

**Designing a persuasive information  
architecture for a culture center  
- taking the center Godsbanen in Aarhus  
as a main example**



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**May 2016**

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10th semester, Master Thesis  
Information Architecture and Persuasive Design  
Aalborg University

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Delivery Date: 31.May 2016  
Character Count: 78 standard pages

## **Abstract**

Culture center is a very broad term in general and also in the scope of activities culture centers offer. Every culture center is different and therefore creates curiosity and uncertainty for new visitors of their webpages. This thesis adopts the theories of information architecture, persuasive design and user experience to help make culture center webpages usable, persuasive and user-friendly. It answers main research question: How can a culture center utilize the theories of information architecture, persuasive design and user experience in the design of their webpage? Based on performing qualitative research- usability testing, a new webpage layout is suggested for the culture center Godsbanen that would prioritize the needs of their users.

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# 1 Introduction

When I first moved to Aarhus nearly three years ago, I really wanted to explore the city and find out more about where I live. I searched through all the websites I could find and clicked on all the possible links I could get hold of, and this way I discovered many interesting things that are happening in Aarhus, many initiatives, many events, activities and places. And as you are probably guessing, this is also how I found out about Godsbanen. As I was diving deeper into the webpage as far as I could without understanding Danish, I was totally excited. I greatly appreciated that this center, especially the workshops, is so easily available for only token prices. As soon as I had time, I went there personally to check it out and to find all the answers I could not understand because of my lack of language skills. Anyway, I am a big fan of Godsbanen and I would like to contribute to this great project by conducting a heuristic analysis of the existing website and figuring out how to make it more usable, persuasive and user-friendly.

To do this, I decided to tap into theories of information architecture, persuasive technology and user experience. As my building block for information architecture I used the founders of information architecture and their newest book *Information architecture: For the web and beyond*. I used the same strategy with persuasive design and worked mostly with the theories of the founder B.J. Fogg. We could say that these people affected in a way the course of technology in our modern world, laid fundamentals for theories, and moreover developed them further on and inspired many others to research them from different angles. Therefore, I consider their works as fundamentals which I could not omit. Secondly, I tried to get hold of all the significant literature and research there is in the field of user experience and combine the theoretical knowledge with my research project.

In this paper you can read about the culture center Godsbanen, their current activities and the history of the location. Secondly, the theories of information architecture, persuasive design and user experience will be explained in more detail. The subsequent chapters will focus on the qualitative research, which will continue with results. Based on the results a proposal for a new webpage layout is offered and we will end with a discussion and conclusion, where the necessity of these theories, especially for institutions similar to Godsbanen, will be explained. With this in mind, we believe we will be able to answer our main research question: How can a culture center utilize the theories of information architecture, persuasive design and user experience in the design of their webpage? as

well as our sub questions: Can a webpage of a culture center benefit from the theory of information architecture? Is persuasive design useful in the webpage design of a culture center? Is it beneficial to take users and the theory of user experience into account when considering a culture center's webpage?

## 2 Godsbanen



Figure 1 Photography of a market at Godsbanen

### 2.1 What is Godsbanen?

Godsbanen is a culture center that opened in March 2012. It hosts festivals, concerts, markets, workshops, conferences, meetings and much more. In other words, it hosts around 400 different arrangements yearly and has around 175 000 visitors every year. It offers a big variety of possibilities in its 10 500 square meters of indoor facilities. It includes: production rooms, modern conference facilities, office spaces for experience rooms, studios, project rooms, theatre stages, auditoriums, dance halls, large common areas, a mini cinema, a large lobby with numerous arrangement options, and there are also three art centers (advisory boards) for performing arts, visual arts and literature.

The performing arts center hosts Open Scene, which offers a stage for local, national or international theaters or projects. It can run performances and festivals among others. Open Scene has all the necessary technical equipment, professional staff, back stage and can be rented out.

The visual arts center has a goal of strengthening visual arts, its production and conditions in Aarhus. It is a common meeting place and a professional forum for the city's development, for professional artists and also initiatives for interdisciplinary and international cooperation.

The literature center aims to make visible and propagate literature with the cooperation of partners in and outside of Aarhus. It leads, for example, the School of Creative Writing, a space for creative writers where they can develop their voice, investigate and practice creative writing in communal settings.

In addition, there is a production theatre, a regional venue, a restaurant, an open-curated stage (blackbox), film workshops and schools, as well as a 1000 sq. m hall that can be used for larger events. Godsbanen also includes 10 apartments, which are used for guests and artists in residence.

Another big part of Godsbanen are the well-equipped workshops for textiles, wood, metal, laser cutting, graphic/print work and art, not only for private use, but also for businesses. The workshops are open for all regardless of their level of skills. Visitors can work on different tasks with the guidance of helpers.

Godsbanen is situated in Aarhus, the second biggest city in Denmark and can be found at Skovgaardsgade 3 behind one of Europe's largest art museums, ARoS, and close to Aarhus Concert Hall, live music venue Voxhall / Atlas and the Scandinavian Congress Center. There is open access to the roof, which is 19 meters high and provides a view of the surroundings.

In the grounds of Godsbanen and Brobjergskole are 50 project sites where cultural partners work in common creative offices. There are people from several festivals, professional artists, cultural organization associations, like Aarhus 2017, Aarhus Cultural administration, etc. There are around 200 people who work daily at Godsbanen and there are circa 130 registered CVR numbers there. All these parties are active in the cultural sphere and the intent of these many groups and activities is to

create an environment where they can inspire, enrich and challenge each other, so there is a development of a dynamic and vibrant art and cultural environment in Aarhus.

#### VISION 2014-2016

- Godsbanen is Aarhus' cross-functional, cultural hotbed
- Godsbanen has a central role for Aarhus' cultural self-image
- Godsbanen is a development and competence center for art and cultural production - locally, nationally and internationally
- There is a wide range of ambitious partners and projects where, through collaboration and knowledge sharing, they enrich and challenge each other
- Godsbanen's competencies and projects are developed in a constant dialogue with the city's other partners

(<http://godsbanen.dk/om-godsbanen/hvad-er-godsbanen/>)

Godsbanen is led by two organizations, the Independent institute of Godsbanen (Den Selvejende Institution Godsbanen) and Godsbanen's operating organization (Godsbanens Driftsorganisation). Both of these parties have different responsibilities and tasks. The Independent institute of Godsbanen has its own board which stands for all the activities, network, communication and cooperation with and between Godsbanen's and external facilitators. Its task is to create a platform for the development of cultural competencies. "The Independent institute of Godsbanen handles the branding and profiling of Godsbanen and works on user development, so that Godsbanen's offer is visible and accessible to as many users as possible." (<http://godsbanen.dk/om-godsbanen/organisering/>)

Godsbanen's operating organization belongs under Aarhus Municipality Culture Department. It owns the buildings and the whole area which will be developed in the upcoming years. They administer bookings, maintenance of the buildings and economy. (<http://godsbanen.dk/om-godsbanen/organisering/>)

We asked the leader of the Independent institute of Godsbanen, Ole G. Jørgensen, if he was willing to talk to us about Godsbanen in general, about their vision and the importance of a culture center like Godsbanen for the city. He was very kind and agreed to give us an interview. From the conversation with him we learned more about his goals for future of Godsbanen. They would like to:

- add more art centers (advisory boards) to the existing ones (performing arts, visual arts and literature) to accommodate needs of more people, for example, designers and people interested in handicrafts, so they could work on their projects and develop their businesses. They would like to
- create a gallery that would not have strict requirements, where it would not be necessary to sell things, so it would be more of a free and open gallery. And also to
- create a space for collaboration between artists and cultural entrepreneurs because they can learn from each other, they could change artistic inputs for learning about the market and selling their products. Another plan for future is to
- develop collaboration among different culture centers in Europe to encourage residency exchange programs to help develop young talents and offer them new opportunities. And as the area behind Godsbanen will be developed and built on, they want to
- open a dialog and create a space where people can simply experiment, something like a playground for adults.

So there are many things that Godsbanen has ahead and we can be looking forward to how this culture center develops and contributes to the city of Aarhus and its inhabitants.

## 2.2 Godsbanen on Facebook

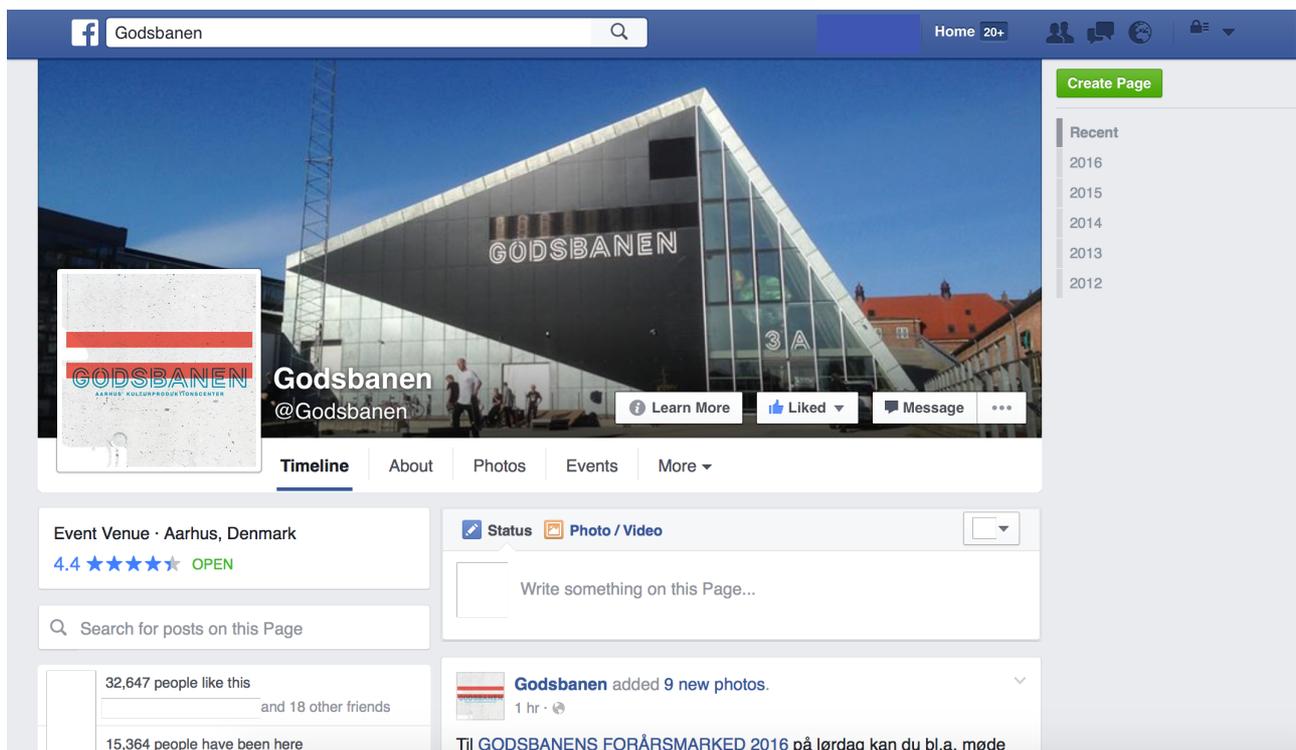


Figure 2 Screen shot of Godsbanen's Facebook page

In this paper we will focus on Godsbanen's webpage, but we wanted to present also Godsbanen's Facebook page since they use it as an important communication channel. They post approximately one post a day which has informational impersonal character and usually advertises the upcoming events. It is possible to get all the basic contact information about Godsbanen here as well as a bit bigger scope of information in the section About and then Page Info. It is also possible to see a lot of photographs and videos from different events and there is a connection with the Instagram feed. Moreover, a street view from inside of Godsbanen is also available at their Facebook page. And lastly, there is the most important part, events, which are a big part of their timeline and a tool for inviting people. They also include events that are organized by Institute for (X), which is going to be presented later.

At the moment there are 32,915 people who like Godsbanen. And so far it has pretty positive reviews, 4,4 starts out of 5 based on 497 reviews. 419 people subscribed for being informed about their events on Facebook. (<https://www.facebook.com/Godsbanen/>)

There is one more Facebook page under Godsbanen called Godsbanen's Open Workshops. It is focused on the activities and courses that happen at the workshops. It is possible to see a newsfeed about different artists, products, events, or news, inspirations, photos and videos. There are 1520 people who like this page and there are 25 subscribers for their events. (<https://www.facebook.com/godsbanensvaerksteder/>)

## **2.3 History of Godsbanen**

Godsbanen's buildings were built in 1923 and were used as a terminal for freight traffic for 80 years. But the history of Godsbanen reaches down to the 1890s when the idea of moving the freight station from the current Aarhus Train Station was proposed. Even though the plans for redeployment got into the town plan already in 1896 and 1898, it was only after 27 years that the plans were carried out in reality. The very costly project was locked in debates between the city council and parliament, which was hesitant to invest state funds.

It was only in 1917 that the law about moving the ranger station and freight terminal into the area of Mølleengen, made the project proceed. After that a new city plan was made in 1919 and in 1920 the

construction of the new terminal in Skovgaardsgade started. The monumental building on Skovgaardsgade is kept, since Aarhus Kommuneatlas states it is worthy of preservation.



Figure 3 Old photography of the main building

It was Henrich Wenck's architecture office that designed the old monumental building. Wenck was employed by DSB in 1882 and became a leading architect for the period 1894-1921. His office designed circa 150 train stations around the whole country like Copenhagen Main Train Station, Gedser Station, Odense Old Train Station or Pakhuse, for example.

Godsbanegården was the third most important freight terminal in Denmark, which was serving the rising need for freight transportation by rail, and which was later outperformed by truck transportation. In the year 2000, DSB sold its part to German train company Railion and in 2008 it was bought by the municipality of Aarhus, since when its function as a freight terminal was definitively over. Godsbanegården was a part of several railway facilities, which were the city's biggest employer.

The idea of Godsbanen as a culture center can be tracked back to 1987, when a working group under the council of Thorkild Ibsen with Trevor Davies as the chairman published "Culture in Aarhus?" Based on that, in 1995, a Culture House Aarhus was established in the buildings of Officer Building, Ridehuset and Brobjergskolen. In November 2002, a study tour for the Culture committee was organized to Helsinki, where they visited an old Nokia cable factory, which was rebuilt

by the Helsinki municipality into a huge culture center the size of 53 000 square meters. This created a motivation to make something similar in Aarhus.

Torben Brandis, a councillor, was considering Godsbanen for this purpose, as it was not used anymore. The idea was supported by the new culture politics, which focused on improving conditions for the city's artists. In the meantime, negotiations started with DSB, and Realdania was contacted. In 2005, after many discussions, Realdania granted 50 million kroner to rebuild Godsbanen into a culture production center and in 2007 the dealings with DSB succeeded. Aarhus municipality took over the area of 43 000 m<sup>2</sup>, including the buildings of 10 500 m<sup>2</sup> in 2008. The whole reconstruction cost 120 million kroner, and both Aarhus municipality and Realdania paid half. After an architectural competition, Exners drawing office became architects for the existing buildings and 3XNielsen drew a new building between the Production hall and the Raw hall. Godsbanen's doors were officially opened on 30 March 2012.

## 2.4 In the area of Godsbanen

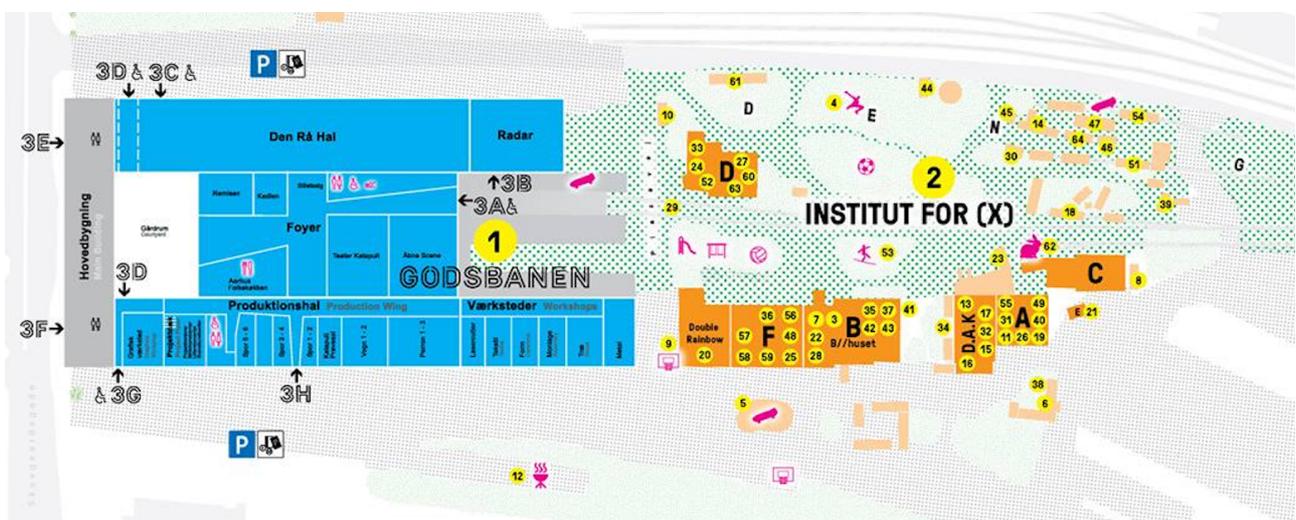


Figure 4 Map of Godsbanen and Institut for (X)

Outside of the Godsbanen buildings, in the old DSB building and the surrounding area is an institute called Institut for (X). On their webpage (<http://www.institutforx.dk>) they explain their activities in these words:

Institut for (X) is a culture and business platform for young designers, musicians, artists, entrepreneurs and craftsmen working side by side. Located in a former customs building, Institut for (X) is a part of Godsbanen, a former railway traffic area now officially dedicated by the municipality of Aarhus to become a future culture hub in the very heart of the city. The various buildings in the area include various workshops and office facilities which may be used for projects of all sizes.

A number of non-commercial cultural events (organized by ourselves, the municipality of Aarhus, various international and Danish artists and other art and cultural initiatives) have taken place here. Everything from art exhibitions, concerts, children and family events, municipal meetings, “open house,” cultural salons, festivals and more.

Recently (in December 2015), a big book was printed called THIS IS (X) (576 pages and 1,5 kg) about the Institut for (X) and the urban development they are creating in Aarhus. “This book is an attempt to communicate the complex DNA of Institut for (X), by addressing the What?, How? and Why? questions regarding the structure, history, methods and philosophies of the platform. THIS IS (X) is a DIY urban handbook, in the form of an encyclopedia, and serves to inspire architects, citizens, urban planners, politicians, cultural platforms and organizations to think ”bottom-up” instead of ”top-down”.” (<http://thisisx.bigcartel.com/product/this-is-x-book>)



Figure 5 Photography of the area of Institut for (X)

As I learned from the leader of the Independent institute of Godsbanen, Ole G. Jørgensen, it is mostly very young people (16 and older) who are active in Institut for (X) and it is people who are

mainly does compared to Godsbanen, where there are a lot of thinkers. Institut for (X) and Godsbanen are two separate organizations, but the vision is that there would be even more cooperation than there is now. Ole G. Jørgensen believes that different types of people will have the opportunity to learn from each other and that people from the Institut for (X) will bring more of their attitude and energy to Godsbanen.

## **2.5 Why are culture centers important?**

Matsumoto and Juang (p.15, 2013) define culture as “a unique meaning and information system, shared by a group and transmitted across generations, that allows the group to meet basic needs of survival, pursue happiness and well-being, and derive meaning from life.” We especially like this definition as it highlights the social aspect which enhances our lives. It is through culture that we engage in relationships, take part in sports and use our creativity in music, art, drama and many others. It is not possible to be without or outside a culture, it is everywhere around us in all the details of how we do things, as it is imprinted in our values and beliefs.

But even though, on one hand culture is all around us, it is still something we need to pay attention to and invest in. According to Perkumienė, Kleinienė and their research (p.33-39, 2013) “One of the most important roles of community centers is developing social intellectuality of individuals.” It is hard to find research on the importance of culture or community centers even though they play such an important role in our societies. “The results of the empirical research indicate that culture centers are important for local communities as a venue of organizing their leisure, providing opportunities for self-expression, initiatives and cultural education.”

63,5% of participants in their research confirmed, that the services that a culture center provides are necessary, only 9% said they don't need those services and 27,5% didn't know or didn't have an opinion. Even though culture centers are not formal centers of education, their activities are essential for many people. “Culture centers should continuously analyze the needs of the inhabitants and look for new possibilities to provide more varied cultural services.” (Perkumienė, Kleinienė, p.38, 2013)

Culture centers have other roles as well. For example, they are spaces for social interaction. According to Berkman and Syme's extensive research of almost 7000 individuals (in Matsumoto and Juang, p.190, 2013), those "with the fewest social ties suffered the highest mortality rate, and people with the most social ties had the lowest rate." Many other studies confirmed this pattern that "feeling lonely is linked to a host of health problems." Triandis together with his colleagues (p.323-338, 1988) researched among other things the link between individualism, collectivism and diseases. They came to a conclusion, that people living in individualistic cultures have a higher chance of cardiovascular diseases compared to people from collective cultures who have stronger and deeper social ties, which help them handle stress and hardships.

To be more concrete we can look at how Aarhus benefits from a culture center like Godsbanen. First of all, the open workshops give visitors great possibilities to work on projects they wouldn't otherwise be able to work on. It is not many people who have all the tools necessary for different projects at home. Secondly, in order to fill museums and galleries with proper art, there needs to be space for people to experiment and create art. And that is what Godsbanen offers; it facilitates the development of artistic skills and production of culture, not just the presentation of art and culture.

In addition, it offers an alternative for people who are not interested in for example higher education, but still want to be active and creative, as well as it gives possibilities for students to be engaged in different environment than education. That applies of course not only for students or other young people, but it is in general a space for everyone to develop their hobbies and do it in the company of others.

Moreover, some people turn their hobby into a business and Godsbanen is great at creating space and supporting these new startups. Business ideas can be developed in many environments, but not many such environments are suited to the development of new creative or artistic businesses, which require a special approach (often a place and tools to start, for example).

Compared to other art and cultural institutions, like Aros for example, people are not just passive consumers, but when they come to Godsbanen, they can learn something and not just be exposed to art, but have the possibility to do it themselves as well.

Last, but not least, Godsbanen has a lot of subsidized jobs for older people or people who cannot work full time. They can come and join a big group of volunteers, help out in the workshops, have a hobby or have something to do with their life even though they cannot work so much. Here they can still be appreciated, talk to people, make new friends and help other people gain new skills.

To sum it up, we will use the words of Godsbanen's leader of the independent institute, Ole G. Jørgensen: "Culture is what we do, it is who we are, without culture everything would be just practical and functional and would be really really boring. Nobody would like to live in a society like that. Everything stems from culture, it is so obvious, that it is almost stupid to discuss it, culture is what gives people's lives quality and if that's not the most important thing, then I don't know what is."

## 3 Information architecture

### 3.1 The history of information architecture

The first time we hear the word architecture in the combination with computer systems is in an IBM research paper from 1964 called “Architecture of the IBM System/360.” The second time it appears is in 1970, at the Xerox Palo Alto Research Center, where a group of information scientists received a task to develop a technology that could support the “architecture of information.”

But the first one who coined the term “information architecture” is Richard Saul Wurman, who presented it during an American Institute of Architecture conference in 1975. (Resmini, Rosati, p. 19-20, 2011)

In 1997, he published a book: *Information Architects*, where he presented a definition of the profession of information architect, that is still common today:

- a. “the individual who organizes the patterns inherent in data, making the complex clear;
- b. a person who creates the structure or map of information which allows others to find their personal paths to knowledge;
- c. the emerging 21st century professional occupation addressing the needs of the age focused upon clarity, human understanding, and the science of the organization of information.” (Resmini, Rosati, p.37, 2012)

Some years later, Louis Rosenfeld, together with Joseph Janes, both coming from the faculty of the School of Information and Library Studies at the University of Michigan, started a company in 1994 called Argus Associates. Argus Associates was a consulting company focusing on web development. When Rosenfeld started writing a column *Web Architect* for the *Web Review*, Peter Morville joined him and the company.

