledge. Examples of interactive functions of an extranet are chatrooms, newsgroups and video conferences.

Extranet personalise the process of knowledge management

The knowledge can be adjusted to the needs of the user, with a search engine in the database, the user can find exactly what he needs. Also the users can individually consume the knowledge, they will not bother each other. If one user is reading a document at the same time another user in another location can read the same document. An user can also personalise the information to subscribe to a service that sends the requested information to the user. Examples of functions of an extranet that personalise the process of knowledge management are search engines and notification functions that send you a notification when new knowledge or information is added to the extranet.

5.4. Summary

Knowledge management encloses the activities that an organisation undertakes to realise that the best knowledge is available on the right time and place, against minimal costs. Knowledge management encloses three aspects: To organise processes for knowledge sharing, to stimulate the behaviour and attitude of employees in the field of knowledge sharing and to deliver the instruments to supports the other two elements.

In general we can distinguish two approach in knowledge management: the stock-approach and the flow approach.

Four important processes of the arise of knowledge are: registration, interpretation, experience and application.

Four reasons are described why extranets are important for knowledge management. Extranets have associative characteristics, are multimedial, are interactive and can personalise the knowledge management process.

6. Case study: The EVD and Hermes

6.1. Introduction

During my internship at the Agency for International Business and Cooperation (EVD) I conducted an users-research of the users at the Dutch missions abroad (embassies, consulates, etcetera) of the extranet, called Hermes. In this chapter I will describe the case of Hermes and the research I did at the EVD in The Hague.

6.2. About the EVD

The Agency for International Business and Cooperation (EVD) is part of the Dutch ministry of Economic Affairs. The EVD is the executive-organisation of the ministry of Economic Affairs of the Government for the facilitation and stimulation of international entrepreneurship and international cooperation.

The aim of the EVD is two folded: On the one hand it has to support parties in the field of international entrepreneurship and cooperation, in The Netherlands and outside The Netherlands, and on the other hand it has to improve the image of The Netherlands abroad.

These aims of the EVD contribute to an improved Dutch economy, good international circumstances for entrepreneurs, optimal circumstances for international cooperation and it also strengthens the position of the EVD in the network outside and inside The Netherlands.

To come to these aims the EVD has some tasks, these are: to support Dutch companies which operate on foreign markets with information and other financial facilities, the EVD does this also by publishing a couple of magazines: 'Buitenlandse Markten'(Foreign Markets) and 'Made in Holland'. Another task is to develop the private sector in upcoming markets and developing countries and to strengthen the public sector in upcoming markets via strict programs.

The EVD has some core competencies like having the knowledge and the capacities in the field of information obtainment and provision and taking care of the obtaining, processing, structuring and making sure that the information becomes available on time. Another core competency is that the EVD has knowledge in the field of project development and execution and the contracting out of this, they work systematically according to plans and structures, and pay attention to systems and procedures to control the work processes and create a view in the progress of the processes.

The EVD has access to a world wide network, knows the important players in the extern 'battlefield' and knows how to use knowledge and relations for its own organization and its target groups. The EVD has also the capacity to let organisations function in a network.

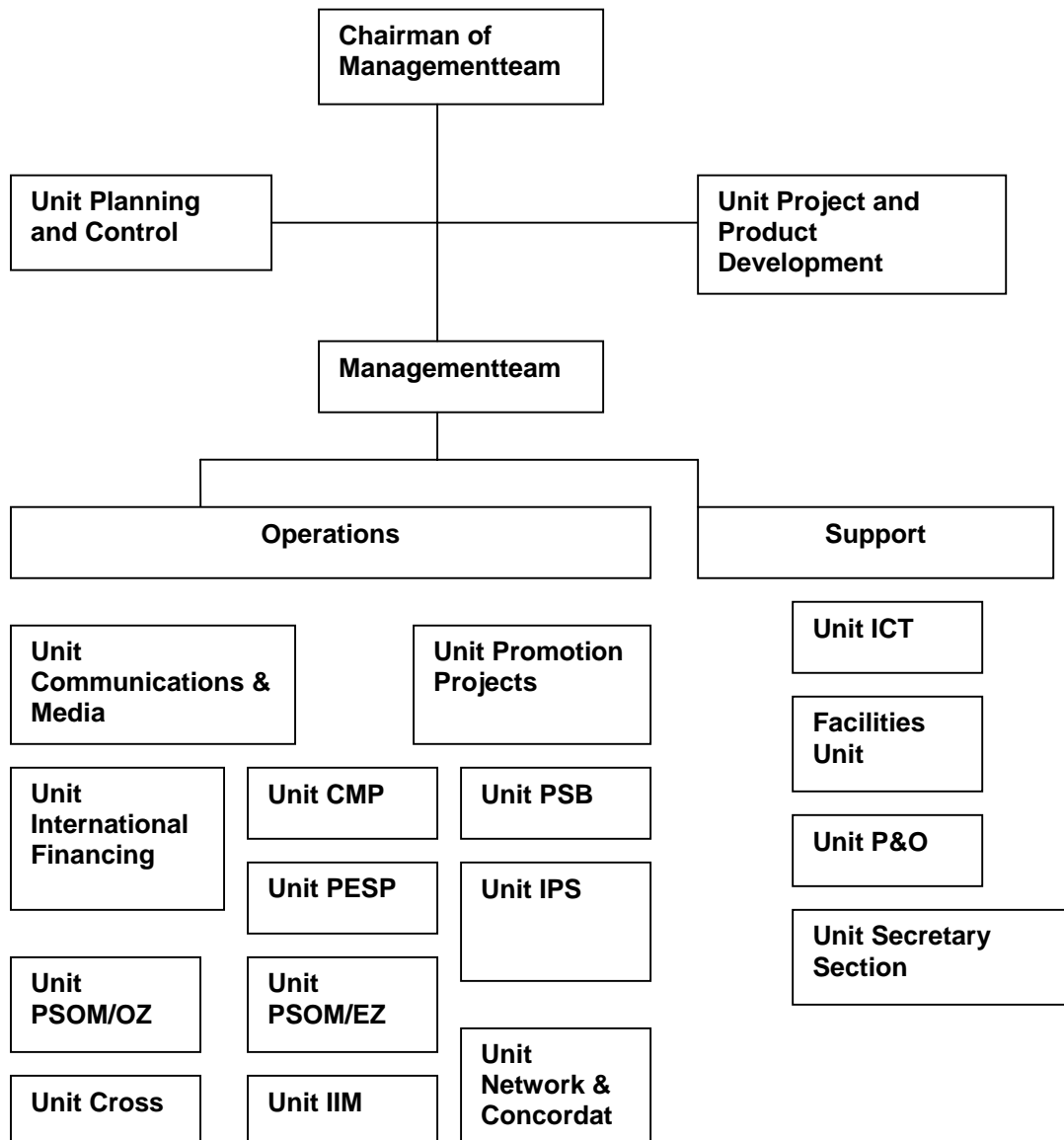
The enhanced position of the EVD in the world of international business and cooperation brings the EVD into contact with four different target groups:

- Dutch businesses (those that operate internationally or have the potential to do so): The EVD combines tailor-made information, personal guidance and financial support to improve Dutch companies' prospects in foreign markets.
- Foreign businesses in emerging markets and developing countries: The EVD administers programmes focusing specifically on cooperation with companies in emerging markets and developing countries.

- Public-sector organisations in emerging markets: The EVD administers programmes aimed at assisting the public sector in emerging markets, for example with respect to corporate governance, legislation and enforcement.
- The Dutch government: The EVD administers programmes intended to encourage government-to-government and business-to-government cooperation and collaboration in the field of education.

The organisation of the EVD looks like this:

Figure 6.1.organisational diagram of the EVD



6.2.1. Unit communication and media

My internship was at the unit for communication and media, this unit is responsible for the development of the policy on communication of the EVD and for the development and the realisation of information- and advice media. The unit gives advice about the communication policy and functions as a point of address and a centre for passing on for Dutch companies

who do not have entries in the EVD, or have general questions about international entrepreneurship and cooperation.

This unit is also responsible for the control of 'Gezamenlijke Front Offices'(GFO, joint front offices) of the agencies of the ministry of Economics; SenterNovem (agency for durability and innovation), EVD.

There is a close cooperation with EVD, DG BEB (Directorate-general Foreign Economic Relations), diplomatic missions of the Ministry of Foreign Affairs, network partners (like The Chamber of Commerce) and other parts of the Dutch national government.

The unit is divided in a couple of clusters; advice and support, internet, publications, front office international entrepreneurship and product support and customer management.

The promotion of The Netherlands and the image of The Netherlands is important for this unit, that is why a research here is conducted about the image of The Netherlands as a part of the barometer international entrepreneurship.

6.3.About Hermes

6.3.1.History: The Electronic Quadrangle

In this paragraph is described how Hermes was set up from the beginning. The history of Hermes described in this paragraph is based on interviews with employees from DG BEB and the EVD. I also used some meeting documents from the meetings of E4H to write this paragraph.

In 1998 the ministry of Economics, the ministry of Foreign Affairs (including 12 Dutch missions abroad), the DG EVD and the DG BEB (Directorate-general Foreign Economic Relations) started with the Delta 6 project group, the EVD was still a part of the ministry of Economic Affairs, later, in 2002 it became an agency. The project they started was called "Elektronische Vierhoek" (electronic quadrangle) or E4H for short. The goal of this project was to improve the information supply in economic-commercial field between the ministry of Economics, the ministry of Foreign Affairs, the DG BEB and 12 missions.

Figure 6.2.screenshot Hermes

This project comprise the realisation of a joint, secured informationsystem between the parties, based on modern technological applications as internet and intranet. The system must be an easy to access information- and communication system, through which information can be obtained and provided.



The criteria for the choice of an information system were:

- Control: The documentation of extra information about a document requires extra actions of the information supplier and a more consequent living up to the procedures.
- Ability to find: Links between documents in an information system are hard to apply and control.
- Presentation: A combination of HTML for the information pages with the same style as entry to a documentary information system with the original document formats.

