Understanding human values
in banking technology

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Project report submitted in part fulfilment of the requirements for the degree of Master of Science (Human-Computer Interaction with Ergonomics) in the Faculty of Brain Sciences, University College London, 2014.

ACKNOWLEDGMENTS

I would like to extend special gratitude to my supervisor, Ann Blandford, for her unwavering encouragement and mentorship throughout this project. Thank you to all of my participants for giving their time. And thank you to my family and friends for their patience and support.

ABSTRACT

Technology has revolutionised the way people bank in the 21st century. Online and mobile banking, self-service websites for financial products, and cashless spending are all normal parts of banking, with these digital methods more popular than their analogue, offline alternatives. The opportunities in digital banking have lead to huge investment from banks, financial providers, and technology startups. However, despite the popularity and investment, the research community has remained mostly hands off banking and finance. The only models, theories and frameworks of electronic banking come from the marketing community concerned with quantitative, consensus views to assist promotion. This research project used qualitative interviews to investigate banking behaviours and thematic analysis to understand people's motivations for choosing digital or analogue banking channels. These methods informed a flexible model of the human values most influential in people's perceptions and experiences of online and offline banking. The model includes seven interacting values broadly split into two groups: 'compatibility' with environments, lifestyles and ideologies; and the 'assurance' of security, comfort and trust. The model is developed, explained, and used to explore the potential impact of emergent financial technologies.

CONTENTS

CHAPTER 1.   INTRODUCTION

Technology has revolutionised banking. Digital technologies affect how consumers use, research, buy, and maintain nearly all financial services and products. It is typical for people to maintain bank accounts using websites or mobile apps, independently research and buy financial products at home, and make payments without ever handling cash. Within the multi-channel financial ecosystems, the new and popular digital channels complement traditional analogue methods, such as high-street branches, cheques, and cash (BBC News, 2014; Khatri, 2014).

The successful adoption of the major banking technologies over the past few decades – ATMs in the 1980s, automated telephone banking in the 1990s, and online banking in the 2000s – is mainly attributed to the high levels of "convenience" and "ease of use to adopters" previously unavailable with traditional in-branch banking (Black, Lockett, Ennew, Winklhofer, & McKechnie, 2002). The banks also make huge cost savings from directing their customers towards online channels (Dandapani, 2004; Gerrard & Cunningham, 2003; Hughes, 2006; Pikkarainen, Pikkarainen, Karjaluoto, & Pahnila, 2004), so they will increasingly adopt and rely on digital to facilitate servicing, communicate information, and sell products. Recognising the huge opportunities, this shift to digital banking shows no sign of slowing; there is currently huge investment from big high-street banks and small start-ups in emergent financial technology (or 'fintech'), especially in London ("Companies - Level39," 2014; Prosser, 2014; Skan, Lumb, Masood, & Conway, 2014). However, with their raising expectations, consumers are becoming increasingly dissatisfied with their bank's recent digital products, especially on mobile phones (Capgemini, 2014; Marous, 2013). To meet increasing consumer demands, the financial services industry must look beyond the basic factors that popularised their past technologies and

look towards designing human-centred products and services, else new innovations may fail to meet human needs and become costly mistakes.

Many of the studies in usage and adoption of banking technologies are published in marketing journals, typically using quantitative surveys to test hypotheses around the Technology Acceptance Model (Davis, 1989) or Innovation Diffusion (Rogers, 1995) to gather consensus view from the population. These studies mainly attribute the successful adoption of online banking to promotion of its convenience, ease of use, and low risk, mostly ignoring the important contextual and holistic factors that effect people's perceptions, experiences, and behaviours. It is apparent that human-centred methods did not influence the design of financial technologies from the past decades, nor was there thorough evaluation from the human-computer interaction community.

Technology acceptance is dependent on the technology meeting human needs and values, otherwise it will not be efficient, helpful, or trusted. For example, life insurance is still bought with the help of a human advisor due to the product complexity and high risk of an incorrect purchase (Frambach, Roest, & Krishnan, 2007). Some emergent payment technologies include contactless cards and mobile phones to capitalise on convenience for consumers and lower costs for banks and merchants. However, the public is unfamiliar with these new and ubiquitous technologies; people may distrust and rejected them if they do not meet their intended audiences' requirements.

Dourish and colleagues (Dourish, Grinter, Delgado de la Flor, & Joseph, 2004) looked at people's understanding of online security using Grounded Theory to analyse qualitative interview data as their goal was "not simply to document what users do, but rather to understand their experience." This is compatible with

Yvonne Rogers' view that HCI research is entering its "third paradigm" (Rogers, 2009) with a focus on understanding human values, context, and emotion. Black *et al*. (2002) used qualitative focus group interviews to uncover the interactions between human, product, channel, and organisational characteristics when customers are researching financial products.

Based on the human-centred research approaches of Dourish *et al*. and Black *et al*., this research project used qualitative interviews and thematic analysis to gain a deep understanding of the values, contexts, motivations, and emotions that people experience with their financial products and services, with a view to how these concepts will affect emergent, unfamiliar, banking technologies. This study aimed to address two main questions:

1. **Motivations**: 'What influences people's behaviours when choosing digital and analogue financial channels?'
2. **Impact**: 'How may this influence people's responses to emerging financial technologies?'

Many other industries have seen a similar shift to consumer independence, notably in online shopping, travel, entertainment, and, increasingly, health. This report focuses on banking as a unique domain to examine people's relationships with money, banking and technology. With the financial services industry's increased focus on technology, this is a domain the human-computer interaction community should not ignore.

This reports includes the background literature, experimental method, findings, and discussion of the interview data.

- Chapter 2 'Background' reviews the current literature into online banking adoption, online channel choice, and reasons or non-adoption relevant to this study.

- Chapter 3 'Method' outlines the qualitative interview approach used for data gathering and the thematic analysis method used for data analysis.

- Chapter 4 'Results' reports the main findings and core themes and frameworks developed from the data.

- Chapter 5 'Discussion' deepens understanding of the core themes and frameworks by exploring human goals and motivations, and the implications for current and future e-banking technologies. The limitations of this study are also discussed.

- Finally, chapter 6 'Conclusion' considers the implications of this study and suggests areas of future research.

* * *

Throughout this paper the terms 'internet banking' and 'online banking' are used interchangeably and refer to use of a desktop or laptop computer. The terms 'e-banking' or 'digital banking', are broader and may refer to internet/online banking, ATMs, mobile banking, or other digital technologies. The terms 'offline', 'traditional', and 'analogue' banking are used interchangeably to describe non-digital channels: high-street branches, call centres, cheques, or any other method mediated without technology.

CHAPTER 2.   BACKGROUND

Technology adoption and acceptance is a well-established area of research that looks at the situational and behavioural factors that impact how a new technology may be received or used by its intended audience. In the financial services domain, the goals of this research are often to understand the contexts of use and re-frame the marketing message, or, in some rare cases, to redesign the system or a brand new solution. A review of the existing literature identified three main approaches that researchers take in addressing these concerns depending on their domain expertise and the end reader.

