Sven Bakker

3connect

An effective and easy way to collaborate, share and communicate within 3form.

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"To simplify complications is the first essential of success."

-George Earle Buckle

3CONNECT

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Project:	3connect
Autor:	Sven Bakker
Studentnumber:	1576554
Institute:	HU University of Applied Sciences Utrecht (Bachelor)
Program:	Communication and Mediadesign
First Supervisor:	T. S. Waardenburg
Second Supervisor:	D. van 't Hof
Company:	3form Europe
Coördinator 3form:	Romain Laisne

3form Europe
's-Gravelandseweg 246
3125 BK Schiedam
(088) 336 76 00
www.3form.eu

Hogeschool Utrecht
Padualaan 99
3584 CH Utrecht
(088) 481 82 83
www.hu.nl

> "Confusion and clutter are the failure of design, not the attributes of information."

-Edward Tufte

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> **"We do not see things as they are. We see things as we are."**
>
> -from the Talmud

ACKNOWLEDGEMENTS

This document is the result of four months of research, conversations, conceptualizing, creating, testing and modifying at 3form Europe. With this document as result I hope to have made a valuable contribution to the internal communication, collaboration and file sharing within 3form Europe.

I am grateful to everyone who had helped or inspired me during the period of my graduation internship. Especially I want to thank Romain Laisné for his support as a company supervisor. The experience and insight of Romain helped me very well during this internship.

Sven Bakker

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ABSTRACT

About 3form
3form Europe (part of the Hunter Douglas Group) is an independent establishment of 3form located in Schiedam, The Netherlands. This location, office and factory, provides all sales-support and production for Europe and Africa.

3form Europe has 55 employees. The employees of 3form are divided into seven departments; Externals Sales, Sales Support, Production, IT, Marketing, Architectual Support and HR. The largest and most important departments within 3form Europe are Externals Sales, Sales Support and Production. These departments are responsible for the sale and production of the 3form products. 80% of the 3form employees are working at one of these departments.

Research
According to James Robertson of Step Two design, intranets are the internal web-based environments that provide staff with the tools and information they need to do their job. The current intranet of 3form Europe, originally meant for this purpose, is currently rarely used and no longer maintained. The 3form staff is using other solutions as alternatives of the intranet that are not effective. The research question of this thesis is therefore

"*What is a proper solution for the 3form staff to communicate, share and collaborate effective and easy with each other, on desktop computers and tablets, within the company?*"

To answer this question desk research and field research are used to answer this question. Contextual interviews with the 3form staff, shadowing and customer journey mapping is used to get information about the current solutions and the needs and expectations of the 3form staff. Different Staff members of all department are interviewed. Desk research and an interview with a expert are applied to gain insights of alternative solutions and to choose the best alternative. The use of different methods such as iterative design and usability testing ensure the best configuration and design of the chosen solution.

Current solutions
Many solutions used by the 3form employees provide similar services. E-mail is the most used solution to share files at this moment. Next to e-mail, USB Flash Drive, Online file transfer and networldrives are used to share file. There is no clear procedure or structure about sharing files provided by the company. The 3form staff chooses for solutions that are easy for them and consume the least amount of time. The two network drive makes that are used within the 3form office do not make it easier for the staff to share the most used files.

Needs and expectations
The main requirements for the 3form staff are to access and find files easy from tablet and desktop. Easy managing and controlling these files is also a requirement. The existing functionalities of the current intranet; news and photos, are important also needs. Minor needs are the appealing of the new solution, involvement of all departments and less passwords to access all solutions for communications, sharing and collaboration.

Alternatives and solution
Although there are main alternatives solutions for communication sharing and collaboration, only three solutions come close to the the needs of the 3form staff; Intranet + Cloud Storage, Google Apps for Business and Microsoft Office 365. Research and testing shows however that a traditional intranet combined with cloud is the best solution to satisfy the 3form staff and fulfill their needs compared to the other alternatives. An important factor here is the ability to adjust the solution on the long term.

New intranet + Dropbox
The new solution, 3connect, is a custom intranet that consists; Files, News, Contact Directory, Event Photos, Links and Birthday's. The existing 'My 3form', a online tool for the sales is also integrated in the new intranet. The final and most recent files are available on the intranet. The installation of Dropbox on the server allows the users to access these files using Dropbox. The files can also be updated and maintained using Dropbox. The files in the Dropbox folder on the server listed on the intranet through a PHP listing script. In this way the same files are available from a smartphone, tablet, personal computer via Mac Finder or Windows Explorer and the intranet on a 'private' or 'foreign' computer. There is always easy access to the files and the files are very easy to renew and update by employees without technical knowledge.

INTRODUCTION

"*Chaotic, unprofessional and not inviting to use.*" is something you don't want to hear about your intranet as a company. Unfortunately this is the case at 3form Europe. The employees are not satisfied with the current intranet and they would rather not use it. However, this is does not only apply to 3form. Worldwide, one out of three workers are dissatisfied with the intranet of the company they work for.[1] Those who have experience using na intranet can confirm this beyond a doubt.

"*Intranets are the internal web-based environments that provide staff with the tools and information they need to do their job.*"[2] according to James Robertson of Step Two design.But what makes a good intranet? A good intranet works well for the user, is useful for the users and delivers business benefits.[3] But is an intranet is the only solution that can offer these conditions? Is a intranet really necessary? An intranet is just one of the many solutions that can help a worker in his daily work. "What employees need is solutions that help them to be productive and engaged in their daily work, helping them to achieve their goals and the purpose and objectives they share with everyone else working in the same enterprise."[4] This thesis examines the right solutions for the employees of 3form Europe.

Problem statement, goals and key research questions

3form Europe is a international company with 55 employees. Located in Schiedam, The Netherlands, 3form designs and manufactures unique materials and solutions for architecture and design. These products are manufactured in Schiedam and sold all over Europe and Asia (by 3form sellers in these continents).

The current intranet of 3form Europe, originally meant for internal communication, file sharing and easy and effective collaboration between colleagues, is currently rarely used and no longer maintained. The employees of 3form now use other solutions to communicate, share and collaborate easier. Although these solutions seem to be sufficient, it might not be effective. The 3form Europe management would like a new intranet to make communication, sharing and collaborate within the company more effective. But after the failure of the current intranet, the question is whether an intranet, in the traditional meaning of the word, is the right solution.

The goals of this project are to uncover the needs and expectations of the 3form staff, find and a proper solution to communicate, share and collaborate within the company, configure or design this solution and evaluate it with the 3form staff. The research question of this thesis is therefore:

"*What is a proper solution for the 3form staff to communicate, share and collaborate effective and easy with each other, on desktop computers and tablets, within the company?*"

This question will be answered using the following sub-questions:

- What are the strengths and weaknesses of the current solutions that the 3form staff is using within the company and how are these solutions used?

- What are the needs and expectations of the 3form staff to communicate, share and collaborate within the company?

- What are alternative solutions that fit the needs of the 3form staff?

- What is a proper solution and how does it need to be configured and designed?

Although improving the internal communication is not a new development, there is no pattern, directive or theory that provides 'the' solution. Every company is unique and unique solutions are therefore required. Understanding of the employees needs, however, is considered as an important starting point.[5] Some suggest to design new solutions for new employees.[6] New employees are never used to current solutions and therefore are ideally to give an unbiased opinion about the new solutions. Others are wondering why free tools such as LinkedIn, Facebook, Dropbox and Google Drive are not used as solutions, because most users have become accustomed to digital collaboration.[7] But reports of the best intranets of 2013 shows that 70% of the best intranets use an extensive customized version of SharePoint.[8]

Structure

The first chapter contains an introduction to 3form Europe and an internal analysis based on the 7s model[9] of McKinsey. Chapter Two describes the research questions and the methods used to answer the research questions. The reasoning of applying these methods are also described in this chapter. The results of the research are expound in the third chapter. Each section answers one sub-question. The last section of this chapter covers the solution, and the configuration and design of this solution. The fourth and final chapter, contains an epilogue.

Examination document

The competences 'depicting and implementing' (and 'conceptualising' of the All Star Excellent program) are selected for the evaluation of this thesis.

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[1] Nielsen Norman Group, 2013, p.6
[2] Robertson, 2007, p.13
[3] Robertson, 2007, p.17
[4] Berg, 2013
[5] James Robertson, 2007, p.33
[6] Van Leemput, 2013
[7] Driessen, 2013
[8] Nielsen Norman, 2013
[9] Rood, 2001, p.29-32

1. CASE STUDY BACKGROUND

Introduction
This chapter provides a general description of 3form Europe. Next to this, the structure of the organization and main departments of the company are discussed. The culture of the 3form organization will be covered last.

1.1 Introduction to 3form Europe
In 2002 Ray Goodson in Salt Lake City, USA, founded 3form. 3form created a vision to develop design driven materials with an unyielding commitment to environmental responsibility. After 5 years, in 2007, 3form became part of the Hunter Douglas Group[10], world market leader in window coverings and a major manufacturer of architectural products. The Hunter Douglas Group went on with the brand 3form and opened new operational centers in Europe and Asia.

At this moment 3form is the leading manufacturer of sustainable building materials and architectural hardware solutions for the architecture and design industry. The option, for the buyer, to compile their own product is one of the key features of the 3form core products[11].

3form Europe
3form Europe[12] is an independent establishment of 3form located in Schiedam, The Netherlands. This location, office and factory, provides all sales-support and production for Europe and Africa.

1.2 Internal analysis
The internal analysis of 3form Europe is discussed in this chapter, based on the McKinsey[13] 7S model[14]. This model consists of seven factors, Strategy, Structure, Systems, Staff, Shared Values, Skills and Style. These factors can be divided into two groups: hard factors and soft factors. The hard factors are easier to identify and to change, compared to the soft factors. Hard factors are things you can devise and execute, such as creating a strategic plan, organizational charting, formal processes and develop and deploy communication systems. Soft factors are difficult to grasp and therefore more difficult to affect. The soft factors are particularly related to the company culture. These are things that only can be influenced and can not be imposed. However, these soft factors are equally important as the hard factors.[15]

HARD FACTORS	SOFT FACTORS
Strategy	Shared values
Structure	Style
System	Skills
	Staff

[10] www.hunterdouglasgroup.com
[11] www.3form.nl, 2013
[12] www.3form.eu
[13] www.mckinsey.com
[14] Rood, 2001, p.29-32
[15] Ibidem

VARIA™

One of the 3form core products is Varia™. For this product the color, pattern, texture and finishing of the material can be chosen by the buyer. The interlayer can also be selected by choice. A new collection is present every year consisting new finishes interlayers and material colors.

The product can be formed into any desired shape during production. Although the possibilities of usage are endless, Varia™ is still used the most for panels, doors and partitions.

Example of custom Varia™ panel

| Pattern | Layer 1
Varia™ | Interlayer
Bamboo seleeves | Layer 2
Varia™ |
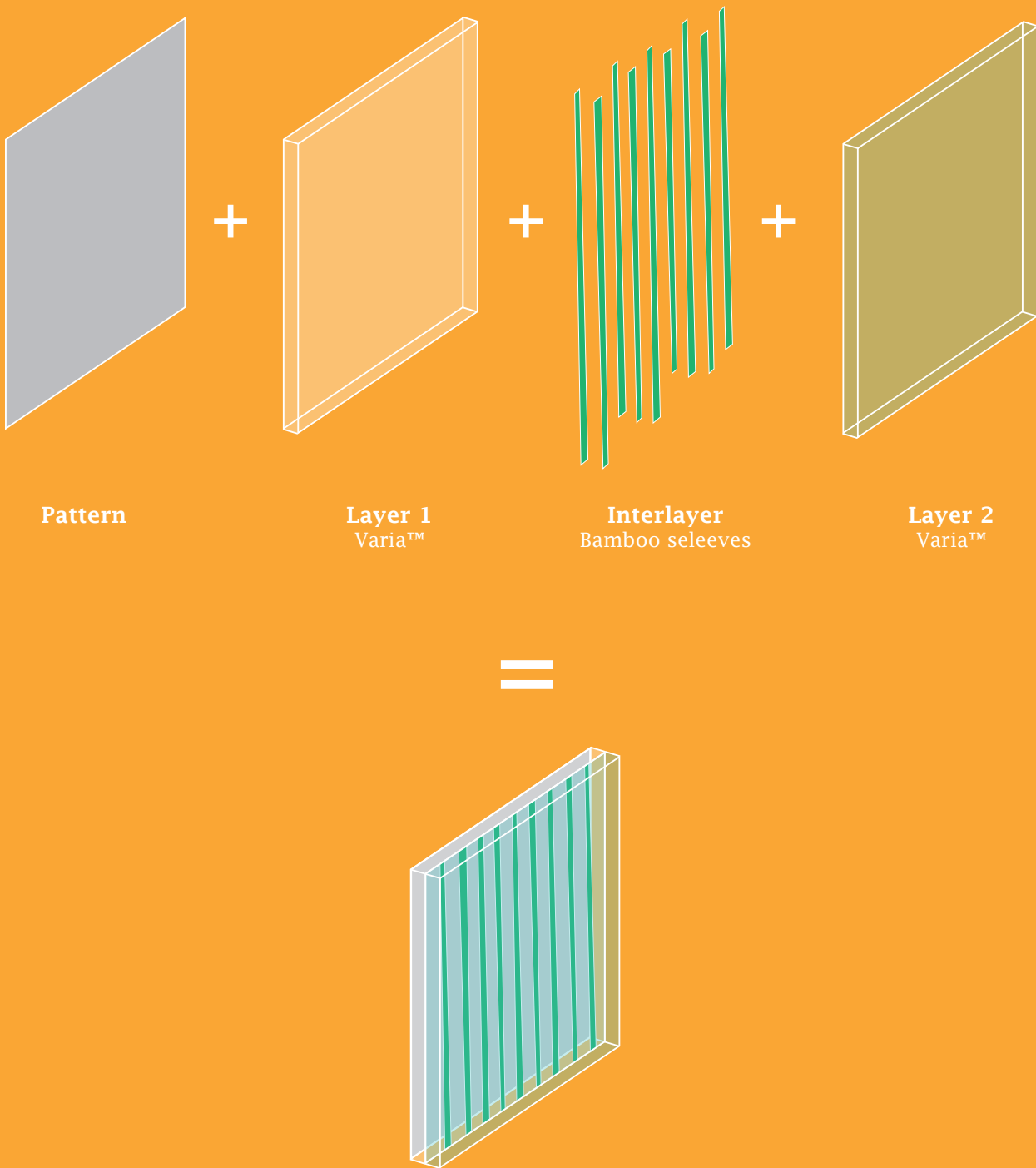
1.2.1 Strategy

The main goal of 3form Europe is providing solutions for inspiring and sustainable environments. This is also reflected in the mission statement of the company: "*3form will be known by Architects and Designers as the unconventional brand that offers cutting edge design solutions, produced with sustainable materials in a responsible manner, by honest people that thrive on individual ability and creativity.*". The upcoming year 3form will focus more on simple solutions instead of custom made solutions. 'Customized solutions' are usually 'expensive solutions'. In the current time of recession 3form will also focus on companies that have less to spend.

1.2.2 Structure

3form Europe has 55 employees. The employees of 3form are divided into seven departments; Externals Sales, Sales Support, Production, IT, Marketing, Architectual Support and HR. All departments are managed by a supervisor. The largest and most important departments within 3form Europe are Externals Sales, Sales Support and Production. These departments are responsible for the sale and production of the 3form products. 80% of the 3form employees are working at one of these departments.

Hierarchy

The staff of each department report to their supervisor (see organizational chart). The supervisors report to the general manager.

Location

Sales Support, Production, IT, Marketing, Architectual Support and HR departments are working at the 3form office in Schiedam, The Netherlands. The External Sales employees are located all over Europe at various locations. The office in Schiedam has two floors. The Production department, factory and canteen are located on the first floor. The other departments; Sales Support, Marketing, Architectural Support, HR and ICT are located on the second floor.

External Sales

The most important job of the members of the external sales staff is -obviously- to sell the 3form products. Closing the deals. The members of the external sales staff are stationed, and living, in various countries in Europe and work from their home. From there they visit potential customers (e.g contractors and architects), and existing customers, to provide information about the possibilities and application of new and existing 3form products. Each external sales staff member represents 3form in his (large) area. For example, there are three external sales staff members in France, each with his own area. The external sales staff members spent therefore much of their time traveling, by car or public transport. Three days a week the external sales staff members are off to potential clients and customers. The other two day they work from home processing orders, discussing orders with sales support and making new appointments. Every week they consult with the management in Schiedam through conference calls.

Sales Support

At the 3form office in Schiedam the sales support staff are supporting the external sales staff by making quotes or figuring out complex questions. The sales support staff is also busy with answering questions from clients, settlement of orders and making orders ready for production. The sales support staff is always working at the office in Schiedam.

MCKINSEY 7S MODEL
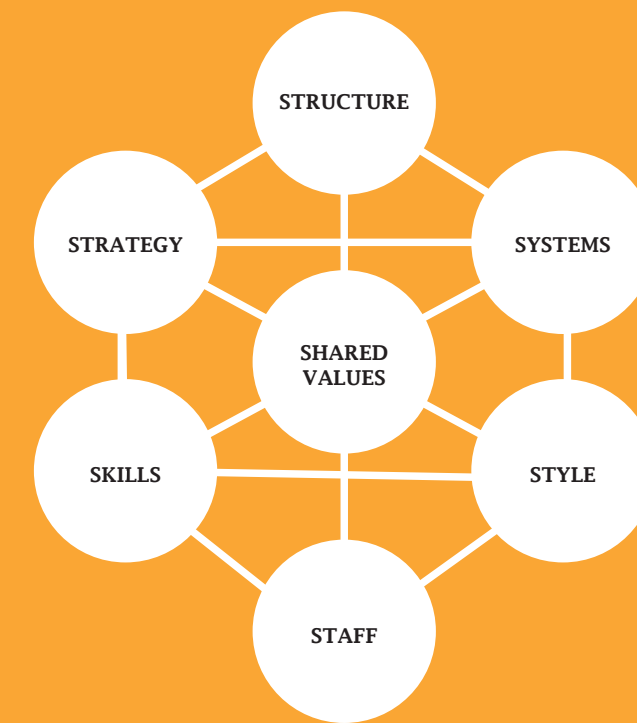
3FORM ORGANIZATIONAL CHART
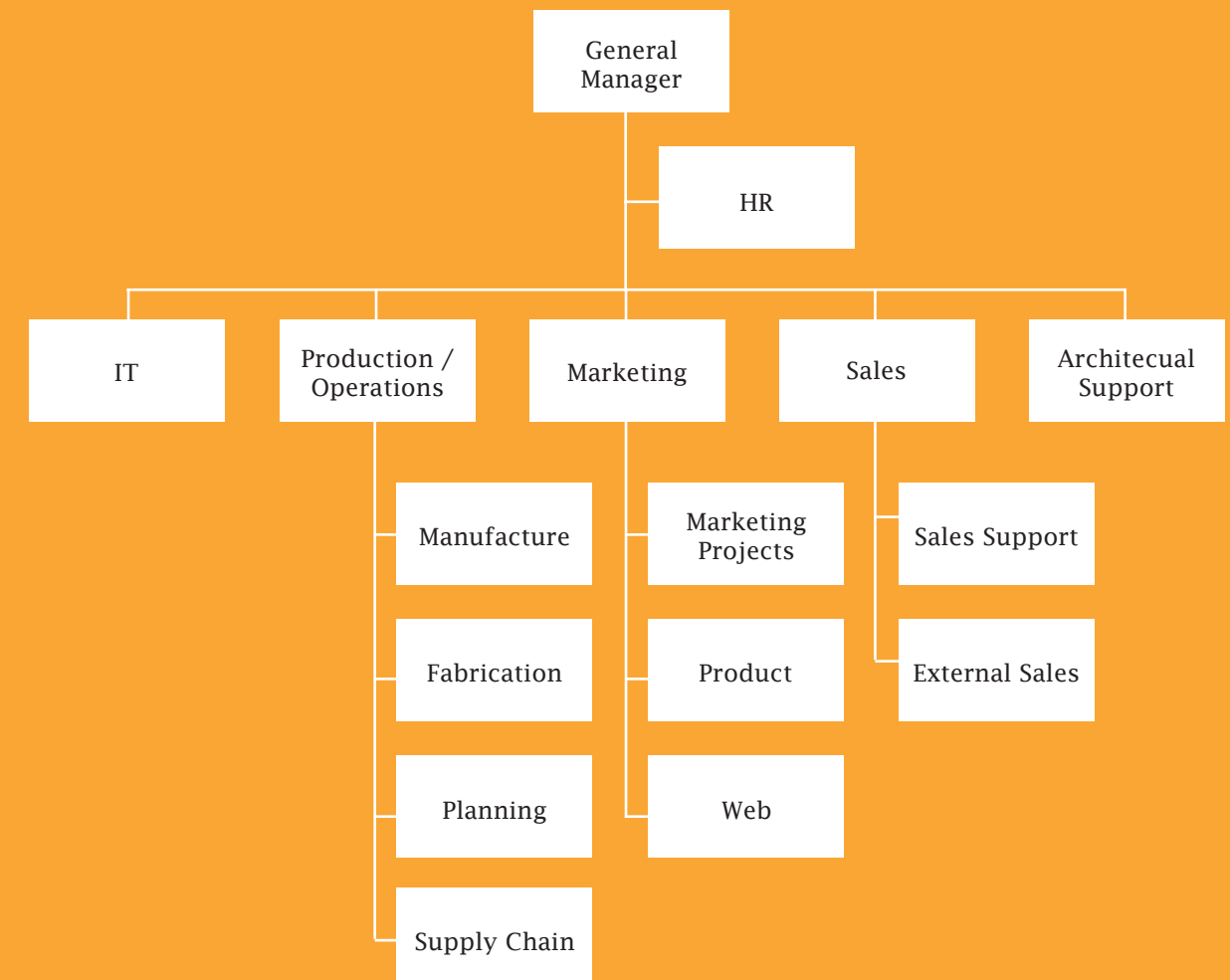
Production

On the ground floor of the office building in Schiedam the production department is stationed. Most of the orders are manufactured, checked and send from here. Some 3form products cannot be manufactured in Schiedam and are ordered from 3form USA. The production staff members have little contact with the office staff. Only for special orders or problems they consult with the office staff.

Management/Supervisors

The management is supervising the external sales staff and production staff. At the moment of writing there is no manager for sales support. The management also ensures also the delivery of the right and up-to-date information, such as new price lists and technical documentation, for all departments. This is very important because the employees need to inform the customers correctly about product use and the current products prices.

HR (1 Employee)

The HR staff is responsible for the recruiting, selection, and rewarding of employees, but also for the staff policy, absence and the preparation and determination of work schedules. The 3form HR staff is supported by the HR department of parent company Hunter Douglas.

IT (1 Employee)

The IT staff is responsible for the technical support of the 3form staff. The IT department works close together with the ICT department of Hunter Douglas. Next to technical support the IT department also works on new software and web tools for the 3form staff, for example, to automate processes, for planning and quoting, within 3form.

Marketing (5 Employees)

The Marketing staff is mainly concerned with the the production of brochures, flyers, newsletters and the maintenance of the website. Visitors of the website, who ask for more information about the 3form products (also called leads) are linked to the External Sales staff member in their region. This seem simple but is very a important job. Leads are very important for the External Sales staff.

