
The Easy Ergonomist Finder

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Summary

The International Ergonomics Association (IEA) was founded in the Netherlands 50 years ago, and because of its 50th anniversary the 2006 world congress of ergonomics will be held in Maastricht. The results of this assignment and the succession thereof (the execution) will be handed to the congress organization as an anniversary present.

In 2006, the general theme of the congress is “*meeting diversity in ergonomics*”. The main idea is that ergonomics must be viewed in a very wide perspective. In the context of this project, “meeting diversity” must be interpreted as meeting new people with all kind of specializations and interests. All congress participants and other ergonomists must be able to meet people of their interest.

The goal of this assignment is to design a main idea and an interface concept for an online application, with design guidelines for optional offline components, by analyzing the criteria from the involved parties and generating ideas and concepts based on these criteria and based on creativity. These ideas and concepts lead to a final design.

Easy Ergonomist Finder is the name of this project, similar to the name of the designed online application.

Everybody who practices or researches ergonomics falls within the target group of this project. There is no restriction to certified ergonomists.

Researching the web shows that there are numerous ways to display information comparable to the information on the Easy Ergonomist Finder. But there are a lot of similarities in the analyzed websites. These similarities can often be applied to the Easy Ergonomist Finder.

A competition analysis shows that there are websites with similar activities. However, there are significant differences between these websites and the Easy Ergonomist Finder. The Easy Ergonomist Finder takes advantage of these differences optimally to outrun the competition, based on a SWOT analysis.

The above leads to a clear set of criteria that the design must comply with. These criteria can be used to evaluate the concepts.

People are being asked to participate on the congress, both by addressing them plenary and by asking them individually in the hallways. To convince people to register several ergonomic gurus are approached to be in the first few registrants and act as role model.

The main function of the online application is to search for other ergonomists, based on the information they provided about themselves. It is up to the ergonomists to decide what information they want to publish. They have the choice of filling out a lot of information fields. The parts that are left empty won't be displayed.

For the ergonomists it is interesting to enter one or more kinds of contact information. Thereby they can be contacted both during and after the congress.

As mentioned above, searching on the website and viewing other ergonomists' profiles is the most important functionality of the online application. Both these things can only be done when a user is logged in, to protect the information to the outer world.

The only functionalities that can be used without logging in are the register function and viewing ergonomic news. The news section's intention is to make the site more interesting to visit on regular bases.

The graphical user interface complies with a lot of ergonomical demands. It is very important when designing an interface with ergonomists as target group that the interface is ergonomically all right.

The prototype of the online application can be found on the Cd-Rom that comes with his report.

The visitors of the congress are confronted with the Easy Ergonomist Finder. When they enter the congress they are being informed of its existence. They have the possibility to register directly, and to have their photograph taken and put on their profile.

To bring the Easy Ergonomist Finder more to people's attention, ergonomists' picture, name, slogan and country are projected onto a large screen. This happens at the meeting point situated in the trajectum in the MECC congress centre in Maastricht. The meeting point consists of a lounge where people can chill and talk, and some space where people can work with their laptop. The meeting point is dressed up with elements that support the meeting point's "contact" theme.

One of the elements that can be found at the meeting point is a large telephone. This telephone controls the slide show mentioned above. Pressing a button changes the type of transition between the slides. Goal hereof is to trigger people's interest. This is strengthened by the "un-ergonomic illustrations" on the telephone's buttons.

The "datacloud", an application invented by Axis Media Ontwerpers, is an interesting way to implement all the ideas. The datacloud has a lot of functionality that can be used for the Easy Ergonomist Finder. It has a graphic user interface that encourages people to use it and browse around in the Easy Ergonomist Finder. The datacloud does have two disadvantages. It is unknown how the datacloud will function with large amounts of people and companies. Furthermore it requires someone to enter or change information. With up to ten thousandth ergonomists that is going to be a lot of work.

All together and with the recommendations from chapter 7 taken into account, there's a clear concept for both the website and the introduction on the congress.

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Foreword

This report is the result of the final assignment for my bachelor's degree industrial design. To me it was an interesting experience to be working on a large assignment almost fulltime and individually. Mainly in the beginning it was an intellectual challenge to find out where the assignment would lead me and where I would go with the assignment. I believe this report gives a clear ... of the contents of this assignment.

I want to attend readers who are mainly interested in the outcomes of this project and less the research I have done and the steps I have taken that you may and can skip chapter 2: analysis entirely.

I want to thank Fenneke van Buchem. This project would not be what it is now without her help and support.

Sietse Goedheer
Enschede, 20 februari 2005

Preface

The foundation of the IEA fifty years ago in the Netherlands is motive for the upcoming World Congress on Ergonomics to do something extra. The idea is to “give face” to ergonomists and with this carry out the IEA’s worldwide orientation.

This is the motive to start this project. The results of this project and the implementation of these results will be handed over to the IEA on the upcoming congress as an anniversary gift.

The goals of the project are:

- To develop an online application on which ergonomists can enter information about themselves, and on which ergonomists can find other ergonomists
- To do ‘something’ on the congress that has a link with the online application

The report setup is as follows. Chapter one is the introduction into the project. It covers the actor analysis, the project framework, the motivation to this research, the goal definition and the research questions.

Chapter two is called the analysis. In this chapter the design route and the project name are explained. The target group, the competition, and the SWOT properties of this project are analyzed. This leads to the criteria in the last section.

Chapter three covers all the concepts that are formed on every issue and according to the criteria from the previous chapter. The issues are: how to provide which information, how can the website be present at the congress, and how must the website continue after the congress?

Chapter four explains the designed online application. After the overall idea has been stated out, the interface design, website contents and the prototype follow.

Chapter five covers everything this project is involved in on the congress.

Chapter six explains the external application that is likely to be used.

Finally in chapter seven conclusions are drawn and recommendations are made.

introduction





Chapter 1: Introduction

This chapter describes the general issues of this assignment and of this project. The following items are covered in this chapter:

- What is this project all about?
- Actor analysis
- Project framework
- Motivation for this research
- Goal definition
- Research questions
- Report setup

1.1 What is this project all about?

Based on the information further in this chapter, this project describes the creation of an online application (website) and the way it will be introduced on the 2006 ergonomic world congress.

In short, the website is a database where ergonomists can enter information about themselves. They can search for other ergonomists based on the personal information of these ergonomists.

On the congress the website is officially introduced and people are asked to register. To encourage them, their name, picture and some other information is projected onto a large screen once they registered.

1.2 Actor analysis

All involved parties are called 'actors'. The actors below are relevant to this assignment.

The International Ergonomics Association (IEA)

The international ergonomics association (www.iea.org) is an international organization, covering 42 federated ergonomic associations across the globe.

The mission of the IEA is to elaborate and advance ergonomics science and practice, and to improve the quality of life by expanding its scope of application and contribution to society.⁽¹⁾

The IEA was founded in 1957 in the Netherlands. Therefore in 2007, they exist 50 years!

The IEA Congress Committee

Every three years, the IEA organizes an international ergonomic congress, somewhere in the world. A special congress committee is formed by the IEA in the congress' country and appointed for this.

(1) source: www.iea.org



The 2006 committee consists of three chairs:

- Congress chair (Ernst A.P. Koningsveld)
- Program chair (Ruud N. Pikaar)
- Chair finances and facilities (Paul J.M. Settels)

The committee is leader of and responsible for this project.

The 2006 congress is the congress closest to the 50th anniversary of the IEA.

Therefore this congress is considered the anniversary congress.

ErgoS Engineering and Ergonomics

ErgoS Engineering and Ergonomics (www.ergos.nl) is an agency consisting of nine people. Ergos is an engineering agency integrating ergonomic expertise in projects, mainly in the ICT, industry and health services.

Ruud Pikaar of the congress committee is employed by Ergos. This makes it easy for Ergos to facilitate this project. Ergos itself has no benefits in this project.

Fenneke van Buchem accompanies this project. She studied Industrial Design in Delft, the ergonomic track.

University of Twente

The University of Twente is the educational organization for whom this project is executed. They accompany and evaluate this project.

1.3 Project framework

The International Ergonomics Association (IEA) was founded in the Netherlands, and because of its 50th anniversary the 2006 congress will be held in Maastricht. The results of this assignment and the succession thereof (the execution) will be handed to the congress organization as an anniversary present.

More than 20 years ago, an analogous project was set up to accompany the congress. Nowadays, people still think very positive about that congress, but more importantly, they remember exactly how it was.

Because of the success of the project back in the days, an analogous goal is set for this project: it must be remembered on the congress of 2021.

In 2006, the general theme of the congress is “*meeting diversity in ergonomics*”. The main idea is that ergonomics must be viewed in a very wide perspective. In the context of this project, “meeting diversity” must be interpreted as meeting new people with all kind of specializations and interests. All congress participants and other ergonomists must be able to meet people of their interest easily.

This is the leading thought of this project. To achieve this, an external communication consultancy has been contacted to give their opinion and ideas about this problem. They came up with some ideas for this project. These ideas can be used. However, they aren't cheap and their ideas are a little bit complicated. Furthermore, these ideas are just ideas, they're not thought through.



One of the targets in the early future strategy plan of the IEA is that they want to communicate more directly to their members. Most of the current communication goes through the federated societies, but the IEA wants a more direct contact. This project can contribute to this. The IEA could use it to create mutual commitment between the IEA and its members.

1.4 Goal definition

The goal of this assignment is to design a main idea and an interface concept for an online application, with design guidelines for optional offline components, by analyzing the criteria from the involved parties and generating ideas and concepts based on these criteria and based on creativity.

The design enables ergonomists to build up and enhance mutual contact, before, during and after the 2006 ergonomic world congress, and will be based on an online database containing ergonomists' personal data.

This goal definition leads to a multi angle design challenge. What kind of online application would be interesting to the ergonomists? And how can this be done? And also what would be interesting to do on the congress?

1.5 Research questions

To reach the goals stated out in the goal definition, two research questions are formulated. They are stated out below, and both have their sub questions. Together they cover the entire goal definition.

Question 1: What criteria are relevant for the design of the application?

- Which fields of interest are relevant for this project?
- Which general theories from these fields are useful?
- Which demands can be specified to comply with this project?

Question 2: Which design will fulfill these criteria?

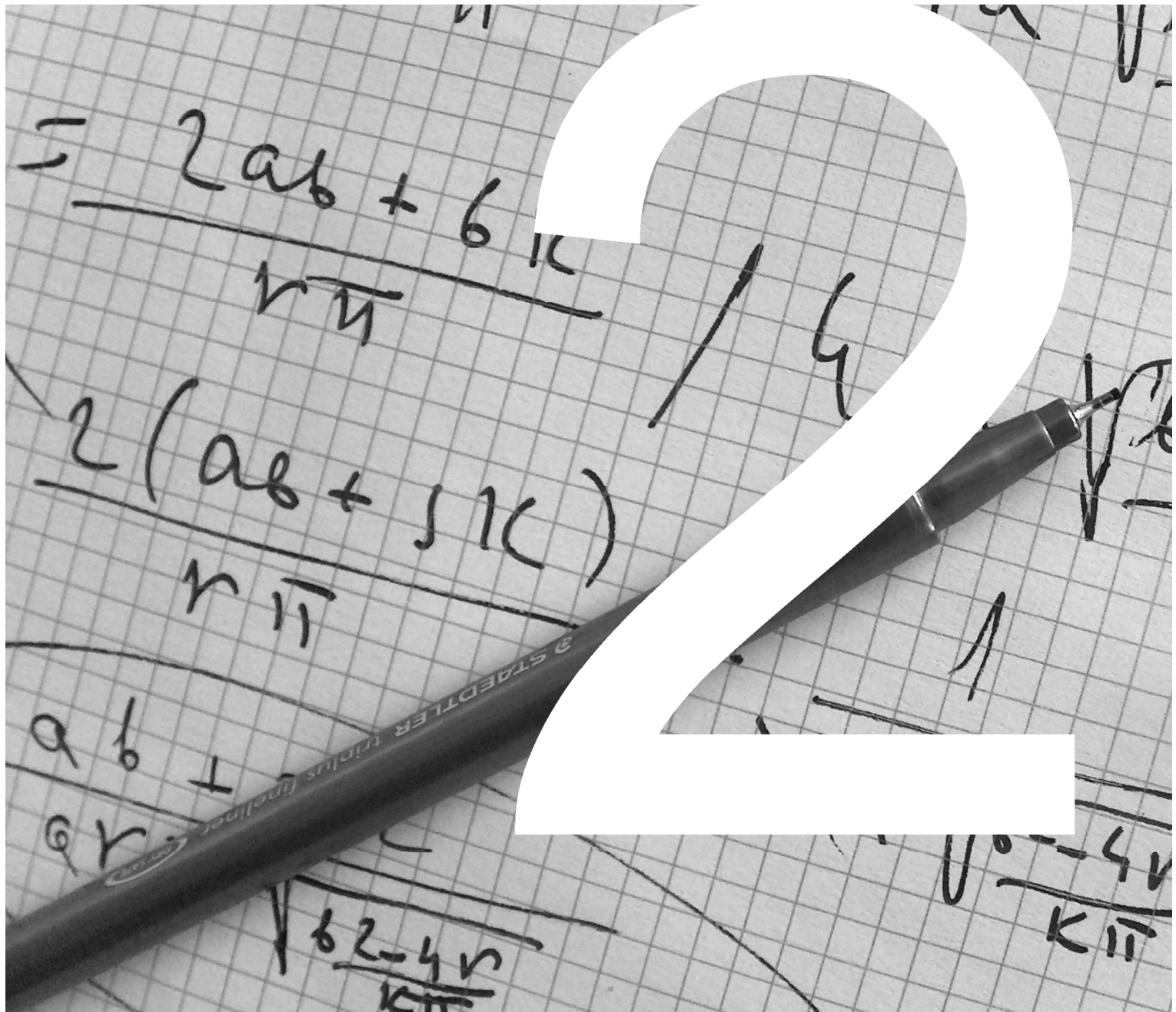
- Which elements must be designed?
- What designs are possible for these elements?
- What designs will trigger ergonomists to use the design as intended?
- Which design is ideal according to the criteria from question 1?