The first type '**e-banking marketing**' typically appears in marketing journals, and is based on the assumption that consumers should be using e-banking services. These papers use quantitative techniques to devise recommendations on how financial services marketeers and managers can effectively market e-banking to their customers.

The second group of research '**multi-channel banking**' is also published in marketing journals, but it acknowledges the complexities of financial services with a holistic view of the multi-channel environment. This research uses either qualitative techniques, quantitative or a mixture of both. These studies unique in that they discuss the contexts and appropriateness of the offline and online channels for the benefit of managers and industry influencers.

The final research type '**banking for underserved audiences**' is published in any journal or conference proceeding from any domain. This research can also be qualitative, quantitative or mixed method. It is differentiated from the other two types of research by looking at the non- or underserved-users of e-banking to uncover requirements and design new technology solutions.

Much of the research outlined is from the year 2000 to present. With the popularity of online banking throughout the last decade, this has been a particularly interesting time to examine adoption and engagement.

2.1. E-banking marketing

The majority of research on e-banking is of this first type. With a marketing steer, much of this research uses Rogers' diffusion model (Rogers, 1995), Davis' Technology Acceptance Model (Davis, 1989), or a theoretical model adapted from either of these. The key themes that affect adoption and satisfaction will be briefly discussed.

2.1.1. Perceived advantages

The theme 'perceived advantages' encompasses terms including "relative advantage", "perceived usefulness" and "optimism" from the theoretical models. Perceived advantages are considered to be the biggest drivers of e-banking adoption (Pikkarainen *et al*., 2004) coming in different guises depending on the consumers' preferences.

The most significant advantage, repeatedly mentioned in the literature, is that of **convenience**; 24-hour banking anytime, anywhere (Durkin, 2007; Eastin, 2002; Eriksson, Kerem, & Nilsson, 2008; Gerrard & Cunningham, 2003; Polatoglu & Ekin, 2001). This is not just true of internet banking, Durkin's summary of previous literature (Durkin, 2007) reported that the biggest driver of ATM adoption was the convenience of time and place. A voice of dissent comes from Liao & Cheung in their study of Singaporean attitudes to e-banking. They found convenience to be the least important advantage after five other factors: "accuracy, security, transactions speed, user-friendliness [and] user involvement" (Liao & Cheung, 2002).

Time-savings, **speed**, and efficiency over traditional offline banking are other significant advantages that drive adoption (Eastin, 2002; Eriksson *et al*., 2008; Jayawardhena & Foley, 2000) with the long-term- or regular-users feeling the greatest speed benefit (Polatoglu & Ekin, 2001).

The **monetary costs** or economic benefits are only minor drivers of e-banking adoption (Eastin, 2002), with Gerrard & Cunningham explaining that even with reduced fees are only "nominal benefits" (Gerrard & Cunningham, 2003). Users perceive few cost benefits to banking or buying financial products online.

Yet, with these convenience, speed and cost advantages, some studies have found no direct, or only weak, relationships between perceived advantages and actual use (Eriksson *et al*., 2008; McKechnie, Winklhofer, & Ennew, 2006). Lassar and colleagues summarise this: "The benefits of this new technology do not, in and of themselves, explain why some consumers embrace the new technology … and others do not," (Lassar, Manolis, & Lassar, 2005).

2.1.2. Ease of use, complexity and self-efficacy

The broader concept of 'ease of use' has an effect on e-banking use, with negative perceptions and fears of complexity being a detractor for non-users (Gerrard, Cunningham, & Devlin, 2006; Wang, Wang, Lin, & Tang, 2003), and poor usability, navigation, and access issues affecting satisfaction amongst users (Jayawardhena & Foley, 2000; Polatoglu & Ekin, 2001).

Some studies found the attribute of self-efficacy (or technology confidence) did not affect e-banking adoption (Eastin, 2002; Lassar *et al*., 2005). Yet other studies did; Wang and colleagues found: "Users who have a higher computer self-efficacy are likely to have more positive usefulness and ease of use beliefs," (Wang *et al*., 2003).

Although these ease of use and complexity factors were important in adoption, some claimed they were not as important as the perceived advantages of the financial technology (Eriksson *et al.*, 2008; Pikkarainen *et al.*, 2004). Eriksson and colleagues explain: "Customers are often willing to overlook some difficulties of usage if the service provides critically needed functions; however, no amount of ease of use can compensate for a system that does not perform a useful function" (Eriksson *et al.*, 2008). There is an important interplay between the ease of use and perceived advantage factors (McKechnie *et al.*, 2006).

2.1.3. Security

Whilst many of the factors in this part of the literature review support a binary concept of adoption vs non-adoption, McKechnie and colleagues' view was that financial services technology adoption should be seen as a continuum reflecting the users' decision making processes (McKechnie *et al.*, 2006). 'Security' themes of trust, risk, privacy and credibility are in a cluster of related factors that change in importance and visibility as the user's relationship with the technology matures.

To non-adopters of e-banking who purchasing financial services over the internet, security is a hugely important issue and reason for non-adoption (Eriksson *et al.*, 2008; Gerrard *et al.*, 2006; Jayawardhena & Foley, 2000). Older people are especially distrustful (Fox & Beier, 2006). Liao & Cheung felt that in marketing online banking, "Too much importance was attached to attributes like time and location convenience … to the extent that tangible safety symbols like bricks-and-mortar offices were neglected," (Liao & Cheung, 2002). Wang and colleagues have a similar recommendation: "It is not going to be enough to make the system easy to interact with … Develop Internet banking systems with

valuable functions and with a trustworthy protection of security and privacy for the users," (Wang *et al.*, 2003).

Durkin recommends that existing users should still be reassured about security (Durkin, 2007). However, there was an emerging view that once people had adopted e-banking, "The importance of perceived risk is rendered insignificant," (Eriksson *et al.*, 2008); the benefits outweighed the risks (Gerrard *et al.*, 2006). McKenchie and colleagues found that perceptions of insecurity, "No longer appear to stop consumers from finding information and purchasing [financial services] over the internet," (McKechnie *et al.*, 2006).

2.1.4. Minor effects

The following areas are not fully explored by the quantitative research and are candidates for further research and examination.

2.1.4.1. *Technology clustering*

"People are more likely to adopt information technologies 'functionally' compatible to those previously adopted," claims (Eastin, 2002), for example, use of telephone banking, ATMs or online shopping (Eastin, 2002; Fox & Beier, 2006; McKechnie *et al.*, 2006) leads to use of online banking.

