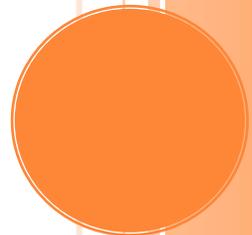


A GUIDE FOR ADVERTISING MUSEUM-APPS

Developed within the project BalticMuseums: LoveIT!

Baltic Museums Beratung - GbR on behalf of the Hochschule
Stralsund – University of Applied Sciences

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A Guide for advertising museum-apps

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Abbreviations:

- i.e. = that is to say
- e.g. = for example
- WIFI = Wireless fidelity/ Wireless Lan
- QR-Code = Quick response Code to link a visual
- BYOD = Bring Your own device
- App = application for smartphone
- P = page
- SEA = search engine advertising
- SEO = search engine marketing

1 THE PROJECT: BALTICMUSEUMS: LOVE IT!

Museums, touristic attractions, IT specialists and research institutions from Poland, Denmark, Sweden, Lithuania and Germany cooperate in the project ‘BalticMuseums: Love IT!’. Together with eight associated partners, the team creates IT-enabled tools for touristic attractions in coastal areas of the South Baltic Region to exploit the attractions’ potential in low season and for international guests. Led by the University of Szczecin, the project develops tours for the visitors’ smartphones including concepts of ‘gamification’ and ‘user experience’ – e.g. by inviting IT enthusiasts to a series of creative programming events (hackathons) in the touristic attractions, the so-called ‘Baltathons’. Extensive sharing of knowledge and training within and beyond the project team aims at inspiring for exploiting digital trends in attractions: Attractions love IT and visitors love it! Findings are published on the public online knowledge base at www.knowledge.balticmuseums.info. The project consortium will establish a brand to jointly promote the developed gamified services for visitors. The project is part-financed by the European Regional Development Fund within the South Baltic Programme.

2 GOALS

Promoting the app can increase the user numbers by over 600%

¹

The aim of our work was to explain the most effective possibilities to optimize the communication to the visitor about this digital offer, to enrich their visit by using the BYOD-offers (bring your own device).

Through our website research, it was found that the south Baltic region needs to keep up with digital

offers compared to museums in the rest of Europe and especially compared to the USA, where a larger proportion of museums offer digital systems² As a part of this, the advertising of those museums was analyzed to learn from their experience.

Based on this research, various marketing measures will be analyzed in order to provide a suitable strategy and concrete recommendations for the marketing of the digital BYOD offers of the partner museums in the project ‘BalticMuseums: Love IT!’. A distinction is made explicitly between the phases before, during and after the visit. Ultimately, better marketing should create added value for both the museums and the visitors.

3 METHODS

At the beginning of the project, the focus was on getting an overview about how often and where applications in museums are used. A research on 52 museum websites accomplished that. For a more detailed research on single museums and their advertising measures. It was checked if the museum has an application or a similar guide for the visitors how and where the app is advertised. The last try of checking if the museums are offering those features was

¹ Compare Interview research table1, museum3-at the bottom

² Compare the compared website research

to use the search bar on the website for searching “application”. Some museums got no information at all about their digital system and we just found it via “google” where, for example, a special exhibition was advertised, which offers an application for the visit³. The next step was developing a suitable questionnaire to obtain precise information about the advertising measures applied to the app and what recommendations the museums can give in general. In the following, the focus was on museums that offer their visitors the opportunity to use an app for their smartphone and thus have experience in this area. The questionnaire formed the basis for the interviews, which were conducted in both written and telephone form. This gave us 9 usable and meaningful outputs of telephone interviews but just one completed questionnaire, completed in written form. The interview phase was followed by an analysis of the collected information, during which the information collected was viewed and evaluated. Based on this analysis, strategies for advertising an app in the museum sector were derived. As we found out that it is important to not just promote the digital offers but to avoid common mistakes of museums and appearing problems of the usage, we started to give solution ideas for the most common problems which hold the visitor from the use and how to improve the efficiency of marketing in general. Then the results were expanded with own considerations and in consultation with marketing professors.

4 RESULTS

4.1 *Effects of the usage of a digital system on the visitors’ behavior*

Through the use of a digital system, i.e. the app, the museum visit becomes more interactive and modern at the present time, where over 66% of the population in the world are using a smartphone⁴. This makes a visit of the museum much more attractive, especially for the younger generation. If the app includes some kind of game or challenge to complete certain tasks, kids are a lot more likely to visit every room of your museum and answer all the questions correctly. Our research also has shown that visitors tend to spend significantly more time on a single exhibit as soon as an app is used⁵. This lengthens the overall visit as well. That was confirmed by a large number of museums. They tell us in the interviews that the independent visit through the museum and the implementation of various challenges take more time than walking by a guided tour. Thinkable would be that this could save costs for the museum, because less staff is required for the guided tours and for handing out the rentable guides. Another observation by different museums is that visitors are more interested in special exhibit and events as soon as additional information is available⁶. Obviously, all these aspects cannot be met by an audio guide to that extent. However, its functions were rather limited. In general, the trend leads us in the virtual direction. The influence the app has on the visitor does not stop after the visit is over, because most users do not delete the app right away. This gives the museum the opportunity to inform their users about upcoming events and additional content through push-notifications. This would be a direct connection to the visitor which improves the chances that he will visit your museum again. Therefore, a few

³ Compare the compared website research

⁴ Compare: https://www.wuv.de/digital/weltweite_smartphone_verbreitung_steigt_2018_auf_66_prozent , in relation to the Zenith Mobile Advertising Forecast, 2018

⁵ Compare interview research table2, museum7_observations

⁶ Compare interview research table2, museum1_behaviorchanges

museums told that the number of visitors is even higher than before the app usage. The museums also noticed that the number of clicks after the visit was still at a similar level as the visitors subsequently retrieved information on the exhibition of the museum and thus can also be informed about the events as mentioned above. This is again not the case with an audio guide, as it has to be returned after the visit.

