



Recommendations for Improving the MIK Website and Overall Marketing Strategy

An Interactive Qualifying Project Report to the faculty of Worcester Polytechnic
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Science

Submitted by:

Philip Davidson
Maria DeCicco
Matthew Wetherbee

Submitted to:

Project Advisor:

Prof. Guillermo Salazar

Project Liaisons:

Sophie Paisley, Museer I København
Signe T. Lundgren, Museer I København
Lise Korsgaard, Museer I København

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Abstract

Museer I København (MIK) is an organization that represents over seventy diverse museums in Copenhagen and the surrounding area. This report presents a proposed plan to aid MIK to better attain their mission of promoting these museums. By identifying and investigating member museums', museum visitors', and website users' needs, we made recommendations to improve their website and overall marketing strategy to reach a broader audience.

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Janne Laursen- Danish-Jewish Museum

Rikke Bengtha Ruhe- Frilandsmuseet

Henrik Hansen- Tourist Information Center

Authorship

This report was a collaborative effort by all team members. All research and writing was done by equal contributions of each author.

Table of Contents

Abstract	ii
Acknowledgements	iii
Authorship	iv
Table of Contents	v
Table of Figures	viii
List of Tables	ix
Executive Summary	x
1. Introduction	1
2. Background	4
2.1 Museer I København	4
2.1.1 Purpose	4
2.1.2 Member Museums	5
2.1.3 MIK Portal	5
2.1.4 Future Perspectives	7
2.1.5 Museum Selector Survey	7
2.2 Museum Culture	8
2.2.1 Social Implications of Museums	9
2.2.2 Museum Visitors	10
2.2.3 Online Museum Resources	10
2.2.4 Case Study	11
2.3 Marketing	12
2.3.1 The Technology Enabled Consumer	12
2.3.2 Social Media Optimization	13
2.3.3 Location Aware Marketing	13
2.3.4 Marketing in American Museums	13
2.4 Web Technology	14
2.4.1 Website Content	14
2.4.2 Web Presence	14
2.4.3 Usability in Web Design	15
2.4.4 Evaluation Case Studies	18
2.4.5 Implementations and Frameworks	21
2.4.6 Archetypal Solutions in Web Design	22
2.5 Summary	25
3. Methodology	27
3.1 Analysis and Evaluation of the MIK Website	29
3.1.1 Known Problems.....	29
3.1.2 Evaluation Techniques	31
3.2 Analysis and Evaluation MIK's Current Marketing Strategy	33
3.3 Identification, Analysis, and Assessment of Needs of MIK Web User Base	34
3.3.1 Types of Users	34

3.3.2	Surveying.....	35
3.3.3	Survey Design.....	36
3.3.4	User Stories	37
3.3.5	Prototype creation and planning.....	39
3.3.6	Comparisons of Web Technology	40
3.4	Assessing the Needs of Visitors of MIK Member Museums.....	40
3.4.1	Tourism Analysis	41
3.5	Assessment of the Marketing Needs of the MIK Member Museums	42
3.5.1	MIK Member Museums	42
4.	Results and Analysis.....	44
4.1	Direct Observation of User Stories	44
4.2	User Statistics Results from Log Analysis.....	50
4.2.1	User Statistics Analysis	52
4.3	MIK Marketing Director Interview Summary	53
4.4	Tourist Information Center Surveys	54
4.4.1	Analysis of Tourist Information Center Surveys.....	57
4.5	Museum Visitor Surveys.....	59
4.6	Interviews of Member Museum Directors.....	63
4.6.1	Interview of Janne Laursen- Dansk Jørdisk Museum.....	63
4.6.2	Interview of Barbara Læssøe Stephensen GL Strand Museum.....	64
4.6.3	Interview of Jesper Thomas Møller-Danish National Museum.....	66
4.6.4	Analysis of Museum Director Interviews.....	68
4.7	Prototype Results	70
5.	Conclusions and Recommendations.....	73
5.1	Conclusions	73
5.2	Member Museum Relations Recommendations.....	74
5.2.1	Increase Interaction with Member Museums	74
5.3	Marketing Strategy Expansion Recommendations	75
5.3.1	Organizational Collaboration	75
5.3.2	Revised English Brochure	76
5.4	Website Improvement Recommendations	76
5.4.1	Fix Existing Aesthetics Issues on the Website.....	76
5.4.2	Social Networking Tools- Facebook©, Calendar/RSS feed, etc... ..	77
5.4.3	Museum Ranking System and User Comments	77
5.4.4	Establish a Personal Connection with Users.....	78
5.4.5	Different Content for Museum Pages (Danish vs. English).....	78
5.4.6	Tours	78
5.4.7	Tagging of Member Museums	80
5.4.8	Google Optimization of English Website	81
5.4.9	Implementing a Filter for the Museum List.....	81
5.4.10	Log Analysis and Online Survey.....	82
5.5	Recommendations for Future Studies	82
References.....		83
Appendices.....		85
Appendix A: Museums By Alphabetical Order		85
Appendix B: Tourist Information Center Visitor Survey		87
Appendix C: Museum Visitor Survey		88
Appendix D: Museum Director Interview Questions		89

Appendix E: MIK Liaison Interview	90
Appendix F: Worcester Art Museum Interview	92
Appendix G: Danish Jewish Museum Interview Summary	94
Appendix H: GL Strand Museum Interview Summary	96
Appendix I: Danish National Museum Interview Summary	99
Appendix J: Frilandsmuseet (Open Air Museum) Interview Summary	101
Appendix K: MIK Director of Communication Interview Summary.....	103
Appendix L: Design Diagrams For Filtering Prototype	106
Appendix M: Museum Filter Prototype Demonstration	108
Appendix N: Source Code from museums.js - “MIK Filtering Prototype”	113

Table of Figures

Figure 1: Partial Museum Listing on MIK Website	6
Figure 2: Homepage-MIK English Website	7
Figure 3: Final MUSEUM SELECTOR Graphic Design (Forti et al, 2008)	8
Figure 4: Usability and its Components	16
Figure 5: An Example of Tag Usage from Flickr.com	24
Figure 6: Methodology Flowchart	28
Figure 7: The Current MIK English Website	30
Figure 8: Country of Tourist Origins at the Tourist Information Center	55
Figure 9: Advertising Preferences Among Tourists	56
Figure 10: Tourist Internet Usage Compared to Museum Interest	58
Figure 11: How they Discovered Museum (Tourists)	60
Figure 12: How they Discovered Museum (Danes)	60
Figure 13: Desired Experience (Tourists).....	61
Figure 14: Desired Experience (Danes).....	61
Figure 15: Preferred Form of Advertising (Tourists)	62
Figure 16: Preferred Form of Advertising (Danes)	62
Figure 17: Google Map for Museum Tours.....	79
Figure 18: Prototype Museum List Page	108
Figure 19: Initial Narrowing of the Museum List	109
Figure 20: Museum List with Subcategory Checked	110
Figure 21: Further Narrowing of Museum List	111
Figure 22: Message-No Museums in These Categories	112

List of Tables

Table 1: User Story 1- Find Information About a Museum by Name	45
Table 2: User Story 2- Finding Featured Museums/Events.....	46
Table 3: User Story 3- Find Information About MIK	47
Table 4: User Story 4- Find a Listing of Museums by Genre	48
Table 5: User Story 5- Find a Listing of Museums by Genre Using Prototype Filter.....	49
Table 6: Other Issues with the Website	49
Table 7: Participant Suggestions for Improvement	50
Table 8: Top 10 Countries of Origin for Visitors to mik.dk.....	51

Executive Summary

The Internet has become one of the most popular and easiest forms of gathering information today; therefore organizations should maintain a web presence in order to gain the most benefits from the Internet. Museums should also continuously evaluate their role in society in order to market correctly. Museums have consistently had issues with effective marketing. In recent years, museums have evolved into social and educational venues, and cater to a much broader audience than in the past. Founded by the Museum Council of Copenhagen and Frederiksberg in 2003, MIK is a non-profit Danish organization whose purpose is to “broaden the knowledge of the museums’ collections by improving their visibility and marketing them in new ways” (MIK, 2009). While MIK has a broad and diversified marketing strategy for its Danish audience, its marketing strategy for English speaking tourists is not nearly as well developed. One of the primary tools for this strategy is their website, called the Museum Portal. While the Museum Portal does contain much information, it is not strategically formatted in order to aid tourists in finding what they are looking for. The objective of the MIK Interdisciplinary Qualifying Project (IQP) is to make recommendations to improve their website and overall marketing strategy to reach a broader audience.

To achieve this goal, we created a series of seven objectives and a methodology in order to fulfill these objectives. The objectives were 1. To analyze and evaluate the current website, 2. To analyze and evaluate MIK’s current marketing strategy, 3. To identify, analyze, and assess the needs of the common MIK website user base, 5. To assess the needs of foreign and local visitors of MIK member museums, 6. To assess the marketing needs of the MIK member museums, and finally 7. To propose modifications and make recommendations for implementation to MIK.

Before arriving in Copenhagen, we completed an initial website analysis in order to identify current and obvious issues with the website. We based our analysis on overall usability and aesthetics of the website. After this analysis, we made preliminary observations for potential improvement that included adding a social networking aspect such as Facebook© and blogging, as well as to optimize the English website for search engines. Search engine optimization is

designing a web page with links and key phrases which result in having the website appear as high as possible on the results list generated by the search engine.

Once in Copenhagen, we set up interviews with four museum directors. The museums were chosen because they each represented a different type of museum within the MIK organization. They represented small, medium, and large museums, covered a variety of visitor demographics, and also were chosen based on their location within Copenhagen and outside the city limits. The purpose of these interviews was to find out how MIK currently interacts with its member museums, and also to gather suggestions for improvement from the museum directors.

After the museum director interviews, we conducted an interview with the head of marketing at MIK, Lise Korsgaard. This was done to gain a comprehensive knowledge of the current marketing strategy at MIK for both residents of Denmark and English speaking tourists. MIK used many different marketing techniques to appeal to the Danish speaking audience, but lacked a diversified strategy to reach a broad audience of tourists.

Next, we surveyed tourists at the Tourist Information Center in Copenhagen. We spoke with 75 tourists over the course of three different days as recommended by the Center employees. The purpose of these surveys was to collect information on how tourists most commonly find information before a trip, as well as to discover which means of advertising they find most effective once on location. While interviewing 75 subjects is not statistically significant given the millions of tourist who visit Copenhagen each year, for the purposes of this study it was considered enough to gain sufficient insights on the matter. After the tourist surveys, we completed 83 museum visitor surveys total at the four museums at which we had previously interviewed the directors. These surveys were different than the Tourist Information Center surveys in that the museum visitors had made a conscious decision to come visit a museum, and we wanted to know how they found out about that particular museum, and also if they were familiar with the MIK organization.

Finally, we created a prototype search filter for the museum listing and conducted a direct observation study with 11 volunteer participants in order to test and evaluate this filter and to verify the preliminary observations made. The filter is designed to reduce the amount of museums listed based upon the user's specific interests. After the observation session, we

conducted exit interviews with each of the 11 participants to generate and identify new ideas and discuss possible solutions for realized usability issues.

Based on our interviews, surveys, and first hand observation and discussions, we were able to derive conclusions and formulate recommendations. The museum directors all felt that MIK served a very important purpose, but that there is a great deal of room for improvement in regards to marketing to tourists. Half of the museum directors felt that their type of museum is not properly represented by the MIK marketing strategy, which in their opinion is currently directed towards families with children. One of the most important suggestions the museum directors made was to include different information on the Danish and English member museum pages as both groups visit the museums for different reasons. All museums directors also felt that a monthly correspondence from MIK with updates on new marketing would be useful.

According to our survey results at the Tourist Information Center, 55% of tourists use the Internet as one of their primary sources of information when planning a vacation. Once on location, their primary sources of information are guidebooks and pamphlets, which are located in various places around cities. On the other hand, we found that the local Danish population who we surveyed at the Tourist Information Center and museums heavily relied on newspaper articles to find new activities in the city.

From our direct observation study we determined that the website is presently effective for users who already know which museum they would like to visit and are only seeking additional information about that particular museum. In addition 91% of participants felt that a filter is an effective tool for users that do not already have a specific museum in mind.

According to our survey results from the member museum surveys 22% of the Danes interviewed had heard about MIK while only 10% of tourists had. Those that had were familiar with MIK through having used the museum guides. In addition, 90% of Danes had prior knowledge of the museums before visiting.

Based on all the information gathered, we made several recommendations to MIK for the improvement of their English marketing strategy. These recommendations include adding a social networking feature and optimizing their English website for search engines. This will help them reach a broader audience. We also suggested including a search filter for the museum list that aids potential visitors in getting directions to the museums. We are confident that if these

recommendations are implemented, they will allow MIK to reach a broader audience and will also help promote each of the member museums more effectively.

1. Introduction

Museums provide a place for the public to discover and view exhibits of cultural and historical significance. These institutions are considered to be reliable sources of information to provide authentic and informative exhibits featuring art, history, and science among other topics. This experience has recently increased the perception of museums as social venues. As valuable educational and social institutions, it is important that museums are promoted effectively. A museum's success relies on their ability to attract visitors. In order to catch the attention of visitors, museums and organizations need to develop innovative marketing strategies. The Internet has become one of the most powerful marketing tools for both small and large organizations. It is a method for providing information quickly, worldwide. As web technology advances, it is crucial that organizations continue to update their websites and utilize all that technology has to offer in order to maximize its potential.

Museer I København (MIK) is a young and growing organization, representing over seventy museums in the Copenhagen and the surrounding area. Their main mission as an organization is to promote their member museums by increasing awareness and increasing visibility of the museums to visitors. They are seeking to develop a more effective marketing strategy in order to better promote their member museums. In order to appeal to a larger population, MIK must utilize multiple marketing strategies to attract more museum visitors. Static media, such as flyers, posters, and newspaper advertisements are useful in providing information, but do not allow the user to interact with the information source. A website can help to alleviate this dilemma. Currently, MIK operates and maintains a website called the museum portal which contains a listing of member museums and highlights special exhibitions. They are looking to utilize new interactive technology to improve their museum portal and further engage the users to increase the number of museum visitors. If a website is not easy to use and does not contain up-to-date information, then an organization risks losing its web user base. MIK has a Danish museum portal along with an English museum portal, though they contain essentially the same information in different languages. In order to better cater to the specific users' needs of these two groups, MIK needs to collect more information on the differences between their Danish audience and the English speaking audience, as they realize that these two groups may be seeking different information.

Last year, a group of students from Worcester Polytechnic Institute examined MIK's strategy in reaching out to potential visitors and made recommendations on how to better engage these potential museum visitors through their museum portals (Forti et al, 2008). They created and tested a program, the Museum Selector Survey, to aid visitors in selecting museums to visit based on a list of given criteria. Users were asked to answer a set of questions regarding the particular genre, atmosphere, and experience they were seeking in their museum visit. The tool then generated a list of museums that would be of particular interest to the user based on their answers. The museum selector tool was found to be useful by those who tested it; however, due to technological limitations, MIK was not able to integrate the program into the website.

Despite previous efforts, MIK continues to look for ways to improve their overall marketing strategy to better reach out to and engage potential visitors in order to better serve their member museums and attract more visitors. Currently, MIK's museum portal does not allow the user to interact with the site or help them to create their own unique museum experience. In addition, functional issues with the web page make it difficult for users to find information. New features such as social networking tools and other modern technologies leveraged by existing websites are very effective methods of increasing user ability to interact with the website. While MIK does utilize static and dynamic media in Denmark, the marketing strategy for tourists, including the English version of its website, is not nearly as thorough.

In order to help Museer I København better promote their member museums we made recommendations to assist them in improving their website and expanding their marketing strategy to reach a broader audience. We assessed the current issues in web design, usability, and museum marketing. We then analyzed and evaluated the current MIK English website and assessed the needs of common MIK web site users through log analysis, surveys, and direct observation. Further, we assessed the needs of foreign and local visitors of the MIK member museums and the marketing needs of the MIK member museums through surveys and interviews.

Based on all the information gathered, we made several recommendations to MIK for the improvement of their overall marketing strategy. These recommendations include adding a social networking feature and optimizing their English website for search engines. In addition, we suggested collaborating with other tourism organizations including Wonderful Copenhagen. This will help them reach a broader audience. We also suggested including a search filter for the

museum list that aids potential visitors in obtaining directions to the museums. We are confident that if these recommendations are implemented, they will allow MIK to reach a broader audience and will also help promote each of the member museums more effectively.

2. Background

The purpose of this chapter is to provide background information to aid in the understanding of our project. We reviewed the MIK organization and its member museums to better understand the mission, objectives, and operation of the organization we are working with. Through an examination of museum culture, research and case studies, current marketing strategy, and web technology, we developed a better understanding of the issues surrounding museums and their web technology needs. Enhancing the understanding of these core issues prepared us to determine and suggest ways to improve their website and to better serve their member museums.

2.1 Museer I København

This section contains information about our project sponsor, Museer I København (MIK). Founded by the Museum Council of Copenhagen and Frederiksberg in 2003, MIK is a non-profit Danish organization whose purpose is to “broaden the knowledge of the museums’ collections by improving their visibility and marketing them in new ways” (MIK, 2009). Since 2003, they have established themselves as a useful marketing tool for the member museums in the greater Copenhagen and surrounding area. MIK is funded both through public and private institutions. Public funding is provided through taxes and money from the Danish Ministry of Culture for programming. Private funding is made up of membership fees from the member museums of the coalition. The following sub sections contain information about the purpose of MIK, member museums, and their goals for the future, as well as their current marketing needs.

2.1.1 Purpose

The sole role of Museer I København is to promote their member museums. They do this both through their “museum portal” and through special pamphlets, flyers, and articles in local newspapers. The museum portal is a website dedicated to providing information about the member museums, events, and special exhibits. This website is essential to the organization’s success as it provides a single website in which a visitor can discover information about all the museums that are a part of MIK. In addition to the museum portal, MIK also markets their

museums by cooperating with tourist organizations, educational institutions, and local businesses in order to reach a broader audience. MIK is always looking to use new, interactive technology and creative methods for marketing and promoting the member museums.

2.1.2 Member Museums

Membership of MIK is comprised of over seventy individual museums ranging from small institutions such as the Danish Jewish Museum to large museums including the Danish National Museum. The content of these museums varies greatly ranging from customs and taxes to music and performing arts. Most museums are located in the greater Copenhagen and greater Frederiksberg areas. A full list of member museums can be found in Appendix A. Member museums receive advertising assistance from MIK in the form of a page on the MIK portal, the “Museum Guide” pamphlet, and other advertisements. Viewers can discover important information about each museum such as location, admission price, and exhibits as well as, in most cases, a link to that museum’s own website.

2.1.3 MIK Portal

The current website for MIK contains information about every member museum as well as general information about MIK. The website also features a few current special exhibits as well as a calendar of events. There are several issues with this current website however. As shown in Figure 1, the MIK website displays a page in which museums are arranged in alphabetical order rather than categorized by the type of exhibits they feature. This makes it difficult for a tourist to easily select a museum that caters to their particular interest.

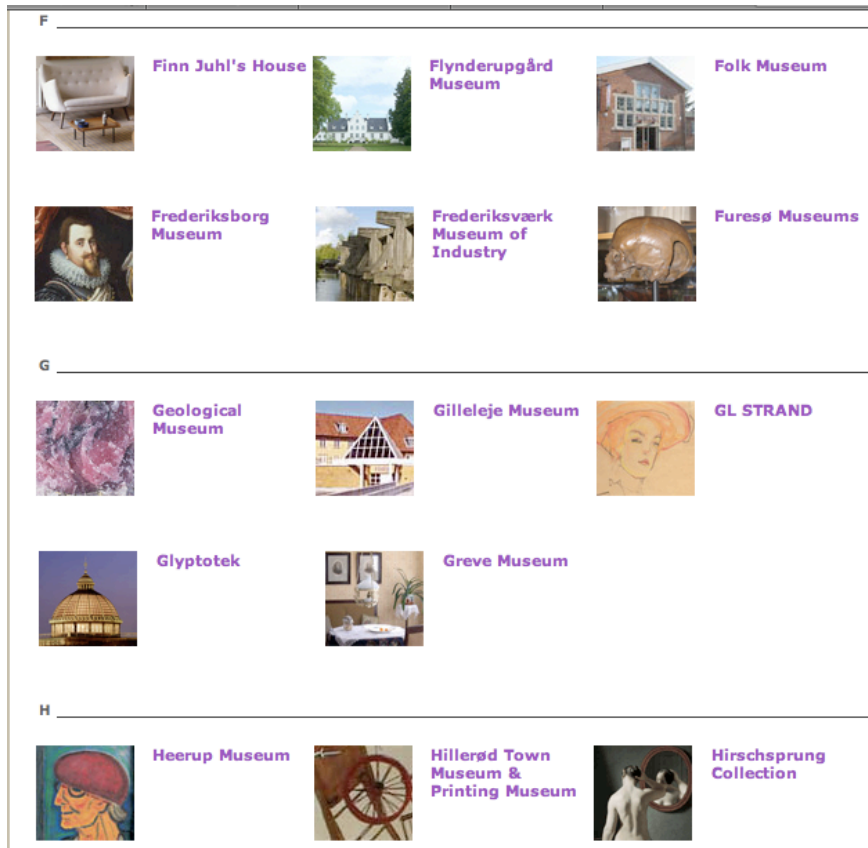


Figure 1: Partial Museum Listing on MIK Website

In addition, the calendar function does not currently work and there are several aesthetics issues with the main page. Apparent in Figure 2, some text on the webpage is the same color as the background, making it very difficult to read. The main aesthetic issues concern the alignment of text on the web pages. The text appears very cramped and either misaligned or hard to read in various sections, which makes the website difficult to navigate. In order to utilize the website to its fullest potential as a marketing tool for MIK's member museums, updates and revisions must be made to the current website.

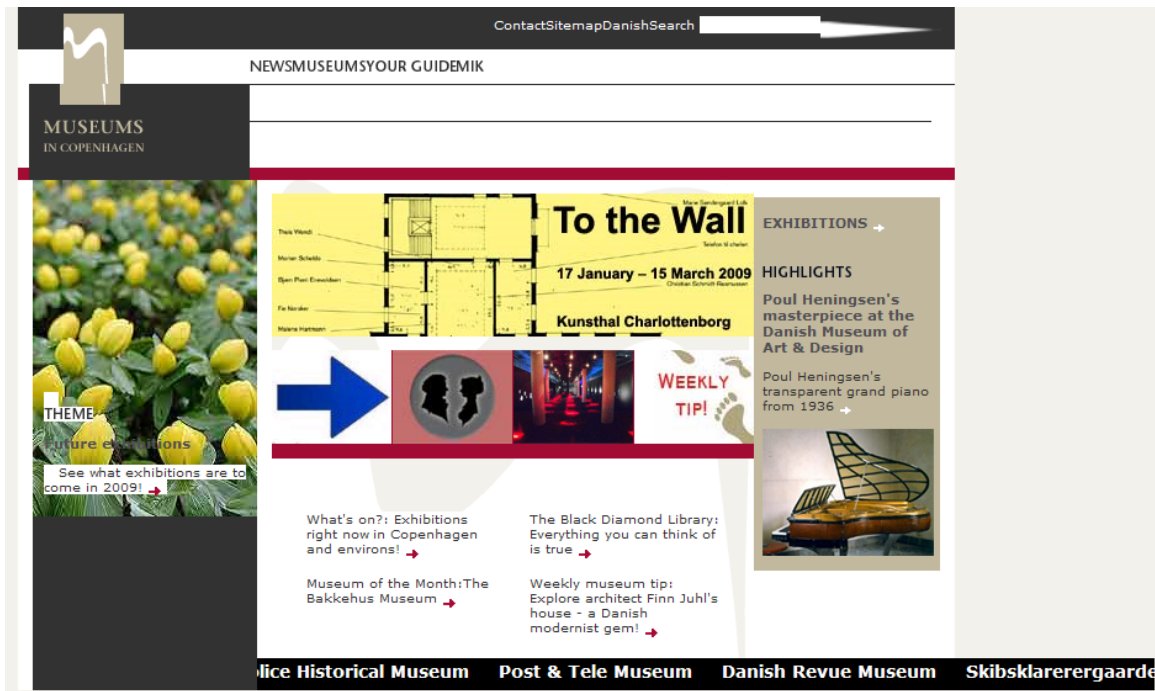


Figure 2: Homepage-MIK English Website

2.1.4 Future Perspectives

As a relatively young organization, Museer I København is always looking for new and innovative ways to better promote their member museums. Through their Danish portal, they have been able to successfully promote the museums and have supplemented the portal with flyers, newspaper, and television advertisements. In addition, many commercial websites contain links for the MIK Danish Portal. For foreign tourists, MIK provides an English portal similar to the Danish one and also places weekly advertisements in the Copenhagen Post, a weekly Danish newspaper written in English. Their English portal is not nearly as developed, and MIK is currently looking for more effective ways to reach out to foreign tourists.

2.1.5 Museum Selector Survey

A recent study conducted by students from Worcester Polytechnic Institute in 2008 developed a program titled the Museum Selector to integrate into MIK's website as a means of assisting tourists in the selection of museums to visit (Forti et al, 2008). This program interacts with the user by asking various questions that helped to characterize the desired experience of the user. After asking questions relating to the desired subject matter, price, and atmosphere, the

Museum Selector generates a list of museums that the user may enjoy. There was also a feature entitled “Surprise Me” in which a museum would be selected at random. This ensured that each of the member museums would receive equal exposure to the users. This Museum Selector Survey was designed in such a way so that it could be integrated into the existing MIK website so not to function as a pop-up window. As seen in Figure 3, the layout and color scheme of the survey matched that of the website for an aesthetically pleasing and user-friendly experience. Unfortunately, due to technical restrictions, this survey could not be implemented. A review of the Museum Selector Survey tool highlights a previous method used to attempt to improve how well the current MIK website serves its users while effectively promoting its member museums.



Figure 3: Final MUSEUM SELECTOR Graphic Design (Forti et al, 2008)

2.2 Museum Culture

Museums are very important in promoting and preserving the history and culture of a nation. There are various types of museums which are all major expressions of cultural identity.

Museums draw millions of people annually to share culture and history through first hand experience with artifacts. In the United States, more people visit museums annually than attend professional sporting events (Hein, 1998).

2.2.1 Social Implications of Museums

According to the International Council of Museums, the definition of a museum is “a non-profit making, permanent institution in the service of society and of its development, and open to the public, which acquires, conserves, researches, communicates and exhibits, for purpose of study, education and enjoyment, material evidence of people and their environment” (ICOM, 2009). The educational work scope of museums is broad.

According to the highly influential museum director John Cotton Dana who founded the Newark Museum, the proper role of the museum is to enrich the quality of people’s lives. In promoting the museum, his two stated social aims were to provide educational opportunity and to celebrate local and immigrant culture (Hein 2005).