1.6 Report setup

This report is setup as following:

- Chapter 1: Introduction
- Chapter 2: Analysis
- Chapter 3: Concepts
- Chapter 4: The online Application
- Chapter 5: The congress
- Chapter 6: The Axis datacloud
- Chapter 7: Conclusions and recommendations

Analysis



Chapter 2: Analysis

This chapter analyses the different aspects of the assignment. These backgrounds are needed to be able to take a clear look on the challenge of designing a proper solution. The following items are covered in this chapter:

- Design route
- Project name
- Target group
- Web research
- Competition analysis
- SWOT analysis
- Design elements
- Criteria

2.1 Design route

A design route describes the steps taken to come to a well grounded design. For this project these steps are stated out below.

- Analysis
- Idea generation
- Concept forming
- Concept Choosing
- Design refining

Analysis

An analysis is performed to get information. What is the competition doing? What do other websites in different segments look like? What is the target group? Questions like these are answered in this chapter.

It is a fact that the results of this project are an online application and “something” on the congress. The analysis is performed to gather information merely about the online application. The congress part follows more from the idea generation below.

Idea generation

This phase of the design process is based on Brainstorming. Brainstorming can be done according to a lot of different techniques. For the Easy Ergonomist Finder the brainstorm session took place in a group of five people (all fellow students) by drawing their ideas on large papers and saying it out loud to inspire each other. No ideas are directly rejected, all ideas are interesting.

The following theses were discussed in the brainstorm session:

- What is ergonomics?
- How can ergonomists find each other on the congress?
- How can incidental meetings be encouraged?
- What can be put on the site in the general part?
- What can be put on the site in the personal part?



A list of all ideas that came up during the brainstorming session can be found in appendix A.

Concept forming

For all issues that need a concept, concepts are formed. The concepts are based on the brainstorming, and are stated out in chapter 3

Concept Choosing

Several concepts are formed for every issue. Most issues do not influence each other, so the choice per issue can be independent of other issues.

The concepts are chosen by looking at the pros and cons of each concept.

Design refining

Once a concept appears to be the best solution, it must be further refined. This happens by drawing and looking through all possibilities. For the online application a prototype is made to see what problems may occur.

2.2 Name: Easy Ergonomist Finder

No project can go without a name. The choice for the name “Easy Ergonomist Finder” is based on several criteria. These criteria are listed below.

The project name must:

- Be easy to remember
- Be easy to write and type
- Be easy to pronounce
- Sound good
- Cover the contents

These criteria apply very well to the name “Easy Ergonomist Finder”. It is a very simple name, based on common English words. This makes it easy to remember, write/type and pronounce. This name also covers the contents of the project very well.

There are some other suggestions for the project name brought up.

Other name suggestions:

- Ergonomist Explorer
- The Ergonomist Directory
- The Ergonomist Database
- Look for Ergonomists Online
- Extensive Ergonomist Database
- Ergonomist Seeker Deluxe
- Electronic Ergonomist Explorer
- Easy ergonomist finder
- Ergonomist search engine
- Worldwide ergonomist database
- Ergonomists online
- Find an ergonomist
- The ergonomist finder

- The ergonomist seeker
- Ergonomic Elite
- Ergo-knowledge

Subtitle suggestions:

- The worldwide online database of ergonomists
- Find your ergonomist colleagues

Note: The name “Easy Ergonomist Finder” was presented to the project organization as a working title. The title was approved and immediately taken over by the organization.

2.3 Target group

The target group of this project, or in other words the future users of the web application and the visitors of the congress are mostly ergonomists. They are employed all over the world in all kinds of organizations. Anything from small consultancies to large industrial cooperations. But they all have two things in common: they are all ergonomists, and they are member of a federated ergonomic association which is affiliated with the international ergonomics association. The fact that they are all registered ergonomists means that they’re probably quite involved or at least interested in what’s going on in the ergonomic world.

What is an ergonomist?

An ergonomist is somebody who practices or does research on ergonomics. Two official definitions of ergonomics can be read below.

Dictionary.com:

er·go·nom·ics (ûr'gō-nŏm'īks)
n.

The applied science of equipment design, as for the workplace, intended to maximize productivity by reducing operator fatigue and discomfort.



dictionary.cambridge.com:

Ergonomics

noun [U]

The scientific study of people and their working conditions, especially done in order to improve effectiveness.

Both definitions cover fairly the same working area. Together they form a good definition of the ergonomist.

Ergonomists can be divided into several categories. A large group of ergonomists is occupied with research only. These theoretical ergonomists create theories which others can implement. These implementing ergonomists can be categorized as practical ergonomists. They work in companies as advisor, or as designers, etcetera.

Another distinction that can be made is the one between physical and cognitive ergonomists. Physical ergonomists have physical properties, such as size, weight, as their main concern. Cognitive ergonomists however look at pure cognition properties. For example how the mind interprets specific information.

The congress participants are more researching than practical ergonomists, but both physical and cognitive ergonomists visit the congress. The ergonomists come from all over the world. This means all nationalities must be taken into account.

Ergonomist is not a protected title. Anybody who spends a little of his time on something that has anything to do with ergonomics, can call him self an ergonomist.

The ergonomic foundations have found a way to solve this problem and clarify who is really an ergonomist and who is not.

In many countries people can get certified as a registered ergonomist. In the United States for example, Certified Professional Ergonomist (CPE) is a certificate one can get when he is appropriately qualified and spends a set amount of hours a week on ergonomics. In the Netherlands and fifteen other European countries an analogous certificate and suffix is Eur.Erg. (European Ergonomist).

2.4 Web research

Based on this assignment it is interesting to take a look at one of the many and other websites where people can find or meet each other that already exist on the internet. Thousandth's of people message each other daily. It is interesting to take a closer look at some of these websites to see how they handle things.

Several websites have been examined to see how they handle interaction with their users. A closer look has been taken on the following items:

- Welcome
- Register
- Login
- Forgot password
- Profile
- Find user
- Search results

The examined websites are very diverse. All sites are written out in the table below, along with their URL and a keyword describing the site.

Site name	URL	Description
Bol	www.bol.com	online bookstore
CU2	www.cu2.nl	profile community
FOK! forum	forum.fok.nl	general forum
ICQ	people.icq.com	members directory
Hyves	www.hyves.nl	network of friends
Lexa	www.lexa.nl	dating
Hotmail	www.hotmail.com	email
MSN	members.msn.nl	members directory
PayPal	www.paypal.com	secure payment
Partyflock	www.paryflock.nl	party information
Relatieplanet	www.relatieplanet.nl	dating
Sugababes	www.sugababes.nl	profile community
TMF	www.tmf.nl	chatting

Table 1: *Researched sites*

Welcome

The welcome screen is usually the “home” of a website. This is the first page a visitor sees when he or she has entered the URL. The following items occur on the mentioned sites.

- News
- Direct login or a link to login



- Link to “contact”
- Search user function
- Navigate to main website functions (this is always possible from any screen)
- Register (sign up)
- Newest members
- “hottest” members
- Advertisements

Register

The items below are the items asked for during registration. Usually some of them are required to complete the registration, but which items are required is different from site to site.

General text fields:

- Title
- Name
- First name
- Company
- Home address
- Country
- Phone number
- Email address
- Password
- Secret question + answer
- Username
- Subtitle (short sentence after / under name when posting a message)
- Signature (under message, can contain URL, can be quite long)
- Smudged characters to type over (against robot registration, computers cannot read these characters)
- Gender
- Date of birth
- Dating: looking for man or a woman
- Dating: type of relationship
- TMF: enter received sms code (for payment and reliability)
- Homepage
- Little picture that is shown next to the name
- Profession
- Hobbies
- Current password (to allow changes)
- ICQ number
- MSN address
- Marital status

Thick boxes (yes or no):

- “Receive news letter”
- “Accept terms of use”
- “Mail me when getting personal messages”
- Information: public or not

Announcement:

- “Your IP is registered. Abuse will be reported.”
- Password security level indication: low - medium - high

Login

Required information found in the login screens.

- Email address
- Username
- Password
- Register now
- Forgot password
- Forgot email address
- Session expires or not
- Remember email address / remember email address and password
- Remember always
- Link: Trouble logging in?
- Log out (change user)

Forgot Password

All sites offer a possibility to either get you a new password, or resend your old one when your password is lost. Information in these screens:

- Enter email address
- Enter username
- Enter characters (against robots)
- Audio support for the characters
- Enter username *or* email address
- TMF: sms “PASSWORD” to and receive a new password (phone number is recognized)

Profile

The information displayed when viewing or changing one’s profile.

- Main page with links to account data / friends / etc.
- Data entered during registration

Find user

Search terms:

- Profile name
- Name
- City
- Zip code



- Country
- MSN / ICQ address
- Status (relationship / married / ...)
- Age
- Keyword
- Email address
- Range (km) to look for possible partners

Options:

- Gender
- Hetero / homo / bi
- Result per page
- Sort by ...
- “Users with picture first”
- “Users with picture only” (standard on)
- “Online users only”

Search Results

General:

- New search field above results
- “AND / OR” search option

Results per website:

- Picture, profile name, city, state, age, gender, hetero / homo / bi
- Picture, name, ICQ nr. (member ID), age, city, country, add me (to address book / contact list), “message me”, “SMS me”, homepage
- Profile name, contact options, gender, age, city, country
- Profile name, picture
- Name, age, personal message, picture, current online/offline status, time of last visit, link to profile, favorites, interests, “message me”

2.5 Competition analysis

The market of offer and demand leads to an analysis of the existing situation. Who are the competitors, what exactly do they do and how well do they do it?

When looking at the competitors, the Easy Ergonomist Finder’s function to find ergonomists is the most important one. This is the competing service that is offered. All other functions of the website are only supporting secondary functions.

Who are the direct competitors?

The direct competitors can be divided in two groups.

The first group consists of websites of national ergonomic societies. Almost all of them are federated to the IEA. The names of the members of these federated societies can be found on the website, accompanied by contact information, and



sometimes also by the name of the company they work for. Some websites have a search function or an alphabetical list to find a specific ergonomist. An example can be found at www.bcpe.org.

The second group consists of commercial websites who can be joined. Once someone joins they offer amongst other things a function to search for ergonomists. These search functions can sometimes be extensive and the search terms can be very specific. The search results however are usually very minimal. For example a name, address, telephone number and email address.

Below are two examples of the commercial websites.

- Humanscale: www.humanscale.com
- HFES directory of human factors / ergonomics consultants: www.hfes.org

What do they do?

The core business of a part of the federated societies is certification. They allow future ergonomists to get certified. To show who already is certified they offer a list of certified ergonomists on their websites. The other federated societies, those who do not certify, have as main goal to protect and serve the rights and interests of ergonomists.

The commercial websites offer members diverse things. For example publications, newsletters, bulletins, product discounts, car rental discounts, résumé postings, job search, and access to their online directories with members. The online ergonomist directory is only a small part of their businesses.

Is their business growing, steady or declining?

It is not easy to do judge the success and the business growth of the competition. There is however no reason to assume that their market is either expanding or shrinking extreme rapidly, since the ergonomic market and business is not subject to huge changes.

People are more and more realizing that ergonomics is an issue, and an increasing number of companies apply ergonomics in their working spaces. This leads to the conclusion that the entire ergonomic market is slightly but steadily growing.

It is very plausible that the federated societies as well as the commercial websites are growing along with the market.

What can be learned from the competition (their operations and advertising)?

Most websites or societies require an annual fee for membership. These fees vary from an almost symbolic amount, to hundreds of euros. From this can be not only concluded that people are willing to pay for the offered services, but also that they are very involved in ergonomics. They wish to be well-informed on ergonomics. They want to read the latest news, to see the latest products and product reviews and the upcoming ergonomic happenings.

What are their strengths and weaknesses?

Strength of some federated societies is that people must join the society to get certified. The listing follows automatically. It just comes with the package. Strength of both the federated societies and the commercial websites is that people are willing to pay for the membership, and this price can sometimes be rather high.

One of their weaknesses however, is that they do the listing of ergonomist just as a side project. The Easy Ergonomist Finder has this as its main function and can focus fully on this.

Another weakness is the price that must be paid for the membership. The fact that people are willing to do this is a strength, but the price itself is a weakness.

How does their product differ from the Easy Ergonomist Finder?

Both the federated societies and the commercial websites offer the possibility to look for ergonomists on their websites. But they differ in a couple of aspects from the Easy Ergonomist Finder.

The federated societies and the commercial websites have members in specific countries, and sometimes in areas with the same language, but they all act relatively local. The Easy Ergonomist Finder on the other hand is very global oriented. Users from all over the world are expected to register.

Both the federated societies and the commercial websites have a search function with which the user can search for an ergonomist based on user specified search terms. Details of a specific ergonomist can be requested by choosing an ergonomist from the search results. The details on these sites are very lean. They show the following information in general:

- Name
- Address + City
- Company
- Email address

The easy ergonomist finder can show a lot more information to make it a more useful tool.

All these differences are very important and should be taken into account. Every difference between the competitive websites and the Easy Ergonomist Finder can work in the advantage of the latter and contribute to its success.

2.6 SWOT analysis

To analyze the possibilities in the market a SWOT analysis is performed. A SWOT analysis is a simple model that provides a basis for marketing plans. SWOT is an abbreviation for Strengths, Weaknesses, Opportunities and Threats. This stands for what an organization can do, what it should not do and what favorable and unfavorable conditions can be expected.

Strengths and weaknesses are internal issues, opportunities and threats external.

Strengths

- ***Coming from the IEA***
The organization behind the project is the IEA. The IEA is a large and important organization with a lot of (indirect) members. When this is stated out clearly, it will make the project very convincing.
- ***Worldwide***
The IEA is globally oriented. This will make the story of the Easy Ergonomist Finder more plausible.