Just promoting an application is not enough. All hurdles which hold the visitor from the use must be removed

4.2.1 Hurdles and opportunities

The implementation of an App may come with some unforeseen problems, in the development phase as well as after the launch. To avoid these time and money consuming mistakes, we are listing the most common risks which were found through the interviews. To avoid these hurdles there are some suggested solutions below.

As easy as possible⁷

Some museums refer to need more staff since the introducing of a digital system, especially with the BYOD-system. One of them said: „We found out that it is too difficult for a lot of the visitors to download and use the app properly. As a result, we had to hire extra staff to explain how to download the app and how it works. Especially older visitors are often not familiar with downloading and using an app right away.“⁸ Many museums mentioned similar problems.⁹

→ To not exclude the older generation from the experience and as different museums recommended, it is important to make the app as easy as possible to use by providing easy instructions within the context of advertising the app. Especially because we found out that a lot of these older visitors, who used to use audio guides in the past, are trying to use the app these days.

Furthermore, it is possible to use the museums website, Youtube, or different social media channels to provide tutorial clips about the app.

Sometimes these instructions won't be enough so every employee who gets in contact with the visitors needs to know how to install the app on every operating system and to answer questions about the app. One additional and successful solution of a museum was to lend App-devices which already have everything installed and which are easy to use.¹⁰

⁷ Compare: interview table2, museums1,2,3,8_recommendations

⁸ Interview table2, museum1_misunderstandings

⁹ Compare: Interview table2, museums1,3_misunderstandings

¹⁰ Compare: interviewtable2, museums5,7_problemsofusage

Website: Information about the app are mostly “hidden”¹¹

While analyzing 52 websites, it was found that it is mostly hard to find out if the museum offers an app. After visiting the website and opening the main index tabs, the last step of our targeted search was to use the search bar. This search bar was mostly the only possibility to find information about the app. There may be more ways but if we did not find them with the targeted search, the visitor is unlikely to get knowledge about an existing application while gathering information about the museum.

→ To make sure that the visitors are not missing the app at their first contact to the museum, which is the most important step of the customer journey to promote the app, it is recommended to promote it on the landing page with a link to further information.

Language of the app¹²

Many museums mentioned that most of the visitors are international visitors who complained that they cannot use the app which is mostly only available in one or two languages.

→ Therefore, the development of the apps in several languages is a very important aspect to simply cover a wide range of visitors and to make the use of the app possible for a bigger audience.

A high battery consumption¹³

Furthermore, museums noticed that many visitors asked for charging facilities because they were running low on battery since the permanent use of their smartphones while exploring the museum. On top of that, many of visitors are tourists who are not coming with a full charged battery to the museum because they used it for example by exploring the city before entering the museum.

→ Therefore, loading stations distributed in the museum are needed. Rentable power banks are also conceivable.

Just 4 out of 52 analyzed museum websites are advertising the digital system on the landing page.

Wi-Fi¹⁴

The interviewees also mentioned problems with the Wi-Fi connection as a hurdle. Not just because the users got problems with logging into it but with crashes and with bad reception. This problem occurred mostly at museums who first started

¹¹ Compare: compared website research

¹² Compare: interview research table2, museum7_recommendations, museum8_problems

¹³ Compare interview research table, museum1_problems

¹⁴ Compare interview research table, museums1,3,8_problems

offering WIFI in the course of launching of the application.

→ The obvious solution here, which is not used in every museum, is to make sure that the WIFI is working well in the whole exhibition area before implementing the app, especially in the entrance area where the download is happening. All technical tools should work smoothly in general.

4.2.2 Opportunities and optimizing marketing tools in the future

But there can be more problems we did not identify or problems which can appear in the future. There may even be better ways of advertising as this guide will tell you. To identify those problems and opportunities it is important to collect data about the app. This is an important part especially because we found out that many of the interviewed museums do not have a lot of data about their digital system¹⁵. This is because most of the museums are using external IT-service providers for their digital system¹⁶. Those providers are hosting a lot of data, like download numbers, time of use or other general data about how the use is happening, which features of the app were used the most and so on. The museums should acquire and evaluate the data to identify the most popular and unpopular features of the app. Furthermore, it can identify areas of the museum where the app is used the most and where the promotions for the app needs to be improved.

Another opportunity to collect the needed data, is to ask the users themselves how they got excited to use the app and to introduce a rating system for the use. Inasmuch as the app is open source based there should be easy channels for users to communicate to the open source community and mentioned problems and solution proposal of the users should be included.

