

## Understanding Sharing Habits in Museum Visits: A Pilot Study

Galena Kostoska, Italy, , Beatrice Valeri, Italy, Marcos Baez, Italy, , Denise Fezzi, Italy

### Abstract

Most museums try to find with different ways to prolong the museum experience outside of the museum environment and facilitate its sharing after the visit. The main reason is two-fold: it can create interest and attract people to the museum, and it can help people who for various cognitive or physical limitations cannot attend the visit, to still enjoy it. We conducted couple of surveys and we designed a possible platform for facilitating sharing, for which we report the preliminary results in this paper. Our findings show that i) although visitors claim that they would like to share their visit, the number of the actual sharing visitors is significantly low, ii) most of the visitors use only verbal narrations in order to share their experience with friends and families, and iii) visitors do not share emotions "virtually" (e.g., facebook or twitter) during the visit. Guided by these results we developed a potential solution through which sharing can be facilitated. It includes various ways to bookmark or "save" and share artifacts during the visit, catering different types of visitors. It also includes a way for people to come to consume the shared content.

**Keywords:** museum, sharing, artifact, bookmark, storytelling

### 1. Introduction

Museums are no longer places where visitors "just" go and observe objects; they are becoming a place where visitors enjoy different kind of experiences. Museum managers are increasingly trying to extend the experiences from visitors to other people, including people who wouldn't normally come visit and people who for various physical or logistic reasons are incapacitated to do so. There are two reasons for this: first, to create interest and attract more visitors. Second, to help people with disabilities enjoy the same experience as those without disabilities. Sharing habits of interest include announcing **intentions** to go to an exhibition at a given date and time, sharing of **emotions** during the visit to one's social network, and sharing of **content** with friends and family (e.g. storytelling supported by images, maps, and the like). However, initial attempts to facilitate the sharing and experiencing of the content and emotions originated by an exhibition have met limited success.

To address this problem, we ran several studies to understand *if* and *how* people share, and which technologies can help increase sharing. The research had two phases: first we conducted face-to-face interviews at the museum for understanding sharing habits, then we asked to respondents what and how they actually shared their visit once back home by sending them a questionnaire through e-mail.

All the phases were conducted in collaboration with the Natural Science Museum (Museo delle Scienze, MTSN) located in Trento, Italy during the exhibition *Homo sapiens* – an exhibition explaining the human evolution.

After a short discussion of related work, we discuss how we run the studies and did the design, and what we found.

### 2. Related work

Filippini-Fantoni and Bowen (2007) provide a comprehensive overview of the museums' attempts to allow visitors to collect memories of their experience and to facilitate their sharing after the visit. Some museums developed websites where visitors could experience and bookmark the virtual representation of exhibits; others positioned some computers and interactive kiosks or allowed the usage of personal mobile devices for collecting interesting exhibits in one place.

There are several museum platforms that offer the opportunity to bookmark favorite artefacts. The Peabody Essex Museum's *ARTscape* allowed a visitor to bookmark exhibits using an audio wand, and then later view further information on these from their personal collection online (Johnson, 2004). *Myartspace*, a service on mobile phones supporting the process of inquiry learning, allows "collection" and annotation of artefacts in the museums during a school visit (Vavoula et al., 2009). Different technologies that are used by museums are RFID cards and PDAs. They allow people to get more information about the interesting exhibits while experiencing them, and after the visit they can access the museum's website and relive the visit thanks to a personalized area. An example of such system is Rememberer, in which people were able to get links to exhibits and record them for later revisit (Fleck et al., 2002). The xSpot system was built as descendant of this project, where the PDA device was replaced with a kiosk positioned inside the museum (Hsi & Fait, 2005).

The effectiveness and attractiveness of these platforms have been studied in several studies. The results show that the bookmarking feature was used only by a small part of visitors and the authors identified different reasons. First of all, some visitors were not interested or did not have time for using the bookmarking feature. In some other cases the deployed systems were not visible enough and some other systems were lacking transparency and simplicity (Filippini-Fantoni & Bowen, 2007; Marty, 2011).

The proposed approaches are facing problems in their adaptation from the visitors and have met limited success. In order to cope with this we designed a complete study starting from understanding the sharing habits and intentions through prototyping to participation and sharing behaviour.

### 3. Method

We organised our study in two phases: the first to understand the sharing intentions during the visit, and the second to get insights into the actual sharing afterwards. We detail both phases below.