2.1.4.2. *Enjoyment*

Pikkarainen and colleagues explored the concept of "perceived enjoyment", an "intrinsic motivation" that affects intentions, time of use and frequency of use (Pikkarainen *et al.*, 2004). Yet they found it only had a minor effect on adoption. McKechnie and colleagues, though not specifically looking at enjoyment measures, describe, "A positive attitude towards using the technology is required and perceived usefulness alone is insufficient," (McKechnie *et al.*, 2006).

2.1.4.3.   Compatibility

'Compatibility' incorporates a variety of attitudes, values and beliefs, and in the context of internet banking, it is the opposing social and private aspects that matter to users the most.

Cited studies in Turkey (Gerrard *et al*., 2006) and Finland (Durkin, 2007) identified a preference for "over the counter" transactions and "dealing with humans". This lack of sociability in ATMs and e-banking reduced compatibility and therefore inhibited adoption.

McKenchie and colleagues found that use of the internet at home, not work, affected adoption (McKechnie *et al*., 2006) with a home computer providing additional internet experience, and that banking is a "highly private matter" better suited to the home. Gerrard & Cunningham agreeing that Singaporean adopters, more familiar with modern technology, "Enjoy the privacy that internet banking brings," (Gerrard & Cunningham, 2003).

2.1.5. Demographics

The effects of demographics on adoption is an area of disagreement. Whilst some studies claim that younger males with higher incomes have higher rates of adoption (Eriksson *et al*., 2008; Kleijnen, Wetzels, & de Ruyter, 2004; Lassar *et al*., 2005; Sadiq Sohail & Shanmugham, 2003; Yousafzai & Yani-de-Soriano, 2012) others studies – sometimes within the same paper – found there to be little to no effect (Durkin, 2007; Lassar *et al*., 2005; McKechnie *et al*., 2006).

However, as is described later in this literature review, age becomes an important factor, perhaps due the younger population having an "extrinsic motivation" (Kleijnen *et al*., 2004) towards the perceived advantages of technology. The age difference is not always negative, in fact those aged 34–45

are more likely to use the internet for "getting financial information" than younger demographics (Zickuhr, 2010).

2.2. Multi-channel banking

A key, and often-cited, paper on the topic of "multi-channeling" comes from Black and colleagues (Black *et al*., 2002). To paraphrase their sentiment, much of the existing research focuses on the internet as an alternative to existing channels, yet in the multi-channeled financial services, there is little to explain why users choose one channel over another. This becomes a crucial knowledge gap in the context of Siriluck & Speece's finding that, "Customers do not seem to see the web as a channel to replace traditional relationships, but rather as a way to supplement and enhance the relationships," and they recommend, "Careful integration of Internet services into the other service channels, so that customers can move among service channels at will," (Siriluck & Speece, 2005).

Adding responsibility to the online channel within the multi-channel environment, Howcroft and colleagues identified that, "Delivery channels within the financial services sector also have a long term continuing maintenance role. … The purchase and subsequent management-monitoring of financial services can involve individual consumers using a range of alternative delivery channels." (Howcroft, Hamilton, & Hewer, 2002). Karjaluoto and colleagues felt the transition to generic online services, at the expense of branch closures, has had a negative impact on the traditional banking industry. They propose, "Viewing [the] online banking channel more as a complementary rather than replacement channel," (Karjaluoto, Koivumäki, & Salo, 2003)

The qualitative study from Black and colleagues identified four interrelated characteristics that affect channel selection. They are briefly outlined and related to other literature where appropriate.

2.2.1. Consumer characteristics

Similar themes to what was discussed above in the marketing research appeared within these 'consumer characteristics'. Attributes included:

- "Confidence in the ability to use a particular channel", similar to the self-efficacy themes described earlier.

- Socio-economic, age and lifestyle characteristics, similar findings to the demographics earlier, but with "lifestyle" being highlighted as most significant with online shopping and banking appealing to the "time poor – cash rich."

- Themes around "motivation" touch on perceived advantages (eg. time-saving) or a social motivation towards channels with social interaction;.

- "Affective responses" include the social effect, but also negative perceptions and concerns around security.

- "Ethical attitudes", including social responsibilities and attitudes towards branch closures. This attribute did not feature strongly in the marketing research.

2.2.2. Type of product

Black and colleagues identify product complexity as an important determinant of channel choice, even amongst advanced online banking users. "Simple, low involvement products, such as general insurance and basic banking," are suited to technology-based channels. This is related to perceived risk, where the more complex, or expensive products (e.g. a mortgage or pension) expose the user to a

higher level of risk. There was a suggestion that online and offline channels could "co-exist" and complement each other. Frambach and colleagues agree with this view: "As potential losses may be more evident in case of purchasing a complex service, consumers may prefer the consulting role of the offline channel (that is, a personal advisor) rather than making the purchase decision themselves online," (Frambach *et al*., 2007). And Howcroft and colleagues felt "investment-based products" need a "human interface" (Howcroft *et al*., 2002).

2.2.3. Channel

The channel attributes included accessibility, cost (simply related to time and money), and risk.

2.2.3.1. *Accessibility*

Opening hours was seen as a particular advantage of online banking, but access is limited as the computer can't provide physical cash. The internet was seen as most convenient or accessible as it was possible to see figures visually, and it didn't impose any time pressures.

When looking into three distinct stages of buying mortgage products: *pre-purchase*, *purchase*, and *post-purchase*, Frambach and colleagues identified that accessibility only affected the *pre-purchase* stage, which highlights that, "Accessibility mainly reflects the consumers' need to reduce information search," (Frambach *et al*., 2007). And ease of use only affected channel choice during the *purchase* stage, suggesting this is most risky part of the process.

Jun & Cai identified a bank's responsibility to their online service's *responsiveness*, *reliability*, *accuracy* and specifically *access*. This was especially important for internet-only banks to be quick and responsive via email as they often can't "interact directly" with their customers, and to make available other banks' ATMs fee-free to their customers (Jun & Cai, 2001).

2.2.3.2.   Risk

Risks include:

- Physical risk (eg. of being robbed at an ATM).

- Risk of making mistakes due to inexperience or unfamiliarity. With complex products or transactions people want personal contact for "putting the blame on someone" should things later get complicated (Black *et al*., 2002).

- Typical online security concerns (eg. secure data transfers or hacking). The above review of the marketing literature identified that this was a crucial factor.

2.2.4. Organisational

This final factor included the organisation's reputation – well known organisations are less risky – and the range of channels available. Internet banking was perceived as less risky if the service provider had physical branches. Karjaluoto and colleagues identified that a bank's name and reputation was more important to non-users than users of online banking (Karjaluoto *et al*., 2003).

2.3.   Banking for underserved audiences

The marketing research identified some disagreement around the impact of demographics on e-banking adoption. This may be due to the questionnaire-based methodologies where people are asked to report their intent, rather than monitoring actual behaviour. From government and other official sources, it is clear that some older people are not engaging with digital technologies in the same way as younger demographics (Ofcom, 2011; Office for National Statistics, 2012; Randall & Beaumont, 2010).