A model was designed with the angle of the improvement of the information supply. The headlines of this model are the following:

- Supply of current Dutch policy documents in the economic-commercial field
- Access to information of and about Dutch companies and organisations, especially for the foreign parties
- Supply of information of the departments
- Supply of information chains to Dutch companies
- Supply of complementary organisational information of the DG BEB, ministry of Foreign Affairs and the EVD
- Functional facilities

The idea the project group came up with, was the idea of a website with a public part and a confidential part. The intension also was to link this with the websites of the DG BEB and the EVD.

In 2001 the EVD had some discussions with some missions and the other parties about the performance of E4H, this was not a planned evaluation, and only the missions who were in The Netherlands for a visit participated. The evaluation pointed out that there were some parts of the extranet that needed to be improved.

The first improvement need to be made to make the extranet faster, there was a long wait to log in, search and download the documents, this is discouraging for the users. Another problem was that a personal computer with internet was not at all missions accessible, because of security reasons. The missions are part of the ministry of Foreign Affairs. Security is a big issue of the ministry of Foreign Affairs, employees did not have access to internet because of security-issues, this ministry handles a lot of delicate information that needs to be protected.

Another point that needed to be improved was that the users wanted to see what was new on the extranet, new information about market scans or other new posted messages. There was a demand for an alert-function on the website or notify users by e-mail when new messages are posted.

Another improvement was to make the extranet more international by providing translations of the documents. There were demands for information in other languages, English for instance. The information was only in Dutch.

Further, was there a problem that the users did not know how to use the system, employees were not trained to work with the system and found some problems in use.

In 2002 the E4H-group followed the Delta 6 project group, the E4H-group decided that E4H was boundless, the ministry of Foreign Affairs had not changed its network (proper security to make access to internet possible), which was needed to use E4H, so they made a 'lighter' version of E4H without some functions for interaction, collaboration and editing documents together in the extranet application. This lighter version could be used on 'stand alone' computers in the ministry and named it Hermes. This 'lighter' version requires less demands of the system of the computers.

6.3.2.The goal of Hermes

The E4H-group set up Hermes with the goal to work effective and efficient and stimulate cooperation. To reach this goal the E4H-group set a couple of criteria for Hermes (source: meeting documents E4H):

- It has to save time to get the information, compared to other ways of information collecting. (This was the basis for the second question of the questionnaire that I will describe in paragraph 7.3.1.)
- It has to make sure that the same actions are not done twice
- Hermes has to make it possible to have less communication by phone calls, e-mails or in other ways than via the extranet to collect information
- it has to work faster then sending documents by (e-)mail

- CRM (Customer Relationship Management), a new system to register clients will be used in the future and will be part of Hermes. With CRM the missions can manage as well Dutch as local relations, it will be a linked system, that means that multiple parties have access to the data in the system.

These goals lead to two aims:

- Internal communication and information exchange between EZ/BEB, EVD, BuZa and missions
- Client support: Missions collect information from Hermes to serve their clients

These aims may look conflicting, but they are not. Hermes has elements of both aims in it. For example the sector specials on Hermes, with information of the development of different economic sectors as agriculture, biotechnology, chemicals etcetera is used for client support. The internal information of Hermes, for example about the employees of the EVD, is used for internal communication and information exchange between the users of Hermes, and is not for (direct) client support.

The EVD can decide to go on with these two aims, or choose one of them. The questions of the users-research give insights in both aims.

6.3.3. The participants of Hermes

Hermes is an exceptional extranet, because it is used by two ministries. This is a special cooperation, because when ministries work together, political aspects can be involved and can cause problems of rivalry or budgetary differences of opinion.

The ministries involved are the ministry of Economic Affairs (EZ) and the ministry of Foreign Affairs (BuZa). The participants of Hermes are: The EVD, DG BEB and the ministry of Foreign Affairs and the Dutch missions abroad.

The EVD (agency of the ministry of Economics)

The Agency for International Business and Cooperation (EVD) is part of the Dutch ministry of Economic Affairs. Its mission is to promote and encourage international business and international cooperation. As a State agency and a partner to businesses and public-sector organisations, the EVD



aims to help them achieve success in their international operations. A growing network of organisations, government institutions and companies have come to rely on the EVD for information about foreign markets, governments, and trade and industry. With its wide-ranging knowledge, the EVD is able to develop products and services that meet the needs of its clients. It obtains its information from its network of Dutch and international organisations, that includes international financing organisations, the European Commission, embassies, Chambers of Commerce, local business support offices, trade representative associations and trade and industry (www.evd.nl). In the beginning of the E4H in 1998, the EVD was not an agency yet, but a directorate-general of the ministry of Economics. More about the EVD can be found in chapter 6.2. about the EVD.

The EVD is performing most of tasks of Hermes (editing, controlling) this is because the EVD is an executive organisation. The EVD needs Hermes for a better information provision and other tools to provide the missions with, so they can provide the clients with better service.

The DG BEB (Directorate-general Foreign Economic Relations)

The Directorate-general Foreign Economic Relations has the task of creating favourable conditions for giving new boosts to the international economic activities



of the community and trade and industry so that they can contribute to the sustainable economic growth of the Netherlands.

Examples of the directorate-general's work are:

- Pressing ahead on opening up world trade through bodies like the WTO
- Stimulating international enterprise, by such means as financial instruments, information campaigns and trade missions
- Attracting foreign investments to the Netherlands with a view to employment opportunities and reinforcement of the country's competitive strength
- Intervening to eliminate bottlenecks for internationally operating companies. (www.minez.nl)

The DG BEB needs Hermes to improve the exchange of economic information for international economical activities. The DG BEB is also the customer who gave the EVD the assignment for the research about Hermes.

The ministry of Foreign Affairs

The ministry of Foreign Affairs coordinates and carries out Dutch foreign policy at its headquarters in The Hague and through its missions abroad. It is likewise the channel through which the Dutch Government communicates with foreign governments and international organizations. (www.minbuza.nl)

The ministry of Foreign Affairs is important in the use of Hermes because this Ministry is the owner of the infrastructure that is needed for the use of Hermes. By infrastructure, the computer networks of the missions are meant.

The missions fall under the responsibility of the Ministry of Foreign Affairs. There are different types of missions abroad:

- embassies
- consulate-generals
- consulates
- vice-consulates
- permanent representatives
- Netherlands Business Support Offices (NBSO)
- Netherlands Trade and Investment Office (NTIO)

The missions are set up to maintain networks and they play an important role in gathering and providing information and offering on-the-spot assistance to Dutch companies and individuals. The NTIO and the NBSO's are special offices to support Dutch entrepreneurs on foreign markets who are extensive and promising.

On the missions abroad employees from the Ministry of Foreign Affairs are employed. The Chef de Poste is in charge on a mission, this is an ambassador on an embassy and can be a consul-general on a consulate-general or a consul on a consulate. As a result of the increasing internationalisation on other policy fields of other ministries the staff increase with employees from other ministries, for example economic attaches or agricultural attaches.

The missions, the NTIO and the NBSO's use Hermes for the registration of their clients and information can be found to perform their tasks abroad.



Ministerie van
Buitenlandse Zaken

6.3.4. Use of Hermes

A metaphor I heard for Hermes at the EVD is the one of an empty case, that can be filled with applications, files, etcetera, that will be useful (source: interview employee EVD). Now Hermes is filled with these contents;

- Information from EVD, DG BEB, ministry of economics, the ministry of foreign affairs and Dutch embassies abroad.
- A system to register clients, in the future CRM (Customer Relationship Management) will be used for this, that will be a part of Hermes, nowadays missions work with Matchbase to register their clients, this is also a part of Hermes.
- On the homepage of Hermes some news articles, general forums to which users can subscribe and notifications can be found.
- A selection of the HIS (Trade information system) of the Chamber of Commerce, profiles of companies who export services and products abroad.
- Subscription to “Het Financieele Dagblad”, the Dutch financial times is on Hermes.
- Useful objects for the promotion of The Netherlands in a foreign country, can be used by the missions, when they organise an event.
- Groups, groupware gives users the opportunity to collaborate at a distance. “Groupware are computer based systems that support groups of people engaged in a common task or goal and that provide an interface to a shared environment” (Pedley, 1999; 39) For example to work on and edit documents together on different locations.
- Hermes is also a book of reference, or a database for relevant information that the missions have received till so far.
- Links to websites of ministries, the EVD and other important websites for information of international entrepreneurship.
- Sector Specials, this is an overview of the development of different economic sectors as agriculture, biotechnology, chemicals etcetera.

Figure 6.3. content of Hermes



6.4. Summary

The Agency for International Business and Cooperation (EVD) is part of the Dutch ministry of Economic Affairs. The EVD is the executive-organisation of the ministry of Economic Affairs for the facilitation and stimulation of international entrepreneurship and international cooperation.

In 1998 the ministry of Economics, the ministry of Foreign Affairs (including 12 Dutch missions abroad) and the DG BEB (Directorate-general Foreign Economic Relations) started with the Delta 6 project group, the project they started was called “Elektronische Vierhoek” (electronic quadrangle) or E4H for short. The goal of this project was to improve the information supply in economic-commercial field between the ministry of Economics, the ministry of Foreign Affairs, the DG BEB and 12 missions.

Now, Hermes is used by more missions all over the world. The aim of Hermes is twofold:

- Internal communication and information exchange between EZ/BEB, EVD, BuZa and missions
- Client support, missions collect information to serve their clients from Hermes

One can find the following applications on Hermes: groupware, sector specials, financial newspaper, links and Matchbase application, among others.

7.The users-research

7.1.Introduction

In this chapter I will describe the users-research I did at the EVD about the users of the Dutch missions of the extranet Hermes. This research was done in 5 phases. The main part of the research were the questionnaires that were sent to the Dutch missions abroad and the analysis of the response of these questionnaires.