1.2.3 Systems

The most commonly used systems for internal and external communication and collaboration are; phone, e-mail, network storage, USB flash drives, WeTransfer, whiteboards, TeamViewer and the intranet. Although there are no agreements or rules for it, phonecalls, both internal and external, are only made in urgent cases or if a complicated explanation is needed. For file-sharing, e-mail, network drive, USB, WeTransfer and the intranet are used. There are no rules or agreements about file-sharing, employees choose the solution that suits each situation best.
One of the most important systems to share and store files is the network drive, connected to the server. 3form Europe makes use of two different servers; the 'Hunter Douglas server' and the '3form server'.

The Hunter Douglas and 3form server

As mentioned previously, 3form is a part of the Hunter Douglas Group. When setting up 3form Europe in 2007, the Hunter Douglas Group played a major role. The computers and servers needed to set up this independent branch of 3form in Schiedam were purchased by Hunter Douglas. The server and computers (licensed

GENERAL NUMBERS ABOUT THE 3FORM EMPLOYEES

	EXTERNAL SALES	SALES SUPPORT	PRODUCTION	MANAGEMENT
EMPLOYEES	17	12	16	7
AVERAGE TIME IN SERVICE OF 3FORM	3 Years	2 Years	3 Years	4 Years
AVERAGE AGE (19)	44 Years	36 Years	45 Years	48 Years
WORK IN OFFICE	40% Quote, Email, Phonecalls	100% Quotes, Customer Support, External Sales Support	100% Production, Material preparation, Planning, Transport	60% Coördination of (External) Sales, Meetings, Product design
WORK OUTSIDE	60% Vistion Architects, Product presentations, Traveling, Email	–	–	40% Coördination of External Sales, Work from home
COLLABORATE WITH	Sales Support, Other External Sales, Product Management, Technical Support, IT	External Sales, Technical Support, Planning, Product Management	Production Staff, Supervisors	Supervisors, External Sales, Management
WORKING WITH A COMPUTER	30%	85%	10%	30%

by Hunter Douglas) are also managed by the IT department of Hunter Douglas. This means that 3form Europe cannot regulate all things themselves. E.g. registering a new user, resetting passwords, changes in the server etc. is done by the IT department of Hunter Douglas.

The IT department of 3form Europe has to contact the IT department of Hunter Douglas for these changes with and are dependent on them for this changes. This does not only take time but often feels as an extra step that causes delay. Another disadvantage is that the server and computers that are licensed by the Hunter Douglas Group are also managed under the IT Policy of Hunter Douglas. This policy brings" some consequences for the 3form IT department. Certain software is not allowed on the Hunter Douglas computers for example. This is sometimes experienced as a limitation because 3form Europe is a young company that is often experimenting with new methods, techniques and programs.

Although depending on the Hunter Douglas IT department is sometimes experienced as annoying, there are also a number of benefits. When the 3form IT personal is absent -which is only one person- the IT department of Hunter Douglas -that is much bigger- is always there to help. Registering a new user, resetting passwords etc. is still possible when the 3form IT employee is sick or has a day off. The 3form IT can also contact the Hunter Douglas IT department if there are IT problems that require more knowledge.

Despite these benefits, 3form purchased their own server in 2010. This server is used next to the Hunter Douglas server. Computers purchased by 3form are connected to this server. Users of these computers have more freedom because they are not bound by the policies of Hunter Douglas. The server also provides more freedom to experiment with new projects for the IT staff, without being dependent of the IT department of the Hunter Douglas Group. This 3form server is the first step towards technical and IT independence from the Hunter Douglas Group. To create an e-mail address for a new user or doing major changes to the Hunter Douglas server 3form still needs to contact the IT department of Hunter Douglas.

3form strives to be more and more independent of Hunter Douglas concerning technology and ICT. In the future there will be more computers purchased by 3form and connected to the 3form server. However, this development does not have a high priority.

These solutions are regularly discussed to figure out where bottlenecks are and what can be improved. In the past two years a lot of improvements are made by the IT department. 3form has also recently changed from PC and Windows to Apple and MacOS as hardware and operating systems.

1.2.4 Staff
The ratio of men and women within 3form is roughly equal. The production department staff, in the factory, are mostly men. At the office and at the external sales staff, these ratios are equal.

3form uses the same collective agreement and salary scales as their mother company Hunter Douglas.
There is a general bonus plan for all employees, which is a determined percentage of the sales volume and is paid out when business goals are achieved. Personal

bonuses are also applied, during the evaluation interview, which is one time a year. This bonus is determined based on the achievement of the personal goals. After the interview new goals are set for the upcoming year. New employees are recruited by Hunter Douglas, who uses headhunter companies to fill management positions.

1.2.5 Shared Values
Organisational culture
The best way to describe the culture of an organization is based on the various expressions of this culture. "*Expressions of culture are symbols, heroes and rituals. They refer to patterns of values and principles which are rooted much deeper than symbols, heroes and rituals and shape the heart of the organisational culture.*" [16]

Symbols
Both inside and outside the office, employees of 3form present themselves in neat but casual clothing. Suits and ties are seldom worn at the office. Casual clothings are accepted by everyone. The sales staff, who represent 3form, are always wearing neat clothes, but rarely wear a suit and tie. The difference in hierarchy is, however, reflected in the size and decorations of the rooms. But there are no reserved parking spots for the management staff.

Another symbol within 3form is the extreme care granted to products, samples, packaging and brochures. A professional and solid performance.

Heroes or Anti Heroes
3form Europe has no specific heroes or anti heroes.

Rituals
A habit within 3form Europe is that the production and office employees do not lunch at the same time. The production staff lunches at half past twelve while the office employees lunch later. This is not an obligation but a habit. A possible reason for this is the difference in nationalities. The staff in the office are, next to some Dutch staff members, from France, England and Italy. The employees who are not from The Netherlands speak insufficient Dutch to communicate with the production staff who usually do not speak English. Some (Dutch) office employees choose therefore to have lunch with the factory staff at half past twelve. Productivity is more important than presence. This can be seen in the 'working from home' policy. The employees who can do their work from home (e.g. IT and Marketing department) do this regularly. New 3form staff members always get an introduction and training. In the introduction, the evolution of 3form and the origin of parent company Hunter Douglas is explained. The training is divided into a product training and IT training. Even if the job of the new staff members has nothing to do with the 3form products, they are required to attend this training.

Values and principles
Entrepreneurship and openness are highly valued inside 3form Europe. These two terms are therefore part of the five core values of 3form. The little attention that has been given to the look and feel of the 3form building is one of the first things to notice when arriving. This reflects that the priority of 3form is not to enrich themselves. This is also reflected inside the building where no elegant interiors or themselves. This is also reflected inside the building where no elegant interiors or

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[16] Sanders et al., 1987, p.18-22

other luxury is presented to show off. An exception is the product showroom. This stylish room is needed to show the unique 3form products to clients. The origin of this honesty and entrepreneurship is can be lead back to mother company Hunter Douglas. An objective and practical view of things are deeply rooted in this company. New and popular trends are not blindly followed. For example: If a smartphone it is not really necessary, it is just a toy and therefore not acquired.

Innovative, edgy, responsible are next to honest and entrepreneurial the core values of 3form. 3form wants to be the leading company by playfully challenging convention and design-led creativity. The company cares a lot about the planet and its inhabitants. This is reflected in recent reclaim[17] and full circle programs[18].

Innovative - leading, not following;

- Edgy - playfully challenging convention, design-led creativity;

- Responsible - in our actions towards the planet and its inhabitants;

- Honest - open, transparent, trustworthy, committed;

- Entrepreneurial - encouraging ideas & embracing initiative, using common sense.

1.2.5 Skills
The distinction between the products of 3form and competitors in this branch can be found in the durability and quality of products. Something that is recognized and praised by clients and prospects. The downside of this distinction is the price of the products, which, on average, is much higher than competitors,resulting in potential customers who drop off regularly. Product innovations and thinking along with projects and customers are important but less unique features in this industry.

1.2.6 Style
The management style that is maintained by 3form is a dynamic culture[19]. The structure within the company is open, highly interactive and flexible. Decisions are made in a quick and decisive manner. The bottom-up management style is used throughout the whole company. There are a few management layers within 3form but everyone employee is equal. There is also an informal ambience within the company, rules don't play a major role within 3form.

1.2.1 Conclusion
It is remarkable to see that the externals Sales staff are very busy and demanding. Their job is seen as very important and they are therefore supported by the sales support department. Together with the production department they constitute 70% of the 3form staff. An important group to study and test.[20]

Lastly, many systems and tools are used within 3form, and two servers makes file sharing not easier. Also a important system to study.

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[17] www.3form.nl, 2013
[18] www.3form.nl, 2013
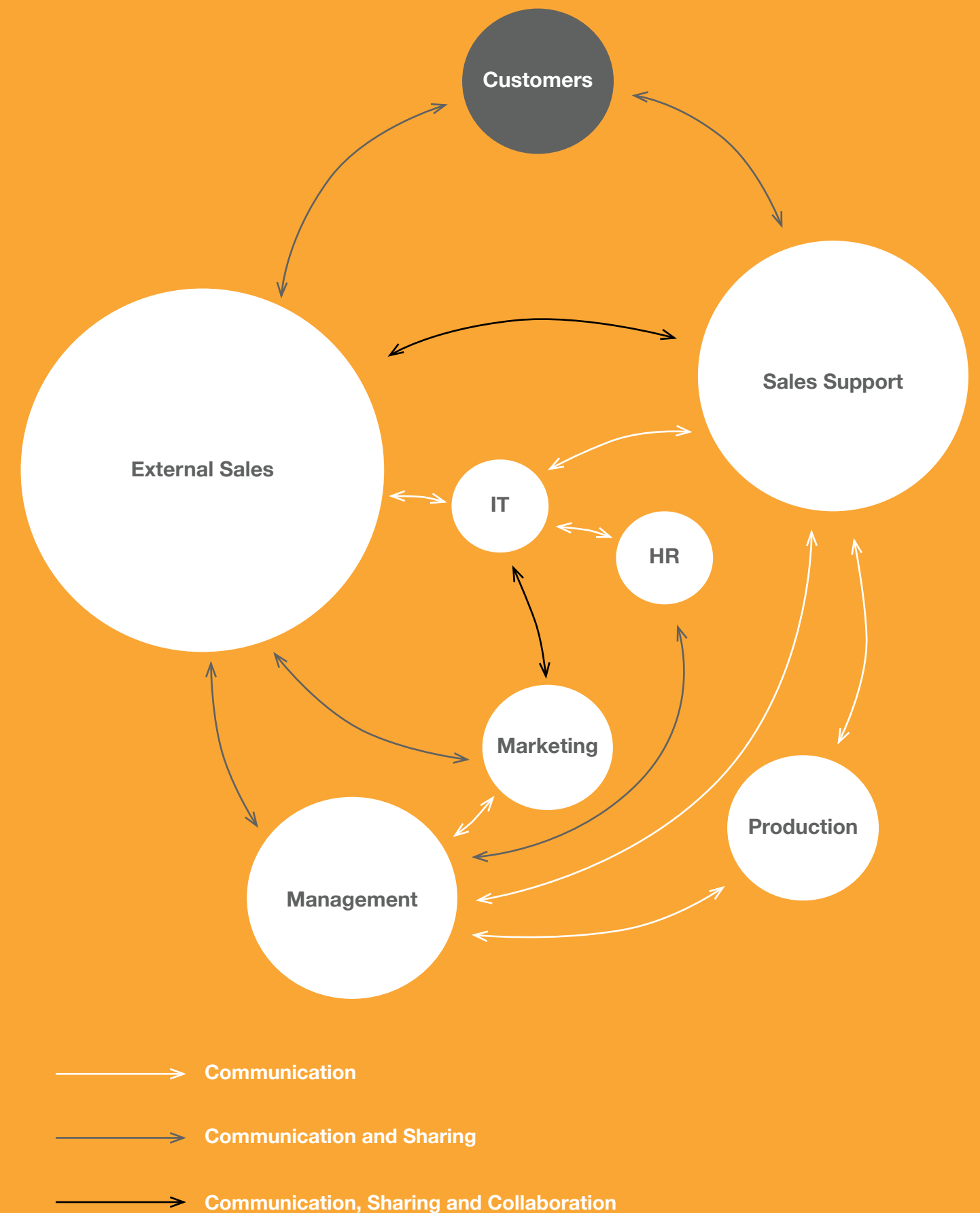[19] Rood, 2001, p.41
[20] See Reseach Approach

STAKEHOLDER MAP

Customers

Sales Support

External Sales

IT

HR

Marketing

Production

Management

→ Communication

→ Communication and Sharing

→ Communication, Sharing and Collaboration

2. RESEARCH APPROACH

Introduction
In this chapter the research questions, methods and usage of these methods are described.

2.1 Research Questions

Main research question:

"*What is a proper solution for the 3form staff to communicate, share and collaborate effective and easy with each other, on desktop computers and tablets, within the company?*"

Sub-questions

➡ What are the strengths and weaknesses of the current solutions that the 3form staff is using within the company and how are these solutions used?

➡ What are the needs and expectations of the 3form staff to communicate, share and collaborate within the company?

➡ What are alternative solutions that fit the needs of the 3form staff?

➡ What is a proper solution and how does it need to be configured and designed.

2.2 Methodologies

2.2.1 Desk research
With desk research sources are used that already exist. This concerns literature researchl in which articles, Internet resources, books and other publications are consulted.

2.2.2 Field research
Field research, in which information is gathered that has not been previously gathered in this form, is also conducted in addition to desk research. The following methods are used for in the research for this thesis:

Contextual interviews
Contextual interviews are interviews, conducted with relevant stakeholders, in the environment, or context, in which the service process of interest occurs. The interviewer visits the interviewee within their usual environment. A combination of questions and observations are used to generate the desired insights. One of the key reasons of doing an interview contextual is that is helps the interviewee to remember the kind of specific details that so often get lost in a traditional focus group setting.[21] These details are usefull for this project. The staff has accepted the current way of working and can easily forget important details in an 'ordinary empty room' without the context that gives the memory a helping hand. Due practical reasons the external sales staffs are interviewed by phone. During the phone interviews the interviewees sat in their usual work environment for that day, i.e. their home office.

[21] Stickdorn et al., 2011, p.162-163

The interviews were held using a 'interview script'[22]. This script contains all the questions. The questions do not need to be handled in this exact order, the interviews are more like a conversation in which all questions are asked. The focus of the management, when discussing the assignment, was on the current intranet that is not a proper or desired solution today. Therefore, a separate part of the questions was devoted to the current intranet.

Before interviewing the employees the interview script was discussed with the 3form employees involved in this project and a test interview was held with a marketing staff member. Twelve employees were interviewed: three of every main department.

Stakeholder maps
"*A stakeholder map is a visual representation of the various groups involved with a particular services. By representing the stakeholders in this way, the interplay between these groups can be charted and analyzed.*".[23] This visual representation can be used to highlight issues concerning the different stakeholders and the way they interact with each other. [24] For this project the stakeholder maps is used for analyzing the different departments inside 3form Europe. The required information for the stakeholder maps come from the contextual interviews and desk research.A stakeholder map must based on both desk- and field research to avoid assumptions and to gain new insights.

Besides being a good overview of the parties involved is a stakeholder map can be used to win support for this project, any outcomes or concepts.[25]

Product Reaction Cards
The Product Reaction Card[26] (PRC) method, developed by Microsoft[27], is used to check the emotional response and desirability of a design or product. The participant is asked to describe a design / product using any number of the 118 words. Each word is placed on a separate card. After viewing a design or product the participant is asked to pick out the words they feel are relevant. The moderator would then ask the participant to describe their rationale for their selection.[28]

For this project the PRC's are used to describe the existing intranet. The fact that the participants have a lot experience with the current intranet and will not purely judge the visual aspects is something to take in account. The judgment and card choice of the participants in this study will be based primarily on user experience. This can result in valuable and actionable insights.

Another reason to use this method is because the participants are not (by definition) volunteers but existing users (i.e. 3form employees). Because of the, these participants may be less motivated.

By using the PRC's, it is possible participants find words that they have previously not thought of. It 'forces' them to think differently. Another aspect is that the

[22] Attachment D: Interview Scripts
[23] Stickdorn et al., 2011, p.150-151
[24] Stickdorn et al., 2011, p.162-163
[25] Mind Tools.com, 2013
[26] Writers UA.com, 2013
[27] Microsoft, 2013
[28] Robertson, 2007, p.57

participants sometimes do not know how to describe their feelings. By using the PRC method, there are a number of words (descriptions) ready on the table as suggestions. This does not only makes it easier for the participants to describe the current intranet, but does also result in a better description.

This method alone would not give enough information in itself but is a valuable support for the contextual interviews. Using the PRC's, it is important that the participant is not only asked to choose words, but also asked to explain these choices and give examples. This gives more insights and makes is easier to analyse the selected words.

The PRC method was used to examine the strength and weaknesses of the intranet. This method was not used to judge the current intranet but to give insights in the user context, user experience and associated emotions.

The method was applied in a quiet room after the contextual interview. First the intranet was shown, after the participant was asked to choose 8 words to describe the intranet. The reason to let the participant choose 8 words instead of 6 or 4 is to gain as much information of the current intranet as possible from the experienced users. Also only 80 words of the original 118 are used in these sessions. Words such as 'responsive', 'stable', 'gets in the way', 'unrefined' etc. did not apply to the current intranet and were therefore removed to make it easier for the participants. During the session this turned out to be a good choice because many participants indicated that choosing 8 words out of 80 was already challenging.

A Day in the Life
"A Day in the Life" collates the research pretending to a particular type of user in order to create a descriptive walkthrough of their typical daily activities. An effective way to collect data for "A Day in the Life" is to ask participants to note down their individual activities during a specific day in the previous week. "A Day in the Life" contextualizes a user's service interactions, allowing a great deal of background information pertaining to their thoughts and feelings when interacting with a touch point to be conveyed. It can be present in several different formats; e.g. simple graphics, comic or video. [29]

By applying this method, the participant is forced to retrieve certain memories. This may yield new insights; such as things the participant took for granted. Or irritations the participant already has accepted as a part of their daily life.

It is not proper to use "A Day in the Life" to create an overview of a participants daily behavior. But is used to find and discover interactions with services, background information, thoughts and feeling.

Personas
"*Personas are fictional profiles developed as a way of of representing a particular group based on their shared interests, behavior and frustrations. They represent a character with which client and design teams can engage. Effective personas can shift focus away from abstract demographics, and towards the wants and needs of real people. Even though the personas themselves may be fictional, the motivations and reactions they exhibit are real; personas can are a collation of feedback elicited during the research stage of a project, and as such embody the real-world perceptions surrounding a service.*" [30]

For this project personas are used to collect interesting information and observations, from the contextual interviews and "A Day in the Life", into one specific, recognizable character for each department of 3form. A persona can be a good way to create a "guinea pig". [31]

Shadowing
Shadowing or observing users is a good way to collect information about their behavior. "*Spending time within the service environment is often the only way to develop a truly holistic view of how a service is operating and how user interact with it.*".[32] Shadowing is used to spot problems, which the staff or customer may not even recognize as such, at the moment they occur.[33] This method was applied almost everywhere inside the company. Following conversations between all different types of user: in the ICT room, at lunch in the canteen etc. The shadowing gives, in combination with contextual interviews, a reliable result.

Customer Journey Maps
"*A customer journey map provides a vivid but structured visualization of a user experience. The touchpoints where users interact with the service are used to construct a journey; an engaging story based upon their experience.*".[34] Next to the structural visualisation of the user experience a customer journey map gives an overview of the steps of a user towards his goal. The difference between a customer journey map and "A Day in the Life" is that the customer journey map is about the journey towards a specific goal. For example downloading a file. All steps of this process, from beginning to end, are defined and written down, together with touchpoints and emotions. Information needed to create a customer journey map is obtained from interviews and shadowing. "*One concern is to be comprehensive within the variables you choose to capture. What seems meaningless, could actually be the nugget that develops into a stunning insight.*".[35]

The 'five planes'
The 'five planes' is a design method that provides a framework for talking about and solving user experience problems. The five planes are: the Strategy (User needs and product objectives), Scope (Functional specifications and content requirements), Structure (Interaction design and information architecture), Skeleton (Interface design, navigation design and information design) and Surface plane (Sensory design). The five planes, each depending on the planes below, are used to build a design from bottom to top.[36] "*Plane by plane, the decisions we have to make become a little more specific and involve finer levels of detail.*".[37] This does not mean that a planes are treated individually. "*The important consideration here is not build the roof of the house before you know the shape of its foundation.*".[38]

This method is used for designing the intranet, combined with iterative testing.

[29] Stickdorn et al., 2011, p. 174
[30] Stickdorn et al., 2011, p.178
[31] d.school, 2011, p. 17
[32] Stickdorn et al., 2011, p.156
[33] Stickdorn et al., 2011, p.156
[34] Stickdorn et al., 2011, p.158
[35] d.school, 2011, p. 16
[36] Garrett, 2011, p. 21
[37] Ibidem
[38] Garrett, 2011, p. 24

Iterative testing

Iterative testing is a method in which designs are frequently tested with participants and adjusted bases on the results of these tests. This method is used during the design process to light and resolve usability problems at an early stage. "*Redesigning user interfaces on the basis of user testing can substantially improve usability.*".[39] The first iteration testings will probably identify the largest errors and ambiguities while the later testing in most cases will show the smaller errors. In this way the design will be adjusted and made better test after test.[40] Iterative testing can be used in combination with usability testing.

Usability testing

Usability testing is a black-box testing technique that examines the functionality to discover problems in efficiency, accuracy, recall and emotional response and recommend changes based on the discovered problems. The participants have to perform a fixed set of tasks asked on a scenario of realistic situation while a machine or person examines how much time it takes to perform the tasks, how many error there are during the tasks and what the emotion is of the participant. "*Usability testing is a research tool, with it roots in classical experimental methodology.*".[41] It is important to mention that testresults not prove that products works. This depends on the way the test is conducted. A good test result is not a guarantee for a good product.[42]

Usability test can be performed with designs or prototypes. Gathering the opinions of the participants is no usability testing but market research.

"Failure comes when you don't listen. You can't put something out there and assume it's great. It's up to us to make sure we're listening to improve our chances for succes -if not this time, next time."

-Alan Lewis

[36] Nielsen Norman, 2013
[37] Ibidem
[36] Rubin et al., 2008, p. 21
[37] Ibidem

3. RESEARCH AND FINDINGS

Introduction

This chapter contains all research and findings. The sub-questions are answered here, divided in four sections. Each section provides an overview of the application of the used methods, the research results for this sub-question and a short conclusion.