5 WAYS OF ADVERTISING

This part focuses on marketing measures that enable an optimal promotion for digital applications in museums. The measures are separated into the following three segments: Advertising before the visit, advertising during the visit and possibilities after the visit. Before implementing measures, the goal of the application has to be absolutely clear, because different types of applications require different types of promotions.

5.1 Advertising before the visit

Before entering the museum¹⁷

Promoting the digital application before the visit is the most important part, since the application is generally used inside the museum. The visitor should usually start his journey

¹⁵ Compare: compared website research

¹⁶ Compare: interview research table2, museum6_problems

¹⁷ Priorising in consultation with marketing professor

through the museum with the application. To create awareness for the customer, advertisements are necessary. Most visitors inform themselves before the visit about opening times, the location of the museum and admission charges. This information is usually looked up online at the website or via social media and should be the main channels of advertising the app. By the majority of the interviewed museums these possibilities are including flyers at tourist information points¹⁸. The digital application should at least be promoted at these first contact points for the visitor. Creating awareness to the visitor at the landing page of the website increases the count of downloads drastically. This is of particular importance because just 4 out of 52 museums of our website investigation were promoting the app directly here. Furthermore, there is a common approach needed how and where information for the app is located on the website. Our research showed that every museum got a different position where to find information about the app. The brand of the application can help to achieve this goal by uniform the way of advertising of the app on every website.

Including the promotion of the application on every current form of marketing is generally recommended and by far the easiest and cheapest method of advertising specifically for the application. This creates awareness to the visitor who informs himself about the museum and everyone who is addressed by the marketing tools of the museum. Incidentally, it helps to raise the interest in the museum in general.

Still only a little over one half of the interviewees answered that they are promoting their applications with flyers or at their homepage.

Other, more expensive, measurements include search engine optimization (SEO) and search engine advertising (SEA) and are recommended for applications that really complete the visit.

More thinkable examples for local promotions are posters and radio spots.

In the entrance area

The final contact point to promote the application to the visitor before the actual visit, is the entrance area. Here, the recommended measurements should include posters, short video advertisements and explanation on screens, which many museums got in their entrance area. A hint or explanation at the ticket switch by the employees also used by many museums¹⁹. But we heard about some problems about the efficiency of the method especially if there is a high frequent of visitors at the ticket counter. Around 80 % of the interviewees were already using at least one of these measurements in the entrance area²⁰. Posters and other visual hints should be designed conspicuously, also with a QR code and simple, short advertising slogans or with a short instruction. Some examples could be: “We have secret exhibits! Find them with our app “; “No desire for a guided tour? Get the information yourself. With our app!“.

¹⁸ Compare: interview Research table1, museums1,3,4,8,9,10_entrancearea, beforethevisit

¹⁹ Compare: interview Research table2, museums1,2,3,4,5,6,10_entrancearea

²⁰ Compare: interview Research table2, museums1-10_entrancearea

5.2 Advertising during the visit

It is generally recommended that the visitor downloads the app before the visit. Nevertheless, it is important to also promote the application during the visit in order to reach visitors who are not yet familiar with it. It is most effective if the ticket sales staff informs the customer that a QR code, which is best seen on the ticket, will take them directly to the App Store to download the application. In this course one could also refer to the free Wi-Fi, which is usually necessary for an optimal use of the application. Alternatively, it would also be possible to give every visitor a small flyer about the app when selling tickets, to inform them about the application in regard to usage and functions. An example would be a step by step guide for the app. Starting with logging into the Wi-Fi, scanning the QR code with the camera, downloading the application and other small hints to avoid common problems. This could be an effective solution to reduce dialogues between ticket staff and visitors, especially for larger museums where it is unrealistic for staff to be able to inform and explain the application to every visitor.

The Internet and their web 2.0-instruments are used from every group of age nowadays, especially social networks.²¹ In order to ensure that everyone can use the application, one museum offers rental devices where everything is already installed and downloaded. This seems to be a solution because the museum made good experiences because it can simplify the process of downloading and installing the application and gets rid of those barriers.²² Thus, the target group is kept broad with every visitor and makes the usage of the application inside the museum possible and easy for everyone.

Another possibility would be again, placing large, eye-catching posters which vividly inform about the application with which the visit can be accompanied interactively and which also provides additional information and facts, for example.

In the exhibition itself, usage possibilities of the app should be indicated. At many museums it is possible for the visitor to get more information about single exhibition pieces by scanning a QR-Code or a different link on a small sign next to exhibit.²³ WIFI access points should function smoothly to avoid frustration and disappointment for the visitors and can be used to promote the application as well. After logging into the WIFI there can be a pop-up window to inform about the application. Alternatively, an offline application can be used to minimize battery consumption and functions without WIFI inside the museum.

