IKNOWWHATTHISIS

CROSSMEDIALAB
CREATE THE NEXT STEP

Authors
Harry Van Vliet
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Cell
Cahier Light

HELLO
MY NAME IS

Tagging

Type any name or tag...

- Crossmedia
- Museum
- Taggen
- Kever
- Ikweetwatditis
- Weetjijwatditis?
- Cell
- Museon
- Naturalis
- UU

Tag   Cancel

US
UNLAWFUL TO REMOVE
840 003 123 456 789
6789

IKNOWWHATTHISIS
Research report PACE
Utrecht University of Applied Sciences
Faculty of Communication & Journalism
Crossmedialab

€100.000

You like this.

TAG

'10

32013 70185

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Website ikweetwatditis.nl
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Figure 7.2

Mobile tagging application

I know what this is

PREFACE

On behalf of the Crossmedialab, we hereby proudly present you with the first part of the 'Cell Cahier Light' series on The Public Annotation of Cultural Heritage. The Crossmedialab is the workroom of the Cross-media Business Research Group at the Research Centre for Communication and Journalism at the Utrecht University of Applied Sciences, dedicated to the study of cross-media developments and applications. The term 'cross-media' is taken to mean the use of multiple media resources in the realm of communication – TV, the Internet, mobile phones, events, printing, radio, etc. As soon as multiple media resources are used to convey a message or story, one is inclined to ask questions about 'orchestrating' the various media resources. Examples are: 'what content and what medium?', 'how do the various media resources relate to each other?', 'what scenarios allow for mutual strengthening?' and 'what different media features are used in relation to the target group?' In particular, the development of the Internet and mobile telephony has made these questions virtually inevitable for today's – digital – communication.

This publication gives an account of the Public Annotation of Cultural Heritage research project (PACE) conducted at the Crossmedialab. The project was carried out between 1 January 2008 and 31 December 2009, and was funded by the Ministry of Education, Culture, and Science. Three members of the Dutch Association of Science Centres (Vereniging Science Centra) actively participated in the execution of the project: the Utrecht University Museum, the National Museum of Natural History (Naturalis), and Museon. In addition, two more knowledge institutes participated: Novay and the Utrecht University of Applied Sciences. BMC Consultancy and Management also took part in the project. This broad consortium has enabled us to base the project on both knowledge and experience from a practical and scientific perspective.

The purpose of the PACE project was to examine the ways in which social tagging could be deployed as a tool to enrich collections, improve their accessibility and to increase visitor group involvement. The museums' guiding question for the project was: 'When is it useful to deploy social tagging as a tool for the benefit of museums and what kind of effect can be expected from such deployment?'
For the Crossmedialab the PACE project presented a unique opportunity to conduct concrete research into the highly interesting phenomenon of social tagging with parties and experts in the field. We were eager to seize this opportunity and jumped in with both feet.

Harry Van Vliet
Research Head, Crossmedialab

1

INTRODUCTION

Our society's collective memory is solidified in the artefacts of our cultural heritage: hundreds of collections contain an enormous number of archival items, art objects, books, paintings, archaeological remnants, folkloristic objects and audio-visual objects. These treasures have been scattered across a large number of cultural heritage institutes, such as museums, archives and libraries. The government's duty to sustain adequate quality levels among cultural facilities is, therefore, a real challenge, especially if we want to give further substance to this duty of care by setting additional criteria, such as the accessibility of such cultural treasures for each and every person. The fact is that our cultural treasures are mostly invisible to the general public. This is hardly surprising considering that over 45 million objects are in the custody of museums in the Netherlands alone. The same applies to the wealth of material in archives leading a hidden and hence invisible existence.

Especially since the beginning of the 1990s, the growing impact of information technology and digitisation has given cultural heritage institutions a fresh impulse to deal with these problems (Van Vliet , 2009). Their efforts, however, were mostly aimed

at cultural preservation however, and, for the time being, have done little to bring us any closer to the dream of a Virtual Collection in the Netherlands. In 2008, there were still substantial delays in digital registration. The digitisation of art objects alone is still in its infancy. The following applies to museums: 'From a national perspective, digital images have been made for 2 to 4 out of every 10 art objects, which comes down to a digitisation rate of 17%-37%. The total number of non-digitised art objects thus amounts to 28.4 to 37.3 million art objects'. (Veeger, 2008, p. 33).

Various analyses have been published to explain this course of events. The term 'vision' was used on frequent occasions, as in 'a vision of what ICT and/or digitisation can do for institutes and their art collections' (amongst others, Velthausz & Bruinsma , 2002; Helmus, 2002; Van Vliet, 2009). In this respect, it is appropriate to observe that, as yet, digitisation is mainly focused on internal management processes and, only to a lesser extent, on external processes targeted at public outreach. Great

amounts of efforts and funding were engrossed in the massive digitisation of art objects. As a result all sorts of digital, non-interoperable, object stores have come into existence. At first, the cultural heritage sector's other targets, in particular making collections accessible to the general public, were much less of a priority on the digitisation agenda. Indeed ambitious goals towards realising public accessibility had already been formulated at an early stage, most clearly articulated in the 1998 report 'Pulling out all the Stops' (Alles uit de Kast) (Adriaans et al., 1998). This report argues for the necessity of shifting gears, moving from preservation towards accessibility. Not until many years later were we able to observe something of a turning point (see: Huysmans & de Haan, 2007; Veeger, 2008; Weide & De Niet, 2008). It seems that for digitisation one has not found a balance between management and accessibility as part of the cultural heritage institutes' target yet. Although in the last decade digitisation has led to a breakthrough in many areas, for the general public, the door to the digital world of cultural heritage has only opened a crack.

Meanwhile, it has become exceedingly urgent to further open the door. The Internet's dominant role in recent years has caused a change in the relationship between media producers, suppliers and consumers in the traditional media landscape. As a low-threshold channel stimulating interactivity, it has brought about massive use among producers and consumers, informing each other, meeting and collaborating through this channel. The cultural heritage sector did not entirely ignore these developments. For several reasons, in recent years emphasis

has been placed on increasing the number of visitors and broadening the target group. For example, digital presentations of art collections are used to open up new public groups. In fact, there is no shortage of multimedia and cross-media presentations of collections at this point. Today's availability of digital cultural heritage is characterised by a rich variety of initiatives: colourful array of websites, mobile applications and multimedia interactive compilations. This confirms the urge among cultural heritage institutes to get to work using new media resources and the low-threshold possibilities that these new media technologies presently offer. On the other hand, all of it gives a strong impression of being carried out on a trial and error basis, with public sentiments being more important than a well thought out strategy.

The developments surrounding information technology, digitisation, the Internet and new media have quickly led to all sorts of reflections and views on what awaits us (EU, 2002; Bearman & Geber, 2007). We risk to fail considering small realistic steps, and focussing exclusively on technological developments, without taking other types of developments into account (see also: Van Vliet, 2008b). The question is therefore: what can be accomplished with today's digital resources in response to the general public's changing role, and for the purpose of improving accessibility to our cultural heritage? The use of multiple media resources and particularly resources like the Internet and mobile telephony seems to be inevitable. The only question that remains is: how?

Beetle collection

Naturalis

Department: Modern Art
Title: The Innocent Eye Test
Classification: Paintings
Artist: Mark Tansey, American, born 1949
Date label: 1981
Medium: Oil on canvas
Dimensions: 78 X 120 in. (198,1 x 304,8 cm)
Credit Line: Partial and Promised Gift of Jan
    Cowles and Charles Cowles, in
    honor of William S. Lieberman,
    1988
Accession: 1988.183
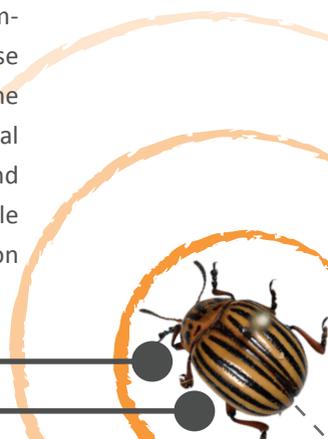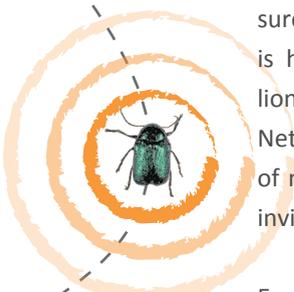
2 MUSEUMS & SOCIAL TAGGING

Searchability is crucial for the accessibility of our digital cultural treasures. The ability to find these digital cultural treasures begins with an effective description of digital art objects. Therein lies the problem. If any object description can be found at all, it usually includes only a minimal amount of technical data focusing on object management issues such as documentation of the acquisition process and storage, and art-historical features, such as the time frame, style, artist and art-historical value. A minimum description of an art object usually involves six to seven characteristics, which include a description of the art object, the date of acquisition or de-acquisition, the reason for acquisition or de-acquisition, the museum employee's name responsible for the object, the institute's name and the inventory number.

👍 I know what this is

When art collections are presented on the net, often the same object descriptions are used as those used for physical collection management. Consequently, any problems in describing the physical art collection are reflected in the digital presentation. Typical problems include the following:

1   information has been tightly structured along the lines of a museum's targets, e.g. specific exhibitions or educational programmes; or

2   terminology is used of a technical nature or geared towards specialists. E.g. as a result of strict annotation standards the formal description of a painting with the image of a cow might not even in-

clude the word 'cow', so as a result the painting cannot be found using 'cow' as a search term; or

3   an art object is embedded in a context that does not appeal to the visitor's perspective since it is exclusively linked to an art-historical context, e.g. tags indicating a certain genre or art-historical time frame; or

4   as the case may be, an art object has been completely taken out of context, and only a database record is shown (Trant, 2006a/b).

In conclusion: art collections are available, but not accessible; descriptions have been made, but are incomprehensible.

Website Brooklyn Museum

Website Buurtatlas

enhancing search engine performance for the websites of cultural institutes by giving better explanations, tips, examples, etc. (Taskforce Archives, 2004; De Haan et al., 2006; Wubs & Huysmans, 2006a/b; Chan, 2007). There is definitely much room for improvement in this respect, but the fact remains that usually formal art collection descriptions differ from the terms and search terms used among visitors: there is a 'semantic gap' (Trant, 2006a). Another approach involves providing better context and narrative form for the presentation of art objects. This could make the formal description less prominent, and also less alienating, and may also have an effect in the context of educational objectives or in relation to certain target groups. It would apply to a much lesser extent to the professional who tends to search for specificis or create his or her own story (Van Zeil, 2006). Nonetheless, these approaches usually remain costly, project-related initiatives that have arisen from a tradition of making well-considered selections of any given art collection in order to comply with museums' limited space requirements. Such limitations are much less of a concern for digital presentations.

Yet another response to the changing relationship between museums and visitors is to let the latter play a much more active role, both in the process of making

Although we have been talking about descriptions, we stress that not all art objects have been suitably described; not all descriptions are available in a digital format; many are of minimal length and they fail to support their public purpose. The descriptions supporting collection management are, therefore, insufficiently aligned with visitor interests and perspectives. The online digital presentations are no exception to this (Velthausz & Bruinsma, 2002; Trant, 2006a; Beyl, Nulens & de Nil, 2008; Srinivasan et al., 2009).

The public role of cultural heritage institutes and the strong increase in visitors wanting to do their own search on the Internet have changed the perspective on cultural object descriptions. To make cultural objects better accessible and easier to find it is essential that object descriptions reflect the interests and perspectives of the general public to a higher degree. Various approaches are possible for this purpose. One particular approach involves

Website Erfgoed.be

art collections more accessible and in the process of enriching these collections and making them more engaging. Examples abound of museums inviting visitors to create their own exhibition or to do this together with other people.

An example from the Victoria & Albert Museum allowed the visiting public to design its own tiles after visiting a tile exhibition. This led to an extensive collection of user-generated content. Another good example is the website erfgoed.be, which features a photo collection of protected monuments, landscapes and village views in Flanders, Belgium. Since there are around 12,000 protected views, one has sought the help of the general public to make and upload the pictures. This was done using the functionality and interfaces provided by Flickr, which included the possibility of geotagging, allowing to place photos on a map. Some two years later, a substantial part of the protectec views had been photographed and made available at little cost and with a specific emphasis on its re-use (De Lusenet, 2008). A comparable example in the Netherlands is the reliwiki.nl website provides an inventory and descriptions of religious buildings in the Netherlands. As another example re-use by the general public is also being stimulated in the 'Re-picture Australia'

project at the National Library of Australia. This project challenged artists to re-use photos for the purpose of creating new works of art, as a mashup of old and new material (De Lusenet, 2008). Wiki has also found its way into the communication between museums and visitors, e.g. the London Science Museum provides decriptions of art objects on its public wiki (objectwiki.sciencemuseum. org.uk). Finally, there is a glimmer of hope for the municipal archive of Cologne thatwas struck by disaster in the spring of 2009. The general public had been called upon to help with the uploading of photos, films and copies of archive material to a special website, with the motto: 'better a picture or copy than nothing at all' (Van den Breemer, 2009).

Social tagging deployment is another possible solution for engaging the public and making object descriptions more public-friendly. Tagging entails assigning labels and/or keywords to a specific item, such as a painting tagged with the word 'beautiful'. Consequently it creates associations with the structure: user - tag - item.