Museums provide an exceptionally valuable educational tool. Museums have been recognized for their educational value since their inception, but developed into professional educational institutions in the twentieth century. After World War 2, museum education matured into a recognized profession. Various institutions including Tufts University now offer Master’s Degrees in Museum education, and museums now hire professional educators as full time staff members (Hein, 2005).

The museum education experience is an innovative and effective learning tool. Unlike studying in a classroom, the museum is an object based learning environment. This is a progressive education method (Hein, 2005). Understanding progressive education is important to the recognition of the role of the museum as education. A progressive society is one that strives to restructure the social and economic class structure in light of a less divided group of people. It is important to educate the people in such a society on how to inquire, and a museum is a valuable tool. Progressive education efforts coupled with research involving child development resulted in specialized educational activities. This agenda resulted in professional educators in museums and an emphasis on learning in the museum, which drastically changed the educational role of the museum (Hein, 2005).

2.2.2 Museum Visitors

In order to help museums realize their full potential, it is important to understand the museum visitor. Though museum visitors are information seeking, they are looking for something other than the traditional academic experience.

Many studies have been conducted on museum goers and present interesting demographics. Visitors are principally older, well dressed, and more often female. Couples are often seen, though seldom with children. The presence of children in museums is commonplace during the week though, attending school programs and trips. Despite obvious visitor trends, analyzing the demographics becomes pointless because each visitor is looking for a new and individual experience (Hooper-Greenhill 2002).

Despite the wide range of artifacts available, research shows that even though a visitor may have a hands-on opportunity at the museum, their overall knowledge level is hardly increased. Essentially, museums are not very effective in conveying factual knowledge to the visitor, but rather promote the learning experience as a whole (Orr, 2004).

It is very important to note that the vast majority of people who visit museums are at the museum both to learn and to have a social experience. Between 1994 and 1996, sixteen thousand visitors were interviewed. 14 percent of visitors had come alone, while the remaining 86 percent were making the museum visit a social event (Orr, 2004). Social interaction is at the center of most trips to the museum.

2.2.3 Online Museum Resources

It is important for museums to understand the needs of their virtual users. Museums are constantly struggling to keep pace with user needs on the rapidly changing Internet. These unprecedented changes force museum professionals to constantly create new information policies and features (Marty, 2007).

The needs of the Internet user change so rapidly that there is now a critical lack of information about the user and their true needs. By not understanding user's needs, the museum professionals cannot know whether the digital access they provide is fulfilling the user's needs. Though museums recognize the lack of information and understand the importance of properly addressing their users, they must learn more about the user to move forward (Greenhill 2002).

2.2.4 Case Study

An exploratory study was conducted by the Florida State University College of Information into online museum resource users and their needs. Focus questions included how likely a user is to make the online museum resource a part of their daily life, how users see the website as different from the museum, and what activities do users prefer performing on the internet versus at the museum. The survey was conducted between October 2005 and October 2006 and included 1215 valid responses (Marty, 2007).

The results echo the importance of a successful museum website. Respondants to the survey indicated visiting a museum on average of 4 times per year, but said that they visit museum websites on a weekly basis. Respondants also indicated that they are more likely to use websites with resources such as photographs, and have much different expectations for the website than for the actual museum. Most respondents agreed that though the online museum resources are useful, they cannot replace actually visiting the museum (Marty, 2007). However, the growing popularity of virtual museums has contributed to a fuller online museum experience and has been good for physically disabled individuals or others who cannot actually visit the museum.

According to the survey results, museum education professionals must understand their user in order to most effectively use the museum website. Though it is easy to become caught up in the technical aspect of the website design, it is important to focus on how people will use digital resources and the potential impact of these resources on the museum (Marty, 2007).

This study has three key implications. First, museum goers are already making museum websites an integral part of their museum experience. Secondly, online users have a much different attitude about museum websites than about the actual museums. Most importantly, online users have strong feelings about the tasks that should be done on the website, and what museum activities should be saved for the museum. Though this study is very comprehensive, there is still much to be learned about online museum resource users and their needs (Marty, 2007).

2.3 Marketing

Marketing is a very important consideration for a company that desires to best reach its audience. According to Merriam-Webster, marketing is defined as the process or technique of promoting, selling, and distributing a product or service. Marketing has evolved from billboards and magazine advertisements to television commercials, and more recently the Internet. The Internet has revolutionized the methods and speed which information reaches consumers, and have changed the marketing field greatly. Moreover, the method in which travelers use the web has significant implications on marketing (Bender, 2009).

2.3.1 The Technology Enabled Consumer

The technology-enabled consumer is one of the most pivotal changes that have come about in the marketing field over the past decade. Twenty years ago, the Internet changed the way people received information. They could sit at their desk at home and search faraway places and had new resources at their fingertips. Now, consumers can carry the Internet in their pocket wherever they go. This technology enables the consumer to find information on the go, and has altered marketing significantly (Bender, 2009).

Web based social networking devices are critical in reaching out to the consumer as well. Information exchange such as blogs, forums, wikis, and podcasts allow the consumer to share their experiences and opinions with a global audience. Consumers tend to trust one another more than corporate marketing, making the social tools even more powerful (Bender, 2009).

The web is becoming omnipresent in cities around the world. South Korea is the world's most Internet accessible nation and is working to develop fifteen cities with ubiquitous Internet and plans to have the first complete by 2014. These U-cities, short for ubiquitous cities, will have wireless broadband capabilities that will be combined with radio frequency identification (RFID) to enable people to use technology anywhere and everywhere in the city. All major information systems including residential, medical, business and government will share data and computers will be built in the houses, offices, and streets (O'Connell 2005).

It is essential for marketers to adapt to reflect the shift to the technology-enabled consumer and to expand the availability of their product. Organizations in the tourism sector have begun to redesign their websites to integrate social media elements, but the process is ongoing (Bender, 2009).

2.3.2 Social Media Optimization

Though the Internet provides an outlet to the global audience, organizations must optimize how their information reaches the consumer. Search engines are very popular tools consumers use to find information. The consumer types in a few words or phrases related to their interest into the search engine, and hits search. A typical search engine such as Google can produce millions of results in a fraction of a second. Because a search engine produces millions of results, it is important for marketers to optimize their websites for search engines (Bender, 2009).

The goal of social media optimization is to increase the efficiency of information transfer to the consumer. Marketers can optimize websites by adding social media elements such as blogs and wikis, and also by tagging each one of their web pages, bookmarking, and by utilizing new technology such as Real Simple Syndication (RSS) (Bender, 2009).

2.3.3 Location Aware Marketing

With the development of global positioning systems (GPS), travelers can more readily find the places they want to go, but they can also use the GPS to figure out where they would like to go. GPS units now have a search feature that allows the user to search broad topics and find locations relative to the topic. For example, a traveler in Europe can use his GPS to find local museums in the area.

Global positioning technology, coupled with the Ubiquitous City concept will revolutionize information exchange for consumers again in the near future, and marketers will benefit from anticipating the change. In Japan, technology has already reached the consumer that allows one to point their GPS and Internet enabled smart phone at a building, click a button, and receive information about the building. Currently, the system stores advertisements and information on over seven hundred thousand buildings and locations (Bender, 2009).

2.3.4 Marketing in American Museums

In order to gain some firsthand knowledge and additional background information on previous efforts to promote and market museums, we scheduled an interview with Brian Barlow, the Director of Advancement for the Worcester Art Museum. The most important lesson learned from Mr. Barlow is that it is crucial for a museum to make a personal and emotional connection

with the potential visitor. He highlighted the importance of creative titles for exhibits, rather than plain informative titles. In order to attract visitors, it is necessary to provide a reason for the visit. The most effective way to achieve this is to create a personal connection between the visitor and the exhibit. According to Mr. Barlow, museum marketing overlooks the needs of the visitor and advertises in an entirely informative manner. The summary of the interview is included in Appendix F.

2.4 Web Technology

Modern museum websites should make use of current web technology to create an interactive website that is usable, engaging, and aesthetically pleasing. “Unless a web site meets the needs of the intended users it will not meet the needs of the organization providing the web site” (Bevan 2001). Usability is a key concept in the evaluation of websites as it refers to how easy to use the web site is. The easier a web site is to use the more likely it will meet the needs of its users assuming it contains effective, up-to-date content. Case studies provide a review of methods used in other museum web site evaluations. Frameworks and implementations used in web design provide insight into how programmers succeed in making dynamic, interactive web pages. Considering some solutions used by other sites provides specific ways that improve usability and build community.

2.4.1 Website Content

The content of websites has a drastic effect on their success. Regardless of content though, the method of presenting the information remains important. A website may contain valuable information, but without optimizing the usability of the website the information will not reach its intended audience. According to Brian Barlow, Director of Advancement for the Worcester Art Museum, the presentation of the content must create a personal connection with the user in order to be effective. The website should evoke an emotional connection and make the user desire to visit the museum. Without personal connection, the user may ignore the information presented and look elsewhere.

2.4.2 Web Presence

Companies and organizations use web presence to increase efficiency and further their business or cause. Web presence is a title given to numerous outlets that can be used via the

Internet. Websites are the main component in web presence. Stemming from websites are two different tracks, informative and communicative. Search engines, websites, and web directories are used to transmit information, while blogs, forums, email and social networks are outlets for communication. Using the Internet has become a popular medium to reach one's target market.

Web presence is beneficial to companies due to its accessibility. With just a computer and Internet connection, messages and information can be sent worldwide in a matter of minutes. Through the use of the Internet, organizations are more effective in reaching their consumers. By simply typing a website's URL into the search bar, the user can obtain more information than by actually entering the business itself. Not only can their market be seen, but also target audiences can find who to contact and how to contact them. They can also find the mission statement and how to get involved, i.e. to make donations, apply for a job, or give feedback.

An organization's web presence can be improved by making simple changes. A user-friendly website can make a significant difference in its popularity. A user will quickly leave the site if they are unable to navigate it. The website should be updated frequently, which shows the target audience that the company cares about the image they are portraying. It also means the information on the website is accurate. Outdated information results in confusion. By focusing on these important components, the company can begin to make their web presence known and increase effectiveness.

In order for the previously mentioned aspects of web presence to have any affect on the user, the user must first be able to find the website. This is most commonly done using Google searches and links from other websites. There are certain known techniques, which are outside of the scope of this project, that can be used to optimize a website to appear high on the list of results on a Google search for a given page. This is important because most users will not go beyond the first three results on a search citation.

2.4.3 Usability in Web Design

Usability refers to the ease of use and navigation of a website. The Systematic Usability Evaluation (SUE), a process used to evaluate usability of museum websites, employs a set of usability attributes (Garzotto, 1998). These, taken together, highlight the concept of usability. These usability attributes stem from the concepts of learnability, which "concerns the features of an interactive system that allow novice users to use it initially, and then to attain a maximum

level of performance”, and efficiency, which “concerns the features that support the successful achievement of the user's goals, with a high level of productivity” (Garzotto, 1998). Learnability can be achieved through consistency and predictability, while efficiency can be achieved through accessibility and orientation (Garzotto, 1998). To ensure the value and timeliness of the attributes proposed by the SUE, Pallas’s MUSEK, another museum website evaluation method, was analyzed. Their approach to usability can be summed as assuring that “any visitor can easily learn, use and remember the site” (Pallas, 2008). The values proposed by MUSEK match up almost exactly with SUE’s larger points of learnability and efficiency. This implies that the values of usability on museum websites employed by evaluations frameworks have gone largely unchanged in 10 years. Figure 4 shows the hierarchical organization of usability into its more specific approaches.

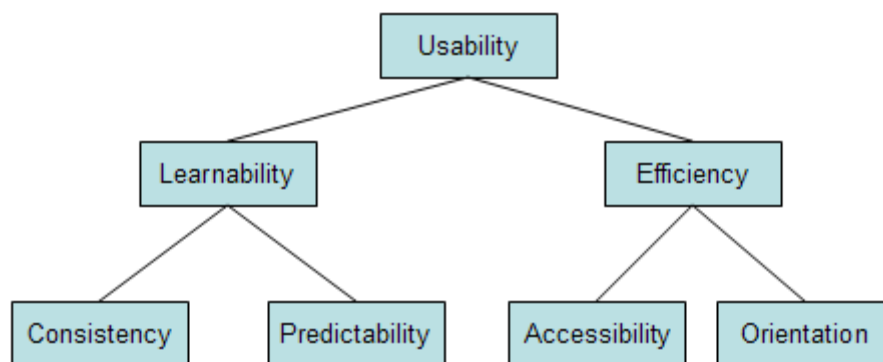


Figure 4: Usability and its Components

Consistency is created by developing similarity between pages or objects within a website. If a website uses a navigation bar to provide access to different pages of the website on one page but expects its user to enter a keyword into a search box to traverse the website on another page the website would be considered inconsistent. Inconsistency negatively affects learnability by not allowing the user to accustom themselves to one way of performing an action within the website. This leaves the user constantly having to determine how to use the web site. The usability issue of consistency would be especially affected if there were any sort of randomness in any use case.

A website would be considered predictable if in all cases the same action symbols perform the same, expected action. If the home symbol brought the user to the “home” page when clicked on one page while on another page the home symbol submits a form, it would be inconsistent. This example also highlights that actions performed by certain symbols should be the action that it is expected to take. It would be unexpected that a home symbol would submit a form. Without predictability, negative effects on learnability would be observed since the user would not be able to traverse the website or perform actions without guessing what different symbols or links do.

When considering learnability it is important to consider how a user will approach the website. Many users will visit the website with preconceived notions of consistency and predictability. These expectations are from experiences of how other websites use certain symbols or arrange pages. Although a contained website may be consistent with itself it is still important to think of how other websites interact with their users. Thus, a website should not only be consistent with itself, but also should be vaguely consistent with other web sites as well. Since most websites use some form of a navigation bar to traverse the pages of their site, it is counterintuitive, due to lack of consistency, to expect the user to select where they want to go from a set of radio buttons. Also, most users’ concepts of what a symbol should do are based on their previous experiences with that symbol on other websites. As in a previous example, the user would normally predict that a symbol depicting a home would bring them to the “home” page of the website.

The more accessible a website is, the easier it will be for a user to find a piece of information or achieve a goal. If a user visits a website to ascertain the operating hours of a museum but in order to do this they have to go through several other, non-related pages one should be concerned with the accessibility. This could easily be fixed if the site included clear links in the navigation bar to the list of museums and their hours. Accessibility of a website can generally be improved by adding search technology or quick links to different areas of the site. Lack of accessibility will lead to less efficiency as the user must spend more time to get to the section of the website with the information that is desired, thus decreasing productivity.

Orientation in regards to a website implies that the user is able “to understand their current location and their own movements, to grasp their current navigation context, and to return to previously visited items” (Garzotto 1998). Without orientation the user will either have

to re-enter the website and start over, which could take more time than simply going back to a different page within the website, or may give up entirely on attempting to use the website. Although most modern browsers confer some of these abilities it is important to consider the user's expectations and ability to tell where they are as they navigate the website.

2.4.4 Evaluation Case Studies

Evaluation plays a key role in the analysis of anything that is for more than personal use. There are many processes and benchmarks one may use to evaluate a product within its domain. For example, the evaluation of how a toy manufacturer is meeting the needs of its clients would probably include measures for the quality of the toys and speed of manufacture. In the case of evaluation of how a web site is meeting the needs of its users most of the processes involve querying users, using different methods, about the usability, effectiveness, and aesthetics of the website. Benchmarks for web sites can include analyses on the number of users who view the website or perform a certain action, the average time a user stays on the website, and demographic information about users. This information can generally be gathered automatically through the website or by parsing through the website's logs. The goal of most evaluations is to gather information in order to make improvements or corroborate a lack of issues.

In the past many museums have had their websites evaluated in order to make sure they are meeting their consumers' needs. Although most of the available studies include pieces concerning primarily "virtual visitors", or visitors who come to the website in order to view museum content, they are telling in the fact that certain methods are used to gather information.

One such study is the redesign of the Germany's Saarland Museum's web site. In this study they first used the "Heuristic for Web Communication" which consists of five aspects: display of information, navigation, text comprehension, author and reader roles, and user analysis. Graduate students were assigned a specific heuristic aspect which they used to evaluate the Saarland Museum's website in two hour sessions. After these sessions they discussed with each other in groups of four about their experience. Finally, the usability issues discovered were graded for severity. The most frequently observed issues were navigation and orientation (Schweibenz, 2001).

The next step in this study was to create tasks based on the usability issues discovered in the previous heuristic evaluation. Test users were then instructed to perform the tasks while

“thinking aloud.” During this experiment they were observed and video taped. Through this method of direct observation the usability problems identified by heuristic evaluation were proved to be problems real users face and the developers were made aware.

This case study shows that by smart ordering of methods of evaluation the experimental issues of heuristic evaluation, that the problems identified may not be issues true users would face, can be eschewed. Although the tasks created could have been biased so that the user would find issues with the usability issues discovered in the heuristic evaluation, through proper critiquing of discovered issues this can be avoided.

Another relevant study goes into more detail on the success and limitations of different techniques to gather information. “This case study concerns the resource-limited evaluation of a Web site providing information about an annual review journal, *The New Review of Multimedia and Hypermedia*” (Cunliffe 2001). Although there are many forms of gathering data for use in evaluation of websites there were four used in this case study: direct observation, log analysis, online surveying, and non-user techniques.

Direct observation works by creating a set of tasks and instructing an observed subject to perform them while “thinking aloud”. After a direct observation session an interview or short questionnaire can be given. In the study, direct observation leads to discovery of where users may get confused or not take the optimal path to complete a task. The time to complete tasks is also recorded but its use is questioned based on lack of something to compare it to and its relative unimportance. Interviews provided an insight into thought processes of the users.

Log analysis can be likened to “observing visitors in an exhibition area” (Cunliffe 2001). In the case study the logs were analyzed from a sixteen-day period. The evaluator attempted to discover views per page and patterns of use. The latter proved difficult as the evaluators had “difficulties identifying visitors and defining sessions” and “mapping from what the user did to why the user did it” (Cunliffe 2001). Further, the data that was gathered was not elucidating usability issues but is best suited to show what pages the visitors are interested in and their country of origin.

The evaluation of the NRHM site also included an online survey. The survey asked questions to gather three types of information: demographic, technical, and visit-related. This survey was linked to throughout the web site, as well as, sent out to many mailing lists to increase awareness and responses. However, the response rate was extremely low (2.3 to 5.9%)

which is “not unusual for Web based questionnaires” (Cunliffe 2001). Due to the small number of responses, 5 in all, the data was not considered to be reliable or demographic. No incentive was given for this survey; however incentives are known to increase the rate of responses (Cunliffe 2001). Given more responses this technique may be more useful.

Finally, non-user methods of evaluation were considered and one applied. The techniques generally employ either experts or non-experts, generally the concerned developer, critiquing the website based on a set of heuristics. High and low level heuristics exist. High level heuristics are generally concerned with the overall usability of the site, such as “effectiveness” while lower level heuristics are concerned with how one part of the site reflects the usability of the site as a whole, such as “every page should express one topic or concept” (Cunliffe 2001). In this study a mixture of high and low-level heuristics were used and the evaluator performed the inspection. Considering that someone who is not a user of the site can discover an issue, it is possible that a particular issue, which does not actually affect the user, may be discovered through this technique.

Overall the evaluation highlighted in this study identified a number of issues. The main two problems were “search facilities are not efficient enough” and “index is not consistent across the web site” (Cunliffe 2001). Both of these issues were discovered in all of the techniques except the latter, which were not discovered by the online questionnaire. In fact, log analysis only discovered those two issues and online surveys only discovered the issue with search. While the other two techniques, direct observation and heuristic evaluation, discovered many issues few were corroborated by each other.

These studies highlight the use of different techniques to gather information on how a website is meeting the needs of its users in terms of usability and effectiveness. Aesthetic issues are not concerned here, although information on the look and feel of a web site can be gained through these methods. Overall the two most valuable techniques examined were the direct observation, “think aloud” method and the heuristic, non-user, inspection, although either can have some level of experimental failings. It is not conclusive whether online surveys are effective from the evidence in these case studies, which only included online surveys with such low response rates that they could not be used.

2.4.5 Implementations and Frameworks

The implementation of a website should be a reflection of the needs of the system and its users. This can be achieved by using any of a number of design processes. The general flow of a design process is to first gather requirements of the system from the clients and users, analyze those requirements into separable tasks, implement those tasks, and test the solution. Different design processes will focus on different parts of this flow, change the flow entirely, or revisit parts of the flow periodically.

Any website that serves its user's needs is implemented in a way that maximizes its usability. It is important to consider usability, especially in relation to the target audience, during the design process as a general requirement. As a website evolves it may become necessary to re-implement for usability based on the recommendations and problems discovered through evaluation methods.

Browser abilities and differences should also be considered when implementing a website. Each of the three major browsers, Microsoft Internet Explorer, Mozilla Firefox, and Apple Safari, treat some technology different. These differences are generally well documented and can be found through Internet searches. Websites should be tested on as many browsers as possible to discover these issues.

Technology in web design is constantly being updated to provide more interactive experiences for its users. If a website does not keep its interactive experience up to date it may risk a decrease in its usability. Different technologies can be used in conjunction with each other depending on the needs of the system. Client-side technologies, such as JavaScript, generally deal with visuals and layouts. Further, these technologies can also be used to create dynamic web pages which change their content based on user input, time, or supplied information from the entry point to the page. Server based technologies, such as java server pages and php, allow execution of technical code on the server to provide different functionalities.

Frameworks confer some new functionality to an implementation. A framework will either be the base for the implementation or a component added onto the implementation. Many frameworks can be used to more easily create visually pleasing website layouts while many others provide for more technical solutions such as interfacing with databases or multiple users.

The use of new web technologies is instrumental in attracting the attention of users. A more dynamic web page has the potential to better serve its user's needs by increasing usability.

Further, dynamic web pages have the ability to change their content to match the needs of a user, making that user better able to complete their goals. A website that tries to meet many different types of user's needs is more likely to succeed if they use modern web technology than if they are using static web pages. Websites that deal with communication of events or locations can especially benefit from dynamic pages as it makes the work to highlight special events or featured locations easier and less intrusive.

2.4.6 Archetypal Solutions in Web Design

Archetypal solutions refer to technologies or patterns, which other websites use such as social networking, tagging, and Real Simple Syndication (RSS). These solutions have all been shown to improve different aspects of websites such as usability, community building, and information gathering.

Social networking implies the ability to interact with other users. Many large-scale social networking websites exist such as Facebook©, MySpace©, and Orkut. Creation of fan pages and groups on these large-scale sites can be leveraged to increase community on a different website. For example, a web site might have fan pages or groups on the large scale sites that are meant to bring users to that website to find the information or use the services offered or advertised.

Alternatively, social networking features can be implemented on a website to increase community in relation to the subject matter. Social networking is primarily a tool of community building. There are many aspects of social networking that may be valuable to implement. These include profiles, discussion boards, event planning and calendars, and possibly other more content oriented functionalities.

Profiles are created by the user and are displayed or searchable for. Generally, a profile allows the user to share information about their self, show what they are interested in, and possibly display events they plan to attend. A user is able to "friend" or "connect" with someone else who has a profile assuming they also have a profile. This act is either confirmed or denied by the user being friend-ed. Becoming connected on a social networking site can change privileges those users have in relation to each other. Once connected they may be able to invite each other to events, send each other messages, or have the ability to see more information about each other.

Discussion Boards allow users to communicate with each other. A user will be able to post new topics or replies to topics within different areas of interest. For example, a museum website discussion board might include an area of interest in relation to the museum content, an area of interest where users can post topics about how to improve the museum, and an area of interest that is for topics not related to the museum. There will usually be some set of moderators who monitor the discussion boards for inappropriate or off-topic content. This builds community through introducing users to one another through posts and replies. Discussion boards usually serve as a forum for debate and camaraderie.

Event planning allows users or other clients to schedule events. In the case of a museum this would be very useful to schedule when exhibits run. Further, it allows users to see which other users will be attending the event.

Other functionalities that are subject matter specific can provide intriguing ways for users to interact with each other. For example, in a website with museum content there could be a functionality that allows users to view a piece of artwork and discuss it in real-time with other users who are viewing the same piece.

Tags have recently come into wide use especially in sites such as digg.com, Slashdot.com, flickr.com, and blogs. Tags are similar to keywords that relate to the post or article. Tagging can be either user-generated or automatically generated. An example set of tags for a photograph of a sunflower are “garden, nature, sunflowers, flowers”, see Figure 5 below (Flickr picture). The usefulness of tags is that they interface with a database with links to items that have been previously tagged. For example, if the user were to click the Sunflowers tag in the previous example it would show them pictures or links to pictures, which are also tagged as “Sunflowers.” This would be helpful for a museum list in that if each museum was tagged there could exist some infrastructure such that if the user is looking at a botanical museum (presumably tagged as “botanical”) they could click on the “Botanical” tag and find other museums they might be interested in. This would increase their ability to find the information they are looking for, increasing the efficiency, and thereby usability, of the site. Further, this could increase the preciseness of a search through the list of museums.



Figure 5: An Example of Tag Usage from Flickr.com

<http://www.flickr.com/photos/chrisser/122247277/>

Real Simple Syndication, more commonly known as RSS, is an “extensible metadata and syndication format” (RSS-DEV Working Group 2000). RSS is used by websites to publish regularly changing or new content. When a website uses RSS to publish content it is termed an RSS feed. A user who consumes the feed would be said to subscribe to the feed. Many websites use feeds to publish their content. An example of the widespread use of RSS is that all of the New York Times’ blogs have a feed, which one can subscribe to. Most RSS feeds require a feed reader or an RSS aggregator to be read. An example reader is Google Reader, created by Google, Inc (www.google.com/reader). This would be relevant to museums most specifically in relation to exhibits. An RSS feed could be created which publishes either what exhibits are running on that day every day or what exhibits start or end on that day.

These solutions have all been successful for the major websites that use them. The popularity of these websites does, however, have some effect on how useful its users find them. If there were, for example, three users participating in a discussion board they would find that they have a maximum of exactly three points of view on all of the topics they discuss. If instead there were hundreds of users using the same discussion board many different viewpoints would

emerge allowing the discussion to go more in depth. This is important to consider when choosing if a feature is applicable to a website's situation.