7.2.Methodology

The research about Hermes the extranet consisted of the following phases:

1. Background information about Hermes and the EVD
2. Theory
3. The users-research
4. Analysis of the data
5. Interpretation of the data and formulate recommendations

Phase 1: Background information about Hermes and the EVD

In this phase I gathered information about Hermes, the history of Hermes, its users and the goals. I held interviews with employees of the EVD and DG BEB, read memo's, meeting documents and other documents about E4H and Hermes.

Phase 2: Theory

In order to conduct the users-research some theoretical insights were needed. The questions I asked the missions in the questionnaires were based on theoretical aspects about possible problems users could have with extranets and on background information gathered in the first phase. More about the questionnaire and the questions is explained in chapter 7.3.1. about the questionnaire.

Theoretical insights were also needed to formulate recommendations, draw conclusions and answer the questions of this thesis.

Phase 3: The users-research

In order to find out what the users want and expect from Hermes, I did an users-research. Based on the theoretical insights and other information about Hermes, I made a questionnaire and sent this to Dutch missions abroad to fill it out.

For this users-research I prepared a questionnaire. This questionnaire should meet some requirements, such as the principles of good questioning from Neuman.

Nueman (1999) gives principles of Good Question Writing, which I kept in mind:

1. Avoid jargon, slang, and abbreviations: Respondents may not understand what is meant by this and will not be able to answer the question. The abbreviations I used in the questionnaire are known by all users I sent the questionnaire to (see paragraph 7.3.1. about the questionnaire).

2. Avoid ambiguity, confusion, and vagueness: The confusion can cause inconsistencies in how different respondents assign meaning to and answer the question.
3. Avoid emotional language and prestige bias: Emotional language (words with emotional “baggage”) may cause a reaction of the respondent rather than to the issue and the respondent will not have a neutral look at the question. Prestige bias means associating a statement with a prestigious person or group and the respondent may answer the question based on their feelings about this person or group.
4. Avoid double-barrelled questions: This is a question which consists of two or more questions joined together and can be confusing. It is better to split the question in two questions to see if there is a relation between the answers.
5. Avoid leading questions: This is a question that leads the respondent to choose one response over another by its wording.
6. Avoid asking questions that are beyond respondents’ capabilities: This can cause frustration and respondents produce poor-quality responses.
7. Avoid false premises: If you begin a question with a premise the respondent will not agree with, the respondent will be frustrated and will not know how to answer the question.
8. Avoid asking about future intentions: Respondents are poor predictors of behaviour, so the answer will be less reliable.
9. Avoid double negatives: This can be confusing for the respondent.
10. Avoid overlapping or unbalanced response categories: Response categories or choices should be mutually exclusive, exhaustive (every respondent has a choice) and balanced.

Phase 4: Analysis of the data

When the questionnaires were sent back to me by the missions I analysed the data and drew some conclusions from the answers of the questions.

Phase 5: Interpretation of the data and do recommendations

Based on the conclusions from the data from the users-research, the interviews and the literature I made some recommendations about the use of Hermes and improvements. The conclusions and recommendations are described in chapter 8 of this thesis.

7.3. Research framework

In order to find the requirements of the users to use Hermes I did a users-research. In this paragraph I will describe the framework of this research.

7.3.1. The questionnaire

The questionnaire consisted of a couple of parts with different subjects. The first part of the questionnaire is about how the users collect their information. If the way the users collect information is known, Hermes could be played into this to make it more useful. This question is based on another research of the Ministry of Foreign affairs about the satisfaction of the clients of the missions. In this research different missions participated, questions were asked about the way missions collect information to answer the questions of the clients and about what subjects clients ask questions about.

The second part is about the use of Hermes, how often do the users use Hermes, are there any problems and do all users have access? These factors can be very important to Hermes, if it seems out of these questions that the users do not have (a good) access to Hermes, this should be improved, instead of Hermes.

In the interviews the employees said that users were suffering from log on problems with Hermes and that there were problems with the internet connection, because the Ministry of

Foreign Affairs did not take care of a good connection. With these questions I wanted to find out if the employees in the interviews were right about this.

The E4H set time saving for the collection of information as a criteria for Hermes. In the questionnaire I asked the users if Hermes does save time to collect information.

The third part is about how the content of Hermes is valued, do users appreciate the information that can be found on Hermes, or does it not meet the requirements of the users?

The question about the quality of the information on Hermes is based on theories of data requirements, these are described in chapter 4.3. about data in this thesis.

The question about the functions of Hermes is based on the current functions of Hermes, these functions of Hermes are described in chapter 6.3.4. about the use of Hermes.

The fourth part is about the layout of Hermes. If users have any problems with the layout, this can be a reason for frustration and then it should be improved.

In chapter 4 of this thesis problem areas are described, one problem area of an extranet that can cause problems, is the layout of an extranet. By means of this question I wanted to find out if the users of Hermes like the layout of Hermes or that it has to be improved.

The fifth part is about improvements of Hermes, are there specific functions the users are missing in Hermes? If these functions can be added to Hermes, users will appreciate it.

In chapter 6.3.4. of this thesis the current functions of Hermes are described, in chapter 3.5. I described functions of extranets. With this question I wanted to find out if the users of Hermes are interested in other functions that an extranet can offer them.

And the last part is about suggestions, this is an open question to ask the users if they have any suggestions to improve Hermes.

The questionnaire contains 10 questions:

3 yes/no/no opinion questions:

- Does Hermes save you time to collect information in comparison to the other methods mentioned above?
- Do you and your colleagues have access to Hermes at your own workstation?
- Do you and your colleagues have practical problems with the use of Hermes? At this question respondents can after giving a positive answer mention what problems they experience.

2 multiple-choice questions with more options, it is possible to give more than one answer:

- How do you collect information to serve your clients?
- Which functions are missing in Hermes, and are you interested in?

1 multiple-choice question where only one answer can be given:

- How often do you use Hermes?

3 questions about a valuation (with a mark from 1 to 10):

- The quality of the information on Hermes (reliability, completeness, topicality, practical usefulness, degree to which you can answer the questions of your clients, ease of finding)
- Give a mark for the following functions of Hermes
- Give marks for the layout of Hermes (layout, menustructure, menucontent)

1 open question:

- Do you have other suggestions to improve Hermes?

The questionnaire can be found in the annex 10.2.

7.3.2. The research objects

Although Hermes is used by three parties (Ministry of Economic Affairs, EVD, Ministry of Foreign Affairs including the missions abroad), for this users-research only the users from the missions abroad were asked for their opinion. The users from EVD and DG BEB in The Hague were already approached and gave their opinion in interviews.

I selected random users from countries all over the world for the users-research. Countries are divided into various categories: economically significant countries (2- and 3-star countries), less economically significant countries (1-star countries) and least economically significant countries (0-star countries) (BEBweb). See the country index in the annex 10.1.

In these countries are different missions with users of Hermes:

- Embassies
- consulate-generals
- consulates, vice-consulates and honorary consulates (at this small consulates there are local unpaid representatives performing the tasks of a consul, instead of a professional consul)
- Netherlands Business Support Offices (NBSO)
- Netherlands Trade and Investment Office (NTIO)

The NBSO's and the NTIO are funded by the ministry of Foreign Affairs and the ministry of Economic Affairs. The missions fall under the responsibility of the ministry of Foreign Affairs.

The missions are not only divided by the economic importance of the country they are in, but also by region. The EVD has made a division by the following regions: Western countries (WEL), middle and eastern Africa (MOA), middle and eastern Europe (MOE), and Asia and Latin America (ALA)

In some large countries, China, for example, are more than one mission: An embassy in Beijing, consulate-generales in Hong Kong, Shanghai en Guangzhou and six NBSO's in Jinan, Kunming, Nanjing, Shenyang, Tianjin and Wuhan.

On the other hand, very small countries do not have their own Dutch representative. The missions from small countries without their own representative are in another country in the neighbourhood where the tasks are performed for this country.

I have sent 358 questionnaires to embassies and all types of consulates, NBSO's and the NTIO in all the four regions.

7.4. Description of empirical material

The empirical material consist of the description of the response of the research and the answers to the questions in the questionnaires.

7.4.1. The response

The questionnaire was sent on may the 18th 2006, unfortunately, I did not get a lot of response. The deadline was set at June the 2nd 2006, but only 16% of the missions had sent a reaction at that time, so, a reminder was sent on the 2nd of June 2006 to get more response.

In the table below the response can be found. The total amount of response is 111, this is 31% of the 358 questionnaires that were sent. The reactions can be divide in three types:

1. complete the questionnaire (23,5%)
2. other reactions (e-mails) (7,5%)
3. no action undertaken (69%)

Only the first two categories belong to the response, and only users of the first group, the ones who completed the questionnaires are respondents. In the table below, the response of the questionnaire can be seen.

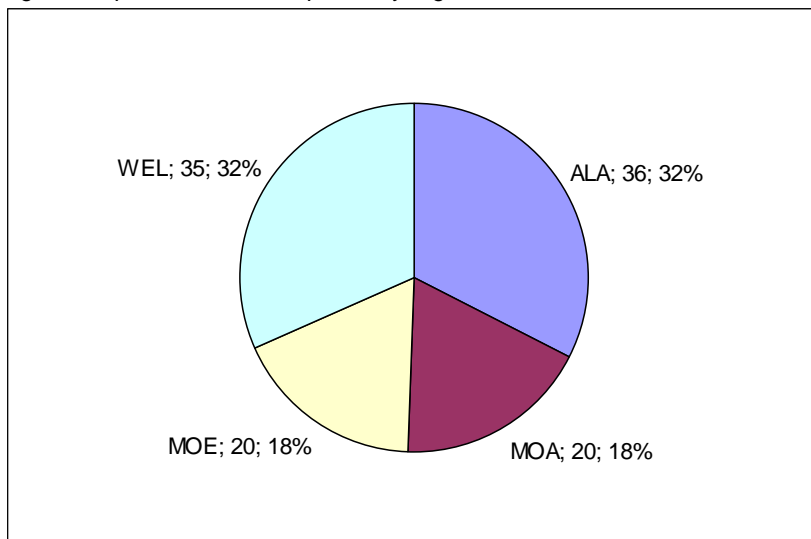
Figure 7.1.table response by economical importance

	missions	complete questionnaires	other reaction	total	%
3-stars	232	61	11	72	64,9%
2-stars	39	12	2	14	12,6%
1-star	47	9	10	19	17,1%
0-stars	40	2	4	6	5,4%
total	358	84	27	111	100,0%

The most of the response came from the 3-stars countries, 64,9% (72 reactions). In the 0-star countries was the response very low, only 2 questionnaires were completed.