We refer to this process as social tagging when multiple people are engaged in this activity, and tags are mutually visible. For instance, on the social tagging website delicious.com, tags for a website are immediately visible to other users and when tagging it reveals who has been giving the same kinds of tags for the website, the different kinds of tags used, and the names of websites that have comparable tags. Taggers then tend to predominantly use a common vocabulary: a set of terms that is preferrentially used to describe items. This entire set of associations that is semantically coherent in a statistical sense is referred to as a folksonomy, a contraction of the words 'folk' and 'taxonomy' (Marlow et al., 2006). The term folksonomy is used to distinguish it from taxonomy, which refers to a formal, hierarchical description of items. Social tagging is generally considered to be a part of the Web 2.0 developments on the Internet (Van Vliet, 2008a).

👍 I know what this is

Social tagging offers museums a quick and direct way to learn about visitor experiences, what visitors judge to be significant, and what significance they attach to particular art objects. The frequently mentioned benefits associated with social tagging include:

1 Tags provide visitors with access points that are usually closer related to the idioms used by visitors rather than the formal object descriptions.

2 Tags add new information to art collections. In some cases the general public may also have knowledge and information that is not available at any particular institute (Trant, 2006a).

3 Tagging increases people's involvement with art collections: taggers contribute by sharing the meanings collections have to them personally with the museum and other visitors, and consequently may provide insight into visitors' perceptions of art collections.

4 Tags can be used to personalise access to art collections by making suggestions, composing virtual expositions, offering route maps, or bringing visitors in contact with other visitors (Van Setten et al., 2006; Trant, 2006b).

Social tagging enables people to contribute to an art collection's accessibility. It provides additional information about art objects that may not, or only partially, have been described, and it offers many possibilities for further enhancing visitor involvement. It may also facilitate new types of services by suggesting other areas of interest based on given tags (Van Setten et al., 2006). Various studies suggest tagging has a positive effect, on both the added value for art collections and visitor involvement with those collections (Marlow et al., 2006; Trant, 2006a/b; Trant & Wyman, 2006: Trant, Bearman & Chun, 2007).

Why people tag is still a research topic. Various studies have suggested a number of motives (Marlow et al., 2006; Ames & Naaman, 2007; Zollers, 2007; Van Vliet, 2010). One suggested motive is the ability to retrieve and categorise information or material for personal use. For example, people tag holiday photos with date and location, music collections to create ad-hoc playlists, or articles for easy retrieval while writing an article or book. There are therefore many different tagging applications geared towards different sources of information such as email (Gmail), websites (Delicious, formerly del.icio.us), photos (Flickr), music (Last.FM), blogs (Technorati), and scientific articles (CiteULike). Tagging may easily expand into an activity with a social dimension when multiple people start using the same tags for concerts or conventions, to enable everyone to retrieve photos of an event. The prospect of rewards, often in terms of prestige such as achieving a top ranking in the list of frequent taggers rather than financial gain, can also be a motive. Finally self-expression

Website Steve Museum

Website Steve Museum

Website powerhouse
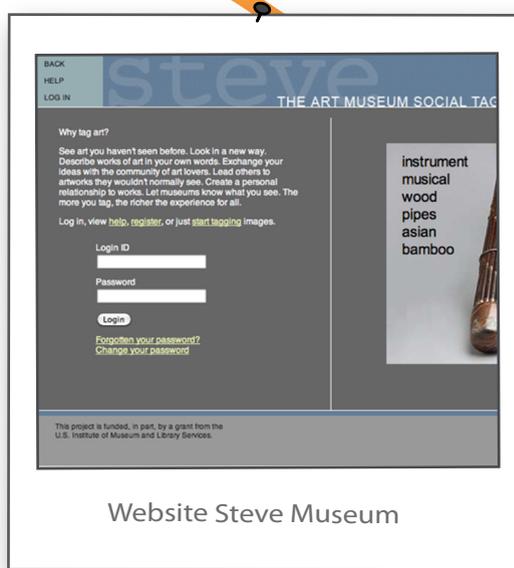
has been mentioned: showing who you are by sharing your music tastes (Last.FM), the types of books you read (Librarything.com), or by giving opinions with tags like 'cool!', 'boring', 'best ever...'.

An ever-increasing number of examples of social tagging deployment can be found in the realm of cultural heritage. International reknown examples include the Steve Initiative (www.steve.museum), the Powerhouse Museum (www.powerhousemuseum.com), the Smithsonian Photography Initiative (http://photography.si.edu) and the Brooklyn Museum (www.brooklynmuseum.org). The latter has a so-called Posse, a group of people participating in the 'Tag! You're it!' initiative. It is a playful way to stimulate tagging among people, showing who has added the most tags. In February 2009, it was Moriah11 (a 'midwestern girl with a love for history & museums') who ranked first, with a total of 6,304 tags. We also mention the Flickr initiative 'The Commons' (www.flickr.com/commons) launched in 2008. A large number of photos have been provided on Flickr by quite a few museums and archives, including, the National Library of Australia and the Library of Congress. As an online photo management system and host to 'The Commons', Flickr specifically focuses on photo collections of museums and photography archives. One of its goals is to enrich and facilitate searching through art collections with the aid of tags and comments. However, it remains

Moriah11 6304 tags

Bird

to be seen whether sufficient thought has been given to the integration of the tags into the archive's own collection management system and/or website: "It is not yet clear what the Library of Congress is eventually going to do with the comments and tags." (De Lusenet, 2008, 36). For the time being, it appears that 'exposure' is mostly sought after.

have facilitated the creation of online expositions on themes like 'humour', 'politics', a particular artist or a location. The website relies entirely on the community to provide information about any given object. A questions and answers module has been added to enhance the quality of information provision. It may include questions such as: 'is it true that the main colour of this art object is red?' or asks visitors to select the best of five keywords to describe a particular art object. The Q&A game has been designed in such a way that different types of questions and art objects are being presented equally. Other Dutch examples include: research conducted by Sound & Vision (Beeld en Geluid) into deploying researchers and the wider public for continuing the annotation of their audio-visual archives (www. waisda.nl); research conducted by Kennisnet into

Website Ondergrond.org

Orange beetle

A variety of different initiatives is available in the Netherlands. In 2006, students at the Utrecht Academy of Art developed the 'Ondergrond.org' website (a Dutch pun on the Underground scene and the "canvas" used by graffiti artists) in collaboration with the Institute for Telematics in Enschede. The website is dedicated to street art, such as graffiti, posters and stickers. The website allows graffiti artists and others, to upload street art photos and provide tags, which may include the location, artist , colour and other keywords. Their contributions

Website Waisda

automatic or semi-automatic annotation of standards-based learning objects; research conducted by Teleblik into the annotation of videos; tagging photos from archives and museums (www.zoekplaatjes. nl), and the Amsterdam Public Library allowing people on the Internet to add keywords to its collections of books, CDs and DVDs since March 2008.

Social tagging is not without its problems. There is a realistic risk of pollution caused by vandalism and nonsense words (tag spam) or simply erraneous tags added in good faith. Rewarding people for contributing a large amount of tags may also lead to 'inferior' tags and pollution, which may in fact make it more difficult to retrieve something. Just like 'ordinary' language, tagging has all kinds of linguistic problems, such as synonyms, homonyms and ambiguity (Simons, 2007). A topic of discussion is the way in which visitor generated tags relate to the reigning official taxonomy. This discussion has been mainly focusing on the quality aspects of tags submitted by visitors vis a vis the authority and professionalism among institute employees. A call for moderation is expected soon (Beyl, Nulens & de Nil, 2008), but the professionals' responses are not necessarily negative; there is indeed appreciation for their co-existence (Trant, Bearman & Chun, 2007).

Not all website visitors are charmed by tags in the interface; especially tags that are meant for personal use are experienced as disturbing. A tag such as 'in possession' may be useful for someone to tag a book with, but it holds little meaning to others. In addition, research has shown that individual tagging behaviour is influenced by other people's tags. Quite a few tagging systems make use of suggestions, e.g.

by showing the most frequently used tags for any given item. New taggers will be selecting from these tags, as a result of which fewer new tags will be added in the course of time (Sen et al., 2006). Moreover, it has become apparent that tags added at a later stage are less likely to become popular tags than tags added at an earlier stage. When it comes to adding tags, time is, therefore, of the essence. In addition, an individual or group of people contributing a disproportionally large number of tags will have a bigger voice than those adding fewer tags. This is referred to as 'the Matthew effect'. To address some of these objections to tagging, people have also considered introducing an element of play, such as on CamClickr and in the 'Brooklyn Posse'.

In conclusion, we note that not all tags are of the same type: the 'Picasso' tag is likely to describe a fact, that the creator of the art object is Picasso. On the other hand 'exciting' refers much more likely to the expression of an opinion, and, for example, the tag previously referred to, 'in possession' is likely a personal tag. There is a boundary somewhere, which can be determined by majority vote: whether or not a book is 'exciting' can be concluded from certain frequently used tags; however, the author's name or title is usually an established fact. To specify these types of differences it is of importance to know who is tagging what (Van Setten et al., 2006).
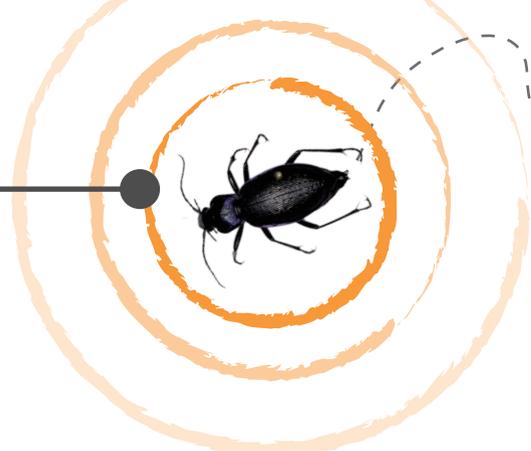
3 RESEARCH

The PACE research project builds on the observations made earlier: that the object descriptions for art collections are insufficiently consistent with the interests and perspectives of a broad audience, and the increasing use of digital resources by the general public for searching, viewing and reflecting on art collections. Social tagging has been presented as a solution by bringing together both observations.

It is a relatively simple way for museums to learn about visitor experiences, what visitors value, and what significance they attach to an artefact. It contributes to the enrichment of art collections, whilst facilitating better disclosure and enhancing visitor involvement.

However, whether it is really useful to deploy social tagging as a tool and what kind of effect we can expect from such deployment is an unanswered question. To answer this question in a scientific way, we must consider at least two issues. First, we must further divide the question into sub-questions that are hidden in the main question; in particular we need to specify the exact meaning of the terms 'useful' and 'effect'. Secondly, we must choose or create a research environment that enables us to conduct effective research. In this regard, it is crucial to find a balance between the necessary conditions for research and the pragmatic aspects of ensuring adequate congruity between the research environment and the museum collections. We will return to this matter in chapter 4 - the research environment.

Bird

The question relating to useful deployment has been translated into: 'what choices museums have to make for the deployment of social tagging?' Three such choices have been identified for the purpose of this project:

I know what this is

1 In social tagging research, researchers usually work with a dichotomy of professionals versus laymen. In doing so, there is little consideration of the different degrees of knowledge among visitors. In addition to the museum curator and the layman, there are 'well-informed' interested people including amateur scientists and retired professionals to be found among the visitors (see, for example, Wubs & Huysmans, 2006a). This group of experts is not small, either. In some areas, hundreds or thousands of experts are involved and they may even be over-represented among the group of active taggers. It is extremely relevant for museums to cater for and continue to involve this group in their collections. It is possibly more useful to deploy social tagging for a specific group of experts as opposed to a broad audience.

2 A second choice is to move beyond the limited power of expression of tags. No matter how powerful some tags may be, they are still essentially key-words with a limited amount of information. It may therefore be interesting to consider other forms of expression, such as digital storytelling. This might open up perspectives for community development and connect all sorts of sub-collections by means of a common narrative or conversation (see Srini-vasan et al., 2009). The aspect of storytelling is not unknown in a cultural context. Chew (2002) sketches a development that began at the end of the 1950s, through which, to an ever-increasing extent, stories about people (oral histories) have obtained their own meaning and role in the presentation of cultural heritage. Such stories may contribute to making exhibitions better accessible and more attractive, precisely because of this personal perspective. Stories, however, also contribute to and emphasise the meaning and interpretation of art objects (see further Van Vliet, 2009). Social storytelling is potentially more useful to deploy than social tagging.

3 From a traditional perspective, a physical art collection and its presentation are essential for museums. Social tagging, on the other hand, seems reserved for digital presentations of art collections. The underlying assumption of museums is that social tagging will also stimulate website visitors to start visiting the museum itself. As part of the PACE project, we have been examining ways to strengthen the relationship between the physical and virtual visitor, e.g. by also allowing visitors to tag art objects inside the museum or by making tags visible in the descriptions of art objects at physical exhibitions. Tagging in physical environments, including in cultural settings, is in fact not entirely unusual (see Van Mensch, 2005; Van Vliet, 2009). Therefor it may be useful to introduce social tagging not only on websites, but also on art collections inside the museum itself.

In addition to the question of what is 'useful', we will also address the question of the effects of social tagging. In the theoretical discussion (chapter 2), we have encountered three effects in the context of social tagging:

Enrichment: Tags enrich collections by way of adding information. Taggers make a statement about art objects and, as a result, tell us something about the relationship between visitors and art objects;

Accessibility: Tags can be used as search terms to find art objects;

Involvement: The tagging process creates involvement. Through tagging the visitor engage in a process of viewing, analysing and describing the object.

One can expect that these cognitive processes will arouse interest in art collections.

