The Chawton House Experience – Augmenting the Grounds of a Historic Manor House

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ABSTRACT

Museum research is a burgeoning area of research where ubiquitous computing has already made an impact in enhancing user experiences. The goal of the Chawton House project is to extend this work by introducing ubicomp not to a museum as such, but a historic English manor house and its grounds. This presents a number of novel challenges relating to the kinds of visitors, the nature of visits, the specific character of the estate, the creation of a persistent and evolving system, and the process of developing it together with Chawton House staff.

INTRODUCTION

Ubiquitous computing has been employed to enhance the museum experience (Aoki et al 2002, Benelli et al 1999, Brown et al, 2003, Fraser et al 2003). We want to develop engaging experiences for visitors to an historic English country estate, Chawton House, which blend into its specific atmosphere and 'natural' experience. Our aim is to produce a ubiquitous computing system that enables visitors to explore the estate on their own, while tapping into the knowledge about the estate held by curators. These experiences are to be co-designed with Chawton House curators who are eager to tell visitors more about the grounds and to attract further visitors, but lack time to give tours in parts of the estate other than the house. The projects long-term aim is a persistent infrastructure for long-term use and adaptation by various groups with an interest in 'using' Chawton House, for example coach parties, school children and scholars. The project builds on past work using embedded technologies in outdoor environments for explorative learning activities with schoolchildren (Rogers et al 2005). A key milestone of this project will be an evaluation of a demonstrator system in July that will deliver two experiences: one for visitors to the house, and one an educational experience for schoolchildren.

An essential part of our work is acquiring an understanding of the specific nature of this place and of the work of curators that we seek to support and extend. Before laying these challenges out in detail, we give some background on the house. Then we describe what kinds of experiences we have started to design, how we went about and what we learned so far from workshops with our collaborators.

CHAWTON HOUSE – A SPECIAL PLACE

Chawton House Library, half an hour from Southampton near Alton in Hampshire, is a charitable organisation that has restored and refurbished *Chawton Manor House*, gardens and park to operate as a centre for the study of early English women's writing. The library's core activities are the study of the collection (attracting scholars) as well as seminars, day conferences and cultural events. Where appropriate, the landscape has been returned to its early 19th century design, and it is stated as a goal 'to preserve the peace and beauty of the estate while sharing this heritage with visitors'. The landscape reflects the open landscape ideals of the late 19th century, so signage and visible technology in the grounds detract from the desired impression. The Manor has been in the Knight family since the late 16th Century and at one point was inhabited by Jane Austen's brother Edward Knight. Jane Austen lived in a cottage in the village and was a frequent visitor. This is a part of the house's history and many visitors have specific interest in this aspect. The grounds include a church and churchyard where most of the Knight family are buried.

Chawton House is primarily a study centre. This differentiates it from most museums (Taxén 2004). Seeing it in use gives visitors a sense of how such a house 'might have worked' in the 18th Century. The building and grounds themselves are of interest to visitors, and artefacts within them are part of the space, rather than merely placed within it. Visits need to be arranged on an appointments basis and only groups of certain sizes are accepted. Chawton House is not only a house, but an estate with extensive grounds. Curators give tours of the house and enjoy this, but lack resources to give tours of the grounds on a regular basis. This provides an opportunity for technology support.

Types of visitors

A wide variety of visitors to the house can be identified. Just looking at the grounds, we might identify:

- Academics studying at the Centre who wish to take a stroll through the grounds as a break from their studies.

- Coach parties (such as the Jane Austen Society of America), who might want to gain a sense of the environment in which she was creating her fiction.

- Groups (such as the Farnham Flower Society) interested in the botany of the gardens, which are created using 19th century techniques and reflected the available flora of the period

- Groups of schoolchildren using the grounds for a number of possible curriculum based experiences
- Visitors interested in landscape architecture (the garden providing features from late 19th Century, from Lime avenues to Arts and Crafts designs by Luytens).

Visitors using the library stay for several days or weeks, living in the village, while other visitor groups stay for a few hours only. Visitors need to plan for an appointment and thus usually have a dedicated interest, unless it is colleges touring several literary sites or manor houses.

Chawton House curators

As the main function of the Library is a study centre, no-one has the official role of curator, but the staff between them hold much of the information that visitors might wish for. Several members of staff give tours besides other responsibilities. The various staff who play a role include:

- The Trust Director – Has general knowledge about the overall goals of the Centre along with some specific knowledge of the history of the house.
- The Estate Manager – Has specific knowledge of the landscape and architecture through managing the restoration for over 10 years, gives tours of the grounds.
- The Public Relations Officer – In charge of giving tours of the house and with more targeted experience of visitor groups.
- The Librarian – Primarily in charge of novels held on site, but with some responsibility for giving tours and with specific knowledge of the period.
- The Gardener – With specific knowledge of the plants and planting schemes of the gardens

These curators complement each other but none would claim to be able to give the 'definitive' tour to all potential visitors. How to explore and integrate the different stories that they can tell for re-use in a guide system for visitors, augmenting the grounds and using UbiComp technologies, is one of the key challenges of the project.