If we look at the response by region, we see that the response is divided equally between the four regions. All region delivered more or less 25% or a quarter of the total response. This can be seen in the piechart below.

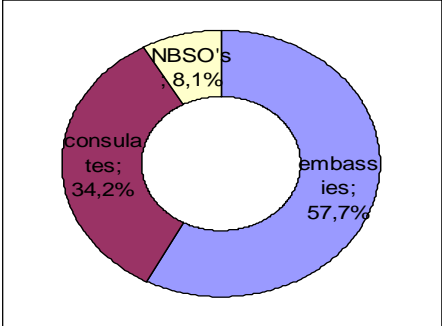
Figure 7.2.piechart of the response by region



The type of mission who responded the most are the embassies, they delivered 57,7% of the total response. This is remarkable because there are more consulates than embassies. Only 15,3% of the consulates responded and 56,1% of the embassies.

The percentages of NBSO's (including the NTIO) is low, because there are less NBSO's than embassies or consulates. 52,9% of the NBSO's and the NTIO responded.

Figure 7.3.chart of response by type of mission



The for the EVD most important missions delivered the majority of the response:

- The 3-stars countries, these are the economical most important countries
- Embassies, these are the major missions in a country
- NBSO's, these missions are important for the international trade abroad

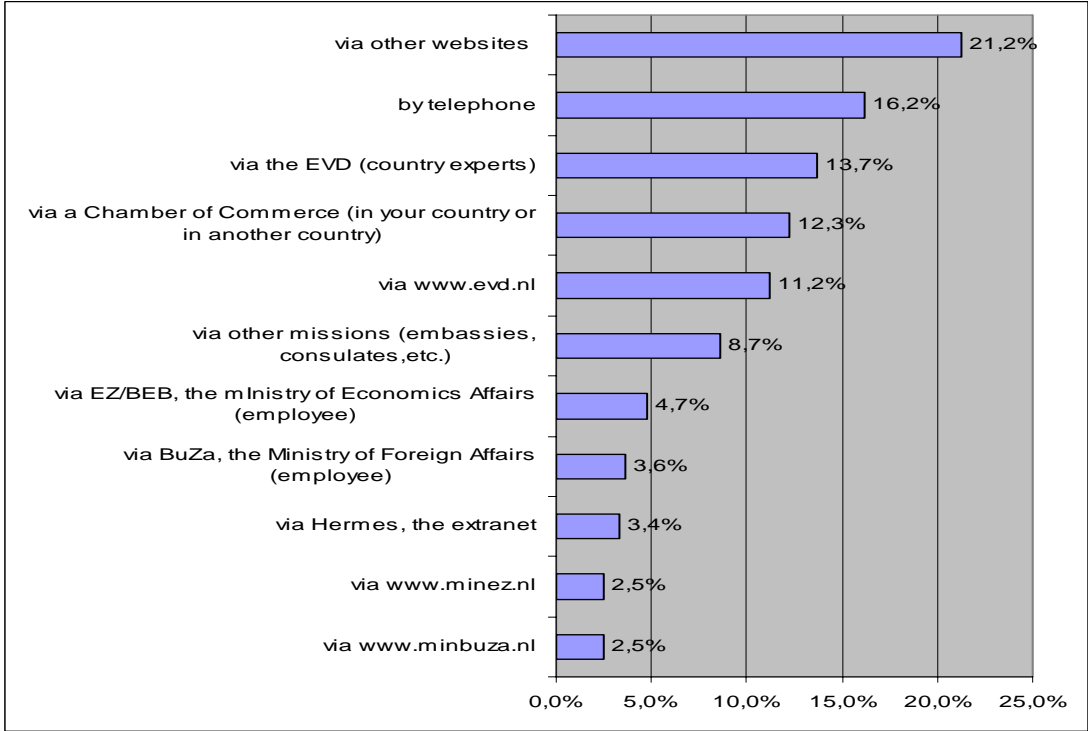
7.4.2.The answers to the questionnaire

The questionnaire consisted of 10 questions, the answers to the questions the respondents gave are discussed and analysed in this paragraph.

1.How do you collect information to serve your clients?

The respondents had to choose between the 11 options, multiple answers could be given to this question. From this question it seemed that the respondents mainly collect their information on the internet (at other websites, than the ones of the EVD or the ministry of Economic Affairs), by telephone or by a countryexpert of the EVD. The figure below shows the ranking of the options to collect information.

Figure 7.3.collect information



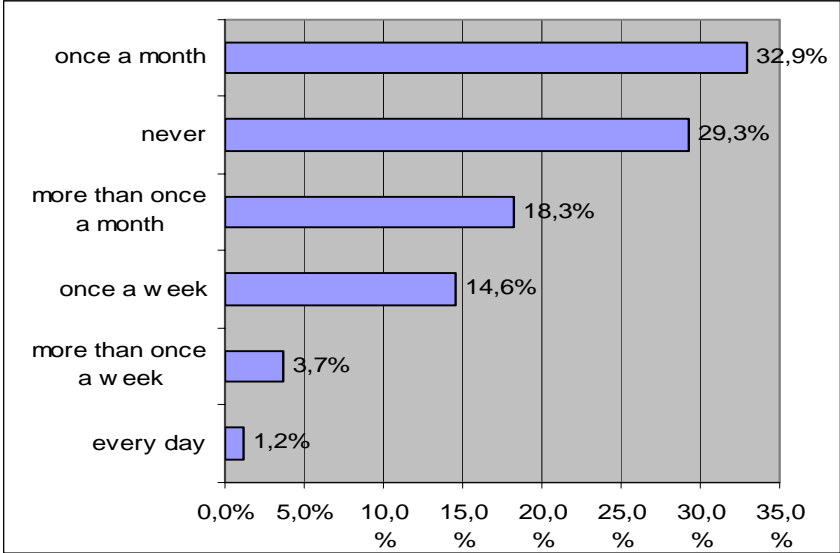
2.Does Hermes save you time to collect information in comparison to the other methods mentioned above?

A goal of Hermes is more efficient information collection, is this goal achieved? According to 50% of the respondents is this not the case, 43,9% does not have an opinion about this and only 6,1% of the respondents says that Hermes does save time to collect information in comparison to the other methods mentioned in the former question.

3.How often do you use Hermes?

This was a multiple-choice question, only one answer was possible. From this question it seemed that the majority of the respondents uses Hermes once a month. There are also a lot of respondents who never use Hermes, only a very small amount of the respondents is a daily user. The NBSO's (including the NTIO) use Hermes more often, 50% uses Hermes once a week. The frequency of use can be seen in the figure below.

Figure 7.4.frequency of use



4.Do you and your colleagues have access to Hermes at your own workstation?

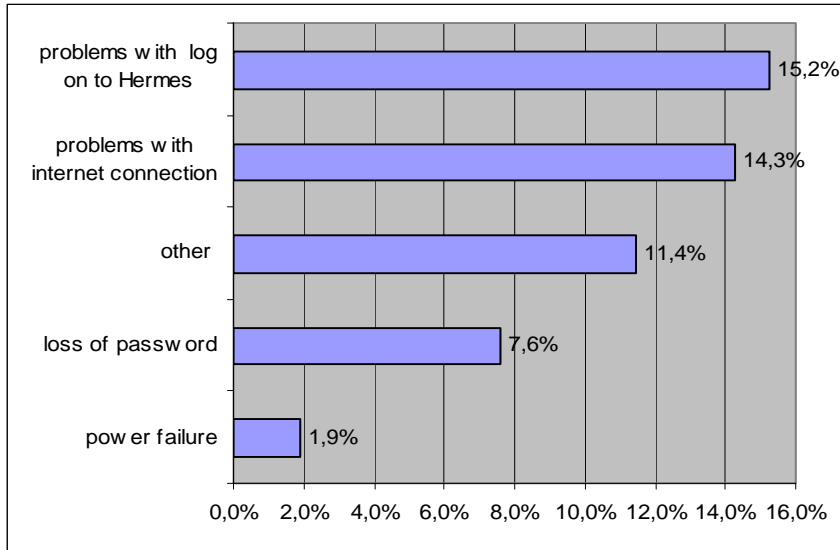
Until recently the employees of the ministry of Foreign Affairs did not have access to internet at their workstations. An internet connection is needed to access Hermes, so it is important to know if the missions have access to Hermes. If this is not the case, not only Hermes should be improved, but the connection to the internet as well.

54,9% of the respondents has access to Hermes on his or her own workstation, 40,2% of the respondents does not have access to Hermes on their own workstation. The majority of the 2,1 and 0 star countries does not have access to Hermes (75%, 57,% and 50%).

5.Do you and your colleagues have practical problems with the use of Hermes?

Respondents could point out practical problems at this question, if they experience any. 21,9% of the respondents do not have practical problems with the use of Hermes, 15,2% does not have an opinion and the rest, 62,9% does have practical problems with the use of Hermes. A top five of these problems are mentioned in the figure below.

Figure 7.5.practical problems



The other problems respondents mentioned were problems with slow operations of Hermes, problems with the uploading of data and that most of the information is in Dutch, not all users know this language.

6. The quality of the information on Hermes; please, fill out marks from 1 (very bad) till 10 (very good) or n/a.

The respondents were asked to value different aspects of the information on Hermes with a mark from 1 till 10. 1 does mean very bad and 10 means very good.