The earlier cited paper from Howcroft and colleagues had a wait-and-see attitude to the oldest demographics: "Changes in the use of delivery channels will occur naturally as the population matures and computer usage 'seeps up' into the older age groups, but this process will undoubtedly take time." (Howcroft *et al*., 2002). But to other researchers, older people's disengagement introduces interesting questions on why this is the case, and what, if anything, can be done about it.

Mattila and colleague's research into "mature" (refers to people aged over 65) customers' perceptions of online banking in Finland (Mattila, Karjaluoto, & Pento, 2003) is noteworthy as (at the time the paper was published) Finland had the highest use of online banking in the world, yet three-quarters of their mature respondents had never used online banking. This population was found to be sceptical and negative towards online banking, whilst they are, "Avid readers of financial materials," who enjoy, "The actual process of learning and discovery." According to Mattila and colleagues, the biggest barrier to e-banking adoption was, "Lack of personal service," (Mattila *et al*., 2003). The previously described themes of 'Ease of use' and 'Security' were also factors. There were also misconceptions about online banking being more expensive, especially when adding internet access costs to the transaction. The key takeaway from this research was that this is a "heterogeneous" audience, and services should not be marketed or designed for "homogenous groups".

Vines and colleagues investigated some of these concepts with the "oldest old" (refers to people aged over 80) based on the thesis that, "The banking sector does not provide services that are either appropriate for this age group or make use of their lifetime of banking experience," (Vines, Blythe, Lindsay, *et al*., 2012b). They found this to be an audience who are used to, and reliant on, paper artefacts: paper records, cheques, cash, etc. So having to remember PIN numbers or

passwords and the lack of receipts and paper trails are particularly difficult for this audience to transition to. Their research methodology did elicit some positivity from the respondents towards not having to leave their homes, or the control that comes with online banking, but there was a satisfaction with current methods and a perception that the new methods did not meet their needs.

In an extension to their research, Vines and colleagues specifically used participatory design techniques with the oldest old to design an alternative to cheques (Vines, Blythe, Dunphy, *et al*., 2012a). Their solution was for "digital cheques" using special machine-readable pen and paper technology. This is an example of "invisible computing", promoted by Coleman and colleagues as suitable for older adults because it is, "Not perceived as being computers, but merely contemporary versions of recognisable products," (Coleman, Gibson, Hanson, Bobrowicz, & Mckay, 2010). Vines and colleagues still found people worried about breakdowns and requested a confirmation that the cheque had "gone through", even though traditional cheques do not have this feature.

As found in the marketing and multi-channel research, people of any age and background can be disengaged from or unmotivated to try a new technology, especially with the variety of channel alternatives in banking. Some these themes just outlined are not exclusive to older adults.

* * *

This Background has identified a gap in the research landscape in between the second type that rationalises mass-market consumer choices of current technologies and channels, and the third type that targets underserved audiences with exploration of their unique needs. The remainder of this paper contributes towards filling that gap by investigating mass-market consumer behaviours and underlying motivations for banking channels through qualitative methods.

CHAPTER 3.   METHOD

The study was designed to determine and analyse the factors that influence people's channel choices when interacting with financial services. Qualitative methods were chosen, rather than quantitative, as the intention of the study was for depth and detail of experiences, not to validate existing theories or to simply document behaviours. The methods used were semi-structured interviews for data gathering and a thematic analysis approach to data analysis.

3.1.   Participants

Ten participants were recruited through convenience sampling of the interviewer's extended network of contacts. This sample size aimed to reach theoretical saturation within resource constraints, and was suitable for qualitative methods designed to capture the participants' contextual requirements, rather than looking for differences within sub-groups. Ages of participants ranged from 25 to 54 years and all had experience using both analogue and digital methods. There was a suitable distribution of gender, occupations, and highest levels of education to represent a mass market consumer audience. Participants were incentivised with £20 for their time. Table 1 below lists the participants with any notable demographic qualities.

Table 1 - List of participants

ID	'Name'	Gender	Age range	Occupation	Highest education	Bank accounts
P1	Valerie	Female	35–44	"Mum"	GCSEs	Personal
P2	Jack	Male	45–54	Company Director	O-Levels	Business & Personal
P3	Ted	Male	25–34	Picture Manager	BA Degree	Personal
P4	Claire	Female	25–34	Risk Manager	Undergraduate Diploma	Personal
P5	Steven	Male	25–34	Company Director	A-Levels/ BTEC	Personal
P6	Terry	Male	35–44	Digital Producer	BSc	Business & Personal
P7	Holly	Female	25–34	Science Teacher	Postgraduate Teacher Training	Personal
P8	Derrick	Male	45–54	Artists & Teaching Assistant	BA Degree	Personal
P9	Audrey	Female	45–54	Personal Development Coach	MA Degree	Personal self-employed
P10	Katy	Female	45–54	Drug & Alcohol Recovery Worker	MSc Degree	Personal

3.2. Design

The study aimed to document current channel choices, understand the reasons why people make these choices, and discuss responses to future financial innovations. The interview structure was adapted and refined as the theories progressed.

3.2.1. Interviews

Participants were questioned on recent and past experiences, comparisons between experiences, reasons for choosing methods, channels or products over others, and the contextual issues that may affect motivations. To capture the value-based behaviours, the interviews were open to gathering both digital

(online) and analogue (offline) experiences. Interviews were held in two rounds of five interviews in August 2012 and August 2014.

Semi-structured interviews allowed flexibility and prompting of the participants' responses. The focus of the first round of five interviews was to broadly discuss usage, experiences, and preferences of digital banking methods, loosely based on some themes and assumptions identified during the literature review.

During the initial analysis of the first round of interviews, the most interesting and valuable sections were the deep dive discussions into people's memorable events and behaviours. With a developing conceptual framework, the second round of interviews gathered further insights to validate, refine, or disprove the framework. The discussions were now based on critical incident technique, focusing on good or bad memorable incidents that that participants had experienced with banking and financial services.

To avoid participant fatigue, all interviews lasted between 30–60 minutes, with the average around 45 minutes. Discussion guides for both rounds are outlined in Appendix B.

3.2.2. Analysis

Analysis methods were inspired by thematic analysis (Blandford, 2014; Braun & Clarke, 2006) and grounded theory techniques (Charmaz, 2006; Furniss, Blandford, & Curzon, 2011).

All interviews were fully transcribed from audio recordings of the sessions, whilst concurrently noting any general themes and ideas.

First pass approximate/open coding determined the broad themes and stories. Themes were collated and iterated until theories and patterns emerged. (These

themes informed the discussion guide for the second round of interviews.) Steps 1 and 2 were repeated for both rounds of interviews.

Refining and remodelling the themes via ad-hoc note taking. Some of these refinements were introduced into the final few interviews.

With the complete data set, identifying quotations and re-coding with axial codes for consistency, detailed analysis, and confirmation of the narratives and connections between codes.