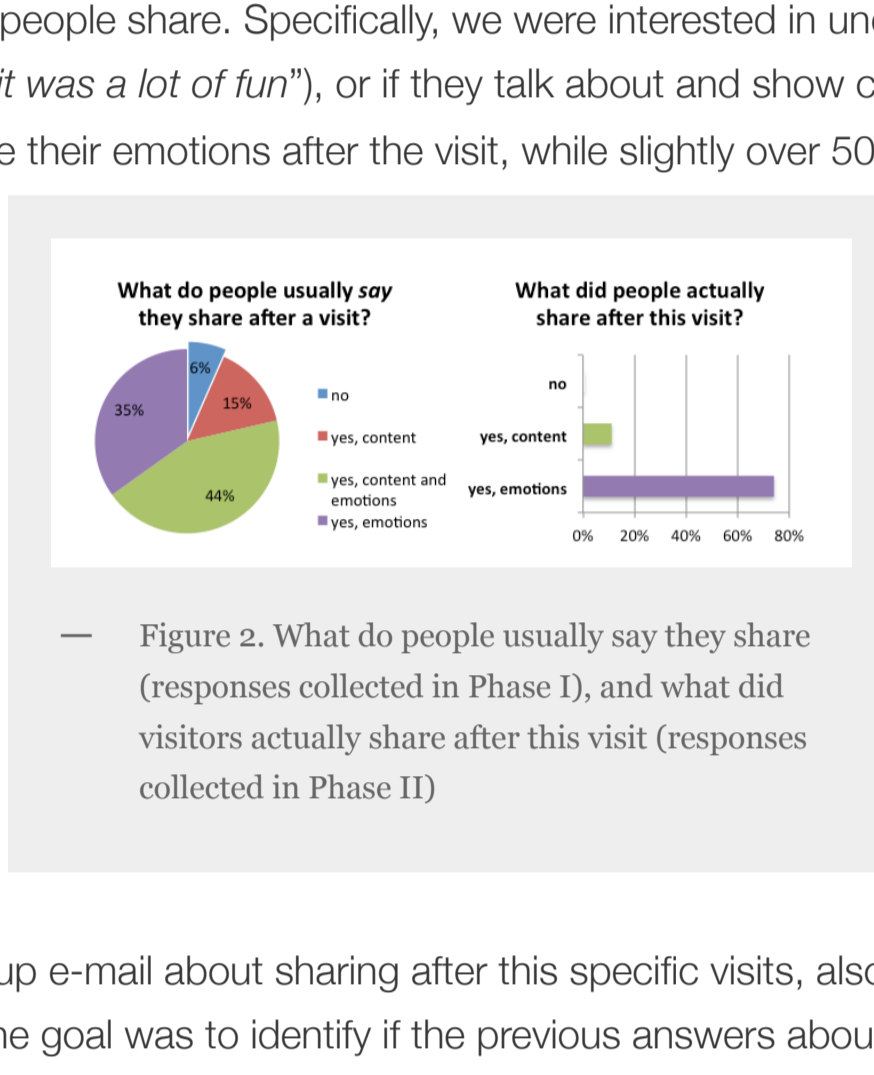
#### 3.1 Phase I

The aim of Phase I was to understand what visitors usually share after a museum visit with a relatively large number of face-to-face interviews. These were conducted during a holiday weekend (1-4 of November 2012). In this period the museum was expected to have greater and a more diverse affluence of visitors, in part due to a new exhibition (*Homo sapiens*) explaining human evolution. This museum doesn't put any restriction on the visitors regarding taking photos and videos of the exhibition, therefore, this study captures the behavior of users in an open setting where they are free to choose what and how to share.

In order to gather as much information as possible for the sharing habits of the visitors after the museum visit, we based our study on individual, face-to-face interviews. These interviews were conducted by two researchers, based on a questionnaire consisting of 14 questions (<http://alturl.com/3u7c>). Responses were later processed into common clusters/groups with similar meaning.

A total of 2,000 visitors came to the exhibition in the four days of the interview period. We performed over 300 interviews during these days, from 10am to 6pm. The interviewee typically was either an individual or a family, therefore the interviewed population accounts for approximately 40% of the visitors. The average duration of each interview was about five-six minutes.

Families with kids accounted for 56% of the interviewed visitors; 18% were young adults (below 30) and 26% were adults. The museum staff distributed a leaflet advising visitors about the study to let them know they would be approached. The interviewee was approached by an interviewer, explaining the purpose of the project and the affiliation. Only a few people refused the invitation to participate in the study; the most common reason was because they were in a hurry.