The following aspects were valued as follows:

7,0	Reliability
5,1	Completeness
5,3	Topicality
4,5	Practical usefulness
3,0	The degree in which the information answers the questions of the clients
4,8	The ease of finding of the information

7. Give a mark for the following functions of Hermes, fill out marks from 1 (very bad) till 10 (very good) or n/a.

17 functions of Hermes were mentioned here, the respondents valued this functions with marks from 1 till 10. 1 does mean very bad and 10 means very good.

The valuation of the functions can be seen in the figure below.

Figure 7.6. valuation of the functions of Hermes

Financieele Dagblad	7,5
Sector analysis	6,4
EVD information	6,3
Hermes database	5,8
Links	5,8
EZ/DG BEB information	5,5
Matchbase Basis	5,3
DG BEB web	5,2
Economy of Holland	5,2
Publications	5,1

Holland Promotion	4,8
Matchbase Plus	4,6
BuZa information	4,5
Companies	4,5
Notifications	4,3
Groups	4,3
Forum	2,3

8. Fill out marks from 1 (very bad) till 10 (very good) or n/a.

The respondents were asked to value the lay out of Hermes with a mark from 1 till 10. 1 does mean very bad and 10 means very good. The following aspects of the lay out were valued: The lay out (in general), the structure of the menus and the content of the menu.

The respondents valued the lay out with a 5,9, the menustructure received a 6,1. The menucontent was given a 5,9.

9. Tick the boxes of the functions which are missing in Hermes, and that you are interested in;

This multiple-choice question had 20 choices, respondents could give more than one answer about what they wanted to add to Hermes. The ranking of the options can be seen in the table below.

Figure 7.7.interesting functions

addresses of (other) companies and organisations	10,5%
information about 'match-making events', trade missions, seminars	9,2%
projects (of EVD/EZ/BuZa/BEB/missions)	8,7%
contact data of employees of EVD/EZ/BuZa/missions	7,8%
communication tool between missions/EVD/EZ/BuZa	6,2%
notice board for short announcements of missions/EVD/EZ/BuZa	5,7%
EU-information	5,7%
translations of the information and documents in other languages	5,7%
subsidy/financial aid (for entrepreneurs)	5,7%
practical hints and advice	4,8%
information about foreign economical laws and rules	4,6%
market information of different countries	4,3%
addresses of trade promoting organisations in different countries	4,3%
work together on documents at different locations	3,9%
general country information (population, politics, safety)	3,7%
information about foreign tariffs (passports, licenses)	3,4%
news of the world press	2,3%
currency converter	1,1%
declaration forms	0,9%
timezone information (clock)	0,7%
other, namely.....	0,7%

10. Do you have other suggestions to improve Hermes?

Not all the respondents answered this question, the respondents who answered came up with the following problems and suggestions about Hermes. The suggestions and problems of the respondents can be categorised in the following categories: Information, internet connection, technical problems and improvements, and the lay out.

Information:

New information about:

- Subscriptions on other (international) newspapers, like Financial Times
- Export needs of clients
- Doing business in The Netherlands for foreigners
- Information of the ministry of Foreign Affairs
- Database of Dutch companies (like the Chamber of Commerce), EVD client register, logbook

About current information:

- Information needs to be *up-to-date*
- Information can be found anywhere else, information should be *exclusive* on Hermes
- Better quality of information

Internet:

- Make internet available on all missions
- Security of the internet connection should be improved
- Possibility to access Hermes from own workstation

Technical Problems:

- Operations, like downloading of documents is too slow
- Depending on settings of your display, you cannot access all links
- Hermes requires Office, not all computers/missions use Office
- Integrate all internal databases of different stations
- Access Hermes via EVD website
- Log on problems: Expiration on password monthly
- Overall search engine
- Notification by e-mail when new information is available
- More interaction (forum, virtual organisation ideas)
- Some functions do not function well, like the forum
- Holland Promotion is hard to find, must have another place

Lay out:

- More professional
- More friendly in use
- To be able to open pages directly, not sending them to personal e-mail accounts (if you open a document 3 screens appear, one with related information, one with data of the resource, and a small screen with the document itself) The documents should be full screen to read easily.
- There are a lot of small mistakes in spelling and date's for example in the information on Hermes.

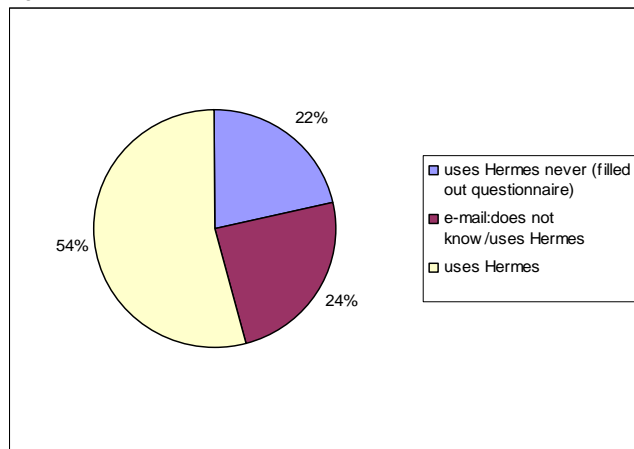
7.5. Conclusion

In the former paragraph, the answers to the questions are discussed. In this paragraph conclusion and recommendations based on the answers will be presented.

The 111 reactions contained 84 completed questionnaires and 27 e-mails with the message that one does not know and/or use Hermes. The questionnaires showed that 24 respondents

do never use Hermes. Together these are 51 reactions, or 45,9% of the reactions of users who do not know and/or use Hermes. A small majority of 54,1% does know and/or uses Hermes.

Figure 7.8. use of Hermes



The conclusions from the users-research are interpreted with the aims of Hermes in mind:

- Internal communication and information exchange between EZ/BEB, EVD, BuZa and missions
- Client support, missions collect information to serve their clients from Hermes

From the first question it seems that the missions mainly use other websites to collect information, other than www.evd.nl, www.minez.nl and www.minbuza.nl, to serve their clients.

If Hermes is used as an instrument to support clients, this should be improved, so that missions use Hermes more often to collect information. Now, only 3,4% uses Hermes to collect information to help their clients.

This could be improved by adding a FAQ list (list of frequently asked questions) to Hermes. Country experts of the EVD can make a list of those questions they receive from missions or clients. If a client comes up with one of those questions, the answer is ready and can be found on Hermes. The questions may differ per region, so the FAQ list can be categorised by region. For example, the questionnaire shows that respondents need EU-information and information about subsidies and financial aid, these information can be added to the FAQ list.

It is also possible to extend the list of links to other websites with the links to the websites the missions and the employees of the EVD use to answer the questions of their clients. These can also be categorised by region to keep it clearly.

If the users of Hermes have to use Hermes to collect information it should be time saving, compared to other methods of information collection. According to the questionnaire, Hermes does not save time to collect information. This should be improved, Hermes should be an instrument to collect information in an efficient and effective way. This can be accomplished by using a well functioning search engine to search information on the extranet.

In the questionnaire the missions are asked for the frequency of use of Hermes. It seems that Hermes is used once a month by the majority of the missions. This can be explained by the use of Matchbase Basis, the missions have to fill out the contacts they have with clients monthly in this system.

NBSO's use Hermes more often, this can be explained by their use of Matchbase Plus, they use that to open IMM-dossiers on a regular basis.

It is possible that there is a relation between the frequency of use and the access to Hermes. A good and easy access can lead to a higher frequency of use. From the questionnaire it

seems that the majority of the respondents does have access to Hermes on their own workstation. In the economical less important countries the majority does not have access to Hermes at their own workstation, this could be improved.

The majority of the respondents (62,9%) has practical problems with Hermes, the most problems are log on problems. This can be explained by a password that expires after a couple of weeks. A password is needed to get access to Hermes. The users have to ask the EVD for a new password. This causes for the users, and for the employee of the EVD, who has this task, troubles and is time consuming as well.

A password is needed for the security of Hermes, but it is possible to give the users a password they can change themselves every couple of weeks, without the interference of the EVD.

Another practical problem is with the internet connection, a lot of users say that Hermes has a slow connection. The ICT-department within the EVD should make it possible that the users have a faster connection with Hermes.

In the questionnaire respondents are asked to give a mark for the quality of the information on Hermes. The respondents think the information on Hermes is reliable, they give a 7 for the reliability.

The degree in which Hermes answers the questions is valued with a 3. This is a bad mark for Hermes' aim of client support and should be improved. Useful information should be added to Hermes, like links or the FAQ list mentioned earlier.

The marks of the other aspects of information (completeness, topicality, practical usefulness, the ease of finding the information) vary between 4,5 and 5,3.

Completeness, topicality, and practical usefulness can be improved by a good control of content. The information should meet these criteria when put on Hermes, and the employees who are responsible for the control of the content should realise this. To make the information easier to find a well functioning search engine is needed.

In the questionnaire the respondents were asked to give a mark for the current functions of Hermes. The respondents gave the highest valuation to the financial Dutch newspaper. The sector specials also received a good mark. The links received a pass mark as well. Matchbase received a low mark, but will be replaced in the future by CRM, so this does not have to be improved now.

The low valuation of the information of EVD, EZ/DG BEB and BuZa is caused by the outdated information, and the lacking of the right contact data. This information should be updated and email addresses should be added. If this information about the contact data is up-to-date, it supports the aim of internal communication.

Holland promotion got a low valuation, maybe, this is because it is hard to find and outdated. The EVD just presented their new toolkit with promotional material, this should be placed on Hermes. Holland promotion can support the aim of client support.

According to the questionnaire, the lay out, the structure of the menu and the content of the menu get a moderate valuation. This is a pass mark, but not excellent. The lay out could be made more user friendly.

Another reason to change the lay out is to let the users see that Hermes has changed, that it has made some improvements. With a new lay out users can see immediately when they enter Hermes that something has changed.

Two functions of Hermes that the respondents are missing and are interested in, are addresses of companies of clients and information, or a calendar of 'match-making events', trade missions, etcetera. These functions will be implemented in CRM, so that they will be on Hermes via this application.