Repeating step 4 with axial and selective codes until the basic taxonomy, categories, and concepts had developed and the narratives throughout the data were clear and concrete. At this point, reaching theoretical saturation within the constraints of available data, time, and budget.

3.3.   Materials

Interviews were conducted in people's homes or workplaces. The home interviews were informal and often the participants' children, spouses, or friends were at home.

This study was approved by the UCL Research Ethics Committee (Project ID number: UCLIC/1213/015) and printed information sheets and consent forms were brought to each interview (available in Appendix A). The interview script was both printed and available on a laptop screen for the interviewer's benefit.

Throughout the interviews, an iPhone app 'Dictate + Connect' recorded the interview and some notes were typed directly into a spreadsheet document using Microsoft Excel or Google Sheets.

After the interviews, the voice recordings were transcribed into Microsoft Word or Markdown documents. Pen and paper was used for initial approximate coding of the themes. Evernote Mac and iPad software was then used throughout

the rest of the analysis to type up paper notes, capture and assign quotations, and iteratively re-code using Evernote's tagging features. Pen and paper, the 'Penulimate' iPad app, and 'Omnigraffle' Mac software were used to sketch representations of stories and themes.

3.4. Procedure

Participants were informed they would be participating in an interview discussing their past and recent experiences with banking and finance. Participants were asked to be as honest and descriptive as possible, but they were not encouraged to disclose any personal or sensitive financial information.

After given the opportunity to ask questions, all participants consented to continue with the interview. The voice recorder was switched on and the interview began. Participants were asked questions roughly in line with the discussion guides, frequently prompted for more detail and explanation of their motives.

After the interviews, the recording was switched off, participants were thanked for their time and given their incentive. Interview recordings were then fully transcribed and analysed using the methods described above. An example interview transcript is available in Appendix C.

CHAPTER 4.   RESULTS

This section presents the results of ten qualitative interviews conducted in two groups of five over the summers of 2012 and 2014. Any relevant temporal differences between the groups will be highlighted. Throughout the interviews and data analysis, the motivations and behaviours identified were clearly distinguishable as human values (Harper, Rodden, Rogers, & Sellen, 2008; Sellen, Rogers, Harper, & Rodden, 2009) and these values began to cluster into two main topics. The first cluster of values describes a banking channel's congruence with environmental factors, including lifestyles, habits, and beliefs, these are referred to as '**Compatibility**' values. The second topic relates to people's deeper needs and securities, these are referred to as '**Assurance**' values. These values are closely interconnected with strong bonds and influences on each other, but for these results they are separated to help catalogued the complex issues. What follows is a broad description of the values as identified through the data analysis, with example quotations for illustration and as evidence.

Based on the analysis, the hierarchy of values is illustrated in Table 2 below.

Table 2 - Simple model of human values in banking

1. COMPATIBILITY	2. ASSURANCE
Being compatible with…	*Providing assurance via…*
1.1. Control & Convenience	2.1. **Safety & Security**
1.2. Price & Money Management	2.2. **Inspectability**
1.3. Physical & Emotional Wellbeing	2.3. **Confidence & Trust**
1.4. Ideology	

4.1. Compatibility values

The first of the two sets of values is compatibility. Compatibility values include many of the themes identified in the previous Background chapter: convenience, speed, reduced cost, ease of use, accessibility, social effects, enjoyment, and attitudes and beliefs. Analysis of the latent themes in the interview data identified four core values of banking and financial services compatibility: *1*. Control & convenience; *2*. Price & money management; *3*. Physical & emotional wellbeing; and *4*. Ideology. The following section describes the four compatibility values, and the effects the values have on behaviour, channel choice, and other compatibility values.

4.1.1. Control & Convenience

Regardless of channel choice, sense of control must be with the customer. Control and empowerment was a core motivation for choosing convenient and time-saving channels. Within a hierarchy, convenience and time-saving are considered sub-values of control.

Many of theses values push people towards digital channels, especially online, mobile or ATMs as they afford the most control and time-savings within people's busy lives. This value was exemplified by P1, *Valerie*, whose interview was conducted around her kitchen table with young children running around her and a husband asking questions from the next room. This context was a clear illustration of why *Valerie* valued control:

> The advantages of internet banking is that you're in control, 'cause if I telephone them, sometimes it's within certain hours, time restrictions, or have children who are out, or they take time to pick up the phone. … I'm in control, it's quick, you know, and it's accurate.

—P1, *Valerie*

4.1.1.1.   *Products and services*

The interviews provided strong evidence that using the online channel for financial product and service research stems from control, convenience, and time-savings. Online comparison sites were frequently cited as a time-saving service when people were researching simple products, such as insurance.

> Convenience, without a doubt. Pure convenience. I mean, in the past, you used to traipse from insurance company, literally walk from one to the other to the other to find the best insurance or spend 3, 4 hours on the phone, where now it's all done on the web, nice and simple.
>
> —P2, *Jack*

In product and service research, this sense of convenience has trade offs and a saturation point where people satisfy themselves by selecting the best of a bunch. After reading up on mortgages, running online comparisons, and phoning different providers, P3, *Ted* eventually settled for: "Convenience above anything else." Similarly, after visiting comparison sites and reading online reviews, P5, *Steven* purchased a new ISA purely because of the convenience of doing it online, there and then: "If it wasn't online I probably wouldn't have even bothered to purchase it." P6, *Terry* applied for a bank loan on his mobile phone app whilst travelling home on the bus. He was moving home and had an urgent need for a loan to purchase some basic supplies and furnishings. Terry filled the redundant time travelling home from work by visiting his bank's mobile app and applying for a loan that was immediately approved.

4.1.1.2.   *Offline control*

Prioritising control and convenience also leads people to offline channels. P8, *Derrick* and P9, *Audrey* both save up loose change to take to the bank for depositing into their accounts. They had both developed routines of delaying and

grouping several banking transactions together so they could visit the branch and resolve them all at the same time.

> If I go into a branch … it's an effort to go in, my branch is not near me, so I actually have to make a special trip, so in theory if I have money to pay in I usually wait until I've got coins to pay in, cash to pay in, so I will do several things at once.

> —P8, *Audrey*

P10, *Katy*'s local branch was just a five minute walk away so she had developed a routine of walking to the branch whenever she needed to bank. This included her day to day banking, and she had also once visited her bank to request a loan: "I suppose because it's up the road and it is open on a Saturday morning so I can set that time aside to do that." Likewise, because P1, *Valerie*'s bank provides a personal relationship manager she chooses to phone him whenever she needs advice on new financial products.

> We have a telephone number of a relationship manager we can phone at any time, so I just deal directly with him for anything. Especially with things that are a bit more complicated, like ISAs and things. .. so we just phoned [our manager] and he talked us through our best options and he just set that up for me, and now I can just view it online. Like he did all the set up work.