Argus Associates gained reputation in the field of information architecture and were commissioned by O’Reilly Publishing to write a book on this topic. (White, p. 218-219, 2004) A year later, after Wurman's book, in 1998 a foundational work for information architecture was printed. Rosenfeld and Morville’s *Information Architecture for the World Wide Web* or the “polar bear book,” as it is

known because of a polar bear on the front page cover, presented a large source of solutions to the field problems.

Rosenfeld and Morville were using the architecture metaphor for the sake of their clients to explain the necessity of structure and organization in website design. (Gilchrist, Mahon, p.xiii, 2004) They were not aware of Wurman's work until later, when they got hold of his book. Interestingly, Morville remembers after reading that book, he thought that it was not about information architecture, but rather about information design. (Resmini, Rosati, p.41, 2012) Rosenfeld and Morville, on the other hand, had an approach based on library and information science. (White, p. 218, 2004)

The difference is that Wurman focused on the design of pages themselves, while Rosenfeld and Morville had the big picture in mind, when focusing on “the design of what was between the pages of a web site, meaning the links, the structure, the connections. It could also be said that Rosenfeld and Morville designed for a world of ever-changing, dynamic content, something somewhat unsurprisingly still alien to Wurman’s vision.” (Resmini, Rosati, p.41, 2012)

Rosenfeld and Morville brought new and very practical methodologies like: organization, labeling, navigation and site-structure. No wonder that this approach brought them success and spread the knowledge of the field. (Resmini, Rosati, p.41, 2012) The popularity of their book is not decreasing, on the contrary, the book’s 4th edition was printed last year, in 2015. After the 1st edition in 1998, the other two editions were published in years 2002 and 2006.

The newest edition is no longer called Information Architecture for the World Wide Web, but Information Architecture, For the Web and Beyond. In their former books they focused on websites, but they realized that the information platform changes rapidly and now includes except smartphone apps also other electronic devices (like thermostats and doorknobs, for example). Even though they are not based on the same semantical structures, they are still subject to the same design principles. So instead of websites, they talk about information environments in the 4th edition. (Rosenfeld, Morville, Arango, p. xii, 2015)

Kalbach addressed this already in 2003 (p.24) when he wrote that even though information architecture “grew out of the Web, it is not limited to the Web. Information architecture can be applied to a wide array of information products, including CD-ROMs, software applications, personal digital

assistants, pocket PCs, information kiosks, cell phones and other mobile devices...” Donna Spencer (p.4, 2010) widens the field even more when she writes, that information architecture can be found everywhere where people need to organize things, even in physical context like paper files or groceries on a supermarket shelf.

According to Kalbach (p.23-24, 2003) the official birth of the field happened in 2000 at an Information architecture summit meeting in Boston. The theme of the summit was: “Defining the Craft,” but as in other new disciplines there is not one single complete definition, but many different definitions.

“In the USA information architecture has been embraced by the American Society for Information Science, and promoted and supported by the Asilomar Institute for Information Architecture” (AIfIA). (White, p.219, 2004) AIfIA is a non-profit volunteer organization, which supports organizations and individuals in learning about information architecture and promoting the profession. A month after it had been established (Nov. 2002), 200 members from 5 continents joined in. (<http://www.iainstitute.org/news/aifia-finishes-its-first-month-200-members-international-flavor>) Nowadays it can be found under the name: The Information Architecture Institute with a corresponding webpage: [www.iainstitute.org](http://www.iainstitute.org).

Even though the history of information architecture is not long, it is a field that is constantly growing and will continue so in the future. We believe that information architecture is not one of the fields that might die out soon, as long as we use computers and other information environments, there will be need for information architects. And if the field changes its name, it won't matter as long as the tasks and goals of information architecture are being fulfilled.

### **3.2 What is information architecture?**

Since the beginnings of information architecture there have been many attempts to define this field and in this chapter we will offer several of them.

According to the Information Architecture Institute, “Information architecture is the practice of deciding how to arrange the parts of something to be understandable. Information architectures (IAs)

are in the websites we use, the apps and software we download, the printed materials we encounter, and even the physical places we spend time in. A good IA helps people to understand their surroundings and find what they're looking for - in the real world as well as online. Practicing information architecture involves facilitating the people and organizations we work with to consider their structures and language thoughtfully.” (<http://www.iainstitute.org/what-is-ia>)

Morrogh (p.108, 2003) adds the aspect of users, their needs and their goals: “The focus of IA is the design of structures-information environments-that provide users seeking information with the necessary resources to translate successfully their information needs into actions that ultimately lead to the accomplishment of their goals.”

Evernden and Evernden (p. 95, 2003) describe information architecture this way: “We use the word architecture whenever we want to define a high-level overview of interrelated components and when the relationships among them are complex and difficult to understand. It can mean, for example, a skeletal framework representing the overall view of a detailed technical specification, emphasizing the parallels between IT and the art and science of building construction. The common theme is that architecture is used to organize information about a topic in order to manage it in a structured way.”

According to Rosenfeld, Morville and Arango (p. 24, 2015), information architecture can be defined with these four characteristics:

1. “The structural design of shared information environments
2. The synthesis of organization, labeling, search and navigation systems within digital, physical and cross-channel ecosystems
3. The art and science of shaping information products and experiences to support usability, findability and understanding
4. An emerging discipline and community of practice focused on bringing principles of design and architecture to the digital landscape”

Kalbach (p.24, 2003) also offers a variety of practices that information architecture uses: “In practice IAs essentially perform some or all of the following tasks:

- Help define the vision of the information product by gathering and defining stakeholder requirements, content and desired functionality.

- Organize information on a comprehensive level, usually in something called a site map, content map or information model. This may include developing a controlled vocabulary or thesaurus.
- Determine content positioning and interaction at the screen level. This is often captured in wireframes or gray-scale dummy screens that prototype navigation, content relationships and user interaction before the final design is added. A written technical specification usually accompanies such a work product.
- Perform user research (interviews, observations, demographic research, market segmentation, etc.) and usability testing (heuristic evaluations, usage analysis, user testing, etc.)”

“A well-designed information architecture is invisible to users (which, paradoxically, is quite an unfair reward for IA success.)” (Rosenfeld, Morville, Arango, p.80, 2015) The problem with information architecture lies within its invisibility, it doesn't have any tangible expression, so it is very easy to take it for granted. (Davis, p.45-47, 2013) But just because we cannot see it, it does not mean it is not there. On the contrary, often the most important things are invisible. But as long as information architects do their job well, no one might notice it. It is usually when things don't work and information is hard to find that we are reminded of the important function of information architecture.

We are going to look at Godsbanen's webpage from different angles. We are going to find answers to questions like if the webpage's parts are arranged in an understandable way, if it provides the resources for users to accomplish their goals, if information is managed in a structured way, and we will look at organization, labeling and navigation systems as well as usability and findability. We interviewed one of the stakeholders to get deeper into the vision of the culture center as well as goals for its webpage. We will perform usability testing and, based on that, create a webpage layout. In other words, we will test and put into practice all the different definitions of information architecture and much more.

### **3.3 Information architecture and other disciplines**

Information architecture is a field very close to visual design, information design, library science, computer science, social informatics and engineering psychology. (Morrogh, p.6, 2003) It is also close to disciplines that have to do with managing information like graphic design and information design, information and library science, journalism, usability engineering, marketing, computer sci-

ence, technical writing, architecture, product management and others. All these require some skills that can be very useful in information architecture. (Rosenfeld, Morville, p.19-20, 2006)

According to James Kalbach (p.23, 2003) information architecture does not have its own tradition, standards and literature and only benefits from already established disciplines. So do we really need a new field called information architecture? Even though information architecture is closely related to librarianship, it is still specific and there is a need for it.

There are several differences between librarianship and information architecture:

- Even though librarians often manage digital sources, their content is more stable and database-driven, compared to the digital medium information architects work with.
- That also has an impact on the authorship, it is the information architect who decides the amount and type of content as well as the format; librarians do not have such rights, rather they gather, evaluate and manage existing resources.
- From the time perspective, information architects work on projects for a couple of months, but librarians develop bibliographic systems for years.
- There is also expected some level of creativity from information architects, while on the contrary, librarians stick to strict and existing systems, they usually do not create new systems.
- Libraries are physical spaces where librarians operate, while information architects are able to create information spaces within digital environments.
- The focus is on users, to create a positive user experience is vital for information architects. Librarians have other priorities; they focus on the organization of information which is not so visible for users. Libraries are content-oriented, where on the other hand, IA is user-centered.

These two complementary fields have many things in common, but still are two different fields with different problems in different contexts.

Information architecture is not a discipline with strong borders, on the contrary, as the demands for web development grow, as we constantly meet higher expectations from clients, as the challenges expand, so does the need for blended knowledge from different fields. There is not a single discipline that would have all the answers and all the techniques and expertise to satisfy it all. So the field of information architecture will accommodate and cooperate with other fields, because there is a need for different disciplinary perspectives. (Rosenfeld, p.874-876, 2002)

We understand the concern of information architecture not having tradition and standards of its own as other disciplines do, but it is still a new field which develops and grows and we believe that in the course of time also these requirements will fall into place. So far we can see the benefits of information architecture and we will explore them very practically in this paper. In addition to information architecture, we will get hold of the disciplines of persuasive design and user experience to include the different views and use the multidisciplinary approach to benefit our purpose.

### 3.4 How do people search for information?

Donna Spencer (p.97-112, 2010) describes in her book *A Practical Guide to Information Architecture* 9 common information-seeking behaviors. It is important to understand these behaviors so that we can come up with design solutions that will help our users find the information they are looking for in the most user friendly way.

Searching for a known item happens when we know what we are looking for, we have the right words to describe it, we have an idea where to start and we will know we found the answer when we see it. The best solutions for this kind of information-seeking are the search button or A-Z indexes. If users want to use the Search button, it is located in the right end of the main menu on Godsbanen's webpage, but we will not focus on the search button or A-Z indexes.

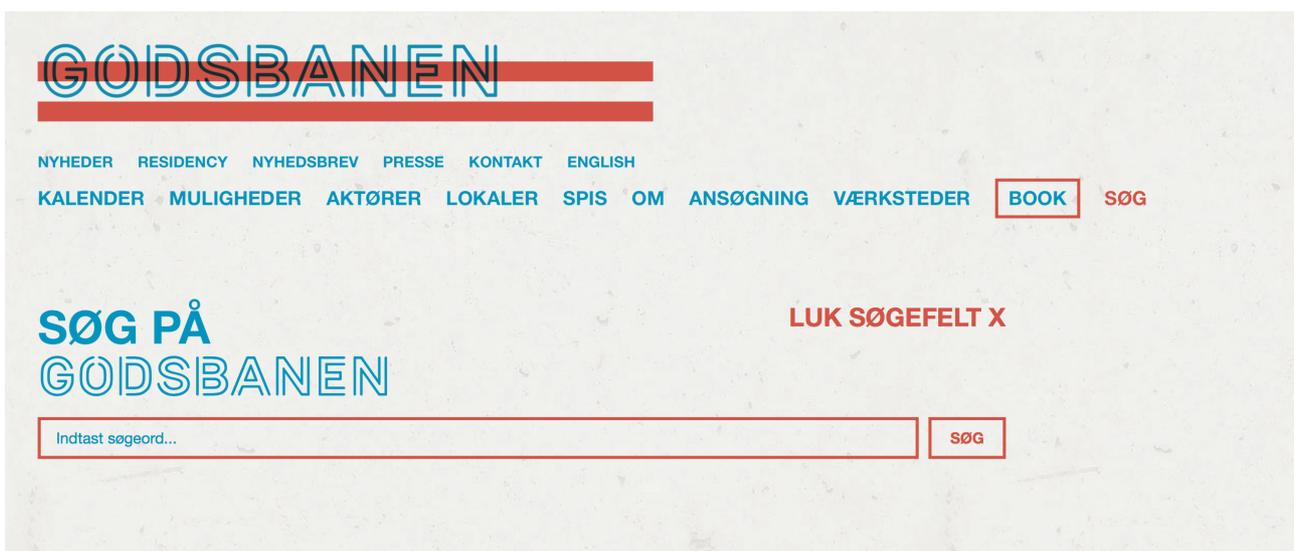


Figure 5 Screen shot of search function

On the other hand, we seek information in an exploratory way when we know what we are looking for, but not precisely or we do not have the right vocabulary to articulate it and when we do not know where to start looking. This type of information-seeking might not have a clear end, because as we search we learn and we discover new areas we want to explore. So a search button is probably not an effective tool for this, but rather links between relevant content pages can lead users in the right direction. If users want to browse through the webpage, the first main page should give them some inspiration since it offers options like: That happens in Godsbanen, What you can do at Godsbanen, Facilitators at Godsbanen or Videos and Pictures from Godsbanen. Or if they choose an area they are interested in from the main menu, the secondary menu or Local navigation system (which will be discussed later) can help them and inspire them.

Refining and narrowing is about finding the things you are looking for from among a huge number of items. In this case it is inevitable to have some criteria in mind before we start our search. The best solution for this type of information-seeking is filters and faceted browse. Since there is many things going on in Godsbanen, it is important to have a possibility to refine and narrow the search. We can do so on the side in the left menu when we are in the calendar section for example.



Figure 6 Screen shot of the possibility to refine and narrow search

The next step might be comparing. When we chose two or a few products usually, we might want to compare them. In other words, find their similarities and differences. When giving our users this possibility, it is necessary to understand clearly the criteria and features that are important to them.

Even though we could theoretically compare different events, it is not a common need and is not necessary on Godsbanen's webpage.

Often people have a different need, and they prefer to get a broad idea. They don't need to know and read about all the details, just an overview would be sufficient for them. In this case it is a good idea to provide summaries of the content that would present the user with the big picture. Giving a short overview is especially important on a webpage with a lot of information. In Godsbanen's case there are some pages with overviews, but some pages do miss them.

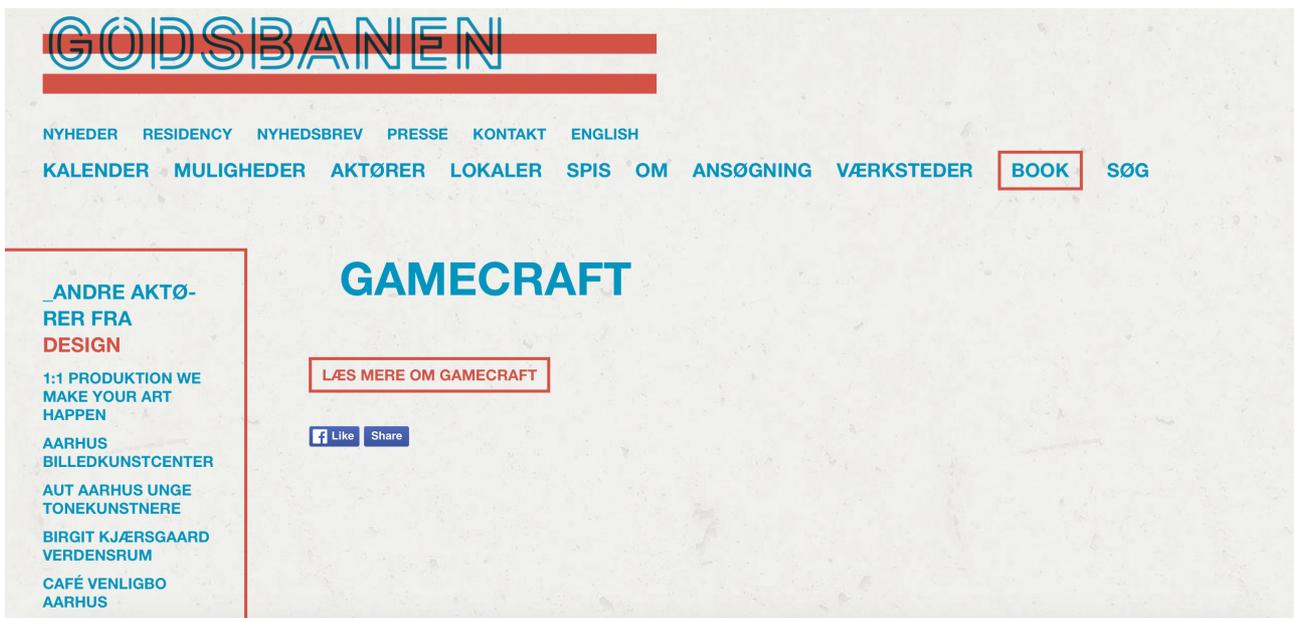


Figure 7 Screen shot of a missing overview

The opposite of just hovering above the surface is diving into details. The problem that might occur in this instance is giving the right amount of details. Since the needs can vary from just a few details to getting a deep knowledge, it is best to create layers of information. In this way we avoid overwhelming users with a lot of information they do not need. One way the designers of Godsbanen's webpage deal with a lot of detail information is by creating headlines that can be just rolled down in case of interest. That is a good way of not overwhelming the users.

Discovering unknown things happens when we are on a website looking for one thing and then spend many more hours there looking at different content we didn't know existed, but that is interesting for us. Often this might not be planned, but rather spontaneous exploration. The goal with these websites might be to expose users to more advertising or to sell them a product they did not



Figure 8 Screen shot of headlines that can be rolled down

know they needed. For this purpose, it is important to understand the users very well and moreover to understand the relationships between different content. That way we can present related items that can catch the attention of our users. What helps for this kind of search is Contextual navigation, but we will get to it later in the chapter about Navigation systems.

Keeping up to date means that “people often want to keep up to date with what’s happening within an industry or topic, but aren’t looking for a specific answer.” (Spencer, p.109, 2010) In the case that users of Godsbanen’s webpage would like to be updated, they can always go to News or even sign up for a newsletter.

Re-finding is simply trying to find things that we have already seen. We might know exactly where we have seen them or we might not have a clue. To prevent that, it is nice to be able to save items or if the webpage saves them automatically like, for example, Amazon, which keeps track of what we viewed and offers us related items. Re-finding is not a feature that Godsbanen’s webpage would support, so it is up to users to be able to find what they found before.

Rosenfeld, Morville and Arango (p.39-51, 2015) offer a simpler model with only four information needs, but still share the opinion that understanding information-seeking needs and behaviors helps us design accordingly and moreover helps us prioritize where to invest our efforts and resources.

Simply because: “There is no goal more important to designing information architecture than to satisfy peoples’ needs.” (Rosenfeld, Morville, Arango, p.39, 2015)

They use the fishing metaphor to answer the question: what do people want? And people often want the perfect catch (or known-item). That means that they have a very precise question which has a very precise answer. For example, what is the population of San Marino?

Lobster tracking (or exploratory seeking) is a search where we do not expect a single right answer; on the contrary, we are open to coming across answers that we hope will be useful. We are simply setting a trap and might be happy with few of the items we find and toss out the rest.

We search in the indiscriminate driftnetting (or exhaustive research) way when we need to catch every single fish in the sea. We might do thorough research, finding everything on a specific topic.

I’ve seen you before, Moby Dick... information-seeking strategy is the same as Spencer’s re-finding. Today we can toss a fish back into the sea without ever losing it again thanks to social bookmarking, like on Pinterest, for example.

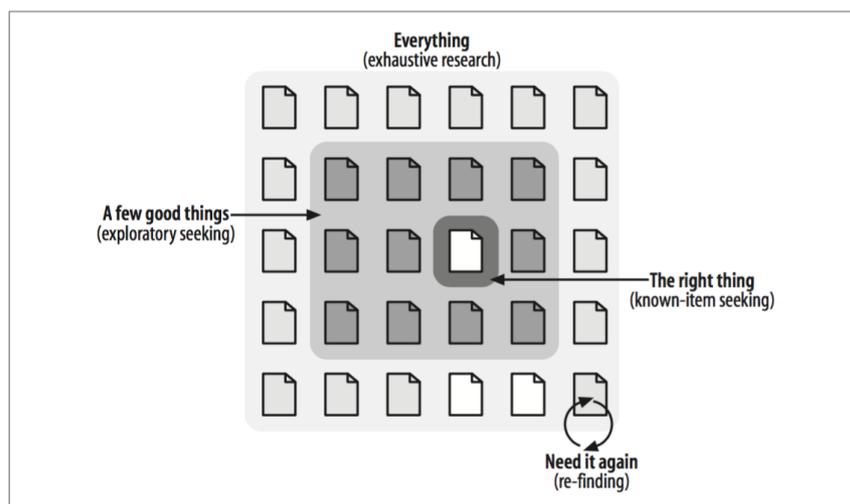


Figure 9 Four common information needs (Rosenfeld, Morville, Arango, p.45, 2015)

We expect that when people know Godsbanen and have an overview of all the activities going on or just have seen an event on Facebook they want to read more about, they can find the answer easily. So the perfect catch or known-item seeking will not be at the center of our focus. Also we will not dive deeper into re-finding strategies.

What we want to look closer at is people who do not know Godsbanen very well and who are not aware of all the activities and possibilities Godsbanen offers. So in this case they might want to search for information according to the exploratory seeking model. They might start with a broad interest, browsing the different activities and events that happen in Godsbanen and maybe when they find a couple they like maybe even attend them. Or a different type of people, who are very curious might choose a different strategy and use the exhaustive search. They want to see and explore everything that Godsbanen has to offer and they will not stop when finding a couple of activities that are of a high interest to them.

### **3.5 The relationship between physical and digital spaces**

We, as humans, have a need for orientation, which is the same when it comes to digital spaces. “It is easy to imagine occupants of an information space needing to have a sense of place in order to remain oriented, a sense of space so as to know where it is possible to go and navigation devices commonly seen in physical environments such as maps, signs, paths and landmarks for navigation.” (Morrogh, p.4, 2003)

And as context helps us navigate in the physical world, so it does in the world of digital environments. “Whatever context is in any given situation, though, one aspect remains consistent: we need context to be clear and to make sense.” (Hinton, p.4 ,2014) When we enter a kitchen, no matter if we have been there before or not, we know it is orderly to prepare and eat food there. But if we treat kitchen as a bedroom and start to sleep there, it would be not only inappropriate, but we would probably not be able to get a good sleep anyway. In that case we misunderstood the indications for context.

So the surroundings websites create should introduce us to the context we are entering. Context really does matter, because it is the context that determines how we perceive and understand information. In the physical world we distinguish between different places based on their context, in which our different needs are met. Information environments are similarly different types of places.

When we enter a kitchen, we know it is kitchen because it has a refrigerator, sink, stovetop and a counter as most of the kitchens in the western world have. But how do we know we entered a web-

site of a bank if there are no physical signs of it? It is through the semantic cues like navigation structures, headlines, section headings, images and other information elements that we get the impression of where we are. In this case it would be hard to confuse a bank's website with a hospital's website.

“Building architecture aims to produce physical environments that can serve and communicate their social functions effectively and information architecture aims to do the same for information environments. The main difference is that instead of defining compositions of forms, spaces and objects such as walls, roofs and furniture, information architecture defines compositions of semantic elements such as navigation labels, section headings and keywords and produces the design principles, goals and guidelines that capture the intended feeling of the place (e.g., is this a serious, solitary place or a fun, social space?)” (Rosenfeld, Morville, Arango, p. 58-59, 2015)

Another connection between physical and digital spaces are typologies. As all the physical banks have some specific characteristics in common, so are the information structures that underlie websites of banks similar.

These common types of information environments have three advantages. First of all, they make it clear to the user in which place they happen to be. Even if the name of the bank (and the title -bank - itself would be missing), it should still be clear to the user, based on the information structure, that he is at a bank's website.

Secondly, users learned already what a bank's website should be like and would have similar expectations of a new bank's website. Our goal is to make it easy for users to understand and navigate the website, so the logical step is to follow the norm.

This, on the other hand, gives us space to differentiate our website from the competition. The big picture in the information environment stays the same, but it is the details that can make a big difference. If the semantic structures users are used to change unexpectedly, it can cause disorientation and maybe even loss of the user. (Rosenfeld, Morville, Arango, p. 53-75, 2015)

When we consider Godsbanen, it is a physical space offering a lot of physical activities, but has to inform about them through its webpage (and does so also through Facebook). And as Godsbanen is

so multi purpose and accommodates so many different initiatives, it is the task of the website to bring structure and system organization to the whole, so all the information can be findable and understandable. So there are several questions that come up: first of all, can one understand what Godsbanen is when only briefly looking at the home page? If so, what is it that helps people recognize that it is a culture center? If not, what misguided them from the right assumption? What kind of atmosphere do people feel from the web page? Compared to webpages of other culture centers or culture institutions, is the webpage of Godsbanen comparable, does it have similar characteristics or does it differ in some way?