Respondents say they want to know what projects the EVD, EZ/DG BEB, BuZa and the missions are executing. Respondents want to use Hermes as a communication tool between EVD, EZ/DG BEB, BuZa and the missions to communicate about these projects.

This can be made possible by a forum or a 'notice board' where users can post messages (text, pictures, movies etcetera) themselves. The users can keep each other informed about what they are doing, so that they get more involved with each other, this supports the internal communication aim.

Users can also inform their clients about projects of other missions or the EVD that can be interesting for them, this supports the aim of client support.

Because of the international environment Hermes is used in, translations of the information in other languages is needed. Most documents are in Dutch now, but not all employees on the missions know this language and not all the clients of the users speak Dutch as well.

8. Conclusion and Recommendations

This is the final chapter of this thesis. In this chapter I will answer the subquestions of this thesis. The central question of this thesis will be answered by means of recommendations in this chapter.

8.1. Conclusion

In this paragraph I will answer the subquestions of this thesis. The answers of the subquestions will lead to the answer of the central question of this thesis: How can international public organisations optimise the use of their extranets and improve it to link up better with the needs of the users? This central question will be answered by means of recommendations in the next paragraph.

To refresh our mind, the subquestions mentioned in the first chapter are:

1. What is an extranet?
2. What can an extranet mean for an international public organisation?
3. What do the users of an extranet expect of an extranet?
4. What are the causes of problems with an extranet?

What is an extranet?

An extranet is a secured network accessible for a private group of authorised users who do not belong to one organisation, to exchange information and facilitate communication across borders, using world wide web technology.

In this thesis the case of Hermes, the extranet is described, Hermes is a secured network for a private group of authorised users from different ministries. According to the Nolan classical diffusion model Hermes can be placed in the network phase, because it crosses organisational boundaries and it is used for the distribution of information.

To build an extranet some technical elements are needed such as: a computer network, a server machine and software to make it function, TCP/IP standards to transfer data over a computer network, user workstations where users have access to the extranet, a firewall to maintain security and integrity, applications that run on the servers and search engines to search databases on the extranet.

From the research about Hermes it seemed that some technical elements, like a workstation with access to the extranet is a problem for a lot of users. The ministry of Foreign Affairs has not provided the missions with a computer with access to internet, and to the extranet.

There can be different models of extranets, in this thesis I explained the secured intranet access model, the specialised application model, the electronic commerce model and the multiple organisations model.

Hermes can be seen as an extranet according to the multiple organisations model, because it is an extranet used by different organisations. These organisations are different parts of the ministry of Economic Affairs: the EVD and DG BEB and the ministry of Foreign Affairs including the Dutch missions abroad. This is a special cooperation, because when ministries work together, political aspects can be involved and cause problems of rivalry or budgetary differences of opinion.

What can an extranet mean for an international public organisation?

In the public sector are different types of organisations: production organisations, procedure organisations, professional organisations and 'struggling' organisations. In this thesis the case of Hermes is described, the research was assigned to me by the EVD. The EVD can be described as a professional organisation, because professional organisations, like the EVD, represent craftsmanship. The EVD has specific information and methods to help entrepreneurs, and other governments all over the world. An extranet can play a role in a professional organisation by the exchange of specific information all over the world, because extranets are multimedial and interactive. The extranet can also store the information in a database that can only be accessed by the authorised users. The data in the database can be found by a specific search engine of an extranet.

Public organisations have special tasks that cannot be performed by organisations in the private sector or other parts of society. The public sector is performing these tasks because of shortcomings of the market. There are four market failures: the production of public goods, external effects, unequal distribution of goods and services and monopolies and cartels.

An extranet can help a public organisation by performing these tasks. An extranet can be useful by the production of public goods, because if the clients can order these goods by extranet, the organisation can get information about the needs of the clients from the extranet and can make predictions about the demands of the clients. These predictions can make the production process more efficient and makes sure that there are not too much goods in stock that can expire.

The clients do not have to be citizens, but it is also possible that municipalities for example can order streetlights or traffic signs via an extranet by the national factory of these items.

An extranet can also be an instrument for a more equal distribution of goods and income. Because an extranet treats equal people equally. When citizens can apply for subsidies or can make declaration of their income tax on an extranet, everyone will have the same treatment. They all have to fill out a form on the extranet with their data, so the procedure of gathering the data of the applicants is unbiased and free from human mistakes, like mistakes in calculation. But also to apply for a public service will be possible via an extranet with equal treatment.

For international public organisations there is also the advantage of collaboration at a distance by an extranet. International public organisations with partners abroad (like the EVD) or a department abroad can communicate by the extranet in an easy way. An extranet is interactive and can have applications to posts messages with text and images or the possibility to held video conference via the extranet. Information can be exchanged by an extranet and knowledge about different aspects can be shared by an extranet.

According to the users-research Hermes is not used for collaboration between the users nor for the exchange of information, only for publication of information by the EVD. It seemed from the research that the EVD places information on the extranet and the missions can use that information. The users from outside the EVD do not deliver information on Hermes,

although this is possible, when users send an email with the information to the EVD, the EVD will place it on the extranet.

The interactive part of Hermes, with the forum, is not functioning. So, the users cannot interact with each other by means of Hermes.

An extranet can give the organisation(s) information about the users of the extranet. This can have benefits, like adapting the extranet to the needs of the users or to collect information about the behaviour of the users and statistics about the use of the extranet.

Hermes also has these possibilities of gathering information about the users, but the software program to edit this data is not installed, so it cannot be used.

Another advantage for an international public organisation is that an extranet can be accessed anytime and anywhere (if you have a computer with a connection to the extranet). This can be useful for organisations who collaborate with partners in different time zones, one person can work at the document on the extranet when he or she wants. When one person stops working, on the other side of the world someone gets up and starts working on the same document on the extranet.

This is also an advantage of Hermes, because of the international environment, the Dutch missions all around the world can have access to Hermes, anytime and anywhere. The function to work on documents together, the groupware function, is not used very often. From the users-research it seemed that users are not missing that function. In table 7.7. one can see that only 3,9% of the users is interested in using Hermes to work together on documents.

An advantage of an extranet is that it is secured and only authorised users have access, so it is suitable for confidential matters as well. In the public sector organisations can deal with information, that can influence markets or positions in the markets of companies. This can lead to monopolies and cartels, and the public sector is there to prevent this. So, it is important that information, documents or policies that public organisations share on the extranet stay confidential. This is possible because the extranet is secured, if the information should not be accessible for all the users, but only for a specific group of users, use can be made of the closed users group function. To this group only a specific group of users has access.

Another possible advantage of an extranet for an organisation is speed, but for Hermes does this not count. According to the answers the users gave in the users-research, Hermes does have a slow connection and is not time saving for the collection of information compared to another methods of information collection.

The collaboration on the extranet and the sharing of information and documents can also have financial benefits, like the saving of print costs. This can be useful in the public sector where citizens control very strictly to see if no money is wasted.

Because Hermes is not used optimal yet, and other methods like, telephone or sending documents by mail are still used, Hermes would probably not have financial benefits yet. I cannot say anything about this because this was not a part of my research, this is an prediction.

Besides the advantages of an extranet for the processes in an organisation, an extranet can also be used as an instrument for knowledge management. Knowledge management encloses the activities that an organisation undertakes to realise that: The best knowledge, on the right place, in the right time, against minimal costs available is. This encloses three important aspects:

- To organise processes for knowledge sharing
- To stimulate the behaviour and attitude of employees in the field of knowledge sharing

- To deliver the instruments to support the other two elements.

An extranet can do that, and is an instrument for knowledge management. An extranet has the ability to organise the processes for knowledge sharing by applications for discussions (like a forum or newsgroup), and a database where documents and information can be saved and search for by a search engine. Hermes does not have these interactive parts for discussions, but it does have a database with a search engine.

An extranet can stimulate the behaviour and attitude of its users. For example by sending them a notification when new files are added to the database or when there are new messages on the forum. This notification function makes sure the users get informed and makes them come and use the extranet again to use the new information. Hermes does also have a notification function.

An extranet can influence the behaviour also by giving access only to people who behave well. A punishment of bad behaviour on the extranet (like placing texts who are discriminating) is to draw in the password and ID of the user. This count as a warning for other users to behave.

Other reasons why extranet are instruments for knowledge management is because extranets have associative characteristics, are multimedial, are interactive and personalise the knowledge management process.

Hermes can personalise the process of information collection by a notification function, it also has associative characteristics in its search engine, but the other characteristics need to be improved. Hermes is multimedial, but not a lot of different media is used, this function can be expanded. Hermes is not interactive, this could be improved by a chatroom, a newsgroup or a message board.

Hermes can be used for knowledge management, although it is not used for the first phases from the arise of knowledge, registration, interpretation and experience. Now, the EVD conduct a research or finds information, that they think is useful for the users and places this on the extranet. So, only for the last phase of the arise of knowledge Hermes is used: The application of the knowledge. The users can find the knowledge on the extranet and use it to perform their tasks, or apply it for other goals.

What do the users of an extranet expect of an extranet?

Expectations of users of an extranet can be found out by means of an users-research. In this thesis I described the users-research of the EVD about the extranet called Hermes. The users of this extranet from Dutch missions abroad where asked for their opinion about Hermes, the extranet, and their expectations of an extranet.

From the users-research it showed that the users expect the extranet to provide them with useful information to do their job, this is called professional knowledge. An example of this kind of information that can be found on Hermes are the sector specials with information about the development of different economic sectors, such as agriculture and technology.

From the questionnaire it seemed that users also need EU-information and information about subsidies and financial aid, this is also professional knowledge.

But the users not only expect professional knowledge on an extranet, they also expect some nice-to-know information. This kind of information is not needed for job performance, but is nice to know and may contribute to job performance in an indirect way. An example of nice-to-know information is the subscription to the financial newspaper that can be found on Hermes. At most missions it will only be used for private purposes as looking at the stock exchange rate, but the users do expect this to be a part of their extranet.

