Methodologies for working with older people: pastiche scenarios

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A. Lauener, F. Slack, A. Dearden, C. Roast, S. Yates, S. Cassidy, Methodologies for working with older people: pastiche scenarios. Gerontechnology 2006; 5(1):16-28. An investigation of smartcard technologies and e-consultation systems in local government, taking place in Sheffield and the Black Country, used older people as part of the usability testing and evaluation panels. A number of workshops were conducted in late 2004 to elicit requirements and explore usability of the proposed smartcard products. Many of these groups contained older people in various roles, including IT (information technology) learners, members of Credit Unions and participants in social groups. In order to derive usability data from these potential users, we used the technique known as 'pastiche scenarios'. We report here the reaction of older people in the study and our observations of how the method worked, in comparison to a group of younger people and one where the age groups were mixed. We found that a group of older people is just as varied as any other segment of the population and just as articulate about their requirements as younger IT users, but with less jargon. They display irritation with their physical competencies in using the technology, but equal irritation with the technology for not accommodating their self-perceived 'inadequacies'. Using these participants to generate 'pastiche scenarios' about smartcards has tapped a rich vein of experience and humour. The results from these panels have provided the smartcard developers with a great deal of useful feedback.

Key words: smartcards, pastiche scenarios, usability workshops

The UK Government is pursuing the development of smartcards for public access to e-services provided by local authorities. This paper reports work done as part of the DATES Project (Developing Access Tokens for eServices) funded by the UK Office of the Deputy Prime Minister. It was carried out by a research group in Sheffield Hallam University's Faculty of Arts, Computing, Engineering and Science; part of a consortium of local governments and smartcard developers in Sheffield and the Black Country. The DATES Project was completed in late 2005, although the data reported in this paper was obtained in November and December 2004 as part of the requirements elicitation and usability workshops.

The aim of the DATES Project was to develop smartcards for use in financial and learning environments and so explored the attitudes, concerns and re-

quirements of users in under-represented groups in the community. These target groups included:

(i) People with disabilities, (ii) People on low incomes, many of whom do not have a bank account, (iii) People for whom English is not their first language, particularly women, (iv) Older retired people, (v) Young people currently outside the formal education system, and (vi) Carers: this group is often low income, though can fall outside the net of traditional definitions of poverty.

The paper reports the use of pastiche scenarios with three of the groups listed above and describes the way that this technique was used to probe the concerns and design issues of the subjects. The subsequent analysis of these scenarios helped the technical team to make design decisions, as they worked on products to be accessed by smartcard technology. The use of pastiche scenarios is a relatively recent development of a design methodology and, in this study, raised some interesting differences between the groups studied. Some of the literature of scenarios and their use in HCI (human-computer interaction) design is presented, together with an evaluation of Blythe and Monk's paper[1] on the use of pastiche scenarios. We then explain how the pastiche scenarios used in the DATES Project were designed and developed by the research team for use in the usability workshops. The results of those workshops include examples of pastiche scenarios written by the workshop participants. These are discussed, analysed and evaluated for their contribution both to the DATES Project and also to the wider issues of HCI design using older people.

FRAMEWORK

The underlying premise of the DATES project is that the initial authentication and the ability to use the range of cur-

rent and planned e-services is often a particular problem for certain disadvantaged groups. These groups can either find it difficult, physically or logically, to access these services, or are unmotivated to do so due to lack of opportunity or incentive for use. The DATES project seeks to make use of recent technological advances to help close the digital divide, providing increased security for authenticated access, a means of motivating the user to access these services, and making it easier for them to do so.

This paper focuses on the challenges to older users and their response to the unfamiliar technology associated with smartcards. Reviewing some of the recent literature we present the background work on older users and new technologies. We also explore the use of scenarios as a design method in human-computer interaction.

Older users and new technologies

Recent research has explored the use of ICTs (information and communication technologies) by older users and their attitudes to new technologies. In 2002 the UK charity Age Concern commissioned a study by ICM Research[2]. The survey indicated that 36% of people in the age group over 55 used a computer, whereas 64% did not. Demiris et al.[3] found little evidence to show that older people were reluctant to use new technologies, if they were sufficiently well designed. Nevertheless, 41% of the non-users in the Age Concern survey responded that they were not interested or had no time to use the Internet. More recent data than the Age Concern survey, collected by the Office of National Statistics[4] in late 2005, suggests that the current rate of Internet use by people aged 55-64 is 51% and for those over 65 is 20%.