3.1 Current solutions for communication, sharing and collaboration

This section provides an answer to the first sub-question: "What are the strengths and weaknesses of the current solutions that the 3form staff is using within the company and how are these solutions used?". Several research methods are used to answer this question. The use of the methods will be discussed first. After that the results of the research are covered. The last part of this chapter is a brief conclusion that summarizes the findings and gives an answer to this sub-question

3.1.1 Results

The 3form employees are using the following solutions to communicate, share and collaborate:

SOLUTION	COMMUNICATION	COLLABORATION	SHARING
Telephone	██████		
E-mail	██████		██████
Network drives		██████	██████
Whiteboard	██████		
USB Flash Drive			██████
Online file transfer			██████
Intranet	██████		██████
TeamView	██████	██████	
Conference Call	██████	██████	

Telephone

Strengths and weaknesses

An advantage of telephone contact is the speed and ease with which it can take place. A disadvantage is that the external sales staff does not always knows whether the person they want to speak is in the office in Schiedam, is present or available when they call them on a landline. This costs time and causes frustration for the usually very busy external sales staff. The agreements made by phone are also not 'officially' captured (on paper).

Usage

All employees in the office have a landline phone and sometimes a mobile phone from the company. The external sales employees only use a mobile phone from the company, which is in most cases a smart phone. The telephone is mostly used for questions with high priority to people outside office. When a personal explanation needs to be given to people outside the office the phone is also used often. From the office, the sales support staff has several times a day phone contact with the external sales staff. Inside the building, the phone is not often used to consult with each other.

E-mail

Strengths and weaknesses

A major advantage of using e-mail for communication and file sharing, is the ease and speed. Almost all employees have a 3form e-mail address and all know how it works.

The 3form employees also consider the 'official' capturing of the e-mail conversation as an important advantage. Exchanged information and agreements that are made are saved, stored and easy to retrieve. The fact that the 3form employees maintain their own e-mail structure proves this. Observations shows that the employees maintain their own e-mail (folder) structure in Microsoft Entourage to organize the many incoming and outgoing e-mail.

A disadvantage of sharing files by e-mail is the many data storage it takes. If a file is sent to four employees it will cost four times more storage space than if the file is shared through the intranet or network is.

Usage

E-mail is very import for internal communication within 3form. Everyone, except the production staff, has a 3form e-mail address. E-mail is the most used solution to communicate and share because it is quick and easy according to the staff. It is mainly used for questions, without priority, to colleagues both inside and outside the office. Inviting colleagues for meetings is also done through e-mail. It has almost completely taken over one of the main tasks of the existing intranet: i.e. sharing files. Because the current intranet is no longer up-to-date and not well maintained, the staff is increasingly kept informed of new developments, new files and new documents by e-mail. This kind of information is often sent as attachments. Sharing information and documents by e-mail is not only quick and easy for the sender and receiver it is also the only way to do it.

The fact that files sent by e-mail often ared stored locally by the receiver locally is another disadvantage. From the moment a file is stored locally, there is no control over the version of that file used by the receiving employee. Files stored on the local disk of an employee can not be deleted or modified at distances. This provides a piece of impotence in the management. Using the correct files, such as price lists and technical information, is important for making quotes and supporting the customer correctly.

Network drives

F-drive
The 'F-Drive' is the network drive (only) accessible for computers connected to the Hunter Douglas server. The computers connected to this network are of the Sales Support, Production and Management staff.

Strengths and weaknesses
A strong point of the F-drive is that there is plenty of space to store (large) files. The employees find the F-drive also easy to use. The reason for this is because the F-drive feels like a shared space on a local computer. Working on it feels familiar and easy.

A weakness of this easy and familiar use is that users can determine where to store files by themselves. There is no active policy about this within 3form. New files and can be added by all users, there is no one who watches over the structure and layout of the F-drive. Since a lot employees use the F-drive, this results in the fact that there is little structure on this shared disk, and it is not always easy to find (new) files. Next to this, the network does not give a notification if files are changed or renewed. By missing the right structure, agreements and reports it still takes extra effort, such as an e-mail or a personal conversation, to ensure that a new file on the F-drive is seen and used.

Another disadvantage of the F-drive is that not all employees have access to this network. To share important files with all employees the intranet is used. If an individual employee without access to the F-drive needs a file or document this shared by e-mail.

The last disadvantage mentioned here is that, when collaborating, only one person can open a file at the same time. This can be regarded as a weakness but the interviews shows that it rarely happened that multiple people are working on one file at the same time within 3form.

Usage
The F-drive is used daily by the Sales Support, Production and Management to store files and share with each other. Files or documents that are being worked on are also stored on the F drive. The files on the F-drive are important for the Sales Support, Production and Management. Files are for example, price lists, product information, technical information, schedules, etc. The F-drive is not the only place where these files are stored, many of these files are also on the website, intranet, and stored locally in the attachments of e-mails.

3form's Timecapsule
The 3form's Time Capsule network drive is accessible to computers connected to the server of 3form just like the F-drive is the network drive accessible to computers connected to the server from Hunter Douglas. These are the Marketing and IT. The external sales staff do not have access to the 3form Time Capsule and the F-drive because they are not at the office in Schiedam.

Strengths and weaknesses
Like the F-drive is a strong point of the 3form's Time Capsule is large amount of space. The employees experience the network drive as easy and familiar to use.

ABOUT 3FORM'S FILES AND DOCUMENTS

	EXTERNAL SALES	SALES SUPPORT	PRODUCTION	MANAGEMENT
MOST NEEDED FILES	Pricelist Product Information Technical information MSC Presentations	Pricelist Product Information Technical information Transport calculator	Workinstruction (paper) Logistic files Purchase files Planning	Pricelist Planning Expense forms MSC Presentations
WORKING WITH MULTIPLE PEOPLE ON A FILE	**100%** Multiple times a week	**100%** Multiple times a week	**-**	**100%** Rarely

> " I get updates of files and documents often by email and I save these files local.
>
> -A sales support staffmember about receiving files.

HOW DO THEY GET THESE FILES?

	Pricelist	Product information	MSC Presentations	Planning	Transport Calculator	Expanse forms	Purchase and logisticfiles	Work instructions
Website		●						
Intranet	●	●	●				●	
Email	●	●						
F: Drive	●	●		●				
Local Computer	●	●			●		●	

> " I have the feeling that information by mail will stick better to the memory of the employees of sales support. They always look first in their mailbox. They also have their own structure in their mailbox.
>
> -A sales support staffmember about receiving files.

Compared to the F-drive the missing policy about file structure and layout within 3form causes for less difficulties on the 3form's Time Capsule. Fewer users (5 employees) can be a good explanation. In addition, these employees often work together and sit close together in the office. Fast consultation is very easy this way. But sometimes it is still needed to inform another user about a new added file in person or by e-mail.

When it comes to the accessibility of the 3form's Time Capsule it, like the F-drive, is not possible to access the network if the computer is not connected to the 3form server. The intranet and e-mail are used to share files with all employees.

Also when collaborating on the 3form's Time Capsule only one person can open a file at the time.

Usage
Employees of Marketing and IT use the Time Capsule daily to save and share files, which are important for their work. These are both final files as files that are being worked on. Examples of these files include: presentations, brochures, images of products, files for maintaining the website and the 3form style guide.

Whiteboard
Strengths and weaknesses
The whiteboard is a great way to keep employees without e-mail up-to-date of important announcements. A disadvantage is that not all communal things are and can be shared here. At the present moment the production managers who are responsible for it share only the most important things. It is not their job to find out what is interesting or relevant information for production workers and they only sharing what is important.

The whiteboard at the sales support department is a clear way in which the presence and absence of the sales support employees can be indicated. A disadvantage may be that the employees themselves maintain the whiteboard and that this is sometimes forgotten.

Usage
In the factory whiteboards are used to inform the production staff about important information, messages and news. The whiteboards are hanging in various places in the factory and in the canteen. These whiteboards are also used for announce events or meetings among the staff that have no 3form e-mail address. Tours or initiatives for employees can also be placed on the whiteboard to draw attention. Generally the whiteboards are used only for important announcements.

The sales support department also has a whiteboard, but it is not often used. This whiteboard shows when employees have a day off and if they are out of office. The sales support staff maintain their whiteboard by themselves.

USB Flash Drive
Inside the office, USB is used for transferring large files.

Strengths and weaknesses
Sharing large files by USB Flash Drive is easy and fast. No searching on a network

FILE SHARING WITHIN 3FORM

15%

5%

80%

- ◻ USB FLASH DRIVE / ONLINE FILE TRANSFER
- ◻ INTRANET / F:DRIVE
- ◼ E-MAIL
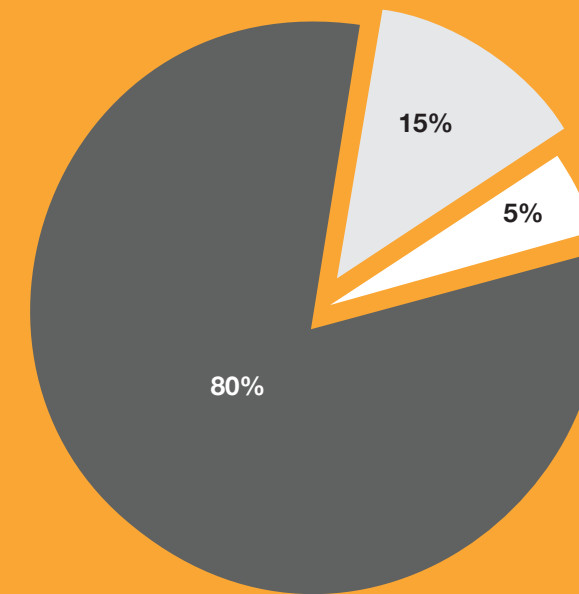
USAGE OF COMMUNICATION TOOLS

FILE SHARE
COMMUNICATION IS STORED
NOT URGENT

GENERAL INFO

ATTACHEMENT NEED EXPLANATION

INFO FOR PRODUCTION WORKERS

RECEIVER HAS NO (WORK) EMAIL

NEED EXPLANATION

URGENT

- ◻ EMAIL
- ◻ NOTICE-BOARD
- ◼ PHONECALL
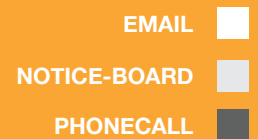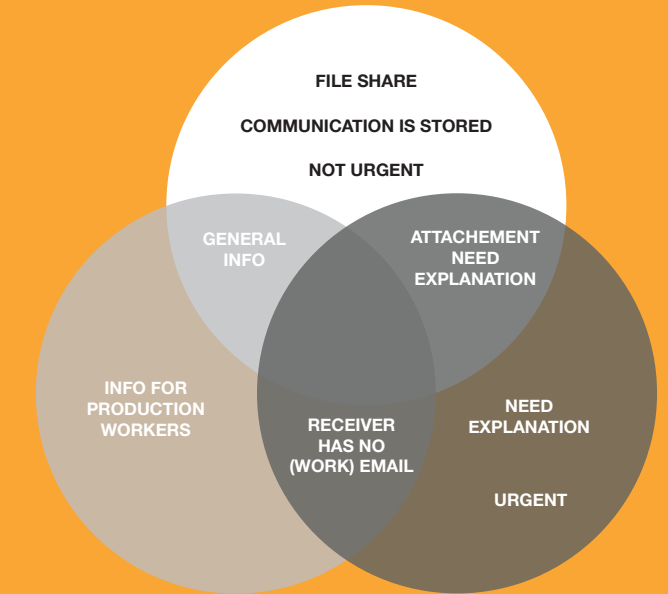
OPPINION OF THE 3FORM STAFF ABOUT THE CURRENT SOLUTIONS

	EXTERNAL SALES	SALES SUPPORT	PRODUCTION	MANAGEMENT
DRAWBACKS	Too many passwords for all kinds of tools/ websites — Can't find the needed information	Files and documents are on too many locations. — Documents are not available in all languages	No background information of project and planning	Verify last versions of files is time consuming — Can't upload information myself
SUGGESTIONS	Holiday planning for all employees — FAQ or forum on the intranet for exchanging experiences	Chat tool	More background information of projects	-

❝ **It is useful to know if someone is in the offce, so you know whether you can call him/her.**

-A suggestion of a external staffmember

drive is needed to find the right file. It also takes this way no additional capacity of the server and the network.

A disadvantage, as with the use of e-mail, is that files shared by USB-stick are stored locally by the receiver. Locally stored means no control over the file version that is used by the employee.

Usage
Files larger than 10MB cannot be shared used e-mail. Depending on who the receiver of the file is, this is done by USB stick or a online file transfer service (e.g. WeTransfer, YouSendIt). The staff at the office in Schiedam uses a USB stick to quickly exchange large files with each other. This happens rarely. Only when the transmitter and receiver use a different network (F-drive or 3form Time Capsule).

Online file transfer
Online file transfer is used for transferring large files remotely.

Strengths and weaknesses
Sharing large files with a online file transfer service is easy and fast. No searching on a network drive is needed to find the right file. It also takes this way no additional capacity of the server.

A disadvantage with the use of an online file transfer service is that the shared files are stored for only a limited time (2-4 weeks).[38] The files shared through this service must be downloaded in order to be preserved.

Usage
Files larger than 10MB cannot be shared using e-mail. Sharing big files remotely is done by a online file transfer service (e.g. WeTransfer, YouSendIt). The 3form staff use this solution regularly for sharing photos or presentations with members of the external sales staff.

Intranet
Since the establishment of 3form Europe the intranet has been important. Originally it was meant to share the most used and latest files and news with the 3form employees. However, the current intranet today is hardly maintained and used. The current intranet contains the following content:

Files
The most used files and latest of all 3form departments. (Not up-to-date)

News
News, announcements and updates within 3form. (Not up-to-date)

Birthdays
Birthdays of 3form employees. (Not up-to-date)

Links
Links to the Hunter Douglas intranet, 3form USA, Image Library etc.

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[38] We Transfer B.V., 2013

HOW OFTEN IS THE INTRANET USED?

- NEVER — 33%
- RARELY — 25%
- ONCE A MONTH — 25%
- OTHER — 17%

WHAT DO THEY USE IT FOR?

Link to the HD intranet	12%
Contact	12%
Holiday planner	12%
Product info	12%
MSC Presentaties	12%
News	4%
Photo's	4%
HR-forms	4%
Birthdays	4%
Tutorials	4%
Pricelist	4%
ABC manual	4%
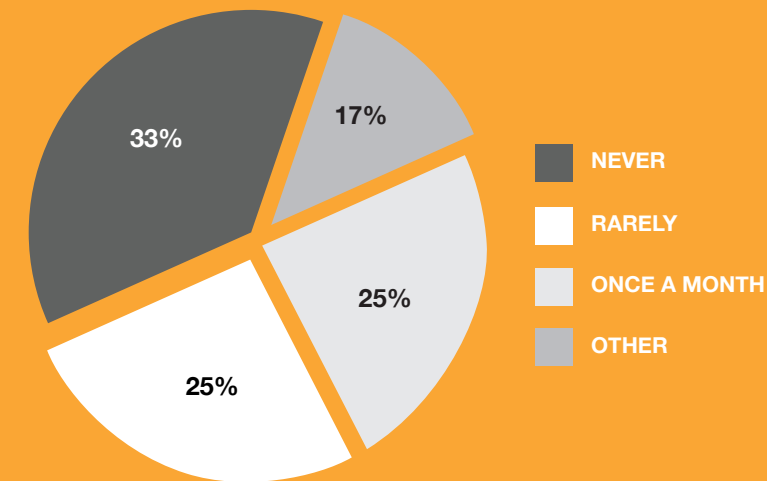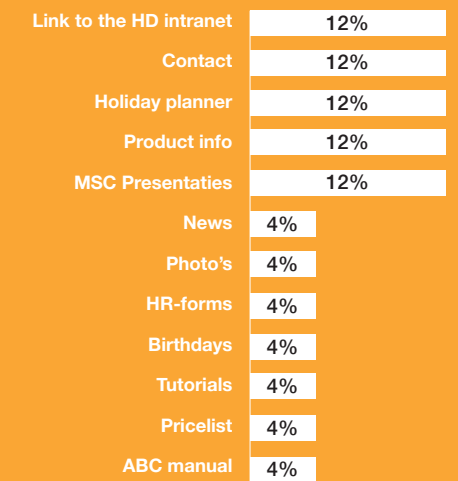
" **The current intrant is a chaos. It look's unproffessional and does not invite to use.**
-A employee about the current intranet.

DESCRIBE THE CURRENT AND DESIRED INTRANET IN 8 WORDS

current intranet			desired intranet	
UNATTRACTIVE	83%		67%	ORGANISED
DATED	50%		50%	EASY TO USE
LOW MAINTENANCE	50%		42%	TIME SAVING
CONFUSING	42%		42%	STIMULATING
NOT EFFECTIVE	42%		42%	FUN
POOR QUALITY	42%		42%	ATTRACTIVE
OLD	33%		33%	COLLABORATION
HARD TO USE	33%		33%	TRUSTWORTHY
BORING	33%		33%	EFFECTIVE
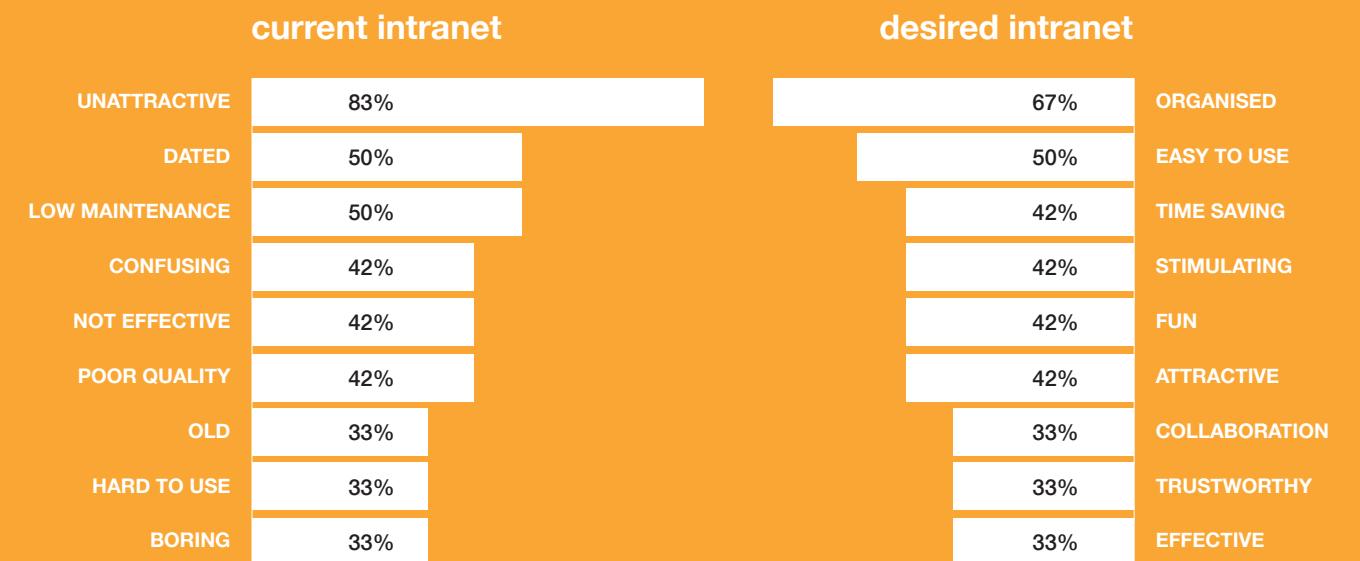
" **Besides documents and files also other things are needed to encourage people to go on the intranet. Photos and videos of trips for example.**
-A employee about the current intranet.

CUSTOMER JOURNEY MAPS

Angelie Dubois
36 years old
Lives in Delft
Works in Schiedam
Sales Support Staff member

Emotional status	🙂	😐	🙁	🙁	🙂	🙂
Context	At the office	At the office	At the office	At the office	At the office	At the office
Customer's Job	Calling with a client	Looking for a pricelist to support the client	E-mails product manager for file	Goes to product manager to remind him of the email	Recieves the needed pricelist	E-mails the needed information to the client
Timeline	10:45	10:50	11:00	12:10	12:30	12:45
Touch point	Phone	Intranet, Network drive	E-mail	Coffee corner	E-mail	E-mail
Company Actions						

Carlos Hernandez
44 years old
Lives in Delft
Works in Madrid
External Sales Staff member

Emotional status	🙂	😐	🙁	🙁	🙂	🙂
Context	With a client	In the car on the phone	At lunch	In the car	In the car	At home
Customer's Job	Looking for a specific product information	Calls Sales Support for the needed file	Checking his e-mail	Checking his e-mail again	Checking his e-mail again. File received	E-mails the needed information to the client
Timeline	11:25	11:50	12:00	13:00	16:30	18:00
Touch point	iPad, Intranet	Car, Phone	Sandwich, Phone	Car, E-mail, Phone	Car, Phone, E-mail	E-mail
Company Actions						

Contact details
Contact details of all 3form employees.

Production Day Off Calendar
Production workers can request free days with the calendar.

Strengths and weaknesses
An advantage of the intranet is that it is accessible for all 3form employees and only accessible for those employees. Apart from the network drives, anyone can use the files shared on it. Also employees who do not have a 3form e-mail address.

The biggest disadvantage of the current intranet is that it is not up-to-date. There are still old news items. For example, there is a news article on the homepage welcoming a new staff member while she no longer works at 3form. A key reason for the current intranet not being up-to-date is that it is difficult to maintain by people without knowledge of HTML. Adding files should always be done by an IT employee. This takes time and is one of the reasons that the intranet is not up-to-date. This makes the employees use other solutions to communicate, share and collaborate. The manager who wants to share a file sends an e-mail to the people involved because it is much faster and easier.

Another disadvantage is that the information structure of the intranet is not usable. This makes it difficult to find the desired files. The content and files are on several places. It is not obvious for the 3form staff where these files can be found. Hard to find what you are looking for and poor maintaince makes the intranet not effective to use. An employee gives an example: "If I have a customer on the phone I need the information I'm looking for quickly." This is not possible in the current intranet, because it is not information structure is not intuitive and files are not complete and up-to-date.

Besides that the current intranet is poorly maintained the external sales staff are complaining that it takes a long time to browse the intranet on the tablet, which they use when they go to customers. This may have two reasons: Firstly, as a result of a slow Internet connection. Secondly, the website experiences and expectations on a tablet should also be taken into account. A website is loading slower than applications that are already installed on the tablet. This can the buser? (unconsciously) compared with each other by the user, when this happens the intranet on a tablet can be experienced slower than expected.

Lastly, the PRC and interviews revealed that the employees find the current intranet not visually appealing and not inviting to use. They compare the current intranet with the 3form website which has a much better appearance according to the 3form employees.

Usage
All employees of 3form have access to the current intranet. However, the intranet is rarely used. The employees find it difficult to find what they are looking for on the current intranet. The intranet is therefore no longer maintained and is no longer up-to-date. Most employees see the current intranet therefore as a "glorified birthday calendar". Only the production staff makes occasional use of the intranet for the Production Day Off Calendar.

TeamViewer
TeamViewer[39] offers the opportunity to control another computer (after the user's permission) from a distance and to share screens. TeamViewer also offers the opportunity to meet online with each other, give presentations and share files.

Strengths and weaknesses
The quick delivery of remote support and troubleshooting is an advantage of TeamViewer within 3form.

At the moment of writing, a weakness of using TeamViewer is the internet connection speed at the 3form office. Screen sharing works witt no problems but screen sharing and videocalling at the same time is a disaster with the current connection.