Based on the analysis of the original question we can create a matrix to compare the choices for social tagging deployment (independent variables) with the effects (dependent variables). It gives rise to nine research questions, such as: 'What target group has added the most information?', 'In what environment are people most likely to add the largest amount of information?', 'Do tags or stories increase the extent to which information can be found?', 'Do tags or stories that have been put forward have a positive effect on developing more activities towards the museum?' (see further Van Vliet et al., 2010). These nine research questions in themselves present a better picture to do practicable research with. It turned out, however, not all of these research questions could be examined within the project period, not least because we had to develop a proper research environment as well. In consultation with the museums, it has been decided to focus our attention on the issues surrounding visitor involvement. However this requires that tags be added to this purpose. For this reason the research questions regarding this topic have been included in our research.

The necessity of creating a proper research environment became apparent during the course of the project (see chapter 4). Due to the sheer effort and the long building time required, it turned out not to be practically feasible to create functionality enabling visitors to add stories to art objects. This prevented us from conducting research into these stories within the allotted project period. We have therefore shifted our focus to the question of how stories can be presented most effectively: in the

form of videos, audio recordings or text alone. This question is relevant because, based on its results, we will be able to assess more effectively how we want to elicit visitor stories. Over sixty stories by experts relating to specific art collections or objects had already been videotaped in an earlier stage of the project. We much appreciated the opportunity to use this material in our research. It became clear, however, that the quality of those stories differed considerably. The question whether this difference in quality has an effect on visitor involvement has therefore also been included in this research.

Eventually, three questions remained, which have been examined during the project period:

1 Do laymen tag in different ways compared to experts?

2 Which way of presenting stories will lead to a higher degree of involvement?

3 How can we establish a link between online tagging and tagging inside museums?

In the following chapters, we will elucidate these three questions, and we will also present and discuss the results of our research. However, we will first have to discuss the materials used for this research and the operationalisation of a number of key terms.

Plinth

Wood

Each of the museums participating in the project – Museon, Naturalis and the Utrecht University Museum – has put collections at our disposal. These collections contain digital photos of art objects or digitalised drawings or photos, both in colour and in black and white. With the exception of one collection, added at the end of 2009, they all involve objects stored in the museums' depots, about which little or no knowledge was known so far. This was one of the main reasons for the three museums to put these collections forward. Another reason was that potential experts on these collections could be readily identified and approached.

👍 I know what this is

Early 2008, Museon made available a selection from a collection of drawings of Japanese intern-ment camps. This collection, which consists of ap-proximately 4,000 drawings, is of national interest and had therefore been digitised entirely. Photos of the camps were taken a few months after the Japanese capitulation, and are therefore not an ac-curate representation of the living conditions in the camps during Japanese occupation. The impressions sketched by Dutch inmates, on the other hand, are

believed to give a good presentation of camp life. We have made a selection based on the drawings' geographic location, the level of realism and the extent to which documentation was lacking in the drawing itself. Bearing in mind these three criteria, 145 drawings were selected from six regions. Mu-seon has chosen to present the drawings for each area rather than for each camp, which means that the drawings do not originate from a specific camp in Dutch Batavia, present-day Jakarta, but from all
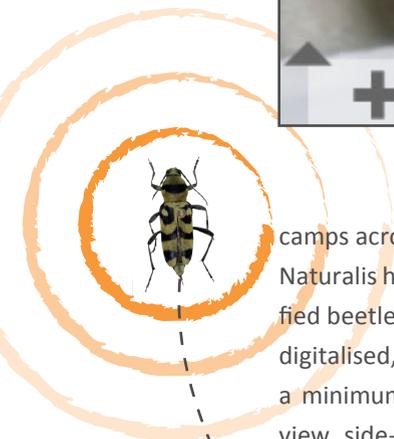
camps across Dutch Batavia combined.

Naturalis has made available a collection of unidenti-fied beetles. This collection, which had already been digitalised, comprised of 100 objects (beetles) with a minimum of three macro photos per object: full view, side-view and label. The objects included ad-ditional information about beetle size in millimetres, the types of beetles, beetle groups and the coun-tries of origin. This collection has been put at our

disposal in mid-December 2008.

In the beginning of September 2008, the Utrecht University Museum has made available 134 objects from various collections, and combined them into a single collection going by the name `Dental Surgery`. The objects were digitised in the period June to Sep-tember 2008, and consist of black and white and colour photos from the museum's depot. In this col-lection, each object consists of a single photo, and all objects were given a title and a description. In ad-dition, the Utrecht University Museum made avai-lable a collection of curiosities in December 2009. This collection has been specifically used for the research into online/offline tagging. The collection comprises a variety of objects such as oddly-shaped shells, exotic animals in jars, plants, etc., which were considered collector items in the Netherlands of the 18th century. The museum used the collection for an exhibition, which ran from the end of 2009 to the beginning of 2010. From the collection, 98 objects were digitised and given a description, cabi-net-number and shelf-number corresponding to the numbers of the objects displayed at the exhibition.

Our research uses a number of key concepts and terms, which require operationalisation. Operationalisation refers to the description of a concept or term in such a way that it readily enables manipulation (experimental operational definition) or in such a way that these concepts and terms can be measured (measured operational definition). Here, we only discuss the most important key concepts (see further Van Vliet et al., 2010).

👍 I know what this is

Laymen, experts & professionals

An important aspect of the current research is the distinction between three target groups, namely: laymen, experts and professionals. For the purpose of this research, they will be taken to mean the following:

1 The group of laymen comprises people who do not have a specific affinity with the museum/archive or art collection in question. This has been operationalised by recruiting students from the Faculty of Communication and Journalism for a variety of experiments.

2 The group of experts comprises people who have an above-average affinity with the particular museum/archive or art collection in question. Such a substantive affinity may manifest itself as a professional affiliation with a collection (as is the case with experts related to the dental surgery collection: dentists in training or retired employees from the Utrecht University Dental School); a personal attachment to a collection (as is the case with the sketches of Japanese internment camps); and/or an active attitude towards sharing one's interests with others

(as is the case with the beetle collection, whereby the experts are also members of a national association). In all cases, we have identified and specifically approached these experts in conjunction with the museums (see Van Vliet et al., 2010).

3 The group of professionals comprises people who have professional responsibility for the museum or archive in question with regard to collection management, disclosure and the presentation of collections. Curators, exhibition project managers and educational staff members are typical examples of such professionals. The professionals who have participated in the various experiments were 'selected' in consultation with the museums.

Involvement

In this research, the term 'involvement' has two interpretations. The first interpretation relates to people's interest in a museum and its collections. The second interpretation pertains to the emotional experience of an object. Both interpretations have led to separate operationalisations.

The interpretation of 'involvement' as 'interest' has been operationalised by means of four questions:

1 How often do you visit a museum or archive? (never; 1x per year; 2-5x per year; more than 5x per year).

2 How often do you visit a museum or archive together with friends, family or acquaintances? (never; 1x per year; 2-5x per year; more than 5x per year).

3 How often do you visit a museum or archive's website? (never; 1x per year; 2-5x per year; more than 5x per year).

4 What is your primary reason for visiting a museum or archive? (interest in a certain collection; because of my profession or study; for leisure; other…).

The interpretation of 'involvement' as an 'emotional experience' has been operationalised in two different ways. In the first place, we have examined if a reliable and valid scale is available to measure the experience of different media. For the survey into media experience, we have followed the measurement used by the SCP (The Netherlands Institute for Social Research) for its research into media experience (De Haan & Adolfsen, 2008). It involves eight different dimensions with a total of thirty items. From this list, a selection has been made of 16 items, where we have selected those items that seemed to be the most appropriate in the context of this research. Moreover, it provided us with a starting point to select an equal number of questions for each dimension (where possible).

In the second place, the concept of 'emotional experience' has been further operationalised by asking human subjects about their emotions. For the selection of precise emotions we have used the so-called circumplex model of emotions (Posner, Russel & Peterson, 2005). This model is based on two independent neuronal systems that jointly account for a variety of emotions. These two systems pertain to 'valence' (pleasant/unpleasant) and 'arousal' (active/passive), and in fact stem from Wundt's early work on emotions (Van Vliet, 2008b). This model is rather typical for the assessment of experiences (see, for example, Nijs & Peters, 2002), and has also been used in previous research at the Crossmedialab (Hazelaar, 2009). We have deduced eight emotion 'pairs' from the circumplex model: passive - active, miserable - delighted, vivid - bored, anxious - be at one's ease, unhappy - happy, cheerful - depressed, aroused - calm and relaxed - annoyed. These terms have been placed on a five-point scale and the human subjects were asked to describe their state of mind along these lines.

IKWEETWATDITIS.NL

A controlled research environment allowing the collection of tags and stories was of vital importance for our research. Setting up this controlled research environment basically came down to deploying a social tagging tool and creating a platform through which the collections could be presented. Since storytelling is playing a role in this research, we also included functionality to facilitate storytelling. In the context of our research, the social tagging tool was primarily aimed at supporting the research questions within this research. The tagging tool tracks various types of information, such as the actions of users, and stores this information in a database for later analysis.

To design the research environment we first created the basic functionalities to support social tagging and storytelling. Various existing social tagging tools from different initiatives were evaluated for this purpose:

Website powerhouse

Flickr, Ondergrond.org, Powerhouse museum, Steve Tagger and the Brooklyn museum. On the basis thereof, we have written several personas and user scenarios. Personas refer to the generic descriptions of users (background, age and current situation) and user scenarios describe how users regard and use a social tagging application in some detail. Several screen mock-ups were made to support this process. On the basis of all these data, we have enumerated eleven basic functionalities, such as 'An overview of art objects is required', 'An object must have text labels and an image', and 'User behaviour needs to be tracked'. This initial inventory allowed us to build a demonstrator in May 2008, named `Guten Tag`. With the help of this demonstrator, a number of additional functionalities have come to light such as 'We should be able to present multiple photos alongside an object'.

The second step involved examining existing social tagging tools that might possibly include the desired functionalities. The main candidate for this purpose was the Steve Museum. 'Steve' refers to a group of museum professionals and information professionals with a shared research agenda, dedicated to

Website Steve tagger

developing tools and techniques to support social tagging in museums. An open-source tagging tool is available, with which tags can be assigned to objects in art collections. Museums making use of this tool include, the Indianapolis Museum of Art, the Minneapolis Institute of Arts and the Walker Art Centre. According to the project website, the 'Steve Tagger' tool includes functionalities for tagging, collection management, and tag analysis and management. The version of the application we have been examining is 2.0. For the purpose of analysis, we have put an emphasis on the functionalities already identified, the user interface, the possibilities for further expanding functionally and the application components (for example whether a storytelling component exists), the possibilities of managing tags and collections, and the ability to gain insight into user results.

The Steve Tagger, developed on top of PHP and the MySQL database, is simple to install. Once installed however, it becomes immediately clear that the majority of promised functionalities are not available. Code analysis also showed that these functionalities are missing. The Steve Tagger code structure has been set up to function effectively, although there is no clear distinction between the functionality code and the user interface code. The database has been conveniently arranged, but it lacked the functionality necessary to support our research; for example, there is no option to add multiple photos to each

item in a collection. In addition, the Steve Tagger neither gives insight in the users contributing the tags, nor does it has the functionalities required to analyse tagging behaviour. To add these functionalities would have required modification of the database. The user interface seemed to be adequate, but for a few reservations. The ability to view an entire collection and choose individual collection items from this collection is missing, which makes it difficult to navigate across the various collection items. Furthermore, the functionality to enlarge an individual collection item for further examination has not been sufficiently developed.

All in all, we came to the conclusion that to continue developing, the Steve Tagger application would be an uncertain and time-consuming endeavour. We have therefore chosen not to use and expand the Steve Tagger application. Instead, it has been used as an example for developing our own social tagging application.