#### 3.2 Phase II

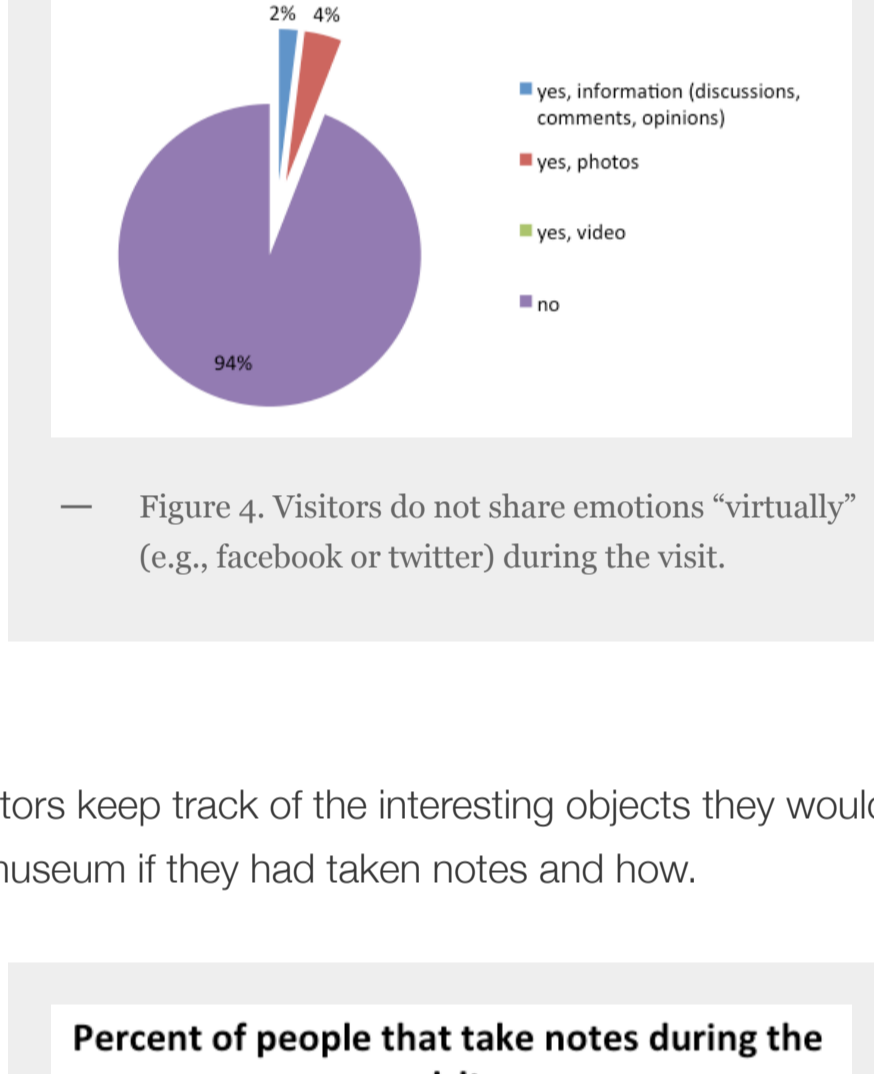
The goal of Phase II was to understand what visitors did share after this visit. Over 90% of the participants of the study in Phase I gave us their e-mail address and were willing to participate in Phase II, a follow-up survey (<http://alturl.com/bor2n>) where we asked the visitors if, what and how they shared their experience. Only 10% of the participants didn't give us their e-mail addresses, mainly because they either didn't have one or they were uninterested in further communication.

We sent over 270 e-mails to the participants of the user study. We divided the participants in 6 groups and we sent the e-mails on Nov 15, 2012 in intervals of 5 minutes from 8:05am till 8:30 am. We limited the investigation in the period of 15<sup>th</sup> – 19<sup>th</sup> Nov and we collected 87 responses.