When we think about which approach to choose when considering information architecture of Godsbanen's webpage, we should be inclined to top-down information architecture. Top-down information architecture means that it is the site's designers who "have worked hard to determine the most common questions and have designed the site to meet those needs." (Rosenfeld, Morville, Arango, p. 83, 2015) Some of the questions can be: Where am I? How do I get around this site? What is available on this site? What is happening there? What is their address?...

On the other hand, bottom-up information architecture is easier to construct in a sense that it is the system's content which suggests the structure. Example of bottom-up information architecture can be image collections in the iOS Photos app, where pictures are automatically sorted according the geographical place they are taken and by date when they are taken. That helps us easily navigate, search the content, move through the information hierarchically and move around. (Rosenfeld, Morville, Arango, p.83-88, 2015)

But our focus should be to find out the most common questions users have when visiting Godsbanen's website and find out if the website does answer these questions. If it does not, what can we do to improve this?

Information architecture has four main components: organization systems, labeling systems, navigation systems and searching systems. For the purpose of this thesis, we will have a closer look at the first three systems in the next chapters.

### 3.6 Organization systems

One thing that is very natural for us as people is organizing. We do it all the time consciously or unconsciously. Sometimes we do it mentally, sometimes physically and sometimes virtually. We meet with some kind of organization everywhere, in work, in shops, in our homes and also on the internet. Organization is very practical for several reasons; thanks to it, we can make sense of things, locate things and find them again. (Chowdhury, Chowdhury, p.5, 2007) Not only that, Hayden White (p.22, 1986) claims that “the beginning of all understanding is classification.” Grouping things together into categories is a basic mental process (Matsumoto, Juang, p.128, 2013) that helps us comprehend the world around us.

In 1606, Jacob Lorhard published a volume of eight books called *Ogdoas Scholastica*, which are based on categorizing all the academic knowledge of that time; it was an attempt to present the conceptual structure of the world. (Sandborg-Petersen, Øhrstrøm, p.57-75, 2010)

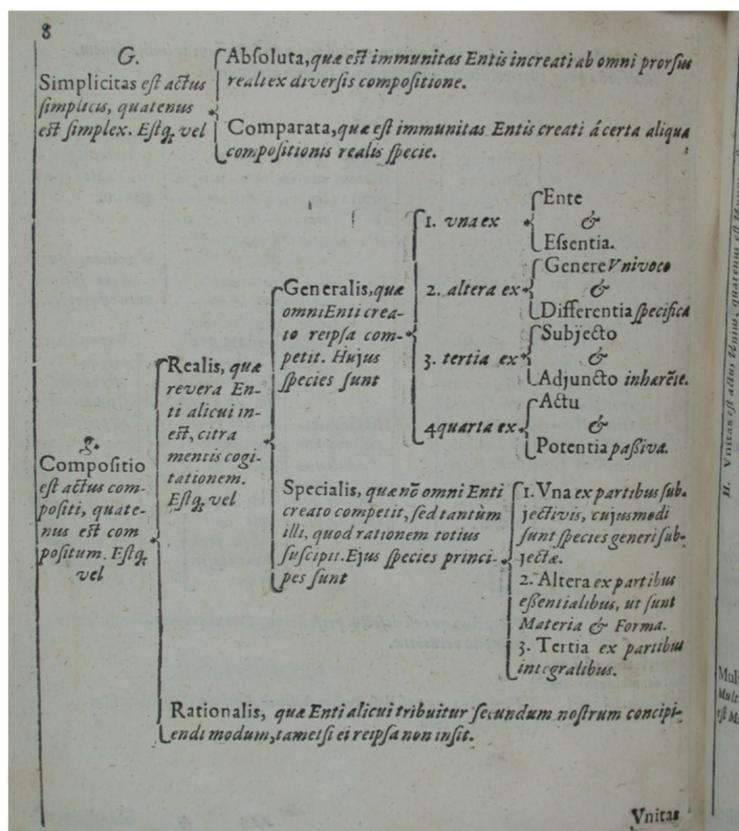


Figure 10 An example from one of Lorhard's books (Øhrstrøm, Schärfe, Uckelman, p.85, 2008)

A lot has changed since then, except the need of organizing, which is even more necessary today, since the amount of information we have access to is simply incomparable. But even though orga-

nizing has a long history (especially in library science), it can still create problems when looking at webpages. There are several reasons.

First of all, we use language to create classification systems and language is ambiguous. That means that words can be understood in several different ways. And that is unfortunately unavoidable. Secondly, we are dealing with many different objects and formats (like product descriptions, image archives, software files...) which are heterogeneous, and that makes it really challenging compared to organizing books in a library. And there are our own perspectives (our subjective logics, which might not be logical for others at all) that get in the way. “To design usable organization systems, we need to escape from our own mental models of content labeling and organization.” (Rosenfeld, Morville, Arango, p.102, 2015) To do this we need to do a lot of usability testing as well as reconcile the thought that we will never be able to create a perfect organization system, because we cannot please everyone.

There are different ways how we can organize things. Classification simply means grouping things into groups based on their similarity. We are structuring our environment based on our personal experience. For example, dogs can be, for some people, in the category of dangerous animals and, for others, best friends. But the biological animal kingdom classification is a very good example of a formal classification scheme. The principles of classification are keeping alike items together and separating items, which are dissimilar. (Batley, p.4-8, 2007)

As well as Exact organization schemes, which are organized alphabetically, chronologically or geographically, there are also Ambiguous organizational schemes. Ambiguous organizational schemes are “problematic” because they are subjective, but they are also the ones which are the most useful, because we often don't really know what it is we are searching for or we cannot find the right words for it. This organization scheme is grouping information in intellectually meaningful ways and there can be different approaches to it.

For example, Topical organization schemes organize items in the menu according to topics (like dishwashers, washing machines, refrigerators...). On the other hand, Task-oriented schemes “organize content and applications into collections of processes, functions or tasks.” (Rosenfeld, Morville, Arango, p.110, 2015) In a main menu of a museum it can look like: explore, visit, get involved, connect.... Audience-specific schemes are practical if we have several well defined audi-

ence groups like students, teachers and scientists for example. Sometimes these organization schemes are not sufficient and we need to create a hybrid scheme, which incorporates several of the above mentioned schemes. This can often lead to confusion, because we are not able to form a mental model of the whole. The key is to keep the different schemes visually separated and not mix all the different schemes into one list. (Rosenfeld, Morville, Arango, p.114-115, 2015)

In Godsbanen's webpage we can see several types of organization schemes. The only exact organization scheme that offers all items also in alphabetical order is under the item Facilitators in the main menu. Otherwise, all the other schemes are ambiguous. We can find ambiguous topical organization schemes under nearly all items in the main menu. For example, under Rooms there are following categories: guest accommodation, rehearsal rooms, stages, small project rooms, big project rooms, exhibition rooms, project offices and so on. And so are many of the items in the main menu. There are not many task-oriented schemes, but there are three included in the main menu: Eat, Book and Search.

But it is the audience-specific schemes that are the most confusing in the main menu. There are four types of audiences that Godsbanen's webpage presents information to. First of all, it is the general public, which we expect to be the majority. Most of the information is directed to them. But then there is an audience which is active, they organize events, book facilities and apply to set up exhibitions and theaters. There are several items in the main menu dedicated to them: Application, Booking and partially also Rooms. Then we have an item in the menu called Press which is mainly for journalists probably. And lastly, there are items for an international audience like Residency, where the whole text is in English and the item English itself, which unexpectedly doesn't change the language of the website to English.

So we can say that our organization scheme is hybrid, because it includes all the other schemes, but unfortunately, it does not keep them visually separated, in fact they are all mixed together. This makes it complicated to create a mental model and can cause confusion among users.

So far we talked about organization schemes and will continue with organization structures. "The structure of information defines the primary ways in which users can navigate." (Rosenfeld, Morville, Arango, p.117, 2015) A typical top-down approach lies in designing hierarchies. Well-designed hierarchies are necessary for good information architecture. Mankind has been using hierar-

chies since the beginning of time (for example, in family trees) and we are very well used to this concept, which is simple and comfortable. We can easily navigate through hierarchies because we can easily create a mental model of the structure and develop a sense of location within that structure. (Rosenfeld, Morville, Arango, p.97-118, 2015)

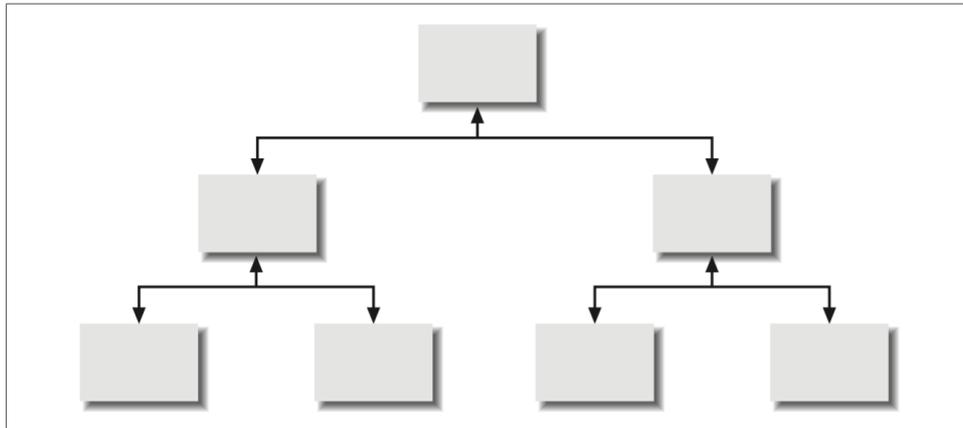


Figure 11 A simple hierarchy

If we want to create a well-designed structure, we need to follow some basic rules. First of all, “hierarchical categories should be mutually exclusive...if too many items are cross-listed, the hierarchy loses its value.” (Rosenfeld, Morville, Arango, p.118, 2015)

When we look at Godsbanen's webpage, at first, it can seem that the hierarchy is in order, but when we go under the main menu, there are some things that can be disorienting. For example, we can find Workshops as an item in the main menu, but also under Possibilities, Facilitators and when we click on Eat, we can see it in the left menu as well. Or there is Application (which is itself an item in the main menu) under Rooms and also Guest accommodation, which is similar to Residency in the main menu as well. Under Press we can find items like Contact (which is also under About) and Newsletter which are both in the main menu. So there really are many items cross-listed, as a result they are destroying the hierarchy and the sense of knowing where one is located.

The second thing is the balance between depth and breadth in the menu. This is especially important because when people search for information, they deal with a certain level of uncertainty. Psychology dictionary (<http://psychologydictionary.org/uncertainty/>) defines uncertainty as “the state or condition wherein something isn't correctly or totally acknowledged or an absence of confidence or conciseness in one's ideas, judgments, or aims.”

Even though Shannon and Weaver suggested in 1948 that the more information is available, the lower the uncertainty (Kalbach, p.48, 2009), Kuhlthau (p.400, 1999) found out that it is not necessarily true, moreover, according to Whittemore and Yovits (p.230, 1973) in some cases presented information increased uncertainty.

Kuhlthau (p.400, 1999) developed a six stage model of the Information Search Process (ISP) which describes the different stages where uncertainty occurs and where, on the other hand, it diminishes.

“The six stages of the ISP are:

- Initiation, when a person becomes aware of a lack of knowledge or understanding so that uncertainty and apprehension are common;
- Selection, when a general area or topic is identified, and initial uncertainty often gives way to a brief sense of optimism and a readiness to begin the search;
- Exploration, when inconsistent, incompatible information is encountered, and uncertainty, confusion, and doubt frequently increase;
- Formulation, when a focused perspective of the problem is formed, and uncertainty diminishes as confidence begins to increase;
- Collection, when information pertinent to the focused problem is gathered, and uncertainty subsides as interest and involvement in the project deepens; and
- Presentation, when the search is completed with a new understanding of the problem, enabling the user to explain his or her learning to others.”

Wilson et al. (p.712-713, 2002) tested Kuhlthau’s Information Search Process model in quantitative research and agrees that there is a relationship between the level of uncertainty and knowledge of the domain that is being explored. So if the user has a knowledge of the domain, he will not experience uncertainty. But new users will browse through a webpage for information to reduce uncertainty.

Knowing this, how can we help our users find information in such a way, that their uncertainty would be reduced? Kalbach, (p.50, 2009) sees the relevance of uncertainty in the practice of information architecture in two fields: uncertainty in breadth versus depth of hierarchical menus and the scent of information and labeling. We will talk about the scent of information and labeling in the following chapter.

According to Bernard (2002), who researched the user performance based on the relationship of breadth versus depth of hierarchical menus, the more items in the main menu, the faster the search is done. He compared 6 different structures and menus with 12 items and 27 subitems (12 x 27) and menus with 11 items, each with 5 and those with 5 subitems (11 x 5 x 5) and they had more accessible information than most of the other structures: (4 x 4 x 4 x 4), (3 x 2 x 2 x 2 x 12), (2 x 3 x 2 x 3 x 2 x 3). Larson and Czerwinski (p.25-30, 1998) did a similar experiment comparing structures (32 x 16), (16 x 32) and (8 x 8 x 8) and their conclusion was, that users performed best in (16 x 32) hierarchy structures.

“A concave information architecture indeed seems to match a decrease in certainty users often experience when seeking information as described by Kuhlthau. At the top level of a concave structure, seekers need orientation without being overwhelmed. A balance of well-selected, mutually exclusive categories serves as an efficient, satisfying starting point. The middle levels are best restricted in breadth, thus reducing uncertainty and feelings of doubt or frustration while making choices.”  
Kalbach, (p.51, 2009)

In opposition to Bernard, Krug (p.70, 2014) suggests that the main menu should accommodate only four or five items (or utilities as he calls them). Only those that users need the most should be included, as if there are more they “tend to get lost in the crowd.” The rest of the items, which are not used so frequently, should be placed in the footer at the bottom of each page. Rosenfeld, Morville and Arango (p.119-120, 2015) warn against overloading users with too broad a menu and remind us to consider the user's ability to visually scan a webpage. We agree with them and add that the number of items in the main menu as well as the whole design is also subject to trends. And nowadays, it is minimalism that is modern.

A culture center like Godsbanen is not similar to Musikhuset or Aros (art museum) or galleries or theaters. In all these, people know exactly what to expect; in Musikhuset it will be a concert of some kind, in Aros and galleries we can see visual arts, usually painting exhibitions and so on, but no one really knows what to expect when we say culture center and that can create a feeling of uncertainty. Every city can have a culture center and each of them can provide different cultural experiences and different possibilities for its residents. In some cases, it can be space for meetings or conferences, in others it can be space for children to play and spend time, as well as a place for concerts. In other words, there are no boundaries to what a culture center can offer and every single one

can be different depending on the local needs, creativity, initiative of the employees and finances from the municipality.

This means that when a person comes to visit a webpage of a culture center, he is uncertain, he wants to explore, and is curious about what is happening there, about the different activities the center offers and how can he join some of them. And it is for this reason that we need to make sure that our communication with potential visitors is very clear and persuasive. The question is if 16 items in the main menu of Godsbanen's webpage are helpful in this goal or rather too overwhelming.

Hypertext links are another organization structure which is very popular because of its flexibility. But there are some dangers of users getting lost in highly hypertextual websites. It is like exploring a spider web from a spider's perspective; every new option opens many other options and therefore it is hard to create a mental model of such a structure. We need context and a sense of location not to get overwhelmed and frustrated. Hypertexts are great as a supplement to, for example, hierarchical models instead of being the main organization structure. (Rosenfeld, Morville, Arango, p. 126-127, 2015)

### **3.7 Labeling systems**

Labeling is present in our language; every word carries meaning, thoughts. Words are representations of concepts and things. Similarly, labels are representations of groups of information in our information environments. We don't have to present all the information in the beginning, instead we can use labels as shortcuts that create the associations with content behind them. This helps us to communicate efficiently and save space on the webpage's screen and in the user's cognitive space.

Since we use language as a labeling system constantly, we might take it for granted and not give it appropriate attention. And that can cause problems. When we communicate, we are constantly getting feedback and can easily rephrase our misunderstood words, but when communicating through a webpage, we are not receiving feedback and confusion can occur. Labels are as important as any other professional communication and the way we represent information on our website says a lot about our organization and brand. And unfortunately, confusing labels can ruin a user's confidence in an organization.

As we realize the importance of good labels, we can easily imagine how difficult a task it is. We can never be sure that we named a perfect label, because we are using words which are ambiguous. So even though creating labels is more of an art than a science, we can still follow some basic guidelines. First of all, we should narrow the scope whenever possible. If we can narrow our target audience and our subject domain, we have a bigger chance of creating context that would encourage effective representation. And secondly, we should develop consistent labeling systems, not just labels. If we want to make our labels easy to learn, they should be predictable and to make labels predictable, they need to be consistent.

There are several factors that can influence the consistency of labels. Firstly,

- style (the usage of punctuation and case should be united),
- presentation (fonts, font sizes, colors, white space and grouping should also cooperate),
- syntax (menus should not be a mixture of verb-based, noun-based or question-based labels),
- granularity (labels should be equal in their specificity, not mixing general with concrete labels like restaurant and Chinese restaurant on the same level)
- comprehensiveness (menus should avoid missing categories that are expected to be present for a certain environment's content) and lastly
- audience (vocabulary should be suitable for our target group and not mixed with different terminology). (Rosenfeld, Morville, Arango, p.133-173, 2015)

In Godsbanen's webpage's menu we can see a couple of inconsistencies like how all the items are in the same style except for the item Book, which is in a red square. There are also a few verb-based items in the main menu and one audience inconsistency, namely that the item Residency is not in Danish as all the other items are. But otherwise the presentation, granularity and comprehensiveness work well together.

As we mentioned in the previous chapter, users visit webpages with a particular level of uncertainty. One way we can diminish this uncertainty is by creating a scent of information and through labeling. It is sometimes hardly visible, but it is the scent trail that leads users to find the information they are seeking. The scent of information and labeling is the subtle thing that makes the difference between webpages. Some of the visible signs of scent are placement of critical information, the length of links and pages, and a few other perceptible elements. But what it is all about is the designer's ability to understand the users and their needs.

“In fact, the best way to detect scent is to measure the users’ confidence. When the scent is weak, users are not confident at all. They doubt their choices. They tell us they are making “wild guesses.” They click hesitantly, hoping the site will magically come through for them. More importantly, they rarely find what they are seeking. When scent is strong, however, their confidence builds as they draw closer to their content. They traverse the site with little hesitation. Moreover, they find what they are seeking.” (Spool et al., p.2, 2004)

So the difference in sensing the scent can have a big effect on the ability to find information. But how do we find the information? All users have in common the instinct to search for trigger words, which they associate with the information they are looking for. That way they pick up the scent. The scent gets stronger as they click through pages that are leading them closer to the specific information. It is not important that they need to do more clicks if they know they are on the right track.

The problem with menu items can be that they are very general, since they cover a lot of information. That makes it complicated for users to choose the right item because it is less likely that items with general names will include the trigger words. So how should we design a webpage so that it is easy for users to navigate? It is not by focusing on the different sections of a home page. That is often the problem. We focus on the structure instead of the content, but the users are more interested in the content. So instead of focusing on the home page, we should focus on the most important content and define the trigger words. This approach will lead us to ask questions like: why are users coming to the site? Which page is most important to the user? How will users find this page? What are the users’ trigger words? Where are they likely to look for those words? The answers to these questions will help us reflect the user’s needs and priorities.

As mentioned before, to find out about the scent of an existing webpage, we need to test the confidence of users. If they use the Back button or search engine very often, it can be a bad sign, that they cannot find the right scent. To research user’s confidence, it’s best to ask: “How confident are you that this link will get you to what you’re looking for?” before clicking on the link they believe will take them further to their goal. If they are very confident, it is a good sign, that we use the right trigger words and the layout is not confusing. If they are just guessing, we have room for improvement. Also after the link is opened we should not forget to ask: “Is this page getting you closer to your goal or farther away from it?” If the website is good, the scent will lead the users to reach their goal. (Spool et al., p.2-24, 2004)

So one of the ways to lower uncertainty of users is to use the right trigger words, or labels. This can be a hard task, since people use many different terms to describe the same things. Still information architects should try to reduce the potential uncertainty by the tools of labeling (the information scent) and by creating a good balance of breadth versus depth structure. The users should experience the feeling of success in changing their initial uncertainty into confidence, so that they would visit the site repeatedly.

### 3.8 Navigation systems

As we mentioned before in the section about the relationship between physical and digital spaces, we need to be able to orientate where ever we are. We need to have the sense of space and our location in that space. No one likes to be lost, it causes frustration, anger, confusion and fear. To avoid these situations, a set of navigation tools was developed. They help us with understanding the context (“what the environment is and what you can expect to find and do in it” (Rosenfeld, Morville, Arango, p.179, 2015)) and provide us with comfort when exploring new places. There are three basic navigation tools that we will discuss here: global, local and contextual navigation.

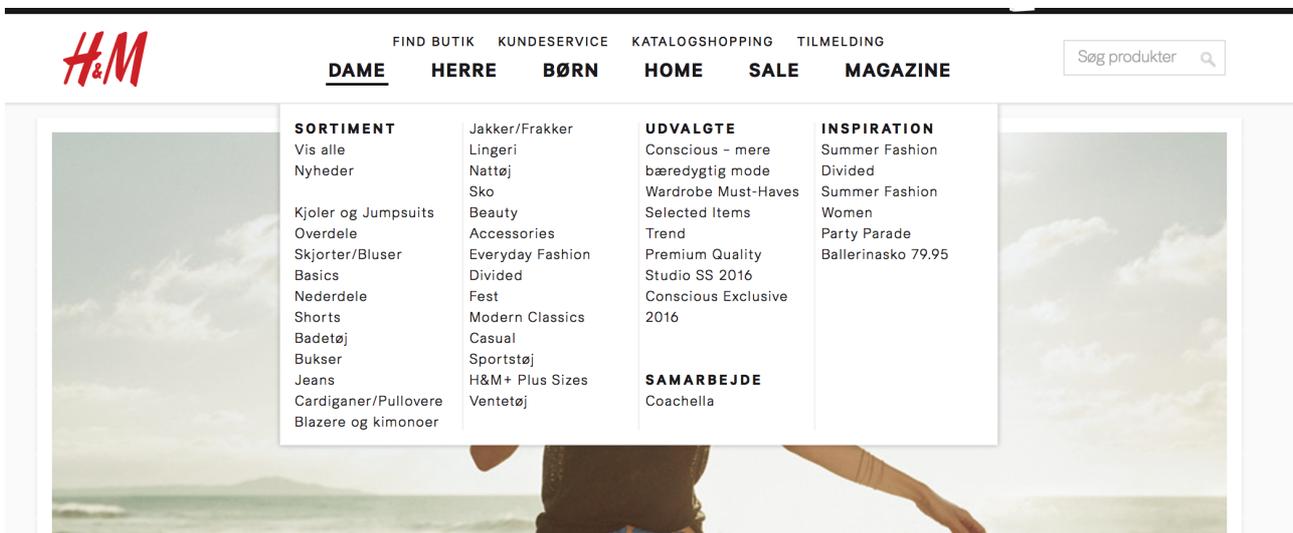


Figure 12 Screen shot of a global navigation menu

Global navigation system (navigation bar or main menu) is the one presented on the top of every page. It is a gateway to the content and structure of a webpage. It is under constant development and nowadays mega menus with drop-down features and fat footers are popular. The other function of global navigation system is creating the context for the whole webpage. It uses the company's

brand language to communicate what the webpage is about, what users can expect and also creates the concept of how users will think of us.