> —P1, *Valerie*

Control affords choice and whilst branch banking or phone advice are the most convenient at one moment, they are candidates for quick and dispassionate change to another channel. Considering branch closures, P10, *Katy* was "apathetic" and "not that bothered" about it, and she was content to switch her preferred channel from branch visits to using ATMs or online.

People are also driven to offline channels because of poor internet connections or slow computing equipment.

4.1.2. Price & Money Management

The monetary cost of day-to-day banking is very similar, regardless of online or offline channel used; the interview data showed that cost does not influence day-to-day banking choices.

For product selection, being price conscious was a significant driver of channel choice. Internet research, through high levels or control and autonomy, enabled the participants to collate a variety of product quotations, compare them, then identify and select the best deal. Visiting comparison sites and requesting quotations from multiple providers' sites were common sources of collecting and comparing quotations.

4.1.2.1. *Payment channels*

The choice of channel or technology was pronounced when discussing choice of payment channel. It was common for participants to shop, on the high-street or online, without ever handling cash and only using cards.

Participants less concerned about money, either due to affluence or confident balance-clearing practices, chose to spend on credit-cards more than debit-cards or cash to benefit from the cashback, points, Air Miles, and extra insurances.

> I always pay for things like that through a credit-card because I have a
> points credit-card, even though I pay it off. I think it's things that you have
> to buy but you want that feeling that you've got the best deals.
>
> —P4, *Claire*

Conversely, those less confident participants preferred to spend with cash (visiting ATMs to top up their purses) and debit-card. These methods helped with

personal financial control and basic money management, both cash and debit-card were equivalent, both coming out of the same account. With balance-clearing routines, using a credit-card encouraged careless spending and increased complexity by creating an extra monthly transaction to pay off the credit. These less confident people reserve use of credit-cards for emergencies or other exceptional situations.

> I feel that I have to pay, or work twice when I use my credit-card. … I buy it in the shop with the credit-card, and then I have to do something later to pay into the credit. And the debit-card seems to be one hop, seems to be straighter.
>
> —P8, *Derrick*

These less confident participants are still price conscious, but the effort to gain the points, Air Miles or cashback is greater than their perceived benefits.

Although they have been available for a number of years, none of the participants were using emergent purchase technologies, such as mobile wallets and peer-to-peer mobile technologies.

4.1.3. Physical & Emotional Wellbeing

Some participants described great anxiety about using in-branch, phone or ATM (self-service) banking; the environmental pressures of queuing, impatient staff, and personal safety all contributing to anxiety and stressful emotions. Online and mobile banking was a way of regaining control by avoiding the stressful situations.

I think that the queues to get through, and, unfortunately, with the nature of some of the people doing the job you often feel an inconvenience to them because they're so busy and they just want to get you on, answer your query, get off, whereas I actually like to digest that information and perhaps ask another query.

—P4, *Claire*

Self-service ATMs, designed to reduce queuing and speed up transactions, had an unfortunate side-effect of increasing anxiety. Participants spoke about keenness to use self-service machines, but being halted by their unfamiliarity of the machine or forgetting their own account information. This unfamiliarity rarely occurs with cashier service as the cashier can ask questions and look up information.

When you're queuing up and you're seeing a person behind a counter and it takes some time, you don't feel the same pressure, even though there's a massive queue behind you, because somebody's dealing with you … you don't have the responsibility of how long your transaction's taking. But if you're at a machine and you got people waiting behind you … you do kind of feel a pressure to get it right and be in a hurry.

—P9, *Audrey*

When unfamiliarity occurs within online banking, as it is not accompanied by environmental pressures, people have the time to think about and complete their transactions. None of the participants spoke about poor ease of use or any stress with using online banking. Banking at home was a safe, un-pressured environment.

4.1.4. Ideology

The fourth and final theme of compatibility values is ideology, within the context of banking it takes on one of three dimensions; sense of innovativeness, tradition, and beliefs. These values introduce some complex behaviours and notable conflicts with other values.

4.1.4.1.   Innovativeness

Regardless of age, and whether or not participants were early adopters, a personal sense of innovativeness and keeping up with the times was a motivator towards technology. This incited a willingness to try new things by silencing perceived risks and security concerns. Though, if the technology then proved stressful or conflicted with another value, participants stuck with their established methods. In regards to the success of online banking, participants reported experiencing new sensations of control that they had never previously received from traditional methods of banking.

4.1.4.2.   Tradition

The opposite of innovativeness is tradition, which is equally important. Interviewees spoke about their parents, in-laws, and themselves as having particularly cumbersome or old-fashioned methods of financial management. But participants weren't embarrassed by their traditional habits and views, they were rational and accepting of them, especially when these traditional values complement other ideological or assurance values.

> I don't tend to use my computer much at the weekend because I don't want to. Associate it with work too much. … I'm a bit of a dinosaur. … I don't think there's nothing wrong with that, actually.
>
> —P10, *Katy*

> I was probably a bit of an old granny in terms of I didn't like the idea of doing stuff online in case of some sort of fraud or you know, a Trojan bug. … I suppose it does make money seem a bit virtual, just figures move. But I've never been a victim of online crime, so that's probably totally old fashioned.

> —P3, *Ted*

This respect for tradition extends the value of compatibility to *compatibility with others*; being open to other people's habits and preferences. For example, P4, *Claire* prefers to make online transfers, but accepts cheques from her mother-in-law: "I'm not sure she'd know as much how to initiate an electronic [transfer], she'd find it more stressful."

4.1.4.3. Beliefs

Related to tradition was the notion of loss as technology enters more areas of society, the loss of social and human contact by adopting technology. To some people, social contact brought assurance, but others were just left with the feeling that society had given up something. P9, *Audrey* claimed it was "much nicer to have human contact" and she felt sadness for the losing "personal relationship" she once had with her bank manager. P8, *Derrick* had the strongest ideological beliefs:

> I think as our society takes a highly technological route, I still believe that the human communication is an important part of our life and that we need human interaction and to remember that, rather than to just go down the digital route at the first chance. Human interaction is natural. Interaction with a machine is not so natural, if it is natural. … It feels a lot more natural if you deal with someone who is made from flesh and bone, and spirit.

> —P8, *Derrick*

4.2.   Assurance values

The second of the two sets of values is assurance. Assurance values include some major themes from the previous Background chapter: security and risk; and some of the minor effects: type of product and brand reputation. The analysis of the latent themes in the interview data produces three core assurance values: *1. Safety & security*; *2. Inspectability*; and *3. Confidence & trust*. The following section reports on the three assurance values, and the effects the values have on behaviour, channel choice, and other values.

4.2.1. Safety & Security

Safety and security often manifests itself in negative and contradictory behaviours as people instinctively want to prioritise safety and security, though it frequently conflicts with their desire for control, convenience, and time-saving. For example, P3, *Ted* and P5, *Steven* had both been locked out of their banking and credit-cards after a crime, the impact was so disrupting and inconvenience that the participants focussed on returning to normality, not on improving their security.