AIMS AND CHALLENGES

The curators are interested in being able to offer new kinds of experience to their visitors. We aim to find out what types they would like to offer, and help to create them. There is thus a need for 'extensible infrastructure' based on a basic persistent infrastructure that supports the creation and delivery of a variety of content. The extensions can be of two kinds (often in parallel): (1) technology; (2) content. The infrastructure can be extended to provide different, more specialized experiences for specific user groups e.g. for 'standard' visitors, schools, history societies, Jane Austen enthusiasts etc. We envisage a hierarchy of users with Chawton creating generic experiences, and other 'users', for examples schools, clubs, etc. tweaking and extending these to offer the results to students, club members etc. The concept is that Chawton takes ownership of infrastructure and content and provides tools to their end users which then author their own experiences, with

experience designers (us as researchers) taking a facilitating role.

A number of questions arise:

- How can we enable curators to create a variety of new experiences that attract and engage different kinds of visitors, both individuals and groups?
- How do we engage curators in co-design of these experiences?
- How can curators without computer science backgrounds contribute to the authoring of content for the system?
- How do we create an extensible and persistent infrastructure; one that can be extended in terms of devices, content and types of experience?

The Chawton House project, then, involves understanding and engaging with curators' practice in ways, which can inform the design of UbiComp systems that are persistent in terms of technology but also of value. The system will only become appropriated and taken ownership of by curators if we from the very start engage in co-design with them.

Embodied Skills of Curators and layers of knowledge

One of the key issues for the project is that the visitors' experience of the house and its grounds is actively created in personalized tours by curators. House and grounds are interconnected in a variety of ways, e.g. by members of the family rebuilding the house and gardens or being buried in the churchyard. Thus artifacts or areas cannot be considered in isolation. There are many stories to be told and different perspectives from which they can be told, and these stories often overlap with others. Thus information exists in several layers. In addition, pieces of information, for example about a particular location like the 'walled garden', can be hard to interpret in isolation from information about other parts of the estate – there is a complex web of linked information.

Running tours is labour intensive at a time when Chawton wants to attract more visitors. So there is a real need to create experiences for visitors based on computing technology as well as the human resources already there. The first major issue, then, is how to produce something appropriate for Chawton House. This first central issue generates some key challenges.

Curators 'live the house' both in the sense that it is their life but also that they want to make it come alive for visitors. The experiences offered by Chawton House are intrinsically interpersonal – they are the result of curators interacting with visitors. Giving tours is a skilled, dynamic, situated and responsive activity: no two tours are the same, and depend on what the audience is interested in. They are forms of improvisation constructed in the moment and triggered in various ways by locations, artefacts and questions. Part of a good tour is what curators call 'enthusing' the visitors and 'responding' to them. They do not consciously categorize visitors, but attend to subtle cues in body language and engage in conversations. The

information they give is not a formalized body of knowledge that could be made immediate use of for digitally augmented tours. Information is of many types – factual, speculative, anecdotal; it is and embedded in the house and grounds and situationally constructed.

This means that the basic issues for us are (a) how to preserve the human agency and skill that is intrinsic to current experiences of the house; and (b) how to abstract these things and make them work digitally, in ways that don't 'put us out of a job' (one curator's concern) or create sterile experiences for visitors.

Creating a Persistent and Extensible System
A second key challenge is more technical. UbiComp projects that 'instrument' public spaces are often heavyweight research efforts that are one-offs, depending on a team of skilled developers. Any maintenance or change has to be carried out by this team. This means that persistence is a crucial issue; there need to be ways that technology can remain in situ, at least partly maintained or changed by its users. The specific issue to be addressed by the Chawton House project is how curators can be encouraged to engage in 'co-authoring', working with developers to create visitor experiences.

We also conceive of 'persistence' in a second sense: that is continuous use of the system, because it is meaningful and valuable to its users (the curators and their visitors). We are therefore exploring how we might enable curators to continue authoring tours and furthermore, to hand over authoring to other stakeholders to create specialized experiences and activities for specific visitors. Further we can envision visitors to contribute, telling their own stories and sharing their knowledge with future visitors. In the rest of the paper we describe how we are going about addressing these issues.

DESIGNING EXPERIENCES
In July 2005 a demonstrator system will deliver experiences for visitors, and a specially designed educational experience for schoolchildren. We have started with co-design workshops both with curators and teachers.