²¹ Open UP! Museum, MFG Innovationsagentur Medien- und Kreativwirtschaft Baden-Württemberg, p.10

²² Compare: interview research table1, museum2_aob

²³ Compare: interview research table1, museums1,3,4,7,8,9_duringthevisit

5.3 Possibilities after the visit

Advertising the application after the visit seems counter intuitive, since the purpose of the application is usually the usage during the visit. While there can be potential for the visitor to use the application after the visit, for example to relive some moments, get more information or to get notified about new events or exhibits inside the museum. An active campaign to advertise the application after the visit is not purposeful. But it is possible to promote a second visit through the app integrated features. This can be accomplished by a notification of the app which shows areas or themes of the exhibitions which were missed. A progress bar could count the viewed exhibits and completed tours to give an overview of the visit. Furthermore, gamification elements could include “Quests” which are challenges in a game which rewards the user with “achievements” which are not much more than giving the user a status to compare his progress of the game. Some of the visitors, especially children and young adults who are used to that kind of system, could be animated for a second visit by giving him Quests which can just be accomplished by visiting the museum multiple time. Additionally, this gamification element would enrich the whole app-based visit which promotes the app use indirectly²⁴.

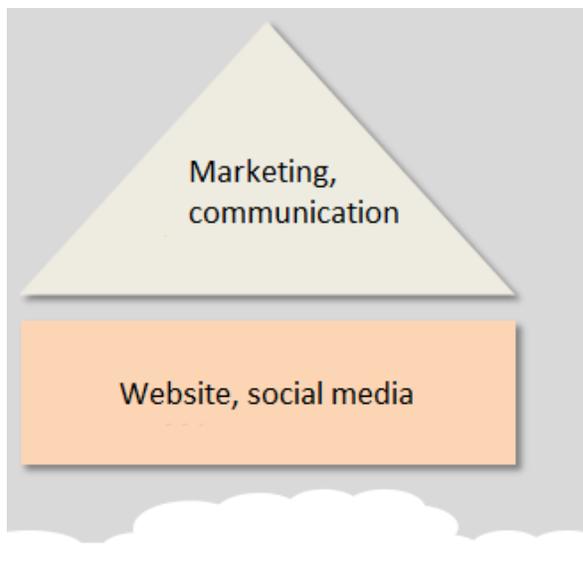


Figure 1: controlled area of museums (compare Digitale Strategien für Museen, Dr. Christian Gries, 2018, p. 5)

This picture shows the “controlled area” of museums to communicate and advertise their applications. Yet, there is still room at the bottom for uncontrolled but usable area. This area includes feedback on google and tripadvisor, tags and pictures on social media or other references in newspapers for example. This means an application will be advertised directly by visitors in ratings or on social media, provided it increased the visit experience. To advertise the application after the visit, the application has to fulfil its purpose and be of high quality to

²⁴ Compare: interview research table1, museum7_rating,behaviorchange;museum5_agegroup

get good ratings and increase the visit experience. This type of advertising is not under the direct control of the museum, but it controls it indirectly by providing an application of high quality.

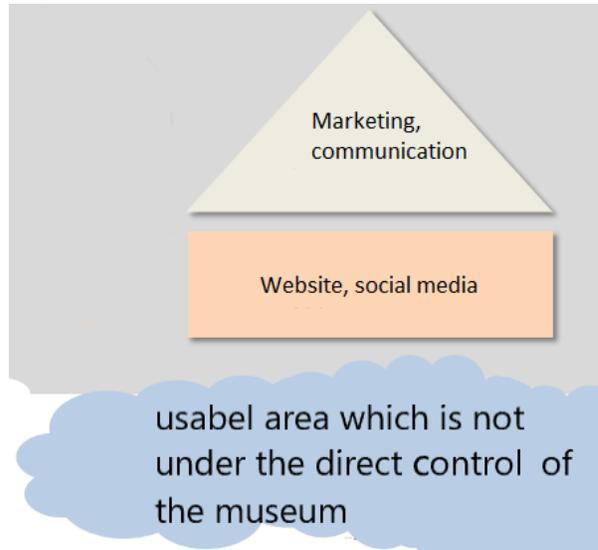


Figure 2: controlled and uncontrolled areas of museums (compare Digitale Strategien für Museen, Dr. Christian Gries, 2018, p. 7)

6 RECOMMENDATIONS

As mentioned earlier, the results of the survey show, that the most used and most effective methods to advertise applications for museums are linking the application on the landing page of the website and traditional print media. Most of these results are coming from German or Danish museums. The target group of the application should generally be everyone who is interested in this particular museum. Visitors of all ages have an interest in the application²⁵, even though the younger generation is more likely to be addressed, as they are more familiar with modern technology and can therefore handle a digital system of this kind much more easily. Especially gamification elements are having high attraction to younger visitors.²⁶ But there are a few museums which describe older visitor as their main target and biggest group of users²⁷. Nevertheless, it is of particular importance to make the application as simple as possible for the older generation, through the rental of the needed equipment, simple handling and explanations. In order to satisfy visitors of every age, the information should be provided in an appealing and easily understandable way.

²⁵ Compare: interview research museums1,2,3,8,9,10_agegroups

²⁶ Compare: interview research museums1,5,10_agegroups,behaviorobserves

²⁷ Compare: interview research museums1,3_agegroups

The following will show a list of ranked marketing measurements that are recommended based on our research and the surveys taken.

Landing page on the website

Every museum nowadays has a functioning website and many visitors use the website to find information on the museum beforehand, regarding prices, exhibitions, opening times and events for example. Promoting the application on the landing page raises awareness and interest into the application and the museum. This method is widely used in our surveyed museums. It is cheap, easy to implement and very effective without drawbacks. It is the clear favourite, as it is the first step of the customer journey and recommended for every museum that uses an application.