Table 1. Prompts for pastiche scenario writing

Activities	Characters	Life changes	Problems
Catching a bus	Blanche Hunt	Moving house	Forgotten card
Parking a car	Jack Duckworth	Going into hospital	Lost card
Topping up the e-wallet	Dot Cotton	Completing a course	Stolen card
Finding a course	Nick Cotton	Getting a new job	Broken card reader
Attending a course	Pat Butcher	Signing on in a new location	Wrong information
Using the library	Victor Meldrew	Immigration status	Credit exceeded
Joining the Credit Union	Hyacinth Bucket	Getting married	Bus full / delayed
Making a deposit or withdrawal	Scrooge	Having a child	Refused prescription
Collecting a pension/benefit payment	Fagin	Death of a partner / relative	Criminal investigation
Ascribing rights to a carer	Captain Picard	Chronic progressive illness	
Obtaining benefits advice	Geordi	Becoming bankrupt	
	Wesley	Going into prison	
		Suffering an injury	

A number of hindrances to the use of the Internet by older people were identified in a report from the Auditor General[5]. These included: physiological problems; lack of confidence; concern about cost; fear of technical language; and lack of skills. The report encouraged government agencies to be proactive in their efforts to promote e-services to older citizens and proposed that such e-services could transform the lives of older people. Hawthorn[6] and other researchers have identified physical, cognitive and sensory limitations associated with old age and have reviewed the implications of these for interface designers. It is therefore important, in any kind of public access research, to involve the users for whom the service will be designed. To identify and address the diverse requirements of this age group is vital, especially when these requirements may change over time, and even over a very short period of time for an individual[7]. Both Olsson[8] and Zajicek[9] recommend actively involving potential users in the usability, design and evaluation stages of such a project.

Scenarios and pastiche scenarios.

The DATES project began with a series of six awareness-raising focus group interviews in both Sheffield and the Black Country. Analysis of the interview transcripts led to a number of key issues being identified. The content and structure of the scenarios was derived from these key issues, and they were also used as prompts in the scenario writing exercise (*Table 1*). As Fallakhair et al.[10] state, the realism of scenarios depends upon the results of requirements elicitation work. Their reported study also used focus group discussions to develop realistic scenarios for learning technologies.

Scenario-based design has been used for some time to help systems designers develop and build applications that correspond to human activity. Carroll[11] shows how scenarios are stories, using settings, actors and human goals to work through particular events and react to potential changes. In his paper he demonstrates five ways that scenarios can address various technical challenges: (i) They provide a reflective space for designers to contemplate the context of their work, (ii) They allow designers to manage dynamic or ambiguous situations by being both concrete, in terms of offering a specific interpretation, and also flexible, in terms of being provisional and easy to revise, (iii) They describe a design at various levels of detail, allowing multiple views of the problem and their potential consequences, (iv) They provide a platform of technical

knowledge within an area where technical design is still developing, and (v) They focus on the needs of the users, rather than on the design constraints of the work.

This has encouraged designers to utilise scenarios in human-based participatory design work, but some people have found that such scenarios are boring, because the actors at the centre of the story are not appealing, or do not evoke sufficient interest in them. Nielsen[12] proposes the use of screenwriting techniques to generate stories where the actor in the scenario is a vivid character that the designers and participants care about.

In their recent work Blythe and Monk[1] also found that the scenarios they used were boring for the participants and provoked little discussion. Exploring Nielsen's[12] proposed technique, they discovered that screenwriting is not really a suitable method, since it requires great writing skill, which may not always be available in the team. Their method to overcome this is to use a pastiche writing technique, where the scenario writer borrows styles and characters from well-known literature in order to provoke a reaction from the participants. They demonstrate with examples taken from Dickens, Wodehouse and Laurie Taylor. These pastiche scenarios still address the technical challenges of Carroll's paper[11], but in a way that stimulates the imagination and understanding of the participants.

METHODS
Pastiche scenarios
As explained above, pastiche scenarios borrow characters and the author's style from well-known literature and use them to present a story representing the design issue under discussion. This method, it was felt, would help the participants in the usability workshops to un-

derstand how smartcards could be used in daily life. By encouraging them to write their own scenarios, it was hoped that some of their concerns and problems would also be brought to the surface.