Designing Visitor Experiences
First we are working with curators to develop a range of tours of the grounds. Visitors may decide on themes they are interested in and either follow a given trail or wander about freely. Information will be contextualized, based on location, stated interests, and visitors' trails through physical and information space. Visitors then experience different locations, e.g. the 'wilderness' – a small (managed) forest with several intricate paths and a romantic clearing. Here, women of Jane Austen's time could imagine being in a wild place, without any danger of getting lost or meeting strangers. Devices that provides information on the grounds and on demand give directions would enhance the experience significantly and make available curators' knowledge in a way not possible today.

The functionality of the devices will mostly consist of giving contexualized audio information and also visual

Figure 1. Second curator workshop: touring the grounds and taping the tours.

information if this provides added value. The devices should accommodate groups and individuals, as visits are usually social events and are shaped by social interaction (Ciolfi 2004, Aoki et al 2002) in which the devices themselves might come to play a role. We imagine extending the scenario to allow visitor annotations – particularly as some have more knowledge on specific issues than curators, e.g. if literary societies are meeting on the estate.

Types of Tours
We envision enabling different kinds of tours for visitors, differing in directedness and contextualization. *Unguided (Random Access*) *tours* allow exploring the grounds in any location order. The provision of information may be based on location only or on previously provided information. *Guided tours* start from one location and direct visitors on a given tour. These tours give certain cuts through physical space. Here contextualization is produced implicitly by tour authors who construct a storyline. *Semi-guided tours ('the hidden story')* allow visitors to wander about and drop in and out of (partial) authored paths, so they can join, leave or even toggle between multiple storyline. They are at most given only suggestions where to go next. Contextualisation can result in visitors hearing different stories about a place or being offered more detailed information when revisiting it. Visiting locations in a different order might also result in different experiences, as information is selected differently.

Designing School Fieldtrips
A second avenue addresses a different group of visitors and introduces a second level of users. A primary school in Southampton is interested in using Chawton House for fieldtrips with children for literacy education and creative writing (for an earlier project see Rogers et al 2005). The rich atmosphere and history of the house and landscape is valued as inspiring and providing context for children. We are cooperating with these teachers to design a first fieldtrip. Teachers could browse available content provided by the curators and include it, while also adding more specific content. Children will explore the grounds and construct narratives around what they discover. For this type of experience the functionality of the device will be expanded significantly. Children will be able to save information they found while wandering the grounds and to record audio or make photos. The teachers want them to e.g. describe places, imagine being a specific person, or to

Figure 2. First curator workshop: telling stories around a map.

role-play and record this. After wandering about in small groups the children when convening together should also be able to show each other what they collected and to swap content. After touring the grounds, the children will reflect on their findings and start creative writing in the house.

WORKSHOPS WITH CURATORS AND TEACHERS

Up to the writing this paper, we conducted two workshops with curators, and one with teachers. Furthermore we were initially given tours of house and grounds.

In the *first curator workshop* we aimed to have curators generate stories about the grounds, which could be digitized for later use in the system, and to identify themes. We printed a large map and populated it with 3D models of core buildings (Figure 2). The map was to provide a shared reference for discussions, to trigger stories (represented with post-its on the map) and reflection on the practice of giving tours. We also hoped the map to provide an anchor for talking about possible types of tours. The workshop gave us insight into what different curators like to talk about, and sparked their imagination on what the devised system might do for them. We found, consistent with the notion of a 'web' of information, that stories were partial, overlapping and hard to categorize. This raises issues of knowledge elicitation and clear information 'streams' or chunks that can be put into a digital guide system.

With the curators we agreed that a potential way of collecting stories that addresses these issues would be to have them tell stories in-situ. In the *second curator workshop* we were taken on separate guided tours and taped these. In early May we went off with three curators who had decided on a loosely defined set of themes to be addressed (the landscape, Jane Austen, characters from the Knight family). We videotaped these tours to select stories for reuse in audio tours (Figure 1). We ourselves attempted to ask questions to trigger desired stories and turn this into a natural situation, but to refrain from interruptions. This delivered a wide range of stories in different voices from different points of view that were richer and more detailed than those generated by the first workshop.

The aim of the *teacher workshop* was to give us insight into how teachers go about designing fieldtrips. We asked the two teachers to design a structure for the actual fieldtrip in July. We also discussed the value of fieldtrips, usual practices in organizing these and other questions. The large

map that we reused focussed discussion about the fieldtrips overall structure, how different groups of children might be distributed around the estate, and which paths to take.