Weaknesses

- ***Not sure it will catch on***
There is no certainty that the Easy Ergonomist Finder will be a success.
- ***Not sure everybody will be reached***
There is no certainty that all intended people will receive an invitation to register.
- ***Not everybody will be convinced***
The amount of people who are not convinced by the idea of the Easy Ergonomist Finder can be so big that it might limit the success.

Opportunities

- ***New / renewing***
A similar system does not exist in this form.
- ***No competitors***
There are no others who are trying to reach the same goals.

Threads

- ***A lot of communities already exist***
People just might think of the Easy Ergonomist Finder as “just another community”.
- ***People are asked often to register for things***
They might be getting an aversion to always registering to do something on the internet.

2.7 Design elements

The project is split up in elements of both the online application and the congress. The different elements are explained below.

Submit information

The first step for the ergonomists using this project is filling out their personal profile on the website so that a sort of yellow pages can be created. This raises the



question: *How can the ergonomists be persuaded to submit their personal data?* This question is very important. The more ergonomists making their profile, the more of their colleagues will be inspired to do the same.

Information

Next, it is important to figure out which information about the ergonomists is interesting for other people to retrieve via the internet. The following question can be asked: *What information should the ergonomists submit?* More available information on a person can be very useful to others, but it also means that the concerned person should make sure his or her profile is up to date and that he or she is not providing someone with outdated information. Shortly, more information on a person makes it a lot more work.

Finding someone on the congress

Now there is the situation that a lot of ergonomists own an online profile in the database and that they're using the website to find other people. The intention is to let them do the same during the congress. This means that the website should be available at the congress. Either through wireless internet and the ergonomists' laptops or through internet computers made available by the congress organization, or maybe even other options. *How can the website be made available at the congress?*

Finding someone online

Once a person has found digital information about a person, he may decide he wants to meet that person, for example to discuss an ergonomic subject. It is in fact a lot more difficult to find the person in real live than it is to find that same person on the internet. This raises the question: *How can someone meet a person on the congress whose information he has found on the internet?*

Promotion on the congress

It is the intention to make sure everybody is familiar with the website before the beginning of the congress. However, there are always people who miss what's new and what's hot, and assuming that everybody already knows everything about this project would be incorrect. This project should therefore be announced and promoted at the congress, so that everybody has enough opportunity to take part in it. The question in this particular matter is: *How can this project be promoted at the congress?*

After the congress

After the congress, the website will continue to exist. But it is important for the information not to get outdated. People must update their profile a once and a while. To make sure they will the website must be interesting enough to visit. *How can the website be interesting enough to be visited regularly after the congress?*

2.8 Criteria

All the elements of the project must apply to a list of criteria. The complete list is divided into categories and can be read below.

The criteria are based on the sections earlier in this chapter. Further criteria on the situation at the congress can be found in chapter 5.

The online application

General criteria

- the website can be visited via the internet
- the website can be visited before, during and after the congress
- the website can be visited at the congress on portable devices
- people are encouraged to visit the site on regular bases before, during and after the congress
- the design has a consistent identity
- the site is visually attractive
- the site has charisma
- the site is amusing / fun / interesting / fascinating

Ergonomic criteria

- The design is well readable
- Dialogs are clear
- Navigating is easy
- Content order makes sense
- Easy to find an ergonomist
- Easy to register
- Easy to update profile

Information technical

- clear information technical structure
- support a clear database layout

content

- asking people to register
 - the request should reach everyone intended
 - the request should be convincing to register
 - the request should be reliable
 - the request should make a clear “link” to the database
 - the request should create enthusiasm
 - the request should be able to reach congress-participants as well as non-congress participants
- register
 - people can register before, during and after the congress
 - people are encouraged to register
 - registration is easy
 - the required information is easy to gather and submit
 - the required information can be published legally
 - the required information is not confidential
 - the organization can check who registered and who didn't
- search
 - users can search for other users before, during and after the congress
 - users are encouraged to do so



- update
 - people can update their profile before, during and after the congress
 - people are encouraged to update
- contact
 - People can contact other users before, during and after the congress
 - The organization can contact people who registered and those who didn't

Internet computers (computer facilities on the congress)

Functionality

- People can visit the website during the congress
- People can register / update
- People are encouraged to register / update
- Other ergonomists can be contacted

Portable solutions

- Some portable solutions are supported

The projection

- Projection method
 - The contents (or a part of) of the database can be shown
 - People get interested
- Content
 - People are encouraged to register / update



Concepts



3



Chapter 3: Concepts

The assignment is split up in several parts. These parts can be seen as separate design assignments for which a solution is found. These solutions follow from the analysis in chapter 2. This chapter contains the following sections:

- Providing information
- Information needed
- The website at the congress
- Registration / promotion at the congress
- Meeting a specific person
- After the congress
- Idea Generation
- Concept decision

3.1 Providing information

Prior to the congress, all participants receive an email in which will be explained that the Easy Ergonomist Finder will be launched during the congress. Through this email, people are aware of the existence of the website and the database. Furthermore, they know that they will be approached on the congress and requested to fill out their registration and profile information.

But how can all these ergonomists be persuaded to do so? It is important to examine the desired effects carefully. A too aggressive approach and a too mild approach might not have the wanted success. People do not want to be pushed, but are not convinced easily.

Several methods can be stated out to do this job. They cover several subjects:

- How to ask? This determines the *medium*.
- How to reach the congress participants and all other ergonomists?
- When to ask? This determines the *date / time* of asking.

The options written out below all consider the fact that the congress participants must be contacted at home or at their work, and not during the congress. At the congress they can be approached personally and / or publicly.

How to ask?

It is very important to the project organization to make sure as many people as possible are contacted to participate. First, all congress participants are contacted. Later on or maybe even simultaneously those ergonomists who do not visit the congress will be asked to register. The contact with the non-congress participants will strongly depend on the chosen method to reach people.

Reaching the congress participants is relatively easily, since their congress registration will deliver a lot of contact information. However, it is not sure whether this information will be available from the congress organization or not. If the information is available, the participants can be reached via email, mail or telephone. Non congress participants can be reached through the same media, but their contact information is not readily available.

Email

Email is a very interesting medium for this purpose, because connections with the website can easily be made through the use of hyperlinks. Email addresses are in general easily available, and most people have one.

Mail

Conventional mail might make more impression than email, since a professional composed and personally addressed letter is usually considered as a formal message. This method of contacting people has as disadvantage that it is not easy to gather the mail addresses of all ergonomists. This will probably have to go through the IEA's federated societies. This is not a very quick and easy process. The postage costs are not to be thought too light of either.

Telephone

Getting a telephone call of someone from the IEA about the Easy Ergonomist Finder is very convincing. This will persuade a lot of people to at least take a look at the website. This very personal message is probably very effective.

Calling all congress participants is considerable job. There are about fifteen hundred to two thousand of them. This is less than a quarter of all ergonomists in the world.

Contacting them would be a lot of effort and quite expensive.

Mouth-to-mouth

Mouth-to-mouth advertising can be very effective. Some people have made a lot of money with their products through this method. Real mouth-to-mouth advertising is something you can hardly influence as a company.

Mouth-to-mouth advertising is not very reliable. It depends very much on coincidence and is not fail proof.

For this purpose it is probably not a very good choice to rely on. Eventually it will happen anyway.

How to reach everybody?

As stated above, reaching the congress participants is not very difficult when their email addresses are available. Reaching the non-congress participating ergonomists individually is much more difficult. If someone would want to make a list of all registered ergonomists of the world, this should probably go through all the federal ergonomic associations joined by the IEA. This is a secure way to gather for example all email addresses, assuming that all associations will provide them. However, some inventive ways to reach people have been going around lately. In this paragraph some possibilities are considered.

Asking everybody

In this method everybody is reached simply by asking everybody to participate in the Easy Ergonomist Finder. Everybody means every ergonomist in the world. All these people receive a message in which they will be asked to participate in this program. This can go through email, fax, mail, telephone and maybe more. See earlier in this section. It is not necessary to stick to just one medium.

Congress participants

Congress participants can easily be reached since their registration will provide all their contact information. If not, their contact information will be available through the same way of the non-congress participants.

Non-congress participants

Non-congress participants can be contacted through federal associations as far as the ergonomists are registered by them. They can also be contacted in a further stadium.

Pros

- Certain that everybody is reached
- Everybody has an equal chance to register

Cons

- Difficult to get the personal data of *all* ergonomists
- Hard to persuade all federated societies to cooperate
- Very laborious to contact everyone
- Difficult to create enthusiasm

Asking gurus, then everybody

The difference between this method and “asking everybody” is that in this method prior to asking everybody, a couple of gurus are asked to participate. This will lower the barrier that must be taken to complete the registration.

In addition the gurus can ask the first ergonomists personally to register, which makes it an even greater privilege. These gurus can be participants or not.

Congress participants

Congress participants can easily be reached since their registration will provide all their contact information. Otherwise their contact information will be available through the same way of the non-congress participants.

Non-congress participants

The people they contact can be participants or not.

Non-congress participants can be contacted through federal associations as far as the ergonomists are registered by them. They can also be contacted in a further stadium.

Pros

- People are flattered when asked by a guru
- Certain that everybody is reached

Cons

- A lot of work for the organization
- Difficult finding gurus for all working areas with whom people feel affected.
- Difficult to get the personal data of *all* ergonomists
- Hard to persuade all federated societies to cooperate
- Very laborious to contact everyone

Snowballing

So-called snowballing is a technique in which a couple of future users are via email asked to register on the website. During their registration they're asked to point out what specializations they have and who they consider to be experts on those and other specializations. These experts will automatically receive an email in which they're asked to register and point out who they think are experts. This continues until everybody has registered.

Someone will be pointed out to be an expert by several people. This will produce a reliable review.

This is a knowledge based method and will provide an overview of working areas and their experts.

It is also possible not to restrict to asking who people consider to be experts, but instead ask for example who they know are working in a specific specialization and how much knowledge they have on that particular subject.

Congress participants

Congress participants can be the start of the chain, although it is not necessary to ask all of them, since they will automatically be asked if all works out well.

Non-congress participants

They should be contacted easily shortly after the start of the program, since this method does not limit itself to participants.

Pros

- An overview of specializations is automatically created
- People feel enlightened when pointed out as an expert
- Not discriminating

Cons

- Not everybody will be able to point out a guru or gurus
- People working on a wide range of subjects and not on a specific working area are easily excluded
- It can have a circular effect

Create a network of friends / colleagues

This method looks a little bit like the snowballing method. People are asked to register via email on the website, but instead of pointing out experts, they point out their ergonomic colleagues and friends. These people will receive an email in which they're asked to register and do the same. This will create an overview of who is related to whom, and whether this relationship is friendly or business.

A similar system is currently being used on Hyves (www.hyves.nl).

Congress participants

As with the snowballing method, congress participants would be a good place to start the chain.

Non-congress participants

This method does not discriminate between congress participants and non-congress participants.

Pros

- Being asked as a friend is always nice
- Analogous programs like hyves.nl and hi5.com work out pretty well
- Not discriminating

Cons

- Individual working ergonomists are easily excluded
- Groups of ergonomists can be excluded when not a single one of them is connected to someone who is already a member
- It is not clear who is an ergonomist and who is not

The one on one chain

Let some people ask someone and let that someone ask someone and so on...
Another method would be to ask a couple of ergonomists to register, and let them all ask some one new to register, and so on. The amount of people asked in the first round strongly affects the speed and effectiveness of the chain.

Congress participants

The congress participants can be asked easily for the first round, to make sure they all participate.

Non-congress participants

They can be reached through the chain as well as personally.

Pros

- Not much effort
- Orderly development

Cons

- Chain might die easily when a circle is formed or someone does not know other people.
- Chain dies when someone doesn't cooperate.

Federated societies

Another method would be to let all the federated associations connected to the IEA do the work by asking them to make sure all their members register.

Congress participants / Non-congress participants

This method does not make a distinction between participants and non-participants.

Pros

- Everyone is reached
- Not much effort for the organization

Cons

- Ergonomist not connected to a federated association are excluded
- It is not sure that all federated societies will cooperate
- The whole process might be too bureaucratic and take too long

When to ask?

This concerns the issue when people should be contacted to register. This strongly depends on the method chosen to contact the ergonomists.

The methods that require the congress-participants to be registered have several possibilities:

- March 15, early registration deadline
- At subscription
- Another set time before the congress

The methods independent from the registrants can be started at any time, as long as it is before the start of the congress giving the ergonomists enough time to register before the beginning of the congress. When working with a chain, it must be taken into calculation how long it will take to reach all participants.

Conclusion

Most reaching possibilities do not exclude each other. It might even be very desirable to use more than one method. People can be asked e.g. through colleagues and later on by federal ergonomic associations.

It might be handy to spread the start of the program over several countries to make sure the program does not limit itself to one or a couple of countries. For the concept choice see section 3.8.

3.2 Information needed

This section explains several concepts on the information needed to create a profile of an ergonomist on the website, and the advantages and disadvantages thereof.

The intention of this section is to state out which aspects must be taken into account when deciding which information is interesting enough to publish. More about this subject can be read in chapter 4: the online application.

Big, Bigger, Biggest...

Below are four concepts regarding the amount of information available on the internet in the profile of an ergonomist. All concepts contain a picture of the involved ergonomist. This makes a profile a lot more interesting and makes it “come alive”.

Small

This concept is the smallest of the four concepts. It contains very little information about someone. The idea that lies behind this is when a visitor of the website is interested in the person and triggered by his slogan, he is able to contact him. The persons email address is known by the system but not visible to the visitor of the website.

**Information:**

- First name
- Slogan
- Photo

Less information means that it is easy to keep the information up-to-date. The teaser-effect may lead people to new contacts, but the barrier may be too high to contact someone you don't know and you know nothing about.