### 4. Results

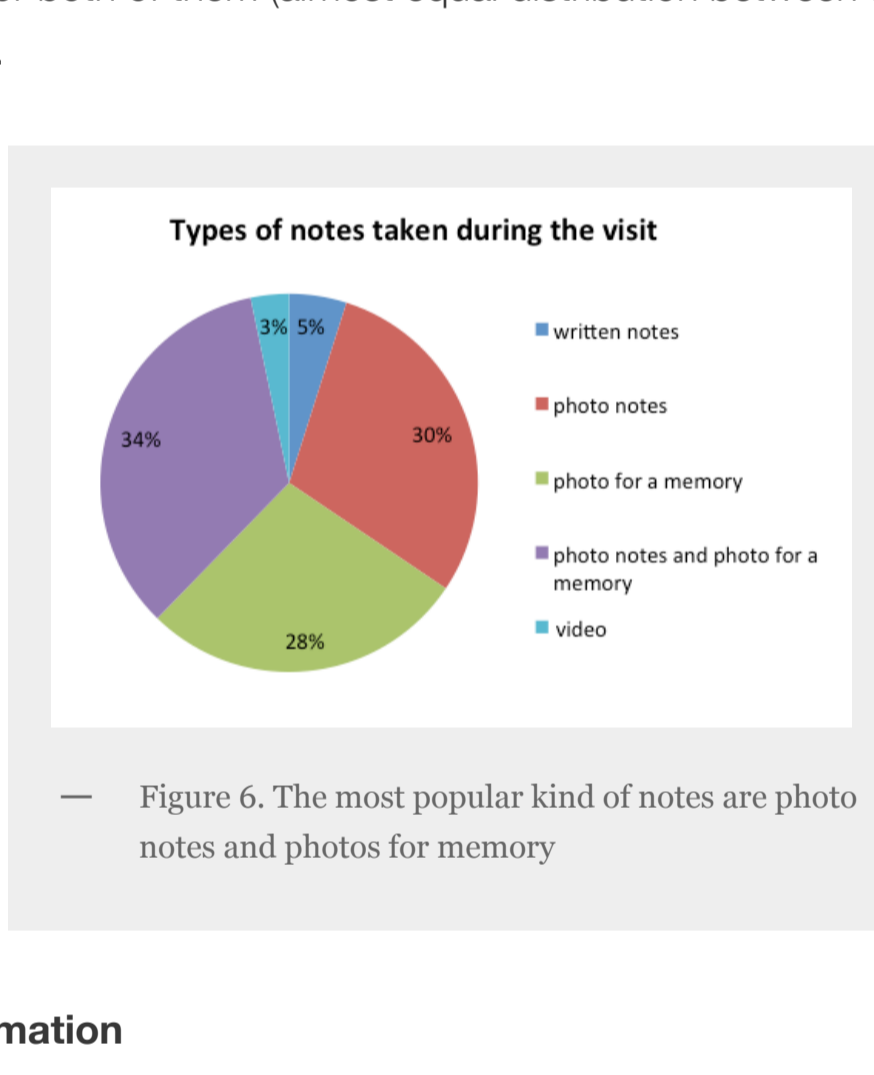
#### 4.1 Sharing habits

The first point we analyze is if and what people share. Specifically, we were interested in understanding if they share a general feeling or emotion about the visit (e.g., "it was a lot of fun"), or if they talk about and show content. The overwhelming majority of visitors expressed that they usually share their emotions after the visit, while slightly over 50% also share content.

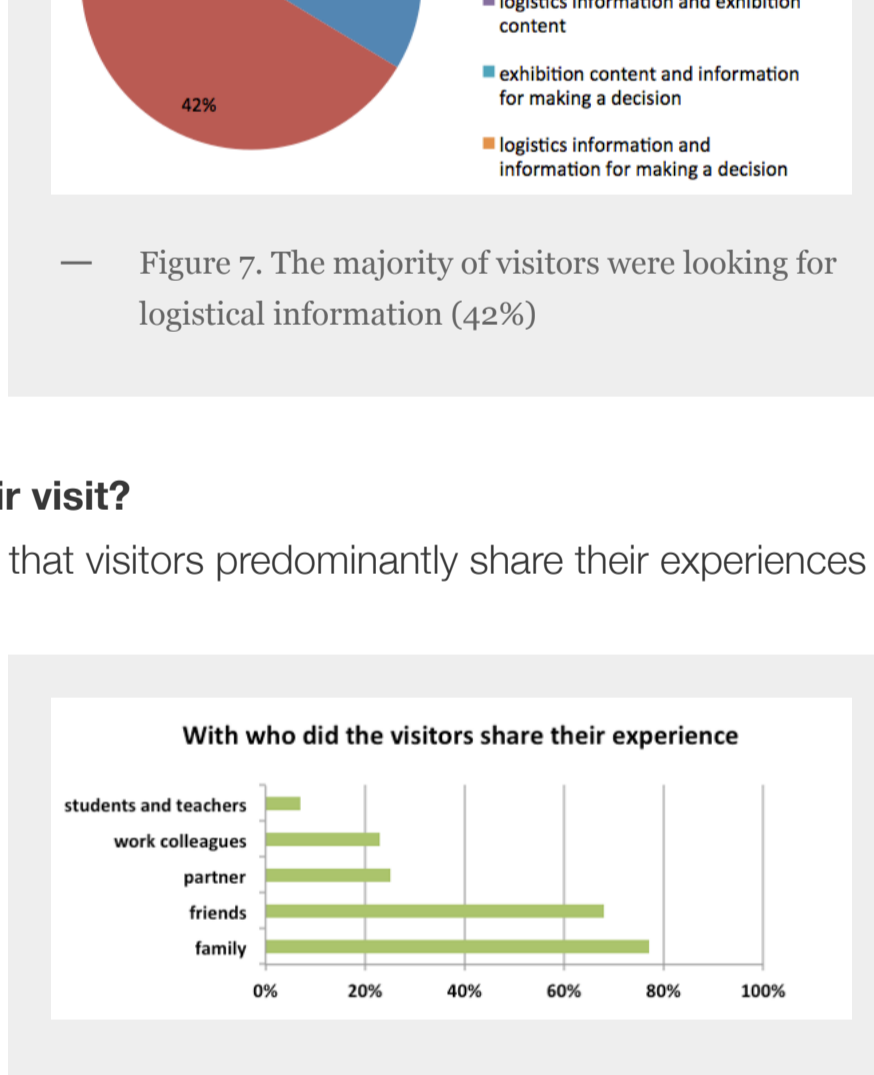


We asked a similar question in a follow-up e-mail about sharing after this specific visits, also trying to more deeply understand the nature of content sharing. Specifically, the goal was to identify if the previous answers about sharing content were more related to talking about a content (e.g., "we saw weapons from the Paleolithic age"), or also showing it. We found that the results were similar in terms of sharing emotions. However, only 15% of the respondents did share content with some kind of visual support.