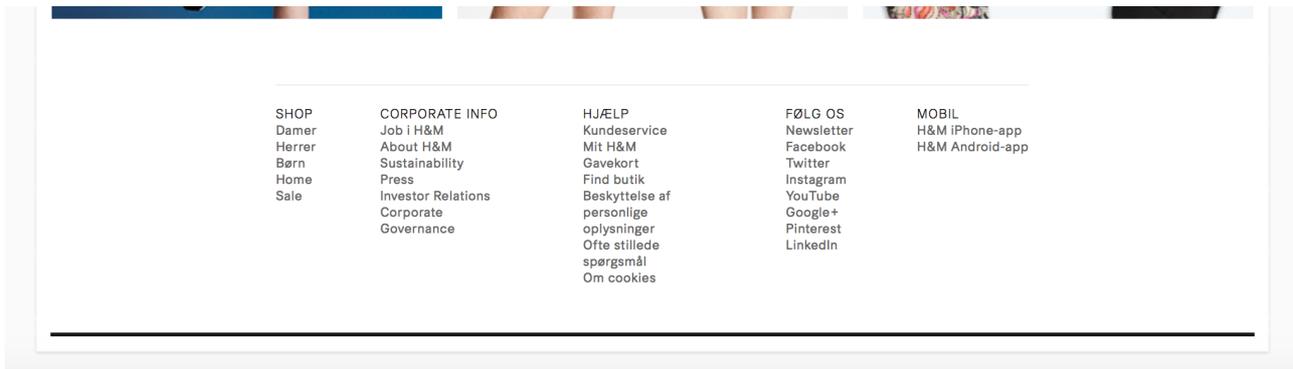


Figure 13 Screen shot of a footer

A local navigation system usually supplements the global navigation system. It is actually like the global navigation system, but only for a particular sections. Local navigation systems are very important because they help users who might not know exactly what they are looking for to search through more specific topics to get closer to the answers they need. “With local navigation, you only need to provide links to other pages in that same section. Local navigation is a way to move within subsections of a Web site.” (Wodtke, Govella, p.196, 2009) We can find local navigations right under the global navigation, on the left side or on the right side of webpage.

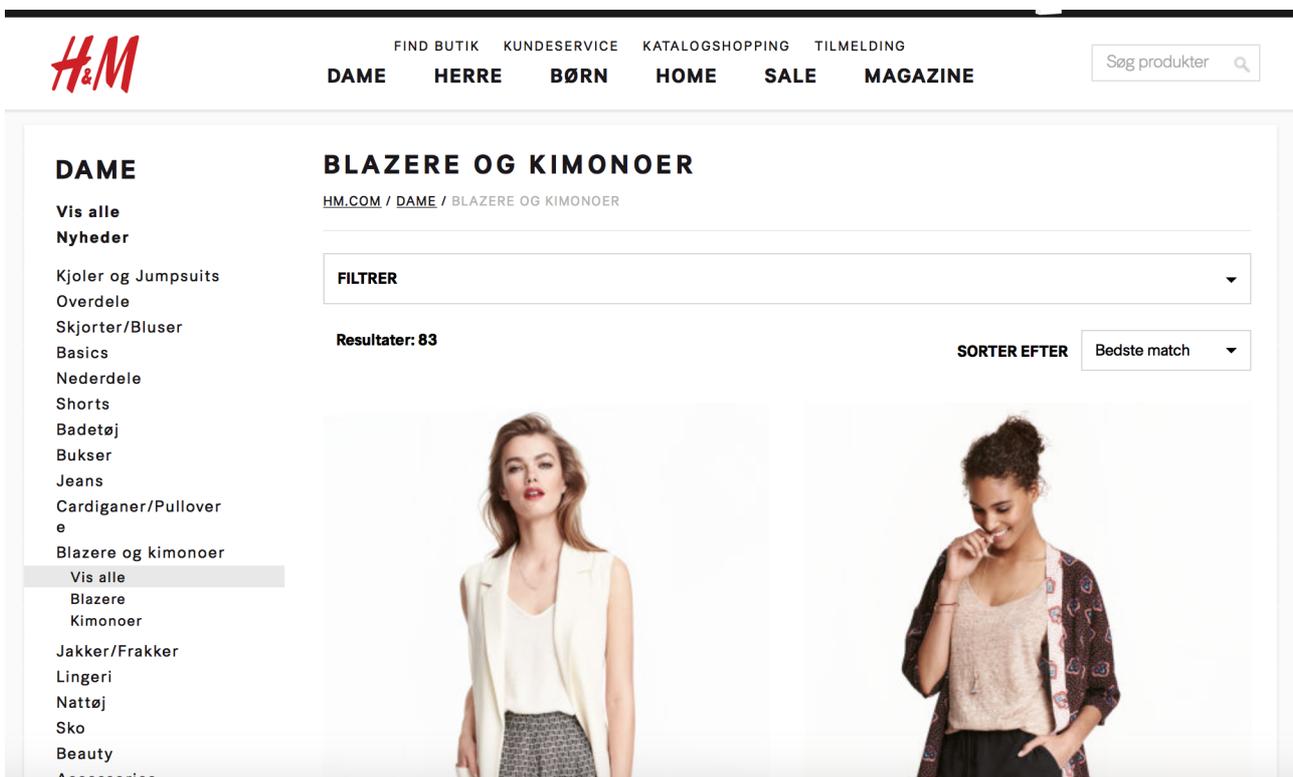


Figure 14 Screen shot of a local navigation menu

Contextual navigation or as Wodtke and Govella call it Associative navigation is all about answering the question: What's next? If a user finds what he was searching for, what happens next? Or what if user did not find what he was searching for? What happens next? We usually want users to stay longer and explore further in both cases. "No page should be a dead-end." (Wodtke, Govella, p. 205, 2009) A typical way to handle this is to offer "see also" links. This way we engage users in associative learning. They might get to content they didn't know existed and might get interested in new subjects. "Contextual navigation allows you to create a web of connective tissue that benefits users and the organization." (Rosenfeld, Morville, Arango, p.189, 2015)

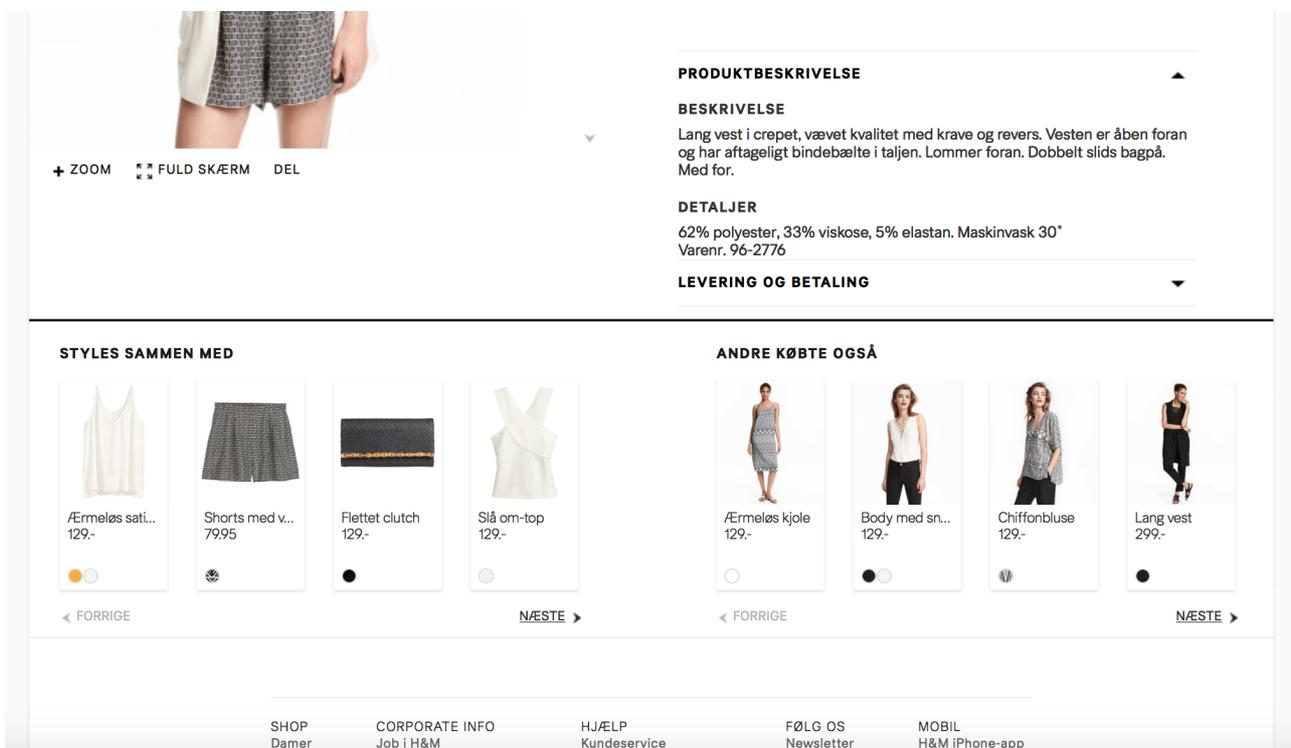


Figure 15 Screen shot of a contextual navigation

In the case that we would like to upgrade our navigation system, there are possibilities of personalization and customization for example. Personalization and customization can work as a supplement to already existing navigation systems. Personalization means tailoring information based on user's behavior, needs or preferences, we in a way guess what it is that the user wants. Customization, on the other hand, requires the user to customize for himself the content he is interested in. Even though these systems are not yet perfect and can have some disadvantages, the advantages can bring a persuasive element into the game. (Rosenfeld, Morville, Arango, p.175-204, 2015, Wodtke, Govella, p.188-217, 2009)

Godsbanen's webpage has a stable main menu (global navigation system), so that (most of it) can be seen on every page also while we scroll down. The local navigation menu is trickier. Most of the time it is available, but not always. For example, when we click on Application, the only thing the left menu shows is Rooms or when you click on Press or Contact, there is no left menu at all. But mostly it shows exactly the same content as is in the center of the page, which makes it kind of redundant. Another problem with the local navigation menu is that in some cases it acts as contextual navigation. For example, when we click on Eat, the left menu offers us other links we can explore. Apart from that we can find contextual navigation in the calendar. When we click on an event and scroll down, we can see headlines like: More from... (and the concrete category), which offers three other events and also Expand the horizon, which again offers three events, but this time from different categories.



Figure 16 Screen shot of a local navigation menu combined with contextual navigation

## 4 Persuasive design

### 4.1 Why persuasive design?

We decided to look at the website of Godsbanen from the angle of persuasive technology, for several reasons. First of all, in today's world we are surrounded with information, activities and events. Aarhus is the second biggest city in Denmark and there are many things happening all the time. But if we don't know what is happening and where, we can get a very different picture of the city. So it is very important to be able to get to the right information at the right time. And that is also what Godsbanen's website tries to accomplish; to inform people about all the possibilities the culture center offers and about all the activities and events that are happening there.

Secondly, beyond fees paid by users, Godsbanen is financed by Aarhus municipality and the state. (<http://godsbanen.dk/media/2016/01/SELVGUIDET-GODSBANEN-2016-3.pdf>) And since they invest money into this, we can imagine that they hope that citizens will take advantage of it. So it is important that the webpage that aims to inform is made in a persuasive way.

Last but not least, it is our task as a society to maintain culture, to maintain environments of creativity, connectedness across cultures and to maintain places where individuals can meet and share their mindsets, opinions and values. Even though it is impossible to measure the value of culture in money, the impact it has on the community can last in the long term. As one person wrote in his review of Godsbanen on Facebook: "Because a stronger culture gives a stronger society." (<https://www.facebook.com/Godsbanen/reviews/>) So again, it is important that people get to know about, for example, all the projects they can be a part of in Godsbanen.

### 4.2 Advantages over human persuaders

B.J. Fogg is a director of the Persuasive Tech Lab at Stanford University, a psychologist and an innovator. He focuses on understanding human behavior through the psychology of persuasion and on converting the insights into practical real-world outcomes. (<http://captology.stanford.edu/about/about-bj-fogg.html>) He is author of the book *Persuasive Technology: Using Computers to Change*

What We Think and Do and defines persuasion as “as an attempt to change attitudes or behaviors or both (without using coercion or deception).” (Fogg, p.15, 2003)

And there are several reasons why technology is better at persuasion than people. For example, technology is anonymous. When we search through the Godsbanen’s website, we can freely look through all the pages without asking anyone for information. People are often afraid to ask questions which might sound stupid, so instead they stay quiet, but in this way, users can get the basic ideas about the happenings in Godsbanen and then ask concrete questions, for example. This anonymity gives people more freedom to explore. If we ask someone personally about a hard rock concert, we might be viewed as hard rock music fans, but that might not be true at all. Maybe we just live in the neighborhood and want to avoid the noisy evening. So searching in anonymity might spare us from being put into boxes or categories.

Secondly, technology can store, access and manipulate huge volumes of data. We can see this persuasive characteristic also in Godsbanen’s website, which stores a lot of information! We can search through many different areas, places, and possibilities, and also in the future events as through all the past events. We can even get information about who is responsible for the cleaning of Godsbanen.

Thirdly, technology can persuade us by using different modalities. Godsbanen’s website is not only a text based website, but there are also short videos introducing the workshops or interviews with different people who are responsible for projects in Godsbanen or just visitors and participants describing what do they do there and why they like it. There are also a lot of pictures used on each page. The social part is a link to the Facebook, Twitter, Flickr and Instagram.

Technology is good at persuasion, because it can easily scale. As mentioned previously, Godsbanen’s website already accommodates a lot of information even though it is only four years old. And as the time goes, the amount of information will only grow. In the same way more and more people will use the webpage, which won't be any problem compared to giving all the information through a telephone or in print as in the old days.

And lastly, technology can be taken simply everywhere. Godsbanen has a mobile-friendly version of their website, so we can look up information anywhere as long as we have an internet connec-

tion. And since Godsbanen is also present on Facebook, Instagram and Youtube, we can enjoy different information through different channels.

The main goal of Godsbanen’s website is to inform people about the initiatives happening in Godsbanen, in other words to persuade them and motivate them to take part, simply join in and be active. We believe that communicating all the information about all the activities in Godsbanen is best done through a persuasive media like a webpage in this case.

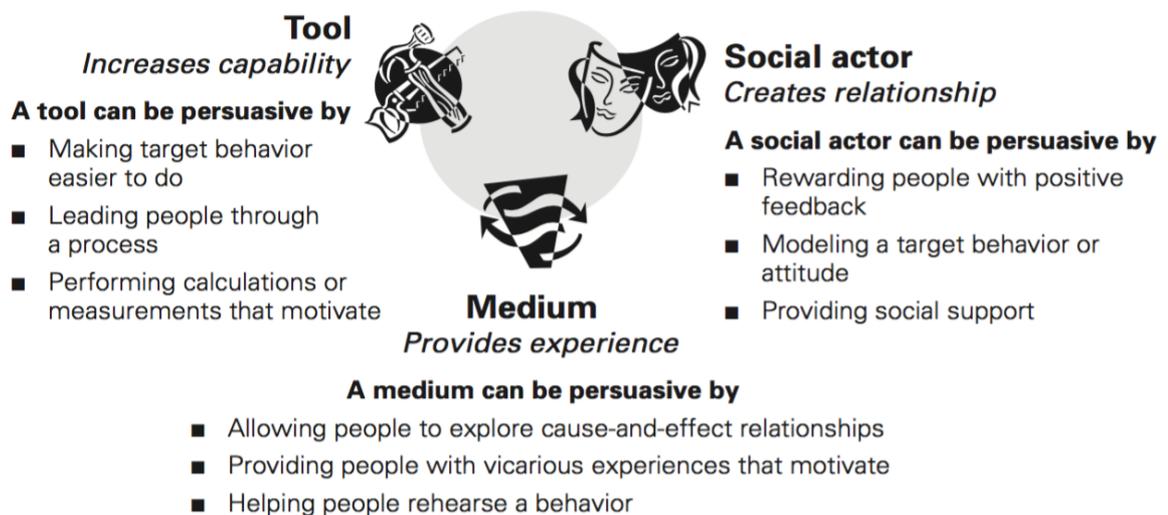


Figure 17 Computing technologies persuade in different ways, depending on their functional roles

### 4.3 Persuasive technology as a tool

In Fogg’s (p.23, 2003) book we can read about a functional triad, which describes three ways of how interactive technology can operate: as tools, as media, and as social actors. “The functional triad is a framework for thinking about the roles that computing products play, from the perspective of the user.” In our case of discussing Godsbanen’s website we will concentrate on tool part of the functional triad only.

Fogg (p.32-33, 2003) identified seven types of tools which, when applied, should create an interactive design able to change behaviors and attitudes by making a goal easier to achieve.

## Reduction

The reduction tool is all about simplifying. If we want to persuade someone to do something, the best way is to make it as simple as possible. For example, Fogg writes about the one-click buy button Amazon uses to simplify the process of shopping.

When we look back at Godsbanen's website, it is their mission to make it easy to find information. So it should be an easy task for users, any complexity of this task should be reduced to only a few clicks. We will try to find out in our research if Godsbanen's website is made in such a way, that users do not have to make a complex search of the website if they need only a few pieces of information, but that it is easy to find whatever they are looking for.

One way Godsbanen's website is trying to achieve this is that right on the home page in the middle of the upper part is a section called "DET SKER PÅ GODSBANEN" (It's happening at Godsbanen), which can give a fast overview of the events happening in the near future. And right underneath is a section called "DET KAN DU PÅ GODSBANEN" (You can do it at Godsbanen), where a couple of possibilities available in Godsbanen are mentioned.



Figure 18 Screen shot of the home page of Godsbanen

And lastly, their menu on the top is supposed to be helpful in the process of finding information. It starts with a larger font size in this order: calendar, possibilities, facilitators, rooms, eat, about, ap-

plication, workshops, bookings and search. Above it is a menu with slightly smaller letters in this order: news, residency, newsletter, press, contact and English.



Figure 19 Screen shot of the main menu go Godsbanen's webpage

## Tunneling

Tunneling is a persuasive tool which will guide you through the whole process. If a person makes a choice of some kind, then it should be made easy for him to follow through. In this process he is guided by the system or series of steps that he easily follows. "For designers, tunneling controls what the user experiences—the content, possible pathways, and the nature of the activities. In essence, the user becomes a captive audience." Fogg (p.36, 2003)

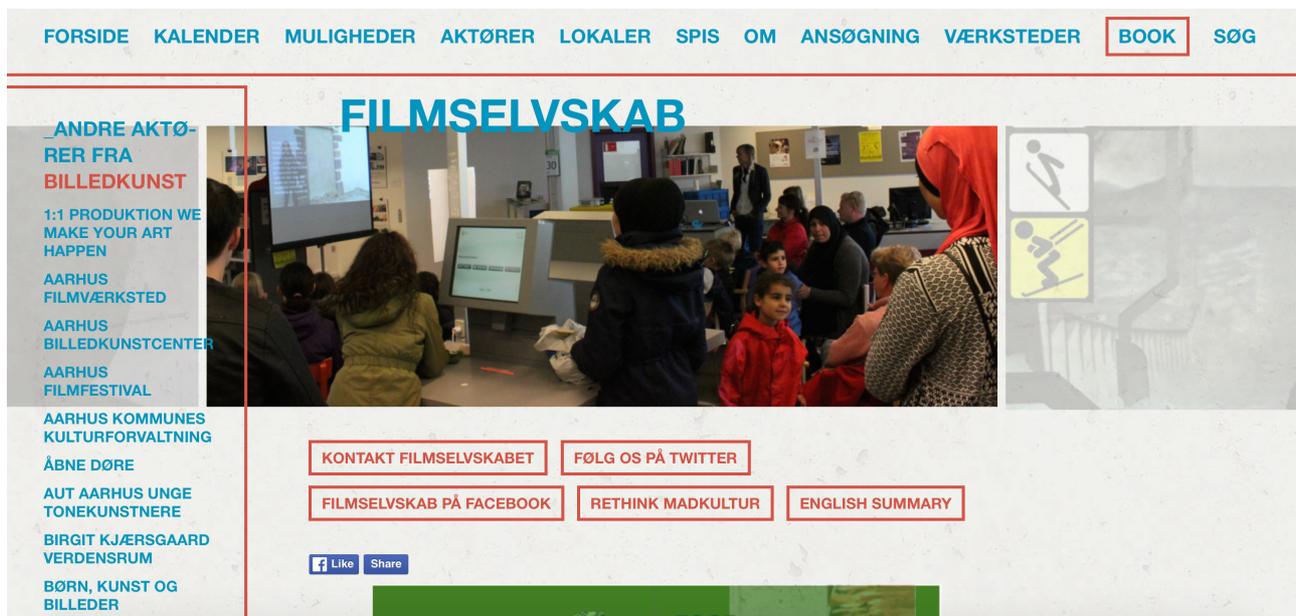


Figure 20 Screen shot of Filmselskab

In our case the user is not so captive; he or she can click anytime anywhere, but if they, for example, decide to find out more about Filmselskab and get to that page, they can see some buttons on

the top (contact Filmselvskab, follow us on Twitter, Filmselvskab on Facebook, Rethink food culture and English summary). Under that they can read a small introduction about Filmselvskab itself and then more information continues underneath in a form of clickable buttons again, that will open a paragraph or a couple on that topic. In this way the user should be able to get all the information available about Filmselvskab on the Godsbanen's website.

## **Tailoring**

Technology uses the tool of tailoring when it is able to suggest something that is personally valid or engaging. Web shops are good at this when they offer products based on your previous search. For example, Amazon displays products in categories: Get Yourself a Little Something (based on what is in my Wish list), Inspired by Your Shopping Trends, Recommendations for You in Kindle Store (the category I search mostly in), New for You, Additional Items to Explore, Inspired by Your Browsing History and Your Recently Viewed Items and Featured Recommendations. So there is a lot of tailoring there. Even though Amazon offers millions of products, when I open their website (and I am signed in), only the items I had been searching for or items in that category are displayed.

Godsbanen's website does not offer tailoring. It does not have any function that would remember our last search nor is it connected with Facebook in such a way that it would recommend future events based on events we attended or were interested in. Namely, everyone sees exactly the same things every time.

## **Suggestion**

Fogg (p.41, 2003) defines suggestion technology "as an interactive computing product that suggests a behavior at the most opportune moment." In other words, people are more prone to be persuaded when the suggestion comes in the right moment. For example, I might forget to take medicine when reminded a day ahead, but if reminded at the moment I should take it, there is a much higher chance I will take it right away and not forget about it. When talking about this tool the most important thing is to know when the right time actually is. The concept of the right time was discussed long ago by classical rhetoricians under the notion of *kairos* which can be defined according to Kinneavy

as: “the right time and due measure.” (Thompson, p.2, 2007) Even though it is hard to catch the lock of hair on the forehead of the bald god Kairos, a god of favorable moment, when he is running towards us, there are some strategies how to get hold of him and not let him disappear forever. (<http://www.theoi.com/Daimon/Kairos.html>) Aagaard, Moltsen and Øhrstrøm (p.3, 2008) use Fogg's model of identifiers (location, time of the day, current task, typical routine and goals for the day), but add two more: behavior (how the user behaves) and physical measures (“information about the physical state of the user, e.g. heart beat or breath”).

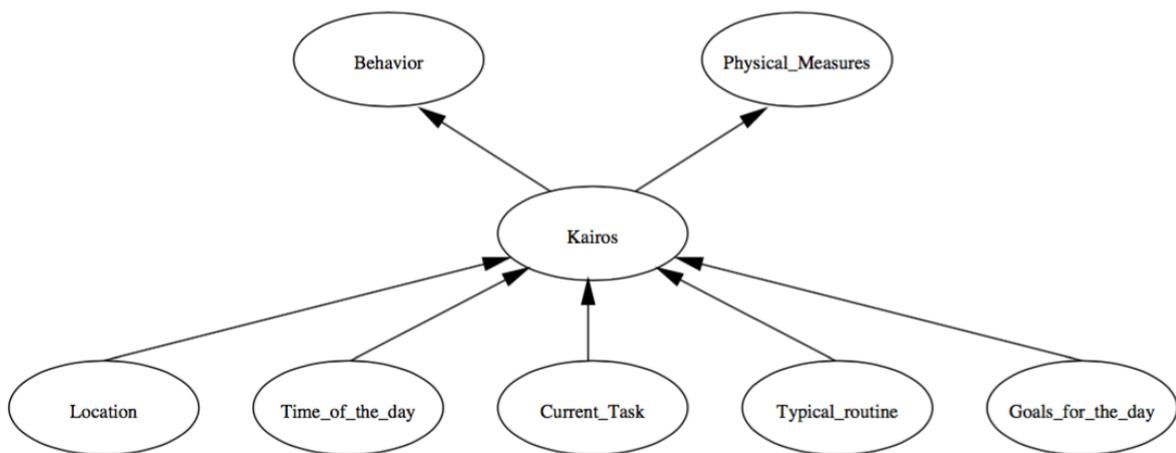


Figure 21 A causal model of Kairos with identifiers

When talking about Godsbanen’s website it does not use suggestion technology to its benefit. But it could do so. For example, if there was an app for Godsbanen, it could simply display the kind of events we are interested in and it could remind us a day before the event or on the day or when ever users would prefer to be reminded. It could also show all the events happening in the particular week with a short description and further links to get us interested. Facebook is doing this job partially, but there is space for even better and more persuasion using suggestion tools.

