

## **Briefing from the University of York**

### **Accessible digital banking The needs of eighty and ninety year olds**

**Results from "New approaches to banking for the older old"  
A research project funded by the Research Councils UK,  
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## Accessible digital banking

### The needs of eighty and ninety year olds

Modern digital banking systems simply do not meet the needs and desires of many of our oldest citizens. Researchers at the Universities of York, Newcastle and Northumbria have been working with eighty and ninety year olds to understand exactly what these needs are. They have designed, with members of this age group, a number of illustrative new services and technologies that show how the payment systems and services provided by UK banks could be made much more inclusive.

#### ***The need for cheque-like payments***

The eighty and ninety year olds who worked with the researchers to develop these provocative ideas saw great value in cheques for certain kinds of payment. Many of them were meticulous record keepers and valued the paper record provided by the cheque book stub. They also valued the flexibility of being able to simply write the name of the payee on the cheque rather than getting a bank account. Most of all they valued the experience of writing a cheque, particularly for gifts and donations.

Despite these obvious advantages, payment by cheques is one of the services the banks wish to withdraw. The cheque clearance system is costly to the banks and these costs are not currently reflected in bank charges. The pictures below are of devices developed with the eighty and ninety year olds to maintain the properties of cheques that they valued. A familiar paper cheque is used to initiate a purely electronic transaction. There is no reason why this transaction needs to be the responsibility of a bank and the eighty and ninety year olds suggested local organisations who might take this on. The researchers have gone on to make a working automated system capable of transferring money in to a Paypal account using Amazon Mechanical Turk.



**Cheque scanner and cheque book. Payer writes a cheque. This is scanned by the payer or the payee to initiate an electronic transaction.**



**Electronic pen and cheque book. Here the Anoto<sup>®</sup> pen senses what you write and transmits the information to the payment system.**

### ***The need for other people to make financial transactions for you***

For some of the eighty and ninety years olds who spoke to the researchers mobility problems and a lack of experience with modern bank accounts meant they received help from others in making financial transactions. Some would ask trusted third-parties such as family members or caregivers to withdraw money on their behalf. Others would ask people to pay their bills on their behalf. These people still desired to keep control of their own finances—they just required some support in order not to be disconnected from their own money. Current banking services and policies explicitly forbid much of this behaviour. What is required is some mechanism for delegating small well defined financial tasks to another individual in a way that limits the risk of abuse of the necessary relationship of trust by either party.

In response to these issues, the researchers have explored how a 'Guardian Angel' service provided by a bank could achieve this. This service would provide an account holder with an extra card that can be temporarily shared with others. In our simulation, a touch screen device is used to illustrate how the Guardian Angel card could be authorised for use by a helper, for example, to withdraw a specific amount of cash from a given ATM within a specified time limit. Alternatively, the account holder can preset what shops the card can be used in and for how many transactions.

A formal analysis of the "workarounds" used by housebound people to get cash and shopping was used to develop the Guardian Angel service. This model is intended as a tool that could be used by any organisation wishing to support delegated payments.

### ***The problem of PINs and passwords***

One of the reasons why cash and cheques are preferred by many of the eighty and ninety years olds was that these systems did not require the use of PINs or passwords to access funds. Many of the people who worked with the researchers felt the need to write down the numbers the banks provided them with, hiding them in diaries and address books. Others struggled so much with these security systems that they need friends and carers to help them

remember and enter the codes. PINs and passwords are a not ideal for many people but the oldest members of our population they are clearly very problematic.

Biometrics, such as fingerprints and iris patterns, provide an alternative to PINs and many of the eighty and ninety years old co-designers were very open to using them. The very large number of PIN-based services currently in use in the banking and retail-service sector would make a move to replace them with biometric authentication systems very difficult. A secure PIN reminder, however, could be used with any of these services. The secure PIN reminder below uses three personal identifiers (fingerprint, hand gestures and body sway).

The secure PIN reminder is intended as a provocation to the banking industry. It highlights the lengths to which people have to go to use a unusable system. Banking policy and the technologies implemented in payment systems have a long way to go before than can be judged as accessible to the full population of people that need to use them.



**A secure PIN reminder.**

**For more information on the "New approaches to banking for the older old" research project visit:**

<http://www.cuhtec.org.uk/banking.php>