Medium

This concept's intention is also not to provide too much information of someone. Goal of this concept is that somebody can show that he is registered in the Easy Ergonomist Finder.

Information:

- Name
- Picture
- City / country
- Specialization

Presenting more information on a website means also that it takes more effort to keep the information up-to-date. The information presented in this concept is quite static information of a person. The fact that the visitor knows where someone lives and what his specialization is ensures that he knows who he is getting in contact with.

Large

This concept publishes some personal information of a person, and his congress program. It is a mediation between the previous and the next concept.

Information:

- Name
- Picture
- City / country
- Email address
- Specialization
- Homepage
- Projects
- Company
- Congress program

"Projects" is a useful addition, and so is the homepage entry. The more information is published, the more interesting it gets to browse and read the profiles of people.



Big King XXL

The Big King XXL concept offers the owner of a profile the possibility to publish a lot of information about him. He does not have to fill it all out. This concept offers several ways to get in touch with this person, and also to look at some things he worked on or that he accomplished.

Information:

- Name
- Title
- Picture
- Gender
- Email address
- Telephone number
- Instant messaging
- Home address
- City / country
- Company
- Function
- Certification
- Specializations (areas of knowledge)
- Publications / projects
- Homepage

An advantage of this concept is that people can publish what projects they worked on and what publications they made. The fact that people can promote themselves this way makes it interesting to them to participate in the Easy Ergonomist Finder. However, this much information will probably get out-of-date soon. It is important to prevent this.

3.3 The website at the congress

People will want to visit the website at the congress. Perhaps they want to register, when they did not get to it yet. Or maybe they want to meet someone from their specialization. Maybe they did already meet someone and they want to find out more about that person. These are just a couple of reasons why it would be interesting to visit the website while at the congress. There are probably many others.

To visit the website, a computer is needed. Many participants will bring their laptops to the congress for example to work on their presentations or for email. These laptops can be used to visit the website. An internet connection and often a connection to the electricity grid is needed for this. The congress centre will offer these facilities. Electricity is rather easy, and the internet connection can be realized either by offering internet cables for use, or by offering wireless internet. The latter is the easiest method. It is good to support this with free cables for those who cannot access the wireless internet.

Maybe other equipment, such as personal digital assistants (PDA's) can be used to access the internet. Their owners will probably carry along a connector to either the wireless internet or the internet cables when support for this is not integrated in their equipment. Offering all kinds of connectors is out of the question. These are not universal and very diverse in kind.

Not everybody will be able to access the internet all the time. Even the people with a laptop, PDA, blackberry and cell phone might forget them a once and a while.

When lacking the personal equipment, the congress can offer the use of internet by setting up internet computers.

These computers can be placed arbitrarily, but this project comes up with a plan for this as well (See chapter 5).

3.4 Promotion at the congress

It is important for this project to be present at the congress. With some kind of presence this project can make its existence clear to the participants, as far as they did not already know of it and created a profile yet. When this project is given to the IEA, people will know what exactly the present is, and they will be encouraged to register or to keep their profile up-to-date and use the site as intended.

The main goal of the promotion at the congress is to make a connection between the people at the congress and the Easy Ergonomist Finder. This Goal makes it interesting to do something with the people who are already in the database.

Displaying information from the database can be done in the following ways:

- Project database information
- Print posters

Projecting is the easiest way to show the information, because a computer can read the information in the database directly and send it to a beamer to project it. The information can be read from the database in real-time. Changes are directly noticed by the computer.

Printing posters containing database information is also interesting, because the manufacturer of printers Océ is sponsor of the congress. They are present with some of their newest models. Their equipment can be used to print the posters.

More about this subject can be read in chapter 5: the congress.

3.5 Meeting a specific person

Networking is an important issue at the congress. People are constantly in conversation. Some know their conversation partners from before, others meet them at congress sessions.

For some reason, people can decide they want to meet a specific person. For example someone they spoke to earlier on the congress, someone they know from an earlier congress, or someone they found on the website. But meeting someone specific is not that easy on a congress where almost two thousand people are eating, sleeping, going to sessions, wandering around, hang out in a bar, never being too long in the same place.

Fortunately, this is not a unique problem. It occurs in more situations, and accordingly solutions are developed.

These solutions are very diverse. From Short Message Services (sms) to entire digital conferences. A lot of solutions are a little bit overdone for this problem, but very interesting solutions exist. The presence of internet can very well be used in advantage of this problem's solution, as well as the fact that many of the participants carry mobile devices.

Regarding the budget of this project, entire t-mobile sms projects are out of the question. Most existing solutions are either intended for larger applications or too laborious. Instead, people can contact others via their contact information on the website.

3.6 After the congress

This project is not to die a lonely death after the ergonomic world congress. The website with the ergonomic database will continue to exist in a similar way. New members will register after the congress, because they hear from their colleagues how useful the site is.

However, this means the website should be kept alive actively. People should continue to visit the site, and make use of all the features.

This can be accomplished depending on the contents of the site. And vice versa: the contents can be adapted in such way that people will keep visiting the site.

The contents should be so that people will return to the site for example to update their profile, to look for information and to read the latest papers written by their colleagues or competitors. People should feel affection for the website.

This all depends on several factors. The main point in this is that the content is dynamic. It changes every day.

The profiles of people change according to the updates they perform. The news section is updated automatically with help from the site(s) the news is streamed from. And the amount of users of the Easy Ergonomist Finder gets bigger every day.

The popularity will be in an upward spiral. When the ergonomists make sure that their profiles are up-to-date other ergonomists will often use the Easy Ergonomist Finder because they know it is reliable. That makes people feel obligated to keep updating their profile. And so on.

3.7 Idea generation

To get from the starting point to a wide range of entries into the design phase, ideas are generated. A brainstorming session helped with this. Six people were present in this session, all fellow students Industrial Design.

The target of the brainstorming session is to gain a lot of ideas on the following three subjects:

- The target group
- The online application
- The congress

The brainstorming session

During the session the participants stood around a table with large paper sheets on it. They speak out loud what ideas or associations they have and draw or write them out. By drawing, writing and saying the ideas the other participants can respond with new ideas or new associations.

There are several rules the session must comply with:

- There are no bad or wrong ideas.
- Try to sketch instead of writing. This works more inspiring.
- If writing, use keywords.
- Do not judge ideas of other participants but instead be inspired by them.

The session first started out with a warming up. The warming up consists a association exercise. Associations must be made to the presented words, that can be anything. Examples of these words are: sandstorm, library, sledge hammer, cheese.

The main questions of the brainstorming session to reach the set targets are the following:

- What do you think about with the word 'ergonomics'?
- How can ergonomists find each other on the congress?
- What can be put on the website? Example: ergonomics store

Results

Below are some interesting results of the brainstorming sessions. A complete list of all the results can be found in appendix A.

What do you think about with the word 'ergonomics'?

- Design for all
- Cognitive and Physic
- Buttons
- Users
- Measurements
- Understandable

How can ergonomists find each other on the congress?

- SMS
- Badges with a chip
- Special glasses

- GPS
- Wearing buttons with an ID number / color

What can be put on the website? Example: ergonomics store

- Ergonomic utopia world
- Good ergonomic designs
- Ergonomic panel
- Ergonomist of the week
- Interesting websites

These results are used to decide what kind of website would be interesting, and what things can be done on the congress.

3.8 Concept decision

The decisions in this section are based on the concept analysis in section 3.1 - 3.7.

People are being asked to participate on the congress, both by addressing them plenary and by asking them individually in the hallways on the congress. Approaching people personally will work the best. Additionally every congress participant receives an email in which they are asked to register. This can only be done if the congress registration system supports this. Emailing is the cheapest and most simple way to reach a lot of people at once.

The presence of the photographer and the meeting point from chapter 5 will also remind people to register.

To convince people to register several ergonomic gurus are approached to be in the first few registrants and act as role model. The easiest way to select gurus is by asking some of the keynote speakers. These people are often more “famous” ergonomists, at least within their specialization.

The congress committee is also asked to register early.

The registration of some well known ergonomists will encourage the other ergonomists to register. They want to be in the same system as the gurus. It is necessary to use gurus from a wide range of specializations, so that most ergonomists will have at least one guru they can identify themselves with.

From the concepts of the information that is interesting to publish in a profile, there are roughly two ways to go. The first is by publishing very little information and thereby teasing the visitors of the profile. The second is by offering the owner of the profile a lot of possibilities to promote himself. There is no need to fill all possible fields out. The profile owner can decide himself what information he wants to publish.

The second option is the way it will go. Enabling people to enter more information about them will give them the feeling that they will get useful results when they search themselves. And they will. The teasing factor can work, but will not last very long. More information also means that people can search more specific. This leads to the Bing king XXL concept.



The easiest way to find a specific person on the congress is to send him or her an email or another personal message and make an appointment. This because everybody is very busy at the congress visiting lectures.

Non congress participants through newsletters from the IEA and from federated societies. Also, mouth-to-mouth will do its job.



the online application





Chapter 4: The online application

This chapter covers the part of the project that is described as the online application. The online application is the database and its web based access over the internet.

This chapter first describes the overall idea of the online application, including the functionalities. Next a closer look is taken at the graphic user interface and how it is constructed. Then the contents of the website come into play. All mentioned aspects are then melted into a prototype which will be covered in the last section of this chapter.

Screen shots and parts thereof are used in this chapter to illustrate the application of the theory that is stated out.

- 4.1: Overall idea
- 4.2: Interface design
- 4.3: Contents
- 4.4: Prototype

4.1 Overall idea

The main function of the website is for an ergonomist to find another ergonomist of his needs or interests, or in other words, *giving face* to ergonomists.

To achieve this (and give face), an ergonomist can make an online profile of himself. This phenomenon is getting quite familiar on the internet. Websites such as Microsoft's ".NET", many websites with forums, and website where you can buy or order something, work with profiles. These profiles contain information such as email address, credit card number, shipping address and so on. A user can log in and the system automatically knows who it is dealing with.

Another advantage of logging in is that certain information can be displayed only to users who are logged in. That means that people who are not a member cannot see the information.

In case of the Easy Ergonomist Finder this means that people who are not logged in cannot see the profiles of users. This prevents people who are not looking for a colleague but for e.g. a consultant can not use the system in this unintentional manner.

The "news" section of the website is not intended as a main functionality of the online application. Its intention is to draw a user's attention. The news will be updated on regular bases. This will trigger a user to return to the site to read the new news items and eventually use the search function. At least the Easy Ergonomist Finder will be obvious and present in the mind of a user.

The front page ("home") shows the people who are remarked as gurus. People who visit the website recognize the name of their favorite ergonomist. They immediately consider registering because their favorite did.

Further the front page shows the name of the five most recent registered ergonomists. They deserve some honor too, and it encourages their friends and colleagues to register.

4.2 Interface design

This section explains the design of the interface. This is a proposal for a good design based on an ergonomic point of view.

The suggestions mentioned in this section are brought together in the prototype in section 4.5.

Menu

The menu items are the main navigating tool of the website. Most screens are also reachable through other ways though.

Menu items:

- Home
- Find ergonomists
- Profile
- News
- Register
- Support
- Contact

The menu items have some sort of ranking. The more important a menu item is, the earlier people should see it. People read from the left to the right and from the top to the bottom (except Asian script). Therefore in a horizontally oriented menu bar, the ranking is from the left to the right. In a vertically oriented menu, the ranking is from the top to the bottom.

Home is always the first item in a menu. “Find ergonomists” and “profile” are the main functions of the application. Therefore they follow directly after home in the menu bar. News is something that people might want to check regularly, which gives news a high ranking. It follows after profile. Registering happens only once, and therefore it is not a very important item, but more important than the two items after “register”. Support and contact are supporting functions of the application. If everything goes as they should go, these menu items are not necessary.



Figure 1: menu bar

Screens

The users of the database are confronted with the web based graphical user interface (GUI). The GUI communicates between the user and the web server and database. The GUI can be divided into several screens, such as the search screen.

The GUI is subdivided according to the situations below. All these situations require their own screen.



- Home
- Login
- Forgot password
- Request login data
- Register
- View / update profile
- Invite people
- Search
- Search Results
- Contact
- Support
- Congress

A lot of these screens can be entered anytime and from anywhere during the visit of the website. However, there are several “routes” a user would be likely to follow. A route can for example be like the following:

A user enters the website, logs in, searches for some one, and send an email to the person he found.

The route through the screens in this example would look like this:

- Home
- Login
- Search
- Search results
- Details of an ergonomist
- Send an email with an external program

Off courses there will always be users who do not follow an expected route. They click through the entire website looking for information. To these users, the website should be set up so that they will find their information easily. This can be performed for example by naming the buttons so that the name matches the content.

The navigation routes are visualized in the scheme in figure 2.



All the screens listed above contain GUI elements, such as text, buttons, input fields and etcetera. The GUI elements that are needed in a screen to perform its function are explained per screen in the sections below.

Home is the first screen the user of the website sees when he enters it. Therefore it contains the welcome message. “Home” is also the screen that shows up when “home” is pressed from somewhere else inside the website. The three latest headlines from the news section are displayed to create a dynamical start page. This is supported by showing the three latest registrants. To see all registered ergonomists, it is necessary to be logged in. Because searching ergonomists is the main function for someone who visits the website, the search function is also reachable from “home”.

Items contained by the “Home” screen:

- Welcome message
- What can be found and what can not be found on this website
- What can this website be used for?
- To whom is this website useful?
- Why should someone register
- Link to “search”
- Link to “register”
- Link to “login”
- Link to “contact”
- Which gurus registered?
- Who are the latest three registrants?
- Three latest news headlines

Login

This is where a user can log in to enter the secure part of the website. The login screen is displayed whenever a user who did not log in tries to enter a secure part of the website, for example the search section, or the profile section. It is also accessible from “home” and from the menu.

- Login name field
- Password field
- Link to forgot password
- Checkbox: “Remember me”
- Link to “register now”
- Link to “trouble logging in?”