### **Self-monitoring**

When being self-monitored, we receive information about our physical state or activity, location and progress which helps us change our attitudes and behaviors in a way that will move us closer to reaching our goals. Self-monitoring technology helps us to learn about ourselves and that way increases our motivation.

Self-monitoring is not exactly what is necessary when considering Godsbanen. We don't need to receive information about our physical state, activity, location or progress, we don't really need to change our attitudes or behaviors, because we do not have any specific goals in this area. Probably the only goal there is that Godsbanen would have higher attendance and visitors might have their own personal reasons (goals) to come, but Godsbanen itself does not give a specific goal like, for example, a gym where people go to exercise. The reason is simple, Godsbanen is so broad in the activities it supports, that it is hard to come up with a broad enough goal that would still be specific and interesting for the purpose of self-monitoring.

## **Surveillance**

Surveillance is in comparison to self-monitoring different in the way that is it others who receive the information about us. The only condition is that we are aware that we are being observed. Surveillance as a persuasive tool is based on social psychological theories and researches which conclude that observation has huge effect on behavior. The fact that the observer can execute punishment or reward is very motivational and persuades the observed person to meet the expectations of the observer.

Godsbanen or Godsbanen's website does not use surveillance technology. The only thing they might use to monitor the activity on their website is Google Analytics, but that is only our assumption. If they do use it, they are not required to inform the users, probably because the information is anonymous and purely statistical. If using Google Analytics, they do not motivate people to any behavior, neither do they use punishments or rewards, they just observe the behavior that users are performing.

## **Conditioning**

Conditioning is based on Skinner's operant conditioning also called "behaviorism" or "instrumental learning". The way behavior is encouraged is through rewards (or punishments). This technological tool is often used in computer games, where a good game (a persuasive one) changes behavior in

such a way, that the player spends more and more time playing it. As an addition to make players more addicted, it is important to apply reinforcement unpredictably. (Fogg, p.31-54, 2003)

Even though Godsbanen is not a game nor Godsbanen's website a gaming site, and does not want to make us "addicted" to anything, it could still benefit from using conditioning. Conditioning could be seen as creating habits. And how fantastic would it be if a person with a free afternoon or evening automatically checks Godsbanen's website and comes to spend the time there because he knows he will enjoy it? Of course one thing is to always have a good experience there, which we cannot always affect, but what we could do is for example motivate people to sign up for a newsletter promising that every one or two months, people can win a ticket to a concert, theatre or other event. Or just doing different competitions where those who will like an event on Facebook and share it can win tickets, for example. Even though this kind of reinforcement is not solely unpredictable, it is still a good way to build reinforcement.

#### **4.4 The Fogg Behavior Model**

In the following years, Fogg developed another persuasive theory, which he called the behavior design. The behavior design got its name because through it we can more systematically design or influence people's behavior according to their, or our, needs.

We decided to include behavior design in this thesis to draw inspiration for making Godsbanen's website more targeted, more concrete and therefore even more persuasive.

Three things need to happen to cause behavior, in other words, behavior is a product of these three things: trigger, ability and motivation, and they all have to appear in the exact same moment. "The Fogg Behavior Model asserts that for a person to perform a target behavior, he or she must (1) be sufficiently motivated, (2) have the ability to perform the behavior, and (3) be triggered to perform the behavior. These three factors must occur at the same moment, or else the behavior will not happen. The Fogg Behavior Model is useful in analysis and design of persuasive technologies." (Fogg, p.1, 2009)

This model is useful because it helps us understand the factors that really affect behavioral change, so it focuses on behavior rather than on attitudes.

As we can see in the figure 22 people who are highly motivated are willing to do things that are hard and on the other hand, people who are low on motivation are still willing to do some things, but only those that are easy to do. That means that it is not always necessary to try to increase motivation in other people, but rather maybe focus on increasing their ability, namely making it an easy task. And that can be an easier solution. For example, we might not be motivated to buy a car, but if someone offers it for 1 krone, we might be very willing to buy it. Simply, our ability to buy a car for 1 krone is very high. So if we want to increase a behavior, we should increase at least on of these two factors (in best case both).

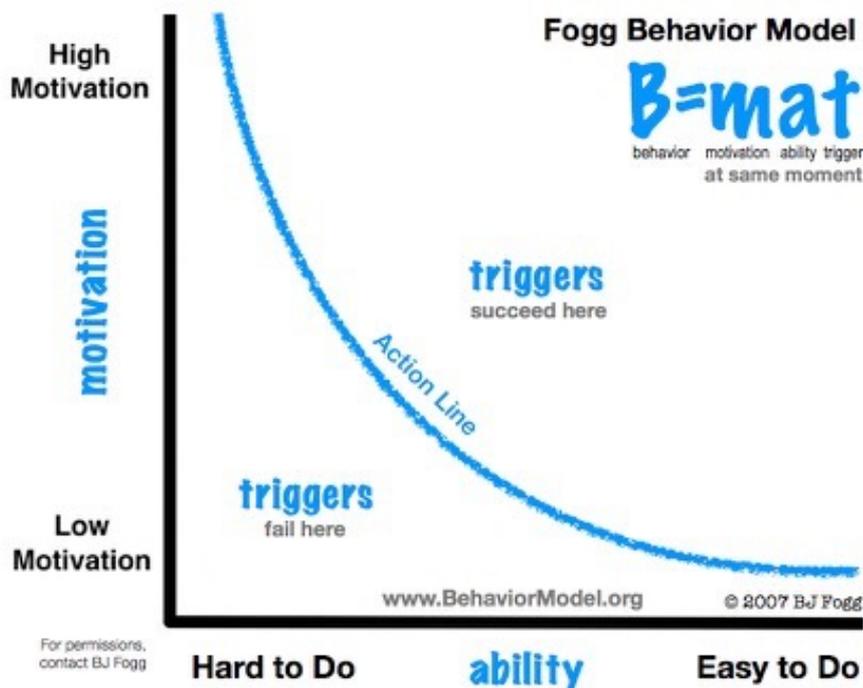


Figure 22 The Fogg Behavior Model

But that's not all; we are still missing the third factor: trigger. Because without an appropriate trigger we can be motivated and have a high ability, but we still won't perform any behavior. For example, we enjoy making food (we are motivated) and we are very good at it even when doing complicated recipes (we have a high ability), but unless we are hungry or we expect guests, we will not start cooking (without a trigger we don't have a reason to do it). "Successful triggers have three

characteristics: First, we notice the trigger. Second, we associate the trigger with a target behavior. Third, the trigger happens when we are both motivated and able to perform the behavior.” (Fogg, p. 3, 2009) The biggest problem in this case is the right timing.

As we mentioned before the importance of kairos is crucial. The right kairos moment is when the motivation and ability rises above the action line. When a trigger appears in that moment it will lead to the targeted behavior. But if a trigger won't come in the kairos moment, the behavior will not occur. A good example of this are spams and pop-up windows which often have the opposite effect; they are annoying, because we are not motivated to do what they say. With a low motivation these things are just distracting, and if we have high motivation, but low ability, we would feel frustrated.

When being aware of this, and not reaching the targeted behavior, we can consider what can be wrong. Maybe people are not motivated enough, maybe the behavior is too difficult to do or maybe we are not giving appropriate triggers. This same strategy works the opposite way when we want to stop or prevent a behavior from happening. Just take one factor from the equation and the behavior will not occur. (Fogg, p.1-7, 2009)

## **Motivation**

According to Fogg (p.4, 2009) there are three types of motivations that are useful concerning behavioral change. The first motivator is pleasure/pain even though causing pain is probably not the goal for web designers. The result of this motivator is immediate, people are simply responding to a momentary situation.

The second motivator hope/fear is about anticipating the result of a situation. “For example, people are motivated by hope when they joining a dating web site. They are motivated by fear when they update settings in virus software. In my view, hope is probably the most ethical and empowering motivator in the Fogg Behavior Model.” (Fogg, p.4, 2009)

And lastly, social acceptance/rejection is a motivation that is deeply rooted in all of us. People are highly motivated to win social acceptance and maybe even more to avoid rejection.

## Ability

When we talk about ability, we talk about elements of simplicity. When we consider increasing ability, we might think about teaching people new things, but that doesn't often bring the results we are wishing for. Mostly because people don't want to give the effort and are simply lazy, so the solution is to make things easy. "Simplicity changes behaviors." (Fogg, p.5, 2009)

According to Fogg there are six elements to simplicity and all of them have to be present for it to work. They are:

- time,
- money,
- physical effort,
- brain cycles,
- social deviance and
- non-routine.

If a task is time consuming and it is time that I am lacking, it is not an easy task for me, the behavior is not simple. But what might be simple for one person might not be simple for the other. The same applies to money. One person has the resources, but if someone does not have the money, the target behavior will not be simple for him. Physical effort is directly proportional; the more physical effort we need to perform, the more complicated the behavior is. Thinking hard might not be a simple task especially when people are consumed with a lot of other stuff. The element of social deviance means that if we need to do something against the norm, to break the rules, it would definitely be less simple than if we act according to the norm. The non-routine factor of simplicity describes people as those who love routine and it is easier for us to do something that follows the routine than to break it, even though the new routine may be less time consuming or even cheaper.

Every person has a different simplicity profile, which can be influenced by the actual context. Some people have the money, but not time, or some people love to think deeply about everything, or some people find it very easy to break the social norms or they might not even like a routine at all. But if someone loses his purse, suddenly using money can get very difficult. So our task as persuasive designers is to find out what sources are scarcest for our target group and consider how to make them more simple.

## Triggers

Triggers are often overlooked because they are taken for granted, but they are vital on the path to persuasive design. If people are above the action line with their motivation and ability, a trigger is all that is required for the target behavior to happen. “A trigger is something that tells people to perform a behavior now.” (Fogg, p.6, 2009) But not all triggers work the same way and Fogg distinguishes between three different types: spark as trigger, facilitator as trigger and signal as trigger.

Spark triggers can be put to practice when one lacks motivation; in that case the trigger has to be somehow connected to one of the above mentioned motivators. An example can be a video that highlights fear, to text that inspires hope. The only condition is that the trigger must be presented when the person is able to take action in that moment.

Facilitator triggers can be used in connection with people who have high motivation, but are low on ability. In that case the trigger must make that behavior easy to do and create a sense that it won't require resources that the person doesn't have.

A signal as a trigger is for people who have both the motivation and the ability. All these people need is a reminder, a signal that the behavior is appropriate at that point. If spark or facilitator triggers occur in this case, they might be irritating.

Triggers through computers are very effective and most of the target behavior happens through them. The reason is that we can react immediately after we receive a trigger, which makes it much easier compared to traditional media like TV, newspapers or radio. With those we had to change our context to perform the behavior, like drive to a shop to buy a product, but now it is only a click away. This often makes us act on impulse, and the connection between trigger and behavior is stronger than ever with new technology. (Fogg, p.1-7, 2009)

Hot triggers are those we can act upon right away and cold triggers are called cold because we cannot do anything with them right now, like looking at a billboard does not allow us to react immediately. The most effective persuasion happens when we put hot triggers in the path of highly motivated people. (<http://bcove.me/ub9t0yfv>)

The Fogg Behavior Model is very useful when we as designers are wondering how to make our designs more persuasive. It gives us a structure which can systematically lead us through the different elements of motivation, ability and triggers. Secondly, it also helps us to see beyond the surface of already successful persuasive technology. With this model we can better understand the underlying psychology, and get inspired, and use the principles for our benefit. (Fogg, p.1-7, 2009)

Godsbanen as a culture center organizes many different events and we believe that it is beneficial for citizens to take part in these activities. Therefore, the target behavior we will be talking about is to get people to join the different events, activities and initiatives.

As described in the Fogg Behavior Model, three things must happen at the same time for a target behavior to occur. They are motivation, ability and trigger. When we look at motivation from the angle of Godsbanen's visitors, we believe that they are motivated by all three types of motivation.

We believe that when people are thinking of visiting Godsbanen, they have a hope that they will have a good time there, and they might experience or learn something new and exciting. Fear can also come on stage when people consider visiting Godsbanen. They might be nervous to come to a new place for the first time, they might feel lost or even lonely or just wonder if it would be worth the visit. In this case testimonies of people already taking part in different activities could be helpful. That can create a safe feeling of not being alone or not being the only one who comes there for the first time, but it can create a hope of meeting similar people, for example.

We also believe that when people join events in Godsbanen, they have a positive experience, that it is pleasure for them to be there, which will motivate them to come back next time or to join different activities as well. We can see that Godsbanen has very good reviews on Facebook by people who visited it. From the 497 reviews, Godsbanen got 4,4 stars out of 5. (<https://www.facebook.com/Godsbanen/reviews/>)

Social acceptance/rejection is another motivation type, which is again present with Godsbanen. Godsbanen is about people meeting, spending time together, talking, experiencing, learning, creating and much more, but it all happens in contact with other people. So Godsbanen is great when fighting loneliness and increasing social acceptance. Visitors can find all groups of people doing all

kinds of things, often things that are not mainstream at all. In other words, everyone can find a corner where they can fit in.

So our visitors are probably high on motivation, but what about ability? Is it simple enough? If people don't have time, they will probably not come to Godsbanen and we cannot do much about that, but we can ask the question in regard of the website. Is it time consuming to find information about what is happening in Godsbanen? Is it complicated or easy to find the information?

Godsbanen is trying to work in a direction where money won't be the problem that would stop people from coming, at least when we talk about the workshops. The prices are very friendly there. A whole day ticket costs 30 kroner, a monthly ticket costs 100 kroner and for a yearly ticket the price is 600 kroner, but if one receives SU, the price is only 400 kroner. (<http://godsbanen.dk/muligheder/godsbanens-aabne-vaerksteder/priser-og-aabningstider/>) Of course the materials are excluded, but the prices should make it available for all to come and that way not hinder the ability factor.

When we talk about physical effort, we can mention public transportation. There is no bus that would stop right in front of the building, but there are several buses that stop close by. As well as bus number 12, which stops on the corner, there are 14 other buses that stop around 400-500 meters from Godsbanen. There is also a place to park bicycles, even though it is not so big and not under a roof. And car parking is also right there, but it is not free; the first hour costs 12 kroner, the second 17 kroner and the third 22 kroner. So even though the workshops are cheap to attend, parking can make the whole experience much more expensive. To make it at least simple, it is possible to pay with card, cash or the MobilParkering app. (<http://godsbanen.dk/om-godsbanen/praktisk/>)

Brain cycles, or thinking hard can be again a question for the website. Do people really need to involve thinking to get around and figure out the different possibilities in Godsbanen? If yes, that can be a problem and hinder them from the target behavior. We should not forget that it is simplicity that changes behavior. (Fogg, p.5, 2009)

Luckily, Godsbanen does not want people to perform any socially deviant behavior, so this should not be a problem. On the other hand, Godsbanen offers people both routine and non-routine activities. There are a lot of one time events, or events that happen regularly once a month or also those that happen on a weekly basis. So this should be covered. And when we look at Godsbanen's web-

site, it did change its design once in the start of the year 2014 and since then it stayed the same. (<https://web.archive.org/web/20140129213321/http://godsbanen.dk/>)

Out of the seven factors of ability, there are some that are simple, some that we cannot really affect, like public transportation, and some that we could do something about to improve the ability for our potential or real visitors.

Let's get to the last important part, triggers. As mentioned before, we believe that our potential visitors are motivated, so that we don't need to use the spark triggers to get them to come. But maybe an advertisement, that can also motivate, can never hurt. And if it is on Facebook, people could also react immediately by clicking that they are interested or that they are going to the event.

Facilitator triggers are used for people with high motivation and low ability, so our task is to make it as easy as possible for them to first of all find out about what's going on, because otherwise they will not come. So we need to make sure that the information is easily available and accessible.

Signal triggers are for people who are motivated as well as able, they just need a reminder. Facebook is doing a pretty good job in this field, so if people did click to join an event, it will remind them that week and that particular day. So we should focus on people finding the information and being able to connect it with Facebook. Currently, the connection with Facebook is the possibility to like and share events, but not to be interested in or join them.

## **4.5 The Behavior Grid**

At the Persuasive Technology conference in 2009, Fogg presented one more idea to develop the persuasive strategy even more. It is called the Behavior Grid because it is a grid, a table which systematically categorizes behavior change based on two dimensions. This model is also very useful, because it helps us to articulate the change we want to see in behavior and thanks to it we can focus on creating the technology that would support it. And since these target behaviors can differ a lot, the Behavior Grid is a simple structure that can be used as a tool for research and also practice.

In the version from 2009, the grid had 35 cells characterizing different behavior changes. “I propose that each cell in the Behavior Grid corresponds to a unique set of psychological theories, persuasion strategies, and design techniques. Understanding how theories, strategies, and techniques can map onto the new framework is one fundamental purpose of the Behavior Grid.” (Fogg, p.3, 2009.1)

		What Type of Behavior Change?				
		<b>A</b> perform new behavior (unfamiliar behavior)	<b>B</b> perform existing behavior (familiar behavior)	<b>C</b> increase behavior (frequency, intensity, or duration)	<b>D</b> decrease behavior (frequency, intensity, or duration)	<b>E</b> stop behavior (cease ongoing behavior)
On What Schedule?	<b>1</b> one time behavior	Take a new type of survey online	Purchase book at Amazon	Buy additional books online today	Spend less time on mySpace today	Don't eat desert tonight
	<b>2</b> one time behavior that leads to ongoing obligation/cost	Adopt a dog	Agree to host a party	Agree to pay more on mortgage	Pay less on a credit card one time	Refuse to continue chemotherapy
	<b>3</b> behavior for a period of time (X has a duration)	Play a new video game for one hour	Exercise for 30 minutes	Floss longer for two weeks.	Spend less money on books this month	Don't complain about anything today
	<b>4</b> behavior on a predictable schedule (X gets repeated, periodicity)	Attend online class each week for a month	Gamble online each morning at 10am	Exercise with higher heartrate each morning	Eat smaller portions for dinner.	Don't smoke after dinner each evening
	<b>5</b> behavior is on cue (X is cued irregularly; it's a change in habitual response)	Report any spam to AOL	Drink water at each fountain you see.	Write a longer thank you note after a dinner party	Control your frustration when driving in gridlock	Don't buy anything at checkout stand
	<b>6</b> behavior is at will (can perform x at any moment)	Read website privacy policy	Check computer for viruses	Check for computer viruses more often	Drink less coffee	Stop interrupting during conversations
	<b>7</b> behavior is always performed (X means change in habit, in way of being)	Use Google for online searching	Maintain good posture	Think thoughts of appreciation	Reduce energy consumption in home	Stop cursing

Figure 23 The Behavior Grid is a new framework for characterizing 35 types of behavior change. (Fogg, p.2, 2009.1)

The later version has been made more simple and contains only 15 cells which characterize different behavior changes. The difference is not on the horizontal axis, as that stayed the same and describes the type of behavior change, such as perform new behavior, perform familiar behavior, increase behavior intensity, decrease behavior intensity and stop existing behavior.

What changed is the vertical axis. Before, it had seven different behavior schedule types like one-time behavior, one-time behavior that leads to ongoing obligation/cost, behavior for a period of time (x has a duration), behavior on a predictable schedule (x gets repeated, periodicity), behavior is on

cue (x is cued irregularly, it's a change in habitual response), behavior is at will (can perform x at any moment) and behavior is always performed (x means change in habit, in way of being). (Fogg, p.2, 2009.1)

From this vertical axis called On what schedule? (does the target behavior happen), the new grid rather focuses on the duration of the behavior. As we can see, there are only three categories: one time, period of time and from now on.

	<b>GREEN</b> Do new behavior	<b>BLUE</b> Do familiar behavior	<b>PURPLE</b> Increase behavior intensity	<b>GRAY</b> Decrease behavior intensity	<b>BLACK</b> Stop existing behavior
 <b>DOT</b> One time	 <b>GREEN DOT</b> <i>Do a new behavior one time</i>	 <b>BLUE DOT</b> <i>Do familiar behavior one time</i>	 <b>PURPLE DOT</b> <i>Increase behavior one time</i>	 <b>GRAY DOT</b> <i>Decrease behavior one time</i>	 <b>BLACK DOT</b> <i>Stop behavior one time</i>
 <b>SPAN</b> Period of time	 <b>GREEN SPAN</b> <i>Do behavior for a period of time</i>	 <b>BLUE SPAN</b> <i>Maintain behavior for a period of time</i>	 <b>PURPLE SPAN</b> <i>Increase behavior for a period of time</i>	 <b>GRAY SPAN</b> <i>Decrease behavior for a period of time</i>	 <b>BLACK SPAN</b> <i>Stop behavior for a period of time</i>
 <b>PATH</b> From now on	 <b>GREEN PATH</b> <i>Do new behavior from now on</i>	 <b>BLUE PATH</b> <i>Maintain behavior from now on</i>	 <b>PURPLE PATH</b> <i>Increase behavior from now on</i>	 <b>GRAY PATH</b> <i>Decrease behavior from now on</i>	 <b>BLACK PATH</b> <i>Stop behavior from now on</i>

Figure 24 The Behavior Grid (<http://www.behaviorwizard.org/wp/behavior-grid/>)

On one of Fogg's webpages: <http://www.behaviorwizard.org/wp/behavior-grid/> it is possible to click on the different cells and read more comments and ideas about how to particularly implement the behavioral change through the trigger, ability and motivation for that behavior.

As Fogg (p.1-6, 2009.2) writes, when we want to create a good persuasive design, we must make several things very clear. And the first one is to have a very clear goal. We need to choose a simple behavior as our target. Even though it can be attractive to choose a really important goal like to make people stop smoking, we should be humble in our choices and rather start small, so we don't fail right away. When starting small we can fail faster, learn more and reach our goals sooner, and then we can always expand.

The second step on this journey is to choose a receptive audience. Again we should start with an audience that is more prone to our persuasion, more willing to adopt our behavior target change and also an audience that is familiar with the technology channel we choose, in our case websites. “The team may be tempted to design an intervention for the toughest audience, such as helping compulsive gamblers to stop. In my experience, this is a mistake. A related mistake is to design the intervention for all users rather than a specific user type. Neither approach works well.” (Fogg, p.3, 2009.2)

To choose a specific target group is a really hard task in our case. Godsbanen organizes activities for all kinds of different people with different interests and for different age groups. But in general, there are two groups of people. Those who know Godsbanen or those who don't know it.

With this being clear we can look back at the Behavior Grid. For the audience who is new to Godsbanen, we will focus on the first step for them to do a new behavior just once, a Green Dot Behavior.

“Green Dot behaviors are often used in the beginning stages of complex behavior inductions. For example, if a company is interested in creating a loyal, repeat customer, they might start off with a small introductory offer. This can then lead to more extensive, prolonged relations and, eventually, habitual purchasing behavior.

The main challenge that we face while triggering a Green Dot behavior is a lack of ability. Since Dot behaviors occur only once, the subject must have enough knowledge to successfully complete the action on the first attempt. Otherwise, frustration, and quitting, may occur.

To achieve a Green Dot Behavior, three elements must come together at once. As the Fogg Behavior Model describes, you must Trigger the behavior when the person is both Motivated and Able to perform it. If any of these three elements is missing, the behavior will not occur.