As a third step we have taken the usual steps of creating an information architecture and functional design based on the functionalities formulated and the


Website steve tagger

Part of QR

Website ikweetwatditis.nl

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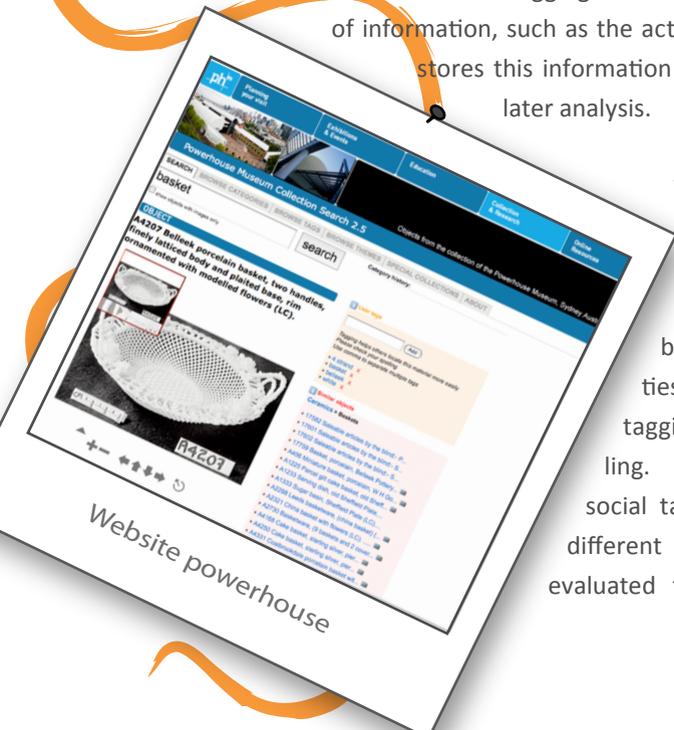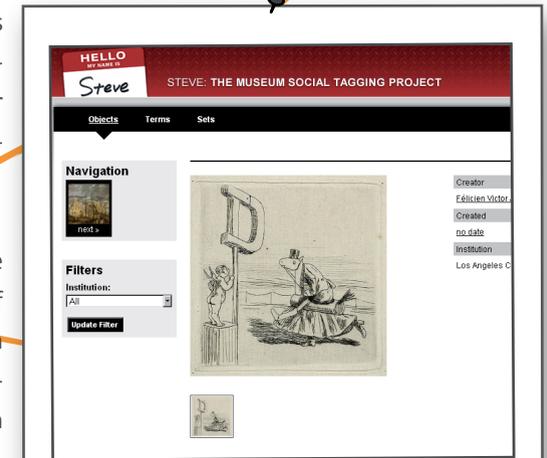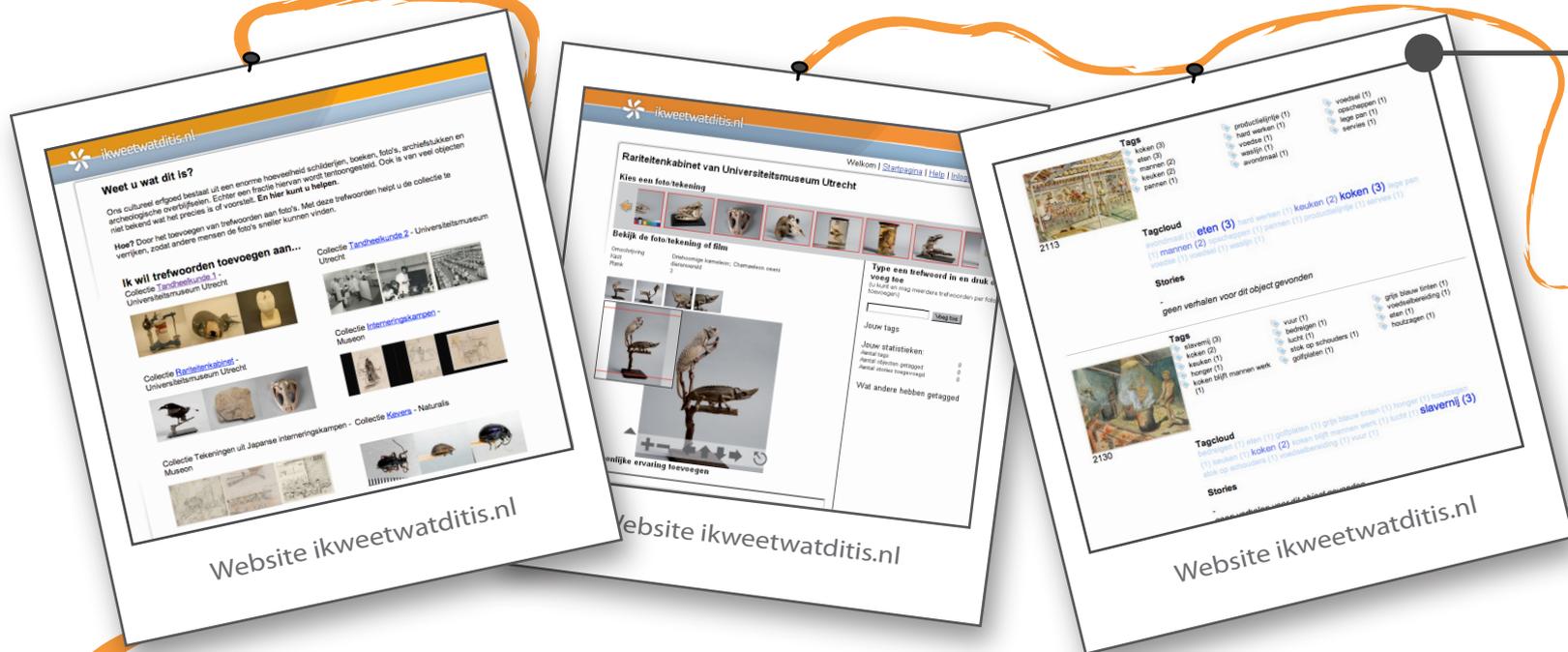
and show these fragments to users. Furthermore, it is possible to add stories to objects. Museums have been given the possibility to view the results for their specific collections with the corresponding tag clouds.

We believe the substantial efforts to develop our own social tagging tool has paid off. We were able to carry out our research, which would not have been possible with the already existing social tag-ging tools, and new opportunities have presented themselves. Our own technical infrastructure also enabled us to develop a mobile variant, which allows visitors to tag inside museums and institutions, and which integrates seamlessly with the ikweetwatditis.nl website.

lessons learned from the analyses. We have then selected an appropriate development environment, the CodeIgniter PHP framework, which is an open-source web application framework for building dy-namic websites with PHP. The social tagging appli-cation has been made available via the URL: www.ikweetwatditis.nl under a creative commons license.

Three major versions of the application have been released during a period of one and a half years. The first version was launched in September 2008. It al-lows users to add tags and obtain an overview of the objects that are part of a given collection. Using the overview functionality, it will first present the least frequently tagged objects with the objects not pre-viously tagged by users having a red frame. Once an object is tagged, the red frame becomes green. The object consists of a single static image together with

text labels which users can zoom into for a more detailed view. Users may either register or remain anonymous, with the selection being recorded. For the purpose of research, we have chosen not to give users any tag suggestions within this version, since such suggestions could have influenced users too strongly. Moreover this version was mainly de-ployed to collect a large corpus of tags.

A second version, launched in December 2008, added, amongst other things, the possibility for us-ers to delete their own tags; the ability for museums to generate tag clouds for their specific collections; and multiple images of each object. The third and last version of www.ikweetwatditis.nl was launched mid January 2010. This version allows users to view object tags added by other users and selected them. It is also possible to link video fragments to objects

Chameleon
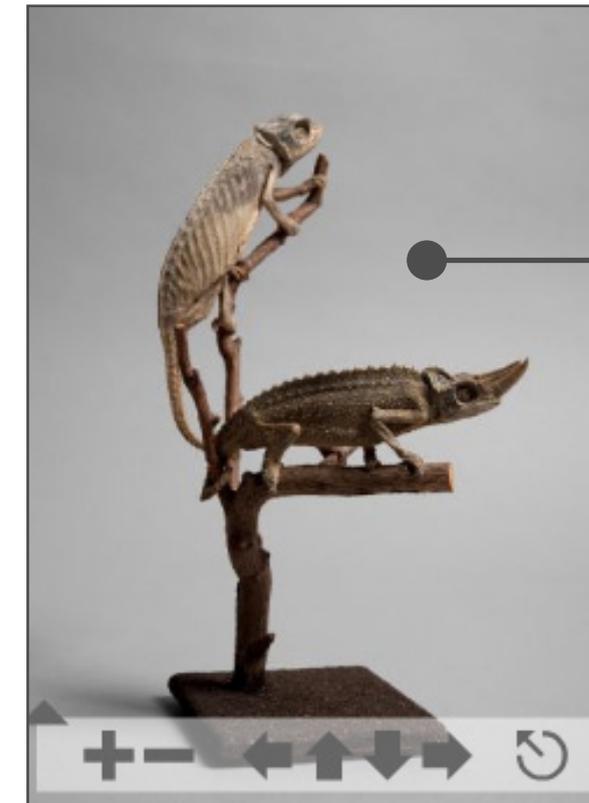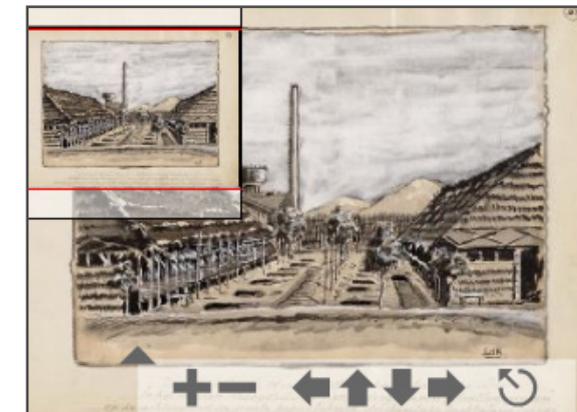
5 SOCIAL TAGGING FINDINGS

Social tagging makes an appeal to people to make contributions to the description of objects. Although individual motives may differ, these combined contributions will eventually result in a richer, more readily searchable collection. A relevant question in this respect is to whom such an appeal should be made. Does a relatively unfocused appeal suffice? And if so, what can be expected as a result? Or would it be worthwhile to focus efforts on a specific target group? This is an important point for consideration among museums because resources are limited and the expectations with regard to social tagging are based on relatively few years of experience.

Beetle

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In our research, we acted on this issue by making a distinction between laymen and experts, as outlined in chapter 3. It might be more useful for a museum to have social tagging tools aimed at a specific group of experts instead of a broad audience. This is based on the assumption that social tagging contributions by laymen differ from those by experts. This assumption was the basis for the research question: 'Do laymen tag in different ways compared to experts?' This question is too unsubtle to be examined. For this purpose, we have ultimately formulated five hypotheses:

H1: Laymen add more tags overall and more unique tags to objects than experts.

H2: Laymen add different kinds of tags to objects compared to experts.

H3: The use of words among laymen is different from the use of words among experts.

H4: The tags added by experts provide more information about objects than the tags added by laymen.

H5: The tags added by laymen are more useful for the purposes of object retrievability than the tags added by experts.
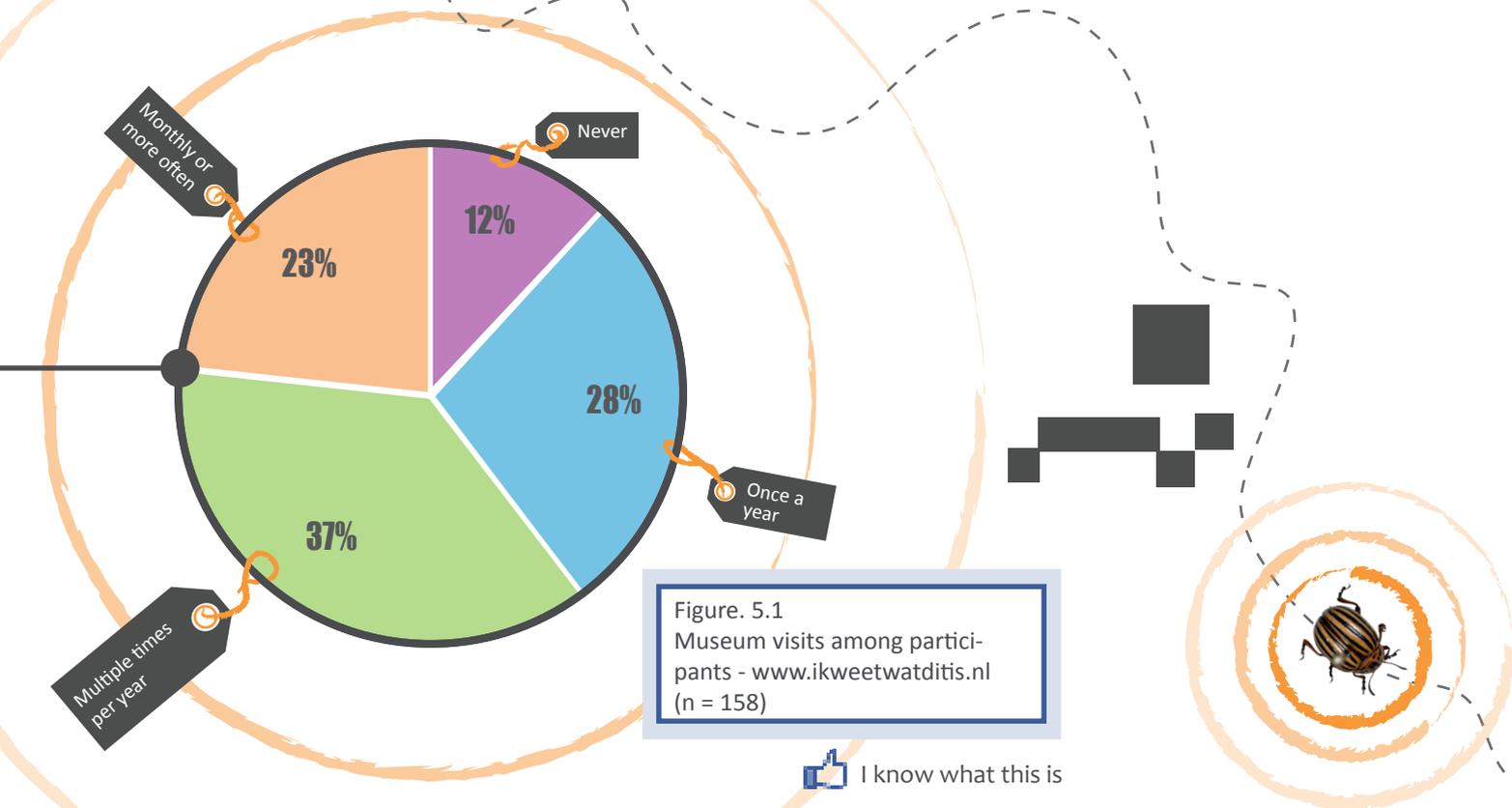
Figure. 5.1
Museum visits among partici-
pants - www.ikweetwatditis.nl
(n = 158)

Never 12%
Once a year 28%
Multiple times per year 37%
Monthly or more often 23%

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We will briefly discuss the assessment of these hypotheses and the most significant results; we refer to Van Vliet et al. (2010) for the full report, including an explanation of the data, analytical methods and statistics used.