Forgot password / login name

When a user forgets his password or his login name, he can request a new one here. This screen is accessible from the login screen and the support screen.

- Forgot password: Enter username or email address
- Forgot login name: Enter email address

Register

To gain access to the secured part of the website, the part with the ergonomist information, it is required to log in. To get a login name and a password, and to share personal information with other users, it is necessary to register.

- First name and last name
- Email address
- Accept terms of use

The register screen from the prototype can be seen in the figure below. Fields marked with an asterisk are required fields.



The screenshot shows the 'Easy Ergonomist Finder' website. The header includes the site name, tagline 'The worldwide online database of ergonomists', the date '15 augustus 2005', and a navigation bar with links: 'home', 'find ergonomists', 'profile', 'news', 'register', and 'support'. A login section at the top right has fields for 'username:' and 'password:' with a 'GO' button. The main content area is titled 'register' and contains a registration form with the following fields: 'First name:', 'Last name:', 'Email address:', 'password *', and 'confirm password *'. Below these is a checkbox for 'accept [terms of use](#)'. To the right of the form, an example is provided: 'example: Luigi di Mauro ldimauro@hotmail.com'. At the bottom of the form is a button labeled 'Verzoek verzenden'.

Figure 3: register

View / Update profile

Here a user can view and edit the information about himself and that he wants to share with the other users.

- Profile information (see profile information in section 4.4)
- Current password to submit changes
- Link to “invite people”

Invite people

In this screen it is possible to enter someone’s email address. This person will receive an invitation to register with the Easy Ergonomist Finder.

- Email address field

Search

The search function is a very important function of the website. This is the place to start looking for other ergonomists, based on users’ characteristics.



The search function consists of two parts: a simple search and an advanced search. The simple search searches for one or more words in all the information of all the ergonomists. In the advanced search, the search terms can be more specific.

For more information about and several screenshots of the search function, see section 4.4.

Simple search

- Search text field
- Submit button

Advanced search

- Search terms:
 - Name
 - City
 - Country
 - Specialization
 - Company
 - Function
 - Keyword (in text)
 - AND / OR search option
- Checkboxes:
 - User with picture first
 - Only with picture (standard on)
 - Online users only
- Submit button

Search results

The search results screen displays the results produced by the search function based on the user entered search terms.

- New search field above results
- Amount of results
- 20 results per page
- Displayed per result:
 - Picture
 - Name
 - City
 - Country

Profile

This screen displays all the information that is available on one specific ergonomist. More specific information on this subject is available in section 4.4.

Contact

In this screen a visitor can contact the person he found. For this he can choose from the contact media filled out by the owner of the profile. If he did not enter the contact information that specific field does not appear. This screen is linked to and accessible from someone's profile.



The following media are available:

- Email
- Telephone
- (Sms)
- Web message
- Instant Messaging (msn icq, AOL IM etcetera)

A schematic display of the contact function can be seen on the right.

Support

Support is the screen where a visitor is supposed to look when he has a problem with the site. The problems can be very diverse. The main sort of problems that occur are functional problems. For example, users who are not able to find something on the website, or who cannot log in. All three items below are hopefully not necessary. When the website functions as it is suppose to do in all aspects the users won't need any help.

- Help with this website
- Abuse report
- Bug report

The first item “Help with this website” gives help to users who have problems with logging in, searching users, forgot their password and other functional problems. It offers help in the form of a F.A.Q. (frequently asked questions).

The second item “abuse report” is present to encourage people to report it to the webmaster when for example people have offensive material in their profile. The webmaster can be informed through this function so that he can take the adequate action.

In bug report, people can report when the website is not functioning properly.

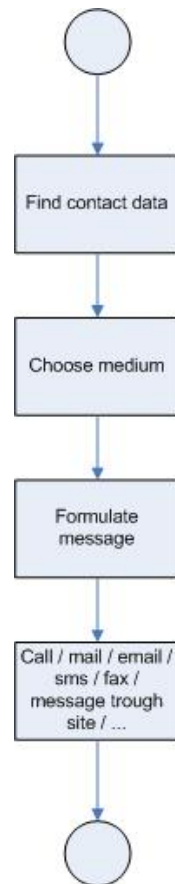


Figure 4: *contact*

News

This section of the website displays ergonomics related news. The site of “usernomics” provides an RSS feed with only ergonomics related news items. This feed can be included in the website.

The “news” section displays the headings of a news item, the first few lines, and a link to the entire article.

Encourage to visit, update, and search

People must be encouraged to visit the site and keep their profile up-to-date. Therefore they receive an email every six months with some news in it from the Easy Ergonomist Finder, and the information they entered on their profile to see if this is still correct.

It is also important to make sure there are interesting things to see when coming back. The news items contribute strongly to this. Updating the site on regular bases too.



It helps to make the domain name easy to remember and easy to write. People will have less problems to return to the site.

Layout

A good layout is important for the readability and usability of a website. The Figure below shows the main layout pattern of the Easy Ergonomist Finder website. It is based on 1024 × 768 pixels of screen resolution.

- Header: graphic material can be placed here, for example with the name in it
- Menu: the menu bar
- Content: the contents of the website
- Buttons: the buttons are at the bottom of the site, below the content
- Footer: bottom graphics

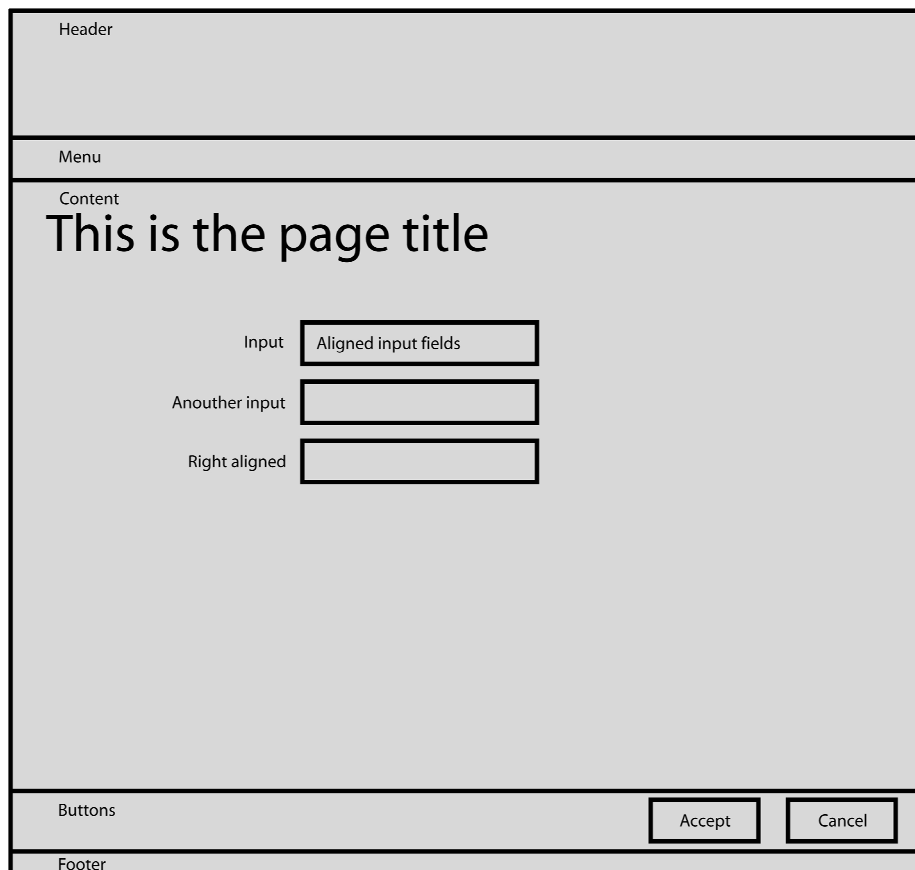


Figure 5: layout pattern



Layout demands

General demands describe the layout of the website. They can be read in the list below and comply with the layout pattern in the Figure above.

Layout / pattern

- Aligned fields and field descriptions
- Reading direction from the upper left to the lower right oriented
- Navigation on the left or top
- Buttons in a logical position
- Links are recognizable (not too much embedded though)

Contents

- Know where you are, for example by highlighting menu items
- Every page has a title
- Clear page titles and menu item names
- Clear button function
- Clear distinction between content buttons and miscellaneous buttons
- Not too much information on one screen
- Clear content arrangement
- Explain what can be expected from the website
- Adjust the contents to the target group

General tips

- Always have one radio button preselected
- Navigation options: Tab / shift + tab, alt + letter and mouse
- Check browser compatibility
- Show the name of the organization (IEA) and explain what it is so that people will understand what site they arrived to
- Show “loading...” so that people know that something is happening

4.3 Search engines

Search engines use different techniques to index websites, but they usually use spiders to “crawl” through websites and reading the information. The tips below help to end up high in search results.

- Use keywords in the domain name
- Use Metatags: META Name='Description' Content='Description, max. 200 characters', META Name='Keywords' Content='Keywords'. Metatags do not work for many engines due to abuse.
- Have other websites link to the Easy Ergonomist Finder
- All pages within the Easy Ergonomist Finder must be linked to each other in multiple ways, so the spider won't get stuck on one page
- Register with the major search engines
- Check the log files for spider and user behavior
- Use keywords in the website title

Further specifications on this subject can be found in appendix D.



4.4 Contents

This section describes and explains the actual contents of the website.

Profile information

The following information can be found on someone's profile. The items marked with an asterisk (*) are required. Other fields are optional.

To display all available information orderly all items can be divided in three categories: personal information, professional information and contact information.

- Username
- Name *
- Title
- Picture
- Slogan
- Gender
- Telephone number
- Email address *
- Home address
- City
- Country
- Publications
- Projects
- Homepage
- Company
- Function
- Certification
- Scientist versus practitioner
- Physical versus cognitive
- Allrounder versus specialist
- Specialization
- Password *
- MSN / ICQ: current online / offline

Username

A person's username is a unique ID used in combination with a password to log on to the website. It must be unique to be able to make a proper distinction between one user and another.

The username is automatically generated based on the information submitted during the registration. The username consists of the last name followed by initials. If this username already exists in the database, the initials are followed by a two-digit number. This number ascends each time a user registers with an already in the database existing combination of name and initials.



Name *

This is the last name of the user.

This field is required when registering, because the username will be based on it.

Title

When the user has a title, for example Msc (Master of sciences) it can be entered here.

Picture

This is the place where the user can upload a picture of himself. If he does not have a picture available, a photographer will be present at the congress to take one.

Slogan

A slogan is a one-liner that can for example be the user's personal motto, or a teaser towards other users.

Gender

Male or female.

Telephone number

This can be entered by a user so other users are able to contact through telephone.

Email address *

A user must enter a (working) email address here. This email address is used to confirm the registration and to send a forgotten password or username to. Because email address is one of the required fields, users can choose whether they want to have their email address published or not. If they don't publish it, it is only used for the situations mentioned above. If they do publish their email address, it is a way for other users to contact them.

The choice between publishing or not is controlled with a checkbox. This checkbox has the default value "checked", which means that the email address will automatically be published, unless the user decides explicitly not to publish his email address.

A specific email address can only be used once during registration. This to prevent users from registering twice, although most people will have more than one email address available.

Home address, city, country

This part contains the personal address data of the user. Address, city and country.

Publications

A lot of users will have publications they might want to share with other users. This can be done here. However to prevent users from publishing their entire personal library, the amount of publications is limited to five.

This maximum must be indicated in text near the “publish field”. When the maximum of five is reached, a message is displayed, telling this to the user, and the user will not be able to select anymore documents or publications.

Projects

“Projects” allows a user to enter information about projects as an example of what their work is about, and to show others what interesting things they have accomplished. For more information about the projects see further in this section.

Homepage

This field allows a user to enter the URL to his personal website, so that visitors can find out more about him.

Company

Company name and URL. This gives a visitor information about the company the user works for.

Function

Function, title, or whatever is used within the company to distinguish jobs.

Certification

In a lot of countries is possible to certify as ergonomist. These certifications can be entered in this field. For more information about certifications, see section 2.3.

Slider



Figure 6: *slider*

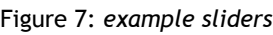
A slider is a horizontally oriented scale like a ruler. It has an indicator which can be controlled by the user by dragging it from the left to the right and back.

Scientist versus practitioner

A rough distinction can be made whether a person is more occupied with the research aspects of ergonomics, or more with the application. The former would make him a scientist, and the latter a practitioner.

This distinction is not very exact and objective. All forms between these two can occur. To indicate this on the profile, the *slider* is introduced.

This slider on someone's profile shows for what percentage an ergonomist is occupied with what. A user can indicate how he sees himself. An example can be seen in the figure below.



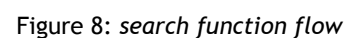
Similar to the distinction between ergonomic scientists and ergonomic practitioners, a distinction can be made between physical oriented and cognitive oriented ergonomists. A second slider on the profile page indicates where an ergonomists sees himself between these two.

Another slider is implemented to indicate whether someone is a specialist whose expertise is one specific subject, or more allround, occupied with diverse subjects but more superficial.

A user can tell here what ergonomic business he is involved in. The list with possible specializations is based on the paper keywords of the congress.

For the complete list of specializations, see appendix B.

When a user enters his password in the password fields, the display shows asterisks instead of the typed characters. This to ensure a user's privacy. A user can not be sure if he typed his password correctly. Therefore he must enter his password





twice. If there is an inconsistency between the two the system will ask to try it again.

Instant messaging: MSN / ICQ / AIM

This part covers the information to contact a person through instant messaging. Instant messaging programs are programs such as MSN, ICQ and AIM. These programs require its user to log in. Then appears the user's *contact list*. The contact list contains people who he added to his list.

These contacts can be reached via instant messaging. You can type a message to a contact and directly send it to him. The contact can respond to this, which leads to a typed conversation.