- Couple the trigger with a motivational or facilitative element.
- Increase the ability of the subject by explaining the novel behavior in terms of one that is familiar.
- Increase the motivation of the subject by explicitly highlighting the benefits of the action.” (<http://www.behaviorwizard.org/wp/all-previews-list/greendot-behaviors-preview/>)

As mentioned before, we must be sure that visitors of our webpage experience very simple access to information. We definitely don't want to frustrate them right from the beginning. We could also use some of the elements mentioned before, like an advertisement on Facebook, videos with people who join the activities, and so on. Godsbanen started to create videos with different people, from those responsible for events, to those taking part in them, and this can be a very nice bridging point.

We hope to see the same behavior: visiting Godsbanen in the group of people who has already been there and know the place. As Fogg recommends, we want to start small, be successful and then maybe expand on a longer lasting behavior. (<http://captology.stanford.edu/wp-content/uploads/2015/02/RSA-The-new-rules-of-persuasion.pdf>) So in this case we are seeking a Blue Dot Behavior.

“Blue Dot Behaviors are among the easiest to achieve. That’s because the person, by definition, is already familiar with the behavior. They know how to perform it (such as exercise, plant a tree, buy a book). In addition, they already have a sense of the costs and benefits for the behavior.

- Trigger: A prompt must tell a person to “do this behavior now.” Triggers can take many forms, ranging from links in email (click here) to internal signals from our body, like a grumbling stomach (eat now).
- Motivation: A person must have sufficient Motivation when the Trigger occurs. Three core motivators exist: Sensation (pleasure/pain), Anticipation (hope/fear), and Belonging (acceptance/rejection).
- Ability: The person must have the Ability to perform the behavior when the Trigger occurs.

With Blue Dot Behaviors, people do not require reassurance (enhancing motivation) or step-by-step instructions (increasing ability). Instead, the challenge is on timing: One must find a way to deliver a Trigger at a moment when the person is already Motivated and Able. This timing issue is well known: “Timing is everything.” The Ancient Greeks called this timing issue Kairos. In today’s world, technology is getting better at timing such Triggers.” (<http://www.behaviorwizard.org/wp/all-previews-list/bluedot-behaviors-preview/>)

If person already has a good experience with Godsbanen, has been there, knows where it is and how to get there, knows how to find information about the events, then all he needs is the right trigger at the right time. If Godsbanen’s webpage could use tailoring, it could present similar events which the

person already visited or was interested in. Again the connection with Facebook is vital. There can one see if his friends are joining, for example. We could also aim at more users signing up for newsletter, as Fogg recommends, we could maybe start with small steps.

## **5 User experience**

User experience is a very broad subject, because it includes all the experiences we have as users of different products and services. Unger and Chandler (p.3, 2009) describe user experience as: “The creation and synchronization of the elements that affect users’ experience with a particular company, with the intent of influencing their perceptions and behavior.” So by applying the principles of user experience we want to create the best possible perceptions and emotions, because they will affect the behavior in a positive direction towards our products and services.

User experience is not about the design and functionality of things itself, it is about what happens on the outside when a person gets to use the product or service. How does it feel and how are the design and functionality cooperating in creating a good experience? Usually it is the details that can make the biggest difference. The approach that helps always to pay attention to details is called user-centered design. “The concept of user-centered design is very simple: Take the user into account every step of the way as you develop your product.” (Garrett, p.17, 2011)

For us the user experience is really about the user and his needs, we realize how important it is to make our users feel good. If we neglect this, the typical reaction that follows is blame. But users do not blame us, they blame themselves! They think they must have made something wrong or that they don't pay enough attention. Anyway, they feel stupid and experience negative emotions. And there is probably not a more effective way to drive users away from our web site. (Garrett, p.10, 2011) That is what we want to avoid at all costs!

As we continue, we will look deeper into usability, which is one of the main characteristics of user experience.

### **5.1 What is Usability**

To start with a definition of usability, we will use Morrogh’s (p.111, 2003) words: “Well-designed information systems increase users’ efficiency by enabling them to complete a task with few complications, without having to learn a lot of unnecessary techniques and with a minimal expenditure

of energy.” Brinck, Gergle, and Wood (p.2, 2002) say just the same with only fewer words: “Usability is defined as the degree to which people (users) can perform a set of required tasks.” We also like the definition of Krug (p.9, 2014), who says: “If something is usable-whether it’s a website, a remote control, or a revolving door-it means that a person of average (or even below average) ability and experience can figure out how to use the thing to accomplish something without it being more troublesome than it’s worth.”

And the degree of usability can be judged based on seven goals of usability, which are:

- effectiveness (effective to use)
- efficiency (efficient to use),
- safety (safe to use),
- utility (having good utility),
- learnability (easy to learn) and
- memorability (easy to remember how to use).

These goals are usually formulated in a form of questions (which will be quoted from Preece, Rogers and Sharp, p.19-22, 2015). That helps designers to consider even details they might have omitted, it gives them a check list structure they can get back to. Effectiveness is simply about finding out if the system is performing the tasks it should perform. The questions we might ask are: “Is the product capable of allowing people to learn, carry out their work efficiently, access the information they need, or buy the goods they want?”

Efficiency is about how the system supports users in fulfilling their tasks. It can be measured by time or steps it takes to carry out a task. Performance that takes less time is usually more efficient. A question to find out about efficiency can be: “Once users have learned how to use a product to carry out their task, can they sustain a high level of productivity?”

Safety in the sense of error tolerance is about the protection of users against serious errors or the possibility to recover from them easily. So the system should help users in avoiding mistakes by accident, and it should prevent mistakes by pressing wrong buttons. It can be done for example by putting the button Delete away from the button Save or by the appearance of a dialog box checking if you want to delete all files permanently. To be aware of these dangers we can ask: “What is the

range of errors that are possible using the product and what measures are there to permit users to recover easily from them?”

Utility describes the functionality of the system, if it allows the users to work on their tasks the way they would prefer to or if it forces them to work with the system in a limited setting. We could ask: “Does the product provide an appropriate set of functions that will enable users to carry out all their tasks in the way they want to do them?”

Learnability is the measure of how much one has to invest to learn a new system. Users are willing to give more effort to learning new systems when for example learning more complex systems with a wide range of functionality. Otherwise they expect to be able to perform everyday tasks in interactive systems without much effort. So the fewer steps one must make to complete a task, the easier it is to learn it. Questions like: “Is it possible for the user to work out how to use the product by exploring the interface and trying out certain actions? How hard will it be to learn the whole set of functions in this way?” can help us focus on the easiness of learning.

Memorability refers to the easiness of performing tasks we learned before, but maybe haven't repeated recently. In that case we should still be able to remember or at least be easily reminded of how to use the system. If it is not so easy, the reason might be obscure, illogical or poorly sequenced operations. We might ask: “What kinds of interface support have been provided to help users remember how to carry out tasks, especially for products and operations they use infrequently?” (Preece, Rogers, Sharp, p.19-22, 2015 and Brinck, Gergle, Wood, p.2-3, 2002)

The focus on usability is irreplaceable even though it is so often forgotten. We tend to think that technology alone can boost our productivity, but the opposite can easily happen when technology is poorly applied and its usability is low. (Brinck, Gergle, Wood, p.4, 2002)

## **5.2 Choosing research methods**

There are several different methods that user experience designers have available when considering research:

- user interviews
- contextual inquiry
- surveys
- focus groups
- card sorting
- usability testing

In this part we will have a closer look at them.

User interviews are generally interviews with existing or potential users. The purpose of this kind of interview is to find out participants' preferences and attitudes about a webpage. We should focus on the experience of the participants rather than their expected behavior. We can ask about the opinion on company's brand, the goals users have when visiting a webpage or our competitors' and what are usually their next steps.

User interviews can be conducted in person or remotely. It is important to decide how structured we expect the interviews to be. Some can prefer highly structured interviews where there is not much space for additional comments, and participants answer only the questions they were given, or semistructured interviews where there is more space for asking further explorative questions and leaving the conversation to a more natural flow. In both cases it is good to ask open-ended questions.

Contextual inquiry is called contextual, because it introduces us to the natural context of our users. It is based on observing them in their workplace (for example) combined with interviews. This way we will gain a better understanding of the real life problems they are dealing with, the space they are working in, the equipment they are using, the level of cooperation with others and what other tools they are using.

We can decide if we want to do an active or passive observation. Active observation makes the participant active in a way that he or she comments on all his actions. This way we can gain more insight into the reasons of participant's behavior, but we can also affect his work more. In the case of passive observations, we are only passively observing without interfering or asking questions. We should act as if we were not there, but we will have the opportunity to discuss everything in the in-

interview that follows. If we have less time, active observing can be more beneficial and on the other hand, if we have a whole day, passive observing would be preferred.

Based on these observations, patterns should be revealed especially in the categories like goals, mental models, ideas and feature requests, frustrations, workarounds and value statements.

Surveys are a good method if we want to approach a large audience. This way we can get statistically significant results and find out about user satisfaction, for example. The participants are asked to fill in a set of questions, where they choose usually from multiple choice answers.

When considering a survey, we should also plan and decide about who our target group is, how we can best approach this target group, how much effort, especially time it will cost them, if we are offering some kind of compensation, how many participants do we need or when we will start to analyze the data and lastly, what tool we will use to collect and analyze the data.

Focus groups are useful when we want to have a personal contact with our participants, but still want to approach more of them at once. The point is to collect a group from our target audience which would be willing to discuss different topics concerning their experiences, related needs, feelings, attitudes, and ideas for improvement.

Focus groups have several benefits. For example, the group atmosphere can create an environment where we get to hear stories one might not recall when in user interview. Participants gladly share their tips and resources and this way we can also learn about our competitors. We can come across many good ideas and see how people are interacting. On the other hand, some don't consider focus groups as an ideal user experience research method, because users work individually with, for example, websites. (Unger, Chandler, p.91-107, 2009)

Card sorting is a good tool, when we want to find out how people think about categories and concepts. It is very useful when organizing information so it is findable. The basic premise is that we hand out a group of cards with content written on them and ask the participants to sort them based on similarity. When we have categories which are defined beforehand, we call that a close card sort. Open card sort is when participants are also asked to create the groups themselves. Participants can work in groups or individually.

Another thing to consider is if the sort will be done manually or with software. With a physical set of cards there is a possibility for more participants to join, but there are some advantages with software as well. For example, all data are already collected in one place, so it is a one-step process, secondly, it is possible to also include participants who are remote and lastly, we can involve much more participants than we would be if doing all the sorts physically. (Spencer, p.6-8, 89-90, 2009)

Usability testing can nowadays use a modern technology of eye tracking to “help researchers understand the complete user experience, even that which users cannot describe.” (Bergstrom, Schall, p.3, 2014) With eye tracking we can get statistical information about the areas of interest based on the length of fixation duration and frequency, we can create heat maps and gate plots to visualize where participants look the most.

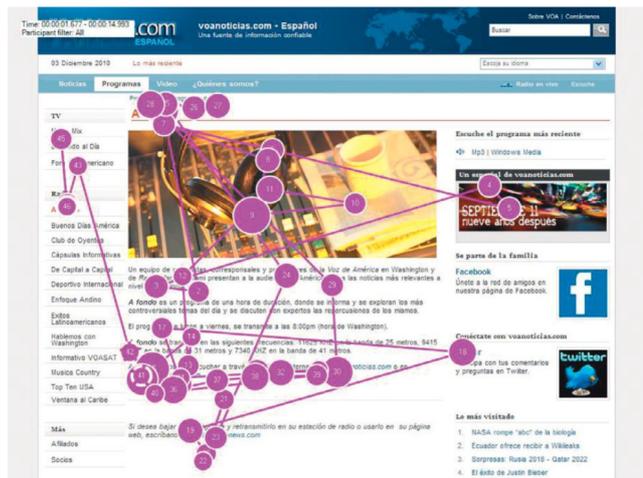


Figure 25 Examples of heat map and gate plot visualization

While watching the eye movements we can see which parts participants pay attention to and which they ignore. It enhances our gained results from user testing and verbalization. It helps us to ask different and more concrete questions. Beyond all the benefits of eye tracking, it is a method which is costly, time consuming and challenging in the sense of analyzing results, but nevertheless very helpful and interesting. (Bergstrom, Schall, p.3-5, 54-77, 2014)

We will discuss usability testing in more detail in the following chapter.

### **5.3 What is usability testing?**

“Usability tests are about watching one person at a time try to use something (whether it’s a Website, a prototype, or some sketches of a new design) to do typical tasks so you can detect and fix the things that confuse or frustrate them.” (Krug, p.113, 2014) Usability tests are structured interviews focused on concrete features of a website (or prototype) done in one-on-one settings. It is a series of tasks for participants which reveal useful information which are later on analyzed and collected. (Kuniavsky, Goodman, Moed, p.273, 2012)

When choosing usability testing as a research method, we need to get ready by fulfilling certain preparation tasks. First of all, we need to define our target audience.

Kuniavsky, Goodman and Moed (p.277, 2012) advise to choose an audience that is similar to our target audience in age, expertise and motivation, for example, because these factors can have an impact on the user experience and if we do so, we avoid doing too many usability tests leading to different results. But Krug (p.120, 2014), on the other hand, has a different opinion when he says, that even though it is good to have your target audience tested, it is not important and many sites can be tested by almost anybody.

When considering the amount of participants that are required, different authors quote Sova and Niesen (p.27, 2003) who claim that 4-5 participants are enough for an informal usability study. “The first few users find almost all the major usability problems, and you learn less from each subsequent study participant.” They even say that it is a waste to have more participants, but rather advise to do a redesign and then test again.

Secondly, we had to decide what features will be tested. Wilson (p.298, 2010) suggests a couple of ideas for making the decision. It could be features that are “used often, new, highly publicized, considered troublesome based on feedback from earlier versions, potentially dangerous or have bad side effects if used incorrectly, considered important by users or viewed with concern or doubt by

the product team.” The tasks should be specific, usability testing is not a good tool to test the whole experience of a product or a webpage. (Kuniavsky, Goodman, Moed, p.273-274, 2012)

We decided to go for the often used, the main menu bar, since that is the first thing that people see and browse through and it is definitely important for users.

The Thinking aloud technique is used in usability testing with combination of giving tasks/interviewing and observing. It is a tool that lets us “read the minds” of our participants while they verbalize their thought process by thinking aloud. As they perform the tasks during testing, they can express their satisfactions and frustrations.

There are several advantages of the Thinking aloud technique:

- We have a direct access to the preferences and performance of the participants, we don't have to remember to ask about them later.
- The technique can make it easier for participants to focus and concentrate, they can get used to the pattern of speaking and working simultaneously.
- Since participants express themselves as they work, we can follow the early clues of confusion and misunderstanding and that way find the source of problems easier.
- We have a good opportunity to listen to participants' opinions about what works or what doesn't work for them.

Even though Thinking aloud seems like a simple and practical technique, there are still some disadvantages we need to be aware of:

- We need to encourage some participants more often to think aloud as it can be unnatural or even distracting for some.
- It can be tiring to express one's thought process constantly for a longer period.
- Thinking aloud can slow the process in a way that participants start to be more mindful of their performance and so avoid mistakes that would otherwise occur if they just worked by themselves. (Rubin, Chisnell, p.204-205, 2008)

## 6 Research

### 6.1 Research questions

We decided to formulate our main research question in this way:

- How can a culture center utilize the theories of information architecture, persuasive design and user experience in the design of their webpage?

We will support it with these sub questions:

- Can a webpage of a culture center benefit from the theory of information architecture?
- Is persuasive design useful in the webpage design of a culture center?
- Is it beneficial to take users and the theory of user experience into account when considering a culture center's webpage?

These are the questions we aimed to find answers for in our theoretical part as well as in our research part.

### 6.2 Participants

For our purposes, we decided to find young people, native Danish speakers, since most of Godsba-nen's website is not translated, students living in Aarhus that are interested in cultural events or like to create art/ handmade things, who enjoy social activities and own a computer or laptop which could be used for this research.

Participants were first reached out to through Facebook, with this informal message:

Hey guys, I am looking for some people who would be willing to get interviewed for my master thesis.

So if you are:

- native Danish speaker,
- living in Aarhus,
- student,

- interested in cultural events or like to create art/ handmade things,
- enjoy social activities

and would be willing to be a part of testing a webpage please let me know!

I need you!

(the interview will be conducted in English and would take ca 45 min)

Since this method was not persuasive enough and no one answered my call for help, I decided to address potential participants, who I knew in advance would fulfill the criteria. This way I found 4 participants, 2 females of age 22 and 24 and 2 males also in the age of 22 and 24.

Moreover, for the purpose of testing and practicing the script, I did two pilot tests with the members of my family, also a female and male both in the age of 28, students living one hour from Aarhus. The pilot testing brought interesting insights, and their comments will be included in the result section because of their value. Pilot testing was also beneficial, because it helped set focus and made ideas about the testing realistic (for example, how much time was needed).

## **6.3 Methodology**

For the purposes of our research, we decided to conduct usability testing to find answers to our research questions. We believe it is a good way to start when evaluating a website, because it creates a lot of useful feedback that can be used in further development of a website.

The places where participants were interviewed differed, one was tested in a cafeteria, one in a classroom and one in his dormitory room. The reason was that since the interview was so time consuming, I wanted to meet the participants halfway and come to places they happened to be in the time they were free. The last participant was tested in my home as well as the one pilot study participant, whereas the second one was tested through Skype using screen sharing.

The participants were asked to use their own computers in this research, so that they would feel comfortable using them, since they are used to them and would not have to deal with other operation and control systems. The down side of this was that majority of the participants had problems viewing the website in its original design and were short of the full experience, but on the other

hand this way we discovered an annoying bug, that we can report to the ones responsible for the webpage.

In the beginning, all participants were informed about the structure of the interview, the time it would take, the rights they have concerning stopping the interview, not continuing with the interview and the possibility to ask questions all the way. They were asked for permission to be audio recorded for the whole duration of the interview and on top of that to be video recorded during the part they were working with Godsbanen's webpage. Equipment used for recording was a smartphone and a compact camera. The pilot study participants were only audio recorded and the interview with them was conducted in our mother tongue, Slovak language.

The audio recordings are available on: <https://www.dropbox.com/sh/ujabtdtwbodvki0/AADDLc-fuZd-wr6jwkB0xXme7a?dl=0>

The video recordings are available on: <https://www.youtube.com/playlist?list=PLkmLtPWBeIok5r-L9H7StVu8FP9sTtYVYI>

## **6.4 Interview script**

Participants of our research were given two instructions before the interviews started. Firstly, they should have been aware of the fact, that we were not testing them and their performance, but we were testing the website, so they should feel free to express themselves. And secondly, that it is important that they articulated everything that went through their minds.

The interview had three parts, first part was theoretical where the participants were asked questions like:

- Do you ever visit culture centers?
- How do you get information about what is going on in them?
- What questions do you ask inwardly when you hear a broad term like “culture center”?
- What content do you expect to be in the main menu of a culture center’s website?
- How well do you know Godsbanen?
- How did you find out about Godsbanen?

- What would make you interested to visit and take part in activities in Godsbanen?

The second part was practical. I asked the participants to open Godsbanen's webpage and we continued with questions like:

- What is your first impression?
- If this was your first time here alone, what would you do next? What would you click on? What would you be interested in investigating?
- What do you expect when you click here?
- Where do you think this would go?
- Were you able to find what you were looking for? Is there any information missing that you would need?
- Do the names of items in the main menu make sense?
- Are there some events or activities you would be interested in?

On the beginning I let them freely look through the webpage at things they were themselves interested in or curious about, and after that we went through the whole main menu looking at each item. The participants were encouraged the whole time to articulate their thoughts.

The third part was again theoretical, where the participants were approached with the last round of questions:

- What do you like about Godsbanen's webpage?
- Is there any information, feature or improvement you would like to see?
- What kind of emotions did you experience during the test?
- Is it complicated or easy to find information?
- What kind of atmosphere do you expect to be at Godsbanen based on their webpage?

In the end I expressed thankfulness to all the participants for being a part of my research.

## 7 Results

- All of the participants take part in cultural events in general and all of them had been to Godsbanen, some also attended a few events, but the majority only walked through to have a look. None of them have been to Godsbanen's webpage (the actual version) before. Many were positively surprised that Godsbanen has so much more to offer than they knew of.
- All of the participants get mainly information about different culture events from Facebook or otherwise from friends. Some mentioned also printed fliers or posters, newsletters, websites about what is going on in the city, or the actual webpage.
- The first thing they are curious about when a broad term like culture center is presented is the possibilities the culture center offers, what is happening there, what kinds of events do they have, what is the program, can they take part and what are the conditions, what facilities are there, what is the purpose of that place.
- They expect that the main menu will answer three main questions. First of all, what can you do there (program, calendar, description of all the things that are possible there, what are regular activities and one time events, what can be done in which workshop).
- Secondly, what kind of a culture center it is (what are the values, intentions and purpose of the place)? For example, when participants clicked on About (Om), the first thing they clicked on next was What is Godsbanen (Hvad er Godsbanen) even though it is third in the row. That means that it is key information and should be treated that way. One even said that the short description
- of Godsbanen which is in the very bottom of every page (where rarely anyone went) should be in the top-right corner; it is so important it should not require effort to find it. It is also important to make description of Godsbanen visible, because it works as an invitation ("so it looks like it is for all kinds of different organizations or people, just like a building for everyone").
- And lastly, practical information (opening hours, information about events like entrance fees, time of the events, who are the organizers, photos from previous events, photos of the space, what are the possibilities for artists, how can they join or have an exhibition, what about rents, information about teachers who are leading courses and who can answer questions, the conditions of joining, and how to sign up).
- The things that would catch their attention would be photos, videos, video interviews with people who joined some events, photos of the space and photos of people doing different things because that would help to imagine what the visitor would do there, quotes from visitors, good prices, that friends would go there.

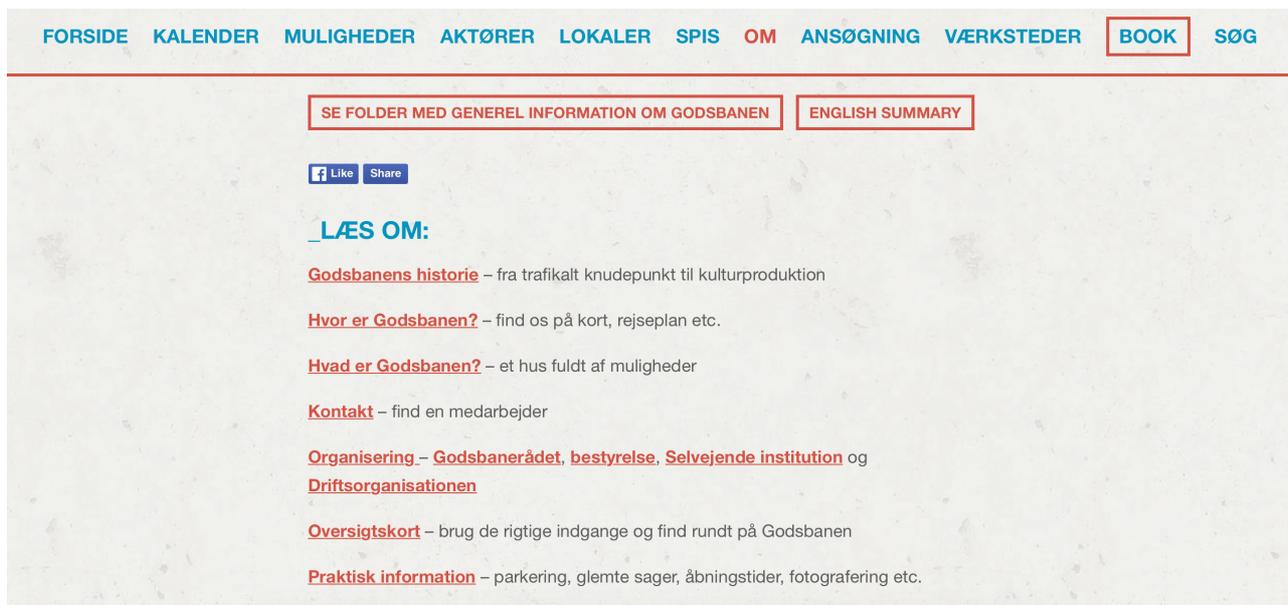


Figure 26 Screen shot of About section

- The thing that mostly everyone clicks on first is the calendar. But many comment on the monthly calendar which is on the left side, because it overlaps with the event. Several ask if there is a technical problem or a mistake, if they should load the page again, for some this feature is weird and makes it a bit confusing and disturbing. Some also commented on the space distribution and don't like that there is a lot of free space on the right side, but the left side is so pressed together, they would rather have the events centered. According to one participant the dates are not written in an easy way, because she saw only the first day of the event (1.MAJ, or 09.MAJ) and did not understand why are events which are no longer current on the first place, as she did not notice that it lasts for a longer period. Maybe a better format would be 1.-31 May or 9.-20 May. Not only that, but several participants also commented on the special feature that happens when they hover over an event (the letters get crossed over, as you can see in the third event). It can be a sign that the event is cancelled or simply it makes it harder to read. Moreover, if one clicks on a date in the calendar in the left menu, nothing really happens except that a small windows opens under the calendar. It is not possible to see anything more about that day's events like what time the event is happening, price or, for example, two sentences on what the event is about, because otherwise every event has to be clicked on to see some basic information. And when it is clicked on, participants expect to see a video or some recommendations of people who visited the event before. Another suggestion is that all events should be in the calendar, also those that happen on a regular basis, that means that the calendar would have to be more structured, it could use color coding to make it easily understandable, as in this way the calendar would give an overall over-

view and would display the whole life of Godsbanen without clicking on every single event separately. One other participant also suggested that it would be possible to have a category: Free (Gratis), so she knows right away, which events are free, without cost. (We would also add a category like English, so internationals have very clear access to events they could join.)