For data collection, i.e. collecting tags by users known to be laymen or experts, we have used the research environment developed for www.ikweetwatditis.nl (chapter 4). Three collections were placed in this environment: 134 objects from the Dental Surgery collection at the Utrecht University Museum, 145 objects from the collection of drawings of Japanese internment camps at Museon and 100 photos from the beetle collection at Naturalis. We pursued two

directions for the recruitment of human subjects. First of all, the 'Iknowwhatthisis' website has been online since September 2008, allowing anyone familiar with the URL to visit the website and engage in tagging. We devoted attention to the website launch at conferences and in specific publications. Laymen and experts were also approached directly, to ask them to tag objects. Most of the laymen subjects were recruited among students of the Faculty of Communication & Journalism at the Utrecht University of Applied Sciences. To enlist experts, contacts of the museums were approached, including, for example, the Academic Centre for Dentistry in Amsterdam (Academisch Centrum Tandheelkunde). We have consistently used the same research environ-

ment with the same online instructions for all groups throughout the experiment. In addition to tagging, human subjects were also asked to complete questionnaires concerning their gender, year of birth, zip code, highest level of education achieved, profession, the frequency of their visits to a museum or archive and the main reason for visiting an archive or museum. We ultimately collected data for more than one year, specifically from September 2008 through 31 December 2009.

During the period of the experiment a total of 935 people made use of the www.ikweetwatditis.nl application. A vast majority (92%) participated anonymously; while only 8% registered. Of the 158 people who filled in a questionnaire, which could also be done anonymously, 67% were male and 33% were female. The average age is 39 years, but there is a considerable spread. Most of the people had had some higher education; 81% had a university degree or advanced professional education. More than half of the people visit museums multiple times per year, even monthly or more often (65%); 28% of the people visit museums once a year and 12% of the people never visit museums (Figure 5.1). The main reason for these visits is interest (44%), followed by work/study (22%) and leisure (21%) (Figure 5.2). We were able to identify the categories that 924 people belonged to: 89% could be characterised as laymen, 10% as experts and 1% as professionals.
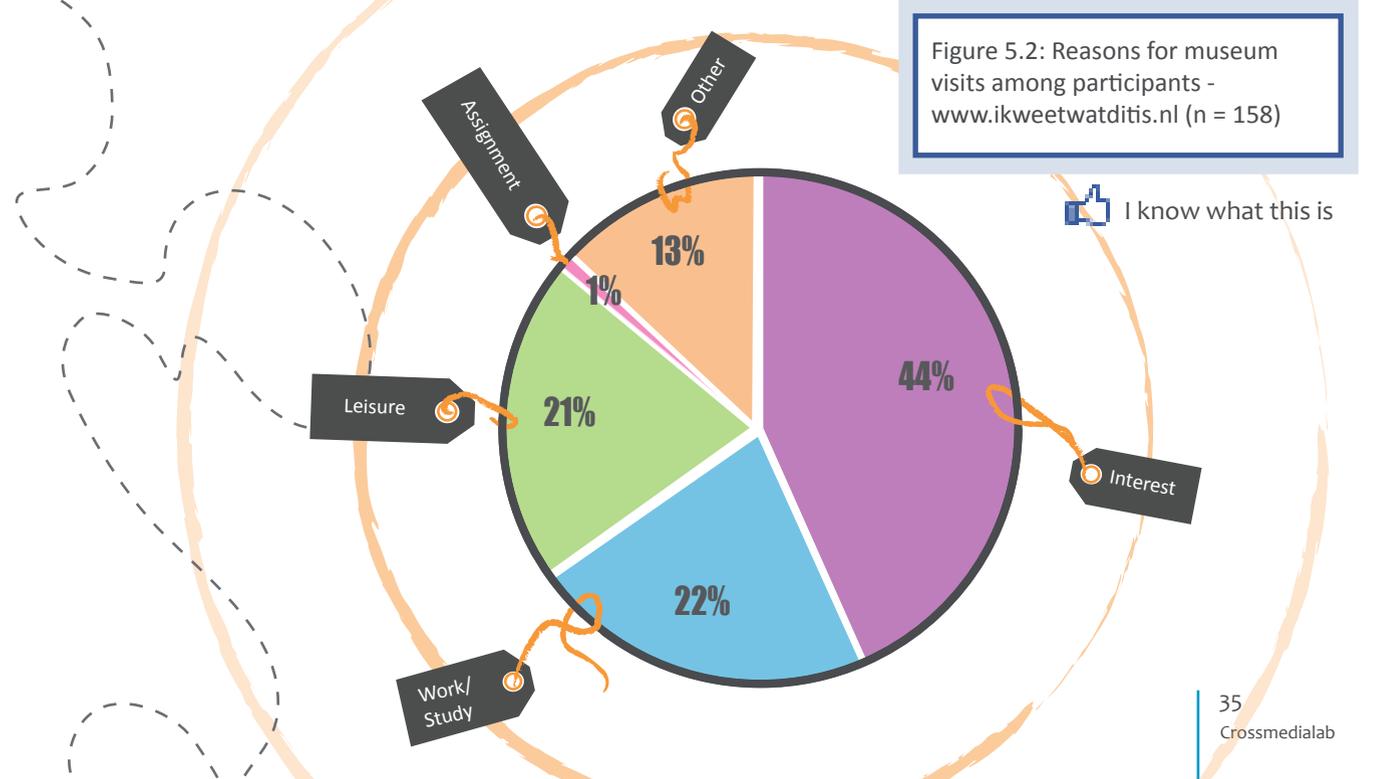
Figure 5.2: Reasons for museum visits among participants - www.ikweetwatditis.nl (n = 158)

👍 I know what this is

Assignment 1%
Other 13%
Interest 44%
Work/Study 22%
Leisure 21%

The participants added a total of 3,592 tags. The largest number of tags (1,349) was added to the collection of dental surgical instruments at the Utrecht University Museum. There are 727 tags that were added to the other collection at the Utrecht University Museum. The Naturalis collection has 278 tags, and the entire collection at Museon has 1,238 tags, which could be divided into different sub-collections (see Table 5.1). When examining each collection separately, the number of unique tags amounts to 2,221. This number drops to 1,892 when we look at the total number of unique tags throughout all collections. The total number of tags is 3,593 across 379 objects, which is an average of almost 9.5 tags per object; this percentage drops to 5.9 tags per object when only counting unique tags per object per collection. On average, visitors added 13 tags and a single session lasted 13 minutes and 39 seconds. The tags were entered non-uniformly over the test period, meaning that there were marked 'peaks' in tagging intensity when target groups were actively approached to engage in tagging.

Table 5.1

Number of tags per collection or sub-collection

COLLECTION	NUMBER OF OBJECTS	NUMBER OF TAGS	NUMBER OF UNIQUE TAGS PER COLLECTION
Utrecht University Museum			
sub-collection 1: instruments	46	1349	859
sub-collection 2: photos alumni	88	727	536
Naturalis			
beetle collection	100	278	196
Museon			
Japanese internment camps	145	1238	630
Batavia	25	395	287
Birma	25	329	242
Buitenzorg	25	184	126
Soerabaja	25	25	23
Sumatra	20	221	146
Tjimahi	25	84	76
Total	379	3592	2221

COLLECTION	NUMBERS AND AVG OF TAGS	NUMBERS AND AVG OF UNIQUE TAGS	N NUMBER	N UNIQUE
All collections				
Laymen	2643 / 13,1	1532 / 7,8	201	182
Experts	871 / 12,8	617 / 9,1	68	68
UM Dental Surgery 1				
Laymen	780 / 10,8	459 / 7,3	72	63
Experts	526 / 13,8	359 / 9,4	38	38
UM Dental Surgery 2				
Laymen	439 / 10,4	317 / 7,7	42	44
Experts	265 / 12,0	198 / 9,0	22	22

Table

Table 5.2

Numbers and averages of tags and unique tags (per collection) among laymen and experts

Hypothesis 1 states that laymen add more tags overall and more unique tags to objects than experts do. This hypothesis was tested by examining the distribution of the overall number of added tags and the number of unique tags among laymen and experts by way of a single-sample t-test, at the 5% significance level. This test was carried out on a sample of data from all collections combined, and from two sub-collections of the collections at the Utrecht University Museum (UM). The other individual collections have too little data to conduct a reliable test. The basic data are listed in table 5.2. Both tests failed to produce a significant result: there is no significant difference in the number of tags added by laymen or experts, nor is there a significant difference in the number of unique tags added by laymen or experts within their own groups. In a supplemental analysis, we examined whether the number of unique tags added to the total number of tags differs between laymen and experts. In addition, in this case, no significant difference was found: as a group, laymen and experts added an equal number of unique tags to the total number of tags.

For the assessment of hypothesis 2, three appraisers were asked to categorise a selection of 50 tags in a separate session by assigning each of the tags to one of the three categories. The 50 tags originated from the dental surgery collection at the Utrecht University Museum and consisted of the 25 most frequent laymen tags and the 25 most frequent expert tags for this collection.

Tags were ranked and presented in alphabetical order. The three tag categories were defined as: 1) Descriptive: tags that provide factual information about an object. Examples hereof are words like 'cow', 'black and white' or 'painting'; 2) Reference or self-reference: tags that are used to retrieve related information/objects. Examples hereof are words like 'important' or 'interesting'; 3) Attitude: tags that express an opinion or emotion about an object. Examples hereof are words like 'beautiful', 'scary' or 'fun'. The great majority of tags from laymen and experts were classified as 'descriptive' (65 and 63 respectively); a few were classified into the 'self-reference' category (10 in both groups); and the 'attitude' category was virtually non-existent (only 2 times in the group of experts). Consequently, there is no significant difference between the types of tags used by laymen and experts, at least for the most frequent tags.

We assessed hypothesis 3 (use of words) by first examining the similarity between words in the categorised list of tags from laymen and experts. Similarities are on the syntactic level; so 'caries' and 'little holes' are not considered as the same use of words. The proportion of tags used by both laymen and experts was calculated. Subsequently, we have determined whether the sequence of these two categorised series of similar words is the same or different. For example, a tag might be used by both laymen and experts , but laymen might use the tag seldom (low ranking) whilst among experts, it could well be a frequently occurring tag (high ranking), or vice versa. Frequency of use tells us something about the 'weight' a user group gives to a word. By counting usage of a word with the same object (co-occurrence) we also have a crude measure for the semantic similarity of words.

In the Dental Surgery 1 collection of the Utrecht University Museum, experts used 67 tags more than once. Thirty-one of these tags, or 46%, were also used by laymen. In the Utrecht Dental Surgery 2 collection, experts used 30 tags more than once. Nineteen of these tags, or 63%, were also used by laymen. In the Dental Surgery 1 collection at the Utrecht University Museum, laymen used 97 tags more than once. Forty-seven of these tags, or 48%, were also been used by experts. In the Utrecht Dental Surgery 2 collection, laymen used 61 tags more than once; 26 of these tags, or 43%, were also used by experts. Consequently, there is a considerable overlap between the tags added by laymen and by experts. We have subsequently examined whether the tag rankings among laymen and experts are equal. In order to assess this we calculated Kendall's tau-b, a measure of rank correlation. The four calculated values for the Dental Surgery 1 and Dental Surgery 2 collections show three non-significant results (ranking is not the same) and one significant result. With some caution, it can be said that in those instances where laymen and experts use the same words, the words do have a different weight or ranking.

It is of course important for the assessment of hypothesis 4 (added information) to have a clear definition of the term 'information'. For the purpose of our research, we used two different interpretations.

First of all, we applied an objective measure from information theory. Objective measurement research makes use of a well-defined objective measure for the proximity of two tag clouds and the coherence between tag words in a tag cloud, also referred to as the semantic distance (see further Brussee & Wartena, 2008; Wartena & Brussee, 2008; and Van Vliet et al., 2010). The outcome of these complex calculations is that the tags by laymen and the tags by experts do not differ significantly in relation to their informativity. Secondly, we used the professionals' subjective assessment of the informativity of tags. For this purpose, a supplemental experiment was carried out, through which we were also able to assess hypothesis 5.

A follow-up experiment allowed us to examine various aspects of the information added by the tags and their potential for retrieving objects. The central assumption is that different target groups make different contributions through tagging. Laymen may add information to an object that is of little relevance however, this group may contribute tags that are useful for retrieving the objects, for example 'white', 'scary' or 'head'. Experts are more likely to add relevant information to an object because of their specific knowledge and expertise.