Print media (Flyer)

Traditional print media, especially flyer, are still widely used and very effective in creating awareness and providing information on the museum in places like tourist information points. Including information or even a QR-Code to directly download the application onto these flyers is an effective method to promote it. Flyers have a wide range are relatively cheap to produce and contain key information on the museum. This method is also recommended regardless of the type of application.

Social media

Around 60 % of museums use at least one social media account to promote their museum and communicate with people.²⁸ This form of communication is free, ignoring the costs of the employee managing the accounts. Potential visitors can inform themselves about the museum, ask them a question directly and give them feedback or tag them through social media. This is also a chance for the museum to promote the application. While the costs for this measurement are very low and it is easy to use, the range is also not as great as with the earlier mentioned methods. This leaves social media on the third rank of recommended measurements and also generally recommended for every type of museum.

Print media

Other print media like posters and articles in newspapers are effective, but not as cheap as flyers and have a smaller range. While posters in the museum itself are recommended for every type of application, newspaper advertisements and articles are only recommended for new products and interactive applications. The reasoning behind this is, that these measurements are more expensive to implement but also effective.

²⁸ compare "Digitale Strategien für Museen", Dr. Christian Gries, 2018, p.13

Signs at the exhibition

Generally, the application should be used from the start of the visit. Yet, there should still be some type of promotion during the visit. Signs at exhibitions are easy to implement, cheap and should reach every visitor. It is still ranked fifth, because the user should already download the application before entering the exhibition. This method is recommended for every type of application but only has a limited range and is used as last effort to promote the application during the visit.

Others

The other mentioned marketing measurements have significant drawbacks. For example, they are very expensive (radiospots, SEA campaigns), hard to implement (SEO) or generally only for a smaller niche. That is why they are all listed under this category. These measurements are only recommended for heavy promotions at launch of the application or for special cases. Furthermore, there can be very creative ways to promote the application. An example could be somewhat like “invisible” spots or exhibitions that can only be found by using the application. Some kind of unique selling point that makes the application something special and worthwhile to use. This is just an example of a creative way that can be utilised to promote the application by giving it added value.

7 CONCLUSION

The main aim of this paper was to give recommendations about the optimal advertising of a digital system in museums. But it was found that advertising of the app is not enough. Many museums experienced different problems, which excluded a big part of the target group from the usage. Many solutions to get rid of those barriers were shown to enable every visitor the full experience with the app.

For the actual advertising recommendations, we distinguished three different ways of communicate the app to the customer.

The most important part was the first part of the customer journey in which the visitor comes in contact with the museum itself. The easiest and most effective way is to connect the regular channels of advertising the museum with promoting the app. The second part of the customer journey, the exhibition area itself, is about giving hints with a link to more information about a single exhibit or where the app provides guided tours or other feature for a special part of the exhibition. It was shown that there are even possibilities to use the app after the visit to promote a second visit and the museum itself.

This is followed by concrete recommendations which are prioritized for effectiveness and which are starting with advertising the app at the landing page of the museum website.

All in all, this in a guide for museums of promoting the app to the visitors in an efficient way.

SOURCE DISCLOSURES:

Page	Contents of the source disclosures
0-3	Website Research Table 1-4
4	Compared Website Research
5-6	Interview Research Table 1-2

Website Research 1:

Museum	availabl	Where to find?	Easy to find? (time)	Advertising?	similar features?	Type of Museum?	Country	Town	Comment	Website
Museum of Nature	Yes	Footer and 2nd Register (Explore Nature)	1 min targeted search	unknown/none	Another Galleryapp (Apple)	Nature	Canada		App give additional information via videos, numeration on exhibits, maps also available	https://nature.ca/en/explore-nature/mobile-apps
British Museum	No	-	-	-	-	World Conservation and Exhibition	Great Britain	London	No App but active Social Media and Youtube accounts	https://www.britishmuseum.org/
TATE	No	-	-	-	-	Art	Great Britain		No App but active Social Media and Youtube accounts	https://www.tate.org.uk/
Science Museum	Yes	Searchbar "App" (https://www.sciencemuseum.org.uk/fv)	hard to find (only searchbar)	unknown/none	Other Apps/Games available	Science	Great Britain	London	App only available through Museum's free Wifi. Map downloadable	https://www.sciencemuseum.org.uk/
Rijksmuseum	No	-	-	-	-	Art and History	Netherlands	Amsterdam	No App	https://www.rijksmuseum.nl/
NEMO	No	-	-	-	-	Science	Netherlands	Amsterdam	Could use an App very well (exhibitions already very playful)	https://www.nemosciencemuseum.nl/en/
Metropolitan Museum of Art	Yes	Searchbar "App" (https://www.metmuseum.org/blogs/digital-underground/2015/met-app-v11)	hard to find (only searchbar)	unknown/none	-	Art	USA	New York	App is in use for a few years now (v1.1 since 2015). Seems to give additional information about the exhibitions also includes a map after userfeedback. I can not find or install the app myself	https://www.metmuseum.org/
J. Paul Getty Museum	Yes	Searchbar "App" (http://www.getty.edu/360/app/)	hard to find (only searchbar)	unknown/none	-	Art	USA	Los Angeles	App features all upcoming events and exhibitions at the Getty Center and the Getty Villa at a glance	http://www.getty.edu/museum/index.html
American Museum of Natural History	Yes	Linked in the footer (https://www.amnh.org/apps/explorer)	1 min targeted search	unknown/none	Other Apps available	Natural History	USA	New York	App seems to have everything we want to have aswell. Gamification, planning, maps, exhibitions. Works with bluetooth at the exhibitions	https://www.amnh.org/
California Science Center	No	-	-	-	-	Science	USA	Los Angeles	No App but active Social Media and Youtube accounts	https://californiasciencecenter.org/
Museum of Modern Arts	Yes	Linked under "Tips for visiting" (https://www.moma.org)	hard to find even by targeted search	unknown/none	-	Art	USA	New York	Audio App "Hear about the art you'll see at The Museum of Modern Art."	https://www.moma.org/
Science Centre AHHA	No	-	-	-	-	Science	Estonia	Tartu	No App, Virtual Tour at google maps	https://www.ahhaa.ee/en
Energia Avastuskus	No	-	-	-	-	Science	Estonia	Tallinn	No App or other features	https://www.energiaakeskus.ee/en/
Lithuanian Sea Museum	No	-	-	-	-	Nature	Lithuania	Klaipeda	No App or other features	https://muziejus.lt/en