4.2.1.1.   *Online security and control*

Participants prioritised compatibility values and behaviours because they found security so complicated and opaque; the interviewees did not understand the issues or precautions. People adopt and accept security measures, but these measures are seen as inconveniencing and incompatible. The bank's security measures promote unnatural behaviours, yet people ultimately accept these practices as necessary to keep them secure. For example, P3, *Ted* found it difficult, but over time he learnt to remember his online passwords and security codes. And P4, *Claire* disliked the inconvenience of having to phone up her bank

to activate new cards, she wants to use new cards immediately, but she would be "first to complain" if her card got lost in the post and other people could use it.

Any reduction in time spent on complex security procedures is always seen as a positive and participants always happily accepted reduced security steps for the increase in convenience. For example, participants choose mobile or tablet apps that have fewer authentication steps than online banking.

SECURITY CONFUSION

People often received mixed, contradictory and uncomfortable security instructions from their banks. The interviewees who held accounts with more than one bank received mixed messages as not every bank requires PIN authentication devices, or uses them for different transactions. P7, *Holly* has accounts with two different banks who are inconsistent in their use of the device, *Holly* was "irritated" with the bank that requires the device to log in to online banking, because the other bank does not and logging in is easier and more accessible.

Sometimes the bank themselves demonstrate seemingly insecure behaviours, sending confusing messages to their customers. When P3, *Ted* lost his wallet and account numbers, the bank asked Tom for publicly available information (eg. his mother's maiden name) so he could authenticate himself: "It's not very hard with Facebook to find out these sort of things, they don't seem very high tech." Also, P4, *Claire* was concerned when her bank asked her to state security credentials out loud over the phone, which she found awkward in public places: "I need to make sure that people can't hear my passwords."

PAYMENT CHANNELS

With payment methods, participants were risk averse and they chose the methods that maximised their security and protection. Everyone's strategies were slightly different as the behavioural response to minimise risk seems to be

personal and unique. P1, *Valerie*'s and P4, *Claire*'s strategies were to carry only small amounts of cash and make the majority of payments on card to reduced risk of loss or theft. Other methods were the opposite: minimising use of card and promoting use of cash. P3, *Ted* and P8, *Derrick* felt the less exposure others had to their credit- or debit-cards, the less risk there was of card skimming.

Credit-cards were understood to providing protection that other methods did not, such as extra insurance, payment protection and fraud protection. As discussed earlier, some participants used their cards for nearly every purchase to maximise protection and rewards. Participants who preferred using cash and debit-card reserved use of their card for online purchases with unfamiliar merchants for the extra protection, or for big purchases to benefit from the extra insurance: "If the item went missing or it was damaged I know I can reclaim it back using a credit-card," (P6, *Terry*).

New technologies, including contactless cards and peer-to-peer payments, were seen with some scepticism of how secure they could be so people were only willing to try them for small payments, or to avoid them altogether. In the move towards electronic forms of payment, such as mobile phone payments, people highlighted the risk of fraud or fraud detection. Currently when banks detect card fraud they cancel the card, potentially leaving people stranded and unable to pay for things. Participants felt that as new payment technologies seem more open to fraud, they are more likely to be cancelled or frozen by banks, which is a bigger concern than the fraud itself.

PERSONAL AND PHYSICAL SAFETY

One of the key benefits of online banking was the ability to make electronic payments which increased personal security for the two small business owners

who could accept and make payments without having to handle large amounts of cash.

There were security concerns with using ATMs at night or out-of-hours: "Is someone behind me going to mug me?" (P9, *Audrey*).

4.2.2. Inspectability

Inspectability is significant in the banking where mistakes and errors can have huge cost. Inspectability provides the assurance that the security is working, and transaction mistakes or errors have not been made. Amongst all interviewees the wait for a monthly paper statement was seen as antiquated, unnecessarily, and even slightly risky to not monitor more regularly. This inspectability aids money management by checking incomings, outgoings and account balances. P3, *Ted*, who early in the interview described his money management as "lackadaisical", still had a monitoring routine, gaining the assurance that things were "in order" and that he was living within his means. A particular advantage of credit- and debit-cards is that spending can be tracked online, unlike cash.

P5, *Steven* referred to the "written confirmation" being a particular advantage of online banking. This enables checking of money paid in and payments out, generating a virtual paper trail, and providing people with a sense of closure or resolution that they have been paid or they have fulfilled their obligations to pay others. Whilst online payments are considered convenient and time-saving, it is value for inspection and closure that are equally powerful driving forces, especially for the business owners (P2, *Jack* & P9, *Audrey*) who have "legal proof" (P9 *Audrey*) of payments. Online banking is the primary channel for monitoring and making transactions, but mobile banking (through an app), SMS text alerts, and ATM printed mini-statements are also used for monitoring.

4.2.2.1. Monitoring and vigilance

Technology has empowered people with new tools that promote frequent and regular monitoring where speed is expected and immediacy is comforting. One of the subtle temporal effects between the 2012 and 2014 cohort was the increased frequency people check their account transactions. The 2012 group still monitored through online banking and ATM mini-statements, but in the intervening time to 2014, text alerts and mobile banking became more prevalent. This accessible information has seemingly changed the 2014 group's habits by encouraging them to check more frequently. There are regular daily routines, usually in a weekday morning when text alerts arrived or on the way to work, when our interviewees reviewed their account activity. It was as if the time people once spent on monthly statement checking and branch visits to make payments has not been saved by e-banking or automated payment technologies; this time has just been replaced, spread throughout the month by daily monitoring and checking. People are not fatigued or unhappy with their new routines, their emotions lean towards satisfaction over having extra power to be vigilant and have assurance.

> I get the text alerts every day which I find really helpful … It just prompts me to do other things or it just clears my head. … I can see my balance … I can see when I get paid. It's just a thing that I do now. I never ignore them. I always look at them.
>
> —P6, *Terry*

These new text alert and mobile app technologies make it easier to check or log in to accounts, however they only give a small snapshot of the transactions and limited banking functionality; people still have to log in to a desktop computer to make payments or see full statements. This generates frustration and anxiety by enabling and encouraging new habitual account monitoring, but then not allowing

people to delve deeper, resolve issues, or even perform simple account maintenance unless being at their computer, willing to make a phone call, or visiting a branch.