A session in front of a whiteboard with most of the project team generated a variety of life events that would require a user to make use of their smartcards. To make these accessible to the participants in the workshops it was decided that example scenarios should be written using familiar characters carrying out tasks related to these life events and using smartcards in their normal environments. The pastiche scenarios shown in Blythe and Monk[1] were all based around literary characters. The team's suggestions proposed characters from familiar TV soap operas (Coronation Street, East Enders), sci-fi series (Star Trek) and some very familiar characters from Dickens (Scrooge, Fagin). It was felt that TV characters were more familiar across the age groups in the workshops and, particularly the soap opera environments, were such that some of the participants could identify with. Some of the UK's current role models of older people are to be found in TV soap operas and situation comedies. They portray similar financial problems, health issues and life experiences as those encountered by some of the workshop participants.

In order to demonstrate what was meant by a pastiche scenario, a number of examples were written by members of the research team using, to the best of their ability, the characters' styles and personalities from the television programmes. Examples 1 and 2 below show examples of smartcard use by older people - Blanche Hunt and Jack Duckworth, both characters from *Coronation Street*. Other examples used younger people (Karen McDonald from

Coronation Street, Captain Picard and Geordi and Wesley from *Star Trek: the next generation*). While not writing in film script style, the writers of these scenarios still aimed to achieve a close pastiche of the dialogue style and personal interaction of the characters.

These pastiche scenarios were presented to the participants as A0 posters during the workshop. The examples provided an opportunity for discussion and comment, before the groups embarked upon writing their own pastiche scenarios.

Example 1: Deirdre collects Blanche's pension

Deirdre picked up her handbag and checked that her smartcard was there. She was going to the hospital to visit her mother, Blanche Hunt. She left the house and caught the bus on the corner, paying for the journey with her smartcard.

"Hello Mum," she said, as she arrived at Blanche's bedside.

"I'm glad you've come at last," Blanche snapped. "I need you to pick up my pension and make a deposit into the Rosamund Street Credit Union for me."

"You know I can't do that," Deirdre remarked, "unless you give me permission."

"Well, I've been talking to the ward sister and they've got a special machine, a computer, so I can do the permission thingy. Go and ask her for it."

A few minutes later, Deirdre wheeled the computer/card reader trolley up the ward and positioned it by Blanche's bed.

"Give me your card, Mum."

"I'll do it myself, thank you. I'm not gaga yet!"

Blanche fumbled through her capacious handbag and eventually produced her own smartcard. She placed it in the reader slot and followed, step by step, the instructions on the screen.

"Right," she said, as she pressed 'con-

firm' for the last time and her card slid out. "Now put yours in for identification."

Deirdre put her card into the reader slot and confirmed that the information was correct. Taking her own card out, she held out her hand for her mother's.

"Now don't you lose it!"

"How much deposit do you want to make?" Deirdre asked.

"Twenty-five pounds for this week and twenty-five pounds for next week. Because I'll still be in here until next Wednesday."

"All right, Mother. I'll bring your card back when I come to see you tonight."

Deirdre headed down to the Kabin Post Office and presented both cards to Norris behind the counter.

"I'd like to collect her pension. I think she's owed two weeks."

Norris checked Deirdre's card first.

"Mrs Deirdre Rachid?" he queried.

"Yes."

Then he put Blanche's card into the reader slot.

"She's actually got 3 weeks pension to collect and she has authorised you until the end of next week. Right, she is now credited with 3 weeks pension." Norris smiled. "How is your mother today?"

Deirdre retrieved both cards and smiled back. "Why don't you go and visit her? She'd be pleased to see you."

Round the corner, at the offices of the Rosamund Street Credit Union, she handed over her mother's card.

"Deposit 25 pounds for this week and the same for next, please."

"That's done," said the Credit Union officer and showed Deirdre the screen that confirmed the transaction.

Later that evening Deirdre returned to the hospital and gave her mother the card back.

"Right Mum, that's done. Now, what else can I do for you? Oh, Norris was asking after you. I told him to call and visit you."

"What did you do that for?" Blanche re-

torted. "I don't want to see that old fogey!"

Example 2: Jack uses his smartcard
Jack Duckworth sat in the Internet Cafe and logged into www.pigeonfanciers.co.uk. He needed more pigeon food and a friend had told him that this site offered a good discount on purchases. He took out his smartcard and ordered the food to be delivered to his allotment, where his pigeon loft was situated. He paid for the food using his smartcard and noted that it would be delivered that afternoon.