Museums on the Internet today do use some of these solutions. For example, the Worcester Art Museum based in Worcester, Massachusetts has a discussion board and a way to get updates on their museum through e-mail. Many other museum websites contain a section where news can be read. Further, in the MUSEK museum evaluation framework there are sections which refer to whether the website allows for users to interact with the museum, each other, or the museum's staff. They state:

“A visitor would welcome the ability to interact with a museum's site. This can be accomplished using either asynchronous (e.g. e-mail, sms, alerts, newsletter) or synchronous (e.g. chat, telephony, videoconferencing) communication. Visitors would like to have the ability not only to interact with the site but also to communicate with the museum's staff as well as other visitors and museum's friends. They would exchange information, news, opinions, and suggestions. They would also participate in surveys and polls. The support of forums and e-communities (e.g. friends of the museum, members, volunteers or sponsors) enhances its quality.” (Pallas, 2008)

This quotation alludes to the fact that all of these archetypal solutions would be worthwhile to investigate for implementation in any museum website as it enhances the quality of that website. Although MIK is not a museum itself it can benefit from these solutions as well since it can be seen to function as a collection of museums. Being a collection of museums may promote a stronger usage of the features outlined here if they were implemented because there will be many more users centralized to the MIK website as opposed to the website of one museum.

2.5 Summary

The exploration of MIK, marketing, and web design was very relevant to this study. We proposed recommendations to improve the MIK website and discovered other ways to reach broader audiences. This effort required a good understanding of MIK and its marketing needs. MIK has many member museums with many unique subject matters. Since we were dealing with museums it was important to understand the culture surrounding them as well as what visitors may be looking for. The Internet has revolutionized marketing leaving many organizations, many of which lack funding, behind. MIK is attempting to avoid this by making improvements to their current website and preparing for a future redesign of their website.

It is important to consider the user's perspective when designing a product such as a website. If a website is not usable it will most likely not serve its purpose or effectively communicate its objectives and information. Our study of usability and the evaluation of websites allowed us to discover issues on the existing website. Some of the evaluation techniques explored through case studies in section 2.4.4 allowed us to gather information on how users typically interact with the website and what more they desire to be able to do or find on the website.

3. Methodology

The ultimate goal of our project was to aid Museer I København (MIK) to better promote their member museums by making recommendations to improve their website and overall marketing strategy to reach a broader audience. We achieved this by attaining the following objectives:

- Analyze and evaluate the current website.
- Analyze and evaluate MIK's current marketing strategy.
- Identify, analyze, and assess the needs of the common MIK website users.
- Assess the needs of foreign and local visitors of MIK member museums.
- Assess the marketing needs of the MIK member museums.
- Propose modifications and make recommendations for implementation to MIK.

Figure 6 displays our methodology flowchart, which provides an overview of how we achieved the stated objectives.

Methodology Flowchart

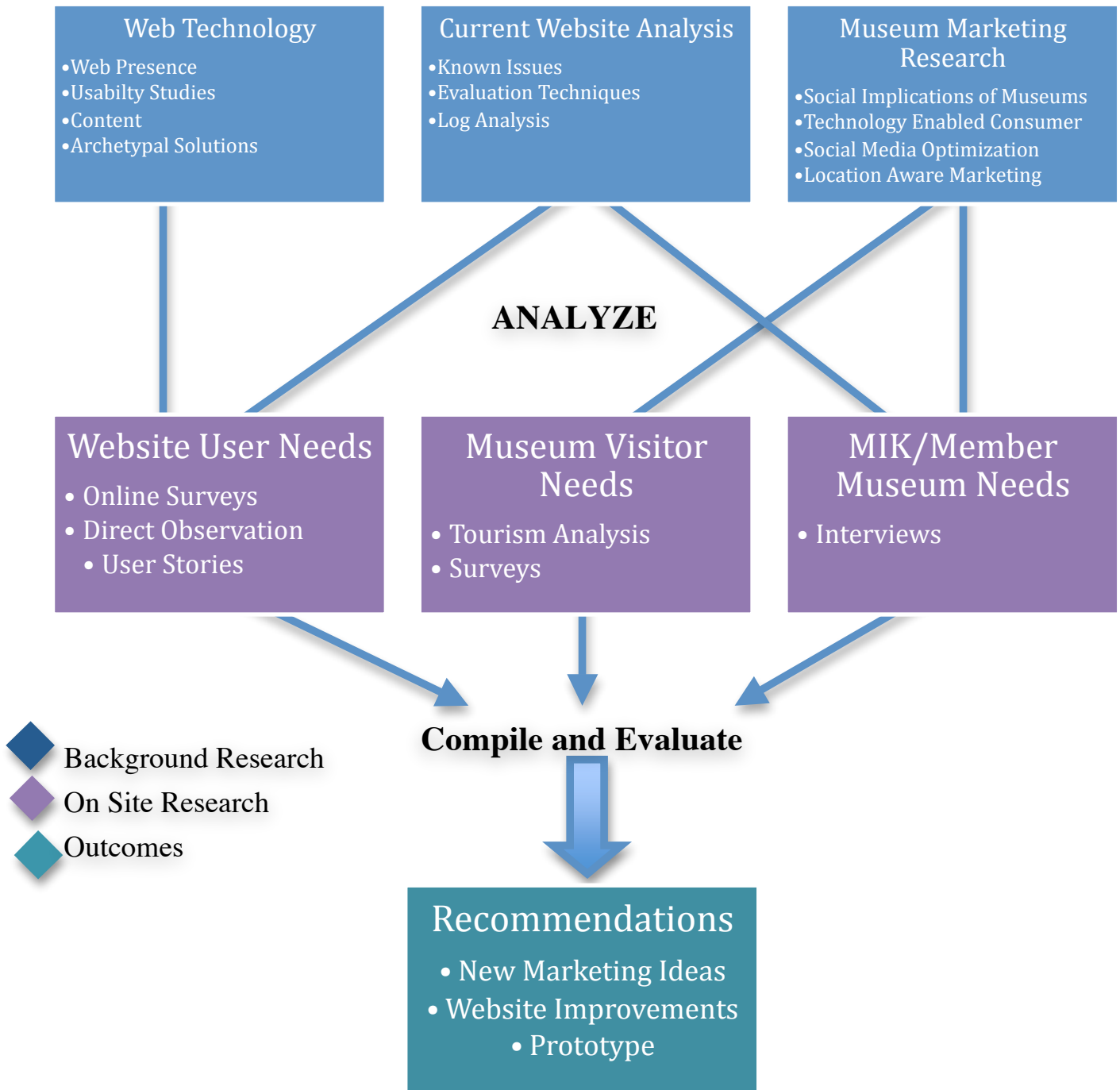


Figure 6: Methodology Flowchart

3.1 Analysis and Evaluation of the MIK Website

An evaluation of the present product is important to consider before making recommendations for the improvement of that product. This is also the case for a website. Evaluation is important to expose issues with the current product. There are many evaluation frameworks, which have been designed specifically for the analysis of museum websites. From these frameworks and case studies different techniques can be gathered such as direct observation and log analysis. We used some of the techniques outlined here to detect current issues, discover new issues, and analyze the current user base of the website. However, for the scope of this project, an extensive evaluation could not be conducted due to time and financial constraints, however it was not necessary as we had already discovered key areas that needed to be addressed through simple observation of the current website.

3.1.1 Known Problems

The purpose of the MIK website is to attract users to the many member museums as well as provide valuable information that will assist them in visiting the museums. Unfortunately, there are a few issues with the current version of the website that directly interferes with this goal. The issues presented here are issues that we discovered through our initial research that made navigation of the website difficult or that we foresaw as issues in achievement of the stated goal. Most of these issues stem from the fact that the museum list is difficult to find, navigate, and customize. These issues had an effect on the user stories that were generated for the website (see section 3.2.2).

The first major issue is that the homepage is difficult to navigate and hard to read. Figure 7A shows an image of the homepage as it was displayed on February 15th, 2009. The main issues here are that the links to the different sections, displayed on the top menu bar, Figure 7B, are unreadable as they are directly adjacent to each other. They appear to be one long link with nonsense as text. However, upon a mouse over of any of the links, that link changes color allowing limited readability. This is demonstrated in Figure 7C.

A:



B:

NEWSMUSEUMS YOUR GUIDEMIK

C:

NEWSMUSEUMS YOUR GUIDEMIK

Figure 7: The Current MIK English Website

Another issue on the homepage is the inlaying of text over images, which is confusing, unreadable, and unappealing. A demonstration of this is seen in Figure 7A, above, on the left side of the image.

The most severe issue observed was the current state of the list of member museums. It is currently a list of museums in alphabetical order with a thumbnail photograph presumably supplied by each of the museums (see Figure 1). This is not very useful to a user who may not know which museum they are looking for information on. Genre, size, atmosphere, location, admission charges, weekday availability, or other characteristics are deciding factors in whether

or not a visitor will attend a certain museum. The fact that there is no way to discover various characteristics of the different museums without reading through the information on each museum's page may deter a user from using the website to choose a museum to visit. The inability to find information when one does not know what they are precisely looking for is a concern from a usability standpoint as well as a blocking factor to the website reaching a broader audience.

With these preliminary observations taken into consideration, we arrived in Copenhagen and conducted interviews and meetings with the MIK website staff. MIK Staff meetings concerning the website were conducted with Sophie Paisley and Signe Lundgren beginning on 23 March 2009 and continuing once a week until 6 May 2009. During these meetings, we focused on current problems with the website and brainstormed possible ways to correct them.

3.1.2 Evaluation Techniques

There are several methods for gathering information about users of a website or evaluating websites. The four that were outlined in section 2.4.4 were direct observation, log analysis, online surveys, and heuristic analysis. Since MIK was attempting to broaden its audience it was important to identify issues as seen by the users. This was done using the first two methods as they dealt with direct interaction with users of the website.

Evaluation schemas such as Garzotto's Systematic Usability Evaluation (Garzotto, 1998) and Pallas's MUSEK evaluation (Pallas, 2008) provide information on what a website should contain to satisfy usability requirements. Both evaluation methods employ heuristics for determination of usability. As explained in section 3.1.1, we had already discovered issues which affect usability of the website and determined that a thorough evaluation of the website was necessary. We assumed that the issues that we identified would also be seen by most, if not all, respondents to any survey relating to the website. In addition, a thorough evaluation would have required a great deal of time and could have increased costs, as consulting experts would have been a necessity. However, some of the methods introduced in the evaluations methods were useful for classification of issues and creation of user stories where usability is a concern.

3.1.2.1 Direct Observation and Log Analysis

The two evaluation methods we used included the direct observation “think-aloud” method and log analysis. Direct observation was used to examine how users interact with the website and if they were able to complete simple tasks. This either confirmed that the website was usable as far as the information seeking needs of some users or allowed us to discover new issues that needed to be addressed. The direct observation method is performed by either giving the user a task to perform or by having them attempt to find the information they were originally using the website to find. The user is instructed to “think aloud” as they complete their task. We conducted these experiments leveraging the user stories outlined in section 3.2.2. These trials were conducted on 28 April 2009 at 42 Classensgade in Copenhagen, Denmark. Participants included students and an advisor from WPI completing their projects in Denmark. Eleven trials provided enough data that patterns were observed and if there were any other issues they would have been discovered. Since these trials were being performed mostly for the sake of discovering new issues, generalization to all users of the website and statistical importance is not required. It is important to keep in mind that all of the participants were very Internet savvy, and therefore they may have been able to navigate the website easier than a casual website user. In order to gain more feedback regarding useful features, issues, and suggestions for improvement, we also conducted exit interviews of the participants at the conclusion of the direct observation sessions.

Log analysis is the act of scanning the logs of a website which detail sessions opened by users, including how long a page was viewed, which country the user originated from, and when they accessed the page. This method was used to discover how website users currently use the website. In specific, through log analysis it was discovered where various website users were coming from, to determine how many unique users visited the website within a certain period of time, and to determine how users were using other links to get to MIK’s website. MIK’s information technology department already tracks this information and they analyzed the data to find the desired information and provide a baseline for current use of the website prior to our study. In addition, we were able to extract some of this data in order to provide ourselves with general user statistics. After our project is completed and recommendations are implemented, this information can be used in part to determine the success of these improvements. This method was not used to discover issues that users are having with the website as, according to

the case study in section 2.4.4, log analysis has not proven to be a reliable source to find issues that users are having (Cunliffe, 2001).

3.1.2.2 Online Survey

With the help of MIK's information technology department, we created an online survey using the SurveyXact program to discover more about the users of the website. This survey was designed to be displayed over the content on the homepage upon a user's arrival. The survey asked a few short questions to give MIK more information about who the users were and how they were using the website. The user will be able to enter their responses to the questions by either typing in a textbox or selecting from a list of responses depending on the particular question. This allows for the discovery of issues users are having with a page's content and functionality as well as elements that users find particularly useful. As this is a mostly qualitative survey, generalization of all users of the website and statistical significance is not required. The survey was primarily to better understand who the users are and to identify any problem areas on the website. If a respondent indicated a page had a certain issue, MIK can make note of this issue and correct it. Unfortunately, due to technical difficulties, this survey could not be implemented during the course of our time in Copenhagen. Once it is implemented, MIK can utilize it to discover the previously mentioned information. The survey questions can be seen below.

1. Gender (M/F)
2. Age (18-25, 26-39, 40-55, 55+)
3. How did you find this page? (Open-ended)
4. Did you find what you were looking for? (Yes/No)
5. Suggestions for page improvement (Open-ended)

3.2 Analysis and Evaluation MIK's Current Marketing Strategy

Before recommendations could be made to improve MIK's marketing strategy, an evaluation of their current strategy was necessary. In order to complete this, we conducted interviews with a few members of the MIK staff. Sofie Paisley and Signe Lundgren, the web page editors, were able to provide information on the current utilization of the "Museum Portal" with regards to marketing and advertising. Lise Korsgaard, the head of communication, was able to provide information on MIK's complete marketing strategy. With the knowledge gained from

these interviews, we were able to make recommendations for the expansion of their marketing strategy. A summary of this interview can be found in Appendix K.

3.3 Identification, Analysis, and Assessment of Needs of MIK Web User Base

The next part of the project was to assess the needs of MIK website users. Before the users' needs could be addressed, the user base needed to be defined and analyzed. This was done through both the information collected via log analysis provided to us by members of the MIK staff and through surveys conducted at the Tourism Information Center and member museums. In order to assess these users' needs, we preliminarily determined a set of user stories that reflect what a user might try to accomplish while using the website. This set of user stories was used during direct observation evaluation techniques in order to assess the usability of the website for these common goals. We also observed current web solutions that may be applicable to the MIK website. These archetypal solutions, found in section 2.4.4, could allow the MIK website to better serve its users. Through our preliminary analysis we also noticed the difficulty a user might have finding the English MIK website through basic searching or prominent links on other pages such as travel websites, museum directories, or other information consulted by tourists. A survey was conducted to discover any other common needs a user may have as well as their general information seeking habits. This survey was conducted at the Tourism Information Center in Copenhagen, Denmark on April 3rd, 14th, and 19th on 75 visitors to the center. Surveys were also conducted at the Frilandsmuseet, the Danish Jewish Museum, GL Strand Museum, and Danish National Museum (See section 3.4). These surveys were instrumental to the creation of new user stories for future improvements to the MIK Website and can be found in Appendices B and C. The data from these surveys can be found in the file "Visitor Survey Results.xlsx."

3.3.1 Types of Users

For our project, it was important to determine the user base and be cognizant of their specific needs. Incorporating information and applications that would be of interest to different age groups is one area that should be considered. For example, as many adolescents are familiar with social networking, it may be useful to incorporate a type of social networking such as a forum or blog where users could interact. It is also important to note the variety of experiences a museum visitor is seeking. In addition, one must consider the origin of the visitor. A native

tourist may find that an address to a museum is sufficient whereas a foreign tourist may require additional information to easily locate the museum of choice. In order to accommodate these different groups our surveys, located in Appendices B and C, were carefully constructed to gather useful information about the user demographics and their specific needs.

3.3.2 Surveying

Surveys are powerful tools that can reveal information about a large population without actually involving the entire population, so long as the methodology is correctly established and adhered to.

Our survey design addressed three principle research goals; the proper selection of survey subjects through sampling, questions designed in order to most efficiently draw relevant information, and to make use of the best data collection method for the situation. Each of the three aspects must be considered in order to create a reliable survey.

Proper sampling methods are paramount to proper survey design, and enable researchers to draw data about a large population through a smaller number of subjects. Statistical probability theory governs most fixed and objective sample populations. To achieve a reliable sample, it is important to define a sampling frame, and understand effective sampling techniques

A sampling frame is the list of all candidates who are eligible to be sampled. By defining a list, it prevents useless data from being drawn. A defective sampling frame can significantly deteriorate the integrity of results, as the data may be misrepresentative. Because the purpose of the sample is to represent a larger population, it is important that all segments of the population be represented in the sampling frame, and subsequently in the sample used.

Certain surveying techniques have natural sampling pitfalls, and it was important to consider these when designing the survey. For example, a telephone survey will not address the entire population, but rather would represent only the population that owns telephones. It is important to note that while conducting a survey at member MIK museums, we obtained the opinion of the population that attends the museum, but would not get valuable information about those who have used the website and did not visit a museum as a result. Though this may seem obvious, such considerations were important to note when designing the sampling frame.

3.3.3 Survey Design

We performed a simple random sampling of visitors in MIK member museums in order to survey opinions about MIK advertising and favored marketing methods. The survey was not completely random however, because we were only able to survey English-speaking tourists. This did not hinder our ability to draw conclusions from the data however, because our goal was to understand what English-speaking tourists desire in the MIK webpage and how to better reach that audience. It should be noted that as we were trying to discover general trends in the tourists' information seeking habits, the day and time of year that we chose to interview visitors at various museums was not a concern. We selected our interview days based on recommendations from the museum directors as to which days were generally the busiest for the given season. We then stratified the results based on whether the subject was foreign or native to Denmark.

The purpose of simple random sampling was to randomize the respondents so that the sample population would best represent the general population it aims to model. By randomly selecting museum goers, the results not only provided information about each age and nationality we aimed to explore, but also provided information about the overall museum visitor population. If we were to select people based on their known age and nationality, the results would not provide valid information about the overall visitor group. The data would be invalid because it would not possess the necessary element of randomness and would skew our results based on the preselected users. We avoided surveying homogeneous groups of tourists such as a full bus of tourists with a similar background. This was done to avoid a surveying bias.

The survey was conducted orally to reliably obtain results and to maximize the amount of useful information gathered. The purpose of the questions was to find out how the visitors discovered the museum and which marketing techniques they find most effective (television, Internet, published literature, et cetera). The survey also inquired about their usage of the MIK website, and any feature they remembered disliking. If there was a trend in unfavorable website aspects, we recommended that MIK remove them. The surveys in their entirety can be found in Appendices B and C. The survey was used to gain a general knowledge of the age range and needs of foreign museum visitors. The data from these surveys can be found in the file "Visitor Survey Results.xlsx."

3.3.4 User Stories

These user stories listed below were used with direct observation as described in section 3.1.2.1. These direct observation sessions were performed in small groups of about three people per session. At the conclusion of each session, the participants were asked to discuss any issues they encountered with the website as well as elements they found useful. In addition, we asked the participants for any additional features they would find useful in the website as well as any suggestions for improvement.

User stories refer to simple tasks that would be performed by an average user in the general course of using the website (Steinberg, 2007). In this project the user stories were used as tasks, which users performed during a direct-observation usability experiment.

In software engineering, user stories are gathered from requirements set forth by the client (Steinberg, 2007). However, in this project the user stories were reverse engineered from the final product. In this case, the final product is the current website, containing the issues we already identified. These can be perceived as user stories which the current MIK website already satisfies to some degree. The original user stories we created were not inclusive of all viewpoints. These user stories evolved and expanded based on observation of use habits discovered during direct observation trials and through the online survey feedback.

As changes are made to the website, there are other user stories that will arise. These other user stories may be interesting in the feature that they imply but will not be usable in the analysis of the website because they will not exist until the improvements are made. These outlying user stories were useful as possible recommendations for features and may be consulted during the possible development of a prototype redesigned website.

User stories generally involve one or many “actors” who interact with the use case in some manner (Steinberg, 2007). In most user interface user stories one of the actors will be the user, who interacts with the user interface, and another actor will be the system, which may enact some change based on user input. This change by the system could be as simple as changing some element in the display or as complicated as calculating an integral.

Prioritization of user stories is essential in software engineering as it dictates what should be focused on first. Priority is given to items on which other user stories directly rely or user stories, which promote the eventual goal of the product the most. Although we were not designing the

website, the priorities given here are mainly based on their ability to achieve the main purpose of the website.

Reverse Engineered User Stories:

- Find a museum you are interested in by name
 - Actors: User
 - Description: The user should be able to find information on a museum given that they know the name of the museum.
- Find out about highlighted exhibits
 - Actors: User, MIK Staff
 - Description: The user should be able to find information on special events or exhibitions. MIK staff performs the determination of which events or exhibits should be highlighted.
- Find out more information about MIK and its purpose
 - Actors: User
 - Description: The user should be able to find information on MIK.

Proposed User Stories

- Find a museum you are interested in by genre
 - Actors: User
 - Description: The user should be able to find information on a museum that relates to a given genre or should be able to find out that there are no museums of that genre.
- Discover museums based on location
 - Actors: User
 - Description: The user should be able to use a function on the website that will allow them to find museums based on their location. Users should be able to find museums that are in close proximity to a specific point of interest such as their home or hotel.
- Find out about Exhibits that are running within a given date range
 - Actors: User, MIK Staff
 - Description: The user should be able to use a function on the website that will let them know what exhibits are currently running, are running between 2 given dates. MIK Staff should keep the database this information is retrieved from up to date.
- Subscribe to an RSS Feed which updates regularly
 - Actors: User, MIK Staff
 - Description: The user should be able to subscribe to an RSS feed, which contains information pertaining to museum exhibits that are running, special events occurring, or new information on museums.
- Read a blog about museums
 - Actors: User, MIK Staff, Member Museums
 - Description: The user should be able to read a blog written either by MIK staff highlighting, for example, a genre of member museums, or a blog that can be contributed to by member museums which may be about a new exhibit

starting or future plans. MIK staff would screen these blogs before being posted to prevent unfair use.

- Interact with other users
 - Actors: User
 - Description: The user should be able to interact with other users. This can be done in numerous ways including social networking methods, forums or discussions boards, and being able to rate or comment on a member museum.
- Tag Cloud
 - Actors: Users, MIK Staff
 - Description: Box with tags we have used and vary by size corresponding with the frequency at which they are used. MIK staff would assign tags to museums based on popular topics of interest.

3.3.5 Prototype creation and planning

To demonstrate the issues of the current museum list as well as to demonstrate a solution a prototype for a museum filter for the museum list was created. The main specifications for this software development were that the user would be able to discover museums they may be interested in by entering information into the system and then being displayed those museums that fit the description. This requirement became the basis of the filter, which was designed. In this design a user would click checkboxes, which correspond to different filtering options. The filtering options were based on the categorizations created by the IQP performed for MIK during 2008. If an option was used which may have subcategories, such as a subject, those subcategories were given checkboxes once the super-category's checkbox was checked. Please see the following design sketches for more information on the design process and ideas.

Based on the experience of the developer of this prototype JavaScript and HTML were selected as the programming languages. JavaScript was selected because of its ability to add and remove HTML elements on the fly without having to reload the page. This would allow the museum list filter to function efficiently. HTML was the language the current museum list, without the filter, was written in and was used in order to not have to rewrite the existing webpage in another language. Although there were advantages to rewriting the current museum page either in HTML or in another language it was decided to be simplest to modify the existing museum list's HTML to interface with the JavaScript that was created.

The museum filter prototype consists of a modified museum list, museums.html, and the filter controlling JavaScript, museums.js. The only modifications made to the museums.html file were to add ids to certain elements in order to be able to easily retrieve those elements within the

JavaScript program. The JavaScript contains several functions for altering the HTML of museums.html on the client's side to filter museums based on the currently checked checkboxes.

This prototype was used in conjunction with the user story titled "Find a museum by genre" to determine if users felt that it helped them complete that user story during direct observation. In this case users were first asked to find a museum by genre without the filter, and then with the filter. Allowing users to use the prototype during direct observation allowed insight into the usability of the filter itself and the ways in which it increased usability of the museum list as a whole. Appendix L contains the preliminary design diagrams for the Prototype filter. Appendix M includes a demonstration of the Prototype Filter. The source code can be found in Appendix N and the files pertaining to this prototype can be found in the folder "MIK Filtering Prototype."

3.3.6 Comparisons of Web Technology

The archetypal solutions presented in section 2.4.4 comprise a short list of possible improvements that could be made to the existing MIK website to increase user interactivity and time spent by users browsing the site for information. Although we would initially recommend that all of these solutions be considered during the next redesign of the website, we drafted questions in the survey we conducted to address whether or not visitors would find such solutions helpful to their experience.

3.4 Assessing the Needs of Visitors of MIK Member Museums

In order to assist MIK in promoting their member museums it was necessary to understand information needs of the visitors of the MIK member museums. Visitors to the member museums are different from the users of the MIK website in a few ways. These visitors have already discovered the museum by a particular method and have arrived at the museum. They may or may not have used the MIK website to find their information and it was important to our study to examine this type of visitor. Although MIK website users can also be classified as visitors to member museums, the reverse is not always true. In order to do this we conducted surveys of the visitors to several member museums. When conducting a survey one must take into account the sampling demographics and the manner in which the questions were asked as they affect the validity and reliability of the survey.

It was important to understand how many tourists will visit Copenhagen during the period of our data collection; 15 March through 15 May. According to the official tourism site for the greater Copenhagen area, visitors to Copenhagen rent 350,000 beds during the month of April. Logistically speaking, our group was not able to survey a large enough sample size in order to have complete statistical confidence in the data. Conversely, each tourist we spoke to provided valuable insight and ideas, and therefore we would not be able to incorporate all the ideas provided by said large sample size.

We conducted 75 surveys of randomly selected tourists at the Tourism Information center, 15 at the GL Strand, 31 at the Danish National Museum, 6 at the Danish Jewish Museum, and 31 at the Open-Air Museum over the course of 6 days in April. 75 surveys at the Tourist Information center and 83 surveys total at the four museum provided enough opportunities for suggestions for tourists and allowed us to construct a picture of the overall tourist group, while simultaneously allowing us to process each survey completely and incorporate worthwhile suggestions from the survey subjects. The data from these surveys can be found in the file “Visitor Survey Results.xlsx.”

3.4.1 Tourism Analysis

In order to make insightful recommendations to improve the website in a sense that it can reach a broader audience; we first examined the tourist user base and the effectiveness of MIK’s current marketing strategy.

- We assessed the regions from which the visitors originated.
- We addressed additions to the website that may be more useful to foreign tourists such as better directions to museums and cultural information.
- We evaluated the effectiveness of the current ways that MIK was reaching out to foreign tourists.

In order to accomplish this we conducted short surveys of visitors to the Tourism Information Center in Copenhagen as well as the Danish Jewish Museum, GL Strand Museum, Danish National Museum, and Frilandsmuseet. The purpose of the questions was to discover the tourists’ information seeking habits and find out which marketing techniques they find most effective (television, internet, published literature, et cetera). The survey also inquired about their usage of the Internet as a means of seeking tourism information. Both surveys can be found in

Appendices B and C and the data from these surveys can be found in the file “Visitor Survey Results.xlsx.”