Another very important aspect for us was to determine whether the visitors used some means of narration to deliver the experience with their families and friends or not, and if they did, which means did they use. The results from the follow-up study showed that most of the visitors used only verbal narrations. Only around 10% used books and catalogs for describing the visit whereas only 5% used scientific games and souvenirs.

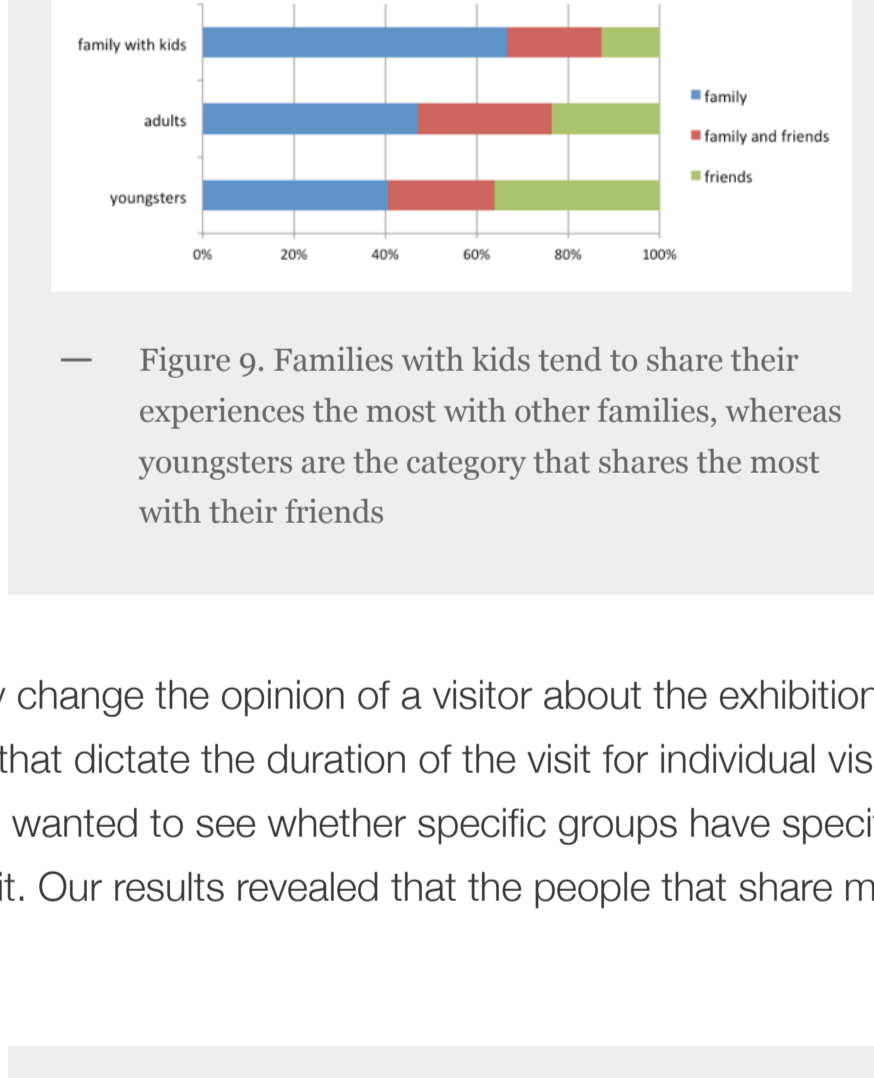


We investigated whether the visitors utilize the social networks to share their experience. The results showed that virtually no visitor shares emotions "virtually" during the visit.