To create a new contact a user has to now the username of the person. This part of someone's profile displays the IM username, as well the type of IM program and symbol which indicates whether a user is online or offline at the moment.

Search

The search function's intention is to let the user find someone of his interest. The route a user follows when using the search function is visualized in figure 8.

Simple search

When the "find ergonomists" button is pressed, the simple search field appears. This enables the user to enter a search term. The search engine searches for this term in all the fields. Next, the search results are displayed.



The screenshot shows the homepage of 'Easy Ergonomist Finder', described as 'The worldwide online database of ergonomists'. The date '15 augustus 2005' is displayed. A navigation bar includes links for 'home', 'find ergonomists', 'profile', 'news', 'register', and 'support'. A login section has fields for 'username:' and 'password:' with a 'GO' button. The main content area is titled 'Search' and features a text input field labeled 'Enter keyword:' and a button labeled 'Verzoek verzenden'. Below the search area, a link for 'advanced search' is provided.

Figure 8: *simple search*

Advanced search

When the simple search gives too many results or is for another reason not satisfying, it is possible to switch to the advanced search. This enables the user to specify his search terms. It is possible to use one or more of the specific search fields.

The search fields:

- Name
- City (place of residence)
- Country
- Specialization
- Function
- Company
- Keyword

This makes the search a lot narrower, and this will give usually less results. Always using the advanced search would require more effort from the user. He will be more annoyed because of the narrow results.

A screenshot of the advanced search can be seen below.

The screenshot shows the 'Easy Ergonomist Finder' website. The header includes the title 'Easy Ergonomist Finder' and the subtitle 'The worldwide online database of ergonomists'. Below this, the date '15 augustus 2005' is displayed. A navigation bar contains links: 'home', 'find ergonomists', 'profile', 'news', 'register', and 'support'. A login section on the right has fields for 'username:' and 'password:' with a 'GO' button. The main content area is titled 'Advanced search' and contains several input fields: 'Name:', 'City:', 'Country:', 'Specialization:', 'Function:', 'Company:', and 'Keyword:'. To the right of the 'Keyword:' field are radio buttons for 'AND' (selected) and 'OR'. A 'Verzoek verzenden' button is located below the input fields. At the bottom of the search area, there is a link for 'Simple search'.

Figure 9: *advanced search*

The results

The search engine can check all fields of the ergonomists' personal profiles for matches with the search terms. The results are categorized to which field matches. Hence, the search results screen displays the results grouped based on the field the search term was found in.

The search results are displayed as a list of people. Each listed person contains the following information from his profile:

- Name
- Picture
- City
- Country

An example of the search results from the prototype can be seen in the figure below.



Figure 10: search results

Projects

In this part of the profile a user can enter information about projects he worked on. By showing two of his most interesting projects a user can tell a lot about what kind of work he does.

To prevent users from filling the entire database with information about *everything* they did, the information people can enter about their projects is strictly regulated. There is a project blueprint in which they can fill out their information.

Users can enter a maximum amount of 2000 characters including spaces. This corresponds with approximately 300 to 400 words. Counting words is easier to cheat with, since a user can leave out spaces, or replace them with dots for example.

The text can be supported with maximum two pictures or illustrations. These pictures and illustrations must be in jpeg, gif or png format with a maximum of 300 kb.

The blueprint gives the following text setup:

- Problem



- Approach
- Results

In “problem” a user can explain what the project’s problem was and how it was broken down. The project approach can be explained under “approach”. The outcome of the project in “results”.

4.5 Prototype

To illustrate all the theories and ideas in this report, a prototype has been build. The prototype functions as an example of what the website *could* look like. Its goals were examining the different aspects of the website, its goals now are illustration only.

The prototype can be found at the following internet address:

<http://portfolio.utwente.nl/student/goedheers/IEA/index.php?nav=home&login=0>

The prototype can also be found on the CD-Rom that comes with this report. Since the website was written in php, it is necessary to use a php server to view the prototype. The URL above has one. When using the CD-Rom, read the instructions carefully. They can be found in the “instructions.txt” on the CD-Rom.

It is possible to view the written website code with any text editor or php editor. Remember that is copyrighted though.

A screenshot of the prototype can be seen on the next page and on several places in this report as illustrations.



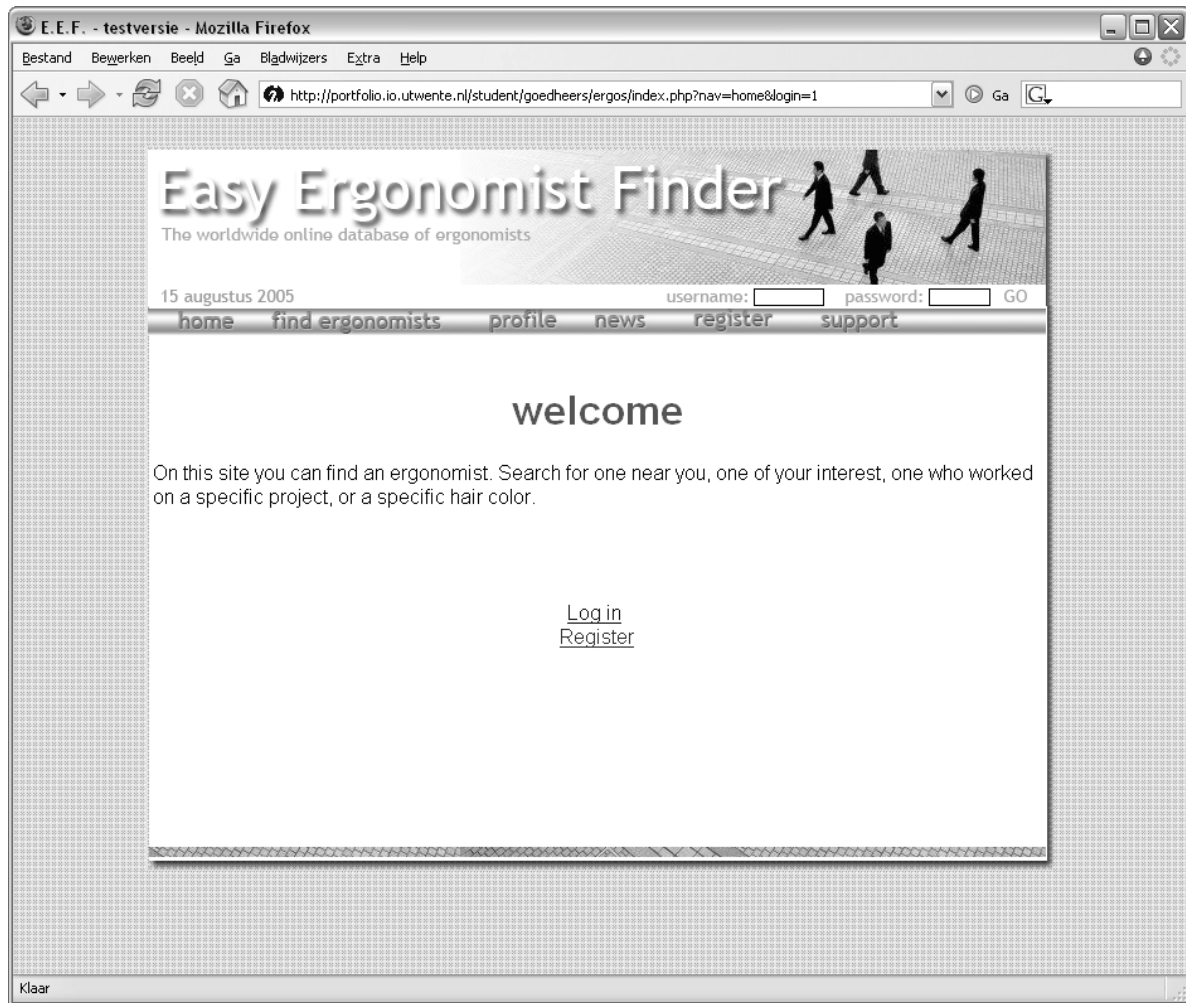


Figure 11: *prototype*

the congress ☐☐☐☐☐



Chapter 5: The congress

As mentioned in chapter 1, the 2006 congress is the 50th anniversary congress. For this reason the official launch of the Easy Ergonomist Finder will take place at the congress. To make all congress visitors aware of the launch and the existence of the Easy Ergonomist Finder some promoting activities will take place at the congress.

The intention of these activities is to inform that the application exists, and to encourage people to visit the website and register.

To achieve these purposes, three elements can be found on the congress:

- Projection
- Projection control
- Meeting point

These elements are situated in the “trajectum” of the congress centre in Maastricht (MECC), see the Figure below.

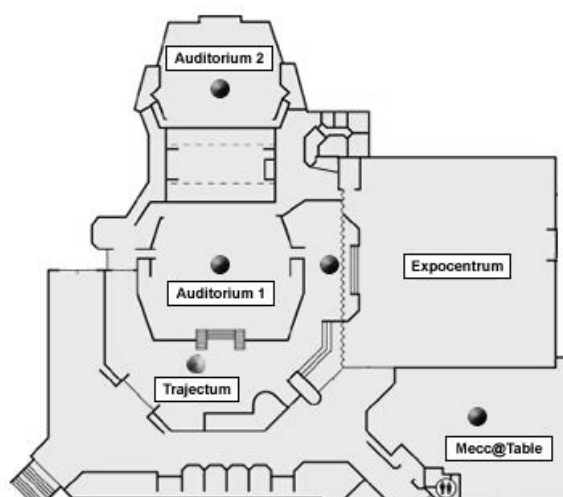


Figure 12: map of the Maastricht Congress Centre (MECC)

5.1 Projection

Information from the database is projected on a large screen. The projected information is based on slides that contain parts of the profiles from ergonomists. Not all information of people is interesting enough to project, and not all information can be published. For example, someone's hobbies are not interesting to other people, and a project will probably contain too much text to project.



The information that is interesting is listed below.

- Picture
- Name
- Slogan
- Country / city

This information of a person is presented as a slideshow. Every 15 seconds appears a new slide with the information of a different person. During the fifteen second display time of a slide the showed information is static.

The transitions can be controlled by everyone that passes by. For more information on this see 5.2 Interaction.

5.2 Interaction

A projection can be very interesting when your mind is focused to it. In the chaotic situation of the trajectum of the congress centre in Maastricht, people will be very easily distracted from the projection.

To support the projection and get a more attention to it, people must be attended to it. Therefore interaction is established between the people and the projection. This gets extra attention to the project, and makes the projection more interesting.

The interaction is established by letting the congress participants control the projection. The information displayed on the screen is quite static. The slideshow doesn't allow the user to control the contents of the slide, but it can let the user have control of the transitions between the slides.

This must be:

- fun to do
- memorizable
- entertaining

The transitions

The transition in a slideshow in its most standard show is a straight "cut". Many other options are available though. The transitions can be anything, from characters walking over the screen to weed growing all over the place, or a character can appear and push the present slide away to make space for the next one.

The control

The fact that the transitions can be controlled by someone who is interested to do so means that some kind of input device is required. This input device's value is more fun than that the actual input is useful. The main task of the input device is to challenge its user to try it and see what happens. Furthermore it must enable the user to control the slide show by activating one of the transition possibilities. Optional it can give the user feedback about which transition he activated.



The controller must comply with the following demands:

- Attract people with its looks (“eyecatching”)
- Challenge people to try it
- Make a connection to the projection
- Be easy to make
- Not too expensive to make

Several possibilities are developed for the transition controlling input device:

- Telephone
- Joystick
- Switchbox

Some ideas that did not make it to the concept phase can be found in appendix C.

Control Concepts

Telephone

The telephone idea consists of a large “old-school” telephone that looks like the one in Figure 13. The dimensions of the bottom plane are about 2 meters square, to give an indication of its size. The twelve buttons can be pressed, and control the transitions. Each button has a category of five transitions. For example, button one has five possible transitions with animated characters in it, and button two has five transitions with falling objects.



Figure 13: Old telephone

Joystick

The joystick is named after the well known computer controller. It is an average looking joystick that controls the transitions with directions it is moved in. For example “up” results in a different transition than “down”. Transitions that are more complex or for other reasons more interesting have more complicated directional controls. For example, up up down right. The controls and their transitions can be read on a poster.

This is not a very ergonomic way of controlling, and therefore some ergonomists will be challenged by the unergonomic control to try it. A large version makes it even more interesting.

Switchbox

The switchbox idea comes from the way they used to connect telephone lines. An operated physically connected two lines using a wire. The switchbox has many plugs, wires and sockets. When changing one of the wires by pulling it out or plugging it in the transition will change.

All plugs, wires and sockets will challenge people to use the switchbox, since people have the habit of touching things because they can touch it.

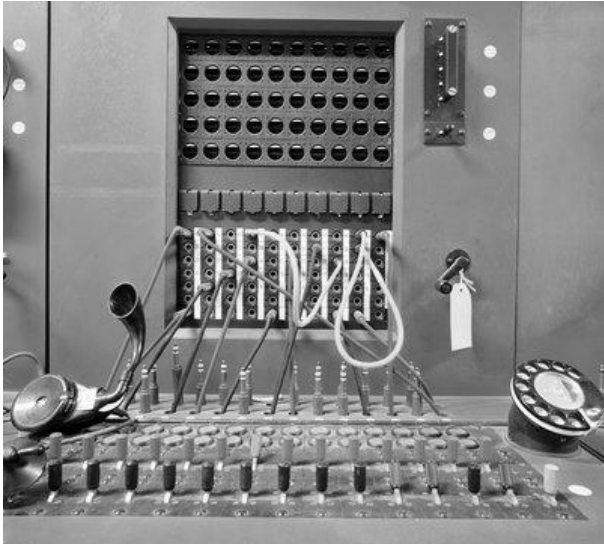


Figure 14: *switchbox*

An example of a switchbox can be seen in the figure above.