3.5 Assessment of the Marketing Needs of the MIK Member Museums

In order to help MIK better promote their member museums, we must understand what the current marketing needs of the museums are. In addition, it was helpful to learn what has been done in the past by the individual museums in terms of marketing and web advertisement. To accomplish this, we conducted interviews with several museums.

3.5.1 MIK Member Museums

Upon arrival in Copenhagen, we arranged to meet with various member museums and interview their directors. Our sponsors arranged with whom and how often we met with these museum directors. In order to gather information representative of the museums that MIK promotes, we arranged to meet with directors from small, medium, and large museums as well as museums that are outside of Copenhagen. The Danish Jewish Museum is a smaller museum that generally receives one-time visitors seeking various experiences. As it has one permanent exhibit, it attracts a different type of visitor than many other museums. The GL Strand is a medium-sized art institution, situated in an 18th century building creating a very unique viewing experience. Their ever-changing exhibition by world-renowned artists brings a diverse crowd to this museum. The Danish National Museum is the largest and most widely visited in Copenhagen. It is not an art museum, but rather a museum of history, which does not charge admission and draws a wide range of visitors from many different countries. The Frilandsmuseet or Open Air Museum is a large museum, located outside of Copenhagen in Lyngby that is generally visited by local families looking to enjoy a day out together. Like museums of its type, the Frilandsmuseet provides visitors with a look at what life was like 200 years ago in Denmark. During our interviews with the directors of member museums, we focused on the questions found in Appendix D.

In addition to these questions, we also posed further questions that were specifically tailored to the individual museums we were visiting in order to obtain information on any additional issues. From these interviews, we hoped to gain an understanding of their current

marketing needs, relationship with MIK, and discuss their current marketing strategies. Summaries of these interviews can be found in Appendices G through J.

4. Results and Analysis

In this section, the results for each prescribed method of data collection are described. Following each of the results sections, there is an analysis that explains how this data has been interpreted in order to aid the project goals. All of the information presented in these sections was analyzed and interpreted before conclusions and recommendations were made.

4.1 Direct Observation of User Stories

Each participant of the direct observation study was given a series of tasks to complete on the website. As they completed each task, they were then asked to “think aloud” and their comments, as well as the manner in which they went about the task were recorded. In order to both assess the website’s issues and acknowledge features that work well, we also asked the participants to tell us about any issues they encountered while looking for information as well as to comment or identify which elements of the website they found effective.

The first task participants were asked to complete was to find information about a museum when given the name of that museum. All of the participants were able to successfully complete this task, however they did this in a few different ways. It was our hypothesis that most people would click the link to the museum list found on the homepage, however this was not the case. There was a split in our test group with a slight majority (6 out of 11) using the search function over the museum listing. Those who used the search function noted that it was not as effective as they hoped as the desired museum was not always the top hit on the list. Others noted that the text on the individual museum page seemed to disappear behind graphics, and some text was overlaid on graphics making it hard to read. The participants remarked that the museum list in alphabetical order was useful if you knew which museum you wanted information about. Table 1 shows how the participants attempted to find the information as well as problems and useful content they encountered on the website.

Table 1: User Story 1- Find Information About a Museum by Name

Method
(3) Went to list of museums and scrolled
(2) Went to list of museums and clicked letter link
(6) Used search function to find museum, but it didn't work well
Problems:
Search function does not work well as desired museum is not first hit
Text on museum page disappears.
Text on museum page is overlaid and hard to read
Pros:
If know which museum you want, alphabetical listing is helpful
Link to museums is apparent on homepage

The second task participants were given was to find information about the featured museums or exhibitions. This information is highlighted on the homepage and changes weekly. Most participants were able to find the information on the homepage and click the links provided to discover more information. Two participants clicked the “News” link and were able to find the desired information. Two participants tried to use the calendar to search for events on a particular day or month and found it to be broken. Although each participant was able to find additional information about featured exhibits and museums, they noted that there was no single page that contained all the desired information, and that multiple links could be used. They suggested having a page devoted to featured events and exhibits. The general opinion of the participants was that the information provided was useful and they liked the use of graphics, although care should be taken to avoid creating a cluttered homepage. Table 2 shows how the participants attempted to find the information as well as problems and useful content they encountered on the website.

Table 2: User Story 2- Finding Featured Museums/Events

Method
(2) Tried clicking on news link (1) Used search function and found link (6) Used a link on homepage (2) Tried using calendar
Problems:
News link is misleading Calendar function is broken No single page containing all upcoming exhibits Bottom of homepage is too cluttered
Pros:
Once find information, it is useful Graphics are useful and appealing

The third task participants were given was to find information about Museer I København. The majority of participants clicked the MIK link on the homepage with only one using the search function. Participants noted that not all of the information they found on the page was in English. In addition, the term “Secretariat” was unfamiliar and confusing to most participants and made finding further information about the organization difficult. In addition, the term MIK changed to MIC on the English page about the organization. Although this was understood as a translation, most participants agreed that the name of the organization should remain the same across both pages. Table 3 shows how the participants attempted to find the information as well as problems and useful content they encountered on the website.

Table 3: User Story 3- Find Information About MIK

Method
(10) Used MIK link on homepage then Secretariat
(1) Used search function
Problems:
Secretariat term is unfamiliar/confusing
Information not all in English
MIK/MIC Confusion
Link to additional information is hard to find
Search function did not work
Pros:
MIK link is easily accessible

The next task participants were given was to find a list of museums that fit into a particular genre. Although there is no way to currently do this on the website, we wanted to see how participants tried to do this in order to make the best possible recommendation to MIK. We noticed that most participants went directly to the museum list and looked for a way to filter the museums. The others tried to use the search function or the site map. This was consistent with what we had expected, and served as a good segue to the next and final task. Table 4 shows how the participants attempted to find the information as well as problems and useful content they encountered on the website.

Table 4: User Story 4- Find a Listing of Museums by Genre

Method
(2) Search Function
(8) Museum List
(1) Site Map
Problems:
Search function could find a few museums, but not a list
No way to sort through the museum list easily
Site map is very poorly laid out and confusing
Pros:
Search function works if genre is in title of museum

After participants were unable to produce a listing of museums based on genre given the current website, they were asked to perform this again using a prototype filter that we developed. (See Section 3.3.5). All of the participants were able to easily use the filter to produce a list of museums that had exhibits that fit into similar categories. All of the participants found this filter useful and noted that this was a useful tool if a user was unsure which museum they wanted to visit. One suggestion they had was to incorporate a search function within the filter to allow for even easier browsing of the museums. In addition, other participants suggested that we add more categories for the filter such as location and cost of the museums. Table 5 shows how the participants attempted to find the information as well as problems and useful content they encountered on the website.

Table 5: User Story 5- Find a Listing of Museums by Genre Using Prototype Filter

Method
(11) Selected boxes to filter museums
Problems:
No search function within filter
Pros:
Very easy to use
Good if unsure exactly which museums to select
Keeps alphabetical listing

After finishing the above listed user stories, the participants were asked to discuss elements of the website that they disliked or noticed problems. A listing of these issues can be seen below. The main issues the participants noted were that the MIK homepage was a bit cluttered and that the links are not always where they would expect them to be. Table 6 shows a list of website issues users discovered.

Table 6: Other Issues with the Website

Additional Website Issues
Only the MIK icon works as a link to return to the homepage, not the text
Search function does not work well
Site map is hard to use and confusing
Calendar function does not work
Homepage is a bit cluttered
Some links are difficult to find, especially to return to the homepage
Website does not fill browser area

After discussing problems with the website, we asked participants if they had any ideas for how to improve the website or if there were any additional features they would find useful. A complete listing can be seen below. The most popular suggestions were to implement the prototype including more filter categories such as museum size and cost as well as to allow

website users to rank the museums using a star system and leave comments about their experience. In addition, participants felt that having a brief slide show or a creative background on the individual museum pages would help users discover more about the museums and create a more personalized experience. Table 7 contains a list of website improvements participants thought would be beneficial.

Table 7: Participant Suggestions for Improvement

Suggestions for Improvement
Implement Prototype and improve search function
Have a star rating system for museums so users can "rank" them
Allow users to comment about their museum experience
Have more pictures/slide show on individual museum pages
Be able to sort museums by locations
Google Maps for museum location and tours
Tag Cloud
Social Networking Tools (RSS Feeds/Blogs/Facebook©)
Tags for Specific Artists
Improve Calendar, maybe make it subscribe able

4.2 User Statistics Results from Log Analysis

Information about users of the website was obtained by MIK using two tools which analyze traffic on the MIK website. The log analysis results presented here were obtained from MIK staff. The tools they used to analyze the traffic on mik.dk were Google Analytics and Azero.dk. Both of these tools are used by numerous organizations to track Internet traffic on their sites. The specific pieces of information that were requested were the following questions from data collected between 22 April and 6 May:

- Top 3 Nationality/Origins of Users of the English MIK Website
- Top 3 Nationality/Origins of Users of the Danish MIK website
- Average number of users per month since you started collecting info (April 2007)
- Top 5 places website users come from to mik.dk on the web on both English and Danish website

Unfortunately the first two points had to be combined into one as the way that mik.dk is constructed did not allow the English and Danish home pages to be discerned between. According to Google Analytics, the top three users of the site originated from three local countries, Denmark, Sweden and Norway. Other major countries were also represented with the United States being the 4th top visitors and other western European countries accounting for the rest of the top ten. Azero's data was very similar, however they had countries that were not known to them as the third top visitor origin, likely due to the volume of user's for whom an originating country could not be determined by their system, and the United States ahead of Norway, which could be partially accounted for by the unknown country issue. Table 8 shows the top 10 countries of origin arriving at mik.dk as determined by Google Analytics and Azero.dk.

Table 8: Top 10 Countries of Origin for Visitors to mik.dk

	Google	Azero
1	Denmark	Denmark
2	Sweden	Unknown
3	Norway	Sweden
4	United States	United States
5	Germany	Norway
6	France	Germany
7	United Kingdom	Netherlands
8	Netherlands	Great Britain
9	Iceland	Spain
10	Finland	Russian Federation

The total number of visitors to mik.dk since Google Analytics began to collect data on this website in February 2007 was 231,984, or about 288 visitors per day. Azero has collected information that there are 19,621 per month, or about 643 visitors per day. Azero's number reflects an average over the past 28 months. This large discrepancy between these two numbers could be due a difference in the way these two programs function. Possible causes include when

a user is considered a new unique user, the number of points of data included in the average, or a user only being counted after viewing the page for different lengths between the two systems.

Azero does not collect information on which websites users come from and so could not be used to answer the final piece of information that was asked for. However, Google Analytics showed that visitors, for the most part, arrive at the mik.dk website through Google searches or by going directly to mik.dk. Other websites visitors are coming from include visitdenmark.com, a website devoted to information about travelling to Denmark, kulturnaut.dk, a Danish site which features a calendar with cultural things to do, and the Danish National Museum's website, natmus.dk.

4.2.1 User Statistics Analysis

This information was used to establish who the common MIK website user was. The information presented here says that the most common visitor to the website is from Denmark and uses Google to find the website. Considering that Danish traffic is the most common, as determined by both systems used for log analysis, it is likely that the current focus on the Danish part of the website is sufficient. However, of the other nine of the top 10 countries of origin for visitors none of them are likely to speak Danish. This presumably accounts for a large amount of the traffic when all of these countries are considered together and perhaps more resources should be focused on making the English website more comprehensive and accommodating to those user's needs.

Although the information was not explicitly available here it is likely that most American users and other tourists also arrive at mik.dk via Google. However, considering that MIK's website is not the number one result, and in some cases not on the first results page, on a Google search for "Museums in Copenhagen" the visitors arriving through Google must be either using a different search phrase or the multitude of Google searchers who get to mik.dk are Danish and are searching in Danish in which case MIK's website is the first result. Without further information neither option is more likely. However, since users are using Google to find information on museums and some of those users are arriving at MIK it is likely that more users would arrive if the English website was easier to find through Google searches.

The numbers of users per day can be used as a benchmark for how many users come to the mik.dk website with the current methods of advertising and web presence. Once the website

is made more visible on Google searches the numbers of visitors per day will most likely increase. However, it is out of the timeframe of this project to actually collect this number for comparisons of how well the recommendations increased traffic to the website.

4.3 MIK Marketing Director Interview Summary

On April 20th, we conducted a meeting with the head of marketing for MIK, Lise Korsgaard. The purpose of the interview was to expand our knowledge of the current MIK marketing strategy. Having a full understanding of the current marketing strategy for both the Danish and tourist audience aided our group in making insightful final recommendations to MIK.

Ms. Korsgaard informed us that a study had been done last year into the current communications strategies that Danish museums are using. The study concluded that, as highlighted in the background research of this paper, museums have come to be social venues as well as important educational and cultural centers. People no longer go to the museums with the sole purpose of cultural education, but also use the venues to meet with friends, go on dates, and host functions. The study concluded that the Danish museums have not embraced this in their current communications strategy, and must do so in order to survive as important institutions. She noted that the marketing staff at MIK was familiar with this study and has kept it in mind when incorporating new marketing tools (Marba, 2008).

Ms. Korsgaard reviewed the prototype filter we developed and was excited about the opportunity to include the useful search function on the web page. She noted that though the museum list is currently useful for those with a museum in mind looking for more information, there should be a new method to sorting museums by type and that the prototype achieves this objective.

Ms. Korsgaard provided a thorough review of the current marketing strategy and tools used by MIK for both the Danish and foreign audience. The Danish marketing strategy incorporates a wide variety of media. Unlike its English counterpart, their Danish website is a primary source of information and has been optimized for search engines. MIK also publishes advertisements and events calendars in local Danish newspapers, and publishes a museum magazine in cooperation with newspapers a few times a year, depending on new events and exhibits. She explained that it is very important to have newspapers focus on museums because they are a primary source of information for the Danish population, which we confirmed in our

surveys. Along with these printed media, MIK works with the Copenhagen public transportation corporation, DSB, to run promotions including distributing tickets to museums for special events. MIK has also utilized Danish television to have advertisements, and will run short segments on local networks with certain press releases.

While the Danish marketing strategy is diverse and utilizes a wide variety of media, the English strategy is much less developed. The English website is the primary source of information and is formatted exactly like the Danish counterpart, but has not been optimized for search engines. The museum guide also has an English version identical to the Danish one. These guides are free and on display in some member museums and other venues, we informed Ms. Korsgaard that it is very difficult to find an English version at the Tourist Information Center. There are also some articles and ads run in the Copenhagen Post, Copenhagen's weekly English news publication, though not nearly as often as ads are run in the Danish newspapers.

Ms. Korsgaard stated that it is difficult to monitor the success of the various marketing tools because there are so many ways that museums are promoted. On the other hand, the Danish government mandated a survey to be conducted this year about visitor origin and experience at the museums. Unfortunately the survey will not include questions about marketing information. MIK does inform member museums of new marketing initiatives, but does not have scheduled regular contact with the museum directors aside from a yearly conference. A full summary of this interview can be found in Appendix K.

MIK has a strong marketing strategy to reach its Danish audience, but can make many improvements to its English marketing strategy. It is important that MIK works to diversify the English marketing strategy in order to better serve the member museums. The marketing tools used to reach the Danish audience are models for an English marketing strategy. In our final recommendations portion of this report, we have taken all the information provided by Ms. Korsgaard into account. These recommendations are intended to improve the English marketing strategy while taking financial and manpower limitations into account.

4.4 Tourist Information Center Surveys

An oral survey was conducted at the Tourist Information Center (TIC) on 3, 14, and 19 of April 2009. 75 responses were obtained. For full results please refer to the file "Visitor Survey Results.xlsx". Respondents were English-speaking tourists as this is the approach MIK has taken

to their tourist advertising. There were few tourists who were approached to be interviewed who did not speak English; these tourists were not relevant to this study and were not surveyed. It is estimated that about one out of every fifteen potential respondents that were approached either did not wish to be surveyed or did not speak English.

Respondents were found to have a wide variety of age, who they were with, and origin. Both genders were also represented approximately equally, a ratio of 15:16 females to males. Age was categorized into young, which represented 45% of all tourists surveyed, middle aged, 43%, and old, 12%. Tourists were generally interviewed either by themselves or with one or more other tourists they were travelling with. The most common origin of tourists was the neighboring country of Sweden, but many countries around Scandinavia and the world were represented. Several tourists were from other parts of Denmark. Figure 8 shows graphical data of the origins of tourists. These categories were found to have no bearing on the responses to the rest of the survey.

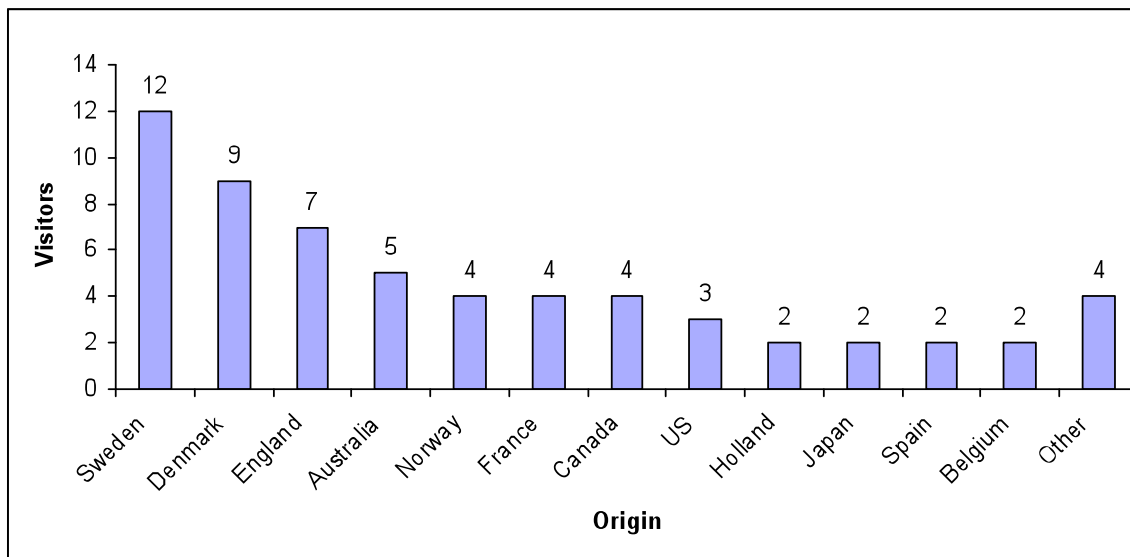


Figure 8: Country of Tourist Origins at the Tourist Information Center

Almost all tourists were at the TIC to find maps and information related to events and sightseeing around Copenhagen during their visit. This was expected, as those are two of the main amenities the TIC provides. A smaller number of tourists were looking for hostels and hotels, which is also provided by the TIC.

51% of all tourists claimed to have planned their trip in some way before coming to the TIC. Of those, 82% planned the trip using Internet websites. Half of those who claimed to have planned their trip using the Internet mentioned specific websites. Visitcopenhagen.com and Google.com searches were mentioned the most. A few other websites were mentioned by fewer than two survey respondents and can be found in the raw results.

60% of all tourists had either already been or planned to go to a museum during their visit. 25% of those tourists heard about the museum they wanted to go to by using a website before they came and 9% discovered museums to go to at the TIC or through brochures; it should be noted that many tourists did not give an answer for how they found out about the museum they wanted to go to.

48% of all respondents responded that Internet advertising was the most likely form of advertising for things to do in Copenhagen to reach them. For this response tourists were allowed to give more than one answer; 88 responses were obtained for 75 people surveyed. Figure 9 below shows the percentages of each response. For the full results, refer to the file “Visitor Survey Results.xlsx.”

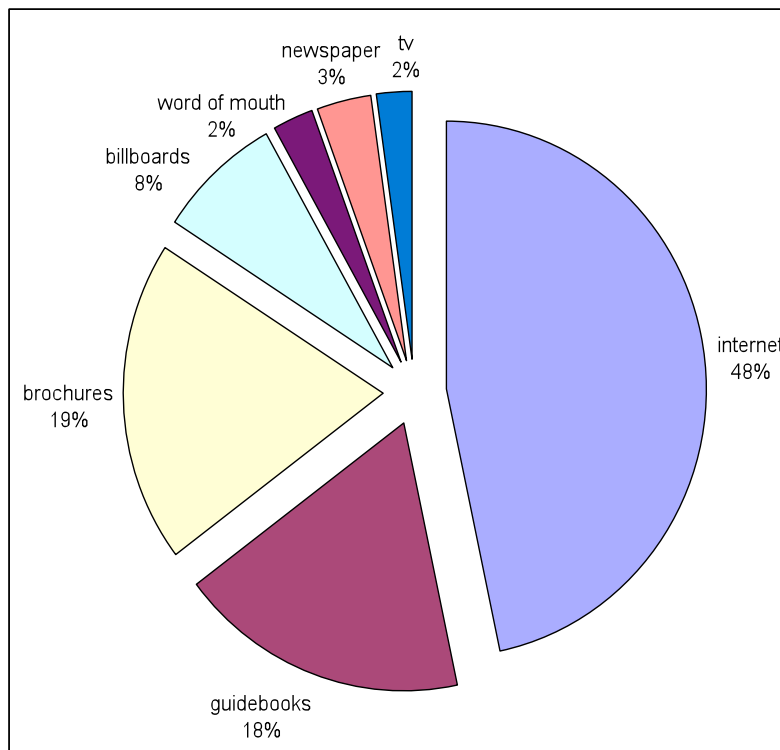


Figure 9: Advertising Preferences Among Tourists

4.4.1 Analysis of Tourist Information Center Surveys

The results for the survey conducted at the Tourist Information Center gave insight into how MIK can best reach tourists, one of the primary goals of this project. The fact that the specifics of individual tourists, including age, gender, and country of origin, did not allow stratification of the data confirms that English-speaking tourists can be treated as the same group. It would not be worthwhile to pursue a different advertising scheme for a specific group of people, such as the younger people, or people specifically from England. However, since the largest number of tourists were from Sweden it may be advantageous, in this specific case, to investigate advertising specifically to Swedes. Information was not collected about what other languages tourists of any origin speak besides English. Therefore, we cannot propose what language an advertising campaign aimed towards Swedes, for example, should be in.

Considering that a change to marketing strategy cannot change the way a Tourist goes about planning their trip it is likely that any efforts taken by MIK cannot increase the number of people planning their trip. However, based on this survey most people who plan their trip do so using the Internet. This confirms the fact that attempting to attract visitors to museums through the Internet is a valid approach. More interestingly, 55% of people who used the Internet to plan their trip and 38% of people interested in museums were interested in museums and used the Internet to plan their trip; this accounts for 23% of all tourists surveyed. The graphic below, Figure 10, shows the percentages of respondents who use the Internet to plan their trips and are interested in museums, and those who fall into one category or the other, or neither. The 23% of tourists surveyed who fall into the both category are the target audience for MIK's website which has information on a large majority of the museums located in and around Copenhagen. With increased web presence it is possible that more of these tourists will find information on MIK's member museums and are likely to attend them. Further, since several tourists mentioned that they used Google.com searches to find things to do it is likely that more hits to mik.dk could be attained by optimizing the English website for the global Google.com. Many tourists also mentioned visitcopenhagen.com, run by Wonderful Copenhagen, who also runs the TIC. Based on this information, MIK should try to collaborate better with Wonderful Copenhagen to better promote their member museums through the Internet on websites controlled by that organization. Currently, MIK has a link on the visitcopenhagen.com website but should attempt to be more

prominently featured on that website considering the number of users who use that site to plan their trips.

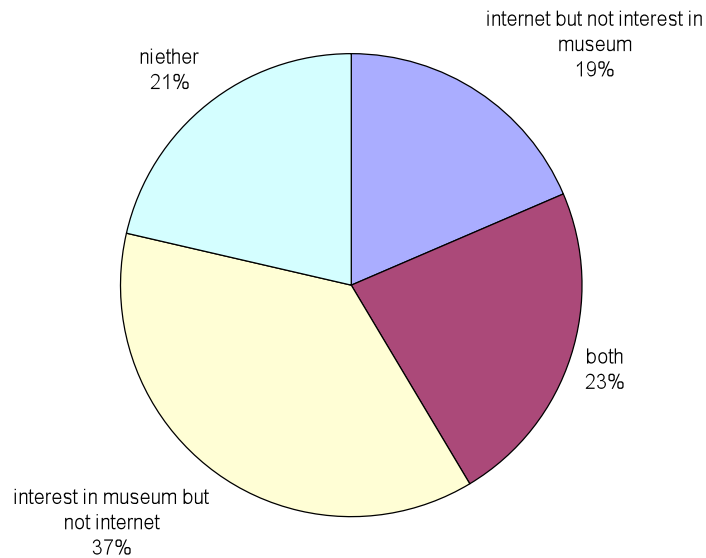


Figure 10: Tourist Internet Usage Compared to Museum Interest

Tourists who desired to go to museums or had already been to museums found out about them largely through the Internet and information at the TIC. This further solidifies that the Internet is a valid approach to attempt to attract visitors; it is just a matter of getting those potential visitors to come to mik.dk. It is more beneficial to MIK's member museums for these potential visitors to come to the MIK website as MIK's goal is to promote each museum equally. Therefore, if tourists who are interested in museums come to MIK's website they are more likely to find the museum they are interested in rather than the museum that pays the most money to the websites they are currently getting their information from. MIK is represented at the TIC in the form of the museum guide that MIK publishes yearly. Many of the museum guides, however, were in Danish, and probably would not aid an English-speaking tourist. Some of the museums, such as the Danish National Museum, which are member museums of MIK, also have their own brochure there. The TIC also has a computer system where users can look up information on activities available to them during their stay in Denmark. Several of MIK's member museums are in this system, but MIK as an organization is not visible and not all of MIK's member museums are represented. Based on the information that tourists who are interested in going to

museums are coming to the TIC to find out about it, MIK should investigate ways to better promote their member museums through the TIC in collaboration with Wonderful Copenhagen.

The last piece of information of value from this survey is that most tourists think that the Internet is the best form of advertisement for recreational activities in Copenhagen to reach them. Once again, this confirms that the Internet is a valid approach to attract visitors to museums. The second most frequent response was guidebooks. MIK does not currently interact or attempt to promote their member museums through guidebooks. Considering that many tourists, almost 25% of those surveyed, are using guidebooks to either plan their trip or figure out things to do once they get there it would be advantageous for MIK to investigate promoting through some of the more commonly used ones.

4.5 Museum Visitor Surveys

We conducted a total of 83 visitor surveys at four museums to answer four main questions. The four museums were the Danish Jewish Museum, GL STRAND museum, the Danish National Museum and the Open Air Museum. The purpose of the survey was to find out how visitors found out about the museum, what sort of experience they were expecting, which form of advertising they thought was the most effective, and whether or not they had heard of MIK. The data was stratified based on whether the respondent was an English-speaking tourist or a native Dane.