Usage
The IT department within 3form regularly uses TeamViewer. This software is installed on each computer within 3form. Problems encountered from external sales staff can more easily be remedied by the IT staff using TeamViewer. The other employees of 3form do not make use of TeamViewer at their own initiative.

Conference Call
For remote meetings or discussions with several employees 3form makes use of a Polycom[40] phone for conference calls. "*A conference call is a telephone call in which the calling party wishes to have more than one called party listen in to the audio portion of the call.*".[41]

Strengths and weaknesses
An advantage of using a conference call is that everyone in the room can be heard clearly when talking. The distance/location of a person in the room does not affect the quality of the call. In addition, it is a secure telephone connection, which is not dependent on Internet and web speed, which can be also considered to be an advantage.

What employees perceive as difficult is explaining visual products because there is no video available. If this is necessary during the conference call e-mail is used to share pictures to explain.

Usage
The conference call is used when a meeting between several people from the office and employees outside the office is needed. Especially the management and external sales staff use conference calls. Every week a work discussion is held using conference call.

3.1.3 Conclusion
Many solutions used by the 3form employees provide similar services. There is no clear procedure or structure provided by the company. Shared files can be currently found on the intranet, in e-mail, on one of the network drives or stored locally. The

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[39] www.teamviewer.com
[40] Polycom, 2013
[41] Conferencing for less, 2013

intranet is rarely used by the staff because the content on the intranet is not up-to-date but primarily it is not easy to find what they are looking for. Most employees see the current intranet as a 'glorified birthday calendar' which is not complete. Only the production staff still makes regular use of the intranet for the Production Day Off Calendar. This causes the employees to look for a solution themselves. The 3form staff chooses for solutions that are easy for them and consume the least amount of time. Solutions such as phone an e-mail, which are by far the most used solutions within 3form. USB and online file transfer is used for big files. These solutions are perceived by users as the fastest and easiest solutions available at this time.

Although these solutions are fast and easy, a general disadvantage of these different solutions is that the 3form staff uses different login data (passwords and usernames). This sometimes causes a lot of frustration.

"Remember, a website is not a monolith that's used by one type of people, it does not exist only for one reason. Your job is to figure out what are all of the reasons that it exists for and find the best source to measure it."

-Avinash Kaushik

3.2 Needs and expectations of the 3form staff

Introduction
This section provides an answer to the second sub-question: "What are the needs and expectations of the 3form staff to communicate, share and collaborate within the company?". To answer this question several research methods are used. The use of the methods will be discussed first. After that the results of the research are covered. The last part is a brief conclusion that summarizes the answer of this sub-question

3.2.1 Results

Sharing

Easy access to the correct and final files

Needed by: Everyone
Priority: ★ ★ ★ ★ ★
Easy access to the correct files is one of the most important necessities. At this moment the external sales staff dependent on others when it comes to getting the correct files. The other employees do not always have easy access to the correct files. At this moment, to ensure that they get the correct (version) files, the employees are sending an e-mail to the person responsible for this file (example: Production Management). It is necessary that each employee has access to the latest files easily access at any time.

Employees can easily find the correct final files

Needed by: Everyone
Priority: ★ ★ ★ ★ ★
The research showed that in the current situation is difficult for the 3form employees to find the files they are looking for. In the current situation the final and most recent files are in many different places such as: Network drives, Intranet, Local Computer and e-mails. Older versions of these files are not always deleted. One place where all important files are collected is missing. Obviously, the intranet was the place for this. But the structure and information architecture of the current intranet does not make it easy to find the appropriate files. Also, the files on the current intranet are not up-to-date.

Control of the file version

Needed by: Management
Priority: ★ ★ ★ ★ ★
For correct communication about price and product to the client, it is necessary that the employees use the most recent files and documents. Not using the correct files (for example, price lists or technical documentation) may have financial consequences for 3form Europe. To make the maintenance of the files and documents easier and reduce the risk of errors, these files, if possible, should be available on just one general place where every employee can access the files. Also the local saving of files by employees should be as easy as possible.

Easy access to the correct final files from tablet

Needed by: External Sales
Priority: ★ ★ ★ ★ ☆
An important need for external sales staff is that the information and files that are available for employees are accessible and easily accessible when using a tablet. This is very important because the external sales staff are often using their tablet when working. The customer journey and interviews shows that the external sales people are often annoyed by the slow intranet for downloading files from the tablet.

A appealing solution

Needed by: Everyone
Priority: ★ ★ ☆ ☆ ☆
During the interviews and product reaction cards sessions the staff indicated that they care about the visual appeal of a possible solution.

Communication

Better days off schedule

Needed by: Everyone
Priority: ★ ★ ★ ☆ ☆
The interviews show that there is a need for a better days off schedule. Not only for the production workers but also for the other departments. Overview is missing in today's days off planner It is not possible to look back at previous free days. The production staff therefore keep track of their free days themselves. The external sales staff indicated they have a need for a list of days of the office staff so is easier to see who can be called and who is absent.

Company news en photos
Needed by: Everyone
Priority: ★ ★ ★ ★ ★
News about the company and employees is important. In the interviews the employees indicate they like to know what is happening in the company. This feeling is particularly recognized the external sales staff.
They feel more involved with the other employees at 3form when news and photos are available.

More involvement

Needed by: Production
Priority: ★ ★ ★ ☆ ☆
With the current solutions to communicate, share and collaborate the production department is not feeling very much involved with the other departments of 3form. The interviews show that the information on the current intranet is only focused on external sales and sales support. The production staff would feel more involved when the news on the intranet is not only oriented on sales. They would also like to see pictures from projects they have worked on.

Other

Less passwords

Needed by: External Sales
Priority: ★ ★ ☆ ☆ ☆
The many passwords that employees of 3form need for all different tools and plans cause delays and frustration, especially for the external sales staff, shows the research. The staff finds it difficult to have to log in so many different services and sometimes forget their password. Less variation in usernames and passwords is a desire of the employees of 3form for a long time.

3.2.2 Conclusion
The main requirements for the 3form staff are to access and find files easy from tablet and desktop. It is also an important requirement that the files are easy to manage and control. The existing functionalities of the current intranet; news and photos, are important also needs. Minor needs are the appealing of the new solution, involvement of all departments and less passwords to access all solutions for communications, sharing and collaboration.

"Clear content, simple navigation, and answers to customer questions have the biggest impact on business value. Advanced technology matters much less."

-Jakob Nielsen

3.3 Alternative solutions

Introduction
One can think of many solutions that are likely able to fulfill the needs of the 3form staff. This section provides an answer to the third sub-question: "*What are alternative solutions that fit the needs of the 3form staff?*". This chapter provides a broad look at the possible solutions and describes the three solutions that can be considered as alternatives for the current solutions of the 3form staff.

3.3.1 Results

Broad look
In general the needs of the 3form staff, such as, files, contact directory, birthday's and links are often to be found in a traditional intranet. But the developments in the field of communication, sharing and collaboration are anything but quiet. At this moment there are many alternatives for communication, sharing and collaboration available than just a traditional intranet. Innovative alternatives such as Yammer[42], Campfire[43], Facebook[44], Huddle[45] en HipChat[46] respond to the growing knowledge and use of technology and programs and turn their backs on the traditional intranet promoting their solutions as better, more convenient and more social.

Although these alternatives make the life of the worker in many aspects easier, they rarely offer a complete package for a company. An example is Yammer who focuses primarily on the social aspect and the collaboration within the company. "*Yammer is as easy to use as great consumer software like Facebook and Twitter, but is designed for company collaboration, file sharing, knowledge exchange and team efficiency.*".[47] Like Yammer, Facebook is also used within companies to increase the social aspects. Besides social contact and sharing news Facebook also offers the possibility to create address books. A disadvantage of Facebook as solution for social interaction is that Facebook does not allow fake or duplicate accounts. The people who want to join the Facebook group of the company have to do this with their own Facebook account what may affect their privacy. A a small group of the employees will always see as a threshold to join.[48] In addition to social solutions like Yammer and Facebook are Campfire, project management tools such as HipChat and Huddle are offering their services. Working together, communicate and share in groups for specific projects is made very easy on both the desktop and on mobile devices. But on the other hand, there is no overview of all available internal files or a list of news in the company.

The reality shows that the (major) international organizations often use a traditional intranet that can be adjusted and optimized to fully meet the requirements.[49] A reason for this may be that there is simply no good alternative that offers all the desired functionalities and is fully customizable. The new and innovative alternatives are easy, fast and social tools but do not provide a complete solution that can be customized as desired. The alternatives are often better suited to smaller companies where employees work closely together and have a lot of personal contact. These are companies that do not need digital news updates because these updates are commonly told personally to one another. In addition, it is common for these companies to use different tools for communication, sharing and collaboration.

Traditional intranet
A traditional intranet provides, in addition to these new solutions, the ability to create a custom solution for a company that meet the needs of the users. Whether using SharePoint[50], Drupal[51] or another system as the basis of a traditional intranet there is always the great advantage that the possibilities are almost endless. Two major parties that respond this situation are Google Inc.[52] with Google Apps for Business and Microsoft[53] with Microsoft Office 365[54]. Two total packages for companies that next to tools for make the cooperation more and more social also offers provide the possibility of an intranet.

What is a priority for 3form now?
The need within 3form is currently finding easily and quickly the appropriate files. In addition, it is desirable that the functions of the existing intranet, such as: contact information of colleagues, company news, birthdays and holiday planner, persist and if possible improved.

On the basis of these needs 3 solution are to be investigated further: Intranet + Cloud Storage, Google Apps for Business and Microsoft Office 365. Connect these solutions at the moment, the best to fulfill the needs of the 3form staff.

Traditional intranet + Cloud Storage

Traditional intranet
With a customized intranet almost anything is possible. Functionalities such as news, offering files, contact information, important links and calendars are just a few of the possibilities. An intranet allows to offer everything the employees need in one central location. (Plaatjes als voorbeelden)

Advantages
The largest and most important strength of a traditional intranet is that the possibilities are endless. Another important strength is that the intranet, because it is custom-made, can also be customized and further developed in the future based on user feedback. Also, the intranet can be developed in different stages by, for example, adding elements that have a lower priority (much) later. The total concept can be realized in phases while employees can use the major parts.

Finally, the worldwide growing Internet use is an important development that provides more experience on the Internet and with website[55]. This development works to the advantage of the intranet. The use of an intranet has become more accessible and easier for most people.

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[42] www.yammer.com/product
[43] www.campfirenow.com
[44] www.facebook.com
[45] www.huddle.com
[46] www.hipchat.com
[47] Yammer, 2013
[48] Weston, 2013
[49] Theelen, 2013
[50] Microsoft, 2013
[51] www.drupal.org
[52] www.google.com
[53] Google Inc., 2013
[54] Microsoft, 2013
[55] Seybert, 2013

Weaknesses

The weaknesses of a custom intranet is that is cost a lot of time to develop and to maintain. Adjusting everything as desired is not only a possibility but also a requirement. To achieve the right user experience intranet must be designed, tested and implemented. Even when the intranet is realized it remains necessary that the intranet is still being modified and improved to the needs and experiences of the users. This designing, testing and realization can be time consuming and costly.

A big challenge, which can also be a weakness, is the search functionality on the website. This is a very important functionality that can be crucial in the success or failure of the intranet usage.

Risks

Also are also risks using a traditional intranet as solution. This solution can be considered as 'finished' or 'ready' when in fact it is important to continue developing the intranet, based on user feedback. "*Your intranet should never be finished, because your business will always be changing. You'll want to build on the elements of the intranet that people use most, and identify the areas of the intranet where information is lacking.*"[56]

Cloud storage

Cloud storage[57] solutions like Dropbox[58], Google Drive[59], SugarSync[60] en Box[61] offer the possibility to provide all files in one place accessible from almost every device. The files are stored in the cloud and shared with the 3form employees. They can access the files from a computer (Internet or software), tablet (application) and smartphone (application). By making use of these software and applications, the files are real-time synchronized, updated and downloaded automatically.[62]
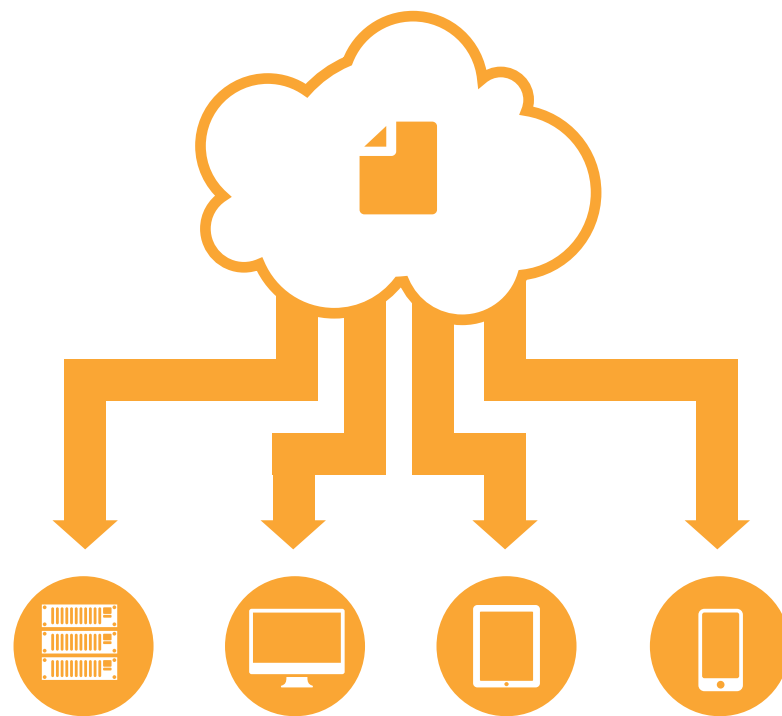
General Risks

Data security in the cloud is serious business. Recently (August 1, 2012) Dropbox was hacked and an undisclosed number of user e-mails were leaked.[63] The expectations of cybercrime in the future confirm that this is something that should be taken seriously.[64]

Another important development that should not be forgotten is the Patriot Act[65], a U.S. law to fight terrorism. This legislation gives the U.S. government and government agencies sweeping powers to, among other things, forensic examination.[66]

If decided to use of cloud storage, a consideration which files will be stored in the cloud is recommended.

Dropbox
Strengths

A strength of Dropbox is that there is an API (Application Programming Interface) available. This makes it possible to integrate Dropbox with websites or mobile applications. The possibility of e-mailing files from the Dropbox application on smartphone and tablet can also be considered as a strength.

Weaknesses

A weakness of Dropbox is that it is not possible to give users restrictions. This means it is possible that users could make changes to files when they do not have jurisdiction for it. It is also possible for files to be (accidentally) removed by users.

Another weakness of Dropbox is that shared files count against both users quotas. The available storage space can therefore be reduced quickly because when used for the shared files.

However, this problem does not apply in Dropbox for Business. The disadvantage of the business version of Dropbox in that this is very expensive.

Google Drive
Strengths

Just as Dropbox Google Drive also has an API which makes it possible to integrate Google Drive with mobile applications and websites.

Another strong point is that with Google Drive is possible to give users restrictions for viewing or editing files or folders. In this way it is not possible that files are being deleted or modified by users which have no jurisdiction.

[56] Clarity, 2013
[57] Strickland, 2013
[58] www.dropbox.com
[59] drive.google.com
[60] www.sugarsync.com
[61] www.box.com
[62] Darrow, 2013
[63] Russo, 2013
[64] Grabianowski, 2013
[65] Van Elk et al., 2013

Weaknesses
Unlike Dropbox, files can not be shared by e-mail from the smartphone and tablet application This is an important function for the 3form external sales staff because they often send files by e-mail to customers and prospects. In the Drive application files can be shared but the receiver only gets the link of the share file to view on the Google Drive website.

SugarSync
Strengths
Like Dropbox and Google Drive SugarSync also has an API which makes it possible to integrate SugarSync with mobile applications and websites. It is also possible in SugarSync to give users restrictions for viewing or editing files and folders.

Weaknesses
A weakness of SugarSync is that shared folder on the desktop is not only accessible in the Mac Finder or Windows Explorer (as usual with Google Drive, Dropbox and SugarSync old version). SugarSync also uses a desktop application to share files. This desktop application is a regular part of SugarSync and can cause confusion because it provides an extra way to upload and share files. However, viewing and editing files is still only possible in the share folder in the Mac Finder or Windows Explorer.
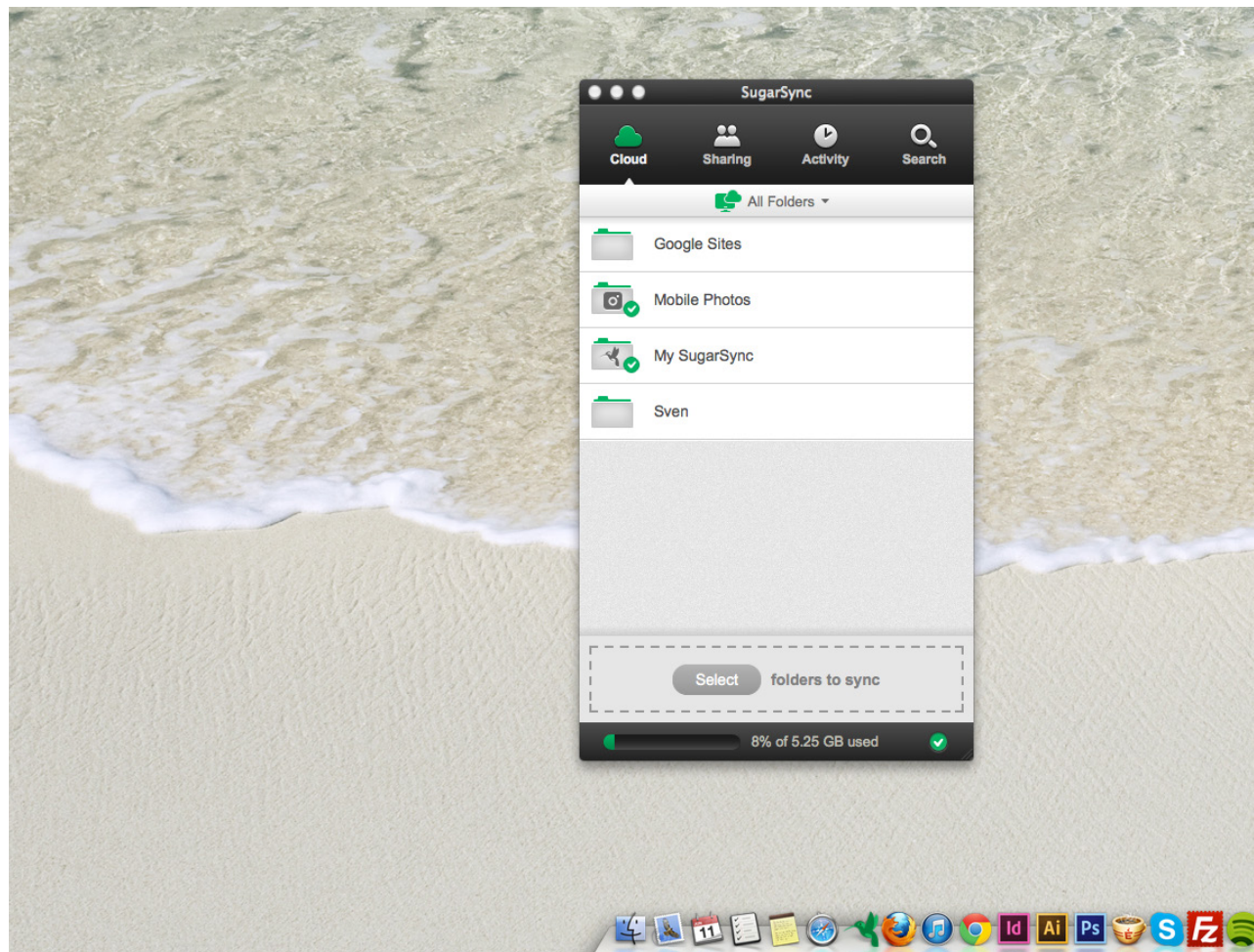
The Sugar Sync 'upload and share' widget on Mac OS

Box
Strengths
Like Dropbox, Google Drive and SugarSync Box also has an API which makes it possible to integrate with mobile applications and websites. It is also possible in Box to give users restrictions for viewing or editing files and folders.

Weaknesses
A weakness of Box is that, besides the smartphone and tablet application, the servers is only accessible online. On the desktop, files must be uploaded and downloaded on the Box website online. Although this is made easy by drag and drop it is less easier way than the integrated folder on the desktop such as Dropbox, Google Drive and SugarSync.

General advantages
A major advantage of cloud storage is that the traditional way of uploading and downloading files is not needed anymore. The files are brought to the user. These files will not be lost if a machine breaks down but are safely stored on servers that are backed up. Also, many providers deliver packages with version control.

No need of servers and storage space, and also the maintenance of it, is another advantage for the user. There is no need for physical equipment to purchased and will the user only pays for the used storage space.

How does this solution fit the 3form needs?
A combination of an intranet and cloud storage can fulfill the most important needs of the 3form staff. Cloud storage offers the opportunity to provide the 3form the final files in one place that is accessible to all employees. This means that files and documents are brought to the 3form employees instead of vice versa something that is the case in the current situation.

Additionally, an intranet provides the ability to retain the existing functionalities on the current intranet like news, photos and contacts and improve them.

Google Apps for Business
Google Apps for business consists of various products such as Google, Google Drive (Cloud Storage), Gmail, Calendar, Sites (that can be used as website or intranet) etc. Google Apps for business is presented as a total solution for communication, sharing and collaboration within companies.

The majority of these Google Apps (Drive, Gmail, Calendar and Sites) are standard already available when signing up a free Gmail account for private users. Yet there are some minor differences compared to Google Apps for business.

At the e-mail client of Google for business use, it is possible to adapt to the style of the company. It is also, of course, possible that the extension of the e-mail address is not @gmail.com but the domain name of the company. Another difference is Vault, which is only available for Google Apps for business. Vault can be used to store mail and instant messaging (For example, if a legal retention for e-mail conversations within the company) Using Google Apps for Business costs a fixed amount a user/month.

Google Drive

Sharing files and collaborate on these files is possible in Google Drive where files can be created, added organized. With Google Drive it is not only possible to save files. By using Google Docs (documents, spreadsheets and presentations) users simultaneously work together on documents. It is also easy to share files with external people and give restriction to the different users.

Gmail

Gmail can be used for e-mail, calendar and contacts both through internet or e-mail client on the desktop. It is also possible to chat online with contacts in Gmail.

Hangout

Hangout can be used to hold meetings remotely using video conference calls. Hangout is also viewed as the online competitor of Skype. The use of Hangout does not require any software installed on the user's computer.

Sites

Google Sites offers the possibility to create a website or intranet without technical knowledge in a easy way, This can be done using the default templates that are customizable. It is also possible for developers to develop applications that can be integrated in these sites

Vault

With Vault makes it possible to archive, control and export e-mail and instant messaging. Vault is designed to ensure the safety of files and stores them therefore encrypted.

Tablet and Mobile

All these features are not only available in the browser on the desktop as well as various applications for iOS, Android and Windows Phone as Drive, Hangout and Gmail.