Choice

All three concepts would be very interesting at the congress. However the telephone concept has two big advantages over the other two. It fits more directly in the “contact theme”, and it probably keeps the attention of the ergonomist the longest.

The telephone is also less scary to try out and touch.
For these reasons the telephone concept wins.

The buttons

The telephone is equipped with 12 buttons that can be pressed to control the transitions. These buttons are ergonomically strange or just don't make really sense as a button on a telephone, to attract the ergonomists and to encourage them to push one. Some examples of the buttons can be seen below.



Figure 15: *badly readable button*



Don't Push!

Figure 16: *contradictive button*



Figure17: *unusual button*



Figure 18: *unsuspected button*



5.3 Meeting point

A meeting point is a good way to express the general congress theme “meeting diversity in ergonomics”. A meeting point is the place you can use in an appointment to find someone. On the other side a meeting point with this theme would be good when it gets strangers in contact. It is also the place where you can sit down and relax.

At or near the meeting point a photographer is present to take pictures of people. People can use these pictures in their profiles if they have no picture themselves.

The meeting point in these concepts also fulfils the role of a place where people can just sit, talk and relax.

The meeting point consists of several elements:

- Couches / sitting units
- Connection points for portable devices
- The projection screen
- The projection controller
- Internet computers

This brings up the following **demands / wishes**:

- People can arrange an appointment on this place
- People can find each other when an appointment is made
- People can “accidentally” meet someone
- People can use their laptop or PDA to access the internet
- People can use an internet computer
- People can just chill and talk
- The projection can be seen
- Interaction with the projection is possible
- People are visible / recognizable for other people who pass by

Based on these elements, demands and wishes, two meeting point concepts are created. These concepts and their advantages and disadvantages are written out below.

Several drawings of other ideas can be found in appendix C.

Concept 1: Contact

“Giving face” means that people know who they are talking to, that they know their colleagues, and that they extend their contact list.

This concept is based on the “giving face” theme. This theme insinuates a new connection between ergonomists. It must be stimulated to make these fresh connections. This happens in the “contact” concept. An artist impression can be found in the Figure below.

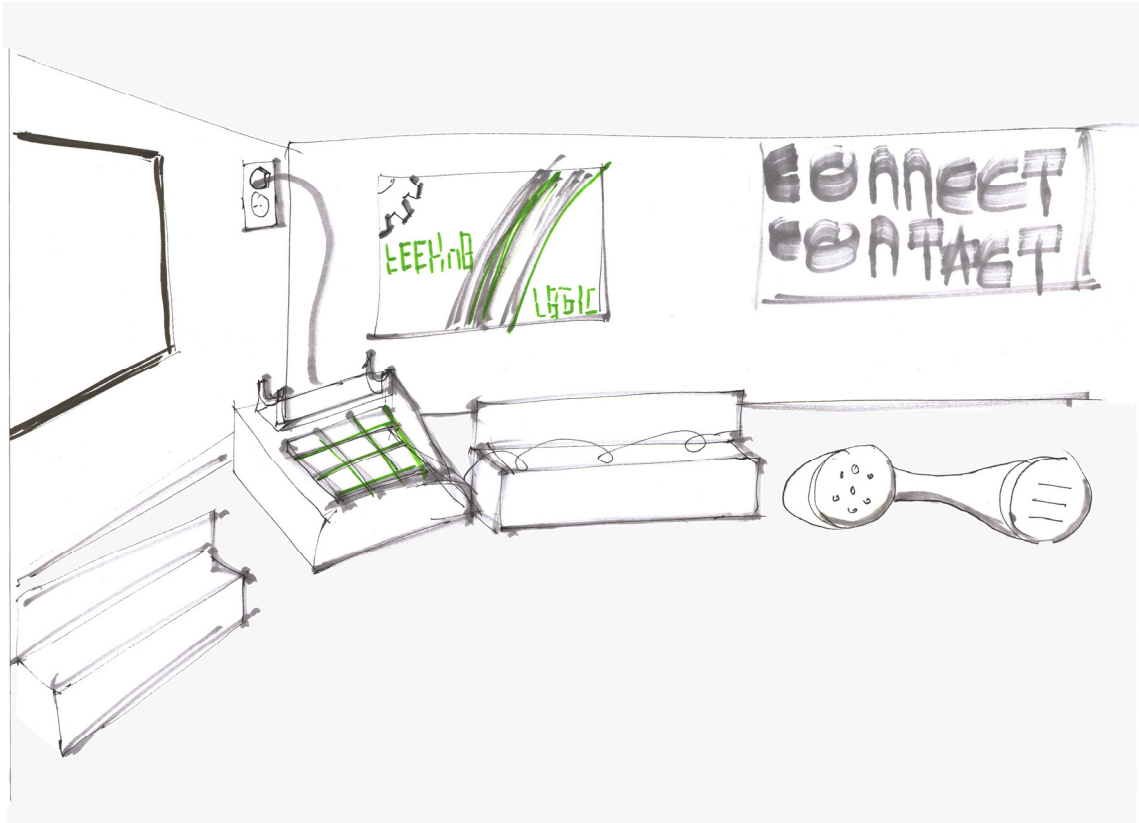


Figure 19: *artist impression of the contact concept*

The contact concept has a tech-look. The looks of the couches fit in this theme but their setup makes it feel not too “distant”. The tech-look is supported in the paintings on the walls, whose images are related to “contact”. The meeting point offers the possibility to use laptops. Internet cables are available on or near the couches.

Pros

- A clear theme of itself
- Clear connection to the website

Cons

- Not clear what the occasion is
- Not directly related to ergonomics

Concept 2: Party Place

This concept’s name “Party Place” is based on the theme Anniversary, which refers to the IEA’s 50th anniversary. The meeting point looks like an anniversary party. See the artist impression in the Figure below.



Figure 20: artist impression of the party concept

There are couches in a setup so that people can have conversations in an informal way. For the people using laptops and other portable devices, there are party tables at a standing working height with connection points for power and internet. The meeting point is decorated with balloons, paintings a disco ball and colored lighting. Happy music encourages the party feeling. Coziness is the keyword.

Pros:

- Clear link to the IEA
- Interesting “props”

Cons:

- Not a clear link to the website
- Not related to ergonomics



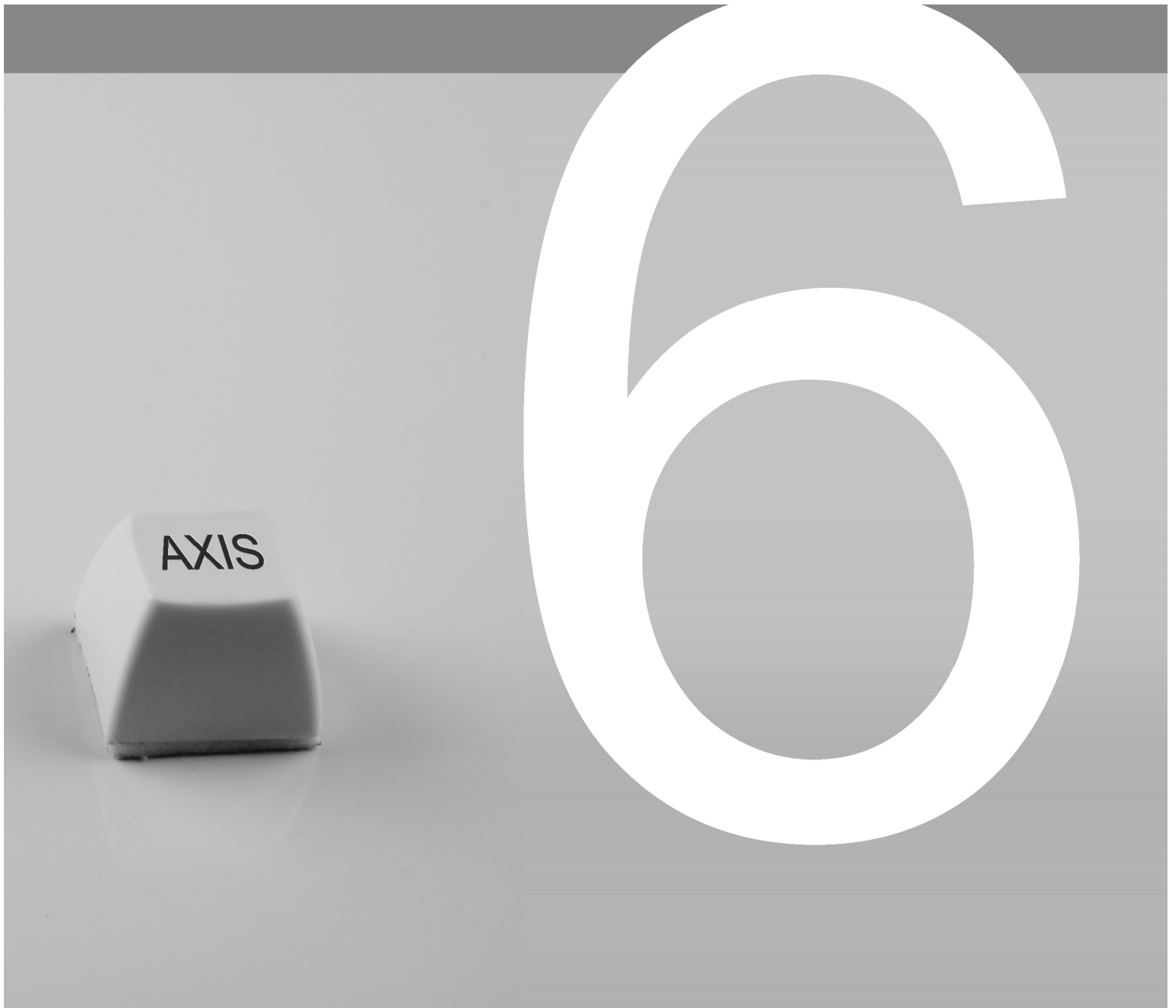
5.4 Concept choice

Concept 1 “Contact” and concept 2 “Party Place” both suit the meeting point targets. Concept 1 has one big advantage: it is merely a promotion of the Easy Ergonomist Finder, whereas concept 2 is a promotion of the IEA in general. All people at the congress at least heard of the IEA since they organize the congress. The Easy Ergonomist Finder is relatively unknown and therefore deserves the promotion.

The “Contact” concept is the preferred concept.



the axis
datacloud





Chapter 6: The axis datacloud

During the writing of this report negotiations are going on between the IEA and Axis Media Ontwerpers. Axis claims to have developed an application called "datacloud" that will suit the needs of the IEA. This chapter explains all about the Axis datacloud in the following sections:

- About Axis
- The datacloud
- The datacloud and the IEA
- Conclusions

6.1 About Axis

Axis Media Ontwerpers is a "creative design agency for effective communication". An example of their recent work is the project: "Enschede: kleur de stad". At the moment of writing this report they have been asked for a solution for the Easy Ergonomist Finder. Their suggested solution is written out in this chapter.

6.2 The datacloud

The Axis datacloud is a MacroMedia flash based online application to visualize network structures. It is divided in several categories, for example persons, companies and projects. In the IEA case this could be completed with specializations. One specific person, company, specialization or project is centered. Clicking on it reveals the information available on this subject. The application show lines connected to the centered object. These lines represent relations and lead to the other categories grouped in the corners of the screen.

Hence, the entire screen shows:

- Information on a specific person, company, specialization or project
- Other persons, companies, specializations and projects who have any kind of relation with the subject above
- The type of relation

See Figure 21 for an example of the application of the Datacloud on www.triangle.nl. Click on "enter datacloud" to enter it.





Every advantage has its disadvantage. That goes up for this case too, there are some doubts with the use of the Axis datacloud:

- How does it function with large amounts of users? That is ten thousand or more
- How does it function with 2000+ companies?
- Is it really a low maintenance product? Can the system function without much external help?

The last issue is point of discussion. At this point it seems that users will not be able to enter information directly into the database and that they are not able to alter the information stored about them in the database, but that a webmaster has to do this on the user's request. This will be a lot of work when the amount of ergonomists is growing. The IEA will have to employ someone to do this. Another problem with this is that when someone requests a change of his data, it will probably take several days until the change has been made.

6.4 Conclusions

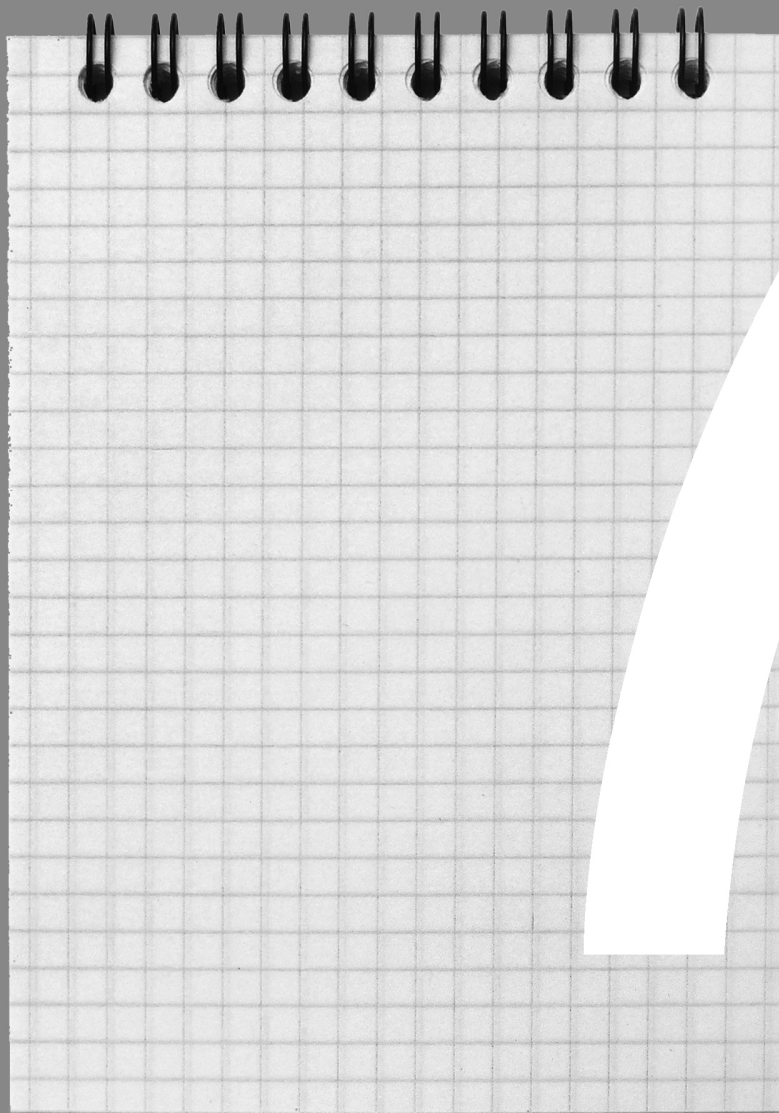
At this point it looks like people will not be able to alter the information in the database, but this feature might be implemented. When people are able to alter the database information directly, the only doubt with the datacloud would be how it handles large amounts of people, companies, projects and specializations. This issue can be rationally considered. Either it will work or it won't.