Website Research 2

Moderna Museet	Yes	Searchbar "App" (https://www.modernamuseet.se/stockholm/en/exhibitions/sculpture-after-sculpture/audio-	hard to find (only searchbar)	unknown/none	-	Art	Sweden	Stockholm	Audio App, "If you don't have a smartphone, you can rent an iPod Touch at the entrance desk (SEK 50)."	https://www.modernamuseet.se/stockholm/en/
Nordiska Museet	No	-	-	-	-	History	Sweden	Stockholm	No App or other features	https://www.nordiskamuseet.se/en
Tekniskaatmuseet	No	-	-	-	-	Science	Sweden	Museivägen	No App or other features	https://www.tekniskamuseet.se/en/
The National Gallery of Denmark	Yes	Searchbar "App" (https://www.smk.dk/en/article/vizgu/)	hard to find (only searchbar)	unknown/none	-	Art	Denmark	Kopenhagen	Vizgu is an app for your smartphone that recognizes artworks in our collection when scanning them, and is your personal art guide when visiting the museum. All you have to do is to scan the painting or sculpture in front of you, and Vizgu will give you information about	https://www.smk.dk/en/
Experimentarium	Yes	Searchbar "App" only in danish (https://www.experimentarium.dk/experiment)	hard to find (only searchbar)	unknown/none	-	Science	Denmark	Kopenhagen	App description only in danish so i can not figure out the functions	https://www.experimentarium.dk/en/
Schloss Christiansborg	Yes	Under the category "What's on" (http://kongeligeslotte.dk/en/palaces-and-gardens/christiansborg-palace/whats-on-in-	easy to find	advertised on the website	-	-	Denmark	Kopenhagen	A Puzzle App/game. You must explore the halls of the palace to obtain the clues you need in order to stop the thief	http://kongeligeslotte.dk/en/palaces-and-gardens/christiansborg-palace.html
Badisches Landesmuseum	No	-	-	-	-	History	Germany	Karlsruhe	No App or other features	http://www.landesmuseum.de/website/Deutsch.htm
Museum für Kunst und Gewerbe Hamburg	Yes	"Digitale Angebote" under the register "Vermittlung"	5 mins targeted search	unknown/none	One audio guide app and an app about music instruments in	Art	Germany	Hamburg	Two seperate apps. One audio guide app and an app about music instruments in the museum	https://www.mkg-hamburg.de/de/
Städel Museum	Yes	"App offers" under the register "Digital"	1 min targeted search	advertised on the website	another audio guide app	Art	Germany	Frankfurt an	Two seperate apps. Main app: Allow yourself to be guided to the work by way of associative questions; then immerse yourself in the collection highlight with the aid of further text information as well as audio and video material.	https://www.staedel-museum.de/en
Mannheim Kunsthalle	Yes	Advertised on the main page (https://www.kuma.art)	easy to find	advertised on the website	-	Art	Germany	Mannheim	App with additional information about the exhibitions and events.	https://www.kuma.art/en
Deutsches Hygienemuseum	No	-	-	-	-	History	Germany	Dresden	No App or other features	https://www.dhmd.de/en/

Website Research 3:

Märkisches Museum	Yes	Searchbar "App" (https://www.stadtmuseum.de/aktuelles/die-offizielle-app-ist-da)	hard to find (only searchbar)	unknown/ none	-	History	Germany	Berlin	App shows events, prices and other information about the museum group. Seems there are no tours or guides inside the museum with the app.	https://www.stadtmuseum.de/
Deutsches Historisches Museum	Yes	Searchbar "App" (https://www.dhm.de/ausstellungen/archiv/2015/zeitschichten/app.html)	hard to find (only searchbar)	unknown/ none	-	History	Germany	Berlin	The App only supported a single exhibition in 2015 with the name „Zeitgeschichte“	https://www.dhm.de/
Jüdisches Museum (Frankfurt)	Yes	"Digitales Museum" under the register "Erkunden"	easy to find, ca. 30 seconds of targeted search	unknown/ none	Another App for historical places around the city	History	Germany	Frankfurt	The App acts as an audioguide with distinct guides for adults and children.	https://www.juedischesmuseum.de/besuchen/juedisches-museum-frankfurt/
Jüdisches Museum (Berlin)	No	-	-	-	Whatsapp guide	History	Germany	Berlin	Students made an App for a digital scavenger hunt, but it is not made or supported by	https://www.jmberlin.de/
Deutsches Museum	Yes	Advertised on the main page	easy to find	advertised on the website	-	Science	Germany	Munich	The app supports nearly everything the museum has to offer, from a map to interactive features	http://www.deutschesmuseum.de/index.php
Deutsches Historisches							Germany			
HopfenBierGut - Museum im Kornhaus	Yes	"Museumsapp" under the register "Besucherinfo"	Easy to find, ca. 15 seconds of targeted search	unknown/ none	-	Culture/History	Germany	Spalt	Interactive map with significant historical places	http://www.hopfenbiergut.de/
Museum Barberini	Yes	"Barberini Digital" under the register "Entdecken und"	Easy to find, ca. 15 seconds of targeted search	unknown/ none	-	Art	Germany	Potsdam	The App features all exhibits as well as audio guides for adults and children	https://www.museum-barberini.com/
Museum Wiesbaden	No	-	-	-	App for a specific Exhibition called "Eiszeit-Safari" which ended in April	Nature/Art	Germany	Wiesbaden	No App or other features	https://museum-wiesbaden.de/
Bach Museum	Yes	Searchbar "App" (https://www.bachmuseumleipzig.de/de/bach-museum/die-museums-)	hard to find (only searchbar)	unknown/ none	-	Historical Figure (Johann Sebastian Bach)	Germany	Leipzig	Features every exhibit in the museum	https://www.bachmuseumleipzig.de/de/bach-museum
Glyptothek München	Yes	Not featured on the Website	Very hard to find (Only AppStore)	Article in "Münchner Abendzeitung"	-	Art and History	Germany	Munich	Mediaguide through the exhibition	https://www.antikam-koenigsplatz.mwn.de/de/glyptothek-muenchen.html

Website Research 4:

Urban Nation - Museum for Urban Contemporary Art	Yes	Searchbar "App" https://urban-nation.com/de/2019/03/urban-nation-x-	hard to find (only searchbar)	unknown/none	-	Art	Germany	Berlin	Part of Smartify	https://urban-nation.com/de/
Museum der Illusionen	No	-	-	-	-	Art	Austria	Wien		https://museumderillusionen.at/
Belvedere Museum	No	-	-	-	-	Art	Austria	Wien		https://www.belvedere.at/de
Kunsthau Graz	Yes	"Audioguide und App" under the register "Programm"	Easy to find, ca. 2 Minutes of targeted search	unknown/none	-	Art	Austria	Graz	Part of Oroundo	https://www.museum-joanneum.at/kunsthau-graz
Tiroler Landesmuseum	No	-	-	-	-	History	Austria	Innsbruck		https://www.tiroler-landesmuseen.at/page.cfm?vpath=index
Louvre Frankreich	Yes	"Audio Guide and App" under the register "Activities and tours"	easy to find, ca. 30 seconds of targeted search	unknown/none	Audio guide also available	Art and History	France	Paris	Entire Museum space is modeled in 3D amongst a lot of other features	https://www.louvre.fr/en
Historisches Museum Basel	No	-	-	-	-	History	Switzerland	Basel		https://www.hmb.ch/
Art-Brut-Museum	No	-	-	-	-	Art	Switzerland	Lausanne		https://www.lausanne.ch/vie-pratique/culture/musees.html
Museum Modern Art	No	-	-	-	-	Art	Russia	Moscow		http://www.mmoma.ru/en/
Stadtmuseum Stettin	No	-	-	-	-	History	Poland	Stettin		http://www.muzeum.szczecin.pl/
Aquarium Gdynia	No	-	-	-	Audio guide available	Nature	Poland	Gdynia		https://akwarium.gdynia.pl/?lang=en
Casa batllo	No	-	-	-	Smartguide on own devices	History	Spain	Barcelona		https://www.casabatllo.es/de/
Museo Nacional del Prado	Yes	"Museo del Prado official Apps"	easy to find, ca. 30 seconds of targeted search	unknown/none		Art	Spain	Madrid	3 different apps for different exhibitions	https://www.museodelprado.es/en
Uffizi Gallery	No	-	-	-	Audio guide available	Art	Italy	Florence		https://www.uffizi.it/en
ZINOO, Wissenschaftsmuseum,	No	-	-	-		Science	Latvia	Riga		https://www.zinoo.lv/home/
Lattvian National Museum of Art	No	-	-	-		Art	Latvia	Riga		http://www.lnmm.lv/en

Compared website Research

In the following, there are some key information and numbers of the tables listed above:

- 25 museums are using an app, 27 are not using an app
- Only at 12 museums this information was easy to find (two minutes or less targeted search)
- Only 4 museums explicitly advertise this on the website

Where the app can be found:

- Always on different places
 - o Sometimes in the footer
 - Sometimes with general tips/ Tips on tours / visitor information
 - o Rarely on the landing page
 - o Sometimes under the tab digital/ digital offers
- Mostly we had to search directly in the search bar for the app to find it

Distribution of proportional use*:

In Germany/ Switzerland/ Austria use about 57 % a App (of 8 museums)

In west Europe (incl. Italy) only 33% (of 9 museums)

In east europe not a single one of the museums reviewed (of 8 museums)

In Scandinavia 67% (of 6 museums)

In North America/ Canada the most with 83% (of 6 museums)

* small number of cases but it can give a rough overview about the distribution

Interview research:

Internet research table1:

Spalte1	museum 1	museum 2	museum 3	museum 4	museum 5	museum 6	museum 7	museum 8	museum 9	museum 10
number of visitors	1.500.000/year	200.000/year	300.000 - 400.000/year	60.000 - 70.000/year	15.000/year (2012)		opened since Jan 2019	390.000/year	214.000/year	215.000/year
admission				2,50 - 5,00€						9,00 €
Average visiting time										
Exhibition area in m²										
What digital system do they lapp		app	Visca App since 1,5 years	app	app	app	app	app	app	free rental device - audio guide, secondary goal, primary goal: increasing visitor experience because many tourists were asking for an audio guide
target audiences							young guests			
Opportunities for visitors										
Is the app free?	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
3. advertising the app										homepage
before the visit	homepage	homepage			homepage	homepage	homepage	homepage		flyer with guide for the use of the audioguide in all languages
entrance area	flyer; poster in the museum (DIN A1); word-of-mouth advertising by employees	Information signs on exhibits; word-of-mouth advertising by employees	flyer	flyer; word of mouth of the employees	poster in the entrance area; word of mouth of the employees	word-of-mouth advertising by employees	poster in the entrance area; word of mouth of the employees	flyer	flyers; posters in the entrance area;	signs; screens that tell about it when you come in; personnel (verbally at the ticket counter)
during the visit	Wlan access points; Information signs on exhibits		information signs on exhibits	information signs on exhibits			information signs on exhibits	information signs on exhibits	information signs on exhibits (floor stickers)	
social media connection? after the visit		yes	yes		online-magazin/social media			social media only for release		Information and advertising possibility via social media through increased "followers"; "We use facebook a lot but not so much to advertise for the digital solution, more for things you can buy", "we got instagram too",
AOB		rental devices for using the app at the cash desk								
				newsletter						
4. How it is assumed?										
rating:good/bad	positiv	predominantly positive but need for explanation function/understanding	positiv		positive and surprised that small museum has app	positive, no criticism	positive, especially with teache	good	positive, point of criticism is poor WLAN coverage in some rooms	"seems good"
user numbers	40.000 downloads, 600 daily, 7% user share		5 times daily without advertising, 30 - 40 times with advertising				estimated over 50%		German and English versions in 4-digit download area, Russian and Czech versions in 3-digit download area each	Useum is hosting them, we can contact them

Interview Research table2:

Spalte1	museum 1	museum 2	museum 3	museum 4	museum 5	museum 6	museum 7	museum 8	museum 9	museum 10
age groups	families with children	50+ (largest proportion of visitors who have used the audio guides before	"Hardcore guests" who want the extra information					equally distributed use across age groups	all	by different products of the app, game function for children; a thorough guide for tapestries about the danish history, for people who want to know a lot
5. observes effects					teenagers and young people					
behavioural changes	increase in visitors at special events; more interactive museum visit	replacement of the audio guide, also used before and after the visit			visitors stay longer at an exhibit		hope to increase attractiveness for young people	longer time at the exhibit, more independent and better navigation without guidance	none	none
AOB		more IOS than Android users						increased attractiveness for young people		
6. animation for the re-visit:								App for preparation or postprocessing. Since the exhibitions change regularly, the app is a further incentive to visit the other exhibitions		hardly any changes in the museum, therefore no suggestion to revisit the museum
no					important -> challenges, games that create an incentive to visit again					
7. problems since introduction										
a) misunderstandings		personnel required (wlan, download, use)						app not in English		
(b) problems of usage	bad/ no wlan reception; offline mode only after download; system maintenance required; high battery consumption;		long loading times; reception in the museum		no rental device yet -->use difficult for older people	no, external developer	older people are dependent on help for downloads	minor technical problems		
c) What would they change?					more interactive content		guided tour especially for children		Flexible changes to the app are desirable. Uncertain whether	
8. recommendation on markwebsite	direct marketing with online ticket sales; marketing the app on the landing page of the				many distributors, through cultural online magazines/websites: easy to contact, free marketing					
launch the app and combine it with a promotion										
recommendations	user-friendly design	as simple as possible	as simple as possible				the virtual tour has proven itself	Reducing hurdles for the app (languages, sign language.)	Define beforehand the goals to be achieved with the app and	
marketing is important			Bluetooth also too complicated							
46										
47										
9. Knowledge about the Webinar Series XChange	no	no	no	no	no	no	no	no	no	