Strengths

An important strength that Google Apps for business offers is that it is an all-in-one solution. All the tools provided in this service work seamlessly with each other. Gmail is the portal that provides access to e-mail, calendar, chat, conference calls and shared files. This also means one password for all these services. When the user uses Google Chrome as a web browser on his computer (something which is always recommended within 3form) logging is not even needed most of the time because the Chrome remembers the users and automatically signs in when booting your device (only when the user does not logout). The easy access to the services of Google Apps for business on tablet and smartphone can also be considered as a strength.

Another strength, already highlighted under cloud storage, is Drive. Next to Drive the conference Hangout tool is also a strong point, although this is not a priority right now within 3form.

Finally, it is, as previously described in cloud storage, an advantage that no storage space, server and maintenance is needed. Not even for e-mail.
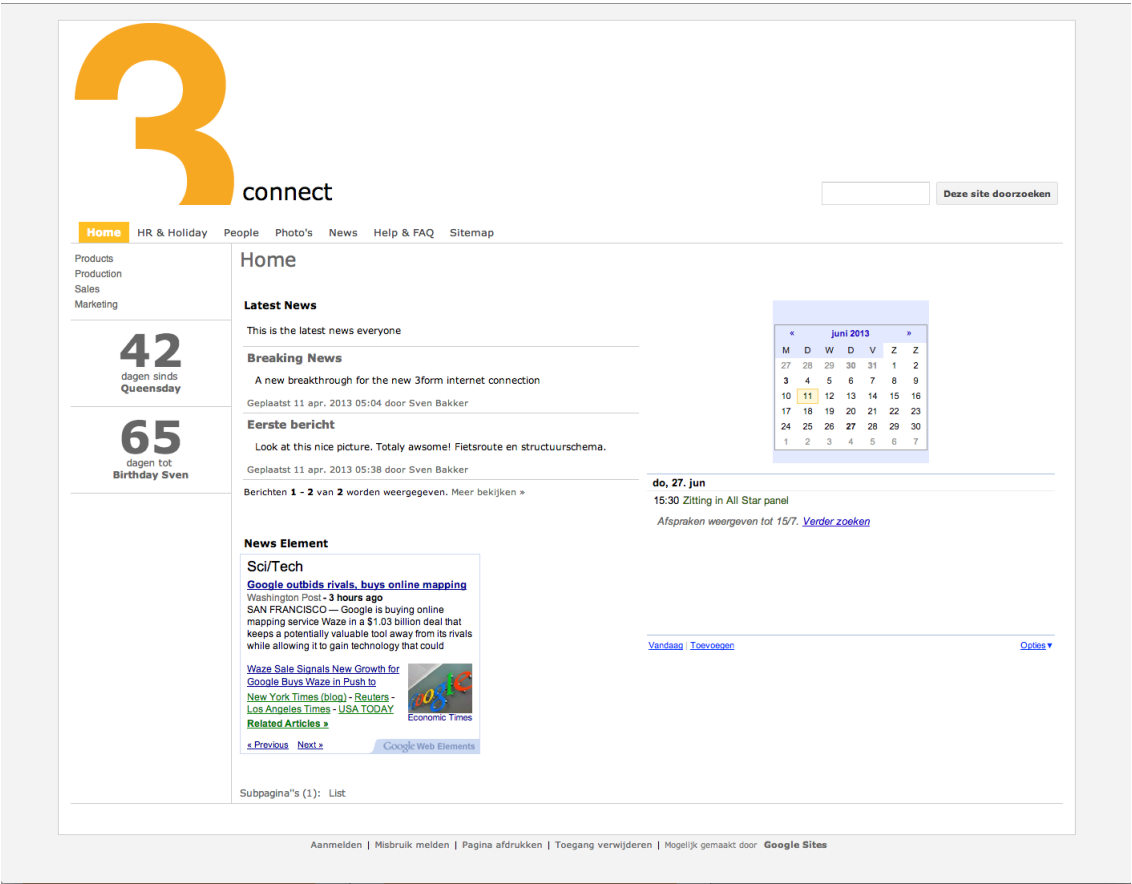
The 3connect homepage on Google Sites
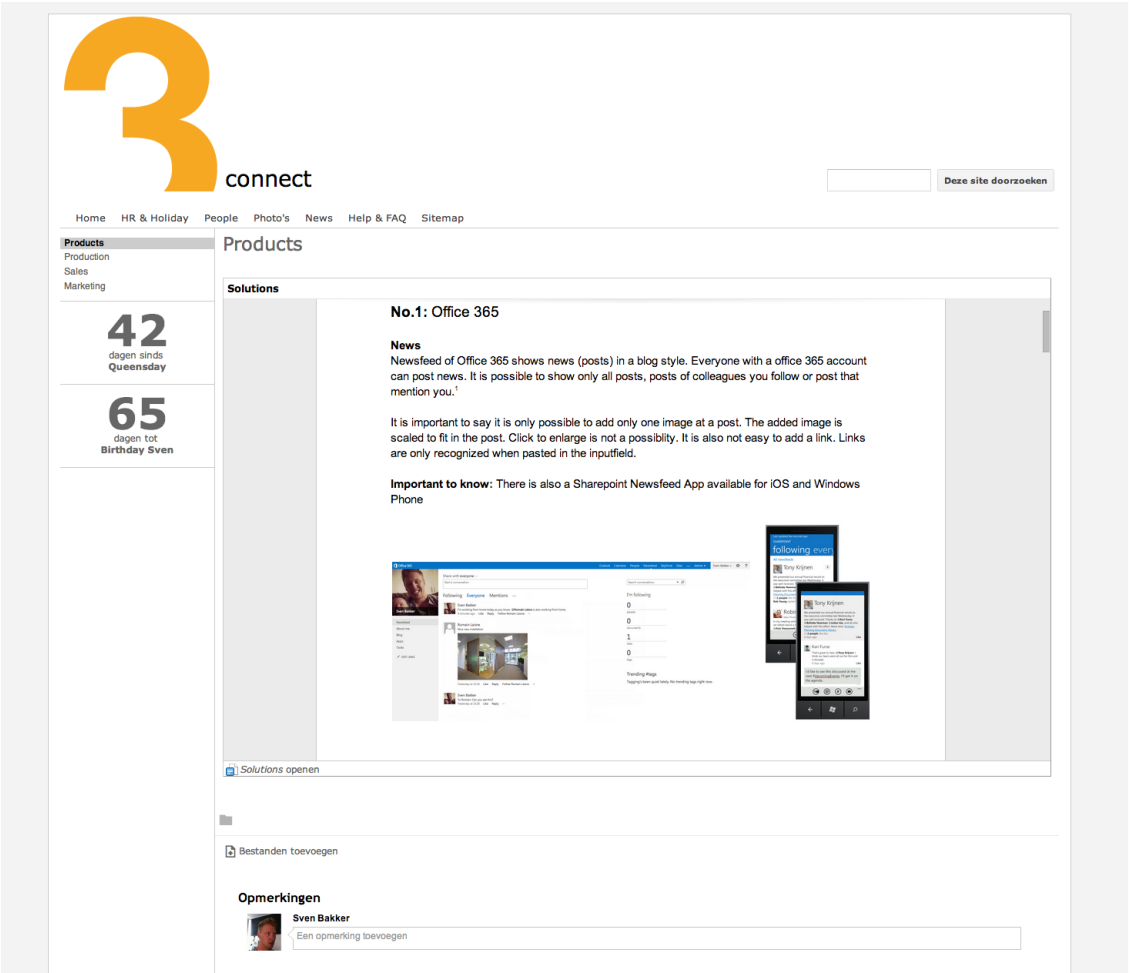
The 3connect product page with files

Weaknesses
A weakness of Google Apps for Business is sites. Sites offers the possibility of a basic intranet, but it is not possible to customized it as desired. This may seem like no big disadvantage but after testing and realization it would not be possible to make changes (e.g. move calendar to the top and make it smaller) based on user feedback and the chances are that the intranet is shunned by the employees of 3form.

There are only a few options in Google site to customize the layout. It can be selected from a number of options (e.g.1, 2 or 3 columns) in order to adjust the layout of the page. It is possible to add html itself but real features like a custom calendar, photo album or a list of files are not possible or supported. It is possible to integrate apps sites but the offering of these apps is very limited at this time. Google Sites has been extensively tested during a trial of Google Apps for Business[66]. In addition, an interview with specialist IT Cumulus confirmed the above weaknesses.

The search functionality in Google Sites is not as good as most people would expect. It does not provide a clear overview, especially not in showing the difference between files and content in the search results.

Risks
As with the other cloud storage cybercrime and the patriot act should also be taken in consideration when using Google App for Business. Also, if decided to use Google Apps for Business, a consideration which files will be stored in the cloud is recommended

How does this solution fit the 3form needs?
As with the alternative intranet + cloud storage Drive, in Google Apps for Business, offers the ability to provide the 3form the final files in one place that is accessible to all employees. Sites of Google Apps for Business can be used to maintain the functionality of the current intranet including news, photos and contacts and improve. The fact Sites is not really customizable can be an important weakness. Sites is also not part of the Gmail portal and need to be accessed by an external link this is not intuitive and user friendly.

A big advantage of Google Apps for Business is all that works seamlessly with each other. With the e-mail address and password, the user has access to everything you need. Although there are few complaints about the current e-mail system is the switch to gmail a serious option to keep total package for keeping the usability as high as possible.

Microsoft Office 365
As with Google Apps for Business Office 365 is meant as a total solution for businesses. Outlook Online, Lync, Skydrive (Cloud Storage) and SharePoint Online are part of the total solution from Microsoft. Office 365 is a portal to access everything that is needed for communication, sharing and collaboration with newsfeed, e-mail, cloud storage and more. Like Google Apps for Business using Office 365 costs a fixed amount a user/month.

[66] https://sites.google.com/site/ssvenbakker

The following parts are available in Office 365:

News
Newsfeed of Office 365 shows news (posts) in a blog style. Everyone with a office 365 account can post news. It is possible to show only all posts, posts of colleagues you follow or post that mention you (Mention other users in a post using the '@' and their name.).

It is important to say it is only possible to add only one image at a post. The added image is scaled to fit in the post. Click to enlarge is not a possibility. It is also not easy to add a link. Links are only recognized when pasted in the input field. There is also a SharePoint newsfeed application available for iOS and Windows Phone.

Outlook Online
Online Outlook can be used for e-mail and calendar. The online interface of Outlook looks almost exactly with the offline e-mail client Outlook.

SkyDrive
Pictures and document can be stored in Skydrive Pro. Skydrive Pro is the business version of Skydrive (the Microsoft cloud storage solution integrated with Hotmail). At this moment it is only possible to share files, not folders. Software to synchronize Skydrive Pro with desktop, tablet or smartphone is missing.

People
People is one of the menu bar items. People are easy to sort by (family names and groups). In People you can find al your contact and if they are using Office 365 it is possible to see their status (Buzy, Away, Online etc.).

Lync
With Lync, a desktop program or app for smartphone and tablets (iOS, Windows Phone and Android) you can chat and start meeting or group meetings.

A strong point of Lync 2013 is that you can check/see the availability of colleagues you approach them. When calling or chatting just not convenient, you can also e-mail each other from within the application. Another useful point is that you can divert calls to your Lync-id, so that they are forwarded to your mobile phone.

SharePoint Online
SharePoint Online provides the opportunity to create a website or intranet in a easy way without using code or developing knowledge. SharePoint Online is the easy version of SharePoint because everything is online and already installed so no custom installation or other technical things are needed.

Office Web Apps
The Office Web Apps are the online version of the familiar Microsoft Office applications like Word, PowerPoint and Excel. No installation is needed for these applications because they are running in the cloud.

Strengths
As with Google Apps for Business is a strength of Office 365 is that it provides a complete package. overall, everything what the 3form staff needs. An advantage is that the employees within 3form Europe currently use Outlook and Office. This will

make it very accessible and easy to use Outlook Online because it is very similar to the current desktop client of Outlook. Same story for the online and offline Office package (e.g. Word, Excel), which are also apart of Office 365. This is not only financially attractive but also convenient and recognizable for the staff to use this solution.

A strong point of Office 365 is Newsfeeds. Employees themselves have the ability to post messages and respond to other messages. This is also possible from the smartphone and tablet with the SharePoint application. This would be a good way to involve the external sales and production more with the rest of the 3form staff.

Another strong point of Office 365 is the search functionality. The stock search engine on the website provides a good and clearly overview where files and content are separated.

The conference tool Lync in Office 365 is also a strength although this is not a huge priority right now within 3form

Finally, it is, as previously described in cloud storage, an advantage that no storage space, server and maintenance is needed. Not even for e-mail.

Weaknesses
A weakness of the Office 365 is that Skydrive Pro is not yet fully developed. With SkyDrive Pro is not possible to synchronize with desktop, tablet and smartphone files, but it is only possible to store and share files online in the Office 365 portal. It is not possible to share folders with the other users and store files together. There is also no application of Skydrive Pro available for smartphone and tablet.

Another weakness is SharePoint Online. With online SharePoint is possible to create websites and intranets to use within the company. There are two ways to create and customize the sites. The first way is to do this via the customization tool in SharePoint Online. This tool, however, is very limited. As with Google Sites is not possible to customize everything as desired. The second way, in which this is possible, is through programming in SharePoint. This takes a lot of time and money because it requires a SharePoint developer that should be hired. In addition, this is also not recommended, according to a specialist at Cumulus IT, because updates on Office 365 can create problems in which case all custom code need to be added again. Like Google Apps for Business Office 365 has also been tested extensively.

Risks
As with the other cloud storage cybercrime and the patriot act should also be taken in consideration when using Office 365. Also, if decided to use Office 365, a consideration which files will be stored in the cloud is recommended

How does this solution fit the 3form needs?
Unlike Google Apps for business and the intranet + cloud storage Office 365 does not offers the ability to provide the 3form the final files in one place that is accessible to all employees. Files can only be accessed on online on the Office 365 portal. The newsfeed, people and calendar tools of Office 365 can be used to maintain the functionality of the current intranet including news, photos and contacts and make it more social and accessible.

The total package of Office 365 with the Office programs and the familiar look of the e-mail client in Office 365 is a big advantage because the 3form staff is used to work with the Microsoft products. A switch to Office 365 e-mail client is a serious option to keep the usability as high as possible

3.3.2 Conclusion
Although Google Apps and Office 365 at first sight seemed suitable candidates for 3form shows further research that, despite the fact that these solutions also bring many benefits, it is impossible to bring important adjustments in these solutions.

Looking at the needs of the 3form staff a traditional intranet combined with cloud is the best solution to satisfy the 3form staff and fulfill their needs compared to the other alternatives. An important factor here is the ability to adjust the solution on the long term. The main necessities such as access, traceability and control of the 3form files is possible with cloud storage integrated in the intranet. The other needs, like news, photos and day off calendar can be provided by intranet and, if necessary, adjusted or replenished in the future.

Cloud Storage
A proper cloud storage solution for 3form to implement in the intranet can be Dropbox or Drive. Both services have a professional and strong foundation and are only different from each other in details. Dropbox and Drive are both solution that makes files more accessible, findable and controllable.

NEEDS	INTRANET + CLOUD STORAGE	GOOGLE APPS FOR BUSINESS	OFFICE 365
Files accessible (also from tablet)	9 (x2)*	9 (x2)*	3 (x2)*
Files findable	9 (x2)*	8 (x2)*	7 (x2)*
Files (easy) controllable	9 (x2)*	9 (x2)*	5 (x2)*
Company news en photos	9	7	9
More involvement	8	5	10
Better 'Day Off scedule'	9	3	3
Appealing solution	9	7	7
Less passwords	3	9	8
Total	**92**	**83**	**67**

The most important needs are counted twice.

3.4 The best alternative (concept and design)

Introduction

As discussed in the previous section is an intranet in combination with Dropbox the best alternative for the 3form staff. This section provides an answer to the last sub-question: "What is a proper solution and how does it need to be configured and designed?". This chapter describes the solution and the configuration an design of the solution.

3.4.1 Solution

A proper solution for the employees of 3form is an intranet in combination with Dropbox. Here are not only found all the files but also the features that were present on the current intranet such as, birthday, links etc. For new and changed content on the intranet and Dropbox, a weekly newsletter sent to all employees, is use to draw attention. This section described the solution; 'intranet + dropbox' but also the newsletter.

Intranet + Dropbox

The intranet consists; Files, My 3form, CMS, News, Contact Directory, Event Photos, Links and Birthday's. These components are described here:

Files

The final and most recent files are available on the intranet. The installation of Dropbox on the server allows the users to access these files using Dropbox. The files can also be updated and maintained using Dropbox. The files in the Dropbox folder on the server listed on the intranet through a PHP listing script. In this way the same files are available from a smartphone, tablet, personal computer via Mac Finder or Windows Explorer and the intranet on a 'private' or 'foreign' computer. There is always easy access to the files and the files are very easy to renew and update by employees without technical knowledge.

A key requirement in the provision of these files is the folders structure (Information Architecture). This structure must be logical and intuitive for the staff 3form to find files easily. A clear policy which prohibit sharing final files by e-mail is also required. For example, the author or responsible such as the production manager sending product information, which is on the intranet, to a sales staff member. In this manner files can only be obtained using Dropbox or the intranet.

My 3form

The existing 'My 3form', which is used by the sales staff for quotations and sample requested, is integrated into the new intranet. The advantage of this is that the 'My 3form' account can be used to log into the intranet. This means that the sales staff don't need a new password for the intranet but can login with their existing account. This saves one password in comparison with the previous situation. Another advantage is that the external sales staff can become more involved with the 3form office in Schiedam, because the 3form news is directly shown on the intranet when they log in to 'My 3form'. The sales staff are enthusiastic about this change: "This save a login and extra url." according to one of the external sales staff.

CMS

My next 3form the CMS of the 3form website is also accessible through the intranet. The CMS is originally a part of 'My 3form'. A marketing employee responds: "*I will use*
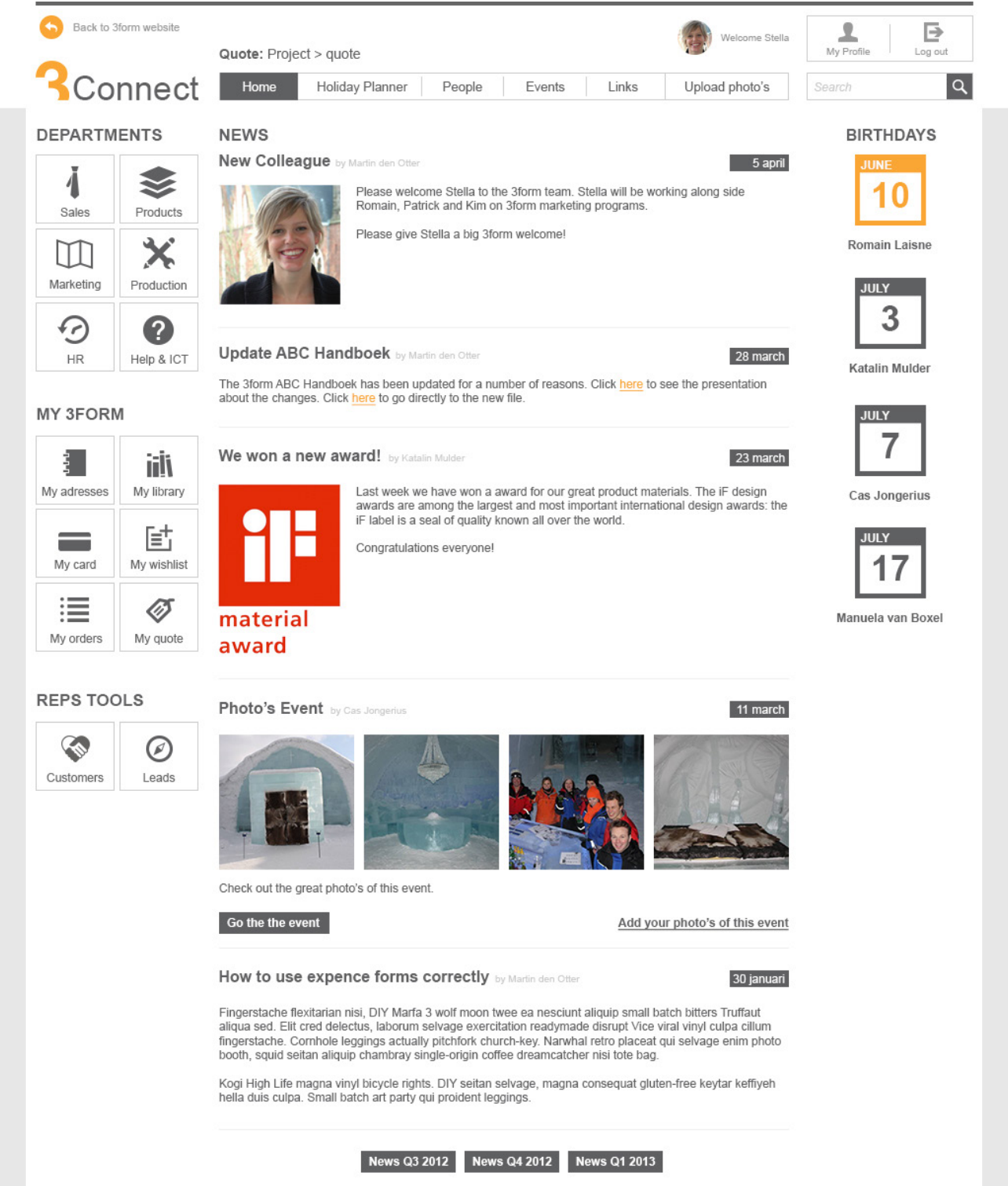
The homepage of the new intranet
Prototype available at: http://www.sven-bakker.nl/3connect

the new intranet all that long if the CMS is included in the new intranet."

News

News is an important part of the new intranet. Company news, announcements, updates files, new photos, etc. can be displayed here. The major impact on the involvement is an important aspect of the news content.

Where news about sales dominated the intranet in the past it is now a priority that a departments are represented here. One of ways to ensure that is through the use of an simple CMS for the intranet where no technical knowledge is required in order to use it. This makes it possible for everyone to add content. As opposed to the current intranet new content don't need to be e-mailed to the Web- or IT-manager, but it can be added by anyone.

Responsibility

Clear responsibilities are needed for adding content to the intranet and Dropbox. It must be perfectly clear who is responsible for placing content (for a particular department)

Holiday planner

Opposed to the current intranet, where the 'Free Days planner' can be used only by production staff, it is for all staffs possible to use the 'Holiday planner' in the new solution. The 'Holiday planner' on the new intranet makes is possible to request a couple hours, a day or a period off. It is also possible to add comments. This request and any comments are sent to the direct supervisor of the requesting employee who needs to approve this request. This approval is e-mailed to the applicant and HR staff to make the request final.

Besides requesting days off the 'Holiday planner' also offers a calendar overview of staff member absence, based on the day off requests. The 3form staff can use the calendar overview to see who is in the office. The HR employee is responsible to maintain the "Holiday planner".

Not everyone is authorized to see the complete overview of all staff. Different user levels are used to provide only the information the user need, or is authorised, to see. The table below shows the different levels of authorisation.

