Handheld Technology-A modern-day device, becoming more effective mode of communication between visitors and the museum presentation

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Introduction

The administrators and experts of modern day museums have adopted a series of advance technologies to achieve their prime objectives that is to facilitate the visitor to gain new experiences and to gather knowledge. One of the important technologies introduced and adopted during recent years is to use simple and more advanced hand-held digital devices to facilitate the different types of visitors to gather more information which are relevant to their perspectives and intelligent levels.[1]The hand held technology has improved from simple to highly advance digital mobile device such as I-Pad to I-Phone[2]. With easy access to these user friendly mobile hand-held devices museums are now attracting and encouraging visitors to come and experience the displays more effectively thus, making the museums more popular.

Today, research on hand held technology and mobile learning in Museums are carried out globally in universities and other institutions by sharing knowledge and experience. Such research explores the functionality of hand held technologies and how it enhances further the visitor experience. A museum can not apply the same handheld guide to all visitors as different visitor groups respond to different stimulus in different ways. One particular devise which works well in one museum will not give the same outcome or result in another. Keeping these facts in mind, many museums and related research organizations have started conducting research and surveys to explore further the impacts of hand held mobile tours.

Recent research, survey and their Outcome/Results

1. **"Mobile in Museum Study 2012",** an online survey/research conducted by Alliance of Museums (USA) and Museum Association (UK) [3] to find; the number of museums use this mobile technology; how the people use this technology in their daily life ; how people like to get information quickly through this technology; how they get interested to use this technology

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[1] Fantani silvia Filippini, Visitintingwitha "personal"touch:Aguide to personalization in museums, January 2002, Maastricht Mc Luhan Institute- International Institute of Informatics

[2] proctor nancy, off base or on target? pros and cons of wireless and location-aware application ns in the museum,ICHIM 2005,Uk

[3] Mobile In Museums Study — 2012. A Survey of American Alliance of Museums (US) and Museums Association (UK) Members, https://aam-us.org/docs/research/mobilemuseums2012-(aam).pdf

when visiting museums; how to attract to engage with the objects and to navigate the museum with great experience,

2. **The three research studies**[4] each conducted at three major museums in New York City, to know about; the impacts of audio tours the reaction of the visitors to audio tours as against their desire structure and freedom etc. how do audio tours hinder visitor interaction and how do audio tour focus the attention of visitors and to evaluate the aspect or aspects of the tours offered by the museum. Results show that visitors prefer audio tours more than other presentations formats to enhance the museum experience. Visitors, who had never tried one before, found positive about the new experience. Fortunately audio technology allow museum to offer both freedom and structure. These studies show some negative responds about audio tours, such as audio tours do not support the opinions of visitors inhibit social interaction.

3. Recently, many museums have started to offer opportunities for the people who live with **visual disabilities** to participate and get experience about exhibitions and cultural activities conducted by them. Audio tours with hand held technology have proven more effective and educationally beneficial to such visually disable visitor groups similarly in case with sighted population

4. **Cell phone base technology** introduced by the American inventor **Steven Landau** and accessibility consultant, Ellen **Ruben** with a system of user-activated audio beacons for people who are blind or have low vision. This enabled the people with visual disabilities to independently navigate in museums by following path of "sonic breadcrumbs" to locate individual exhibits and other destination in the museum[5].

5. The three projects to creative guide deliveries by using technical devices with everyday things and toys such as "**interactive adventures**"[6], conducted by National Museum (Stock-Holm), Swedish Museum of Environment and University Science Museum Center (Gothenburg). This led to museums trying to find solutions how to improve the attraction of future generation for museum experience by using techniques such as audio tours.

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[4] Jeffrey K.Smith and Pablo P.L. Tinio,Audibly Engaged: Talking the Walk, Chapter 4, Digital technologies and the museum Experience, Hand held guide and other media, Altamira press, 2008

[5]Ellen Giusti and Steven Landau Accessible Science Museums with. User-Activated Audio Beacons (Ping!), historicalvoices.org/pbuilder/pbfiles/.../VSA-a0a6a7-a_5730.pdf

[6] Gottlieb Halina, Interactive Adventures, Chapter 10, Digital technologies and the museum Experience, Hand held guide and other media, Altamira press, 2008

Following the outcome of the above surveys and research, the selected technologies and methods have now been introduced to museums in Europe and other parts of the world. It is a challenging task to museum administrations and professionals, but it is their duty and responsibility to apply and introduce such improved techniques to meet the visitor demands and to keep the museums live and getting popular.