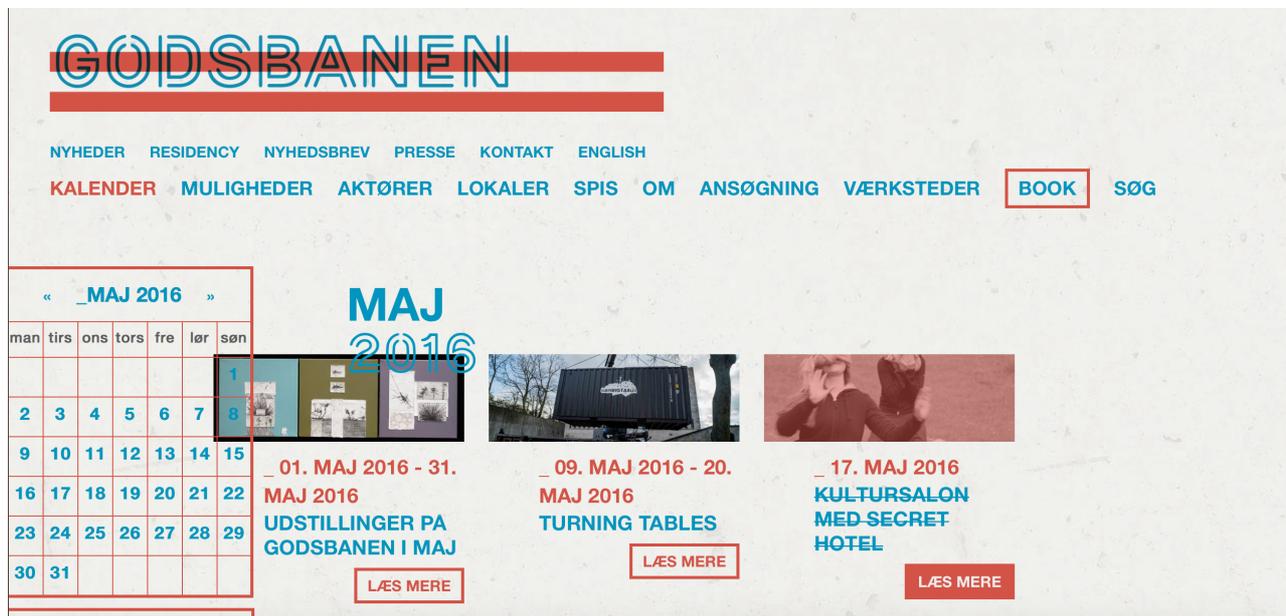


Figure 27 Screen shot of the calendar

- In general, all the participants expressed insecurity and curiosity about prices; that was often their first question and thing they wanted to find out before getting too much into other information. This is easily understandable since all the participants were students on a budget, but would still like to enjoy cultural events and activities. But that means that we should remember to make it always clear and visible, because otherwise, if they cannot get hold of the prices easily, they expect it to be expensive and give up on further search.
- The second thing participants often clicked on were Possibilities (Muligheder) where they expected to see an overview of all the possibilities of what can one do in Godsbanen and it usually answered their questions, but one considered the left menu confusing, since exactly the same is in the center. Another one did not understand why similar things are not under one category; he suggests that all the rooms for rent would be under a category facilities and all the activities where you learn something could be under education and the rest like film production and scene under some other category. Because the categories as they are now are confusing. Also if you choose to view the Possibilities in a list rather than the grid, the descriptions seem to be written by different people, seem unfinished and not united, or as he says, streamlined.

- When asked about Facilitators (Aktører), participants expected something like who is arranging the things, people and organizations who are involved, those who are permanent at the place and those who sponsor it. Some said that they would not really click there unless they had a special task in mind, or they would not expect it in the main menu. But one was very surprised when she found Café Venligbo there; she thought it should have more of a prime spot and their events should be a part of the calendar. Others were surprised by the combination of official organizations (like for example Kultur og Borgerservice, which by the way seems to be something different when you click on it) mixed with the informal and urban organizations. The official organizations opened questions about what they are really doing there, if they are supporters or how are they involved. Participants also did not understand why some of the facilitators didn't have a logo that would represent them and outline what it is they do, or if it meant they belonged to Godsbaenen in another way. The categories are also problematic again, because they are not descriptive enough, but one has to scroll down for a long time to read about the facilitators when they are viewed in a list (not a grid) to learn about them.

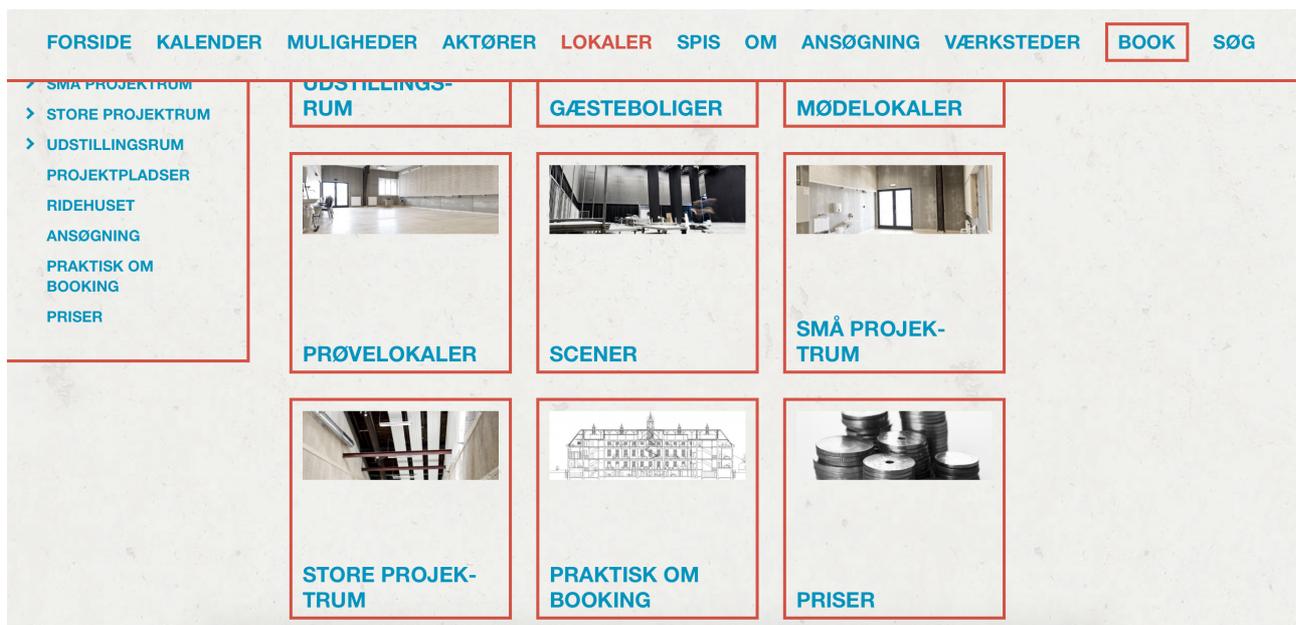


Figure 28 Screen shot of Rooms

- Participants expected Rooms (Lokaler) to be as it is, that there is information about renting possibilities, but they also expected to find a map or a blueprint, so they can see where the space is located and also how big it is. That would give them a quick overview instead of opening all the rooms separately. They also wished that the pictures would be bigger. Some also mentioned that the category prices should not be mixed together with the rooms, but should be separated somehow. But to get back to the map, when participants found it, and some really searched for it for

some time, they would prefer it to be a bit bigger and moreover that it would include all the surroundings as well.

- The Eat (Spis) option in the main menu was pretty clear; it is what people expected. One girl suggested that there could be a pdf file of the menu as well, but otherwise they liked that they could get more info by clicking on the links below.
- When participants commented on About (Om), they were a bit surprised by the location of it in the main menu, they would expect it to be at a more important spot. One participant was a bit disappointed that the most recent video there is from 2013; he would expect a page like this to be updated.
- When the participants were asked what they expected to find under Application (Ansøgning), some of the first reactions were: I have no idea, I don't know, but then most of them guessed correctly. Those who did not guess correctly thought that they can sign up there for courses or lead courses. As one said, it would be nice to have a short introduction at the top and also to have prices visible right away, so you don't have to open everything, but can compare them right on the page.
- Workshops were interesting for most of the participants and some found the information offered sufficient, but for some it opened more questions. For some the concept of open workshops and courses is not very clear, especially with the payments. For example, if one buys a membership for a month can he only visit that one workshop or all the workshops. And what if there are courses at exactly the time when someone wants to work there? What kind of tools do they have? Two participants try to search for courses. They click in the left menu on Courses, Superusers, presentations and workshops, where on the top they continue by clicking on See the complete list of courses in Godsbanen's calendar, but when they open it, it is empty and that discourages one thinking there are no courses available. But otherwise the one that watches the video about workshops likes it and would like to see even more pictures of people working, also if the information in different workshops were united in a same style, it would be better.
- And then we get to Booking (Book), which is very confusing for most, firstly because it is in a red square. Some think that is where they are on the webpage and some expect something important since it is highlighted or booking of courses and workshops. But when they click on it and a new page opens, they are not very positive, except that it surprised them. They find the different layout distracting and old style, one would rather call than use that webpage. And secondly, a confusing thing is that book and applications are a bit alike, so one cannot really see the difference.

- On the other hand, participants were very positive and reviewed the Search (Søg) button as a nice feature and something they really liked.
- In News (Nyheder) people generally found what they expected, even though some said they would not really read it, but it is nice to see what kind of things are going on and more pictures would be welcomed.
- Residency is one of the problematic buttons in the main menu. Participants' reactions were: I don't know, I've never seen it like that, I have no idea what to expect, I am not sure what this is, I don't know because I don't know what it means even though I know what it means in English, maybe something about where it is, in which neighborhood, I think it is weird that they use English word when all the other words are in Danish, it is confusing. And the fact that the text is suddenly in English makes them automatically think that it is for people from outside or international students, and that means not for them and they would not really look at it.
- When participants clicked on Newsletter (Nyhedsbrev), they were surprised they were taken on the bottom of the page, they did not see the sign up there before. Secondly, some expected it to be the same as News and did not really understand why is it under two different categories, since they would probably receive what is written in the News. Two girls said that they hoped to see a small overview of the last newsletter, so they could imagine what they would sign up for, and see if it was interesting for them. That is definitely an idea worth considering, since it might increase the number of people who would sign up for newsletter.

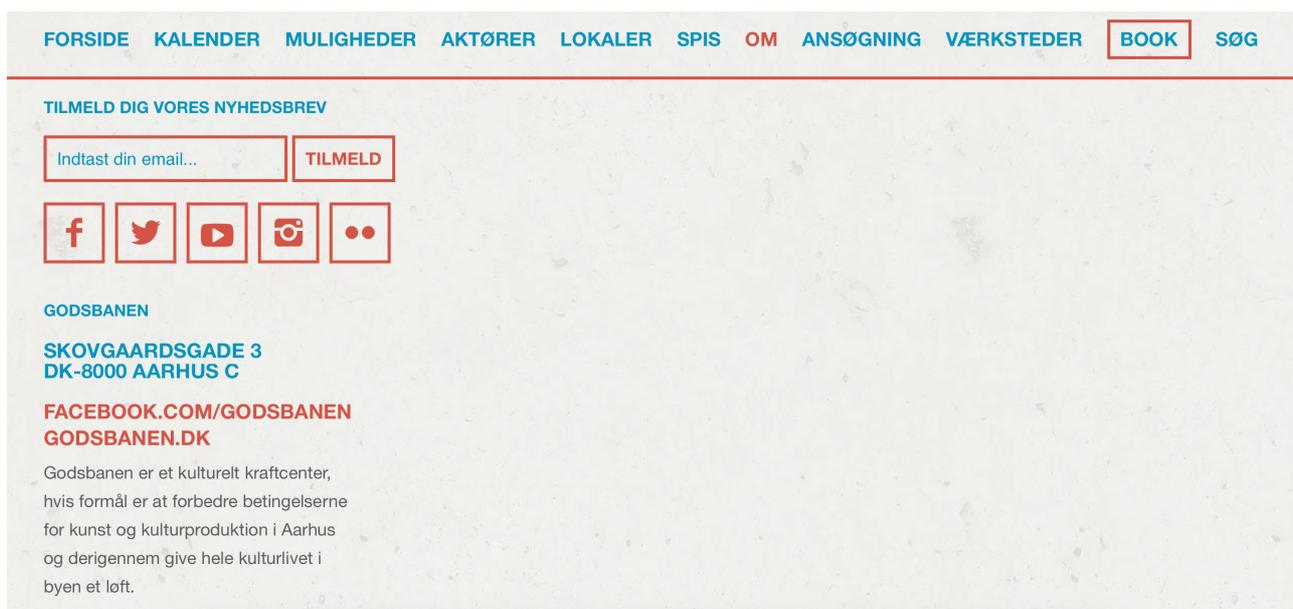


Figure 29 Screen shot of signing up Newsletter

What do participants like about the webpage:

- very nice layout, design, light colors, font,
- good first impression, simple (for example, there are only 3 events in a row on the main page so it doesn't require a lot of decision making), but not too minimalistic, it is dynamic and modern,
- videos on the main page are also very good, because they open easily, show in a big screen, it is easy to browse between them and there is the possibility to click on Youtube right away,
- nice pictures (Instagram for example),
- most of the categories in the main menu are good,
- events are on the first page.

What do participants think could be better:

- less options in the menu (it is messy because of too many options in the menu), some things like rooms, applications and booking could go under one, also newsletter could join news and go under about, and the order of things in menu could be different,
- the left menu should be transformed to the center of the page, often it is just exactly the same as is in the center anyway,
- that it would be possible to scroll in the menu, so one doesn't have to open and click on everything, but would that way have a good overview,
- the information in the end of each page should not be arranged on the left, because then you have to scroll down each time, rather it should be as a strip in the bottom as it is usually done now,
- that it would be always very clear where in the menu one is (sometimes it is visible and sometimes it is not),
- unless you scroll down on the main page, you won't find the latest videos,
- the organization of the website and information should be better (it seems as if all the information were on one pile, as if the website wasn't finished),
- that there should be a field on the right side that would suggest different events based on what the participant is looking at (that is why one likes Youtube because he finds music he didn't even know existed, this way it would be more inviting, more persuasive, it would not be just him trying to find something interesting),
- more pictures and more inspiration,
- that it won't open new windows,
- if the texts are too long they should have subheadlines (otherwise no one really reads them),
- there is a missing introduction to some parts (like Open scene for example).

- Emotions that Godsbanen's webpage created among the participants did differ: from positive emotions (happiness and lightness), neutral emotions (it doesn't bring me so much life as I expected), to confusion and anxiousness (because it looks chaotic, as if there was not one person responsible for the webpage, but many people who all want to emphasize something else, I don't feel I am guided through).
- Participants' opinions about if it is easy or hard to find information differ as well: It is fairly easy to find information, I could find what ever I was looking for, It is easy to find the basic information, but I am afraid there are a lot of other things going on that I might be missing, It is really complicated to find information, In the beginning when I saw the main menu, I thought it was very easy, but I was quite confused when I went into the stuff, because some of the places I had different expectations for, and mostly something I was looking for wasn't there or I didn't know where to find it because I didn't think any of those categories matched it, I am not sure I would know where to find the specific things again, because some of the things were not that logical, it was under different categories, when I pushed a button here I was in a different place, but I don't know how I ended up there.
- The last question was: what kind of atmosphere do participants expect would be at Godsbanen after looking at the webpage? A buzzing vibe, pretty dynamic, a lot of people, a good community and atmosphere, very open, it offers possibilities to be creative, there is space for lots of different kinds of people and thoughts, there are a lot of things going on (it creates a creative chaos, in other words one needs to go there personally to find some information). One participant expressed how important it is for him that he feels that there is an open community in Godsbanen, that he must feel free to come anytime and leave anytime without feeling guilty of disturbing anyone. Unfortunately, one of the participants felt exactly like this in a negative way. He said, that he experienced the environment as closed and that it would require a big commitment and engagement to join the community, which makes it excluding.
- There is probably some bug concerning the font, which gets crossed over, when one hovers above it. Out of the four people who used their own computers, three of them could not see the headlines. They even tried different browsers, but still it didn't work. That made the interviews a bit more complicated, since the important titles of events for example were missing. Moreover, what about all those who come to the webpage and cannot really understand what is going on since they cannot see the titles.

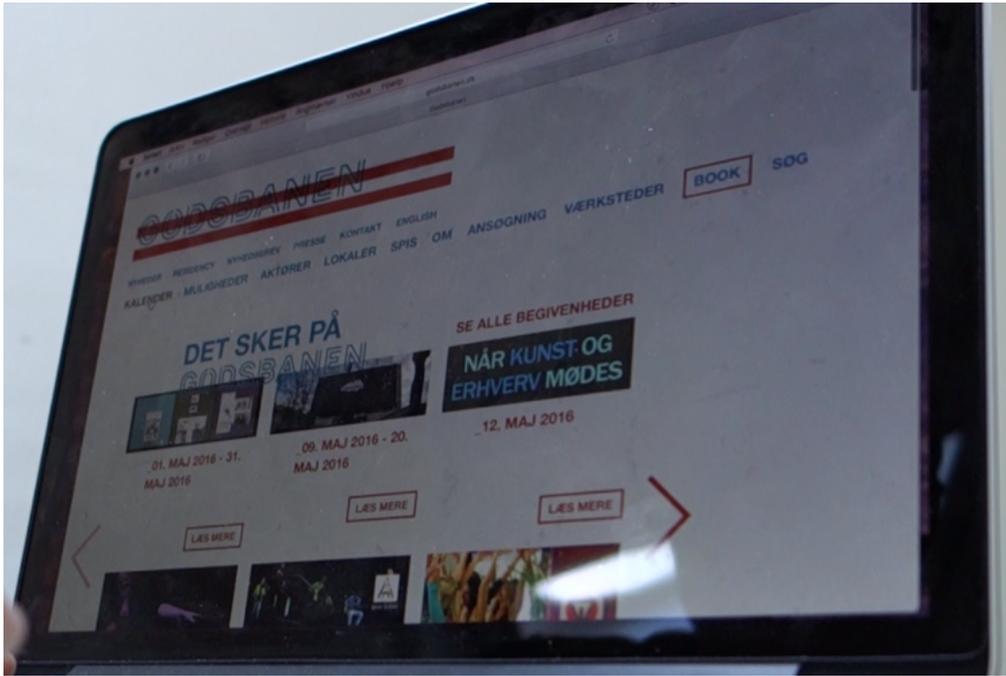


Figure 30 Screen shot of a bug

## 8 Webpage layout suggestion

As a part of this thesis we suggest a webpage layout for Godsbanen’s website based on the results from usability testing. (For more suggestions, please visit Appendix) The first thing that probably catches attention is the slogan that we’ve added: “Culture center, where everything is possible.” We wanted to add a short description of Godsbanen somewhere at the top and we also listened to the users who addressed this issue. We were considering the text that describes Godsbanen at the bottom of every page: “Godsbanen is a cultural powerhouse, whose purpose is to improve conditions for art and cultural production in Aarhus and thereby give the whole cultural life in the city a boost,” but in the end we were inspired by the words of Ole G. Jørgensen, the leader of the Independent institute of Godsbanen: “I think the basic identity of the house is that anything is possible, that this is a house that encompasses all kinds of art forms and all kinds of creative outputs and if you come here with some project, there is some way to make it happen.” We believe that even though this slogan might sound a bit cheesy and provocative even, it would be remembered, it would trigger creativity, and moreover, create fierce curiosity, and that is what we aim for.

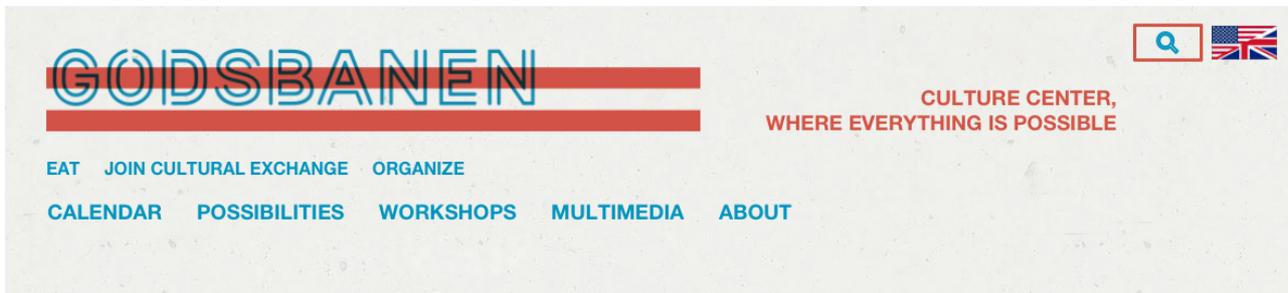


Figure 31 Our suggestion for the main menu



Figure 32 The current main menu

In our proposal we also reduce the number of items in the main menu significantly. There are sixteen items currently and according to us, eight items would be enough. We tried to minimize the number of items for several reasons. First of all, too many items in main menu take too much space in users’ cognitive space and overload their attention. Secondly, the vast majority of our users are

those who come as visitors and do not have any specific agenda, so they do not need all the information that was located in the main menu. Thirdly, some of the items could easily be united into one item and that way be more clear and concrete.

We also tried to organize the menu according to organization schemes. The bottom row should be a clear topical organization scheme which offers basic and the most important information for the broad public. In the upper row, which should be task oriented, we tried to address different user groups. We start the row with the item Eat, because we don't consider it important enough to be placed at the bottom row, and it still works as an invitation when formulated in imperative. The audience is a group of people who would be interested in visiting Godsbanen for the reason of good food, for example. Secondly, we suggest Join cultural exchange, which would be clear information for foreigners about the possibilities offered to them. But we especially like the label Organize, which works as a motivation or invitation for people to be active and take initiative and simply organize things in Godsbanen. Under this item we suggest to place categories like Conditions, Applications, Facilities and Booking, for example. We also chose to put Organize at the end of the row, so it is more in the center of the screen and possibly catches the attention more easily.

The bottom row of the main menu starts with Calendar because that is the most important thing in the menu and as we saw also during the testing, it was very natural for participants to start there. Possibilities, as well as Workshops are the same case, they are the “products/services” Godsbanen offers and should have a prime spot. About was placed at the end, not in the middle, so it is easily noticeable. And we would definitely advise to place the category What is Godsbanen as the first one when clicked on About.

We decided to add one more item to the main menu, which was not there before. We called it Multimedia, even though we are not really satisfied with this label, as we are not sure if users would have the right associations with it. Anyway, we considered it to be important enough to place it there because we heard again and again from participants in our research about their interest in photos and videos from Godsbanen. And also because the whole new section of videos which is placed at the bottom of the home page is only to be found there and it was rarely that users scrolled so low and had a look at them. So we would like to give them more space and attention. We also suggest that the videos and also photos will have some basic text next to them, so people can click to get more information if they got interested. For example, there is one video on the main page about a

group of men who meet and practice Viking fights with traditional tools like axes, but it is not possible to find this activity anywhere on the website.