	Overview Production staff	Overview Sales support staff	Overview External sales staff	Overview Management staff	Overview ICT, HR & Marketing
Productie staff	■				
Sales Support staff		■	■		
External Sales staff		■	■		
Management staff	■	■	■	■	■
ICT, HR & Marketing Staff					■

Extensions in the future

In the future, the 'Holiday planner' can be replaced for a fully automated HR system on the intranet. The remaining free hours of the employees can also be shown here, so it is no longer needed for the employees to ask HR about the remaining hours.

Contact Directory

The contact directory provides an overview of all 3form staff and their contact details like e-mail adres, phone number, function, location etc.

Event photos

The event photos provides in the social needs of the 3form staff. Photos of trips, sales meetings etc. are displayed here. It is for anyone with access to the intranet 3form possible to upload photos to add these to existing and new events.

Links

Links to other websites or services are very important because many employees use these links. For example: to the intranet of mother company Hunter Douglas, 3form USA, Citrix, ISP or the website of the local cafeteria where every Thursday lunch is ordered. Many of these links have a long url that is not easy or not possible to remember. Providing these links on the intranet makes it more easy for the employees to access these sites and services. It also results in the fact that the intranet will be visited more frequently.

Birthday Calendar

The Birthday Calendar is one of the features that was also available on the current intranet. The birthday calendar in this concept linked with the user account. This means that the birthday calendar is updated automatically when a new user is added or if a user changed his date of birth. If the user, an employee of 3form, leaves the company the birthday calendar is updated when the account of the leaving user is deleted. Manually checking and updating of the birthdays is no longer necessary, the birthdays will always be corrent and up-to-date.

Newsletter

In addition to the intranet and Dropbox, a newsletter is used to keep the 3form informed of the most important news and updates of new files.

This newsletter is not an isolated information provision, but is intended to support the intranet and Dropbox. Employees who do not use the intranet are in this way not forced to go to the intranet for staying up-to-date. Through this newsletter they remain informed of important news and updates files. It is alway possible to go to the intranet by one of the many links in the newsletter. This newsletter is sent weekly.

Login

With the integration of 'My 3form' in the new intranet the 3form staff can access the new intranet through the login page on the 3form website (This is the same login which is currently used for my 3form). This login is a familiar for most employees, easy findable and easy accessible for all 3form staff. Everyone with 3form knows -obviously- the url of the 3form website.

3.4.1 Weaknesses and risks of these solution

Introduction
Although this solution meets many of the users, success is not certain yet. The following section describes the weaknesses and risks of this solutions and possible solutions for these weaknesses and riks.

Still many passwords
Despite the new solution, the fact remains that users still must use a variety of tools with passwords. The new solution anticipated on this problem by integrating 'My 3form' in the new intranet. Another solution could be to use one passwords for all these various solutions, but if one password is changed, for example the password for e-mail -which can be used only a limited period of time-, this can result in even more confusion.

A possible solution, in the future, is to use the new intranet as an access portal for more services and websites. An example of this is the online image library.

Involvement
Another important user needs is the involvement in the company, in particular the involvement of the production department. Although this solution can be created involvment, it is not a fact. Involvement can be created through the newspage which is relevant for all departments. Compared to the current intranet is the newspage of the new intranet not only focused on sales but on every department. For the office staff it may seem that there is not much news to post about other departments such as production and external sales. A solution for this problem can be to give staff member from different department the responsibility of posting news and updates. This makes it also easier for other employees to come up with new ideas and to share this ideas with the one responsible on his department.

Updates of edit and new files
Updates of edited or new files are displayed in the Dropbox application on the desktop. (Picture show). On the intranet these updates appear as news items. When using the mobile applications of Dropbox, it is not clear which files have been changed or added. Although the most important updates are highlighted in the weekly newsletter this does not guarantee that the 3form will actually notice this.

Adding and updating files on a fixed time, for example the day before sending the newsletter, can help to control the update better and provide more structure.

Maintaining the content
As with the current intranet maintenance is very important. Although this is easy in the new intranet to add content without technical knowledge, the fact remains that this is necessary to appoint staff member that are responsible for adding content. It is also important for the responsible staff member to have a clear procedure what kind of content is to be added or not. To encourage the involvement of all staff it is desirable to give staff member of different departments the responsibility of adding content.

Maintaining files
The 3form files also need to be maintained by the 3form staff. It is very important that the latest files are always available for the 3form through the intranet and

dropbox. If this is not the case there is a risk that mistakes are made. The customer may be misinformed or products can be sold for the wrong price. There is also the chance that if this happened in the early days of this new solution, the employees will fall back to the old familiar ways such as e-mail.

No using the intranet
Another risks may be that the employees will not let go of their current way of working. It is therefore very important that the new solution is not presented as an alternative but as the new standard. Clear agreements need to be made with the staff responsible for the content and files of helping the other staff and showing them the proper way when needed.

No further development and adjustment of the intranet
Further development and adjusting the intranet is very important. This is not about adding new functionalities but also about moving elements and customizing the user interface, based on user feedback. Feedback can be obtained in different ways. For example using interviews, Product Reaction Cards or web tools such as Usabilla[67]. The risk of no further development and adjustment is that the employees will use the intranet reluctantly and at long last look for other alternatives.

When can the new solution be considered a success?
The success of this solution is not the quantity of use of the intranet but in the rapid finding and using of the by the 3form staff. This can be done through the intranet or Dropbox. The solution can therefore be considered a success when within two months 70% fewer files are sent by the mail

In addition to this, it can be examined whether the new solution meets the requirements and wishes of the 3form staff, after using it a short time. This can be done through a Product Reaction Cards session which results can be compared with the results of the Product Reaction Cards session for the research of this thesis.

What will the intranet look like in five years?

In five years the intranet contains the following functionalities:

HR system
A fully integrated HR system where employees can not only ask a day of but can also see how many days they have left. Requesting days off has become an automated process in which the supervisor only need to press a button to approve or disapprove.

Online Expence forms
Completing and submitting expense forms can also be done online on the intranet.

Everyone can add content
It is possible for each staff member to post news items.

3connect Portal
In addition to integration with My 3form there are other tools that are easily accessible through the intranet. Examples of these tools are: Image library

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[67] www.usabilla.com

3.4.2 Configuration and design

Information Architecture

Organisational structure
The organisational structure of the intranet is based on a broad and shallow hierarchy.[68] This because the intranet is expected to be used quite a lot, especially with 'My 3form' integrated. The broad and shallow hierarchy provides a lot of choices at the homepage, but the user have to click minimal to reach the content they are looking for. This type of hierarchy is applied because most users will visit the intranet frequently. It is possible to access almost every page on the intranet from every page. This makes it possible to navigate quick and easy through the intranet.

Organisation Schemes of navigation
Three organisational schemes are used designing the navigation of the intranet. The main navigation of the intranet is a combination of a 'topical scheme' and a 'task scheme' (both ambiguous schemes). With the topic scheme the user knows what content to expect on this page.[69] "*But in designing a topical organization scheme, it is important to define the breadth of coverage.*"[70] This is very important when designing the file structure on the intranet and Dropbox. Testing these navigation and file structure is therefore absolutely required

All items in the main menu bar and sidebar are topical except the 'upload photos' item in the main menu bar. "*Task schemes are appropriate when it's possible to anticipate a limited number of high-priority tasks that users will want to perform.*".[71] In this case uploading photos for events, which is a need of the 3form staff.

An alphabetical scheme[72] is used in the 'people' page (contact directory) for finding colleagues. This is at the moment, with the small amount of 3form employees, the only navigation necessary. A search bar in the people page can be considered in the future.

Interaction design

Upload photos
The only 'taks scheme' on the homepage is the 'Upload photos' button in the main menu bar. The 'Upload photos' allows the user to upload photos of a company events to a new or existing event on the intranet. Event photo's is a staff need according the user research. A management need was to make adding content as easy as possible. Both desires comes together in the design of the new intranet. It is possible for any user to add photos and the flow of uploading photos has made very easy and intuitive.

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[68] Morville, 2006, p.70
[69] Morville, 2006, p.63
[70] Ibidem
[71] Ibidem
[72] Morville, 2006, p.59

Sitemap of the new 3form intranet

Patterns
The following patterns are used designing the intranet:

Intranet page: Files
Pattern: Rowstripping
What: the similar shaded to alternately color the background of the table rows.[73]
Why used: Is is not possible to use a whitespace to separate the data. This pattern is used to define and delineate the information in the file list. This makes reading or scanning the list easier.

Intranet part: Homepage
Pattern: Newsbox
What: This pattern is used to show latest news items, blog posts and other time sensitive content. "Each item should attract the viewer with readable headlines, link to read more and possibly thumbnail images.".[74]
Why used: To encourage people to read these items by making these items easy to read with readable text and more interesting with thumbnail images.

Pattern: Pagination
What: Pagination is used to break up a long list into pages and provide the controls for the user to navigate the list.[75]
Why used: This pattern is used on the homepage to break up news. Only the news of the current quarter is shown on the home page. News added during earlier quarters are on different pages accessible through the navigation buttons at the bottom of the news page.

Intranet part: Holiday planner
Pattern: Fill-in-the-Blanks
What: One or more fields arranged in the form of a sentence or phrase, with fields as 'blanks' to be filled by the user. [76]
Why: This pattern helps to make the interface self-explanatory. [77]

Intranet part: Profile, Holiday planner and Search
Pattern: Input prompt
What: A Prefill in a textfield or dropdown with a prompt that tells the user what to do or type.[78]
Why: This pattern helps to make the interface self-explanatory.[79]

Visual Design

Design style
The design of the new intranet is based on the 3form brand design guide and on the design of the current website. The user logs in (at 'My 3form') on the 3form website to enter the intranet. It is therefore important that the design is recognizable for the users but still different enough to notice they are not at the public 3form website. The dementions and and colors of the new intranet are the same as the 3form website.

iPad
A big difference between the design of the 3form website and the new intranet is the design of the navigtion. Buttons are designed bigger and iPad friendly in the new intranet.

Icons
In the sidebar menu (Files and My 3form) icons are used to support the 'broad and shallow' hierarchy and ensure recognizability of the menu items. The icons are not used in the main menu bar to remain a clear overview.

Guideline
The design of the new intranet can be used to give direction for new designs such as a more iPad friendly design of the CMS of the intranet and the 3form Image Library website. The same organisational structure also can be used for internal website such as the 3form Image Library.

[73] Tidwell, 2011, p.220
[74] Tidwell, 2011, p.430
[75] Tidwell, 2011, p.225
[76] Tidwell, 2011, p.362
[77] Ibidem
[78] Tidwell, 2011, p.369
[79] Ibidem

3.4.3 Iterative testing

During the design of the new intranet the design is tested three times with 5-7 participants a test. Each test, one or two participants were people outside of the company with no relation to 3form to test if the design was also understandable for people outside of 3form. Four sets of tasks were used:

Basic tasks

➡ Find the office phone number of Andera de Menezes

➡ Find the linkt to the HD intranet

Holiday planner

➡ Find article about expence forms

➡ Request a day of

Profile

➡ Edit youre phone number

Files

➡ Check out the sales files

➡ Find the file "Install printer"

Subjective satisfaction was measured by giving the test users a two-question questionnaire after they had performed the tasks with the intranet:

How did you like using the bank system?

1. Very pleasant
2. Somewhat pleasant
3. Neutral
4. Somewhat unpleasant
5. Very unpleasant

If you had to perform a task that could be done with the intranet, would you prefer using the intranet or would you contact the bank in person?

1. Definitely use the system
2. Likely use the system
3. Don't know
4. Likely contact the bank
5. Definitely contact the bank
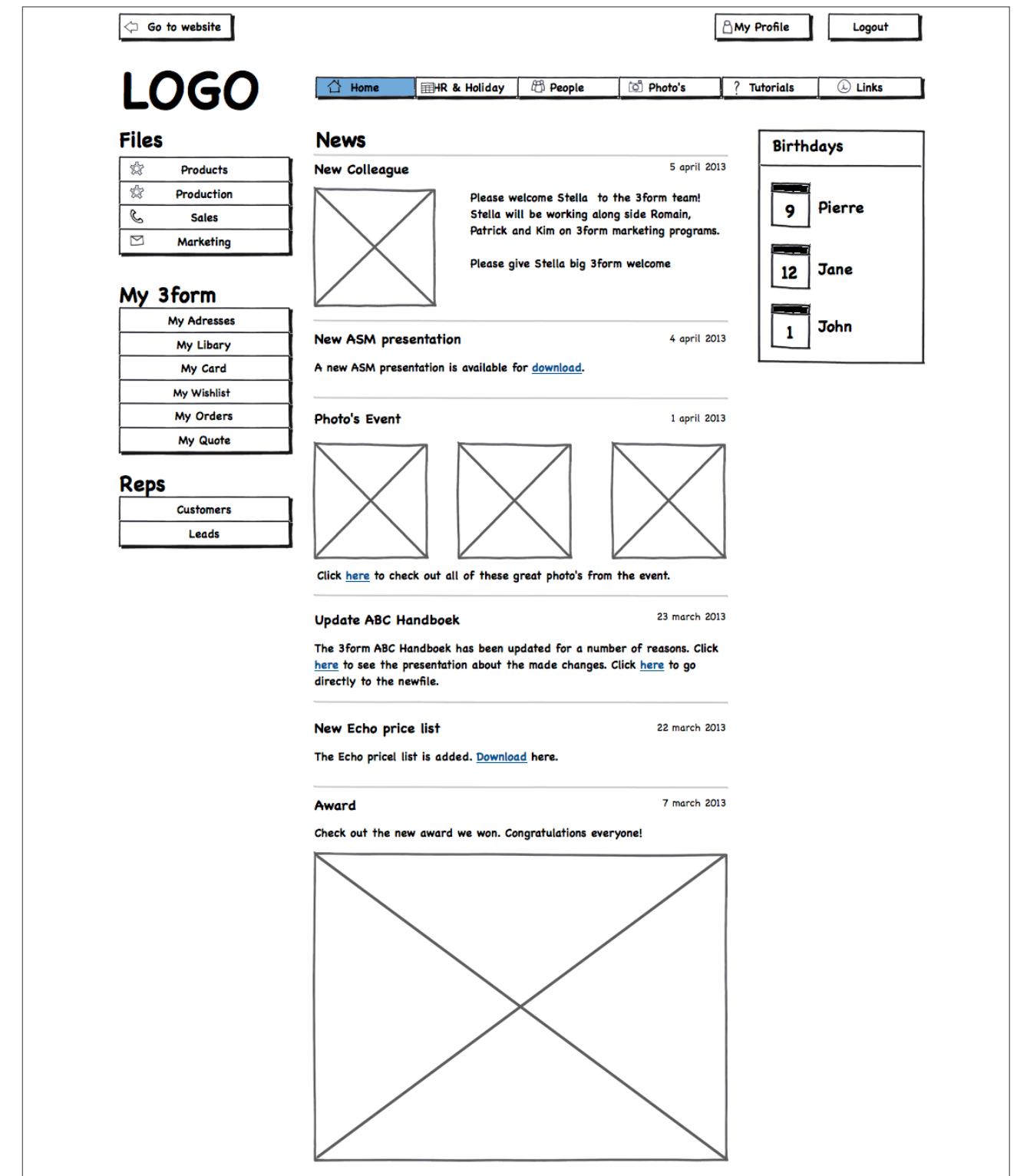
First design of the homepage
Prototype available at: http://invis.io/QEEAT4DU

First iteration test

Results

Task performance:

VERSION	BASIC TASKS (seconds)	HR TASKS (seconds)	PROFILE TASKS (seconds)	FILES TASKS (seconds)
1	11	28	26	12

Subjective sadisfaction:

VERSION	HOW DID YOU LIKE USING THE NEW INTRANET?	IF YOU HAD TO PERFORM A TASK THAT COULD BE DONE WITH THE INTRANET, WOULD YOU PREFER USING THE INTRANET OR WOULD YOU TO IT ANOTHER WAY?
1	2,3	1,6

Problems
A common problem during the first test was that most participants did not know what the word 'tutorials' means. It was therefore not easy to find help files. Another problem was the telephone icon of the 'sales' button. This icon lead to confusing when the participants were asked to find a phone number a colleague.
It was also no intuitive to find the HR and Tutorial news on the HR and Tutorial pages. Participants were also not aware of the fact that they were logged in. The last comment was that the search box was missing.

Design changes
Based on the occurred problems, in the first iteration test, the following changes were made in the design:

- Change icon phone

- Remove news on HR and Tutorial page

- Change name 'Tutorial' into 'ICT & Help'

- Place HR section under files (Because it contains only files after the removal of news)

- Added quick menu -with the first letter of the first names- on top of people page to go directly to the names starting with this letter.

- Added Profile photo and name to show you're logged in.
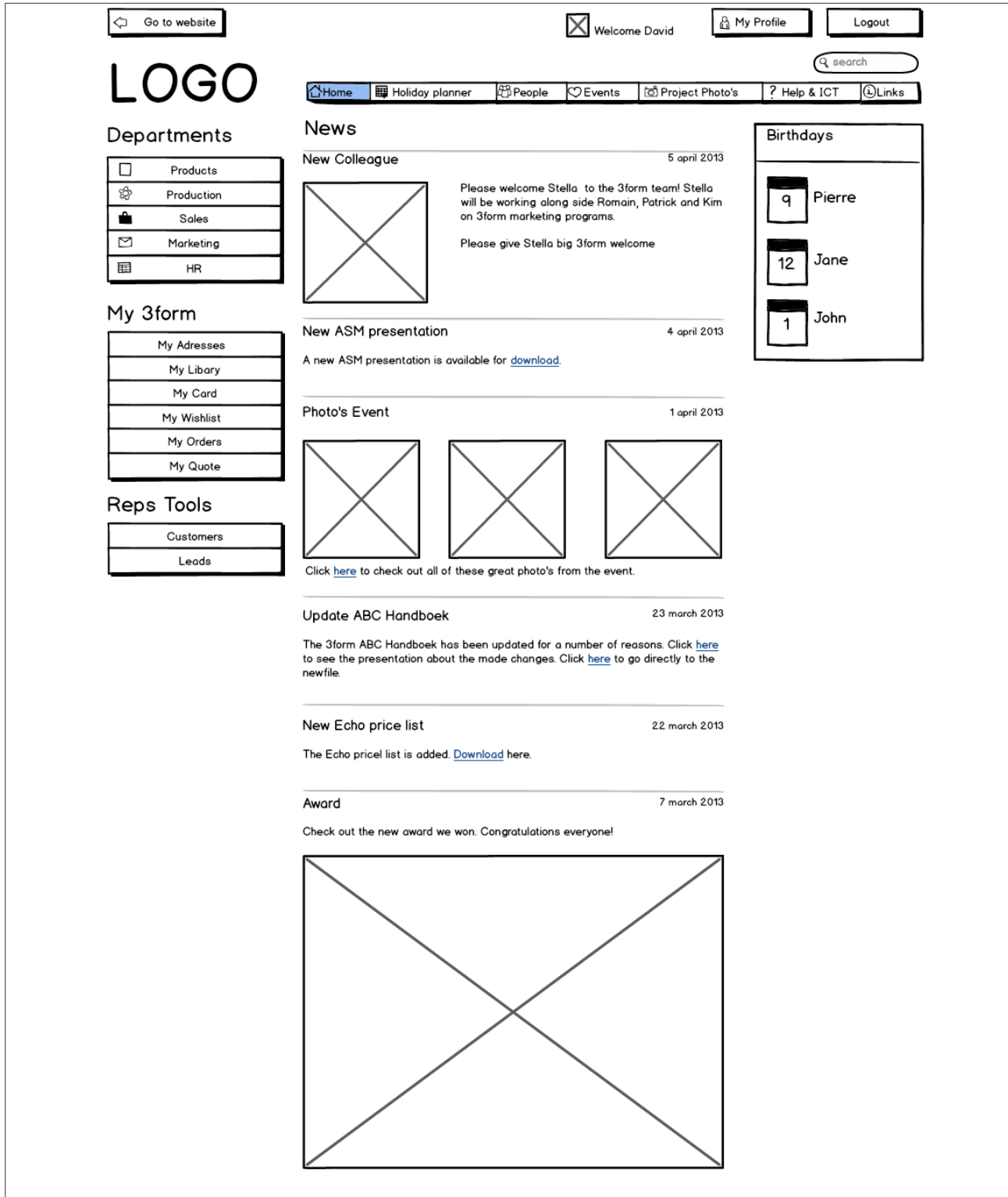
Design of the homepage based in the first iteration test
Prototype available at: http://invis.io/W4F04O7H

Second iteration test

Results

Task performance:

VERSION	BASIC TASKS (seconds)	HR TASKS (seconds)	PROFILE TASKS (seconds)	FILES TASKS (seconds)
1	11	28	26	12
2	7	5	5	9

Subjective sadisfaction:

VERSION	HOW DID YOU LIKE USING THE NEW INTRANET?	IF YOU HAD TO PERFORM A TASK THAT COULD BE DONE WITH THE INTRANET, WOULD YOU PREFER USING THE INTRANET OR WOULD YOU TO IT ANOTHER WAY?
1	2,3	1,6
2	2,3	1,6

Problems
Two problems were noticed during the iteration tests. The first problem was that is was not possible to take half a day or a couple of hour off. The second was the 'recent adjusted quote link' that was not yet designed. This link is a part of "My 3form" and needs also to be integrated with the new intranet.

Design changes
Based on the occurred problems, in the first iteration test, the following changes were made in the design:

- Change name 'files' (of left menu) into 'Departments'

- Place Help & ICT section under departments (because now it is only files)

- Left menu more iPad friendly

- Made links more iPad friendly

- Added a option to select a couple of hour to take off.