A third of all tourists surveyed had found out about the museum from guidebooks. 16% had found out through word of mouth, were already familiar, or through pamphlets. On the other hand, 90% of all Danes were already familiar with the museum before visiting. Figure 11 and Figure 12 below depict the full range of responses.

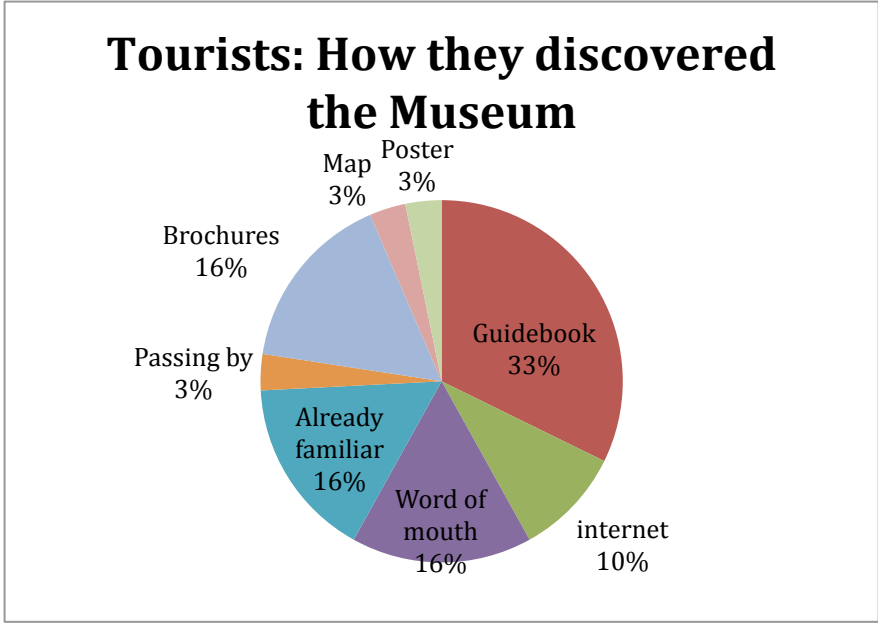


Figure 11: How they Discovered Museum (Tourists)

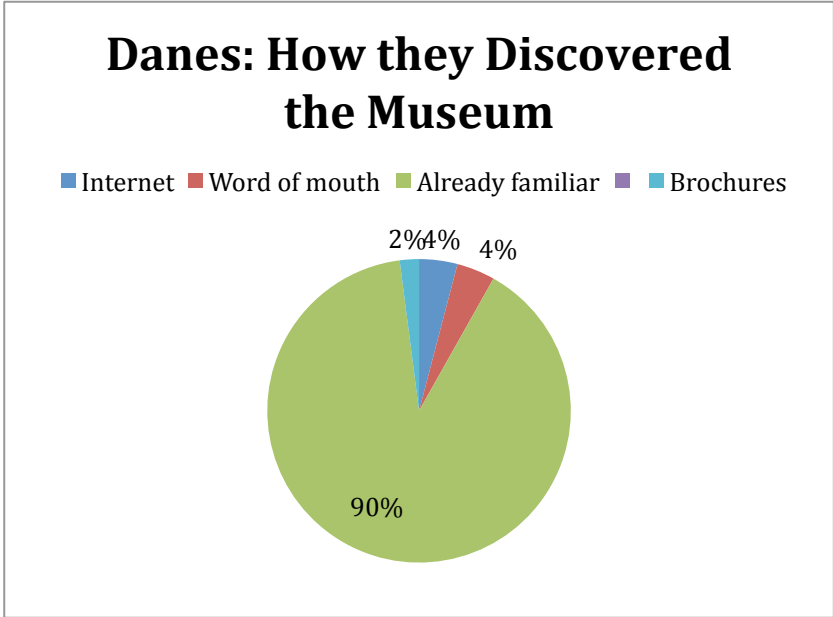


Figure 12: How they Discovered Museum (Danes)

We found that museum visitors do in fact attend the museum for multiple reasons. When interviewing, we categorized responses as either a social, educational, cultural, or specific experience sought, as apparent in Figure 13 and Figure 14 below.

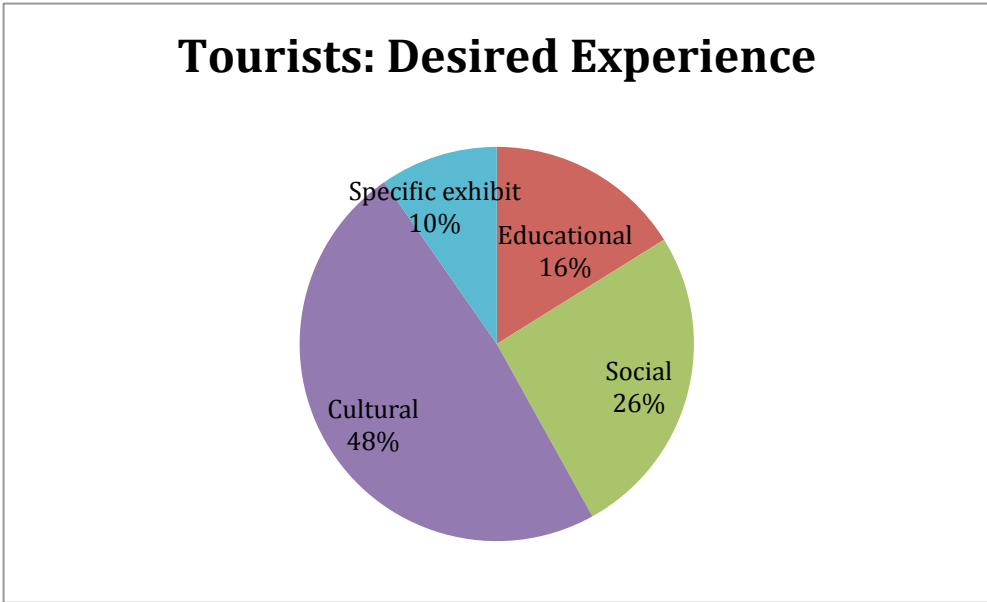


Figure 13: Desired Experience (Tourists)

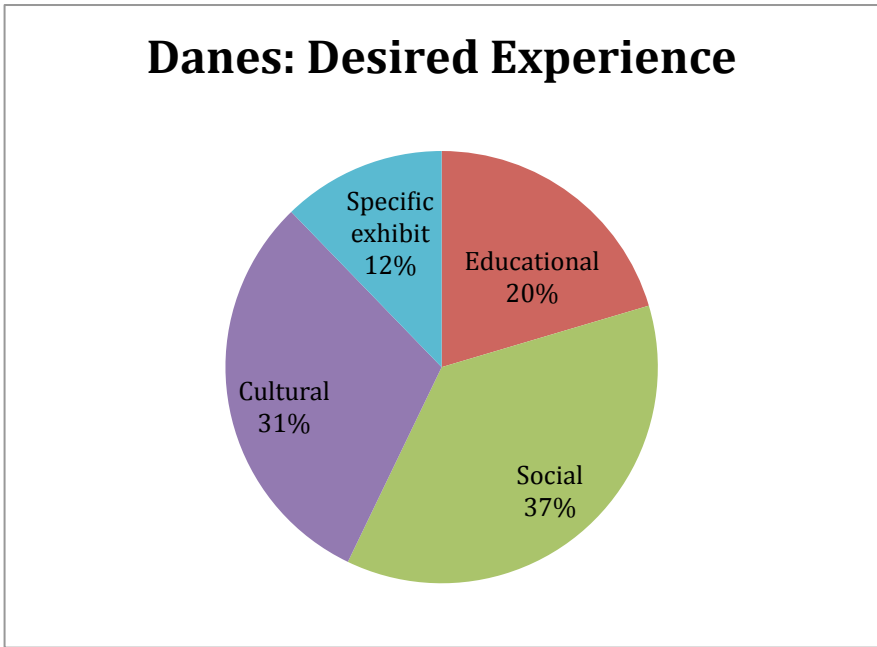


Figure 14: Desired Experience (Danes)

When asking about which form of advertising best reaches the museum visitors, Internet, brochures, and guidebooks were the most popular form of advertisements from both groups. More information can be found in Figure 15 and Figure 16.

Tourists: Preferred Form of Advertising

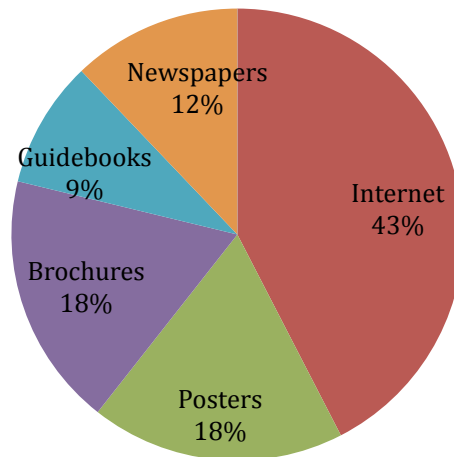


Figure 15: Preferred Form of Advertising (Tourists)

Danes: Preferred Form of Advertising

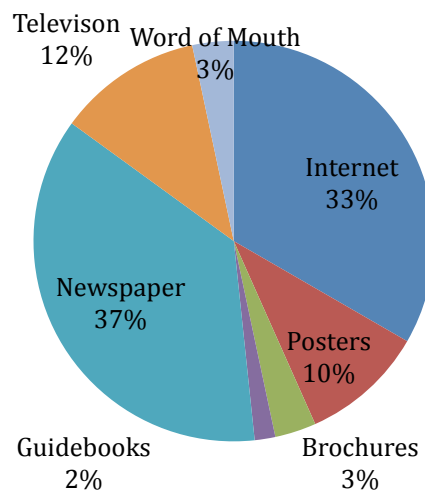


Figure 16: Preferred Form of Advertising (Danes)

The last item we focused on was whether or not people had heard of MIK. 17% of all people surveyed had heard of MIK. This consisted of 10% of tourists and 22% of Danish people. For the full results, refer to the file “Visitor Survey Results.xlsx.”

4.6 Interviews of Member Museum Directors

In order to better understand how the member museums see the role of MIK in their own marketing plans, we organized interviews with employees at four different museums. The Museums they worked for are The Danish Jewish Museum, GL STRAND modern and contemporary art museum, the Danish National Museum, and the Frilandsmuseet (Open Air Museum). The Danish Jewish museum represents the small-scale museums in Copenhagen; the GL STRAND represents the medium scale venues, and the Danish National Museum is the largest and most widely visited member museum of MIK while the Frilandsmuseet is a larger museum, which is located outside of Copenhagen in Lyngby.

Questions posed were aimed at discovering each museum’s marketing strategies, marketing successes, and MIK’s role in promoting the museum. Though the questions were modified slightly from museum to museum, each interview sought to find the same core information.

While interviewing tourists about their individual opinions is valuable and was conducted, it was also very important to speak to the museum employees. They had expert opinions on their own museums and had a great deal of valuable information about their visitors that had been collected through their own research methods.

4.6.1 Interview of Janne Laursen- Dansk Jørdisk Museum

The first museum employee interview we conducted was with Janne Laursen, the Director of the Danish Jewish Museum (Dansk Jørdisk Museum). The Danish Jewish museum pays one fifth of its overall marketing budget to MIK, but they feel that MIK provides a very good service to their museum. In her opinion, MIK does a good job of taking initiative to create new marketing strategies. They constantly ask for new information to stay up to date. They also use some of their budget to pay for advertisements through Wonderful Copenhagen, the organization that runs the tourist information center in Copenhagen.

The Danish Jewish Museum does have its own private website, along with the single page link from the MIK website. According to Ms. Laursen, their website is not their primary marketing tool. The majority of visitors to the Danish Jewish Museum are older Danish women who visit with groups of friends or social programs, while the Internet typically caters to a younger audience. The Danish Jewish Museum's most effective advertisement comes from word of mouth.

Ms. Laursen said that through web analytics, her marketing department concluded that most website visitors arrive there through another promotional organization called Everything About Copenhagen (AOK). Only a small number of website users come from the MIK museum portal. She thinks that it would be valuable for MIK to set up a linking system with AOK to aide one another.

It is important to note that Danish visitors to the Danish Jewish Museum are seeking a different experience than those from North America. While the North Americans, who comprise 43% of all visitors, according to yearlong study that the Danish Jewish museum conducted of its visitors last year, seek information about World War II. On the other hand, the Danish visitors go to learn about diversity, immigration, and identity of the Jewish population in Denmark.

The last part of our interview focused on suggestions for MIK from Ms. Laursen. She would like to see them figure out which advertisements are most effective, because there is no point in sending money on ones that are not effective. She would like to see MIK take new initiatives when old ones are not working. Also, the Danish Jewish Museum is tucked away on the lower floor of a library, so she would like to see MIK include very concise directions to the front door of her museum. Similar to Brian Barlow of the Worcester Art Museum, Ms. Laursen stressed the importance of making a personal connection to the potential visitor by promoting the experience through the webpage. Information is essential, but the personal connection is what makes a person desire to go to the museum. A full list of specific suggestions can be found along with the rest of the interview summary in Appendix G.

4.6.2 Interview of Barbara Læssøe Stephensen GL Strand Museum

The second interview we conducted was with Barbara Læssøe Stephensen, who is the communication manager at the GL Strand museum. The GL Strand is a medium-sized art museum located in the cultural center of Copenhagen. The museum features art exhibits from

small artists as well as world-renowned artists, and periodically changes the exhibits.

Ms. Stephensen states that she does not see the GL Strand as a tourist destination. According to a questionnaire conducted at the museum last year, most English-speaking guests are foreign people who are living in Denmark. Though the GL Strand does incorporate a diversified marketing strategy, most visitors learn about the museum through word of mouth. The museum has a website that is 2 years old; for a long time there was not enough funding put aside for this type of marketing. This new website is part of GL Strand's marketing approach.

The GL Strand is focusing on digital media and has begun to use Google analytics to learn more about their website users. Unfortunately, most of the visitors to the website are not coming there from the MIK website. The GL Strand has also embraced some of the archetypal solutions in web technology highlighted in the background chapter of this report, for example social networking tools and an RSS feed for new exhibits.

Ms. Stephensen stated that MIK is a great alternative to Wonderful Copenhagen for smaller museums. Although MIK is helpful, it is not completely satisfying the needs of the GL Strand. She also cited the importance of networking and cooperation between museums. Ms. Stephensen also highlighted some issues she sees with the MIK website. First of all, English-speaking tourists who are using the Internet do not easily find it. English search engines do not generate mik.dk as a cite in the top ten returns when one uses the search query "museums in Copenhagen", though this is the organizations namesake. She also feels that MIK has not established enough connections, and highlighted teachers unions as a good starting point due to their interest in educational opportunities as well as the networking opportunities already established by said organizations. MIK should also look to link with more websites in order to increase their visibility.

Finally, Ms. Stephensen left us with some suggestions for MIK and for improving their marketing strategy. MIK should categorize their museums in diverse manner, for example "museums you can see in one hour". They should also highlight useful features such as how easy it is to find the GL Strand. She also feels that MIK has too much focus on families in the case of the GL Strand, as it is not a family oriented museum like some others. They should also increase cooperation with other organizations and should optimize their website for search engines. A full list of specific suggestions can be found along with the rest of the interview summary in Appendix H.

4.6.3 Interview of Jesper Thomas Møller-Danish National Museum

The Danish National Museum is the largest museum in Copenhagen even encompassing a few smaller museums, the Danish Resistance museum and the Open Air Museum. The marketing team consists of a PR & Marketing Coordinator, a Communication Officer and a website coordinator. We spoke to Jesper Møller, the PR & Marketing Coordinator at the Danish National Museum. He was able to give us some insights on visitors to the Danish National Museum, the museum's relationship with MIK, their website, and how he thinks MIK can reach a broader audience.

We began by discussing museum visitors. It was discovered in a 2008 survey performed by the National Museum that the typical museum visitor is a well-educated 35-year-old woman from Copenhagen and about 50% of visitors are foreign tourists. American and English travelers made up the largest portion of the visitors who were tourists from abroad. Among tourists the website was not the biggest draw to come to visit. Most tourists discovered the museum through guidebooks. Many of the tourists who did use the webpage found it through the Wonderful Copenhagen website. Approximately 70 to 80 thousand children visit the museum each year through trips organized by their teachers. The museum has a department that coordinates visits with schoolteachers. Mr. Møller also mentioned that the pattern of museum visitors changes throughout the year, with the most tourists coming in June and July, and depends on the weather, where a larger percent of tourists are observed to visit on more pleasant days. According to Mr. Møller, research, done by Wonderful Copenhagen, shows that visitors who visit the National Museum are interested in the culture of Denmark.

Mr. Møller feels that the Danish National Museum has a good relationship with MIK. He talks to MIK frequently to discuss exhibitions and other events. He also feels that the museum is slightly underrepresented by MIK considering its size, but understands the comparatively lower representation. This doesn't pose a major problem for them as they are a large, well-known museum and marketing through MIK is not their only strategy to attract visitors

The Danish National Museum has an English, a German and a Danish website. However, the English website is merely a translation of parts of the Danish site. Most people use the website to find information on the museum, such as how to get there and how to contact it. The website also contains films about the museums and some of the topics that they have exhibits about. The website is specifically engineered to appear high in the results on Google.com

searches. To further increase their web presence the Museum has started a Facebook© group, which will improve word-of-mouth advertising through social networking. See section 2.4.6 for more information on social networking. The museum also publishes a newsletter in Danish. Press releases are translated to English and occasionally German, which contain information on special and holiday events.

Mr. Møller had many suggestions for MIK to increase its presence on the Internet and to better reach a broader audience, especially tourists. Most of the suggestions which revolve around the website were to make the information more accessible and organized and to be able to provide the user with information that is specific to their situation or needs. He also suggested that MIK try to collaborate more with other tourist organizations in the city and with guidebook companies but warned away from collaborating with AOK.dk, as it is not useful to tourists due to a lack of translation into English. It was also suggested that MIK try to leverage some of the new, free tools used by millions in the Internet such as YouTube and Twitter. A full list of specific suggestions can be found along with the rest of the interview summary in Appendix I.

4.6.4 Interview of Rikke Bengtha Ruhe- Frilandsmuseet (Open Air Museum)

The fourth interview we conducted was with Rikke Bengtha Ruhe, the museum inspector for the Frilandsmuseet (Open Air Museum) located outside of Copenhagen in Lyngby. The Frilandsmuseet is one of the world's largest and oldest museums of its type made up of over one hundred buildings on over eighty-six acres from the time period of 1650 to 1950. Visitors are able to take a step back in time and discover what life in Denmark was like during these time periods while enjoying a day out. The Frilandsmuseet is a part of the National Museum and also does not charge an admission fee.

As the Frilandsmuseet is located north of the city of Copenhagen, Ms. Ruhe said that this museum is not usually the first choice for tourists, and that the main visitors are local Danish families. She also said that people tend to visit this museum based on tradition and word of mouth. Many older visitors originally visited the museum as were children and continue the tradition by bringing their children to visit. In addition to the families that visit, educational programs bring many visitors to this museum. Many schools bring classes to visit every year.

Last year, the Frilandsmuseet performed a survey asking their visitors about their origin, age, reason for visit and best and worst experiences. From these surveys, they discovered that

most people liked the feeling of freedom provided by the museum and enjoyed a day outside of the city. In addition, they discovered that each visitor was able to take away their own unique experience as the museum's exhibits are not as "directed" as other museums. Rather than have long written descriptions of each building at the museum, there is a short description of each building and, on special occasions, there is a re-enactor to answer questions. This allows each visitor to discover the buildings for themselves and make their own connections between the exhibits and their every day life. Ms. Ruhe described how one family was even able to notice the difference between consumerism between different time periods.

Most of the marketing for the Frilandsmuseet is done through the Danish National Museum and through their own educational department. Their strategy is directed towards family and children. Part of their strategy includes two newsletters. One is a general newsletter with around 1000 subscribers and the other is a teachers' newsletter with around 600 subscribers. These newsletters contain information about special events and activities the museum is having. In addition to this, the museum also prints maps and pamphlets to advertise. During the summer, the museum has found it useful to print a weekly article in a local paper. According to Ms. Ruhe, their website is used mainly as a "second resource" for visitors after they have decided to visit and is checked frequently for events, opening hours, and if pets are allowed. Most website users are from Denmark and are directed there from Google and the National Museum's website. Notably, the MIK website was fifth on the list of websites that visitors are directed from.

Ms. Ruhe stated that they have had very good communication with MIK and have worked very closely in the past when their programming coincided well with MIK's current theme. She suggested that MIK ask the museums to provide different content for the Danish and English pages on their portal. She thinks that the reasons for visit differ between Danes and tourists and that this would be very useful. She also said that she understands that MIK's resources are limited, but that monthly contact would be very beneficial as well. A full list of suggestions along with the full interview summary can be found in Appendix J.

4.6.4 Analysis of Museum Director Interviews

Each museum director provided valuable insight into shortcomings of MIK's current marketing strategy including issues with the MIK website, and provided suggestions for improvement. The museums were chosen in order to solicit information from a broad scope of

museum types, and the diversity of the institutions helped to draw a wide range of information.

Currently, MIK's marketing strategy to English-speaking tourists is not completely effective. According to the directors, the marketing strategy is not broad enough to serve all member museums. According to the museum directors, MIK most commonly advertises to families with children, while many of their member museums are not family oriented. While the Open-air museum and the Danish National museum are great family venues, smaller art and culture museums like the Danish Jewish museum and the GL Strand do not cater well to that audience.

Due to insufficient human resources at MIK, it is difficult for them to monitor which advertising avenues are most successful and which ones are not cost-effective. MIK must attempt to market over 70 museums with a staff of five, so it is difficult for them to know how well all the marketing tools are working. Also, most visitors to the museum websites are not being directed there through MIK according to website analytics provided by the museum directors. This is due in part to a limited web presence on search engines, but according to the museum directors, it is also difficult to find desired information on the MIK website.

Each of the four museum directors interviewed also provided valuable suggestions for improvement of MIK's marketing strategy. They all agreed that it is imperative that MIK optimize their webpage for search engines and ensure that they are one of the top three results when inquiries such as "museums in Copenhagen" are searched. They also proposed that MIK collaborate with other organizations in order to help serve the member museums. Visitors commonly use resources such as Wonderful Copenhagen to find information online and the DSB website to navigate the city, and it would serve MIK's purpose to have links from those highly visited web pages. The museum directors also proposed that MIK make alliances with groups such as teacher's unions. These organizations are an effective way to disseminate information to a large number of people through a single contact. According to the directors, these organizations are already structured and this should be utilized.

All museum directors also agreed that the content on the Danish and English web pages should be varied in order to reflect the different interests of local visitors and tourists. This idea was proposed at our first scheduled interview and discussed at subsequent interviews. Because the member museums know their visitor groups very well, MIK should ask each museum to provide their own entries for the webpage. MIK would also benefit from adding new tours and classifications to their webpage. For example, museums and tours that one may fully explore

within given timeframes would aid the visitors in selecting the proper museum. In particular, Ms Stephensen proposed classifications such as “museums you can see in an hour”.

The museum directors also felt that the MIK marketing strategy should be expanded to incorporate many new approaches. Social networking tools have become extremely popular and MIK should utilize these items in order to reach broader audiences. Some examples of social networking sites are Facebook©, twitter, and YouTube. According to Ms. Stephensen, the GL Strand has already adopted a Facebook© page and it has been working well so far. These are popular and free resources, which would allow the organization to keep people updated through other media than the homepage.

Finally, the directors all agreed that MIK should have regular contact with a representative from each member museum. While human resources are limited, monthly contact would keep the flow of information open between MIK and the member museums. The directors would like to see updates on new marketing tools that MIK is using. Each museum director was able to provide valuable and varied criticism and suggestions for MIK, but this feedback should be collected on a regular basis. It would be a way for MIK to essentially expand their human resources. Member museum directors would like to provide feedback and would also like to stay updated on how MIK is promoting them.

4.7 Prototype Results

A prototype was produced to illustrate one method of making the museum list more interactive in a way that allows users to discover museums that they may be interested in. This prototype was written using JavaScript and some minor modifications to the museum list HTML source code. The source code for this can be found in the attached zip file. Museums.html, the HTML for the current museum list on mik.dk, was partially modified and js/museums.js was created for the prototype. This prototype will be delivered to MIK as part of this study. Their professional web consulting organization can then optimize it, fix existing bugs, add proposed improvements, and integrate it into the MIK website. The prototype adds functionality to the museum list through the addition of checkboxes to the left frame of the website which, when clicked, will filter the museum list based on the category which that checkbox coincides to. Clicking a checkbox that has subcategories will also reveal those subcategories for further narrowing of the museum list. The prototype works on an intersection, or logical AND, system,

so if two checkboxes are checked it means that museums that only museums that fall under both categories will be displayed. If there are no museums in a given filtering of the list a message will be displayed in the museum list area.

If this prototype is implemented in the future it could require addition of new museums or categories. New museums would need to be added to the `allmuseums` array along with the `museumnames` array in the format that is presently used, comments within `js/museums.js` provide further information on that format. This new museum would also need to be added to all of the categories it falls under and should be placed in sorted descending order. For the implementation of a new category, a new array containing all of the museum names from the `allmuseums` list format would need to be created. The addition of the new array names to the `changecontroller` function, in the manner that the others exist, as well as the addition of an HTML checkbox for the super-category within the HTML would need to be added. Please consult the comments within the source code `js/museums.js` and `museums.html` for further information and guiding.

One element of the museum filter as it was originally planned was not able to be implemented during the study but would benefit the museum filter if it were to be implemented. In this feature, the words in the header will change based on which are clicked. For example, if the Science category is checked the header will read “Science Museums”, if the military subcategory is checked the header will read “Military Science Museums”, and if the Science and Art categories are both checked the header will read “Science and Art Museums.” As other categories are added they could creatively change the header. For example, if a cost category was added the heading might change to “Museums Costing Between 10 and 20 Kroner.”

Current known issues with this prototype include lack of auto-clearing of checked categories upon super-category un-selection (defect 1), lack of systematically named images for procedural prediction of image names (defect 2), lack of support for non-alphanumerical characters including å, ø, and æ (defect 3), and lack of further categorization (defect 4).

Defect 1 can be addressed by adding support for removing subcategory arrays from the `museums_to_show` array upon removal of super-category arrays. Currently, this would require hard coding of which subcategories are under which super-categories.

Defect 2 can be addressed by renaming the museum images systematically. One method of doing this could be to name them as the first letter of their name and then the number museum of that letter as in the `allmuseums` array in `js/museums.js`. This would be desirable as this is how

the museum's names are passed throughout the JavaScript program and is how the prototype is presently naming the images.