When people are unable to alter their information in the database, the situation is quite different. It will cost the IEA probably a lot of work and / or money to maintain the database. Especially to do this so that users will not have to wait too long before the changes happen.

In this situation considering other options might be a good idea and is therefore recommended. Other options will probably not have the nice features as the datacloud does, but their advantages can overrule this lack of features.



conclusions ☐☐☐☐☐☐☐ and recommendations





Chapter 7: Conclusions and recommendations

This reports reads the research for an website for ergonomists complemented by an introduction at the ergonomic world congress.

Conclusions

The goal definition of this research is as follows:

goal definition

The goal of this assignment is to design a main idea and an interface concept for an online application, with design guidelines for optional offline components, by analyzing the criteria from the involved parties and generating ideas and concepts based on these criteria and based on creativity.

In this chapter the important results are summarized and conclusions are drawn.

Question 1: *What criteria are relevant for the design of the application?*

It appears that a lot of criteria are relevant to this project, and they can be divided in criteria for the online application, and criteria for the situation on the congress.

Important for the online application are especially the ergonomic criteria and the criteria regarding the contents of the application.

Question 2: *Which design will fulfill these criteria?*

- The online application:
The online application is a website of which the main targets are:
 1. Ergonomists can register and enter information about them
 2. Ergonomists can search for ergonomists of their interest

People are asked to register on the congress plenary (for example during the introduction) , personally, and by email. Several “gurus” register prior to the other ergonomists to set an example. Ergonomists can enter a lot of information about themselves, including projects they worked on and publications they made. People who do not visit the congress will receive an email and can be invited by ergonomists who did already register. The website continues to exist after the congress and should grow steadily.

Important considerations regarding the interface of the website can be read in chapter four. The prototype can be viewed on the CD-Rom that comes with this project.

- At the congress:
 - The congress is equipped with a meeting point where people can meet each other by appointment or by accident. It is also a place where they can relax and they can work on their laptops.
 - Interesting information from ergonomist’s profiles is shown as a slideshow on a large screen to remind people of the website’s existence.
 - Buttons control the transition between the slides to make it extra interesting and to encourage people to register.



Recommendations

Before starting with the execution of the project based on the project report you are now reading, it is important to keep in mind that there are some aspects that should be taken a closer look at.

Testing

It is recommended to test the interface in a usability test. The interface is a big issue in this project, and its appearance can strongly influence the success of the projects. Especially since the target group consists entirely of ergonomists with a professional opinion about interfaces.

The best way of testing is by doing it so that it will show possible technical flaws in the interface *and* in the database.

Refine specializations

The specializations currently showed in the profiles are based on the keywords of the congress' abstracts. It might be useful to consider another arrangement with a division between expertise specializations and product / system specializations.

International research

It is not certain how ergonomist in other countries, especially countries outside the western culture, will respond to this project. Are they willing to cooperate? Maybe some adaptations have to be made to ensure their enthusiasm.

Another thing that is different from the Netherlands in other countries is how someone's privacy is handled. It is known that for example France is stricter on privacy, and not all data can easily be published.

The first profiles

It is advised to let the congress committee fill out their profiles first, as an example and inspiration to the following people. Next, some other people can be asked to fulfill the role of guru. These people can be some of the keynote speakers of the congress.

Additional features

An addition that can be made to the application is a contact list feature in which a user can have a list of friends, colleagues and other people who he wants to be able to make contact with more often. It is also possible to indicate when one of these contacts has renewed his profile. The contact list can function as an address book.

The Datacloud

It is not sure how the Axis Datacloud will function with large amounts of people and companies in it. It is also not sure whether it will be able or not to let people change their own files directly. Another point of research.

After the congress

It is recommended that, when the website is launched and the congress has passed, the development of the Easy Ergonomist Finder is not put to an end. It is important



to check if the application is being used as intended, and if there are no unnecessary functions, or strong needs for new functions.

Finally

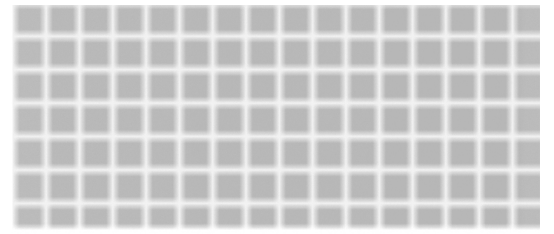
When the aspects explained above are taken into consideration, the Easy Ergonomist Finder can be a great success.



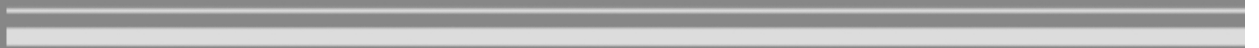
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appendices



ABCD



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Appendix A: Brainstorm results

This appendix gives an overview of all the outcomes from the brainstorming session. More about the brainstorming session can be read in chapter 2.

What do you think about with “ergonomics”?

- Multitasking
- UT Project O
- Relations / sizes
- NEN
- VI-design
- Design for all
- Cognitive en physical
- Aids
- Chairs
- Buttons
- Kittz
- Users
- Logical steps
- Sizes
- Accessible
- Restrictions
- Interface
- Disabled people
- Elderly
- Understandable
- Friendly
- Packaging
- User oriented
- Pictograms
- Life cycle proof

How can ergonomists find each other on the congress?

- Ergo-hyves
- Sms
- Clip-on number
- Color codes
- Badges with chip
- Communication → computer, cell phone, badge
- Voting
- PPMD
- Solve problems together
- Eye catcher (Tokyo - London)
- GPS
- Special glasses
- Sms ticker
- Names through speakers
- Give everybody a PDA
- Project on a large screen

- Direction pointers to the different specializations
- Meeting points
- Terrace on the plaza
- Route: follow the arrows on the plaza

Incidental meetings

- Create strange situations
- Different corners

What can be put on the site?

- Design for all
- Links to ergonomic sites
- Design for the disabled
- Ergo-utopia
- Panels with elderly
- observe
- Complain about products etcetera
- Usability tests
- “Good” products
- Kittz / design innovation price
- Ergonomic awareness
- An ergonomical cup of coffee
- Good ergonomic designs

- Ergo-babe
- Ergo up-to-date
- News
- Database
- Store
- Ergo games
- Panels with elderly
- Publications
- Ergo-doctor
- online panel
- most famous ergonomists
- ergonomist of the week
- ask questions
- Forum
- Interests / hobbies
- wikipedia / ergopedia

Personal part

- Name
- address
- telephone number
- details
- Company
- Publications
- email / www
- Picture
- Specialization
- Résumé
- Projects
- interests / hobbies
- Looking / not looking
- site history

Miscellaneous

- Something bad (in an ergonomic way)
- Give out tickets with a name → find the person
- Digital map
- Wall with telephone numbers, no names
- Scan your pass
- Find the mistakes
- Gotcha → Find some one



Appendix B: Specializations

All the specializations possible for the ergonomists' profile are listed below. They are based on the keywords that are given to the papers of the congress. More about specializations can be read in chapter 3.

Specializations

- activity theory
- aging
- anthropometry
- ASEAN
- auditory ergonomics
- biomechanics
- building and construction
- business
- CCTV
- children
- collaborative work
- cognition
- communication
- computer input devices
- control room
- CSCW
- cultural diversity
- design for all
- digital human modeling
- economics
- effectiveness of interventions on MSD
- EMG (electro myogram)
- equipment design
- ergonomic work analysis & training
- FEES
- general
- hand tools
- hand ergonomics
- health care ergonomics
- human computer interaction
- human error
- human modeling
- human and seat modeling for seating comfort
- IDC
- inclusive design
- industrial inspection
- information design
- information technology
- interactive session
- investigative designer
- logistics
- management

manufacturing
manual materials handling
MMH
mental work load
methods
multi media
neuroscience
noise control
ODAM
office innovation & health
participatory ergonomics
patient safety
personnel oriented simulation
physical aspects
physiology
picture images
primary industries
production system
product comfort
product design
psychology
psychophysiology
rehabilitation ergonomics
reliability
research in design
risk assessment method for MSD
safety communications
safety & well being at work
SIG3
systematic structural activity theory (SSAT)
slip
trip and falls
smart transport
software
sports
stress
temperature
training
TQM
thermo regulation
thermal adaptation
universal design
upper extremity disorders
usability / user participation
vehicle ergonomics
virtual reality
warnings
EAR
working hours
workplace health promotion
Work related Musculoskeletal Disorders
Wearable

Another way to specify the specializations is to split them up so that people have a system / product specialization and an expertise specialization. The complete list of these specializations looks like the one below.

System/Product Specializations:

Chemicals/Materials Processing
Command & Control
Communications
Computers
Consumer Products
Customer Services
Energy Generation/Distribution
Facilities & Architecture
Furniture
Industrial Vehicles
Information Display
Information/Management Systems
Law Enforcement
Manufacturing & Quality Assurance
Materials Handling
Medical Systems/Devices
Professional Expertise
Space Exploration
Training/Instructional Systems
Transportation-Automotive
Transportation-Aviation
Transportation-Rail
Transportation-Ships
Virtual Environments/Simulation
Weapon Systems

Expertise Specializations:

Accidents/Errors/Risks
Anthropometry/Biomechanics
Attention/Perception
Controls/Data Entry Devices
Crew/Team/Organizational Performance
Decision Making
Disabilities/Aging
Environmental Factors/Stresses
Evaluation of Products/Systems
Forensics
HCI
Health & Safety
Information Display
Information Processing
Job/Task Analysis
Job/Task Analysis & Design
Manual Control

Mental Models
Performance
Personnel Testing
Process Control & Automation
Rehabilitation
Detection/Classification
Speech Recognition/Processing
Systems
Warnings & Labels
Workload



Appendix C: Ideas for the congress

This appendix contains all the ideas for the congress. More about this can be read in chapter 5.

General ideas

- Build a board entirely filled with switches and wire connections and etcetera. These connections can be changed by the ergonomists. Changes will respond in a different ergonomist projection.
- Something that must be made more ergonomically
- Something very un-ergonomical.
- A very large keyboard controlling the projection (maybe walk over it)
- Spin a globe → something happens
- Single armed bandit
- Something with pictograms
- Barbecue
- Toilet
- Electric plug(s)
- Something enormous
- Two tin cans with a wire in-between
- Something with hands
- Something with music
- Coffee
- Meeting point

Appendix D: Search Engine search methods

Search engines use a lot of different techniques to index websites. In this appendix can be read what search engine uses what methods and how that can be taken into account. This appendix is based on the website *Search Engine Watch*.

Crawling	Yes	No	Notes
Deep crawl	AllTheWeb, Google, Inktomi	AltaVista, Teoma	
Frames Support	All	n/a	
robots.txt	All	n/a	
Meta Robots Tag	All	n/a	
Paid Inclusion	All but...	Google	
Full Body Text	All	n/a	Some stop words may not be indexed
Stop Words	AltaVista, Inktomi, Google	FAST	Teoma unknown
Meta Description	All provide some support, but AltaVista, AllTheWeb and Teoma make most use of the tag		
Meta Keywords	Inktomi, Teoma	AllTheWeb, AltaVista, Google	Teoma support is "unofficial"
ALT text	AltaVista, Google, Teoma	AllTheWeb, Inktomi	
Comments	Inktomi	Others	

Deep Crawl

All crawlers will find pages to add to their web page indexes, even if those pages have never been submitted to them. However, some crawlers are better than others. This section of the chart shows which search engines are likely to do a "deep crawl" and gather many pages from your web site, even if these pages were never submitted. In general, the larger a search engine's index is, the more likely it will list many pages per site.

Frames Support

This shows which search engines can follow frame links. Those that can't will probably miss listing much of a site. However, even for those that do, having individual frame links indexed can pose problem.

robots.txt

The robots.txt file is a means for webmasters to keep search engines out of their sites.

Meta Robots Tag

This is a special meta tag that allows site owners to specify that a page shouldn't be indexed.

Paid Inclusion

Shows whether a search engine offers a program where you can pay to be guaranteed that your pages will be included in its index. This is NOT the same as paid placement, which guarantees a particular position in relation to a particular search term.

Full Body Text

All of the major search engines say they index the full visible body text of a page, though some will not index stop words or exclude copy deemed to be spam (explained further below). Google generally does not index past the first 101K of long HTML pages.

Stop Words

Some search engines either leave out words when they index a page or may not search for these words during a query. These stop words are excluded as a way to save storage space or to speed searches.

Meta Description

All the major crawlers support the meta description tag, to some degree. The ones actually named on the chart are very consistent. If you have a meta description tag on your pages, you'll most likely see the content used in some way.

Meta Keywords

Shows which search engines support the meta keywords tags.

ALT Text / Comments

This shows which search engines index ALT text associated with images or text in comment tags.