- Added recent Quote link
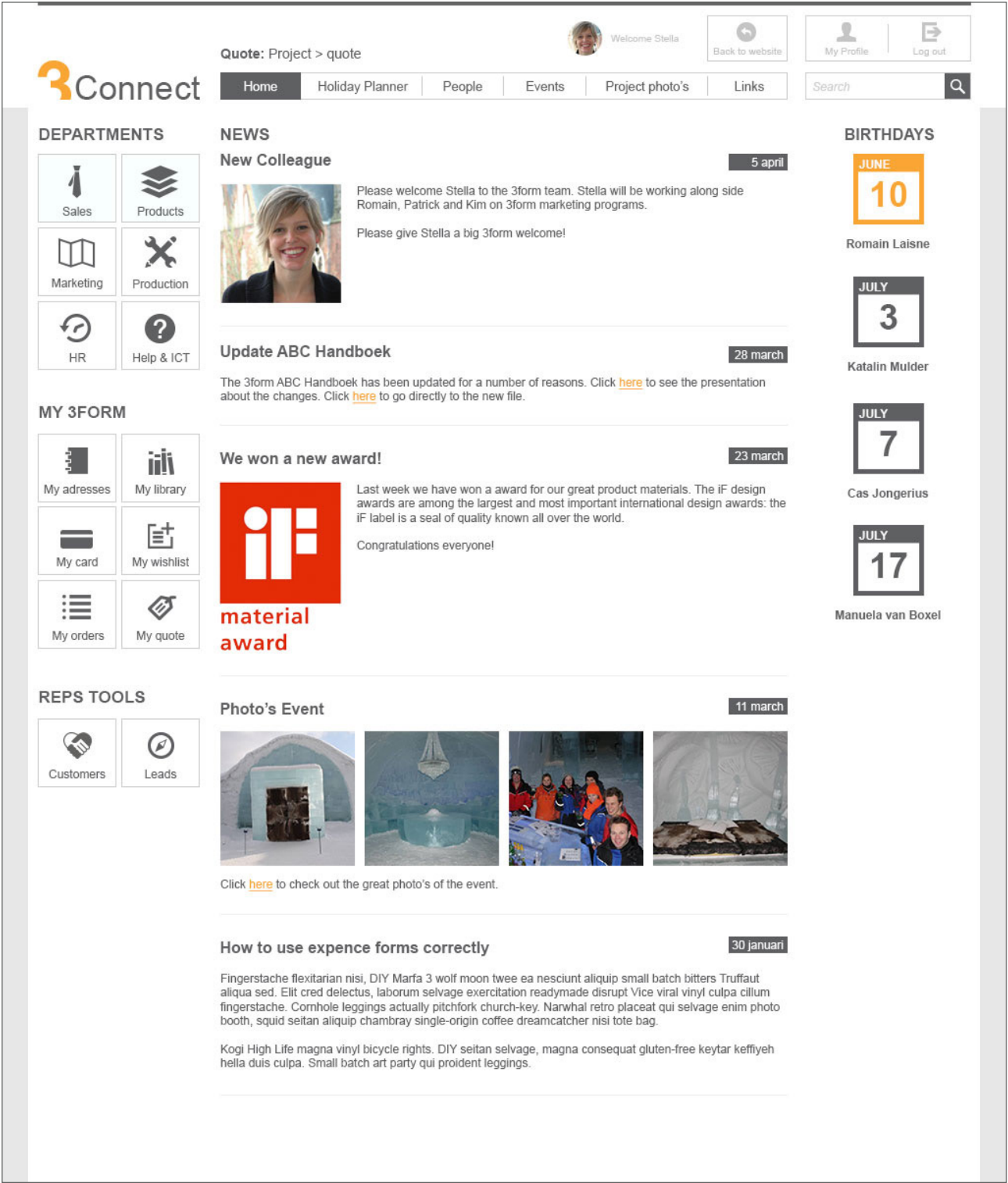
Design of the homepage based in the second iteration test
Prototype available at: http://invis.io/6DF04N7W

Third iteration test

Results

Task performance:

VERSION	BASIC TASKS (seconds)	HR TASKS (seconds)	PROFILE TASKS (seconds)	FILES TASKS (seconds)
1	11	28	26	12
2	7	5	5	9
3	3	5	4	6

Subjective sadisfaction:

| VERSION	HOW DID YOU LIKE USING THE NEW INTRANET?	IF YOU HAD TO PERFORM A TASK THAT COULD BE DONE WITH THE INTRANET, WOULD YOU PREFER USING THE INTRANET OR WOULD YOU TO IT ANOTHER WAY?
1	2,3	1,6
2	2,3	1,6
3	2,2	1,3

Problems
Only one problem was noticed during the iteration test. The participants were difficulties finding the 'back to website' button, most of the participant use the back button in the internet browser to get back to the 3form website.

Design changes
Based on the occurred problems, in the first iteration test, the following changes were made in the design:

▪▶ The location of the Back button is changed

▪▶ Links to older news are added
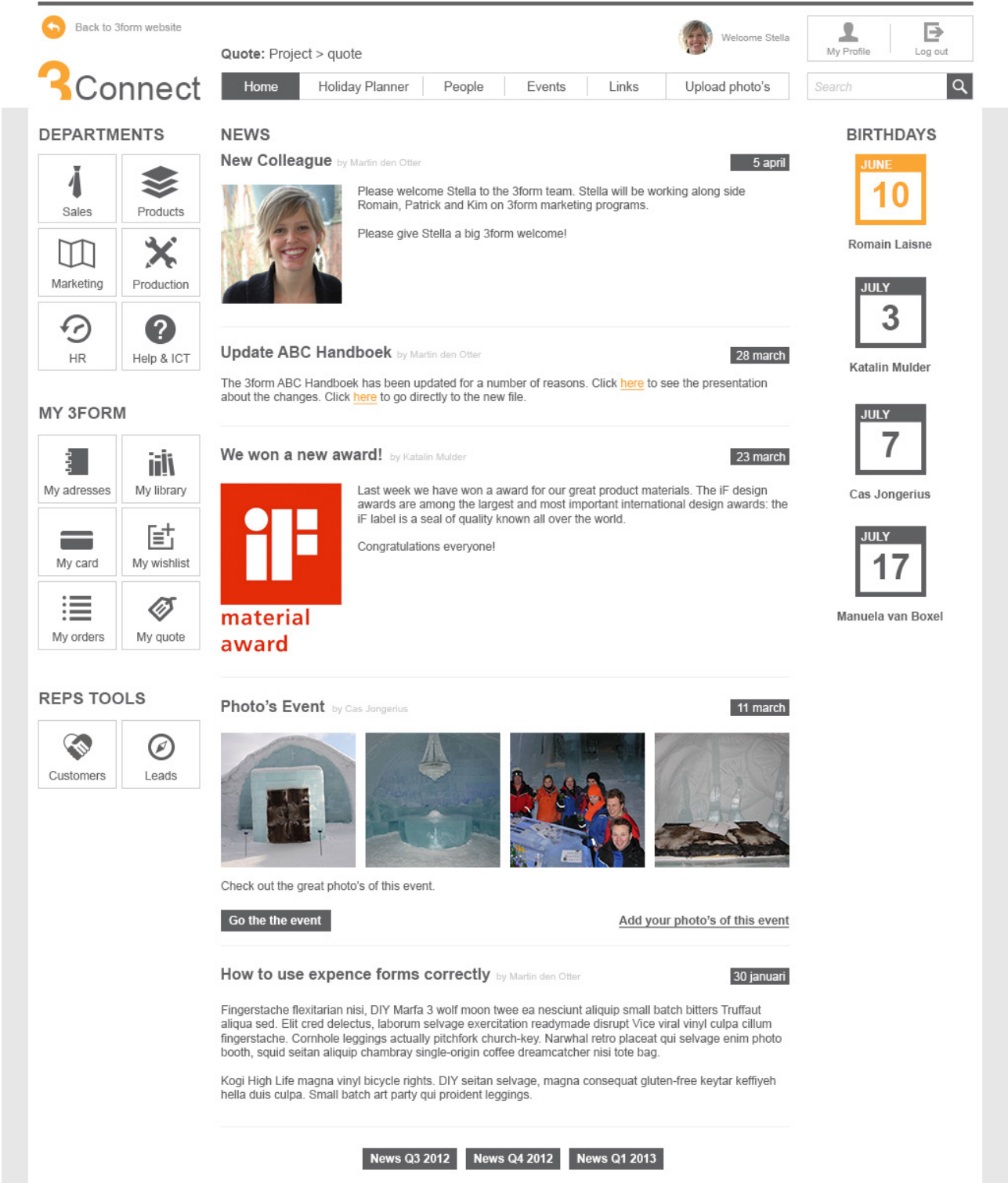
Design of the homepage based in the third iteration test
Prototype available at: http://www.sven-bakker.nl/3connect

3.4.4 Usability test

After designing and prototyping the new intranet a usability test was a usability test was held with 12 participants.[80] 3 participants of each user group (External Sales, Sales Support, Production and a mix of remaining department staff. The usability test was held to test the final design and prototype, by measuring the time required for performing tasks and counting the errors during the performing.

The participants were asked to complete a set of 11 tasks:

1. Log in at 'My 3form'

2. David McQueen is your colleague and you need his e-mail adres. Find the e-mail adres of David.

3. You need something from the Hunter Douglas intranet. Find the link to the Hunter Douglas intranet.

4. Sunday16 June is fatherday. You would like a long weekend off because you are going somewhere with your family. Request free from 14 until 17 June.

5. You have a new phonenumber. Youre new number is 06 36 48 65 98. Replace your current phonenumber on the intranet.

6. The Leadpage is a part of the Rep Tools. Can you find this page??

7. Can you find the pricelists of the 3form products?

8. Can you find the Certification of the 3form products?

9. Can you find the file: How to add presentations to your iPad.pdf?

10. Last January you were present at the Sales Meeting and took some photos. Upload this photos to the intranet.

11. Go back to the 3form website

After this test two questions were asked to measure the subjective satisfaction and effectiveness.

➤ Based on the experience you have just acquired using the intranet what rating would you give the intranet for effectiveness on a scale of 1 to 10 and why?

➤ To what extent satisfies the intranet the things that are important to you on a scale from 1 to 10 and why?

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[80] Nielson Norman, 2012

Results

QUESTION	TIME (sec)	ERRORS
1	4	0
2	6,625	0
3	9,2	0
4	35	0
5	48	3
6	32,7	2
7	13,2	0
8	8	0
9	35	0
10	41.75	0
11	3,6	0

Based on the experience you have just acquired using the intranet what rating would you give the intranet for effectiveness on a scale of 1 to 10 and why?	To what extent satisfies the intranet the things that are important to you on a scale from 1 to 10 and why?
8,28	8,25

Conclusion

The usability test shows that some participants are having trouble finding the right place to edit 'their' profile. The participants who did not find the right place the first time went looking on the people page to edit their profile. After they had not found this possibility on this page they started looking for other possibilities and did find the 'My Profile' button quickly. A few ajustments in the design could handle this problem but it is also possible that it is only a problem that occurs only at the first time and will be remebered and used correctly the next time. A part the learning curve of the new intranet.

The same issue goes for the Leadpage button. This buttom was not easily findable for al participants because is was displayed 'under the fold'.

A important insight was given by one of the participants. The CMS part of 'My 3form' was not included in the design. This important tool for the marketing Staff was overlooked during the design process

4. EPILOQUE

The design, prototyping and testing in this thesis can not guarantee a successful intranet. A proper start is been made. I believe that my work within 3form can be the first stap to a successful intranet. Further research, development and testing is needed to make sure this solution stays a proper way to communicate, collaborate and share. Working within 3form made me realise that it is impossible to satisfy all users and that a intranet or website is never finished.

I had a great time working within 3form and this challenging assignment.

Sven Bakker

Utrecht, juni 2013

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ATTACHMENTS

A - FRAME OF REVERENCE

Black-box testing
Black-box testing is a method in which the participants (don't need to) have no knowledge of the internal structure of the test object. The exact opposite of the black-box test is the white-box test.[81]

Collaboration
The definition of collaboration; two or more people, or parties, working together towards a common goal.[82]

Communication
Communication, explained by science is an activity between transmitter and receiver where information is exchanged. In most simple state of affairs, this happens one-way, but most of the time there is feedback which creates interaction. "*Communication is not only interactive and iterative, but requires informing and participation. It is not an isolated phenomenon that starts and stops but different periods of communication forms part of a continuous process.*"[83]

Company culture
Corporate culture can be defined as the common understanding of the members and the party of the company.This common understanding is related to the daily course of events in the company.[84] Van Doorn and Lammers are explaining the company culture as follows: These are the shared ideas of the community with the function to specify and sustain social behavior.[85]

Intranet
"*Intranets are the internal web-based environments that provide staff with the tools and information they need to do their job.*".[86] The exact difference between internet and intranet lies in the word itself. 'Inter', the first part of internet means 'between' while 'Intra', the first part of intranet means within. The "internet" is a web between many networks while an intranet is a website within a network. The internet give people connection to many websites and networks while a intranet connects the people within a network. This means that a intranet is just a website within a company's network that can, in most cases, only be accessed by the company staff.[87]

Network drive
"*A network drive is a storage device on a local access network (LAN) within a business or home.*" This storage device may be located on a dedicated server and used as a external hard drive on one or more computers that are connected to the server/network. A network drive makes sharing and storing files with anyone connected to the network much easier.[88]

Stakeholders
"*A person, group or organization that has interest or concern in an organization. Stakeholders can affect or be affected by the organization's actions, objectives and policies.*". [89] Examples of key stakeholders are: employees, management, directors, clients etc.

Usability
"*Usability is the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction.*" [90]

Usability is defined by 5 quality components:

· Learnability: How easy is it for users to accomplish basic tasks the first time they encounter the design?
· Efficiency: Once users have learned the design, how quickly can they perform tasks?
· Memorability: When users return to the design after a period of not using it, how easily can they reestablish proficiency?
· Errors: How many errors do users make, how severe are these errors, and how easily can they recover from the errors?
· Satisfaction: How pleasant is it to use the design? [91]

[81] BCS SIGIST, 2001. p.35-59
[82] www.businessdictionary.com (2013)
[83] Rood, 2001, p.33
[84] Sanders et al., 1987, p.12
[85] Van Doorn et al., 1984, p.108
[86] Robertson, 2007, p.13
[87] McGrath, 2011
[88] www.whatis.techtarget.com, 2013
[89] www.businessdictionary.com, 2013
[90] ISO 9241-11, 1998
[91] Nielson Norman, 2012

B - PRODUCT REACTION CARDS

Product Reaction Cards

Joey Benedek and Trish Miner
Microsoft Corporation, 1 Microsoft Way, Redmond, WA 98052
joeyb@microsoft.com and trishmi@microsoft.com

The following table contains all of the words used on the product reaction cards described in the paper *Measuring Desirability: New methods for measuring desirability in the usability lab setting*.

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If you choose to use these cards for your own research, we are very interested in your experience, so we can continue to refine the method. Please contact us and let us know how it works for you.

The complete set of 118 Product Reaction Cards				
Accessible	Creative	Fast	Meaningful	Slow
Advanced	Customizable	Flexible	Motivating	Sophisticated
Annoying	Cutting edge	Fragile	Not Secure	Stable
Appealing	Dated	Fresh	Not Valuable	Sterile
Approachable	Desirable	Friendly	Novel	Stimulating
Attractive	Difficult	Frustrating	Old	Straight Forward
Boring	Disconnected	Fun	Optimistic	Stressful
Business-like	Disruptive	Gets in the way	Ordinary	Time-consuming
Busy	Distracting	Hard to Use	Organized	Time-Saving
Calm	Dull	Helpful	Overbearing	Too Technical
Clean	Easy to use	High quality	Overwhelming	Trustworthy
Clear	Effective	Impersonal	Patronizing	Unapproachable
Collaborative	Efficient	Impressive	Personal	Unattractive
Comfortable	Effortless	Incomprehensible	Poor quality	Uncontrollable
Compatible	Empowering	Inconsistent	Powerful	Unconventional
Compelling	Energetic	Ineffective	Predictable	Understandable
Complex	Engaging	Innovative	Professional	Undesirable
Comprehensive	Entertaining	Inspiring	Relevant	Unpredictable
Confident	Enthusiastic	Integrated	Reliable	Unrefined
Confusing	Essential	Intimidating	Responsive	Usable
Connected	Exceptional	Intuitive	Rigid	Useful
Consistent	Exciting	Inviting	Satisfying	Valuable
Controllable	Expected	Irrelevant	Secure	
Convenient	Familiar	Low Maintenance	Simplistic	

C - FILE STRUCTURE TEST

Tutorials	File	File	File	File	File	File	File	File
Project Photo's	File	File	File	File	File	File	File	File
HR	File	File	File	File	File	File	File	
Events	File	File	File	File	File	File	File	File
Production	File	File	File	File	File	File	File	File
Marketing	File	File	File	File	File	File	File	File
Sales	File	File	File	File	File	File	File	File
Products	File	File	File	File	File	File	File	File

3form™ Files and structure

Green is not a color	3form ABC
High Res images	Brand Design Guide
Terms and conditions	Expence forms
Lead times	Project photo's	Proces Flow
Sales Meeting 2013	Product USP's	Monday Sales Call
Training files	Tutorials and tricks	Product Documentation
Quality Control	Brochures	Product presentations
Certification	Warrantees	Pricelists

D - FILE STRUCTURE

E - INTERVIEW SCRIPT

Interview script

3Connect

A effective and easy way to collaborate, share
and communicate within the company.

1. OBJECTIVES

Objective

- Problem: many complains about the intranet, intranet not up-to-date, and the intranet is used less and less.

What do we want to find out?

1. What are the current solutions that the 3form staff are using to communicate, share and collaborate within the company and what are the strengths and weaknesses?
2. What are the needs and expectations of the 3fom staff to communicate, share and collaborate within the company?

Key question

What is a proper solution for the 3form staff to communicate, share and collaborate effective and easy with each other, on desktop computers and tablets, within the company?

2. TARGET GROUP

Main target group: Employees of 3form

- Men and Women (20 < 55years old)
- Men and Women form different social classes
- Unexperienced users (30%) and experienced users (70%)

Sub target group 1: External Sales Staff
Sub target group 2: Managment Staff
Sub target group 3: Office Staff
Sub target group 4: Production Staff

3. PERSONS AND INTERVIEW SCHEDULING

Who do we want te interview?

Sub Target Group	Name	Age	Gender	User Type
External Sales Staff	Emmanuelle Guillot	47	Female	Unexperienced
External Sales Staff	Rebecca Woods	49	Female	Experienced
External Sales Staff	Filippo Spinelli	35	Male	Experienced
Managment Staff	Katalin Mulder	50	Female	Experienced
Managment Staff	Richard Kin	40	Male	Experienced
Managment Staff	Cas Jongerius	50	Male	Experienced
Office Staff	Marc Bruce	26	Male	Unexperienced
Office Staff	Sylvia Schmidt	48	Female	Experienced
Production Staff	Jaap Ten Kate	50	Male	Experienced
Production Staff	Manuela van Boxel	43	Female	Experienced
Production Staff	Jan van Wijngaarden	43	Male	Unexperienced
Production Staff	Roel Sietses	46	Male	Experienced
*Reserve	Claudia Krabbendam		Female	Experienced

Interview location

Contextual interviews are conducted in the environment, or context, in which the service process of interest occurs. One of the key benefits of making an interview contextual is that is helps the interviewee to remember the kind of specific details that so often get lost in a traditional focus group setting.

Date and timing

Name	Date	From	Till
Cas Jongerius	Monday 4 March 2013	16:00u	17:00u
Katalin Mulder	Tuesday 5 March 2013	09:00u	10:00u
Marc Bruce	Wednesday 6 March 2013	09:00u	10:00u
Richard Kin	Wednesday 6 March 2013	11:00u	12:00u
Sylvia Schmidt	Thursday 7 March 2013	09:00u	10:00u
Manuela van Boxel	Thursday 7 March 2013	11:00u	12:00u
Roel Sietse	Thursday 7 March 2013	14:00u	15:00u
Jan van Wijngaarden	Friday 8 March 2013	09:00u	10:00u
Jaap ten Kate	Friday 8 March 2013	10:00u	11:00u
Filippo Spinelli	Monday 11 March 2013	10:00u	11:00u
Rebecca Woods	Monday 11 March 2013	11:30u	12:30u
Emmanuelle Guilliot	Monday 11 March 2013	13:30u	14:30u

4. QUESTIONNAIRE

General Questions

1. What is your age?

2. How long have you been working at 3form?

3. What is your position?

4. What are your daily tasks at 3form?

5. With which colleagues/deparment do you work together often?
   a. List the top 5/10

6. Can you tell what percentage of the time you are working at the office / outside the office?
   a. What is your work outside the office?

7. Do you have access to a computer during work?

8. Can you tell what percentage of the time you're at work on your computer?
   a. Where are you the rest of the time?

9. What computer skills do you have and what programs are you using?

10. Do you have any other devices with you while working? (Phone, Smartphone, iPad e. g.)

11. Do you use these devices during your work? (Also for non-work related things)
    a. For what purpose do you use these devices?
    b. List the top 5/10

Contextual Interview Questions

!Important! First make clear that it is not only about the intranet but all kinds of internal communication like; Intranet, Dropbox, Network-drive, Email, Phone, Post-It, Whiteboard etc.

2. Which 3form files or documents do you need the most at your job?
    a. List the top 5
    b. How do you get those files or documents?
    c. Who else is likely to touch these files?
    d. What do they do with it?
    e. How do you share those files with you colleages?
    f. Are there inefficient or ineffective things this proces?

3. What devices do you use to communicate, share and collaborate, with your colleagues, within the company? (For example: iPad, Smartphone, computer)
    a. List the top 5/10
    b. When do you use these devices?

4. What programs / websites do you use to communicate, share and collaborate, with your colleagues, within the company? (For example: intranet, email, network-drive, whieboard)
    a. List the top 5/10
    b. For wat purpose do you use these programs / websites ?

5. Do you use other tools (maybe **not** provided by the company) to communicate, share and collaborate, with your colleagues, within the company?
    a. Which tools?
    b. Why do you use those tools?

6. Do you think that one of the above tools or applications can improve the internal communication, sharing or collaboration if it is used of more often used by more colleagues?
    a. How?
    b. Can you give a example?

7. Do you sometimes work remotely/from distance with colleagues?
    a. How often?
        i. Rarely
        ii. Once a month
        iii. Once a week

          iv. Multiple times a week

          v. Once a day

          vi. Multiple times a day

   b. What is the reason for this?

8. How do you communicate remotely/from distance?
    a. Why are you doing it this way?
    b. Do you like doing it this way?
        i. Why (not)
    c. Are there inefficient or ineffective things this proces?

9. How do you share files remotely/from distance?
    a. Why are you doing it this way?
    b. Do you like doing it this way?
        i. Why (not)
    c. Are there inefficient or ineffective things this proces?
    d. Do you think sharing this way meets the need sof the reciever?

10. How do you collaborate remotely/from distance?
    a. Why are you doing it this way?
    b. Do you like doing it this way?
        i. Why (not)
    c. Are there inefficient or ineffective things this proces?

11. I can imagine that working with a colleague at a distance is different than working together in person, do you agree with that?
    a. Are there things you find yourself doing in remote collaboration that you don't do in person?
    b. Are there things that you miss when collaborating remotely that you can do working together in person

12. Imagine that you are about to share a new file with a colleague outside the company (take a example colleague from earlier answers), for example a document. How would you do this?
    a. Why in this way?
    b. Are there other ways to do it?
    c. Would you do it differently if this colleague is mostly inside the office?
        i. Why would you do it differently?

13. Does it sometimes happens that you work with multiple people on a file?

a. How often?

 vii. Rarely

 viii.Once a month

 ix. Once a week

 x. Multiple times a week

 xi. Once a day

 xii. Multiple times a day

b. Why do multiple people work on it?

c. When you get the file, what do you need to know about what they've done?

d. What problems arise from having multiple people work on it?

14. If you look back at last week, was there any moment that you need or wanted to share information of facts with (some of) your colleagues that was not needed but interesting?

 a. Did you share it?

  i. How?

   1. Do you find that a effective way?

    a. Why (not)?

Intranet

2. How often do you use the current intranet? Choose:

 a. Rarely

 b. Once a month

 c. Once a week

 d. Multiple times a week

 e. Once a day

 f. Multiple times a day

3. What do you use it for?

 i. News

 ii. Photo's

 iii. HR-forms

 iv. Birthdays

 v. Holiday planner

 vi. Monday Sales Calls info

 vii. Training files

        viii. Tutorials
        ix. Product info
        x.   Salestools
        xi. Pricelists
        xii. …............

    b. Can you sort the above items on frequency?
    c. What files, available on the intranet, do you use?