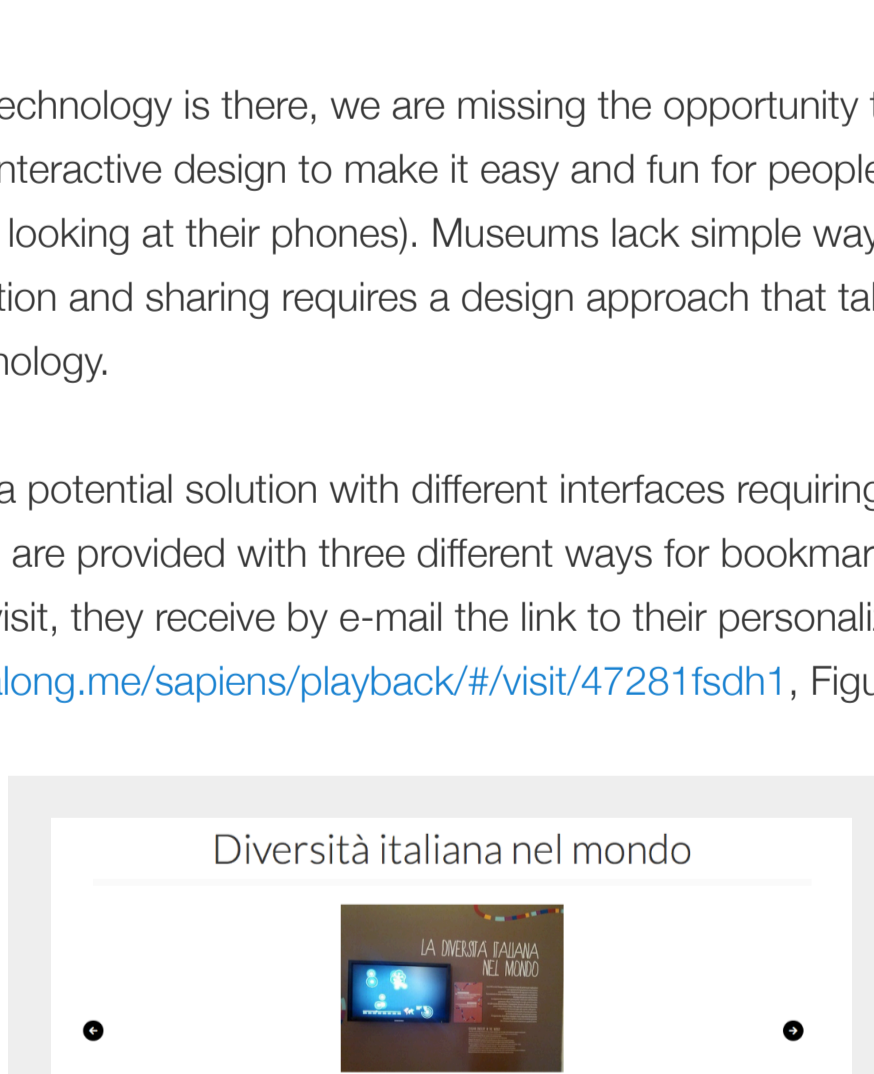
#### 4.2 Taking notes during the visit

Next we tried to understand how do visitors keep track of the interesting objects they would later share and discuss. To this end, we asked people after their visit at the museum if they had taken notes and how.



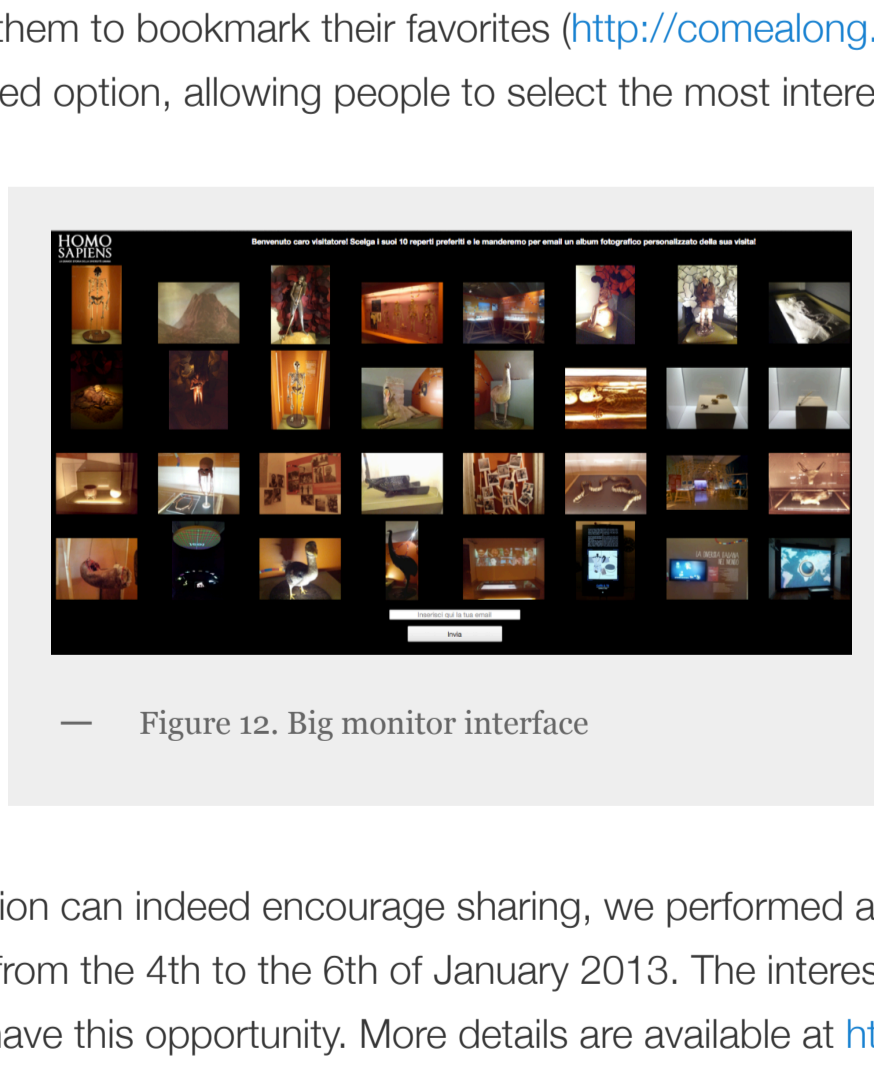
The results showed us that people generally did not take notes; only 20% of the visitors took notes during this visit.