The questionnaire also showed that the users want to use Hermes as a communicationtool. Applications for communication, such as a forum, a messageboard or video conference can be added to Hermes as well.

From interviews with employees of the EVD and DG BEB it seemed that they expect Hermes to work efficient and effective. This can be accomplished by adding useful (professional)

information to Hermes and using a well functioning search engine to find the right information in the database.

Another employee of the EVD said that she expected Hermes to be an instrument for knowledge management. This has the advantages for the users that they can use knowledge and information from other users. When this information is used by others, new knowledge and insights can be developed that can help job performance.

What are the causes of problems with an extranet?

There are some areas that can cause problems with extranets, these problem areas are:

1. Design, this is how the extranet looks, the structure of the menus, the lay out and the interface with what the users communicate. When the design of the extranet is not clear it can cause confusion by the users. In the case of Hermes the lay out does not cause problems, it receives a low mark, and can be improved, but is not causing problems yet.
2. Data, or the content of the extranet is very important, the users judge extranets mainly on its contents. The information on the extranet should meet the information requirements of the users, like the information should be up to date, not ambiguous or wrong, and reliable. For international organisations it is important to have translations of the information in more languages or in an international language everybody can understand.

Hermes does not have translations of the information, most of the information is in Dutch, this does cause problems for users how do not speak Dutch. It also seemed from the research that the users think the data is not up-to-date, complete and practical useful, this causes problems as well. So, the data on Hermes is not judged well and needs to be improved.

The information on the extranet can reach the users by push technology, this has the risks of information overload. When there is more information available, the use of the information decreases, this is called information-paradox. Hermes does use push-technology, the notification function let the users know that there is new information when they enter Hermes again. Hermes does not send the users emails to keep them notified.

3. Costs, different costs are involved when implementing and developing an extranet, like costs for the equipment, security, the development of the extranet, training of the users and the developers and programmers, management of the resources, support in the organisation and taxes. In the case of Hermes a weight out have to be made about what to spend on the different parts. A discussion about who will pay for the costs is not necessary, because the EVD is the executive organisation and will pay all the costs of Hermes.
4. Control, different components need to be controlled when having an extranet, like people (users, employees who design and maintain the extranet), information and procedures (rules about different tasks, business rules).

There are different forms of control: control of the content, to own, control and provide the information on the extranet. Control of the form is to make sure that all the content has the same data structure, this choice of a common data structure can cause organisational-political struggles and ownership disputes. And the technical control to maintain the technical elements of an extranet.

For a good functioning extranet it is important to have a clear control structure, so that when something is wrong, a technical problem for example, someone can be held responsible for it and can take care of the problem. When the control is clear users can go to the right person with their problems or suggestions and do not have to be sent back and forward between different departments, where no one knows what to do with it. Hermes falls under the control of the EVD, because the EVD is the executive organisation of the Ministry of Economic Affairs. Within the EVD is not a

clear control structure, units will not take their responsibility for the different forms of control to control Hermes.

Hermes fell under the responsibility of the unit Network & Concordat, but when the manager from this unit moved to the unit Communications & Media, the staff of the unit Network & Concordat expected that he would take the responsibility of Hermes with him. So, the unit is not feeling responsible for Hermes anymore and is not willing to pay much attention to Hermes, and to make improvements.

5. Security, is needed to keep unauthorised users out and make sure the information on the extranet is save and confidential (no one, who is not authorised, can read the information). Security can cause different tensions between transparency and access security, this rises questions about what information should be shared, and in what degree the user gets access to the organisation. Tensions between costs and benefits, the costs of the security should not exceed the benefits, a riskanalysis will give more insight in this. There is also a tension between flexibility and security, extranet should be flexible and adapt quickly to the needs of the users, but the security has to adapt synchronously.

Extranet security concerns using encryption, authorisation and integrity checks to stay save. Hermes also uses authorisation, users get an ID and a password from the EVD to log on to the extranet. A disadvantage of this password is that it expires often. This is also because of safety reasons. For example when someone is trying to break in into Hermes, it is hard to guess a password that is changing al the time. Because of the delicate information the Ministry of Foreign affairs handles, security must be good. There are some security issues involved with the connection of the missions to the extranet and internet.

6. Functioning, or practical problems, these are problems with power failure, for example or a disfunctioning connection to the extranet because of problems with cables. The users-research of Hermes showed that most practical problems users experienced were with the log on to Hermes, their passwords expire very often. Another practical problem the users mentioned was a problem with the internet connection, this can have a relation with the security issues of the ministry of Foreign Affairs mentioned before.

8.2.Recommendations

In this paragraph the central question of this thesis will be answered by means of recommendations. How can international public organisations optimise the use of their extranets and improve it to link up better with the needs of the users?

To meet the needs of the users, the organisation(s) need(s) to find out what the needs of the users are, this can be done by an users-research for example. I conducted a users-research by means of a questionnaire. I sent the questionnaire to users of the extranet in order to find out what they think of their extranet and what they need to have on the extranet as well.

It can be important to involve users in the process of improvement of the extranet, because when users get informed and are asked for their opinion, it can create sympathy with the users and they might use the extranet more often and for more purposes. This can optimise the use of the extranet.

To improve an extranet it is important to set clear goals and aims for the extranet and keep that goals in mind and act upon them. Does the extranet have an internal aim with functions of intern communication tools and internal information that will not be related to job performance, or has it an external aim with tools to support the job performance. Or has it both aims?

Another way to keep the use of the extranet optimal is to make sure the users know what the extranet can do and how they can benefit from it. This can be done by sending brochures about the extranet and its functions and applications to the users, or by giving them a training of how to use the extranet.

It is important to inform the users and try to influence their mental models and attitude towards technology and the extranet. During the interviews with employees of the EVD and the DG BEB, it seemed that people were not looking positive at Hermes. Because Hermes had not been successful for so many years, people did not believe in it anymore. These negative thoughts about Hermes should be changed.

The EVD has the task to change the thoughts of the users towards Hermes, and make them have a more positive attitude towards Hermes, and make sure that the users are willing to use Hermes. This can be done by informing the users about Hermes, or involve the users in the process of improving Hermes.

To use the extranet optimal, the content of the extranet should be good, the data, information and application should be of good quality. This means that the data should not be inaccessible, inconsistent, ambiguous or wrong. Data should not be missing or used in the wrong applications.

The EVD should make a clear control structure and make someone, or a unit, responsible for the content of Hermes. To make sure the information has a good quality.

Data and information on the extranet should be findable with a well functioning search engine. Otherwise the user cannot use the information, if they cannot find it. Or they can get frustrated if it takes too much time to find the information they are looking for.

It is important to pay attention to the languages that are used at the extranet. An international organisation has to deal with users with different languages, the extranet should act on this by providing information in different languages or in an international language, like English or Spanish so that all the users can understand the information. It is important that the person in control of the content does also know these languages to perform control about the information.

The EVD has to place translations of the information, applications and files on Hermes, because most of this is in Dutch now, and not all the users can read this language, this causes frustrations by users.

Frustrations by users can also come from access procedures, for example when there are problems with the log on to the extranet, or when the password expires within a couple of weeks. This is happening with Hermes, the users have to ask the EVD for a new password every couple of weeks, this causes frustrations by the users and the employee of the EVD who is in charge of the passwords of Hermes.

Hermes has to change the passwords often because of safety reasons, but it can also be made possible that the users can change the password themselves without the interference of the EVD.

Other frustrations can come from bad layout, colours, or an unclear structure of the menus on the extranet. Hermes' layout and menu structure have received reasonable marks from the users. Improvements can be made, this is also a way to show that there have been some changes. When users see a new layout when they enter Hermes, they can see immediately that something about Hermes has changed.

A recommendation for the internal communication of Hermes is to make Hermes more interactive. The missions want to get informed about what other missions do and want information about projects of the EVD, DG BEB and other missions. An extranet can play a role in this by having applications like a message board or a forum or some other communication tool where users can put messages, reports or information about their

projects and events. This information can also be a report of a Queensday celebration at an embassy for example, with pictures of the party.

To communicate with each other outside the extranet, users need each others contact data. An extranet is a good place to store this kind of information. All the users have access, and when the extranet is linked to the database with the data of all employees it stays up to date as well.

A recommendation for the external aim of client support is that the users need professional information to support clients, this can be information like EU-information, information about subsidies and financial aid for entrepreneurs. This information could be added to a FAQ-list or the link to the website of the EU can be added to the list of links.

Other useful professional knowledge that can be found on Hermes are the sector specials with information about the development of different sectors, and materials for the promotion of The Netherlands abroad.

Users also answered in the questionnaire that they are interested in projects of the other users at the EVD, DG BEB and at other missions. If this information is shared on the extranet the users can inform their clients about these projects and clients might benefit from this or deliver a contribution to the projects.

If an extranet is used as an instrument for knowledge management, the extranet should have the characteristics to support knowledge management: Multimedial, by means of an messageboard with texts and images for example. Interactive, by means of an chatroom for example. Associative characteristics in a search engine for example. And personalise the process of knowledge management by a notification function for example.

These characteristics of an extranet support the different phases of the arise of knowledge: Registration, interpretation, experience and application. Hermes does not have the functions to support theses phases. For the registration phase, where data is gathered from events and experience, Hermes should have a place where this data can be saved, preferable in a closed user group, when the data is confidential.

For the next phase, the interpretation phase Hermes should provide the users with some software programme to process the data and give the users the chance to work together on the data, like a closed user group for confidential data or a groupware function. Hermes does now have a groupware function, but, unfortunately this is not used often (only one group of users is using this function). When this function is expanded and more used by the users it can contribute to knowledge management.

For the phase of experience Hermes needs a function to discuss the data and information, like a chatroom, a newsgroup, a poll, or other interaction tools.

Hermes does already have a function to publish the knowledge and users can find the knowledge by a search engine to use it. But now, only the EVD adds knowledge and information to Hermes, the information and knowledge would be more divers if more users add information to the extranet.