A selection of eight objects containing the highest frequency of tags from both experts and laymen was collected from the data; in all cases, they turned out to be objects from the dental surgery collection at the Utrecht University Museum. For each of these eight objects, we selected the four most frequently occurring tags among laymen and experts, so eight tags in total per object. Fourteen professionals from the participating museums were asked to classify the tags for each object into qualitative categories ranging from 'good' to 'bad', first on the basis of the question 'Which tag, in your opinion, adds the most information to the object?', followed by the question 'Which tag, in your opinion, is the best search term to find the object?'.
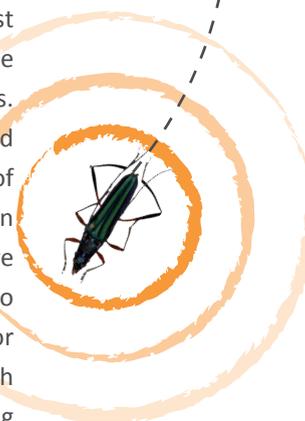
This method of asking human subjects to rank tags for an object on a scale from 'good' (1) to 'bad' (8) is referred to as ordinal measurement or ranking. Whether such a ranking is coincidental or not can be assessed with a non-parametric test, i.e. the Wilcoxon Signed-Rank Test. With regard to the question concerning the added information of tags, a significant result has been obtained in six of the eight cases: the expert tags are considered to be more informative than the laymen tags. There was no significant difference for two of the objects. None of the significant results pointed in the opposite 'direc-

tion'. In the question of object retrievability with the aid of tags, only two of the eight cases showed a significant result. In these significant cases the laymen tags are considered to be more effective in retrieving the object than the expert tags. There was no significant difference for the other six objects. In addition, none of the other results pointed in the opposite 'direction'. Apart from that, we also assessed whether the group of professionals was indeed homogeneous as a group of assessors; in all cases, it became apparent that a consensus exists among the professionals in their assessments in terms of tag ranking.

On the basis of the acquired data and the analyses used, the following conclusions can be drawn. Hypothesis 1 can be rejected: laymen do not add significantly larger numbers of tags than experts, nor do they add larger numbers of unique tags than experts. In fact, these two groups add virtually the same proportion of unique tags to the entire collection of tags. Hypothesis 2 can also be rejected: laymen do not add different types of tags compared to experts. Both groups primarily add descriptive tags. The two other types of tags (self-reference and attitude) are virtually non-existent in our experiment. Hypothesis 3 cannot be rejected: laymen use other words than experts, but not entirely different words. On the basis of the data produced by the assessment of the two collections, we discovered a strong overlap (almost 50%) between the laymen tags and the expert tags. Only one of the four assessed cases shows a significant association in the ranking of words used by laymen and experts. In other words: the

tags used by both laymen and experts differ in the relative extent to which they occur. The hypothesis on the information added through tags by the two groups of laymen and experts has been assessed in two different ways. On the basis of objective measures in regard to the 'distance' of both tag clouds, no difference was found in the degree of 'informativity' between the laymen tags and the expert tags. The post-experiment research carried out with professionals does reveal, however, that the expert tags are considered to be 'more informative': six of the eight objects, on the basis of which the hypothesis was assessed, show a significant result. Hypothesis 5 was assessed by having professionals examine the suitability of tags for retrieving the object in question. Only in two out of the eight cases examined are

the laymen tags considered to be better keywords for object retrieval than the expert tags. None of the cases show that the expert tags are considered to be better keywords for object retrieval. We will further discuss these conclusions after we present the results of the storytelling research.

6 STORYTELLING FINDINGS

Storytelling is not unusual in the context of cultural heritage. Exhibitions are a clear example of storytelling. They are usually set up as a coherent whole, reflecting the organiser's well-considered intention. On the other hand, increasingly more attention is being given to the visitor's own personal story. We are able to formulate the same added value when it comes to enabling visitors to add stories to objects and present those stories to others as with tagging: it would enrich collections, enhance their searchability and elicit greater visitor involvement. An extra effect can be anticipated with respect to involvement, because one tends to be more engaged in storytelling and story listening than in adding and viewing keywords. In this analogy, the same questions formulated for social tagging suggest themselves: when is it useful to have visitors engage in storytelling and story presentation, and what is the effect?

👍 i know what this is

We have only partially addressed this question, not only because the research on tagging was at centre stage, but also because of a lack of content. . As a consequence, a lot of time and effort was spent collecting and selecting the stories. On the basis of this preliminary work, two hypotheses have ultimately been assessed:

H7: Presenting a story through video fragments elicits stronger involvement than presenting a story through audio recordings alone, which in turn elicits stronger reactions than the use of narrative text alone.
H8: The better a story is told, the more involved people are.
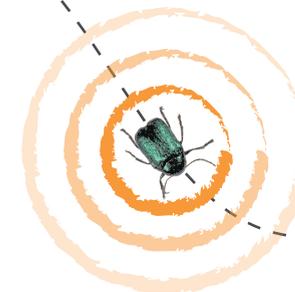
This chapter gives a brief account of the way in which the materials were collected and the hypotheses assessed; we refer to Van Vliet et al. (2010) for the full report, which includes a justification of the methodologies and statistical methods used.

We approached the museums and their relations to begin collecting the stories. The Museon and the Utrecht University Museum each selected four persons to tell their respective stories as part of the exhibition on Japanese internment camps and the dental surgery exhibition. Consideration was given to people who had been detained in an internment camp or, in the case of the dental surgery collections, people who are former employees of the Utrecht University Dental School, like the dean. These eight persons were interviewed at the end of 2008, and video recordings were made with the aid of a simple digital video camera on a tripod and a laptop showing the objects in full-screen mode. The interviews took place at the interviewees' homes, in order to ensure a trusted environment. The interviewer used a fixed procedure and protocol. The interview sessions lasted between 2 and 3 hours, including equipment set-up, a brief get-acquainted period, and putting the equipment away again. The eight interview sessions ultimately produced 62 stories.

Because the volume of the 62 stories was too extensive to be used for this research, we made a sub-selection from these 62 video fragments on the basis of a number of objective criteria, such as: video editing fragments were excluded (other than inserting the object at the beginning of the video fragment); the video fragments had to be equal in length - 2 to 3 minutes, with good image quality and clear sound. Applying these criteria ultimately resulted in the selection of six video fragments: three fragments about the dental surgery collection and three fragments about the collection of drawings from Japanese internment camp, varying in length from 1:21 to 2:46 minutes (Figure 6.1).
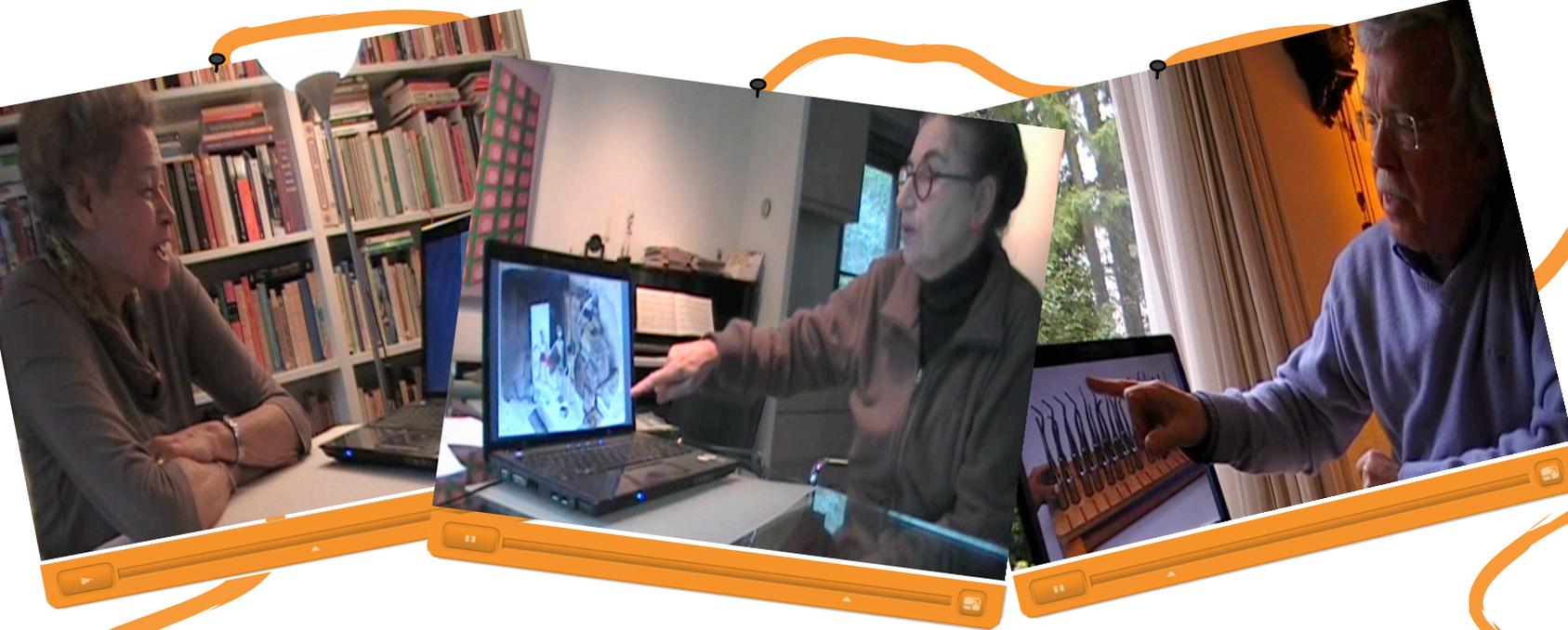
of remarks about the video fragments themselves: short duration video fragments were appreciated, it was considered helpful when the image of the object remained visible in the film, better video recording was recommended, and it was suggested that the storytellers should be urged to look in the camera more often. The latter two aspects also emerged in our own evaluation of the video fragments. Suggestions were made to make the video fragments more interactive for the Internet. Secondly remarks were made about the contents of the video fragments. In particular, a desire to learn more about the storytellers and their relationships with the drawings/objects was expressed. A full transcript of the remarks is available in Van Vliet et al. (2010).

The collected data were subjected to a number of statistical tests. For this purpose, we examined whether the professionals could be considered a homogenous group; in other words, whether they agree in their assessments. It became apparent that their story assessments did not differ significantly. Next, we examined the extent to which the video fragments differ in presenting a well-told story, and the extent to which they elicit certain emotions. The six video fragments proved to be significantly different from each other. By identifying which of the

It was necessary to determine what constitutes a 'good' story and a 'poor' story to assess the hypothesis H8 on the 'better' story's effect on involvement. We set up a pre-test to classify the stories in during the spring of 2009. A total of eight professionals from each of the participating museums were asked to assess the six selected video fragments with stories about objects. For each fragment, questions were asked about the narrated story ('Is the video fragment suitable for a broad audience?', 'Does the information in the story add another dimension to the drawing/picture?', etc.) and about more subjective experiences (Whether the story is 'fun', 'boring', 'instructive', etc.). The human subjects filled in a questionnaire for each video fragment, with all answers scored on a five-point Likert scale. To complete the test, the human subject was presented with six images of objects in A4 format in random

order. He or she was then asked to rank the images in order from 'most appealing to persons interested in the collection' to 'least appealing to persons interested in the collection'.

Using a score sheet, the test manager marked data, such as place and date, the sequence in which the video fragments were presented, the remarks on the video fragments, and the order of the video fragments – ranging from most appealing to least appealing.

The participants made various remarks during the experiment. The general remarks on the video fragments can be divided into two categories. The first category consists

Figure 6.1: The six selected video fragments containing stories

and they are rather outspoken in their assessments of the 'best' and 'worst' video fragments: the analysis of the answers, as well as the ranking of the video fragments and the remarks about the video fragments all point in the same direction. Therefore, we were able to simply and unequivocally select two video fragments from the available material, which were used for the storytelling experiment (Figure 6.2). This experiment will be further discussed below.

two video fragments were most different from each other, enabled us to get hold of a 'well-told' story and a 'poorly told' story. It turned out that video fragment #1 received a negative score most often, while video fragment #5 received a positive score most often. The remarks by the human subjects about the video fragments are in keeping with this outcome; video fragment #1 was criticised for: 'having too much professional jargon', 'lacking context', and having a 'bad narrator'; while the following remarks were made about video fragment #5: 'good story', 'best video fragment', and 'definitely adds something extra'. In addition, video fragment #1 was ranked last most often during the video ranking assignment, while video fragment #5 was ranked first most often in this assignment. Statistical testing also proved that, with regard to the four questions about the narrative, video fragment #1 scored significantly worse, and with regard to the questions about emotions, it also scored significantly worse than video fragment #5.

The eight professionals participating in the pre-test can be regarded as a homogenous group,

Three different modalities were made for both stories:

1 the video fragments presented during the pre-test;

2 an audio version, for which the narrated story was extracted from the video and converted into an MP3 fragment;

3 a text version using a transcript of the narrated story in the video fragment. This resulted in a 2x3 factorial design (good story/poor story x video/audio/text).