To address Defect 3 the museums that begin with any of the three characteristically Danish extra-alphanumerical characters would need to be added to the program as explained above. These were not initially added to the prototype due to some coding issues although they should work now. However, due to time constraints these museums were not added to the prototype.

Defect 4 would require the addition of new categories based on categorizations based on an IQP performed with MIK during March-May 2008 (Forti, et al 2008). Please consult the above explanation on how to add categories.

Ideas for further development of this prototype are listed below:

- Addition of more categories (compliant with defect 4)
- Addition of a help window that can be displayed for users upon a pop-up link
- Addition of options for showing no pictures or only pictures
- Addition of easy options for changing or adding museums, perhaps a script that will change the js/museums.js file given some commands
- Interfacing with php to optimize creation of arrays.

Other ideas for improvement of the museum list page

- Mouse-over information about which categories museums fall under
- Links to popups of short information blurbs underneath links to actual website

The source code for this prototype can be found in Appendix N.

5. Conclusions and Recommendations

Our recommendations and conclusions are the result of all survey data collected, museum director interviews, and an analysis of MIK's marketing strategy. We also considered MIK's financial limitations when making recommendations. The recommendations presented were made considering overall efficiency as well as cost effectiveness.

5.1 Conclusions

We were able to draw many valuable conclusions from our data collection. We discovered which marketing strategies were most effective for both tourists and Danes, which were considered when making final recommendations. We also evaluated MIK's current marketing strategy and decided which marketing tools are the best option based on effect and financial limitations. We evaluated the implementation of a prototype filter for the museum selector, and also drew conclusions about the effectiveness of the current MIK strategy. Lastly, we evaluated our utilized methodology and made recommendations of improvement for similar future studies.

The Internet is the most effective way to disseminate information to tourists before they arrive in Copenhagen. 48% of all Tourists interviewed said they prefer the Internet as the number one source of advertising. Once tourists have arrived at a location, they shift their focus to written media. Brochures and guidebooks were the most used written source of media, according to our research.

For native Danes, the newspaper is the primary source of information for current events and exhibits in their own country. 90% of all museum visitors surveyed said that they were already familiar with the location, while 37% of Danes cited the newspaper as their first source of information, which was stated more than any other source of advertising. MIK currently runs ads and press releases in the newspaper and should continue to invest in this form of advertising.

The MIK organization was familiar to a decent portion of all respondents, but they can improve their web presence through certain methods. 17% of all respondents to surveys said they were familiar with MIK. By optimizing their English website for search engines, as well as

collaborating with other organizations, MIK can increase this number to better serve their member museums.

Both the English and Danish version of the MIK website would benefit from implementing an advanced search filter. We created a prototype filter, which sorted museums for the user based on interest inputs. During our direct observation study and discussions, 91% of all subjects preferred the filter to the current museum list, which is only sorted alphabetically. The advanced filter will aid users in sorting museums according to their interests, rather than forcing the user to search through the entire list.

Our study was very successful. We were able to achieve all our methodology objectives. While the online survey we planned and created was not implemented during the seven-week period, we achieved all other research goals outlined in our project proposal. Our recommendations for MIK are based on well designed and implemented research methods and strategies. We have complete confidence that if MIK implements our recommendations, they will have an improved marketing strategy and reach a broader audience.

5.2 Member Museum Relations Recommendations

After conducting interviews with four museum directors and marketing personnel, we have developed a few suggestions to help MIK better interact with their member museums to ensure that they can better promote them and increase visitation.

5.2.1 Increase Interaction with Member Museums

Although MIK is a small organization and resources are limited, we believe that having monthly contact with the member museums is essential in order for both MIK and the member museums to stay up to date with themes and exhibits. In addition to monthly contact, we also recommend that MIK try to have meetings every so often with some of the museum directors to discuss marketing strategies, successes, and weaknesses. As MIK is a small organization and does not have a large meeting area, having web-enabled meetings may be a useful way to facilitate these meetings. The museum directors we interviewed each employed different strategies to better reach their visitors and each had many ideas and suggestions for MIK. If they were to meet together, everyone would benefit from this exchange of ideas.

5.3 Marketing Strategy Expansion Recommendations

After a thorough examination of MIK's current marketing strategy compared and contrasted with data collected at the Tourist Information Center and member museums as well as from Museum directors, we have compiled a series of recommendations for MIK on how to improve their current English marketing strategy. We understand that there are certain financial limitations that MIK must account for when adjusting their marketing strategy and have taken this into account when making recommendations.

5.3.1 Organizational Collaboration

Collaboration with different organizations will allow MIK to reach a broader audience. Without any cost to MIK, they can reach a large audience through single contacts. Associations such as teachers unions already are structured to disseminate information to a large group of people through organizational tools such as email aliases and newsletters. MIK should contact individuals from such organizations in order to take advantage of this. Museums are educational tools and students would benefit from this collaboration as well.

MIK should also network with other organizations that provide information to tourists. While MIK already provides brochures to Wonderful Copenhagen's Tourist Information Center (TIC), they should work with the organization to ensure that this information is distributed properly. When we visited the Information Center, we noted that it was very difficult to find an MIK brochure in English. According to our surveys conducted at the TIC, we found that the majority of visitors are from outside Denmark and would need an English brochure in order to put it to use. The TIC also provides computers to visitors with a set program for information seeking, and MIK should investigate the feasibility of including a link to their homepage through these computers.

MIK should contact similar organizations and set up links on their web pages. Many countries have organizations such as MIK. By linking with these other organizations, MIK can reach a broader audience. Linking is also a simple method to improve search engine optimization, so this would serve two purposes.

We also recommend that MIK work with other Danish organizations. Many Danes sited aok.dk as a primary source of information when looking for recreational activities, but when one searches "Museer I København" or "mik.dk" on the website, no results are returned. MIK should

use this valuable resource to increase visibility. While MIK does network with the local rail company DSB with incentives for a Danish audience, they do not promote member museums to English audiences through this source. MIK should distribute English flyers on the trains once a month.

5.3.2 Revised English Brochure

MIK should adjust its English brochure to better address the needs of the tourists. The brochure currently contains an alphabetized list of museums with their respective address. While this is sufficient in the Danish brochure because the audience will be familiar with the city, the English version should be adjusted. By containing only an address, a tourist who is interested in a museum must find a way to get directions from a different source. A revised brochure should include maps on the back that will help the tourists navigate to the museum. We understand that some of the member museums are located outside the city, and the brochure should contain several smaller maps.

5.4 Website Improvement Recommendations

After a thorough evaluation and analysis of MIK's current website, direct observation results, tourist and museum visitor interviews, and museum director interviews, we have compiled a series of recommendations for MIK on how to improve their current website. We understand that there are certain financial limitations that MIK must account for when redesigning and improving their website and have taken this into account when making recommendations.

5.4.1 Fix Existing Aesthetics Issues on the Website

As outlined in section 3.1.1, there are several aesthetics issues with the MIK website that should be fixed. During our time in Copenhagen, some of these issues, such as the discrepancies in appearance across multiple browsers, were in the process of being resolved. In addition to the issues we discovered through preliminary observation, there are a few others that were brought to our attention through the course of our direct observation studies. Many users felt that some of the links were misleading or did not appear in the place they expected them to be. In addition, they felt that the website should be streamlined in that there should not be so many ways to find

similar content. For example, many participants were not able to find a complete listing of current events and exhibits, but rather found portions depending on which path they chose.

5.4.2 Social Networking Tools- Facebook®, Calendar/RSS feed, etc...

We would also recommend investigation of some specific topics in relation to MIK's marketing needs and ways to promote user community and foreign outreach. Social Networking tools have become very popular for Internet users today. For organizations like MIK, they provide an effective tool for keeping people up to date on new events and programs. We recommend that MIK start a Facebook® group. This would allow people to join the group and receive notification about new exhibits and events sponsored at member museums. A Facebook® group would also allow users to interact in a manner that is similar to a forum. Members could create threads within the group to discuss their museum experiences or even create social outings. Several member museums including the GL Strand have already created similar pages and have found them to be successful. Of the two hundred million active users on Facebook®, more than one hundred million use the website every day (Facebook, 2009). In addition to Facebook®, we suggest creating an interactive calendar. Although a calendar function exists on the website, it does not function properly. In addition to fixing this problem and keeping the information up to date, we suggest making the calendar more useful by allowing users to subscribe to it. In order to maximize its effectiveness, we suggest that MIK incorporate an RSS feed with the calendar so that users could stay up to date with museum events and exhibits.

5.4.3 Museum Ranking System and User Comments

We also recommend that MIK add a museum ranking system and comments and feedback section to each member museum page. During our museum visitor surveys, personal accounts were mentioned as effective advertising by several respondents, and an online feedback section would help website visitors receive personal accounts and persuade them to visit the museum. In addition to this, many of our direct observation participants expressed interest in having a museum star ranking system in place as well as comments for users to share their experiences. We understand that people may also post negative feedback on the museums, but the museums can use this feedback to monitor the success of certain exhibits.

5.4.4 Establish a Personal Connection with Users

One of the most important things that MIK must do is attempt to establish personal connection with website users through their member museum pages. During our interview with Brian Barlow, director of Museum Advancement at the Worcester Art Museum, he cited personal connection as the most powerful marketing tool for advertisement. Currently, each member museum page on mik.dk is a standard format with a few photographs and a brief description of the museum. MIK should diversify these pages to make each reflect upon the highlights of the museum. Each member museum page should be independent from the rest in order to convey the ambiance at the museum. We suggest either more pictures or graphics on each museum page, or a brief slideshow that includes pictures depicting the essence of the museum. The slideshow should take only five seconds and be optimized for quick loading. We found from direct observation respondents that if a website takes too long to load, they will leave the page.

5.4.5 Different Content for Museum Pages (Danish vs. English)

Another important thing that we learned from our interviews with museum directors and tourists alike is that Danes and Tourists often have different reasons for visiting a particular museum. In order to better cater to both of these groups, the directors suggested having different content on the English and Danish versions of the individual museum pages. Although creating separate content may seem like a large undertaking, we suggest that MIK ask the individual museums to submit separate write-ups for the English and the Danish site. The museum staff knows what experiences the visitors are seeking and are therefore best suited to create this content.

5.4.6 Tours

Although MIK currently has a few themed tours on their website, we have a few suggestions for their improvement. Our first recommendation is to expand upon the tours they have already created. Through surveying and talking with museum directors, we have created a few suggestions. The most popular of which is to create tours that provide suggestions for museums tourists can see in a given time period. For example, creating a tour of museums that visitors can experience in 1 hour may help to increase visitation to some of the smaller museums.

In addition, including a tour that would take 3 hours, or even highlighting museums that are a good venue for an afternoon out with friends may also be of interest to visitors. In addition to creating new tours, another feature that would be useful would be to embed a map on the tour page so that users could plan out their route more easily.

In a recent upgrade the MIK website has added a map to each of their tours but this is a static map which is difficult to read and it does not currently provide information about how one should get from museum to museum. This information should be provided by rejseplanen.dk, a site which given two locations can create an itinerary using Copenhagen’s public transportation. It can also be created through maps.google.com, but this site currently does not support public transportation itineraries. An example map from Google maps is featured below in Figure 17 and demonstrates four of the local locations of the tour titled “Museums for Men.” In addition to an interactive map such as this we also suggest specific directions of how one should get from one museum to the next, as well as smaller maps, which show each location on a smaller scale.

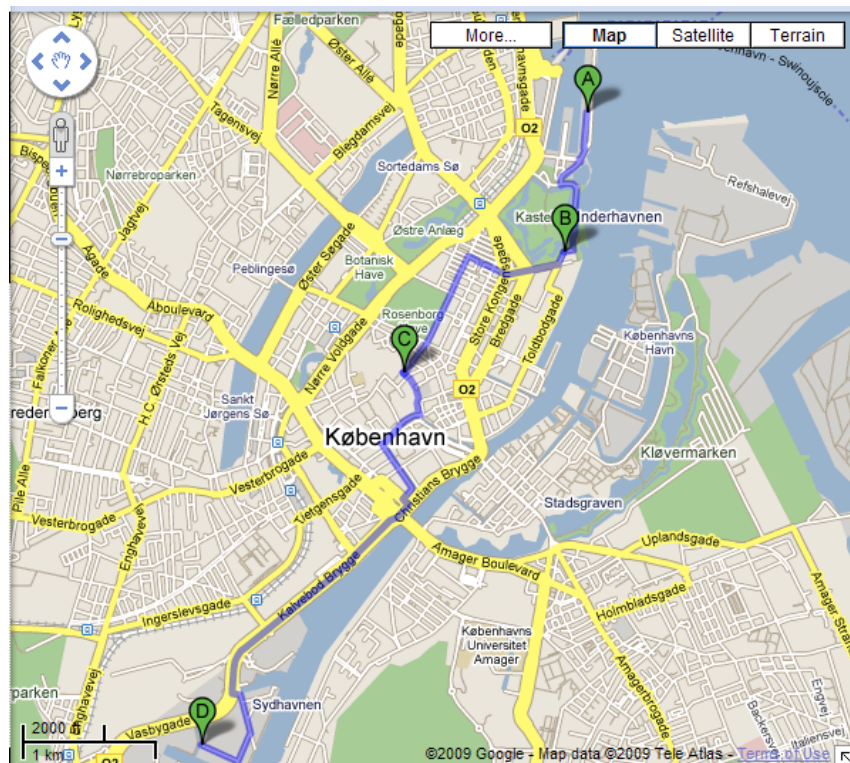


Figure 17: Google Map for Museum Tours

5.4.7 Tagging of Member Museums

One of the initial recommendations was to create a system for tagging the museums with categorical information similar to what was produced by the IQP that was performed with MIK in 2008. The idea of tagging was brought up during post direct observation discussion either by the moderators or by the subjects; the subjects were receptive to the idea. They specifically noted that it would be useful if you were unsure of what one was looking for or if one was looking for the art of a specific artist if multiple museums had their work.

This would entail an area on each page which listed tags that museum was tagged with. These listed tags would be links, which would display other museums that were also tagged with that tag. The tags could either be user generated, systematically generated based on the information blurb on the museum's page, or manually generated by MIK staff. User generation of tags allows the least amount of control over the tag and would probably require moderation. Systematically generated tags would be the simplest given the proper software or service but would be the narrowest. Manually generated tags would have the exact tags that the web editor would want on them. The categorizations provided by the 2008 IQP could be used to aid the manual generation of tags.

An idea to present tagging information on the front page was proposed in the list of desired features provided by the MIK web staff. Based on solutions from other sites this feature has been termed a tag cloud and would display different tags, alphabetically, in a pre-determined area with different text size based on the ratio of use. For example, if one tag was used for one museum and another used for 10 the first tag's entry in the tag cloud might have a font size of 8 while the second has a font size of 24. The tag cloud could be separated into different types of tags such as subject, cost, audience, etc. for simplicity. This idea was received very similarly to tagging the museum pages when the direct observation subjects were asked if they would think that a tag cloud would be useful. A tag cloud is a valid approach to presenting tagged information but may go against MIK's goal of promoting each museum equally since museums that are tagged with the same things will have larger tag entries and are therefore more likely to be seen. Also, before one can create a tag cloud the tagging system must first be implemented.

5.4.8 Google Optimization of English Website

At the beginning of this study, considering it involved a website containing information on “museums in Copenhagen”, we Googled “museums in Copenhagen” to find the website. It was then discovered that the website we would be working with was not within the top 10 results for this search. Considering that Google searches are one of the top ways that Internet users find links to the information they are looking for this was determined to be the biggest flaw in MIK’s web presence.

To remedy this we suggest that MIK’s technical staff research how to or contract with a consultant to use common techniques to get the English portion of mik.dk displayed as a result within the top 10 of a Google search for “museums in Copenhagen.”

5.4.9 Implementing a Filter for the Museum List

One of the initial observations about the MIK website was that its museum list was only available as an alphabetically organized list. As a visitor planning their trip may not know exactly which museum they would like to visit during their stay in Copenhagen an alphabetical list of museums may not be sufficient to accommodate all of the needs of that tourist. It was proposed that a filter could be applied using the categories determined by an IQP performed for MIK in 2008. A prototype of this solution was created during the course of this project. The source code for this can be found in Appendix N.

This museum filter was used during the Direct Observation to illustrate the lack of satisfaction of the user story entitled “Find a museum you are interested in by genre” and to gauge how potential users may feel about the solution. Almost all of the subjects agreed that the museum filter added functionality and usability to the museum list by allowing them to explore, which museums they may be interested in. They found this to be much more efficient than guessing museums they might be interested in and then having to click through to find out if they actually would be. The evidence uncovered during the testing of the prototype museum filter shows that a museum filter on the live website would allow users to find museums more efficiently; even if they are not sure which exact museum they are looking for.

We suggest that MIK contracts with a web development consultant who would use this source code as a starting point to implement a full museum filter. The main issue that still needs to be addressed before an implementation is released is the lack of categories currently available

in the prototype. Please refer to section 4.7 for a full list of issues that still need to be addressed for a final implementation and screenshots of how the museum filter would work.

5.4.10 Log Analysis and Online Survey

As previously mentioned, log analysis is a very useful method for gathering data about the users of a website. We recommend that MIK continue to use log analysis through both Google Analytics and Azero.dk so that they can continue to discover more information about their web user base and monitor the user trends. Although it was not able to be implemented during the time of our project, we recommend that MIK implement the online survey we developed to discover more about how the users are using the website. In addition, the survey allows for the discovery of issues users are having as well as elements they find particularly useful. Through use of the online survey, in conjunction with log analysis, MIK can monitor user trends and gauge the success and effectiveness of any feature they implement.

5.5 Recommendations for Future Studies

While our research methods allowed us to draw many valuable conclusions and make recommendations for MIK, there is room for improvement for subsequent similar studies. When interviewing Museum directors, both the Danish Jewish Museum director and the Open Air museum director informed us that their visitor base is primarily Danish. In future studies, it would be beneficial to go to museums with a larger tourist visitor group if tourist surveys are a research goal. Over 90% of all respondents at the Open Air museum were Danish. While this provided a good comparison for our studies, we could not draw many marketing conclusions from this group. Also, it would benefit the study to have a focus group consisting of tourists. While we set out to meet this objective, we were not able to conduct this study due to logistical constraints. While we did conduct a direct observation study with our classmates, this does not provide a full understanding of the common tourists' web needs. By nature, our classmates have an above average proficiency in web navigation, which may have led to a 100% success rate on many of the use cases.

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Appendices

Appendix A: Museums By Alphabetical Order

Museums By Alphabetical Order		
A	G	O
Amagermuseet	Geological Museum	Open-Air Museum
Armoury Museum	Gilleleje Museum	Ordrupgaard
B	GL STRAND	P
Bakkehus Museum	Glyptotek	Police Historical Museum
Ballerup Egnsmuseum	Greve Museum	Post & Tele Museum
Bank & Savings Museum	H	R
Botanical Garden	Heerup Museum	Royal Cast Collection
Botanical Museum and Botanical Library	Hillerød Town Museum & Printing Museum	Royal Danish Naval Museum
C	Hirschsprung Collection	Royal Library
Charlottenborg Exhibition Hall	Holbo Herreds Kulturhistoriske Centre	S
Charlottenborg, Kunsthall	I	Skibshallerne
Circus Museum	Industrial Works of Brede	Skibsklareregaarden (The shipbroker's house)
Cisternerne Museum of Modern Glass Art	K	Spejdermuseet-Museum of Danish Scouts
D	Kroppedal Museum	Storm P. Museum
Danish Architecture Centre	Kunstforeningen GL STRAND	T
Danish Jewish Museum	L	Theater Museum in the Court Theater
Danish Museum of Art & Design	Little Mill	Thorvaldsen's Museum
Danish Museum of Hunting and Forestry	M	Town Museum in Helsingør

Danish Music Museum	Medical Museion	V
Danish National Gallery	Museum of Copenhagen	Victorian Home
Danish Revue Museum	Museum of Customs and Taxes	W
David Collection	Museum of Danish Resistance 1940-1945	Workers' Museum
Diesel House	N	Z
Dragør Museum	National Museum of Denmark	Zoo Copenhagen
E	Nivaagaard Picture Gallery	Zoological Museum
Esrum Abbey	North Atlantic House	Æ
F	Ny Carlsberg Glyptotek	Æbelholt Abbey Museum
Finn Juhl's House		Ø
Flynderupgård Museum		Øresund Aquarium
Folk Museum		
Frederiksborg Museum		
Frederiksvæ Museum of Industry		
Furesø Museums		

Appendix B: Tourist Information Center Visitor Survey

Tourist Information Center Visitor Interview

1. From where are you visiting?
2. What type of information are you looking for?
3. What is your primary information resource as a tourist?
4. How much pre-trip planning did you do in regards to sightseeing and tourist attractions?
5. How much do you utilize the Internet while planning for your trips?
6. Have you visited any museums?
 - a. -If yes, how did you find out about it?
7. Have you heard of the organization Museer I København?
 - a. If so, have you used any of their resources?
8. What type of advertising best reaches you?

Appendix C: Museum Visitor Survey

Member Museum Visitor Interview

1. From where are you visiting?
2. How did you discover this museum?
3. What type of experience were you looking for/reason for visit?
4. How much pre-trip planning did you do in regards to sightseeing and tourist attractions?
5. How much do you utilize the Internet while planning for your trips?
6. Have you heard of the organization Museer I København?
 - a. If so have you used any of their resources?
7. What type of advertising best reaches you?

Appendix D: Museum Director Interview Questions

Member Museum Director Interview

1. Provide directors with a brief project overview
2. What is your overall marketing strategy?
 - a. Role of website in marketing plan
 - b. Use of Internet in general
 - c. Television ads & other methods of advertisements
3. How do you interact with MIK, and how could MIK better promote/help you?
4. How do you measure the success of these methods?
5. What considerations do you take to reach broader audiences?
 - a. Local population
 - b. Tourists
 - c. Different age groups
6. We noticed certain features of your website that we had been considering recommending to MIK. (Newsletters, email link, etc... This varies by museum)
 - a. Why did you incorporate these features?
 - b. How successful have they been?
 - c. Would you recommend them?
7. How do you make the website more visible on the Internet? (Social media optimization)
8. Do you have ways to measure how many visitors come because of the website?
9. If you had to choose a few of the most important aspects of this museum that you would convey to a potential visitor, what would they be?

Appendix E: MIK Liaison Interview

Initial Liaison Interview

Sofie Paisley

Museer I København

Peterson Room (WPI) via Telephone

18 February 2009

Interview objective: *The goal of the interview is to gather information from the sponsor in order to expand on the knowledge we have gained so far from previous IQPs and other outside research*

1. Introductions
 - a. MIK
 - i. Part of a large project, Golden Days
 - ii. Main responsibility is a marketing portal for 77 Member Museums (Website).
 1. Previously, museums did their own PR and advertising.
 2. Museums send newsletter and flyers to MIK to add to website.
 3. Arrange Webpage with review of museums, pictures, and special exhibits.
 - iii. Also place advertisements in papers, and TV ads (Danish side).
 - iv. Place weekly advertisement in Copenhagen Post (English side).
2. Project Clarification
 - a. Our mission statement clearly reflects the objectives of the project.
 - i. Would like website improvement recommendations
 - ii. Would also like marketing suggestions.
 1. Currently, the English site is much smaller and does not have a specific marketing strategy or plan.
 - a. Only been in existence for five years.
 2. In the form of other channels that can be used to reach tourists.
 - a. (Other commercial sites contain links to Danish MIK website)
 - b. Last year's IQP work
 - i. Likes/dislikes
 1. Survey (Museum Selector) was very useful.
 2. Categorization of museums done by last year's team was also interesting and useful.
 - ii. Has it been implemented?
 1. Has not been implemented due to technical restrictions only.
 - c. In-house research
 - i. Questionnaires to determine how people find the site have been done.

- ii. No usability studies have been done.
 - iii. User analysis studies have been done, but not in English.
 - 1. We can still see statistics from the website if need be.
- d. Additional info and resources
 - i. Sofie provided us with the information necessary to access data from the website.
- e. Technological or Logistical Issues
 - i. Status of website technology
 - 1. Site design outsourced to 1508, a web development service.
 - 2. Trying to get website to function in Safari and other browsers.
 - 3. There is a search function to select museums by “categories”, but it is not easy to find.
 - ii. Calendar Issues
 - 1. Collaborate with partners for this function.
 - 2. Currently, they don’t have the resources to create an English version
 - 3. Empty link on MIK site.
 - 4. Will be meeting with them soon to try to resolve this issue.
- f. Project Logistics
 - i. Scheduled for a March 15th arrival in Copenhagen
 - ii. Scheduled for a March 23rd start with MIK
 - iii. Scheduled to start field work on March 30th
 - iv. Sofie will set up a meeting for us with a representative from the Danish National Museum.
 - v. Sofie will make arrangements with the Tourism Office so we can have access to the computers as well as meet with their representatives.
 - vi. Unsure if we will have workspace at MIK office.
 - 1. Besides the Engineering College, we should look into going to the Royal Danish Library (The Black Diamond).

Appendix F: Worcester Art Museum Interview

Worcester Art Museum Interview

Brian Barlow

Director of Advancement

27 February 2009

Interview objective: *The goal of the interview is to gather information from a local museum director in order to expand on the knowledge we have gained so far from previous IQPs and other outside research*

1.) Brief project overview

- Discussed MIK, their current website, and marketing strategies they utilize. In addition, we gave a brief overview of our project in order to provide Brian Barlow with information necessary to understanding the purpose of our study.

2.) Museum Marketing

- The main focus of the marketing strategy is to reach out to local visitors first through an awareness campaign.
 - Currently, the awareness program provides the public with details they “may not know” about the Worcester Art Museum and its exhibits.
- In addition, this campaign focuses on creating commonalities that people can relate to.
- Currently, WAM does not run television advertisements.
- Local radio advertisements have been found to be a useful form of marketing.

3.) Establishing a personal connection with the visitor

- One of the most common mistakes museums make is that they fail to create a personal connection with the visitor.
- “Programming begets audience”
- One area this is often seen in is in the titling of museum exhibits.
 - Exhibit titles should be creative and not just tell what the exhibit is.
 - Should attempt to reach out to the visitors and give them a reason to attend.
- Personal testimonials are a great method of advertising because people relate to people.
 - In a similar fashion, a comments page is also useful, however it can be a double-edged sword.

4.) Measuring the success of these marketing methods.

- Website log analysis and attendance records are used to determine success.

5.) Considerations taken to reach broader audiences.

- Age is a very important category to take into account.
 - Knowing your audience is essential for success.

6.) We noticed certain features of your website that we had been considering recommending to MIK, including the email sign up (RSS), the events (social aspect of museums), and the feedback section.

- All these features are relatively new, but have been growing in number of users and very successful.
- Once again, forums can be a bit of a danger zone, but so far we have not encountered any problems.