Besides the functions that need to be added to Hermes so that it can be used for knowledge management, it can also be important to change the behaviour of the users towards collaboration. Orlikowski (1992) says that "the competitive individualism –which reinforces individual effort and ability, and does not support cooperation or sharing of expertise- is counter-cultural to the underlying premise of groupware technologies" (Orlikowski,1992;367). When users are not willing to cooperate or share knowledge and information, knowledge management cannot take place.

So, as said before in this chapter, the mental models of the users towards cooperation and using technology to collaborate needs to be changed. Orlikowski (1992) says that "people act towards technology on the basis of their understandings of it, people's technological frames often need to be changed to accommodate a new technology" (Orlikowski,1992;367). Users could be trained to use the new technology of the extranet to collaborated with other users from other missions around the world.

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10. Annexes

10.1. Country index

Landenindeling naar sterren 2004			
3-sterren	2-sterren	1-sterren	0-sterren
Argentinië	Algerije	Albanië	Afghanistan
Australië	Bangladesh	Angola	Andorra
België	Bosnië-Herzegovina	Armenië	Antigua/Barbados
Brazilië	Colombia	Azerbeidzjan	Bahamas
Bulgarije	Costa Rica	Bahrein	Barbados
Canada	Cuba	Benin	Belize
Chili	Filippijnen	Bolivia	Bhutan
China	Ghana	Cambodja	Botswana
Denemarken	Jordanië	Cyprus	Brunei
Duitsland	Kazakstan	Dom.Rep.	Burkina Faso
Egypte	Kenia	Ecuador	Burundi
Estland	Koeweit	Ethiopië	Caymaneilanden
Finland	Libië	Gabon	Centrafr.Rep.
Frankrijk	Macedonië	Georgië	Comoren
Griekenland	Nigeria	Guatemala	Congo DRC
Hongarije	Oman	Guinee	Congo R
Ierland	Pakistan	Honduras	Cookeil.
India	Peru	IJsland	Djibouti
Indonesië	Qatar	Irak	Dominica
Iran	Serv&Mont	Ivoorkust	El Salvador
Israël	Suriname	Jemen	Eritrea
Italië	Tanzania	Kameroen	Fiji Eil.
Japan	Tunesië	Kyrgystan	Fr. Guyana
Kroatië	VAE	Libanon	Fr.Polyn
Letland	Venezuela	Liechtenstein	Gambia
Litouwen	Vietnam	Malawi	Grenada
Luxemburg		Mali	Guadel.
Maleisië		Malta	Guam
Marokko		Mauritanië	Guinee-B.
Mexico		Moldavië	Guinee-Eq.
Nieuw Zeeland		Monaco	Guyana
Noorwegen		Mongolië	H.Stoel
Oekraïne		Mozambique	Haïti
Oostenrijk		Nepal	Jamaica
Polen		Nicaragua	Kaapverdië
Portugal		Oezbekistan	Kiribati
Roemenie		Panama	Laos
Rusland		Senegal	Lesotho
Saoedi-Arabië		Sri Lanka	Liberia
Singapore		Sudan	Madagaskar

Slovenië	Syrië	Malediven
Slowakije	Tadzjikistan	Marshalleilanden
Spanje	Trin/Tob.	Martinique
Taiwan	Tsjaad	Mauritius
Thailand	Turkmenistan	Micronesië
Tsjechië	Uganda	Myanmar
Turkije	Uruguay	N.Marian.
VK	Wit Rusland	Namibië
VS	Zambia	Nauru
Zuid-Afrika	Zimbabwe	Niger
Zuid-Korea		Niue
Zweden		Noord-Korea
Zwitserland		Nw.Caled.
Argentinië		Puerto Rico
		Palestijnse Gebieden
		Palau
		Paraguay
		Pitcairn
		PNG
		Reunion
		Rwanda
		S.Leone
		S.Tome/Principe
		Salomonseilanden
		Samoa
		San Marino
		Seychellen
		Somalië
		St.Kitts/Nevis
		St.Lucia
		St.Vincent/Grenadin.
		Swaziland
		Togo
		Tokelau
		Tonga
		Turks/Caicoseil.
		Tuvalu
		Vanuatu
		Wallis&Fortuna

10.2. Questionnaire

Dear Sir/Madam,

A couple of years ago, the EVD, the ministry of Economic Affairs and the ministry of Foreign Affairs started with Hermes, an extranet to improve the information provision of the missions abroad. On Hermes one can find information about economics, sector analysis, the EVD and other useful applications, such as Matchbase and Holland Promotion Tools.

Now, it is time to evaluate the use of Hermes. We need your help with this, we would like to know your opinion about Hermes. With this evaluation the EVD likes to improve this system and optimise the use of it.

In this e-mail you can find a questionnaire with questions about Hermes, we would like an employee on your mission to fill it out.

Completed forms can be returned to wester@evd.nl , please do this before the 2nd of June.

Thank you very much for your cooperation!


Kind regards,

Paula Wester

Trainee, Unit Communication and Media, EVD, The Hague

Hermes Questionnaire	
	This form is filled out by:
	Mission (embassy, NBSO, consulate):
	City:
	Country:
	Please fill out the answers (x, or a mark) to the questions in the first column, for example:
	Is Amsterdam the capital city of Holland?
<input checked="" type="checkbox"/>	yes
<input type="checkbox"/>	no
<input type="checkbox"/>	n/a
Information	
1.	How do you collect information to serve your clients? (Tick the boxes in the first column)
<input type="checkbox"/>	via Hermes, the extranet
<input type="checkbox"/>	via the EVD (country experts)
<input type="checkbox"/>	via EZ/DG BEB, the ministry of Economics Affairs (employee)
<input type="checkbox"/>	via BuZa, the Ministry of Foreign Affairs (employee)
<input type="checkbox"/>	via www.evd.nl
<input type="checkbox"/>	via www.buza.nl
<input type="checkbox"/>	via www.ez.nl
<input type="checkbox"/>	via a Chamber of Commerce (in your country or in another country)
<input type="checkbox"/>	via other websites
<input type="checkbox"/>	by telephone
<input type="checkbox"/>	via other missions (embassies, consulates, etc.)

Use of Hermes	
2.	Does Hermes save you time to collect information in comparison to the other methods mentioned above?
	yes
	no
	n/a
3.	How often do you use Hermes?
	every day
	more than once a week
	once a week
	more than once a month
	once a month
	never
4.	Do you and your colleagues have access to Hermes at your own workstation?
	yes
	no
	n/a
5.	Do you and your colleagues have practical problems with the use of Hermes?
	yes, namely;
	power failure
	problems with internet connection
	problems with log on to Hermes
	loss of password
	other (fill out a word);
	no
	n/a
Content of Hermes	
6.	The quality of the information on Hermes; please, fill out marks from 1 (very bad) till 10 (very good) or n/a
	a.give a mark for the <i>reliability</i> of the information on Hermes
	b.give a mark for the <i>completeness</i> of the information on Hermes
	c.give a mark for the <i>topicality</i> of the information on Hermes
	d.give a mark for the <i>practical usefulness</i> of the information on Hermes
	e.give a mark for the <i>degree to which you can answer the questions of your clients</i> with the information on Hermes
	f.give a mark for <i>ease of finding</i> the information on Hermes
7.	Give a mark for the following functions of Hermes, fill out marks from 1 (very bad) till 10 (very good) or n/a
	EVD information
	EZ/DG BEB information
	BuZa information
	Hermes database
	DG BEB web
	Economy of Holland
	Sector analysis
	Companies
	Matchbase Basis
	Matchbase Plus
	Financieele Dagblad
	Links
	Publications

	Forum	
	Groups	
	Holland Promotion	
	Notifications	
		
	Lay out of Hermes	
8.	Fill out marks from 1 (very bad) till 10 (very good) or n/a	
	a. Give a mark for the lay out of Hermes (see image next to this question)	
	b. Give a mark for the structure of the menu (left side of the homepage)	
	c. Give a mark for the content of the menu (when you open a menubutton)	
	Improvements	
9.	Tick the boxes of the functions which are missing in Hermes, and that you are interested in;	
	work together on documents at different locations	
	communication tool between missions/EVD/EZ/BuZa	
	notice board for short announcements of missions/EVD/EZ/BuZa	
	EU-information	
	information about 'match-making events', trade missions, seminars, etc. of missions/EZ/EVD/BuZa	
	contact data of employees of EVD/EZ/BuZa/missions	
	news of the world press	
	translations of the information and documents in other languages (spanish/arabic/chinese/german/etc.)	
	addresses of (other) companies and organisations, for example branche organisations	
	information about foreign economical laws and rules	
	market information of different countries	
	projects (of EVD/EZ/BuZa/DG BEB/missions)	
	general country information (population, politics, safety)	
	addresses of trade promoting organisations in different countries	
	subsidy/financial aid (for entrepreneurs)	
	practical hints and advice	
	information about foreign tariffs (passports, licenses)	
	declaration forms	
	timezone information (clock)	
	currency converter	
	other, namely.....	
	Suggestions	
10.	Do you have other suggestions to improve Hermes?	
Thank you for your cooperation!!		

10.3. Responding missions in these countries

Albania	Honduras	Sri Lanka
Algeria	Iceland	Sweden
Argentina	Indonesia	Switzerland
Australia	Iran	Thailand
Bangladesh	Ireland	Trinidad & Tobago
Barbados	Italy	Turkey
Belgium	Japan	Uganda
Brasil	Kazachstan	Ukraine
Burkina Faso	Lithuania	United Kingdom
Canada	Macedonia	United States of Amerika
Channel Islands	Malaysia	
Chile	Nigeria	
China	Norway	
Costa Rica	Oman	
Croatia	Pakistan	
Cuba	Peru	
Cyprus	Poland	
Czech Republik	Romania	
Ecuador	Russian Federation	
Egypt	Saudi Arabia	
Estonia	Serbia & Montenegro	
France	Singapore	
Georgia	Slovenia	
Germany	Slowakia	
Greece	South Africa	