The varying conditions were presented in the 'Iknow-whatthisis' research environment, where the video image of the object was displayed consistently under all conditions. The human subjects were students at the Utrecht University of Applied Sciences. This group was identified as 'laymen'. A total of 65 human subjects participated in the experiment; four human subjects were removed from the data because the video recording application did not work properly. Among the 61 remaining human subjects, there were 15 women and 46 men, with an average age of nearly

23 years. More than half of the students followed the Digital Communication Study Programme at the Faculty for Communication & Journalism (36); other frequently listed study programmes included Commercial Economy (6), Media Technology (5), and Cultural and Social Education (4). The experiment was conducted at the Crossmedialab in the Faculty for Communication & Journalism at the Utrecht University of Applied Sciences from November through December 2009. The human subjects followed onscreen instructions while at their computer monitors. A test manager was present to answer any questions that arose. On average the experiment lasted 20 to 30 minutes.
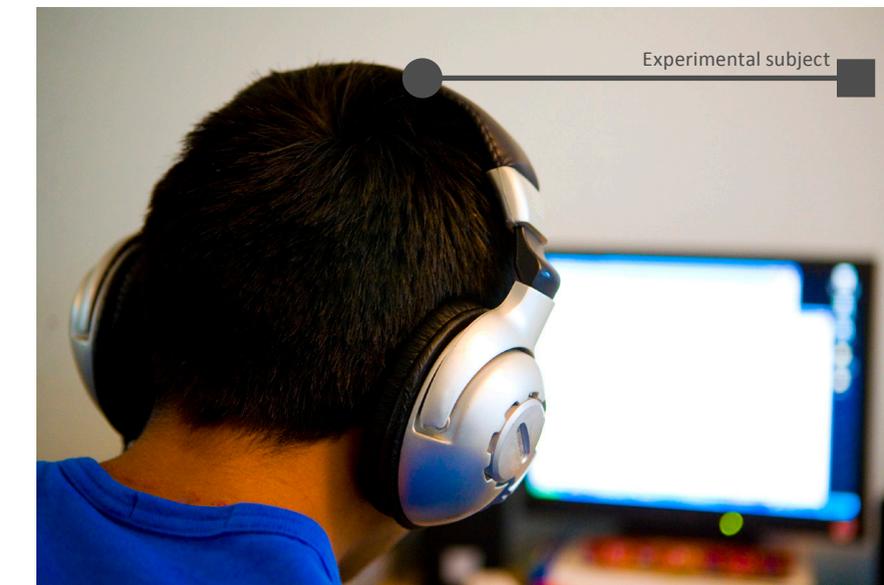
Experimental subject

Following a brief introduction, the human subject was asked to provide gender, age, zipcode, and the study programme in which he or she was enrolled. Next, a number of questions were asked about the human subject's involvement with museums,

four questions relating to museum visits, and several questions about the emotions experienced at museums. After this, the first manipulation experiment took place: the human subject was presented with either the 'good' story or the 'poor' story, using one of the three modalities. On finishing reading/listening/viewing, the human subject should click the 'continue' button. In the fourth step, several questions on the narrative experience were posed. Four questions, which had already been used for the pre-test, were used to examine the 'quality' of the story; sixteen questions were asked about the experience. In the second manipulation: the human subject was presented with the other story, using one of the three modalities. After that the same questions used for the first story were asked. Finally, we repeated the same questions formulated for step 2 in relation to museum visits and the experienced emotions, except that the questions about museums were formulated not as facts but as intentions; for example: "How often do you plan a visit to a museum or archive?" After the experiment the human subject was thanked for his/her participation in the experiment.

We examined the collected data to find whether the 'good' versus 'poor' manipulation was well conceived. Statistical analysis then shows the following.
The 'good' story scored significantly higher than the 'poor' story on its narrative quality, its ability to add another dimension to the object, its suitability for a broad audience, and its usefulness for exhibition presentation.
The attitude change before and afterwards reveals a significant shift: after the experiment, the human subjects showed a significantly more positive attitude on the entire set of questions about museum visits, the museum website, and the likelihood that they would recommend the museum to friends and family.
The motivations for visiting a museum significantly shifted from 'for my work/study' to 'for my leisure'. After the experiment, the human subjects indicated that they were more motivated to visit a museum for their leisure, and less motivated to plan a visit for their work or study.
The scores on the seven emotion pairs indicate that before and after, the human subjects were mainly at ease, calm, and passive, a little bored but happy nevertheless. An assessment of the differences between the emotions before and after the experiment did not produce a significant result in any of the seven pairs.
Regarding differences in experiences, no statistically significant support for hypotheses H7 and H8 could be found.
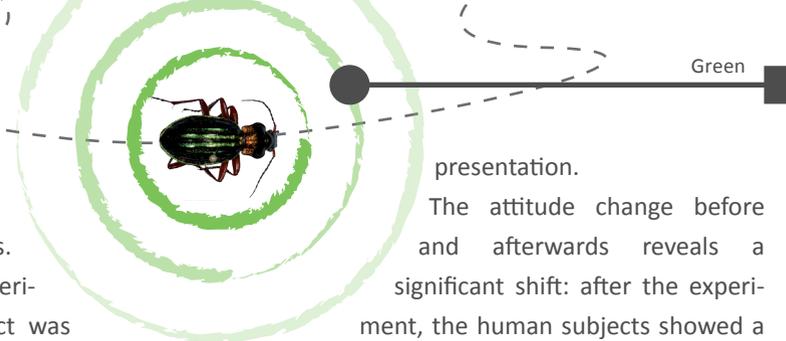
The conclusions from the storytelling research are as follows: first of all, we have established the possibility to record stories by people about objects, and also that these stories differ in their 'usefulness' and 'quality'. In this regard, the assessment by professionals was also expressed by the laymen: they too think that the stories that the professionals had labelled as 'good' are better than the stories that received a less-than-positive review by the professionals. In this sense, the manipulation experiment was indeed successful. Furthermore, we discovered that story viewing/listening/reading changed the participants' attitudes towards museums in a positive sense after the experiment had taken place: there was a more positive attitude towards visiting the museum, museum website, and recommending the museum to friends and family. On the other hand, we saw no change in the emotions experienced before and after the experiment: the scores on the emotion pairs indicate that before and after, the human subjects were mainly at ease, calm, passive, and a little bored but happy nevertheless. Assessing the differences between the emotions before and after the experiment did not produce a significant result in any of the seven pairs. Hypotheses H7 and H8 were tested with a 2x3 factorial design for measuring media experience. We did a full factorial analysis (MANOVA), which did not show any significant effect on separate factors and their interactions. Univariate analyses of the six dependent variables of media experience (see chapter 3) did not produce any significant result either.

No significant difference in engagement was found in relation to the main effect of modality (video/audio/text) or the main effect of the story (good/poor); neither was there a significant difference found in the interaction effect (modality x story). Thus, based on this experiment, both hypotheses H7 and H8 cannot be rejected with regard to experience. In chapter 7, we will further discuss these conclusions in conjunction with the tagging research findings.

Interneringskampen onbekend van Museon

Kies een foto/tekening

Bekijk de foto/tekening of film

Persoonlijke ervaring toevoegen

Voeg toe

TAGGING ONLINE EN OFFLINE

Traditionally, the physical museum collection and its presentation have been essential for cultural heritage institutes. Social tagging, on the other hand, seems reserved for presentations of online collections for the time being. The hope is that social tagging will stimulate website visitors to visit the physical location. Consideration may, of course, also be given to other options, such as the ability to tag objects in a physical location, making online tags visible in the description of objects in a physical exhibition, or offering visitors museum tours on the basis of their online tags, etc. These options, which are steadily becoming more realistic as a result of new media developments, have led to the following research question: How can a relationship between online tagging and tagging in museums be established?

👍 I know what this is

Physical tags are not entirely unusual, nor are they unusual in a cultural setting (Van Mensch, 2005). A good example is the 'Yellow Arrow' project (http://www.yellowarrow.org/), begun in 2004. Participants in the project attach a yellow arrow, obtained via the project's website, on an object or at a location anywhere in the world, then generate a text message about it. When someone spots the arrow and types in its unique code, he or she will receive the message that was previously left behind by someone else. Participants can make further annotations on the website, using pictures and other material. Another example is Grafedia (www. grafedia.net), which works as follows: choose a word and send the content (text, photo, and video) from your PC or mobile phone to "woord@grafedia.net". One then writes the word formatted like a hyperlink (blue and underlined) on a random physical object like a wall, letter, means of conveyance, body tattoo, etc. People who see these hyperlinks may 'click' on them by sending a text message to the hyperlink. This will retrieve the associated content. According to Grafedia's inventor, John Geraci, everything can become a possible 'webpage'; the possibilities are endless, ranging from simple messages to poetry and interactive stories shared by different people.

Number two

A relevant development in this field is the rapid development and adoption of mobile devices. In 2005, Filippini Fantoni (2005) observed in an overview of the use of mobile services in museums, that since 1995 more than 200 multimedia tours have been developed for museums around the world, ranging from radio transmissions in the 1950s to then current podcasts and downloadable tours for mobile phones and PDAs,. According to Weide & De Niet (2008), 20% of Dutch museums offered PDA-based tours in 2008.

Such multimedia tours are created aiming for different types of added value.

1 Supporting different visitor groups, such as children, school classes, and deaf people by providing personalised tours. Various museums, such as The National Great Blacks in Wax Museum in Baltimore are offering deaf people sign language interpreters on PDAs;

2 Facilitating people's ability to find their way in buildings by providing floor plans and interactive maps, or to assist visitors in tracking their whereabouts in buildings with location-based technology;

3 Offering contextual information, such as interviews or video interviews with artists and experts, digital images of certain details, other works of art, x-ray records, other supplemental descriptions, and biographical information. Some devices 'know' which artwork a visitor is standing in front of, so that the appropriate information can be provided;

4 Immersing visitors in the world of the art object or the artist e.g. using video clips, music or voices for historical figures. Examples can be found at the Dutch Railway Museum, where visitors are guided through an old mining village using audio-recorded narratives, and St. Peter's abbey in Ghent, where 'monks' contribute to the narrative, allowing visitors to explore and wander around the centuries-old abbey buildings.

The experimental stage for this kind of multimedia appears to have been abandoned, and commercial applications are widely available at this point. Not everyone is equally enthusiastic, however; Van Zeil concludes: "Because there has not yet been any research in this area, people are just randomly trying things out on their own" (Van Zeil, 2006, p. 10).

We have been examining how a relationship between the online 'Iknowwhatthisis' research environment and the museum's physical location might be established. In September 2009, we contacted the Utrecht University Museum to explore this possibility. At the time, the University Museum was exhibiting its collection of curiosities, which it made available for this purpose. All of the objects in the exhibition were added to the 'ikweetwatditis.nl' website.

A group of students from the Utrecht University of Applied Sciences created a version of www.ikweetwatditis.nl for the smartphone platform using the existing infrastructure of the 'Iknowwhatthisis' website. We decided to develop a cross platform mobile web application with PHP and to expand the existing database. The advantage of the mobile web application is that it can be used with any smartphone with an Internet connection, thereby avoiding the problem of the variety of popular mobile platforms such as Apple's iPhone OS, Google's Android, and Nokia's Symbian.

OTo establish a good connection between the physical location and the virtual location we decided to use Microsoft Tag (Figure 7.1). Microsoft Tag is an implementation of the High Capacity Colour Barcode (HCCB), a technology for representing data in two-dimensional barcodes using clusters of coloured triangles, instead of the square pixels. To scan the HCCB tag, the Microsoft Tag Reader application must be installed on a mobile phone with a built-in camera. The HCCB tag encodes a link to an Internet address. Once the barcode has been scanned, it will launch the mobile phone's web browser and navigate to the relevant Internet address. An alternative to the HCCB tag is the Quick Response (QR) code (Figure 7.1). The benefit of using the HCCB tag, however, is that it provides instant access to the website. On scanning a QR code, it will first display the Internet address together with a number of other options, making the whole process more complicated for the user. Microsoft Tag Reader also supports more custom design options. For instance, the HCCB Tag can be displayed in black and white, may contain background images and can be smaller than QR codes. The HCCB tags could therefore be integrated with the University Museum's company logo, and they were particularly suitable for use in its physical collection.
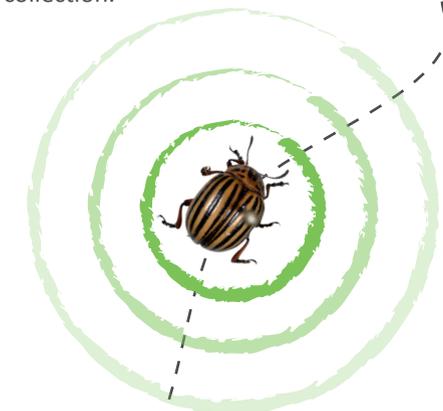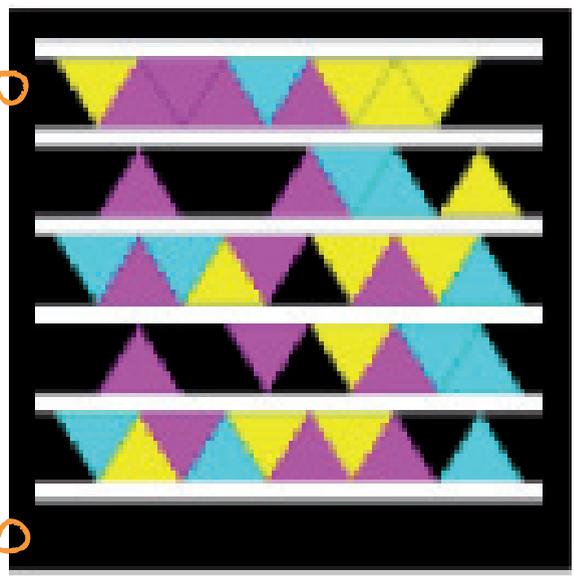
Microsoft Tag and QR-code

For the purpose of this pilot application, we purchased two Apple iPhones and two HTC Hero mobile phones that have been made available to the Utrecht University Museum. Visitors therefore did not have to have a smartphone of their own to use the mobile application, but could borrow one. We also set up an application-specific wireless Internet connection to provide visitors with Internet access, which is required for the mobile application. Unfortunately, the user experiences could not be incorporated into this research report, due to the fact they were planned after the report deadline had passed.

All objects from the collections of curiosities available on the ikweetwatditis.nl website as well as physically present at the exhibition, were labelled with individual HCCB tags. The HCCB tag pinpointed the objects on the www.ikweetwatditis.nl website, sending the information to the mobile phone.