Advantages and disadvantages of Multi-media Audio Tour Guides

When introducing mobile tours to meet the visitor demands, due consideration should be given to its advantages and the disadvantages[7].

Advantages of multimedia audio tour guide:

1. **The level of engagement of a visitor can be higher** through a multimedia tour. Especially under the **facilitation of a learning process**, it provides interaction with the cultural process of the museum and supports giving more details about the museum display. According to the visitor choice and demand museum can provide the relevant information with more details using multimedia tours and the visitor could be kept engaged longer with the tour by maintaining a continued relationship between the visitor and the museum.

2. **Audio tours could be used to connect the visitors** who come to the museum **with non-visitors**. Multimedia tours are very useful especially for school visits. MM- Projects and files attract the young people today as they get more educational information which could be shared with their friends, school mates and neighbors. That way, the museum could extend benefits to non-visiting people who in turn, will get interested to visit the museum in future. More over the non visitor gets pre visiting information through the internet and they can gather and share the museum information with others too. These points be concluded under the advantage of "**Saving the Visitors and Audiences**."

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[7] Silvia Filippini-Fantoni and Jonathan P. Brown, Mobile Multimedia: Reflection of ten years of Practice, Chapter 5, Digital technologies and the museum Experience, Hand held guide and other media, Altamira press, 2008

3. **Any visitor can gather more knowledge** and get educated even before visiting the museum through the pre introduction and information available in the internet. Even after the tour he can continue to connect with the museum with any desired topic or subject through **the virtual circle**. The visitor can keep it as a memory, a souvenir or as a bookmark about his interest through this audio tour.

4. MM Audio tours can **provide personalized contents**. Different types of visitors can get right and suitable information and details according to their choice.

5. MM-Audio Tours **support visitor orientation.** The visitor is physically oriented with the tour, as sound, visuals; light and voice facilitate and guide the visitor. The information and knowledge that the visitor gains could be shared through wireless media such as Bluetooth, GPS and WIFI, more among a wider audience of young and old.

Disadvantages

In general the disadvantages are minimal comparing to its advantages. However some difficulties which are of financial nature are obvious. They are **cost issues** in relation to high **initial investment and its slow recovery rate, high costs of operation and maintenance of hardware and the system, hiring specialist programmers, engineers and technicians** etc**.** Most of the museums are not capable of maintaining this high cost digital concept due to shortage of resources. **Some devices are user friendly and some are not**. Handheld devices trouble the visitor when he carries other equipment such as cameras, mobile phones and Lap Tops. This affects the visitor interest by finding it difficult to adapt themselves with multimedia handheld tour guides. **There are social issues** such as the visitor getting distracted and loosing due attention from others while navigating the exhibition area.

Application of Hand-held MM Audio Tours to a Natural History Museum - Strategies and Recommendations proposed.

Taking the above facts into consideration I wish to recommend application of Hand-held MM Audio technique specifically to Natural History Museum, **as my case study**, in line with the following arguments and strategies. The proposed **specific or special target groups are teen age school students, researchers of different categories, visually handicapped visitors (blind or with low vision) and groups of family members.**

Composition of a Natural History Museum

In general the NH Museums consists of presentations covering a very wide range of objects to facilitate the visitor to get a good understanding about the Biodiversity of the World/Earth and its history and evolution. Information on Natural Environment of the World, Natural disasters, Researches of new discoveries covering nature, information on human communities and societies, making communication, condition and geometrical information, conducting research on specimens and science field are the areas normally covered by a Natural history museum.

Meeting the Responsibilities for the Visitors through MM Audio Tours

Effective presentation of such a wide variety of subjects is a big challenge to Natural Museums on one hand and to facilitate the targeted visitor to understand it properly on the other. To overcome the second challenge, it is recommended to apply the technique of Handheld MM Audio Tours, as an easy way out. As highlighted under the heading, "Advantages of MM Audio" it can help the visitor to gain information for educational and research needs and through interactive, interpretations methods and proper audio tours visitors' attraction could be enhanced by engaging them with the objects.

Audio tours could also be programmed according to contextual model of learning[8], thus improving the museum –based learning of the relevant visitor group and giving them more experience. When MM Audios are prepared it is important to understand the visitor behavior during the three time periods, namely, pre-visit period, present or in-museum visit experience and post- visit period.