He decided to make his way to his allotment and spend the day there, out of Vera's way. He called into the local shop to buy his favourite newspapers, some milk and some biscuits. When he came to pay, he realised that Vera had not given him any cash that morning. However, his smartcard had an e-wallet, where he knew he had a few pounds of electronic cash. The shop accepted e-cash, so he was able to pay. He also found out that he had £4.63 left in his e-wallet.

He remembered the old days, when he could buy things on tick and Vera would pay the bill at the end of the week. Nostalgia's not what it used to be!

The DATES Project
The first phase of the DATES project consisted of semi-structured discussion about high capacity storage technology, mobile communication technology and smartcards. These focus groups included between 6 and 10 participants, and utilised appropriate prompt material (for instance, mobile phones, smartcards, memory sticks). Participants included groups of young learners; IT learners of all ages, including a specific group of older IT learners; members of Credit Unions; members of a disability forum; and a group of Bangladeshi women. The focus group discussions took place in November and December 2004 in Sheffield and in the Black Country (Walsall, Wolverhampton, Sandwell and Dudley). The analysis of the interview transcripts provided evidence of issues to be worked through in the usability workshops, identifying user requirements from smartcards.

The second phase consisted of usability workshops of between 5 and 8 people. These took place during December 2004 in both Sheffield and the Black Country and used, as far as possible, participants from the preceding focus group interviews. The workshops combined structured discussion and two specific exercises: a pastiche scenario exercise and a resource allocation exercise.

A short series of pastiche scenarios were presented to the participants. Each scenario represented a possible usage context for the DATES technology and was printed up as an A0 poster, one poster per scenario. The posters were then stuck to the wall and a short discussion was held by the full group. Key questions included: (i) "What do you think about the characters / what are they like?", (ii) "Is this scenario realistic?", (iii) "Is this scenario important for you?", (iv) "What could go wrong in this scenario?", and (v) "Would this sort of scenario be useful for you?".

Following this exercise, workshop participants were introduced to the pastiche scenario writing technique. They were divided into small groups and given cards suggesting particular activities, characters with whom the participants would be familiar, possible life events that might alter the scenario, and problems with the smartcard or its associated technologies. These were intended to prompt their creation of new scenarios that sought to match the proposed technologies with their own values and lifestyles. After the writing was finished,

these scenarios were also discussed to identify services and design features that might be valued by each user group. They were also used to identify potential usability and compatibility issues that could impact on the technology. During the writing of the pastiche scenarios, much discussion took place in each small group, along with a great deal of laughter.

The resources allocation exercise required participants to 'spend' £100 of Monopoly™ money on a variety of potential services that might be provided by a smartcard (*Table 2*). They were also asked to suggest other services that they would, as a group, find useful. This allowed their priorities to be ascertained. Although not reported here in detail, some of the results of this exercise are discussed below, because the groups' priorities often echoed some of the aspects of the pastiche scenarios they wrote.

The following section presents the results of three of the usability workshops:

the first was a group of young IT learners from the Black Country; the second was a group of older retired IT learners from Sheffield; the third was a group of Credit Union members from Sheffield. This group was of mixed ages.

RESULTS
Workshop 1: Young IT learners
This group of young people from Wolverhampton comprised six males and one female. They were all aged under 25 and were not in full-time employment. The course they were taking was part of the 'New Deal' training package, designed to prepare young people for employment. They displayed a much higher level of technology literacy than other groups, used technology much more than others in the study, and had a more positive attitude to IT in general.

In the initial discussion the young IT learners described the sample smartcards as 'boring'. They expressed a strong desire to choose their own design for the smartcard and personalise it to fit their 'image'. This image, for