7.) Making the website more visible on the Internet (social media optimization)/

- WAM website is linked from other museum websites.
- Similar to MIK, there is a consortium of museums in the United States.

8.) Recommendations for our project:

- Emphasize the individual museums' uniqueness.
- Highlight something that defines them
 - Use graphics.
- Build a personal connection with the potential viewers
- Make the website easier to navigate
- Change the organization/categorization of the museums
- Measure percentage of people that navigate beyond the home page.

Appendix G: Danish Jewish Museum Interview Summary

Dansk Jørdisk Museum Interview

*Janne Laursen
Director of Museum
24 March 2009*

Relationship with MIK

- 1/5 of budget for fee and additional ad campaigns
 - Well spent. Good service, initiative to advertise
- Also use Wonderful Copenhagen
- MIK asks for any materials that they have (updates, new promos)

Website

- Have full time employee
- Not main advertising form, reaches a younger audience.
- People tend to hear about museum from friends (word of mouth, best resource for bringing in users) and articles.
- Website users are there for reasons other than to visit the museum

Ways they are currently promoted by:

- Guidebooks (Slotsholmen)
- Articles
 - Publish an article = see more visitors next day!!
 - NOT Ads!!
- Website
- MIK
- AOK

Previous Study

- Year long study in 2007 of visitors
- 950 responses
- 43% of visitors are USA or Canada
- Most common visitors were ladies over 50
- Most visitors don't know much about the website
- MIK is not the primary way visitors are discovering the museum

Museum Goals

- Not only number of visitors
- Want to have a positive Impact on visitors!
- Don't have a large facility for people.
- Want to make the visitors curious, want them to look for more information.
- Want to establish an educational profile

- Free admissions for educational groups.
- Don't have multiple/special exhibits.

Technology

- Newsletter good to promote arrangements (tours)
- Feedback from email and visitors (mainly) used to re-do website and arrangements.
- Did an analysis on where visitors are coming from and what they are using.

Want to convey

- Architecture
- Story of Jews in Denmark
- Diversity
- Jewish Identity
- English speakers most interested in WWII
- Danish most interested in immigration and identity.

What's the limiting factor?

- Finances.

Suggestions for MIK

- Figure out what advertisements are successful
- New initiatives if old ads aren't working?
- Finding the way (better directions to front door)
- Slotsholmen
- Virtual Museum
- AOK
 - #1 way visitors discover website
- Need to promote the type of experience for the visitor.
- Audience analysis to figure out what to put on the web page.... Personal connection

Appendix H: GL Strand Museum Interview Summary

GL Strand Museum Interview

Barbara Læssøe Stephensen

Communication Manager

27 March 2009

GL Strand Overview

- Museum based solely on private donations, no government funding
- Hard time trying to market because sponsors want to pay for artists and exhibitions, not marketing
- Entrance fee helps to cover marketing costs, facility costs, salaries, etc.
- Website is 2 yrs old. Not enough funds at first for website.
- Had a questionnaire last year
 - English speakers that visit are mostly foreign people living in Denmark
- Museum closed in July
 - Don't see themselves as a "Tourist Destination"
- Most visitors come on tradition or reputation (word of mouth)
 - About 30,000 visitors per year
- Wonderful Copenhagen is not a huge help for marketing or advertising because you have to pay for EVERYTHING (harder for smaller museums)
 - 15k Kr for 1 page flyer in Center.

Relationship with MIK

- MIK is a great alternative to Wonderful Copenhagen (especially for smaller museums).
- Networking and Cooperation is a large part of marketing especially for large events
- Although MIK is helpful, although is not totally meeting needs

MIK Website Issues

- Not easily found
- Haven't established enough connections
- Did not analyze user base or promote themselves well enough (not reaching a broader audience)
- Should associate themselves with other unions and companies more
 - Teacher's organization
 - Cultural groups/societies
- Broaden user base and advertise to a broader audience
- Have a link from DSB site?
- Tool for the hotel? – Not relevant
 - Wonderful Copenhagen resource that you must go through the concierge
- How many visitors come to MIK website come to GL STRAND?
 - Most of what get from MIK is people looking to rent "SATAN" room (20%)
 - Very few regular visitors

GL STRAND Approach

- Focusing on digital media
- Starting using Google analytics
 - To figure out where visitors are coming from
 - Surprised to find users from Japan, Argentina, US not necessarily Denmark or other Scandinavian countries.
 - 70% of users find something useful
 - Hard to measure if visitors are visiting museum because of website
- Open Social Networks
 - Twitter
 - Facebook© Group (Largest of all art institutions)
 - “Ambassador Strategy” – Have people tell other people about the museum
 - Creating a News Feed
 - Not just for their museum
 - Recommending other museums
 - Other info related to exhibits
 - Collaborate with others – Trying to promote art + culture not just their museum
 - RSS Feed for exhibits
- Not necessarily a kids museum
 - No care center/activities
 - No kids exhibits
- Co-op with Danish IT schools
 - Showed them the website
 - Did exercise on how it could be better (they designed new ideas)
- Visitors
 - International visitors come for the artists (Very well known artists)
 - Often critics will give reviews (draws visitors)
 - Lots of return visitors.
- Closing for a year and restoring location
 - More exhibition space
 - Public Reading Room

Suggestions

- Categorize Museums
 - Type, Atmosphere, Region etc.
 - AOK does by region...
 - Different themes
 - Mothers on Maternity Leave
 - Museums you can see in an hour
 - After Work Hangout
- Make known how accessible museum is
 - “Really easy to get to”
- Too much focus on family museums by MIK
 - GL STRAND is not traditionally a family friendly museum

- Try to promote lesser-known museums more?
- GPS or Google earth?
 - Make sure each museum is searchable and GPS knows about it
- Find more cooperative partners
 - More visible as an organization
- Create networks and pull people in
- Search optimization (should be first on Google!)
- Agreements with international organizations
 - Links on other museum coalition sites
- Use-it! for young travelers
- Different info on museum list pages!!
 - Danish and English

Appendix I: Danish National Museum Interview Summary

Danish National Museum Interview

*Jesper Thomas Møller
Communication Manager
2 April 2009*

Marketing Overview

- 3 people in marketing department: website, press contact, Open Air museum, Danish Resistance museum, Danish National Museum and others
- Strong focus is on tourists
- Performed some surveys last year
 - 50% of visitors were foreign
 - Website was not biggest draw to people
 - People come from Wonderful Copenhagen page to their page
 - People find museum by guidebooks and word of mouth as well.
- All museums must perform some surveys this year for a part of the Danish Ministry of Culture (Kulturarvstyrelsen).
 - Results will be compiled at the end of year
 - Asks about nationality of visitors among other things

Museum Visitors

- Depend on weather and season
- Most foreign tourists in June-September
 - Depends on the economy as well (for travelers as a whole)
- US and UK are largest percentage of tourists, but also receive many visitors from Western Europe
- 35 year old, Woman from Copenhagen is common visitor
- 70-80k school children per year visit the museum
 - School department coordinates visits
- Wonderful Copenhagen research shows that visitors are interested in culture of place they are visiting.

Relationship with MIK

- Talk to MIK frequently (know them personally)
- MIK under represents them a little, but this is okay because they are such a large museum.
- Danish National Museum is a former palace, tells the story of the Danes and have one of the largest ethnographical exhibits in the world
 - Should tie into marketing strategy

Danish National Museum Website

- English and Danish Website (Danish partly translated)
 - Most people go to find info on museums

- Have information and films about the museums and different topics.
- Optimized to appear high on Google list
- Social Networking
 - Facebook©
 - Newsletters
 - Danish, English, German
 - Special Events, Holidays

Suggestions for MIK

- Use Twitter or Blogs for website
 - Open Air Museum has Recipe Blog
- Posting videos on YouTube may be helpful
- Focus on establishing connections (not necessarily on their own website) e.g. with Wonderful Copenhagen
 - Collaborations with schools might help, but MIK maybe shouldn't deal with that.
- Should promote Copenhagen as an "Open City" (as Wonderful Copenhagen does)
- Should have listing of Free Museums
- Filterable Museum List would be useful
- Links on guidebook homepages may be helpful
- Individual Museum Pages should have more content that is useful to visitors
 - Focus on Tourist Interest (difference between English and Danish content)
- Focus on Danes being open-minded
- MIK should have tours
 - What should I do in 3 hours? 1 day? 3 days?
 - Like current tours but find them hard to navigate
- Different themes for different types of visitors
 - Different content based on different museums
 - Danish National Museum: Who are the Danes (Vikings), Palace
 - The Open Air Museum: "Experience everyday life in Denmark as it used to be at the time of Hans Christian Andersen."
- Focus on things that tourists already know like the Little Mermaid
- Copenhagen burned/bombed in 1808 so quite a bit of what is left is from Hans Christian Anderson's time
- Because MIK is small organization should prioritize to get visitors, collaborate with Wonderful Copenhagen.
- AOK is not that useful for tourists (a lot not in English)
- Wonderful Copenhagen is part of Tourist Board, which has offices in other countries.

Guidebooks

- Not sure which is most popular, but have ads in a few.
- Not sure how many non Danish or English speakers use guidebooks

Administrative

- Send Jesper a copy of interview summary before putting in report
- Monica will send us a copy of the survey results.

Appendix J: Frilandsmuseet (Open Air Museum) Interview Summary

Frilandsmuseet (Open Air Museum) Interview

Rikke Bengtha Ruhe

Museum Inspector

6 April 2009

Frilandsmuseet

- Never first choice for tourists
 - Most go to city to see city and don't get out of city
- Danish families are main visitors
- Educational Programs
 - Few schools come every year
 - Others come once every so often
- Visitors:
 - 280,000 people per year
 - Can accommodate lots of visitors at one time due to large area.
 - Surveys:
 - Origin, age, reason for visit
 - Best worst experience
 - Like feeling of freedom found there
 - Day outside city is nice
 - Interested to learn new things
 - Directed educational content not present without re-enactors who are there during summer.
 - Some people may miss out
- Marketing
 - Mostly done by Danish National Museum
 - Educational Department does analysis as well
- Main Marketing Strategy
 - Directed towards families, kids
 - Newsletter (1000 subscribers)
 - Teacher's Newsletter (600 subscribe)
 - Maps, Pamphlets
 - During the summer have weekly article in local paper
 - These are very successful and attract local visitors.
 - Small films on website (and at other places around Copenhagen)
- Website
 - Checked frequently, mostly for events, opening hours, and if pets are permitted
 - "Secondary Resource" for people– After they decide to visit
 - Most users from Denmark
 - Most users from Google (MIK #5 on list... more than Wonderful Copenhagen)
 - Last month 5201 unique visitors on website

Interaction with MIK

- Had lots of communication a few years ago
 - Themes correlated nicely
- Very easy to contact (personal connection)
- Knew museum well

Suggestions for MIK

- Improvements
 - Know limited for resources
 - Contact once a month would be nice.
- Different expectations for English vs. Danish visitors
 - Danes go to have a nice day with family
 - Tourists
 - Older
 - Interested in culture of time
 - Different blurbs on website would help
 - Hard time getting Swedish tourists as similar places in Sweden.
 - (Tourists = US and other Europeans)

Administrative

- We can come back and interview visitors.
 - Suggested Wednesday, April 8, 2009, as there will be Easter activities/events.
- We have permission to include the summary of this interview in our proposal

Appendix K: MIK Director of Communication Interview Summary

Interview Summary

Lise Korsgaard

Head of Communication

20 April 2009

Topics Discussed:

- Museums here are focusing on preservation
 - Can see curators working on pieces at the museum as part of exhibit.
- Discussed having monthly contact with museums for marketing ideas.
 - MIK already emails museums whenever they have new themes
 - Have bi-weekly/monthly contact with most museums
- Århus University museum analysis said there was a lack of “strategic” communication/marketing
 - Articles were in the newspapers.
 - Ulla was interviewed.
 - Positive light for MIK
 - New project underway on how museums can fix this!

Reviewed our accomplishments so far

- Talked to 4 museum directors
- Had very interesting suggestions for us
- Conducted visitor surveys at Frilandsmuseet
 - ~30 visitors (Mostly Danes)
- Conducted visitor surveys at Tourist Information Center
 - 75 interviews
- Returning to museums to do survey visitors
 - Discover information seeking habits of visitors

Prototype

- Discussed improvements that need to be made prior to implementation
- Will include excel sheet from last year’s IQP with group’s permission
- Lise thought the prototype was useful.
 - How are museums categorized?
 - There is a coding system.
 - Table of museums, pictures, etc with IDs
 - MIK needs to know how to edit museums
- Phil will donate code, so MIK can use
 - Including having 1508 improve it.
- Can have new museums select categories.
- Does same thing that last year’s group proposed
 - Is easier to implement as it uses existing website

MIK Marketing Strategy

- Current Marketing Strategy
 - Museum Guide, Newspaper articles, Museum Portal
 - Danish
 - Website
 - Museum Guide
 - Co-Advertising with museums
 - Similar purpose but different identity
 - Calendar in paper about museum events
 - Museum Magazine with newspaper
 - Very important to have newspapers focus on museums.
 - Campaigns
 - 2-3/yr
 - Work with S-Togs to have promotions
 - Free admission to museum with pass, etc...
 - Have lots of advertising come out together
 - Press releases
 - Sometimes have TV advertisements (are in a few segments)
 - English
 - Website, Museum Guide, Copenhagen Post articles/ads
 - Copenhagen This Week
 - Send press releases out as well
 - Ongoing discussion about how tourists use museums
- Wonderful Copenhagen
 - Tell them what we have going on and they have a link to our website
 - Don't use culture and museums in their promotion of Copenhagen
- Measuring success is a little difficult because there are so many ways museums are promoted.
- Mandated survey this year is about origin and people's experience in museums
 - Would be more useful to have more marketing information on this.
- 2 Main Marketing Focuses
 - Get people to visit museums
 - Brand museums to make them more favorable
 - Get away from "boring" stereotype
 - GL Strand was our favorite, made a great impression on us.
 - Good marketing strategy
 - Have been able to attract young, urban crowd.

Google Optimization

- Very important, many tourists use Google to search for attractions
- If looking for museums, tourists will search "museums in Copenhagen"
 - Should have our website as top hits

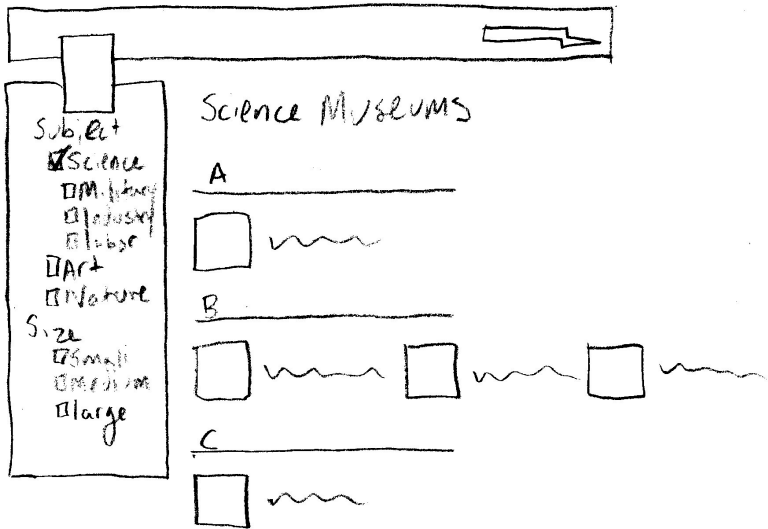
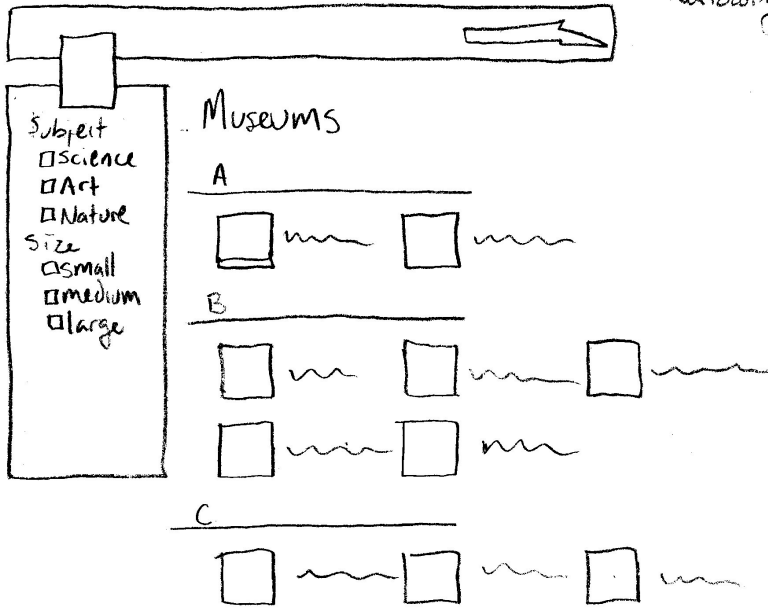
Museum Guide

- Pamphlet Location
 - Hotels, TIC, all museums, conferences/conventions

- We will brainstorm other locations
 - Train stations, larger bakeries, etc...
- Make more visual
 - Compared to last year, this year's is more visual.
 - Created surveys (In Danish) to brainstorm improvements.
 - Told us that it works...
 - Added colors this year.
 - Maybe not as useful for tourists
 - Should make different pamphlets for Tourists and Danes
 - Similarly, have link from website for Google maps/for creating routes
- Discussed User Stories purpose
- Online Surveys
 - Age; was this page helpful to you?
 - A few other questions
 - Focus is to discover user base

Appendix L: Design Diagrams For Filtering Prototype

Museum List Filtering Concept
- Narrowing Selection



POD

Military Science Museums

Subject
 Science
 Military
 Industry
 Labor
 Art
 Nature

Size
 Small
 Medium
 Large

B

~~~~~  ~~~~~

C

~~~~~

Military and Industry Science Museums

Subject
 Science
 Military
 Industry
 Labor
 Art
 Nature

Size
 Small
 Medium
 Large

B

~~~~~  ~~~~~

**Medium Military and Industry Science Museums**

Subject  
 Science  
 Military  
 Industry  
 Labor  
 Art  
 Nature

Size  
 Small  
 Medium  
 Large

B

~~~~~


Appendix M: Museum Filter Prototype Demonstration

This section serves as a demonstration of how the prototype aids the discovery of museums that may interest the user. Currently there are two categories, out of many possible, implemented. Categories are shown in the left hand frame as checkboxes. These checkboxes are the primary control of the new museum filter. Figure 18 shows the museum list page before any boxes are checked.

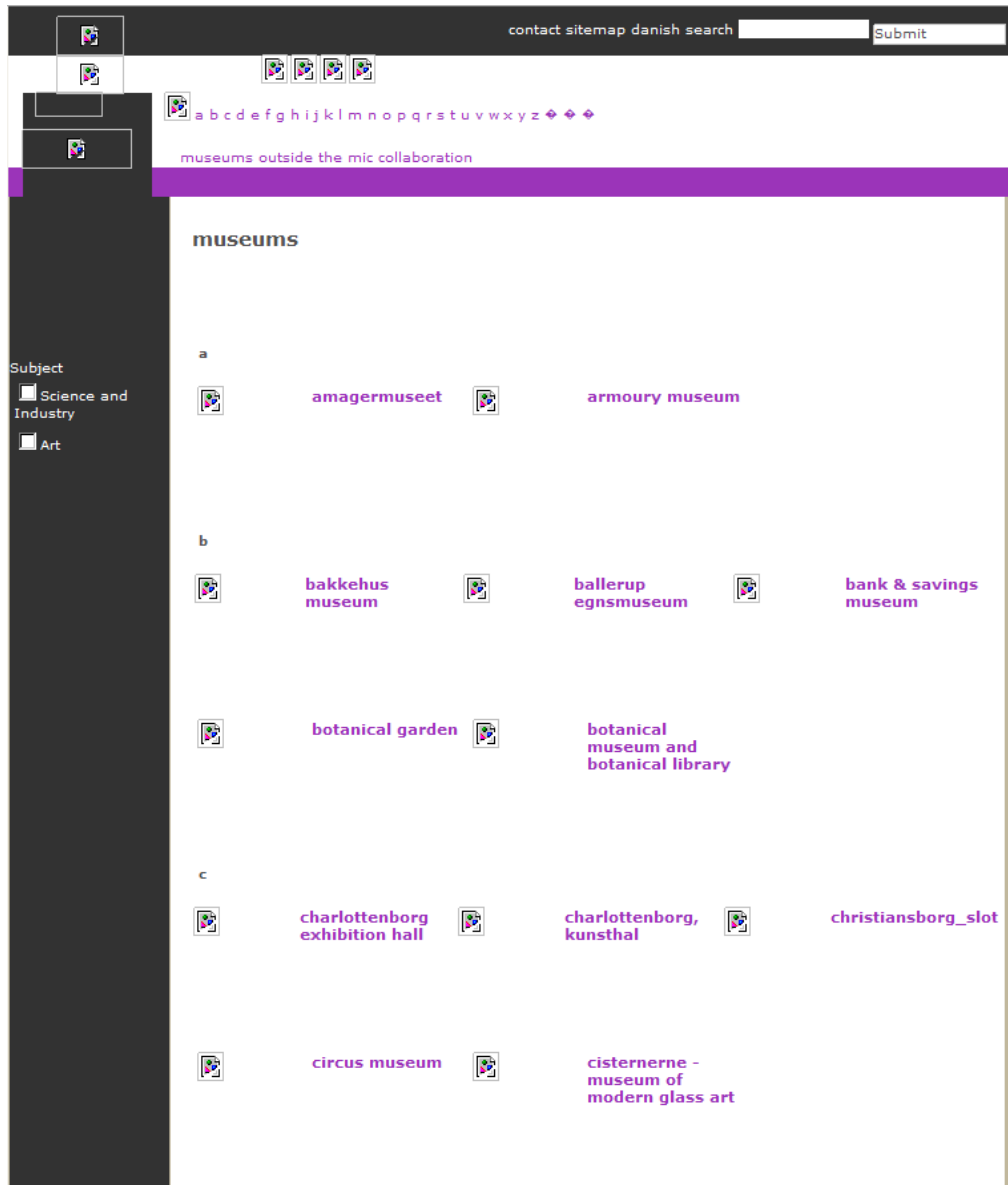


Figure 18: Prototype Museum List Page

By clicking a checkbox the museum list will change to show only the museums that are within that category. If the category that is checked has subcategories, as the “Science and Industry” category does below they will be displayed under it. Figure 19 shows the initial narrowing of the museum list and the creation of subcategory checkboxes.

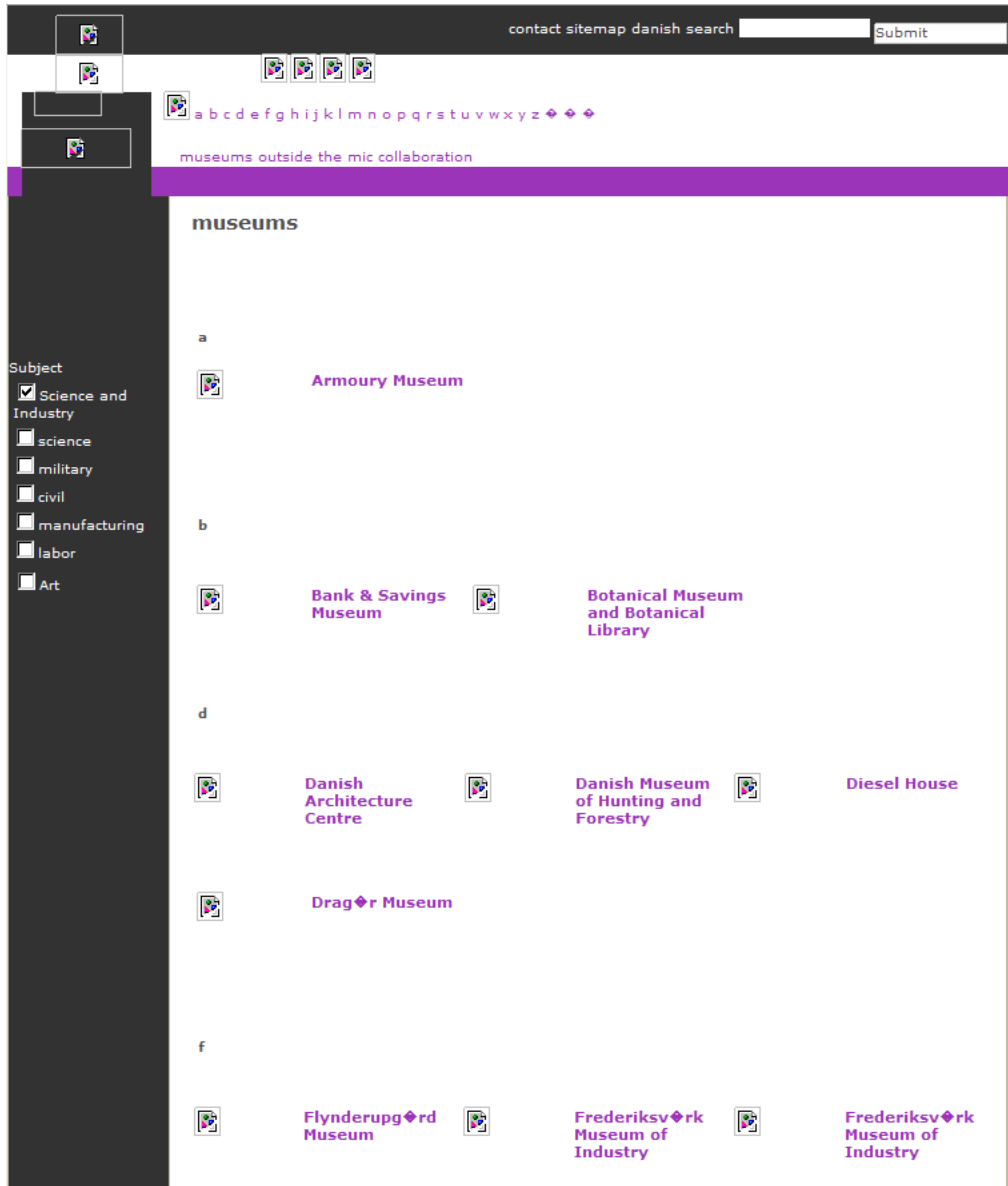


Figure 19: Initial Narrowing of the Museum List

When multiple categories, including subcategories, are checked only museums that fall under all of the categories checked will be shown. Figure 20 demonstrates what happens when a subcategory is selected. Notice that no new checkboxes are created and that the list of museums has once again shrunk and now shows only museums that have exhibits pertaining to military science.