Museum expertise has a big challenge to develop an attractive handheld audio tour for the next generation with new technologies. If we don't introduce effective communication methods with the new technologies, younger generation will tend to refuse visiting the Natural Museums as a result and museums will face a serious problem for its future sustainability.

How to Introduce Audio Tours to School Children as an Important Target Group and w**hy we focus on school children as a target group** ?

Present generation forms the future visitors which the museums are going to depend on. The present generation is fully equipped with all kinds of modern tech. in the process of education and information

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[8] Johne .H. Falk and Lynn D. Dierking, Enhancing Visitor Interaction and Learning with Mobile Technologies, Chapter 2, Digital technologies and the museum Experience, Hand held guide and other media, Altamira press, 2008

and they want to gain knowledge very quickly and accurately. Nature is an exciting subject to them. They are familiar with the mobile devices such as I-phone, I-pad etc. and it will be easier to introduce Audio tours to them. As such the Natural Museums could introduce special handheld guide tours which includes interactive adventures about animals lifestyle and their environment with sounds and scenarios in different international languages including local languages for the benefit of students belonging to any linguistic group. It can include specific and popular specimens and models that are included in their education curriculum. The attractive information contained in the web pages, kiosks in the premises could be down loaded to go through even during pre-visiting periods. During the visits they can actually experience what they learned before as more audio-visual information is available in situ such as music, full scale visuals and other attractive means incorporated to Audio tours. This idea encourages younger generation to explore natural artifacts in a more dynamic and participatory way, and create personal narratives to share with their classmates, family and other friends. Students can find additional information for their school or individual projects following audio tour information during post visiting period. Young people can be attached to museum exhibitions even if they are not present in the museum premises. As a result, Non-visitors can also be increased annually due to awareness they gain from other students. This outcome will result in increase the attraction and the number of visitors to the museum affecting its sustainability.

Creative audio tours for family members including children as another target group

Strategies and theories as discussed above could be adopted when meaningfully creating mobile hand held audio tours to other segments such as local and international **family groups with children**. If museums try to introduce handheld audio tours which include different trails (animal story of their lives, telling of inherent condition, impact of the natural environment, and general natural disasters), eco system can be chosen and presented in different international languages including the national language. Children can be encouraged to engage with exhibit's environment which includes sound in order to discipline and control them within the display area. . They also can use their pre-experience about the natural history museum to improve the mobile audio tour which can be downloaded onto user –owned handheld technology from museum websites or kiosks in the premises. If they can use their prior knowledge about the exhibition orientation and they can engage with the object while discussing about the exhibition experience with family members and non-visiting members. After the visit, the children will have memorable experience about specific animals and the natural environment and elderly people will be satisfied with the experience they gained by visiting the museum and about the satisfaction gained by the other members of the family. This trend will be a good sign for a improved visitor attraction to the museum and its popularity.

Audio tours for research oriented people as a target group

Among the visitors that could be attracted by a Natural Museum the thirdly important category is research oriented people. MM Audio Tour could be programmed to facilitate the **education/research oriented visitor**, to agree, on some selected aspects of the presentation such as the ones that present a verity of real specimens and attractive 3D models that have a great appeal on many different age groups, educational levels and technical levels, when entering. Natural Museums always make connection with research groups and professional communities as they contain a variety of useful collections with relevant information. Natural Museums could give opportunities to research people to access to their research results , collection and professionals in the field. This opportunity could be arranged through introduction of advance audio tours with two trails, namely, educational **trail** which includes research information connected to websites, and **narrative trails** which includes speeches of expertise, photos of research objects and sites, demonstration of research. This opportunity helps to get both the visiting professionals and non-visiting professionals attracted to the museum, which will help the museum in turn for its future success.

Accessibility for disable people (Blind) as non-visitors

Blind and people with low vision could also be given opportunities to experience a Natural Museum by introducing **special audio tours "sonic breadcrumbs**" , a sound development new technology taking such groups under non-visitor category.

Conclusion

Due to technological advancements and the present trend of the younger generation, museums have to act independently to decide about the quality of displays and presentations. Lack of funds and less financial grants given by the governments have compelled the museums to look for private sponsors for their future projects. To continue its sustainability museums have to generate their own resources by attracting more visitors. More over to increase its popularity, museums have to use the latest technology for better interpretation, to connect and engage the visitor. It is not an easy task to go along with the new technology but if any museum is able to continue without interruption providing new projects even under difficulties; its sustainability is well assured. As museum professionals, we all must give due consideration to this technology issue very seriously, taking it as one of our main responsibilities.

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