We also decided to take the Search function out of the menu and rather place it as a symbol of a magnifying glass in the top-right corner. We did the same with the item English. Especially when the website is not really translated into English, it should not be so visible, but should be still available. There are only some parts or short summaries that are available in English and if they are available, they are usually clickable right on the top of each new subpage.

The fact that the webpage is not translated into English is especially troublesome, because according to Godsbanen's vision for the years 2014-2016, Godsbanen should be a development and competence center for art and cultural production - locally, nationally and also internationally. So the international part of it may suffer because of the lack of an English version of the website. Secondly, there are a lot of international students in Aarhus, who are kind of excluded from visiting Godsbanen if they cannot figure out what they could do there. Most probably after looking at the webpage they might suppose that all the events and activities happen in Danish, which is not actually true and there are also some possibilities for English-speaking internationals. So one thing is that they might not use the facilities that are in Godsbanen, but if we look at it from the other side, we are not using the potential that is in international students or other internationals who don't speak Danish.

According to research (Leung, Maddux, Galinsky and Chiu, p.169-181, 2008, Maddux and Galinsky, p.1047-1061, 2009, Tadmor, Maddux and Galinsky, p. 520-542, 2012) "time spent living abroad showed a positive relationship with creativity" in both "creative performance (insight learning, remote association, and idea generation) and creativity-supporting cognitive processes (retrieval of unconventional knowledge, recruitment of ideas from unfamiliar cultures for creative idea expansion)." So if the internationals are engaged more, they could bring a whole new quality to the environment. But unfortunately, as we heard from Ole G. Jørgensen, they don't have the capacity for translating the webpage at the moment, but they would like to involve internationals more.

We suggest that the rest of the items should be placed in the footer at the very bottom of the webpage. It should contain a map of Godsbanen's location, as well as a map of Godsbanen itself together

er with address and contact information. We believe it is also a good place for Facilitators, Facilities, News, Newsletter, Press and social media.



Figure 33 Our suggestion for footer

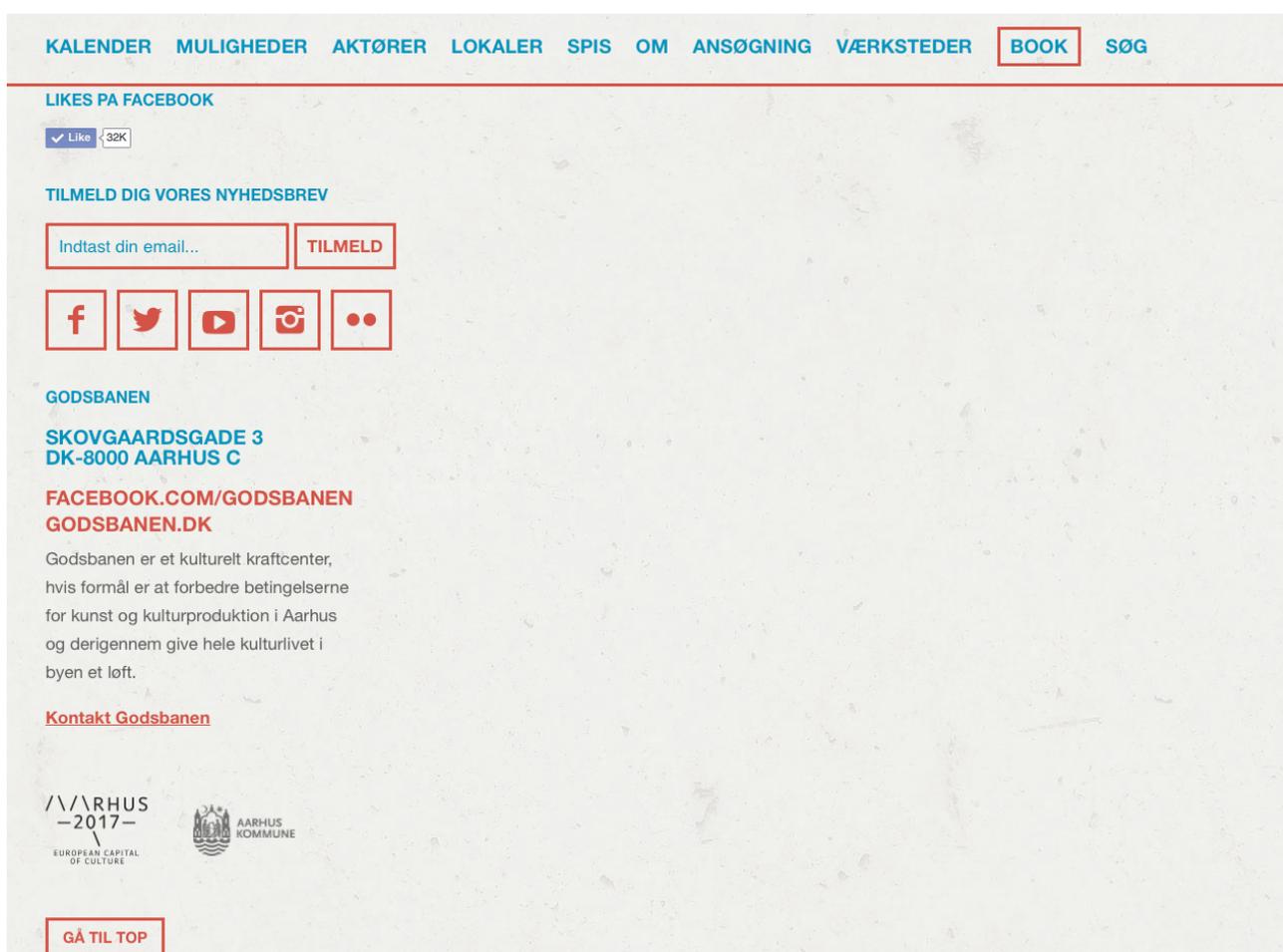


Figure 34 The current bottom of the webpage

We decided to place Facilitators here because we view them as an item which is not so important and is also confusing. There are several categories we can choose from: All A-Å, Music, Design,

Visual arts, Children and young, Dance, Film, Godsbanen, Photography, Literature, Mix:art, Productions, Themes, Workshops. And there are altogether 95 facilitators! That is a huge amount and unfortunately the categories are of no big help. The problem is that there is a mix of organizations, schools, businesses, freelancers, festivals, studios, activities and other categories that can be very confusing. For example, if one chooses the category Literature, seven different facilitators come up. One is a publisher, or a literature center, a web magazine about culture for children, literature festival, freelancer (probably, whose webpage doesn't work), publications of Kirsten Folke Harrits and a School of Creative Writing. So even though we are under the category Literature, it is still complicated to find out how one can join the activities the different organizations offer, because one must click through many different facilitators to find out what they are.

So even though it is nice to have the information about who is available at Godsbanen, it is hard to use the information practically. In the webpage layout we suggest, we tried to organize the facilitators a bit differently. We offer fewer categories, nine, because we don't see reason for some, like Dance, for example. But we added categories like Festivals, Organizations (which are similar to Godsbanen, but with a different label), and Freelancers+Businesses, which are a big group.

But we are insecure in this area, because we cannot find out if and who is welcome to join and how. We strongly suggest that those facilitators who organize regular activities would also have their place in the calendar and that way their events would get noticed and visited. That means that open activities (either long or short term) would be available in the calendar and the list of facilitators would be just to get more information. For example, it is a pity that information about Godsbanen's Choir is only possible to find in the category Facilitators, even though they practice twice a month and welcome people to join.

We placed Facilities also in the footer, because we expect them to be a good supplement to the map of Godsbanen and we don't consider them important enough to take space in the main menu. That is the same reason we placed News, Newsletter, and Press here as well. In the case that we would like to increase the number of subscribers for the Newsletter, we would recommend a small pop-up window in the corner, for example. We also suggest that when clicking on the envelope icon, it would be possible to see an example of the last Newsletter.

When considering this webpage layout, we tried to have our users in mind the whole time and we constantly considered the results from our usability tests and moreover the theories of information

architecture, persuasive design and user experience. We believe that this way it would be easier for users to navigate through the webpage and to get an overview of all the activities and opportunities Godsbanen offers. We don't consider this proposal as a final solution, but as a good start for discussion, testing, and further development.

## 9 Discussion

To accomplish the mission of this thesis, we set out to seek answers for the following questions:

- How can a culture center utilize the theories of information architecture, persuasive design and user experience in the design of their webpage?
- Can a webpage of a culture center benefit from the theory of information architecture?
- Is persuasive design useful in the webpage design of a culture center?
- Is it beneficial to take users and the theory of user experience into account when considering a culture center's webpage?

We will share our findings in the coming part starting with the last three sub questions.

### **Can a webpage of a culture center benefit from the theory of information architecture?**

Based on the theory and research we have done we can only conclude that the answer is yes. Thanks to information architecture we realized that it is important to organize information to make them findable, to arrange content to make it understandable and that information architecture must be invisible to be good, otherwise it captures attention to itself instead of being the tool for users to achieve their goals. We understood how people search for information so that we can take a step towards them, help them and make it as easy as possible for them. We realized that we need to reflect on the context we offer to our users, if it is clear enough and if they can orientate themselves on our webpage. We learned the differences between topical, task-oriented, audience-specific, and hybrid organization schemes and how important it is to keep them visually separated, so our users can create mental models. We learned as well about the importance of hierarchies and that they should be mutually exclusive to serve their purpose. We discussed how we can minimize the uncertainty that our users experience when they come to seek information at our webpage, and how we need to be careful with hypertext links, so that our users don't lose the sense of location. We looked at how serious a business it is to have good labels, if we don't want to ruin user's confidence in our organization and especially if we want to decrease the uncertainty of our users by creating scents that would help them find information they are looking for. And lastly, we looked into the topic of navigation systems, particularly drop-down menus and footers, and wrote again how essential it is

to create the sense of location in space and we highlighted contextual navigation, according to which “No page should be a dead-end.” (Wodtke, Govella, p.205, 2009)

And what is more important, the participants from our research agree, is that they themselves want to find information about activities, events, practicalities and about Godsbanen itself in an easy manner. They themselves come with suggestions about how the calendar could be done in an easier way that would give them a better overview. Participants would prefer if the categories would be more clear, or if they would be united into one if it makes more sense. They would also prefer if the local navigation menu was more useful and if the items in the menu, and generally descriptions and logos of facilitators were consistent. They would not mind if there was more scent available both when they are looking for information and when they are trying to guess what hides under the categories in the main menu, for example. They would like if there was a drop-down menu as well as a footer at the bottom of the page and if they use hypertext links they would still want to know where they are located. And the same way they want to know where they are at on the webpage, the same way they were interested in looking at the map of Godsbanen. And lastly, participants themselves wish for contextual navigation, which would present them more options that they could possibly be interested in.

We believe that a culture center’s website can hugely benefit from the theory of information architecture and that if all the knowledge was used in practice, the users would be more satisfied.

### **Is persuasive design useful in the webpage design of a culture center?**

According to our findings, we view persuasive design as a very useful theory that can enhance a website of a culture center. We need to present information persuasively, so that they catch people’s attention so that their behavior and attitudes can be alternated. We decided to use persuasive design as a source of inspiration that can help us to come up with ideas on how to better persuade users through our webpage.

The theory of persuasive design advises us to use reduction, to simplify. Even though technology can be persuasive because it can store huge volumes of data, it is important that we don't increase the levels of uncertainty among our users, but instead use the data in a simple manner to persuade.

Our first suggestion is to start with simplifying the main menu and reducing the amount of items that are there, which our users very much agree with. Using different modalities is also an important part of persuasion and it is very good that Godsbanen is active on different channels like Facebook, Twitter, Instagram and Youtube, these media should be taken good care of so they can cooperate on creating a steady image of Godsbanen. We consider these different modalities so important that we decided to add an item Multimedia into the main menu, so they are always available for users to check out. We could use tunneling to more easily guide people through the different sections. One of our ideas for how to partially implement this is to create categories in the main menu that would be addressing the audience (like internationals and organizers) and then leading them through all the information that is necessary for them to know. And all the information would be in one place, they would not have to search different places to find it. Tailoring could be also used if the webpage could remember what it is we are interested in and based on that use suggestions at the right time (or at least at the time when events happen). That would raise the bar of persuasion much higher and would engage the users in a deeper level. Our participants wished that by these means they would be invited more actively instead of them searching for interesting events. Another way of increasing persuasion through suggestions is focusing on the newsletter. And lastly, we could use conditioning in the form of competitions where people could win tickets to different events.

Thanks to persuasive design, especially behavior design, we are inspired to ask ourselves questions like how could we increase motivation and ability and use triggers to achieve the behavior we are aiming for, namely, that people will come and join activities at Godsbanen. We could try to increase motivation by presenting even more pictures and videos and adding testimonies of people who have already taken part in Godsbanen's activities. And that is a wish we heard repeatedly from our participants. The second thing we suggest is placing a slogan at the top of the webpage. We believe that this slogan can increase curiosity and encourage hope that would be motivational. When we consider raising the ability of our users, we must make sure that they can get all the information they are seeking as easily as possible. If they should spend a lot of time searching for something they might give up. We should not presume with that they are always highly motivated, but rather make the access to information easily available. And participants really do agree with this one (we already mentioned a suggestion of how to make the calendar better). One of the elements of ability that was of a special concern for participants in our research were prices. Their scarcest resource is obviously money and we should pay attention to it by making prices always easily visible and informative. The topic of prices came up every time and we really like the suggestion of one participant to make

a category in the calendar called Free. Brain cycles is something our participants don't like to waste either. They don't like that they have to click and open each thing to see what it contains. Our participants also came with a fantastic idea of showing an example of the newsletter they could potentially sign up for. That would make their decision making easier. In the case of triggers, we see the potential in newsletter and also in advertising of events on Facebook; we believe that they could be persuasive reminders. When inspired by the behavior grid, we realize that we really need to reduce the requirements for ability of our users so even first time visitors would feel like home. And we should definitely not underestimate the power of well timed triggers like, for example, the already mentioned newsletter or Facebook advertising.

### **Is it beneficial to take users and the theory of user experience into account when considering a culture center's webpage?**

We consider it very beneficial to take users and the theory of user experience into account when considering a culture center's webpage. We learned that it is important because it leads our focus on users and creating positive experiences for them, which will then positively affect their behavior towards a business, or brand as well as a culture center. If we are user-centered in our approach, we will avoid issues that can cause users problems. That will save our users from experiencing negative emotions and blaming themselves for not knowing how to work with the system properly; we simply don't want our brand to be associated with negative emotions. If our webpage is too complicated and users have a hard time finding what they are looking for, they might come to a conclusion that if our website is difficult to work with, our business or a culture center probably is too. (Garrett, p. 12, 2011)

We grabbed the concept of usability and understood that it can be very beneficial to judge our website based on the goals of usability. That way we can make sure that our webpage will be a tool for users to achieve their goals without investing too much energy into figuring out the website alone. When we consider the effectiveness of Godsbanen's webpage, there are some issues that we could work on. For example, when participants searched for courses in the workshops, the page was empty and so falsely suggesting there are no courses even though one could find the information by clicking on different links, but the participants didn't know that.

Our participants would be glad if Godsbanen's webpage could be more efficient. They mentioned several times that they would prefer if they didn't have to click everywhere to see what lies behind the labels. For example, the menu could have a drop-down feature, or the information about prices or rooms could be visible together with the overview, instead of making it necessary to click there to get an insight.

Godsbanen's webpage does not offer any opportunities for serious errors. One can always go back or start the browsing again if he is not satisfied with where he ended up. The mistakes that could possibly occur could be clicking on a different label, as one participant said, there is not a clear difference between Application and Booking.

Utility is a useful feature as well which allows users to work with a system in the way they prefer and not as the system forces them. Our participants would prefer the calendar to have a better utility and let them search the calendar according to categories they are interested in. They even came up with some good ideas that could benefit the level of utility.

Learnability can be formulated in a question: "Is it possible for the user to work out how to use the product by exploring the interface and trying out certain actions? How hard will it be to learn the whole set of functions in this way?" (Preece, Rogers, Sharp, p.21, 2015) One participant answers this when he comments on the categories there are in the facilitators. He says that the categories are problematic because they are not descriptive enough. So even though the user can explore the interface, it won't help him navigate through the long list of facilitators.

Memorability is the last goal for usability and it is about remembering how to perform tasks that have not been performed for a longer period. As one of our participants was searching for things she was interested in, she concluded: I am not sure I would know where to find the specific things again, because some of the things were not so logical. That can easily happen when the operations are obscure, illogical or poorly sequenced. (Preece, Rogers, Sharp, p.22, 2015)

But generally, participants had good first impressions, they liked the design, that events were at the home page and also the videos at the bottom of the homepage. And moreover, what is important, most of them could imagine a very positive atmosphere in Godsbanen.

We decided to choose usability testing as our method and we think it brought some interesting insights and therefore believe that engaging users and the theory of user experience can really be of benefit when designing a website of a culture center.

### **How can a culture center utilize the theories of information architecture, persuasive design and user experience in the design of their webpage?**

We offered an extensive look at the three theories and how useful they are themselves and we offered a lot of inputs for how to use these theories to improve Godsbanen's webpage, but also webpages of culture centers in general. We believe that these findings can serve as an inspiration and can help the Independent institute of Godsbanen to fulfill their task in making sure that their "offer is visible and accessible to as many users as possible." (<http://godsbanen.dk/om-godsbanen/organisering/>) Because as Rosenfeld, Morville, Arango (p.39, 2015) claim: "There is no goal more important to designing information architecture than to satisfy peoples' needs."

If we were in charge of Godsbanen's webpage, we would spend time figuring out how to make the webpage look more lively. Even though there are many things happening in Godsbanen all the time, the webpage looks very passive. We would prefer if there was more activity, movement or life in general. We can imagine that there could be a column on the right side with the most actual news, the newest pictures, the newest comments from Facebook, interviews or products that someone made that day in the workshops. That could motivate people, inspire them, bring the atmosphere even closer and show the life that is happening there. Or at least a banner with advertisements for the bigger events that would switch after a couple of seconds could create a sense of movement, activity and life.

Even though we believe that we got some interesting results and came up with very good suggestions, we still realize the limitations of this study. First of all, testing is an artificial situation and can still be far from reality. Moreover, the fact that I, as a test moderator, was present could affect the behavior of our participants, could influence the way they used the webpage and the things they paid attention to. We also realize that we had only a couple of participants and only from one type of audience which could distort our results in some way. If our target audience were full-time employed people in the age 40-50, or elderly people, we could come to very different conclusions.

Also, if we researched a group that has never heard of Godsbanen before or a group that knows their webpage very well, we could get different results. And since we did a qualitative research with only a few participants, we did not get any statistically significant results.

For further research we recommend to test also different target groups as well as use several testing methods. For example, card sorting could be very beneficial as well as helpful in this case. We would also advise to perform user testing of prototypes and early versions of webpage before it is officially released, so most of the problematic areas could be taken care of beforehand. In addition, webpages of other culture centers could be explored and compared to gain new perspective and inspiration.

## 10 Conclusion

The name of this thesis is "Designing a persuasive information architecture for a culture center - taking the center Godsbanen in Aarhus as a main example." Even though it is not easy to generalize based on one example, we believe that we brought a lot of interesting and important topics to the table which could benefit most of, if not all, culture centers. As we mentioned before, culture center in general is a very broad concept, every culture center can have a different role in the community and can offer different possibilities. Therefore, users can experience uncertainty when first searching for information. In this thesis we tried to offer a lot of important advice for designers of culture center webpages (or any other webpages that has vague content), that would help them design webpages so that people can easily find information and would leave with a good experience. We also hope to offer inspiration for making these websites persuasive, waking curiosity and making them into invitations.

We believe we successfully answered all the research questions:

- How can a culture center utilize the theories of information architecture, persuasive design and user experience in the design of their webpage?
- Can a webpage of a culture center benefit from the theory of information architecture?
- Is persuasive design useful in the webpage design of a culture center?
- Is it beneficial to take users and the theory of user experience into account when considering a culture center's webpage?

We tried to provide a good overview of all the main concepts of information architecture, persuasive design and user experience and explained their importance in web design. We reasoned the necessary use of these theories through the theoretical as well as through the practical part.

During the interview with Ole G. Jørgensen, the leader of the Independent institute of Godsbanen, he expressed his concern with how complicated it is to communicate all the things that Godsbanen represents through a webpage. We very much agree, but we still think that it is possible to be more clear in our presentation and communication through webpages if the three theories, information architecture, persuasive design and user experience, were put into practice.

Cultural activities are essential, they add quality to our lives, we connect with other people through them and they inspire us to reflection. “Culture centers are important for local communities as a venue of organizing their leisure, providing opportunities for self-expression, initiatives and cultural education.” (Perkumienė, Kleinienė, p.33-39, 2013) We could continue for a long time discussing the benefits of cultural activities and cultural centers, but the point is that they are significant and we should be sure information about them is available in the most user-friendly way.

We often hear that life has meaning when it is lived for others. But we want to add that websites can be meaningful as well, when they serve the users. So let us do all we can to create meaningful websites, when we are creating them anyway.

# 11 Appendix

Table 1

<b>Lower main menu</b>	Calendar	Events	
		Regular activities	
		Courses and workshops	
		Exhibitions	
		Presentations	
		Markets	
		Festivals	
		Dance	
		Concerts	
		Film	
		Theater	
		Literature	
		Free	
		English	
		For children	
	Possibilities	Film making	
		School of Creative Writing	
		Professional cultural advice	
		Hang out	
		Tour	
	Workshops	General	Who is it for
			Prices
			How does it work
			Opening hours
			Courses
			Contact
		Graphic	
		Lasercutter	
		Metal	

Table 2

		Textile and screen printing	
		Wood	
		Form: glass and ceramics	
		Photography/ Photostudio	
		Painting and drawing	
	Media	Photos	
		Video	
		Street view inside	
	About	What is Godsbanen	
		Contact	Address
			Employees
		Organisation	
		Practical information	
		History of Godsbanen	
		Virksomhedscenter Godsbanen	
<b>Upper main menu</b>	Eat	Spiselaugget	
		Double Rainbow/ Kakaobar	
		Café Venligbo - Aarhus	
	Join cultural exchange	Residency	
	Organize	General	Exhibitions and events
			Meetings
			Theater
		Facilities	Production room
			Project space
		Conditions	
		Applications	

Table 3

Footer	Map		
	Adress		
	Contact		
	Map of Godsbanen		
	Newsletter		
	News		
	Press		
	Facilities		
	Facilitators	Organisations	Aarhus Kommunes Kulturforvaltningen
			Den selvejendeinstitution
			Performing Arts Platform
		For children	Børn, Kunst og Billeder
			Fine Spind Kultur til børn
			Hvid StøjSceneproduktion
		Production	1:1 Produktion
			Duke Denver Entertainment
			HIMHERANDIT Productions
			HIKI Productions
			Laboratoriet
			Svalholm Dans
		Theater	Teatret Beagle
			TeatretKimbri
			Teatertyven
			Teater Fluks
			Teater B79.2
			Teater Katapult
			SvalholmDans
			Secret Hotel
		Music/Concert	AUT
			Aarhus Jazz Festival

Table 4

		Film	Aarhus Filmfestival
			Visual Remarks
			Super 8
			Station Next
			Potemkin Film
		Literature	Forlaget Æter
			Skrivekunstskolen
			Vild med Ord
		Festival	Aarhus Filmfestival
			Aarhus Jazz Festival
		Frelancers +Business	Carbon
			Caroline Abild Jessen
			Danseteatret Fodfæste
			HejHeidi
			Guillermo Martin
			Gamecraft
			Malene Rauhe +graphic design
			LINE KRAMHØFT
			PREBEN STENTOFT
			Ole Grøn
			Morten Kokkendoff
			MMeX
			Wunderland Mette Aakjær
			Thalias Tjenere
			Sørig Studio
			Sixten Therkildsen
			Signe Klejs
			Sceneagenturet
			Roon & Rahn

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