Table 2. Services for resources allocation exercise

Services suggested by research team	Services suggested by groups
Benefits / services advice	Driving licence
Council / general form filling	Information storage and retrieval
Course attendance reward scheme	Mortgage / rent payments
Credit Union	Shopping / going out
Games	
Learning course records	
Leisure Centre	
Library	
Logging receipts	
Medical (Emergencies)	
Medical (GP)	
Medical (Prescriptions)	
Medical (Remind to take drugs)	
Phone top-up	
Prevent junk mail	
Small payments	
Store & remember appointments	
Store loyalty card	
Tax & Benefits advice	
Transport (buses / car-parking)	

most of the group, was occupied with computer games and appearing 'cool'. The moderators struggled to engage the attention of the group to the presented pastiche scenario, which was written using *Star Trek* characters. When the scenario writing activity began, the young IT learners rejected the offered characters, because they stated that they would not watch that kind of programme on television. Cartoon characters were offered instead (e.g. *South Park*), but in the end a scenario was written around a character from a computer game. This proved difficult to manage because computer game characters do not normally engage in everyday-life activities. The imagination of the young IT learners could not handle the leap from a game scenario to a smartcard scenario. For this reason, no example of their pastiche scenario can be given here.

Another interesting result from this group came in the resource allocation activity, where participants were asked to distribute £100 of Monopoly™ money around a number of services, or to identify other services they would prefer. The young IT learners allocated £69 of their available resources to the idea of incorporating computer games activities into the smartcard. While this may seem excessive, there are some serious potential applications and consequences if this age group is to be engaged in smartcard use.

Workshop 2: Older retired IT learners
The participants at this usability workshop were all retired people, over the age of 65, taking a course in the use of IT and the Internet. The group comprised five women and one man; they were familiar with each other and comfortable to be together in this situation. The workshop was conducted on the premises of the training provider in Shef-

field. No one in the group would describe themselves as being computer literate, but all had a small measure of confidence in using IT and the Internet.

In contrast to the young IT learners the pastiche scenario, using characters from *Coronation Street*, provoked a good deal of discussion. They were more than happy to be split into two groups and write their own pastiche scenarios. These are shown below as Examples 3 and 4. Much discussion and some laughter accompanied the devising and writing activities.

During the development of the 'Scrooge' scenario, one of the participants divulged that he spent up to £8 a week on taxis just to go into town to get money out of the bank. There were one or two others with this problem also and this was brought out, to a certain extent, by the scenario. Filling in forms, for example to claim benefits, register for courses, apply for employment, was a significant activity for many of the users in all the groups. The ability to pre-populate forms was valued by all groups, particularly older retired people. Again this was revealed in the workshop, both by the scenario writing and by the resource allocation activity.

The resource allocation exercise also identified the fact that the groups of older and disabled people valued the idea of keeping copies of medical records on the smartcard that could be accessed during a consultation with a doctor. Although medical information and applications were not part of the DATES Project, this was a key issue for many of the participants.

Example 3: Scrooge rents a video
Scrooge leaves the house, but realizes that his bus pass is out of date because he only buys one when he needs it.

Whilst on the bus he finds he can renew his pass by paying with his smartcard. His bank account will have the money deducted. Auntie Mary gets impatient because she is in a hurry and she can't get on the bus (and it is raining). Scrooge shouts "Humbug!"

On arrival at the video shop he chooses a video, but can't pay for it because he doesn't have enough funds left. (He did not realise it was getting low.) It would have been useful if he had known somehow that it was getting low (for instance, by a flashing light?). If he could transfer some funds from his deposit account to his current account, that would be useful. He now wishes that he had taken up the bank's offer before then to do this. And he has no friends who could lend him the money. He thinks it would be helpful if the bank could have topped it up so it didn't get below a certain amount.

He rushes home because he wants to make sure all the correct sum of money had been transferred. He puts his card in his home computer and this is verified. He looks through his instructions to find out how to amend his bank arrangement. Luckily the instructions are written simply step-by-step and consistent with other things he has changed or added to his card.

Example 4: Fagin attends a course
Fagin attends a course at Agewell (but his smartcard isn't working because he washed it in his jeans).
He slides his card into the card reader; it doesn't work so he can't get in. He buzzes up to the receptionist and explains. (He reviews the situation.)
"How do we know it is you?"
He answers the security questions correctly so they let him in. (The card holds this information, which Agewell holds on its database.) When he gets in, they

explain to him how he can get a new card.
Where would the new card come from? What about the expiry date? Fagin could prove who he was when getting the new card by using his thumbprint/iris scan. Fagin tried to pick a pocket or two to get another card but found his thumbprint did not allow him to use them.
National Insurance number is unique, so this could be another identifier. The combination with thumbprint/iris should be foolproof.
Fagin got a new copy of all his Agewell A-level Accountancy coursework onto his new card, plus all of his personal details and previous qualifications. After this, he turned over a new leaf and applied for the post of Senior Lecturer at Sheffield Hallam as Head of IS — proving what qualifications he had by showing them his smartcard information.