Because the Chawton fieldtrip would focus on creative writing, the teachers want the experience to be character-driven and open-ended, the house providing atmosphere and context. The central idea is to meet characters (from the house) in the grounds, who tell the children about their lives. After a tour of the house focusing on its inhabitants, the children are introduced to the devices. In small groups they visit locations in the grounds where they hear introductory descriptions and are given simple tasks, e.g. to record sounds (with the device), generate descriptions or ask questions. After a while they are 'rewarded' through meeting a virtual character from the house. Then they meet at the house and share their experiences. Groups then decide on which character they want to hear more about and do a second round, collecting more information about that character (using the device) and engaging in creating descriptions. To review their collection and design a story, they return to the house for creative writing. The next workshop with teachers will refine this fieldtrip and provide teachers with possible stories about characters.

Some Issues Learned From The First Workshops

Eliciting content from curators is most naturally and effortlessly done in-situ. Our use of a map in the first workshop nevertheless may have triggered somewhat different content, showing e.g. structures that have by now been removed. We learned that curators do not think of visitors in categories and then decide on what type of tour to give; they rather react to subtle cues and engage in conversation, an ability that no system will be able to imitate. An ongoing issue will be that curators do not think of content in terms of categories, yet visitors should be able to specify their interests. Thus we'll need to review the content we sampled from curators and attempt to roughly relate it to keywords or potential interests of visitors.

The fieldtrips are less demanding than anticipated in terms of categorization or relations between different content. They are structured on a different level, having two phases.

REFLECTION AND CONCLUSIONS

There are lots of different stories, but also different characters. These are not only characters from history, but also Chawton House staff as characters who are enthusiastic about the house and want to transfer this enthusiasm to visitors. Listening to them is much more lively and interesting than listening to professionally spoken, but often somehow sterile and dull audio tapes sometimes found in museums and galleries.

Contextualisation and personalization may thus not only refer to tailoring content for visitors. We do not wish to substitute curators, but have decided to actually re-present them as the person that told the stories in audio tours. If we use snippets from real tours by curators, other visitors may share this experience. They might hear the birds, the wind, and people walking on gravel. Instead of seeing this as an impediment to the 'perfect tour', we feel that this is a

quality, providing a sense of intimacy, authenticity, and an 'unofficial' feel. And curators can only authentically tell stories when giving tours and walking the grounds; these stories are their creations and should be represented rather than replaced. Visitors will thus 'meet' staff that are not present at the day of their visit – or years after, might listen to people that no longer work here.

Taking content from actual tours and not transcribing and having it redone by professional speakers has a second advantage. If curators are to take ownership and to extend the content, we must enable them to do so. The simplest and most natural way for them is taping tours they might give in person once in a while, ands selecting sections. This means that curators could be directly involved in co-authoring content for the system, overseeing its creation and selection, and building an oral archive of knowledge for their own and visitors' use.

There are now many contextualized multimedia and audio guides for museums delivering information based on location and visitor interests. An early example is (Bederson, 1995), newer examples include (Aoki et al 2002, Benelli et al 1999, Fleck et al 2002, Oppermann and Specht 1999). Some audio guides used interviews with 'real' people or authentic sounds to enliven historic places (see Ciolfi 2004). With re-presenting the curators, using recordings from actual tours and handing over the ongoing creation of 'content' to curators and other user groups, we aim to go beyond this. In allowing other types of experiences, e.g. school fieldtrips, the system comes to be more than just an audio guide, but allows creative interaction with the information space, the creation of new content, or complex activities such as treasure hunts as realized e.g. in Nottingham castle museum (Fraser et al 2003).

Authoring and Co-Design

Our research so far has revealed that curators' activity of showing the estate to their visitors is a situated, embodied practice that is constructed in the moment. drawing on rich knowledge of individuals. The co-design process involves understanding this in detail, and also honouring rather than replacing this practice.

This has implications for co-authoring. Our research suggests that curators themselves could review and select material from recordings. They can also sort them into themes and topics, so that the system can cater for people with different broad interests, for example landscape, flora and fauna, or how Jane Austen's writing reflects the environment. This necessitates a learning process, which must build on existing practices and over time develops new practices based on experience and reflection.

We see this kind of ubiquitous experience as one based on information. This means we can deliver a persistent infrastructure that allows for the creation of information applications on top of it. By abstracting the experience away from the technology we can begin to focus on the needs of domain users, and look at ways at empowering them to create their own experiences. We believe that the same ubiquitous information system can deliver different experiences to different groups of visitors, including: local guided tours, authored by curators; field trips, authored by trip organisers such as school teachers; and an annotated, situated visitor space, co-authored by visitors to the house (cp. the visitor annotations to mysterious and unidentified objects in the Hunt museum (Ciolfi 2004)). A major challenge is to make this power available to domain experts who may be non-technical, and allow them to focus on the experience, rather than the system.

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