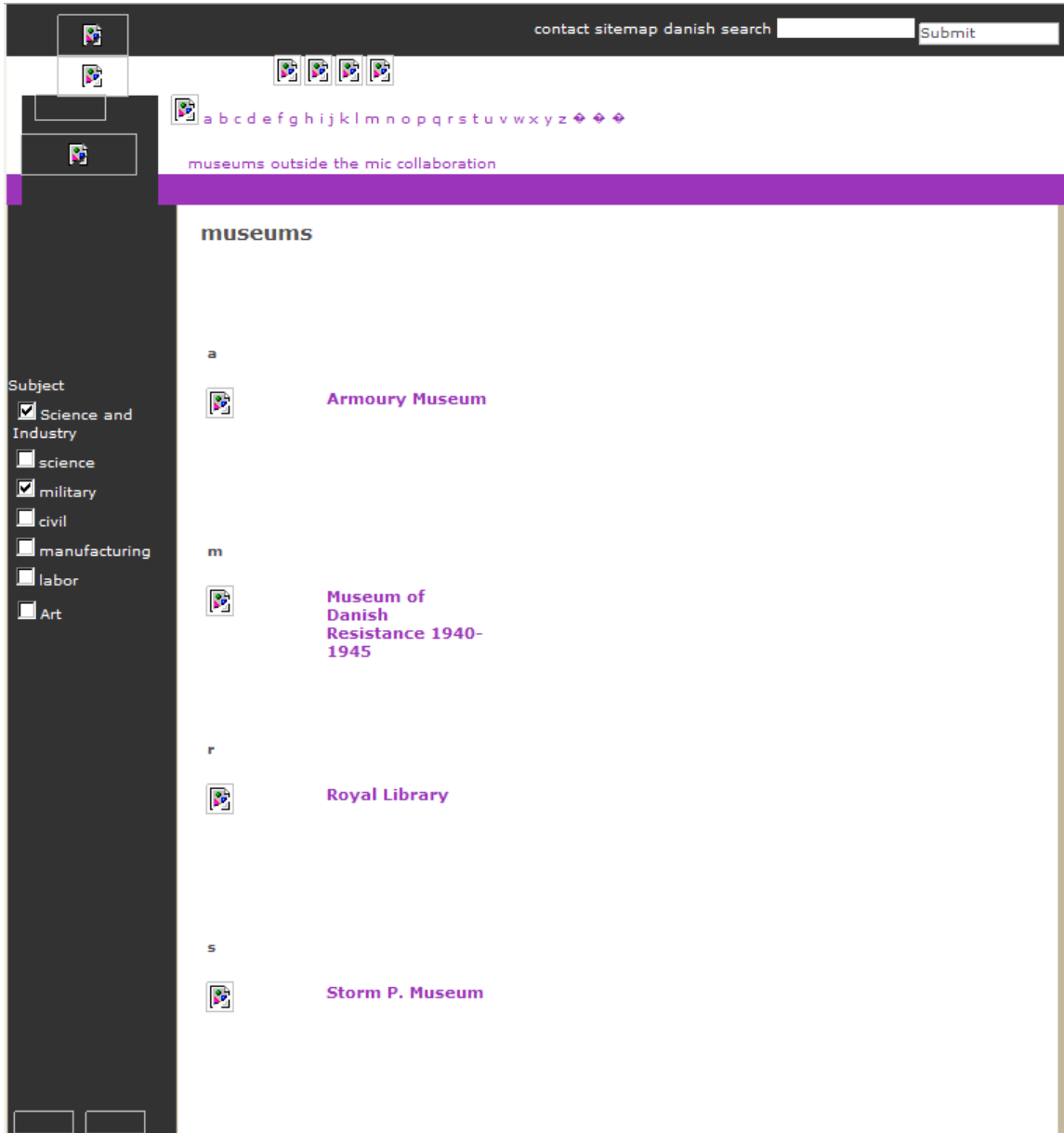


Figure 20: Museum List with Subcategory Checked

Progressively more categories can be checked to show a narrower list of museums that more likely pertain to the interests of the user. With the implementation of more categories in the future this will allow a user to find, for example, a civil science museum which costs between 10kr and 20kr and is family friendly. Figure 21 below demonstrates a further narrowing of topics to Military and Labor Science museums.

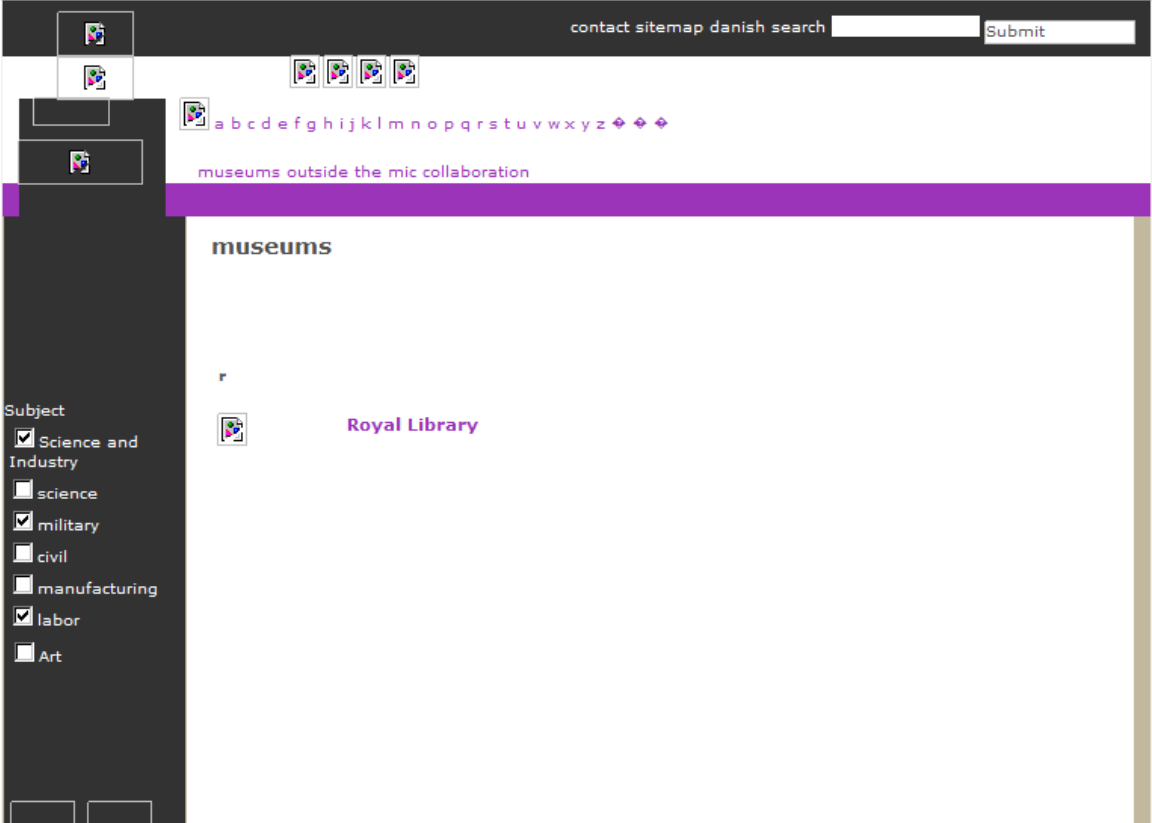


Figure 21: Further Narrowing of Museum List

If there are no museums to show, the message, seen in Figure 22, is displayed. In order to keep narrowing museums after this message is displayed a checkbox must be unchecked. The checkbox that gets unchecked does not have to be the one that was checked to put the list into this state. In the prototype to get back to a full museum list a refresh must be performed on the browser.

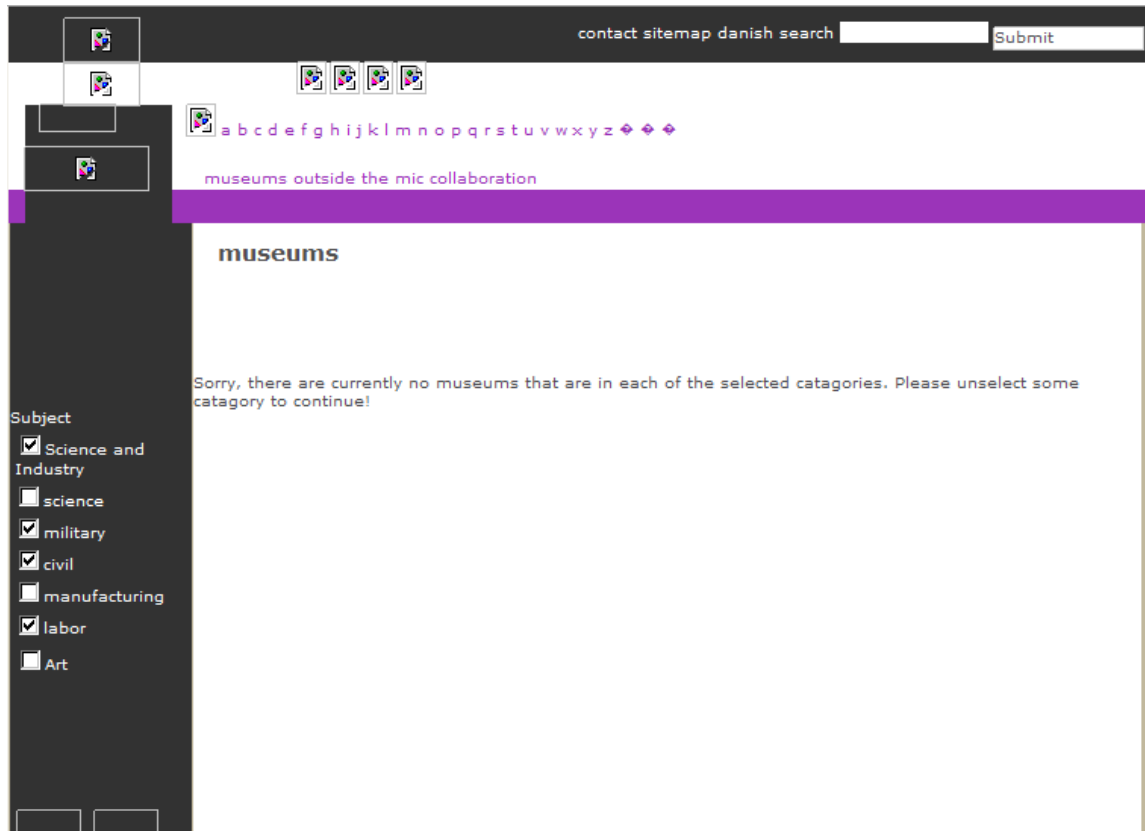


Figure 22: Message-No Museums in These Categories

Appendix N: Source Code from museums.js – “MIK Filtering Prototype”

```
/**the format of the museums is as follows: <first letter of
museumname><number of museums before this one that begins with the same
letter>
Each of these matches up with their respective museum name. if a museum is
added it should be in alphabetical order and all of the numbers should be
updated everywhere they are referenced. example: if a museum wiht the name
Apothecary Museum is added it would become a2, and a2 would become a3 and
should be changed in each catagory array it is currently in. the best way to
do this is to first replace all "a2"'s with "a3"'s and then add a2 to the
proper catagories for the new museum.*/
var allmuseums = new Array("a1", "a2", "b1", "b2", "b3", "b4", "b5", "c1",
" c2", "c3", "c4", "c5", "d1", "d2", "d3", "d4", "d5", "d6", "d7", "d8", "d9",
"d10", "e1", "f1", "f2", "f3", "f4", "f5", "f5", "g1", "g2", "g3", "g4",
" g5", "h1", "h2", "h3", "h4", "i1", "j1", "k1", "k2", "l1", "m1", "m2", "m3",
" m4", "m5", "n1", "n2", "n3", "n4", "o1", "o2", "p1", "p2", "r1", "r2", "r3",
" s1", "s2", "s3", "s4", "t1", "t2", "t3", "v1", "w1", "w2", "z1", "z2");
var museumnames = new Array("Amagermuseet", "Armoury Museum", "Bakkehus
Museum", "Ballerup Egnsmuseum", "Bank & Savings Museum", "Botanical Garden",
"Botanical Museum and Botanical Library", "Charlottenborg Exhibition Hall",
"Charlottenborg", "Christiansborg_Slot", "Circus Museum", "Cisternerne -
Museum of Modern Glass Art", "Danish Architecture Centre", "Danish Jewish
Museum", "Danish Museum of Art & Design", "Danish Museum of Hunting and
Forestry", "Danish Music Museum", "Danish National Gallery", "Danish Revue
Museum", "David Collection", "Diesel House", "Dragør Museum", "Esrum Abbey",
"Finn Juhl's House", "Flynderupgård Museum", "Folk Museum", "Frederiksborg
Museum", "Frederiksværk Museum of Industry", "Furesø Museums", "Geological
Museum", "Gilleleje Museum", "GL STRAND", "Glyptotek", "Greve Museum",
"Heerup Museum", "Hillerød Town Museum & Printing Museum", "Hirschsprung
Collection", "Holbo Herreds Kulturhistoriske Centre", "Industrial Works of
Brede", "JF Willumsens Museum", "Kroppedal Museum", "Kunstforeningen GL
STRAND", "Little Mill", "Medical Museion", "Museum of Copenhagen", "Museum of
Customs and Taxes", "Museum of Danish Resistance 1940-1945", "National Museum
of Denmark", "Nivaagaard Picture Gallery", "North Atlantic House", "Ny
Carlsberg Glyptotek", "Open-Air Museum", "Ordrupgaard", "Police Historical
Museum", "Post & Tele Museum", "Royal Cast Collection", "Royal Danish Naval
Museum", "Royal Library", "Skibshallerne", "Skibsklarerergaarden (The
shipbroker's house)", "Spejdermuseet - museum of Danish scouts", "Storm P.
Museum", "Theatre Museum in the Court Theatre", "Thorvaldsen's Museum", "Town
Museum in Helsingør", "Victorian home", "Willumsens Museum", "Workers'
Museum", "Zoo Copenhagen", "Zoological Museum");

/**this array will contain the list of arrays that are currently checked.*/
var shownMuseumLists = new Array();

/** Below are the arrays for current catagorizations. any new catagorizations
should have arrays similar to these.*/
//science & industry
var sciindus = new Array("a2", "b3", "b5", "d1", "d10", "d4", "d9", "f2",
" f5", "g1", "h1", "h2", "i1", "k1", "m1", "m1", "m3", "m4", "n1", "n3", "p1",
" p2", "r2", "r3", "s1", "s2", "s3", "t1", "t3", "v1", "w1", "z1");
var military = new Array("a2", "m4", "r2", "s3");
```

```

var civil = new Array("b3", "d1", "d9", "d10", "f2", "i1", "r3", "t1", "t3",
"v1", "w1");
var manufacturing = new Array("d9", "f5", "h2", "h1", "i1", "m1");
var labor = new Array("b3", "d4", "h1", "i1", "m3", "n1", "n3", "p1", "p2",
"r2", "s1", "s2", "t3", "w1", "z1");
var science = new Array("b5", "d1", "d9", "g1", "k1", "m1", "r3", "z1");

//art
var art = new Array("h1", "n2", "s4", "t2", "d7", "t1", "c1", "d3", "k2",
"n1", "n3", "r3", "t1", "v1", "h1", "h2", "h3", "k1", "k2", "n1", "n2", "n3",
"o2", "p2", "r3", "s4", "t2", "d8", "f5", "b1", "n1", "r3", "d3", "h1", "k2",
"n1", "n2", "n3", "r1", "t2", "d5", "k2");
var specific = new Array("h1", "n2", "s4", "t2");
var theater = new Array("d7", "t1");
var design = new Array("c1", "d3", "k2", "n1", "n3", "r3", "t1", "v1");
var graphic = new Array("h1", "h2", "h3", "k1", "k2", "n1", "n2", "n3", "o2",
"p2", "r3", "s4", "t2", "d8", "f5");
var literature = new Array("b1", "n1", "r3");
var sculpture = new Array("d3", "h1", "k2", "n1", "n2", "n3", "r1", "t2");
var music = new Array("d5", "k2");

/**Purpose: shows the list of museums or displays a message that says no
museums match the current criteria.
    -museums_to_show is a list of museums in the format of the allmuseums
array that should be shown.
*/
function show(museums_to_show){

    var masterTable = document.getElementById("masterTable");
    //add header:
    var span = document.createElement("span");
        span.setAttribute("style","height:13px;");
    var br = document.createElement("br");
    var div = document.createElement("div");
        div.setAttribute("style","padding-left:16px; height:87px;
width:416px; overflow:hidden; margin:0;");
    var h1 = document.createElement("h1");
    var h1txt = document.createTextNode("museums");
    h1.appendChild(h1txt);
    div.appendChild(h1);
    masterTable.appendChild(span);
    masterTable.appendChild(br);
    masterTable.appendChild(div);
    masterTable.appendChild(br);

    //if there's nothing on the list show the nothing to show message
    if(museums_to_show.length == 0){
        var sorrytxt = document.createTextNode("Sorry, there are
currently no museums that are in each of the selected catagories. Please
unselect some catagory to continue!");
        masterTable.appendChild(sorrytxt);
    }

    var idNum = 0;

    //if there is something on the list show it.
    for(var x = 0; x < museums_to_show.length; x++){

```

```

        //if the letterheader exists there is no need to create it,
otherwise, create it.
        var letterTable = document.getElementById(museums_to_show[x][0] +
"t");
        if(letterTable == null){
            //letter header formatting
            letterTable = document.createElement("table");
            letterTable.setAttribute("id", museums_to_show[x][0] +
"t");
            letterTable.setAttribute("style", "width:627px;
height:17px;");
            letterTable.setAttribute("cellpadding", "0");
            letterTable.setAttribute("cellspacing", "0");
            letterTable.setAttribute("border","0");

            var tr1 = document.createElement("tr");
            var td1 = document.createElement("td");
                td1.setAttribute("style","width:21px");
            var a = document.createElement("a");
                a.setAttribute("name", "d");
            td1.appendChild(a);
            tr1.appendChild(td1);
            var td2 = document.createElement("td");
                td2.setAttribute("style", "width:13px; font-
weight:bold;");
            var td2txt =
document.createTextNode(museums_to_show[x][0]);
            td2.appendChild(td2txt);
            tr1.appendChild(td2);
            var td3 = document.createElement("td");
                td3.setAttribute("style","width:593;");
            tr1.appendChild(td3);

            var tr2 = document.createElement("tr");
            var td4 = document.createElement("td");
                td4.setAttribute("colspan", "3");
                td4.setAttribute("style","height:20px;");
            tr2.appendChild(td4);

            letterTable.appendChild(tr1);
            letterTable.appendChild(tr2);
            masterTable.appendChild(letterTable);
        }

        var tablewasnew = false;
        var trwasnew = false;
        var find = allmuseums.indexOf(museums_to_show[x]);
        var museum = museumnames[find];

        //determine the proper placement of this museum. should be 3 per
row.
        if(x >= 1 && museums_to_show[x][0] == museums_to_show[x-
1][0]){//if same letter as last...
            idNum++;
        }else{
            idNum = 1;

```



```

    }
    var placement = 0;

    var row_placement = idNum;
    while(row_placement > 3){
        row_placement = row_placement - 3;
        placement++
    }

    //do we need a new table for this row?
    var table = document.getElementById(museums_to_show[x][0] + "t" +
placement);
    if(table == null){
        tablewasnew = true;
        table = document.createElement("table");
        table.setAttribute("id", museums_to_show[x][0] + "t" +
placement);
        table.setAttribute("style", "width:627px; height:109px;");
        table.setAttribute("cellpadding", "0");
        table.setAttribute("cellspacing", "0");
        table.setAttribute("border","0");
    }

    //do we need a new tablerow for this table?
    var tr = document.getElementById(museums_to_show[x][0] + "r" +
placement);
    if(tr == null){
        trwasnew = true;
        tr = document.createElement("tr");
        tr.setAttribute("id", museums_to_show[x][0] + "r" +
placement);
    }

    //create the picture element
    var picTd = document.createElement("td");
        picTd.setAttribute("id",museums_to_show[x] + "pic");
        picTd.setAttribute("style","width:85px;");
    var picA = document.createElement("a");
        picA.setAttribute("href","/museer/" + museum + ".aspx");
    var picImg = document.createElement("img");
        picImg.setAttribute("src", "/upload/" + museum + ".jpg");
        picImg.setAttribute("border","0");
    picA.appendChild(picImg);
    picTd.appendChild(picA);

    //create the text element
    var txtTd = document.createElement("td");
        txtTd.setAttribute("id",museums_to_show[x]);
        txtTd.setAttribute("style", "width:117px; padding:0 5px 0;");
    var txtH2 = document.createElement("h2");
    var txtA = document.createElement("a");
        txtA.setAttribute("href","/museer/" + museum + ".aspx");
    var txtTxt = document.createTextNode(museum);
    txtA.appendChild(txtTxt);
    txtH2.appendChild(txtA);

```

```

txtTd.appendChild(txtH2);

//if the next museum has already been placed place this museum
before it. (i don't think this can happen anymore...)
var nextMus = document.getElementById(museums_to_show[x][0] +
(museums_to_show[x][1] + 1) + "pic");
if(nextMus != null){
    tr.insertBefore(picTd, nextMus);
    tr.insertBefore(txtTd, nextMus);
}else{
    //add some formatting elements to the table row.
    if(trwasnew){
        var extraTd = document.createElement("td");
        extraTd.setAttribute("style","width:21px;");
        var span = document.createElement("span");
        span.setAttribute("style","width:21px;");
        extraTd.appendChild(span);
        tr.appendChild(extraTd);
    }

    tr.appendChild(picTd);
    tr.appendChild(txtTd);

    //if the museum is the last of its letter and isn't in the
third placement location add some formatting stuff
    if(museums_to_show[x+1] == undefined ||
museums_to_show[x][0] != museums_to_show[x+1][0]){//if not same letter as
next
        var col_placement = idNum;

        //determine its placement within its row...
        while(col_placement > 3){
            col_placement = col_placement - 3;
        }

        // add some pixels to hold the line right.
        var cells_to_fill = 3 - col_placement;
        var fillerTd = document.createElement("td");
        fillerTd.setAttribute("colspan", "" +
(cells_to_fill*2));
        fillerTd.setAttribute("style", "width:" +
(cells_to_fill*202) + "px;");
        tr.appendChild(fillerTd);
    }
}

table.appendChild(tr);

if(tablewasnew){
    var otherTr = document.createElement("tr");
    var otherTd = document.createElement("td");
    otherTd.setAttribute("colspan","4");
    otherTd.setAttribute("style","height:20px;");
    otherTr.appendChild(otherTd);
    table.appendChild(otherTr);
    masterTable.appendChild(table);
}

```

```

    }
}

/**Purpose: remove all elements from the museum list area.
*/
function hideall(){
    var masterTable = document.getElementById("masterTable");

    if ( masterTable.hasChildNodes() ){
        while ( masterTable.childNodes.length >= 1 ){
            masterTable.removeChild( masterTable.firstChild );
        }
    }
};

```

/**Purpose: this is the function called when a checkbox gets checked. It translates the named array to a javascript object array. It then passes that array to the checked function which updates the museum list. It also controls when new checkboxes should be shown when a subcategory is checked such as the case "sciindus" below. New checkboxes are shown using the changeButton function.

TO ADD NEW MUSEUM CATAGORIES: those catagories must also be added as below and an array created above with the museums that are in those catagories*/

```

function checkedController(arrayName){
    switch (arrayName){
        case "sciindus":
            checked(sciindus);
            changeButton("sciIndus", "science");
            changeButton("sciIndus", "military");
            changeButton("sciIndus", "civil");
            changeButton("sciIndus", "manufacturing");
            changeButton("sciIndus", "labor");
            break;
        case "science":
            checked(science);
            break;
        case "military":
            checked(military);
            break;
        case "civil":
            checked(civil);
            break;
        case "manufacturing":
            checked(manufacturing);
            break;
        case "labor":
            checked(labor);
            break;
        case "art":
            checked(art);
            changeButton("art", "specific");
            changeButton("art", "theater");
            changeButton("art", "design");
            changeButton("art", "graphic");
    }
}

```

```

        changeButton("art", "literature");
        changeButton("art", "sculpture");
        changeButton("art", "music");
        break;
    case "specific":
        checked(specific);
        break;
    case "theater":
        checked(theater);
        break;
    case "design":
        checked(design);
        break;
    case "graphic":
        checked(graphic);
        break;
    case "literature":
        checked(literature);
        break;
    case "sculpture":
        checked(sculpture);
        break;
    case "music":
        checked(music);
        break;
    default:
        window.alert("Not an array name: " + arrayName);
        break;
    }
}

/** Purpose: Show new checkboxes under the given subcategory's checkbox
-place: the name of checkbox to place this checkbox after, usually the
supercategory
-name: the name of this checkbox
*/
function changeButton(place, name){
    var test = window.document.getElementById(name);
    if(test == null){
        var lastTr = window.document.getElementById(place);
        var tr = document.createElement("tr");
        tr.setAttribute("id", name);
        var button = document.createElement("input");
        button.setAttribute("type", "checkbox");
        button.setAttribute("name", name);
        button.setAttribute("onChange", "checkedController('" +
name + "')");
        //name = String.toUpperCase(name[0]) + name.substring(1,
name.length); //<-- causes issues in Google Chrome
        var txt = document.createTextNode(name);
        tr.appendChild(button);
        tr.appendChild(txt);
        lastTr.parentNode.insertBefore(tr, lastTr);
    }else{
        test.parentNode.removeChild(test);
    }
}
}

```

```

/**Purpose: iterate through the allmuseums list and see if each one is on all
of the arrays that should be showing, if it is it will be added to the
returnarray.*/
function checkShowMuseums(){
    var returnArray = new Array();
    for(var x = 0; x < allmuseums.length; x++){
        var onthelist = true;
        var museum = allmuseums[x];
        for(var y = 0; y < shownMuseumLists.length; y++){
            if(shownMuseumLists[y].indexOf(museum) == -1){
                onthelist = false;
            }
        }
        if(onthelist){
            returnArray[returnArray.length] = museum;
        }
    }
    return returnArray;
}

/**Purpose: update the museum list based on the new array being added to the
filter.
This is done by:
    -adding new array to the list of the shown museums
    -call checkShowMuseums to update the list of museums that should be
shown
    -call hideall to remove everything from the museum list
    -call show(..) to show all of the museums that should be shown.
*/
function checked(array){

    var arrayPos = shownMuseumLists.indexOf(array)
    if(arrayPos == -1){ //if the array in question is not on the list
it should be..
        shownMuseumLists[shownMuseumLists.length] = array;
    }else{ //otherwise take it off since it's been clicked once
already.
        shownMuseumLists.splice(arrayPos,1);
    }

    var museums_to_be_showing = checkShowMuseums(); //now see exactly which
museums we should be showing...

    hideall(); //destroy current list

    show(museums_to_be_showing); //show what we should be showing

};

```