Upon entrance to the University Museum, an account is created when a visitor chooses the mobile version of Iknowwhathisis. If a visitor is scanning a HCCB tag for the first time, he or she is asked to log in to the application. Next, the visitor is asked whether he or she is a child or an adult. At this stage, the mobile application is not yet doing anything with these data, but in the future, there might be an application specifically targeted on children. The mobile application enables visitors to add tags to objects and obtain more information about an object. It also

offers functionality to validate tags. The visitor will then view tags that have been added to an object, and vote on the tag by selecting the green up arrow or the red down arrow. Each tag has a total score, which defines a ranking of the tags (see Figure 7.2). Using the green up arrow will add one extra point to the relevant tag's total score, while the red down arrow will deduct one point.

Iphone

Figure 7.2

Mobile tagging-application

8 DISCUSSION

Although museums are still making little use of their digitised collections to fulfil their public tasks, the general public is increasingly using a greater variety of new media applications. Moreover, although object descriptions for museum collections do support discussions about subject matter content, they are insufficiently consistent with visitor interests and perspectives. Social tagging provides a way to meet both needs. Previous research has shown that social tagging is a quick and direct way for museums to learn about visitor experiences, what visitors perceive to be significant, and what significance they attach to objects. Social tagging contributes to the enrichment of museum collections, better retrievability and enhanced target-group involvement with collections. The purpose of the PACE project was to develop a test bed and do field trials to examine whether social tagging does indeed enhance the enrichment and accessibility of museum collections, and increase target group involvement.

One research contribution to the discussion is the distinction made between different groups, i.e.: laymen, experts, and professionals. Five hypotheses were formulated in which the distinction between laymen and experts was assigned a decisive role in relation to the enrichment and retrievability of digital objects. On certain important points, research findings show that there is no significant difference between laymen and experts in this respect. For instance, laymen and experts do not differ in the number of tags added to collections (hypothesis 1), nor do they add different types of tags: the majority of tags added by both groups are of a descriptive nature (hypothesis 2). Moreover, they do not differ in the number of unique tags added, neither in the number of unique tags added within their own group, nor in the number of unique tags added within the entire collection of tags throughout all collections (hypothesis 3).

The latter results suggest that there might be a difference between laymen and experts, for although there is a substantial overlap in the tags used by both groups, each group also adds its 'own' words, words that were not mentioned by the other group, or that were mentioned to a lesser extent. Moreover, there is a difference between the relevant weights assigned to the tags shared by both groups: one group mentioned those tags less often than the other group. This is also visible in the tag clouds, in the sense that the laymen did indeed use more 'common' words to describe the objects in the dental surgery collection, such as 'tooth', 'back tooth', and 'hole', while the experts used words such as 'dental caries' and 'dental prosthesis'. The most extreme examples in this respect were found in the beetle collection, where the experts used specialist terms in identifying beetle species (usually the Latin names of genera and species), to such an extent that there was virtually no overlap with the terms used by the laymen. Laymen's terms, such as 'beetle', 'bug', and 'black', were not among the words used by the experts.

Another indication pointing to a difference between both groups is the aspect of tag informativity. With the available number of tags, we were unable to detect a statistically significant difference in informativity using objective but crude measures for tag informativity. However the professionals' assessments of tags appear to differentiate between both groups, in the sense that the experts' tags are considered to be more informative (hypothesis 4): six of the eight objects, on the basis of which the hypothesis was assessed, show a significant result. When it comes to retrievability, the results were inconclusive in demonstrating that a difference exists: only two of the eight cases examined show that the laymen's tags are considered to be significantly better keywords for object retrieval than the experts' tags. None of the cases show that the experts' tags are considered to be better keywords for search purposes (hypothesis 5).

In a general sense, we may conclude that both laymen and experts provide their own contributions to digital collections through social tagging. The contributions from both groups are well matched in a quantitative sense, and are (partly) different in nature from a qualitative perspective. Based on this research, therefore, we cannot sustain the assumption that having experts engage in tagging is 'more productive' than having laymen engage in tagging. Both groups delivered their own, specific contributions, and the research indicates that the experts' tags contribute especially to informativity, while the laymen's tags tend to contribute to retrievability. Apart from the distinction between laymen and experts, we may further conclude on the basis of the research that tagging does indeed enrich collections, in the sense that it adds keywords that have additional value for collections or the disclosure of collections.

This research has also made clear that there were very few occurrences of 'spontaneous' social tagging. Most tags were added at specific moments, i.e. the moments at which the groups (students, dental surgery experts) were actively approached to join the experiment. Familiarity or unfamiliarity with the website may have something to do with this; we did draw attention to the website among the required target groups, but it was apparently not sufficient. The collections were also uploaded to Flickr, and the results from this website indicated that only a few spontaneous tags were added. In the case of Flickr, unfamiliarity of this website is not an issue; rather, the few hundred specific photos could have easily been flooded by the vast amount of material found
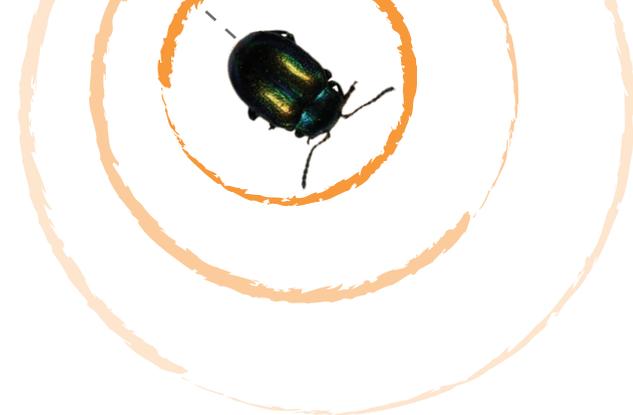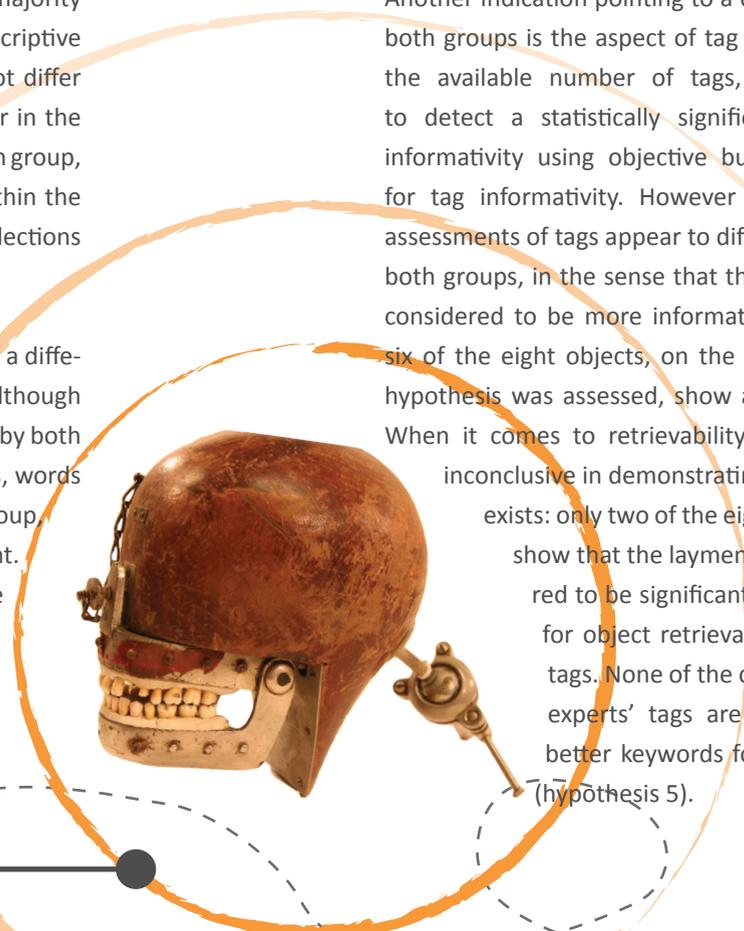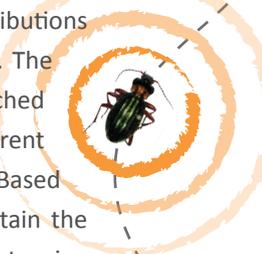
Orange Circle

on Flickr.

Another research contribution is the question pertaining to the role of storytelling in collection enrichment and its potential for eliciting visitor involvement. As with social tagging, the same question suggests itself here: when is it useful to have visitors engage in storytelling and story presentation, and what is the effect?

The professionals were presented with six of the 62 stories collected from the experts. The professionals were in agreement as to what the 'good' story was and what the 'poor' story was. This assessment by professionals was also expressed by the laymen: they too thought that the stories that the professionals had labelled as 'good' were better than the stories that received a less-than-positive review by the professionals. Furthermore, we added some variation to the story presentation, i.e. in the form of text, audio or video, which resulted in a total of six different experimental conditions. Assessing the experience under these different types of conditions ultimately produced no significant result. No significant difference was found for the main effect of modality (video/audio/text) or the main effect of the story (good/poor) and the interaction effect (modality x story) (hypotheses 7 and 8).

Not finding any significant results in the assessment of hypotheses 7 and 8 was quite an unexpected outcome. We had at least expected that the experience of viewing the video presentation of a good story would be clearly distinguishable from the experience of reading the textual presentation of a poor story, to mention the two most extreme modalities

in the manipulation experiment. A possible explanation for this result is that the difference was simply not large enough to emerge as significant with the measurement method used and the limited number of persons interviewed. Another possibility is that the two selected stories 'meant nothing', in an emotional sense, to the human subjects (students); in other words: they were simply indifferent. An additional indication of this interpretation can be found in the measurement of emotions before and after the experiment: the scores in the seven emotion pairs indicate that both before and after the experiment, the human subjects were mainly at ease, calm, passive, and a little bored but happy nevertheless. In short, no change in the emotions experienced occurred. This gives rise to the question of whether the manipulation in regard to this aspect (emotional impact) was sufficient to allow for a significant, measurable result with such a small number of human subjects. In previous research, in which video material was used to examine emotional experience, 'fierce and intense' visual images have often been selected (Lazarus & Folkman, 1984; Van Vliet, 1991). For the purpose of follow-up research, it is thus advisable to thoroughly examine the visual material's potential for eliciting an emotional response, and the number of human subjects required to show a significant difference.

Another possible explanation for the absence of significant results is the operationalisation of the notion of experience. For the purpose of this research, we chose to use the validated items from the study by De Haan & Adolfsen (2008). These items were focused on the experience of different types

of media, while this research involved not so much different types of media as much as different types of modalities (text, audio, and video). For a follow-up experiment, we should once again consider how to operationalise the experience, and consideration should also be given to alternative experience scales (see, for example, Coan & Allen, 2007; Rubin et al., 2009).

However, in a positive sense, story viewing/listening/reading did result in a change in attitude towards museums after the experiment: the human subjects have a more positive attitude towards visiting the museum, the museum's website, and recommending the museum to friends and family. We were not able to discover the exact cause of this change, or to determine its precise relationship with the fact that there was also a shift in motivation: from 'for my work/study' to 'for my leisure'. This would mean that simple exposure to stories, by itself, has a positive effect on visitor involvement with museums. Whether this effect would hold in the longer term and whether it would actually lead to action has not been examined, but it does bring relevance and urgency to continued research in this area.

Returning to the main question, and taking into account all methodological caveats that we discussed only partially here (see also Van Vliet et al., 2010), we may conclude on the basis of this research that social tagging and storytelling are relevant tools for museums to enrich their collections. Our research has produced less unequivocal results for the two other aspects of the benefits of social tagging referred above, i.e. retrievability and involvement, but, in any case, they do not contradict the assump-

tion that social tagging and storytelling contribute to retrievability and elicit involvement. Hereby an essential aspect is to consider who is asked to do what: in addition to the museum professional, a distinction is made between laymen and experts, which has proven to be relevant for clearly interpreting the results. This is inextricably linked to the question of how to reach and influence these target groups in relation to the input they are required to deliver.

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FURTHER READING

This publication is based on the research report 'Public Annotation of Cultural Heritage' (Van Vliet, Hekman, Veldhoen, Rotte & Brussee, 2010) and the theoretical study 'Digital Cabinets of Curiosity. Cultural Heritage & Cross-media' ('De Digitale Kunstkammer. Cultureel Erfgoed & Crossmedia') (Van Vliet, 2009). You can order these publications via info@crossmedialab.nl or download them at www.crossmedialab.nl/impact.

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CELL CAHIER LIGHT   IKNOWWHATTHISIS

'Iknowwhatthisis' gives an account of the research conducted into the deployment of social tagging and social storytelling for museum collections at the Utrecht University Museum, Museon and Naturalis. The research focuses on the question of whether social tagging and social storytelling can be used to enrich and facilitate searching through art collections and achieve a higher degree of visitor involvement with museums. The research was carried out by the Cross-Media Business Research Group at the Utrecht University of Applied Sciences, and was made possible through a subsidy arrangement by the Ministry of Education, Culture, and Science.

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Cell Cahier #1: Digital Cabinets of Curiosity. Cultural Heritage & Cross-Media (De Digitale Kunstkammer. Cultureel Erfgoed & Crossmedia). 2009. Utrecht: Utrecht University of Applied Sciences.

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CELL CAHIERS LIGHT:

Cell Cahier Light #1: Iknowwhatthisis. 2011. Utrecht: Utrecht University of Applied Sciences.

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