Workshop 3: Credit Union members
This group consisted of members of a Credit Union, of a mixture of ages from early 20s to mid 60s. Seven participants, four men and three women, introduced themselves round the table. Some of them knew each other, but not all did. Their ages were: 2 in their 20s, 2 aged 30-40, 2 in their 50s and one aged around 65. The usability workshop was held in a room at Sheffield's Town Hall. Some of the participants were confident about using IT, but others were less so. However, most had a mobile phone that they used with confidence.

As with the older retired IT learners, the pastiche scenario, again using characters from *Coronation Street*, prompted a good deal of discussion and debate. The older participants were more articulate, but with encouragement, the younger participants also joined in. The pastiche scenario writing activity generated some interesting ideas that were discussed freely as the work pro-

gressed. The scenarios are shown below as Examples 5 and 6.

Among the Credit Union members there was a mix of interest in the resource allocation exercise. Some users valued the ability to make purchases using a smartcard, but other users emphasised the need to make deposits close to home, without the cost of travel. For example, in order to make a £10 deposit, paying £2.40 in bus fares is unacceptable. To be able to make deposits or loan requests at the local newsagent would be a useful service from the smartcard.

Another discussion that took place in this group concerned the use of Picture PINs (Personal Identfication Numbers). Some users find remembering PINs and passwords difficult. As more and more services are delivered via electronic systems, this is an increasing problem. One concept that has been explored in some systems is using pictures rather than numbers to support authentication[13]. User tests with this approach suggest that some users find remembering four images much easier than remembering an arbitrary sequence of four digits[14]. A variety of techniques for using such pictures were explored by de Angeli et al.[14] including: selecting a sequence of four pictures with each correct picture presented in a single page display accompanied by a randomly chosen set of distracters (but always with the target picture in the same location); selecting a sequence of four pictures accompanied by distracters but with the location of the target picture changing on each authentication attempt; identifying a 'portfolio' of eight images from which four are selected in each authentication attempt and presented on a single page with twelve distracters. All of de Angeli's[14] examples were drawn from a large database of photographic images, with each

user being assigned a random sequence of four images. Dhamija and Perrig[13] used randomly generated images; the user must select one image from each of the four 'pages', each of which includes a group of other images as distracters. The positioning of the images was the same on each attempt. The explanation given of the technique included the idea that the users might select their own images.

However, the approach may have limitations as one of our user groups discovered when exploring a scenario in which Nick Cotton (from *EastEnders*) tries to use his mother's (Dot Cotton) card. Because Nick would know his mother well, he would have a good chance of recognising images she would select for her Picture PIN. The pastiche scenario here demonstrates the multiple levels of problems and consequences, as described by Carroll[11].

Example 5: Pat wants new skills
Someone asks Pat to put up a poster in the bookies. Pat decides she needs new skills. She thinks it might be good to learn to make her own earrings. She plans a trip down to Walford Community Centre to find out what courses are on offer. When the bus comes she realises she has forgotten her card so she rushes home to get it and phones for a taxi. She pays for the taxi with her card.
When she gets to the Centre there is a booklet, but there are no copies to take away. But a screen is available to browse through. [Some touch screens are too easy to read over the shoulder.] Reading the card the machine 'sees' her 'personal interests' information. There is a course on jewellery making but only Up West and Pat never goes there. So Pat responds by asking the screen to show her something similar in Walford. The machine suggests she tries car

maintenance based on her connection with the garage. She is so unhappy she headbutts the machine but gets her earrings stuck in the screen surround.

Example 6: Dot uses the library
Dot finds Nick's library books in the bin with the middle pages ripped out. "Oh no!"
She asks Nick but he claims they were all like that when he got them. Dot quotes Ezekiel 4:72 – Nick refuses to admit the problem. The letters start arriving from the library. These books have been overdue for 10 years. Dot phones the library and confesses (she has also moved house). She puts the smartcard in her phone and reports her new address. She says she wants to pay for them all. The library puts a fine of £50 on Dot's account.
Dot walks round to the newsagent to arrange an emergency loan from the Walford Credit Union, to be repaid at £1 per week for 53 weeks. With the loan Dot can now pay the fine. She also changes her photo ID set so that it is secure from Nick.