The majority of the visitors takes either photo notes (notes of the descriptions of the artifacts), or photo for a memory (for instance a photo with their kid with some artifact), or both of them (almost equal distribution between these three categories). A small number of visitors take written notes and videos.



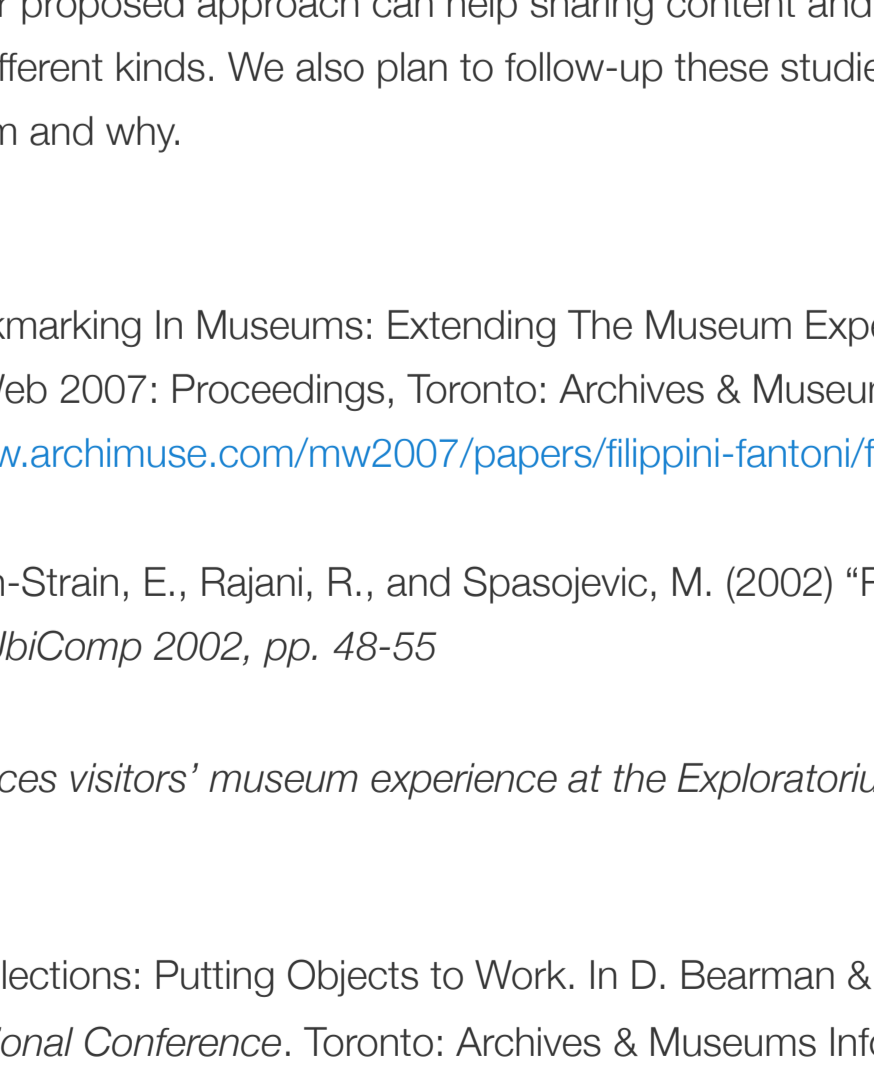
#### 4.3 The website as a source of information

Next we investigated if the website is consulted as a source of information for future sharing. What we found is that the museum Web resources are in essence not used. The main reason for looking up the page is to get logistical information.

