PROJECT OBJECTIVES
Our objectives, as we set them out in the original proposal, are reproduced below.

To research and prototype an information delivery system comprising of RFID tags and receivers, a computer based database, and a handheld PDA.

To explore appropriate content for such a system that takes into account the level of user knowledge.

To research the feasibility, desirability and management of user feedback and participation.

We will discuss each in turn.

Introduction

We are telling the story of computing in Manchester from 1946 until about 1962, an incredibly fertile moment of innovation for computer science, indeed the moment when computer science blossomed. We are basing our work on five objects belonging to the Computer Science Department of the University of Manchester.

These objects are, a Post Office rack purporting to be from the Baby (the world's first stored program computer), a variable speed tape deck from Mercury, a logic bay from Atlas, the control desk from Atlas and the read only memory from Atlas.

These five objects are windows into our discussions about computing history and lead to our first principal; that objects are more interesting and engaging for how they fit into networks of ideas and human stories than being of intrinsic interest themselves although they can be that too.

Rather than produce large quantities of text and paste it up beside the five objects we decided to use an information delivery system based around a handheld device to carry the interpretation. As far as the visitor is concerned this would comprise of a screen on which clips of information would appear.

At the time of this writing, the project hasn't panned out as we expected. We have succeeded in researching this kind of system but we have not succeeded in prototyping it. We have a good plan, which is ready to be implemented but it may well superceded by other projects other relationships before it is fulfilled.

Is the technology a chimera? Is technology a chimera?

You'd think that a project which began with a specific technology in mind would run the higher risk of techno-determinism, of letting the technology dictate the solution or believing that technology was, itself, the solution. In the absence of any technology at all we have ended up with a whole string of actions that are actually rather satisfying in their scope and content. We can say a few things about our working process more generally, about collaboration, and about working on arts and technology research projects.

We have come to the realization that the Museum of Zeroes and Ones is not a physical space. It is not a set of technology trying to assert an interpretation over another set. It has no materiality at all. The Museum of Zeroes and Ones is us, talking, discussing, and presenting. We have a strategic view of this project as part of a much longer-term commitment to working on how to tell histories.

However there are some specific issues relating to telling the history of computing that we think are unique and intrinsic to that history.

Computer design from the very earliest days has sought to hide its workings from the user. Very quickly it became possible to use a computer without knowing how it works.

The Technology
To research and prototype an information delivery system comprising of RFID tags and receivers, a computer based database, and a handheld PDA.

We are less interested a specific technology than in a system which has the result of putting in the hands of visitors a device that can tell them more.

Having almost dismissed the technology it has had significant influence on our ideas, with its materiality, its embedded design decisions, its capacities and affordances, its limitations. It was a powerful force to be reckoned with. It enabled us to conceptualise in quite specific ways about what we wanted from such a system.

We want visitors to be able to pick up clips of information from objects, without submersing the object in text and other data. We want to be able to reveal context. As that context is invisible it seems appropriate to use a system that is in itself largely invisible. As we are talking about technology a technological solution seems appropriate.

We wanted to be able to tell what people had been looking at, how long they had been looking at objects and the pattern of their looking. This data is normally quite difficult and laborious to gather as it requires watching the way visitors move around a gallery.

As a corollary to the above we want visitors to be able to take away a record of what they have seen. People like this and it allows them to take the experience of the museum home with them, moving towards an integrated experience of actual visit, and then at home notes on the visit and delving into web based links and extensions.

We have a notion that the system should be mutable according to its circumstance. So that people to can feed in to a database, that automatically tags their postings and sorts them by subject.

We wanted people to be able to choose what they looked at
To know what they are going to see.

A combination of active RFID tags (used to track large objects like people) and passive RFID tags (used to track small objects like 1MB video clips) systems, coupled with an appropriate server and database, in theory at least, gives us these features.

However there are questions that remain unanswered.

What kind of experience would visitors actually get?
How would the story telling work on such a tiny screen?
Would ‘trees’ of information work best or did each piece of information need to be discrete?
How would the wireless network work in practice?
Could a museum actually take this system and scale it up?

So we have a lot of promise but not much hard data. Some things are clear though.

The information has to be packaged in digestible chunks in relation to the size of the screen. They can be subtle but not too densely overlaid.

The danger with the system is that the quantity of content spirals out of control and that the ‘trees’ become interdependent so that changing one necessitates changing them all.

With computing there is so much to explain about electronics and obsolete solutions to problems that it is really hard to find a stopping place in the ‘trees’. There are always more questions because most of the information is not common knowledge.

Choices for visitors to delve in museums are presented by putting

We've already said a lot about this...about you. It's difficult to say more until we actually get to play with somesuch system, so back off already. But if you want some predictions, here are some predictions. If what we're doing is building a prototype of a museum system—and it's not entirely clear that this is what we're doing—then there will be problems with the fragility and abscondability of the handheld devices. We predict the wireless network is going to be frustratingly slow at downloading clips of our brilliant and not-to-be-changed-or-reduced-in-size-or-any-other-dimension clips. So, Objective 1, you've in fact been no end of trouble so far, but it's been productive trouble. You force us to reckon with our content in creative, adaptive ways, attending to size and dimension of the clips, and dealing with the practicalities of teaching such a system to the uninitiated (which includes, conspicuously, us at this point).

2. To explore appropriate content for such a system that takes into account the level of user knowledge.

actually, we'll capitulate when we figure out how to do it without resorting to tired old techniques like the museum texts "for kids" which stack computers or bunsen burners or computer scientists end to end until they reach the moon or some impressively distant heavenly body, which technique strikes us as irrelevant, distracting and condescending. But more on this in the next section.

We had identified the fault line in traditional histories of computing, the failure to sustain a dual focus on technical and social findings, to let these two types of knowing inform each other. We knew that the hook for audiences was going to be stories about people not stories about machines. We hoped that by telling stories about the people, audiences would become interested in the machines.

We really, deeply dislike you. You're imperious and officious and very probably right. Damn you. You force us to consider writing each of the hard-won scripts two or three times, and differently each time. You make us confront cliche and generally unsavoury past attempts to adapt a story for different audiences. You've flummoxed us thus far, but we have an escape plan. Because this is only a prototype system, one important thing to do is simply to test whether, technically, we can deliver alternative stories for the same device, while members of various types of audiences stand in front of that device. To this end, ipsum dolorum works as well as actual content. But we'll not give up so easily. This is still be a worthy goal, but the way to achieve it may not be to write content which separately addresses specific audiences, but to build the possibility of different audiences into the informational structure of the system.

3. To research the feasibility, desirability and management of user feedback and participation.

Oh. We'd forgotten about you. Well, we suppose you'll want due consideration like the rest of them. We haven't thought very much about you because you seem contingent on there being some working system...and there isn't one...yet. Hilary, you hear? Yet. There will be. Don't you worry. Actually, this is still important to us, as a goal. And we have talked about it. We've discussed using chalk or white board and letting visitors literally leave their thoughts on the wall. We've talked about similar capabilities to be built electronically into the handheld device. But the serious thinking on this, on you, will come once we have a system that works.

Which we're confident will happen before this book is published.

ENDNOTES

(1) Which, because we haven't mentioned it yet, you might as well envision as existing in some kind of museum of computing history; this isn't the only place it might work, but, despite the fact that we were working for no museum, this was sort of the image we carried with us as well.

(2) Latour, B. (2002) 'Morality and Technology: The End of the Means', Theory, Culture and Society 19 (5/6): 19, 251.

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