Discussion
Pastiche scenarios allowed users and designers alike to explore an unknown technology by means of a familiar environment. 'Scrooge', 'Fagin', 'Pat' and 'Dot' let them try out possibilities and discover problems, suggest uses and solutions to their everyday needs. It was interesting to see the different groups working with pastiche scenarios and identifying the potential issues of smartcards. It was also interesting to see the different attitudes of the age groups being used. Older participants seemed more willing to exercise their imagination, engage with the characters and settings, and explore the challenges posed by smartcards. The younger participants, even those in the mixed age group of the Credit Union members, seemed more re-

luctant to let their imagination take the leap into a different setting for the character. This is an issue that merits further study to confirm that there is indeed a difference in age groups and the use of scenarios.

We believe that in this research study it would not have been sufficient simply to discuss the pastiche scenarios written by the research team. It was important to allow each group to have ownership of the process and create the pastiche scenarios that interested and stimulated them, and through which they could identify both the problems and the benefits of smartcard technology on their own terms. While 'standing in the shoes' of the pastiche scenario characters, they allowed the research team to see the issues that were uppermost in their minds. The subsequent discussions with the whole group brought these issues to the fore. This then informed the resource allocation exercise that allowed the research team to 'quantify' the priority of their requirements.

The five reasons identified by Carroll[11] and listed above can be used to evaluate the findings of the usability workshops and, in particular, the use of pastiche scenarios as a methodology. For the team working on user requirements and usability issues, although not as designers, it allowed a space for reflection. In identifying the key issues relating to smartcards and developing and writing the example scenarios we were able to explore the context of the DATES Project.

As we observed the discussions around both the example scenarios and the ones written by the workshop participants it was possible to see the concreteness of the setting of the scenario, and also the flexibility of development

in terms of the characters and their actions. All four of the scenarios devised by participants explored the actions of someone who may be dishonest, aggressive or untrustworthy. Although this was done with humour, it alerted the research team's attention to the fact that not all potential users are honest or trustworthy and that safeguards should be built into the system.

The timing of this study inevitably brought up issues around civil liberties and the current debate about a national identity card. Some groups expressed a concern about the idea that a 'Big Brother' computer would hold all their personal information. But the general feeling seemed to be that 'if you had nothing to hide, you had nothing to be afraid of' and that much of the information was already held somewhere or other. The pastiche scenarios allowed both the team and the participants to explore multiple views of this particular problem and its potential consequences. Again, these issues were brought to the attention of the technical design team.

The debate, especially for older participants, about memory, security systems and Picture PINs identified an area where technical knowledge is more developed than technical design. It was through the 'Dot and Nick' scenario that these security issues became apparent and led to further design efforts by the technical design team.

The fifth reason, that of focusing on the needs of the user can be seen, not through a scenario — or rather through the lack of a scenario. The young IT learners did not really engage with scenario writing, and wanted to allocate £69 out of £100 to games as a service on their smartcards. As designers we have to step back from our initial reaction of thinking that this is just a frivolous attitude. To bring this age group forward we have to engage with them at their level. For example, reward schemes could be linked with the vendors of computer games. The smartcard could be used to pay for time in multi-player games, or aspects of the card scheme could include competitive elements.

In exploring the attitudes of older people to smartcards and design methods such as pastiche scenarios, it has necessarily thrown into relief the equally interesting attitudes of young people. This is an important aspect of such research.

CONCLUSION
The development of pastiche scenarios as a design methodology has allowed the usability workshops in the DATES Project to produce useful and important comments about the provision of smartcard technologies to groups that are under-represented in the community, and often on the 'wrong' side of the digital divide. Using television characters, rather than literary figures, meant that people who normally watch television, rather than read, could still participate in the exercise. In the groups we studied, it appeared to be the older participants who engaged with the process more readily than the younger ones. Perhaps the simple explanation for this is just a greater life experience. However, it would be useful to continue to study the characteristics of user groups engaging with pastiche scenarios.

A group of older people is just as varied as any other segment of the population and just as articulate about their requirements as younger IT users, but uses less jargon. They display irritation with their physical competencies in using the technology, but equal irritation with the technology for not accommodating their self-reported 'inadequacies'. Using

these participants to generate pastiche scenarios about smartcards has tapped a rich vein of experience and humour. The usability results from this part of the DATES Project have provided the smartcard technical developers with a great deal of useful feedback.

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