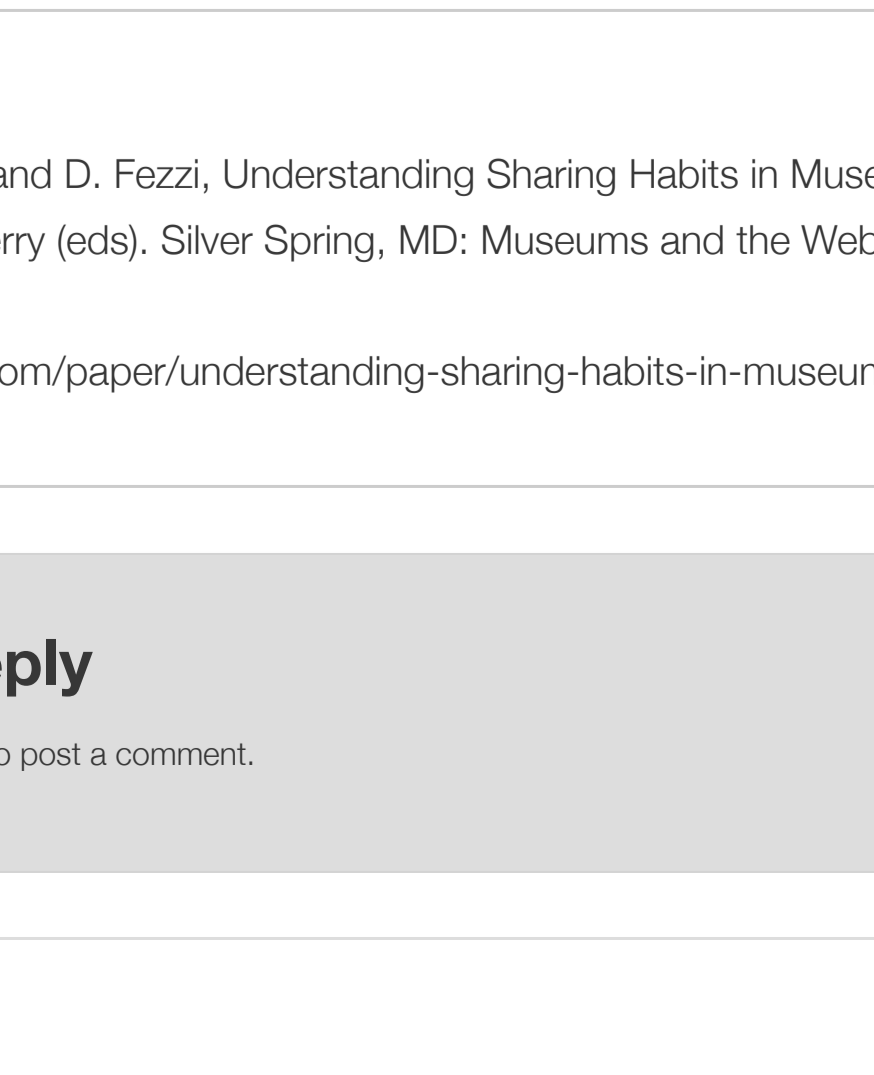


#### 4.4 With whom do visitors share their visit?

The results from the follow up study say that visitors predominantly share their experiences with their families and friends.



We argue that this is the case because the most prominent category of visitors was family with kids. However, if we see the sharing preferences for each individual category we can observe that different categories have different target groups for sharing.



The duration of the visit can dramatically change the opinion of a visitor about the exhibition. The time a visitor spends in a museum can help us understand the constraints that dictate the duration of the visit for individual visitors, as well as show different time spans of various interest categories. We wanted to see whether specific groups have specific visit durations and how the durations of visit influence sharing after the visit. Our results revealed that the people that share more content are the ones that spend more time in the museum.



### 5. Potential solution

This research told us that although the technology is there, we are missing the opportunity to increase participation and enjoyment. We argue that the reason is the lack of interactive design to make it easy and fun for people to share **content** and **emotions** during their visits (without spending all the time looking at their phones). Designs lack simple ways to easily **consume** shared information. Hence, increasing participation and sharing requires a design approach that takes into account the exhibition setting and the target audience – not only technology.

Guided by these results, we developed a potential solution with different interfaces requiring different technological ways, through which sharing can be facilitated. Visitors are provided with three different ways for bookmarking interesting exhibits directly inside the museum and, once completed the visit, they receive by e-mail the link to their personalized online photobook, which can be easily shared (an example, <http://comealong.me/sapiens/playback/#/links/47261f5d81>, Figure 11).



We developed a smartphone app for QrD devices that allow visitors to bookmark and access more information about the exhibit in front of them by reading the associated Qr code or NFC tag. For people that do not have such technology, a big monitor positioned at the end of the visit allows them to bookmark their favorites (<http://comealong.me/sapiens/touchscreen/W/>, Figure 12). We also included a low-tech paper-based option, allowing people to select the most interesting exhibits from the printed form.



In order to find out if our proposed solution can indeed encourage sharing, we performed another study with the Museum of Sciences during the Christmas holiday, from the 4th to the 6th of January 2013. The interest in the bookmarking feature was high and many visitors were really happy to have this opportunity. More details are available at <http://comealong.me/sapiens/study>

### 6. Preliminary Conclusions and Current Work

Our research revealed that the most common way to "take home" the experience is by using verbal narrations and almost 75% of the visitors shared emotions and feelings about their visits this way. Although there's a strong intention to pass the museum experience to non-visitors, only 15% had the opportunity to share content with some kind of visual support. For this reason, we are running studies to assess if and how our proposed approach can help sharing content and emotions, and if it can also make sharing more effective in museums of different kinds. We also plan to follow-up these studies in order to understand if the they shared the virtual photobook, with whom and why.

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