4. When you are using the current intranet, do you find anything frustrating that you wish was easier?
    a. List the 5 most frustrating things
    b. Can you explain that? (The above-mentioned things)

5. Are there also things you like about the current intranet?
    a. List 5 things you like
    b. Can you explain that? (The above-mentioned things)

6. What comes to mind when you think about the current intranet (how would you describe it to a friend)?

7. Is there anything that you wish the current intranet allowed you to do that it doesn't allow you now?

8. Are there things you would like to share with your colleagues through the intranet?

9. Do you have experience with a different intranet or any other kind of internal communication?
    a. What was your experience?
    b. Do you think we can use this tool within 3form?

10. Do you use other tools to communicate, share and collaborate, instead of the intranet?
    a. Why are you doing this tool?

11. How do you compare the intranet to others tools you have used to communicate, share and collaborate?

12. What kind of services/tools do you suggest to make communication, sharing and

collaboration more easy and effective within 3form?

Day in the life
- How does a ordinary day for you at work looks like? Can you describe a day at work?
- Write a list of activities for a particular day last week

**Product Reaction Cards (Scroll down for Photo Example)**

- Choose 8 cards that you think describe the current intranet best.
  - Why do you choose this word?
    - Can you explain what you mean exactly?
    - Can you give me an example?

  - Can you put these words in order, the best description on top?

- Choose 8 cards that you think describe the the intranet you desire.
  - Why do you choose this word?
    - Can you explain what you mean exactly?
    - Can you give me an example?

  - Can you put these words in order, the most desired description on top?

Final questions

- What makes a good intranet experience in your opinion?

- What would be for you the ideal intranet?

- What things wast your time?

- If you had more time to spend on just one or two things, what would they be?

- Would you like to contribute to improve the intranet?
  - In what way?

- Do you have questions about this research or about this interview?

The customized set of 80 Product Reaction Cards

Accessible	Convenient	Hard to Use	Rigid
Advanced	Cutting edge	Helpful	Satisfying
Annoying	Dated	High quality	Secure
Appealing	Desirable	Impersonal	Simplistic
Approachable	Difficult	Incomprehensible	Slow
Attractive	Disruptive	Inspiring	Stimulating
Boring	Easy to use	Intuitive	Straight Forward
Business-like	Effective	Inviting	Time-consuming
Busy	Efficient	Irrelevant	Time-Saving
Calm	Effortless	Low Maintenance	Too Technical
Clean	Empowering	Not Valuable	Trustworthy
Clear	Essential	Old	Unapproachable
Collaborative	Expected	Organized	Unattractive
Compatible	Fast	Personal	Unconventional
Complex	Frustrating	Poor quality	Understandable
Comprehensive	Fun	Powerful	Undesirable
Confusing	Inconsistent	Predictable	Usable
Connected	Ineffective	Relevant	Useful
Consistent	Innovative	Reliable	Valuable
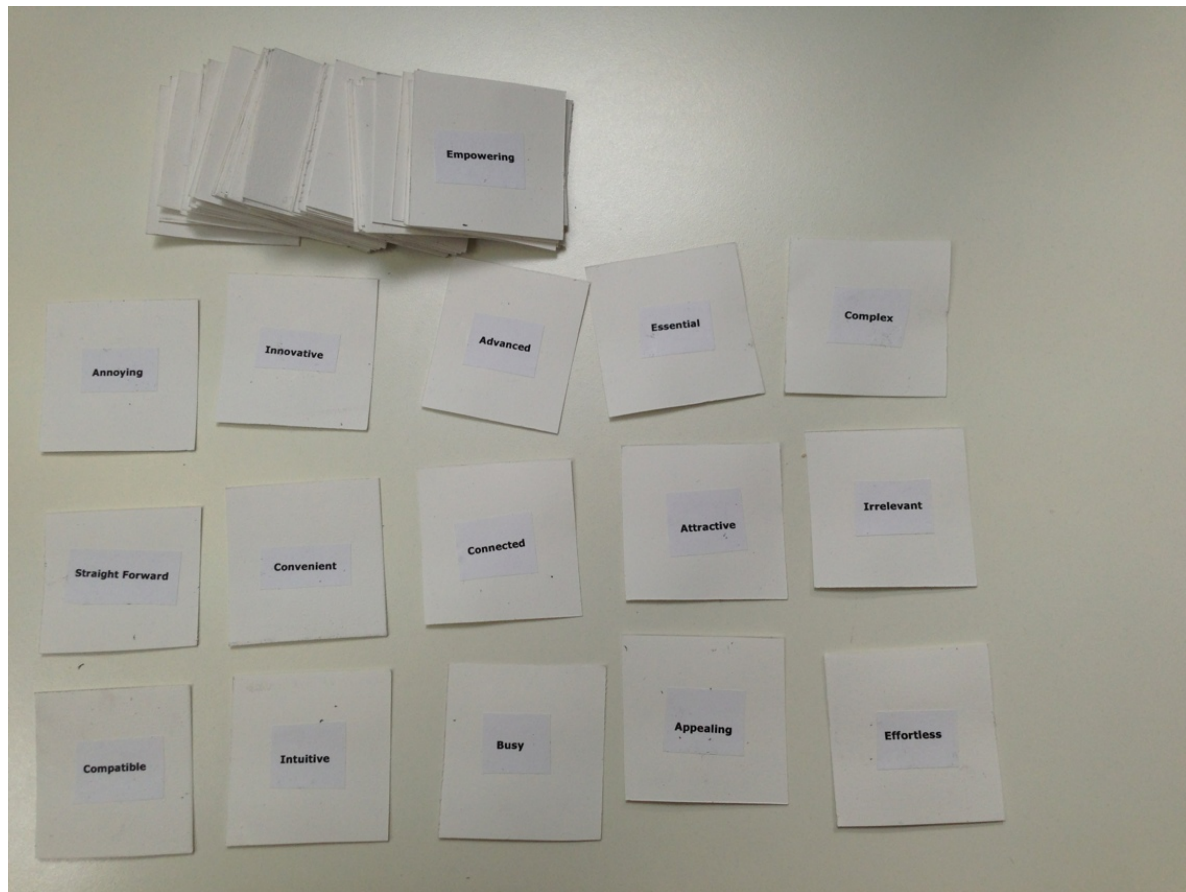
English Cards

The aangepaste set van 80 Product Reactie Kaarten

Toegankelijk	Geschikt	Betrouwbaar	Stijf
Geavanceerd	Effectieve kwaliteiten	Niet persoonlijk	Geeft voldoening
Vervelend	Gedateerd	Onbegrijpelijk	Veilig
Aansprekend	Wenselijk	Inconsistent	Simplistisch
Ontvankelijk	Moeilijk	Niet effectief	Langzaam
Aantrekkelijk	Storend	Innovatief	Stimulerend
Saai	Makkelijk te gebruiken	Inspirerend	Ongecompliceerd
Zakelijk	Effectief	Intuitief	Tijd rovend

Druk	Efficient	Uitnodigend	Tijd besparend
Rustig	Moeiteloos	Niet relevant	Te technisch
Opgeruimt	Geeft mogelijkheden	Weinig onderhoud	Betrouwbaar
Duidelijk	Essentieel	Niet bruikbaar	Ontoegankelijk
Samenwerking	Naar verwachting	Oud	Niet aantrekkelijk
Compatible	Snel	Georganiseerd	Handig
Complex	Frusterend	Persoonlijk	Waardevol
Uitgebreid	Leuk	Slechte kwaliteit	Ongebruikelijk
Verwarrend	Moeilijk te gebruiken	Sterk	Begrijpbaar
Verbindend	Helpvol	Voorspelbaar	Onwenselijk
Consistent	Hoge kwaliteit	Relevant	Bruikbaar

Dutch Cards

The complete set van 118 Product Reactie Kaarten

Toegankelijk	Creatief	Snel	Betekenisvol	Langzaam
Geavanceerd	Aanpasbaar	Flexibel	Motiverend	Geraffineerd
Vervelend	Effectieve kwaliteiten	Breekbaar	Niet veilig	Stabiel
Aansprekend	Gedateerd	Fris	Niet bruikbaar	Steriel
Ontvankelijk	Wenselijk	Vriendelijk	Ongebruikelijk	Stimulerend
Aantrekkelijk	Moeilijk	Frusterend	Oud	Ongecompliceerd
Saai	Los	Leuk	Optimistisch	Stressvol
Zakelijk	Storend	Zit in de weg	Gewoon	Tijd rovend
Druk	Afleidend	Moeilijk te gebruiken	Georganiseerd	Tijd besparend
Rustig	Dof	Helpvol	Arrogant	Te technisch
Opgeruimt	Makkelijk te gebruiken	Hoge kwaliteit	Overwelmend	Betrouwbaar
Duidelijk	Effectief	Niet persoonlijk	Neerbuigend	Ontoegankelijk
Samenwerking	Efficient	Indrukwekkend	Persoonlijk	Niet aantrekkelijk
Comfortabel	Moeiteloos	Onbegrijpelijk	Slechte kwaliteit	Oncontroleerbaar
Compatible	Geeft mogelijkheden	Inconsistent	Sterk	Ongebruikelijk
Dwingend	Energiek	Niet effectief	Voorspelbaar	Begrijpbaar
Complex	Boeiend	Innovatief	Professioneel	Onwenselijk
Uitgebreid	Vermakelijk	Inspirerend	Relevant	Onvoorspelbaar
Overtuigend	Enthousiast	Geintergreerd	Betrouwbaar	Onbeschaafd
Verwarrend	Essentieel	Intimiderend	Responsive	Bruikbaar
Verbindend	Uitzonderlijk	Intuitief	Stijf	Handig
Consistent	Spannend	Uitnodigend	Geeft voldoening	Waardevol
Controleerbaar	Naar verwachting	Niet relevant	Veilig	
Geschikt	Bekend	Weinig onderhoud	Simplistisch	

The complete set of 118 Product Reaction Cards

Accessible	Creative	Fast	Meaningful	Slow
Advanced	Customizable	Flexible	Motivating	Sophisticated
Annoying	Cutting edge	Fragile	Not Secure	Stable
Appealing	Dated	Fresh	Not Valuable	Sterile
Approachable	Desirable	Friendly	Novel	Stimulating
Attractive	Difficult	Frustrating	Old	Straight Forward
Boring	Disconnected	Fun	Optimistic	Stressful
Business-like	Disruptive	Gets in the way	Ordinary	Time-consuming
Busy	Distracting	Hard to Use	Organized	Time-Saving
Calm	Dull	Helpful	Overbearing	Too Technical
Clean	Easy to use	High quality	Overwhelming	Trustworthy
Clear	Effective	Impersonal	Patronizing	Unapproachable
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Compatible	Empowering	Inconsistent	Powerful	Unconventional
Compelling	Energetic	Ineffective	Predictable	Understandable
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Comprehensive	Entertaining	Inspiring	Relevant	Unpredictable
Confident	Enthusiastic	Integrated	Reliable	Unrefined
Confusing	Essential	Intimidating	Responsive	Usable
Connected	Exceptional	Intuitive	Rigid	Useful
Consistent	Exciting	Inviting	Satisfying	Valuable
Controllable	Expected	Irrelevant	Secure	
Convenient	Familiar	Low Maintenance	Simplistic	

Notes

3 parts
1. General usage
2. Current situation
3. Ideal solution

Authorization level to access the info => add somewhere in the analysis

Een andere verklaring kan het tekort aan training en opleiding, aanverwante financiële beperkingen of concurrerende prioriteiten zijn bij zorgaabieders.

Het onderzoek biedt wel ondersteuning voor deze reeks van verklaringen, met name met betrekking tot de verwezenlijking van de patiënten informatiebehoefte (Girgis en Sanson-Fisher, 1995).

Veel artsen voelen zich niet bekwaam in sommige aspecten van communicatieve vaardigheden (Girgis en Sanson-Fisher, 1995), en veel artsen aarzelen om schattingen van de levensverwachting te geven.

F - PERSONAS

3form™

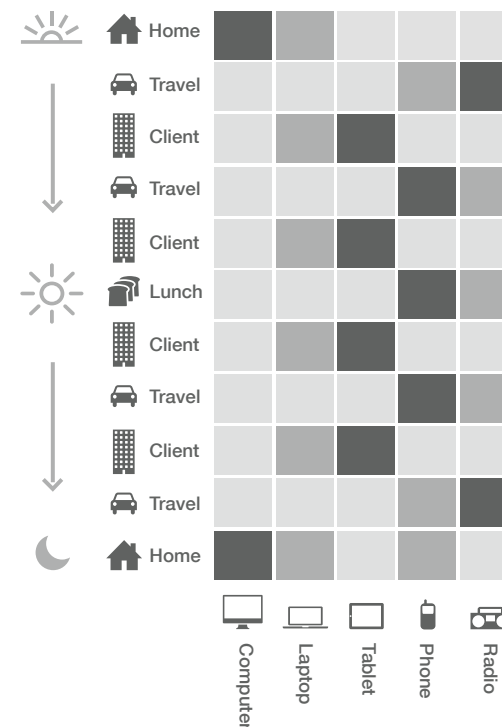**"I go to architect and contractors to show the 3form products and convince them to place an order."**

Carlos is a Area Sales Manager at 3form. Together with 16 other colleagues is Carlos responsible for the aqusition of new client and selling the 3form products to exisitng clients. On a average day, Carlos gives about 4 presentation to architects and contractors about the 3form products.

Because prospects and customers are not in the immediate vicinity Carlos has to travel a lot. Although it is not safe, Carlos does sometimes check his email while driving to his next appointment and gives short replies. He uses his iPad, and sometimes his laptop for the presentations he gives.

Carlos needs quick acces to the information he needs because he has a lot of appointment and phonecalls on a day. If he needs information very quickly, or if he can't find the information he is looking for, he calls his contract person of the Sales Support Staff at the office in Schiedam. He must always be up-to-date with the latest prices and product information. Right now he receives the latest information by email and trough the intranet.

Carlos Hernández

Age: 44

Language: Spanish, English

Day in the Life

	Computer	Laptop	Tablet	Phone	Radio
🏠 Home	■				
🚗 Travel					■
🏢 Client			■		
🚗 Travel				■	
🏢 Client		■			
🍱 Lunch				■	
🏢 Client		■			
🚗 Travel					■
🏢 Client		■			
🚗 Travel				■	
🏠 Home	■				

Key Characteristics

- Medium Company
- 4 to 5 appointments a day
- 40/60 Office and Outside
- Uses the current intranet almost only for Monday Sales Call Presentations
- In possession of smartphone, ipad and laptop.
- Uses email to communicate and share easy and fast.
- Uses phonecalls for urgent questions

Goals

- Easy and fast acces to information
- Well informed of news within the company

Suggestions

- Share more photo's of production
- Free day overview for al employees
- FAQ on the intranet to share experiences

Use of applications

- Word
- Power Point
- Citrix
- Super Office
- Itunes
- Internet

Frustrations & Pain Points

- To many password for al different programs
- Can't find the information I need
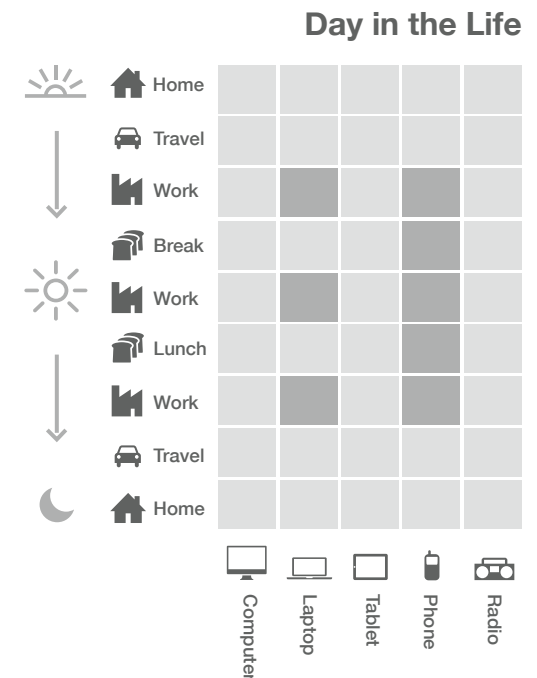- Don't know when a Sales Support Staff memeber has a day off.

3form™

"I have minimal contact with other departments. All I need is printed on paper."

Jan is a member of the production staff. He fabriacates the orders of the 3form clients together with 15 other production staff members. The work/projectfiles for production are provided by planning and printed on paper. Also the general workmanual (for default production processes) is on paper and not available on the intranet. The progress of the needed processes for a order are tracked by a track and trace system. Jan and his colleagues can scan their workfile at beginning and at the end of a proces.

Sometime the products are not as perfect as intented. Because Jan and his colleagues don't know how the product will be uses they have to ask or produce it again. More background information about project can avoid that.

For requesting a free day or holiday Jan uses the holiday planner on the intranet. Hetalso keeps up his free days himself because the holidayplanner does not provide a overview of the past. Jan looks for announcements on one of the notice-board in the factory.

Day in the Life

	Computer	Laptop	Tablet	Phone	Radio
Home					
Travel					
Work		▓		▓	
Break				▓	
Work		▓		▓	
Lunch				▓	
Work		▓		▓	
Travel					
Home					

Jan Brouwer

Age: 57

Language: Dutch English

Key Characteristics

- Medium Company
- Uses computer rarely
- Uses intranet only for holiday planner and birthday's
- Not much contact with Office Staff

Goals

- Manufacture great products

Suggestions

- More background information of projects on workfiles

Use of applications

- SAP
- Word
- Excel

Frustrations & Pain Points

- Information on the intranet is only about Sales Support
- No background information of projects on workfiles
- No overview on holiday planner

3form

Sales Support Staff

Day in the Life

"If I have a customer on the phone I need to acces information quickly. In the current intranet, this is not possible."
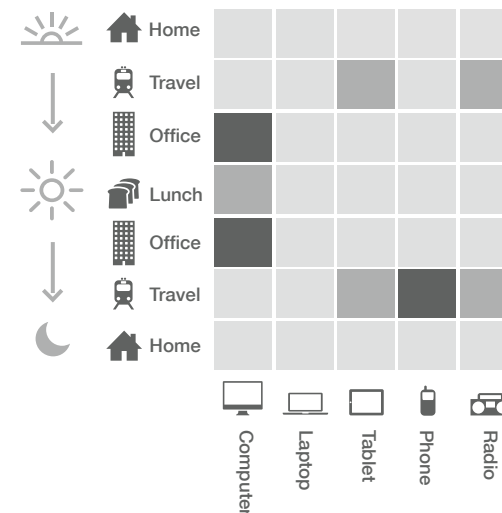
Angelie is next to 12 colleagues a Customer Sales Staff member. Customers and external sales staff can call and email her for questions and quottes. Angelie does also has to check on productionorders and samples once in while.

To provide the customer and External Sales Staff with correct information the most up-to-date documentation of products and pricelist is needed. This information is now provided in several ways; intranet, website, networkdrive and email. The email is most used by the Sales Support Staff. The files and documents shared by email are saved on the local drive of the staff members.

Email and phone are the most used tools for communication and sharing. Sometime it is annoying to make a phonecall, if a quick short answere is needed, but a emailconversation would take too much time. A way to chat with colleagues would be a solution to this problem according to Angelie.

Angelie Dubois

Age:	36
Languages:	French, Italian, English

	Home
	Travel
	Office
	Lunch
	Office
	Travel
	Home

Computer | Laptop | Tablet | Phone | Radio

Key Characteristics

- Medium Company
- 80/20 Behind desk and in factory
- Uses intranet rarely
- Likes to share photo's of projects
- Uses the current intranet almost only for Monday Sales Call Presentations
- Likes email for communication because converstation is saved
- Has own structure in mailbox
- Receives product updates by mail from product manager's "newsletter"

Goals

- Support Customers and Extrernal Sales Staff quickly
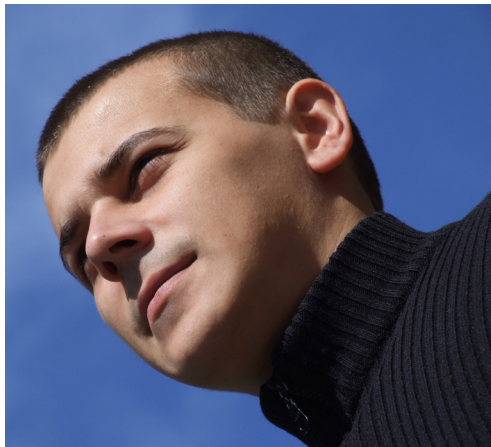-

Suggestions

- Chat functionality

Use of applications

- SAP
- Word
- Excel
- Super office
- My Quote
- Internet

Frustrations & Pain Points

- Don't know were to find the correct files and documents
- There is no pricelist for products from the USA

3form™

"Agreements and knowledge must be shared."

The main task of Jacob is managing the 3form Staff, together with the other 6 managers, and ensure that they meet their deadlines. This means that they are sometimes busy with main things and next time with details.
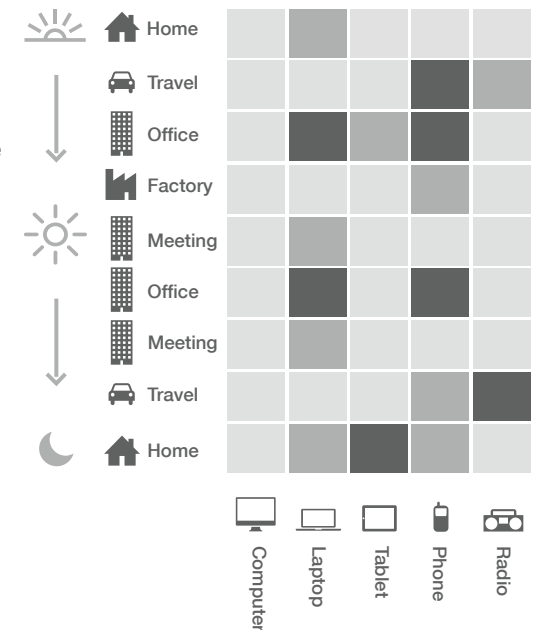
De External Sales outside the office need also supervision. Therefor it happens quite often that Jacob meets with a External Sales Representive on their location -all over Europe-. Supervision does also frequently happend by phone.

Jacob uses his iPad for checking email while traveling. At the office he uses his macbook to do the job.

It is very important for Jacob that all employees are using the latest version of all files, e.g. pricelist, technical documentation. Changes in the documents are now forwarded by email because the intranet is not up-to-date and rarely used.

Jacob de Jong

Age: 48

Language: Dutch, English

Day in the Life

Home
Travel
Office
Factory
Meeting
Office
Meeting
Travel
Home

Computer | Laptop | Tablet | Phone | Radio

Key Characteristics

- Medium Company
- 60/40 Office and Outside
- Uses intranet to check
- 30% of time behind a pc
- Uses iPad for email while traveling
- No smartphone
- Uses email to communicate and share easy and fast.
- Uses intranet to check if the latest file version is uploaded.

Goals

- Provide the latest files
- Supervice 3form Staff
- Easy sharing of information

Use of applications

- Word
- Excel
- Super office
- Sitrix
- Internet
- Itunes

Frustrations & Pain Points

- Files are not up-to-date on one location
- Can not upload files easy to the intranet himself
- Illogical Structure