4.2.2.2. *Coping with technology*

Technology goes wrong; especially when making outgoing payments – via direct debit, standing order, debit-card, or electronic transfer – as these are the most frequent type of account transaction, sometimes payments don't go through, or go through twice. People were fearful of these kinds of errors because fixing them costs time and money in phone calls to the bank. Risk aversion strategies include spending on credit-card for the extra protection, hesitance, or complete avoidance of technologies, merchants, and providers people are not confident with. P6, *Terry* had a negative experience after a failed payment using with a "flimsy" card reader in a local store. This was so inconveniencing that now *Terry* is more cautious and even avoids these technologies at some shops:

> When I go into shops now, if I see one of those machines and I've got cash, I pay with cash. I don't trust them now. Whereas the regular ones with the chip and pin, I know that they work. … You know sometimes you go to the newsagents and they've got this flimsy little card reader on the counter? I think, 'I'm not using that.'
>
> —P6, *Terry*

Currently, it is not possible to monitor transactions immediately via online banking or apps, so people are forced to phone up their bank or provider, or wait several hours to check if a mistake has been made. When shopping online and a page errors or freezes, instead of repeating the transaction and risk being charged twice, P7, *Holly* sometimes must phone up the bank to check if they have a record of it.

4.2.3. Confidence & Trust

The final assurance value of confidence & trust is the most complex and has significant interwoven influences with all of the previously described values.

4.2.3.1.   Face-to-face advice

Through phone or face-to-face advice, participants felt that they should be able to ask their bank questions. But, often due to their busy lives and the pressures of queuing, participants were unable to have these exchanges. Interviewees only felt confident researching and buying simple financial products online that had simple comparable features and bottom-line prices. People lacked confidence with complex products. Research journeys began online to help gain familiarity in the domain, but participants eventually required advice and they felt the most trustworthy method of receiving advice was through face-to-face interaction that facilitates conversation and opportunities to ask questions.

> I just feel when you're talking to someone you can tell from their body language, you're having a conversation with them, and how knowledgeable they are about the product. … I just personally find it more comforting … And also to be able to work someone out, to work out what their intentions are.
>
> —P6, *Terry*

When considering the future of banking, video chat via Skype or FaceTime was suggested by a couple of participants as a viable future alternative to phone calls, especially for younger generations who are familiar and comfortable with newer communication technologies. Video chat was understood to afford many of the benefits of face-to-face, but with the comfort and convenience of being at home.

4.2.3.2.   Accountability

It is worth re-iterating that interviewees were not self deprecating when referring to themselves as "old fashioned" (P3, *Ted* & P4, *Claire*). Participants articulated a preference for the traditional methods because transactions at a human cashier allowed observability of the transaction, and the human element brings accountability. The electronic alternatives often require trusting the infallibility of machines and software. From the participants' experience, machines make mistakes and then aren't accountable for their actions. By not provide enough inspectability or feedback machines have become untrustworthy. P9, *Audrey*, on describing her experience with the cheque deposit ATM, preferring cashier service for its social securities:

> You just see your cheques and money disappearing into this hole …
> You've always got this fear that when you put your money in it disappears,
> even when you get a receipt out. Is it really going to show up on your
> account properly? … Whereas, if you do it over the counter, you feel a sense
> of security that you've spoken to someone and that's quite nice to have a bit
> of contact. … I think you just feel more secure that your transaction has
> actually processed *properly*.

> —P9, *Audrey*

MACHINE USABILITY

For common tasks, such as withdrawing money, checking balances, or printing mini-statements participants had no concerns using ATMs; these were day to day activities and things rarely went wrong. However, depositing cash or cheques into ATMs was unfamiliar and untrustworthy. It didn't help that these new machines offered very few benefits above the cashier service. P6, *Terry* visited his local branch to deposit a cheque with the cashier, only to be steered towards an ATM. He was happy with the machine's simplicity and usability until he realised that he

actually gained no benefit; he missed out on social pleasantries with a cashier, and cheques still took five days to clear.

P9, *Audrey* recounted her experience of being in a branch to deposit cash, and to avoid the queues she thought she would attempt to use the ATM. Being already familiar with cheque depositing was actually a huge disadvantage as the machines were so inconsistent with each other.

> They've obviously tried to slim it down and make it as easy as possible. … If you use the same machine to pay in a cheque, you have to use a paying-in slip … for the cash you don't have to do anything. … It's a different process to when you're paying in a cheque, yet it's the same machine, so you expect the process to be the same. … I was a little bit embarrassed, I guess that it was so simple and I could't do it, so it made me feel that I was a bit stupid.
>
> —P9, *Audrey*

4.2.3.3. *The tangibility and timelessness of cheques*

Interviews had a complex relationship with cheques. There was little fondness for cheques, in fact they were seen as old fashioned and inconvenient as the only way to cash them was through a trip to a branch and a five-day wait for them to be paid. When predicting the future, many participants suggested they wouldn't last. However, their tangibility made them simple and assuring, holding the physical artefact represented a gift or payment, and this resulted in a powerful positive emotion for people who frequent branches. And the universal understanding of cheques meant they could be exchanged with anyone from any generation. There isn't a yet a replacement technology that meets these two attributes: tangible and intergenerational, these attributes are obviously lost with electronic transfers.

4.2.3.4.   Delegation of accountability

Simple financial products are those that are short-term, compete on price, and comparable online. These products are inherently low value, simple, and therefore less risky. Participants trusted themselves to provide websites with the correct information, and therefore trusted that websites will provide accurate quotations and information. Responsibility is shared between the customer and the website. These products are more difficult to compare over the phone or at high-street branches when it becomes the customer's responsibility to repeatedly provide the same accurate information to multiple providers, often under time pressure, and then make decisions based on their own notes or quotes across different documents. Website-mediated comparison and purchase of these products was perceived as a less risky method than the manual offline methods. Participants understood their own responsibility to research a product to ensure it was fit for purpose.

Online financial product research was understood as having limitations for three reasons. Firstly, it is obviously pre-written, rigidly adhering to what the content owners choose to write and publish and it is difficult to gain further detail or ask questions. Secondly, our participants were suspicious of the content and its agenda. Information that product providers publish may be purposefully misleading, too good to be true to generate sales leads, something experienced by P3, *Ted* who identified quotes online, but then repeatedly discovered he was ineligible after phoning the providers. Third, websites make money from the advice provided so there is are concerns that the site's motivations may not be in line with their visitors'. People feel betrayed by this prospect as their autonomous research experience could be been perverted for someone else's agenda.

It may be possible that the comparison sites are influenced by financial institutions to promote products that are not as good but are pushed by the companies that own them.

—P5, *Steven*

MAXIMISING ACCURACY TO MINIMISE MISTAKES

When dealing with infrequent or complex transactions, instead of trusting online banking or ATMs, participants described how they prefer to delegate or share responsibility with another person, usually bank staff, to minimise risk of making mistakes. This is at the expense of convenience and time-saving, but the cost of making a mistake is higher than the cost of waiting in a queue. However, ATMs are not visible, simple to understand, or fixable when mistakes happen, therefore ATMs are not accountable devices to trust delegation to.

When making complex international payments, P4, *Claire* uses phone banking instead of doing it online because it is less risky to phone a call centre and speak to a human. This shares the responsibility with someone else and reduces the risk that something will go wrong as two people have checked the complex 32-digit IBAN number. Also, should something go wrong, *Claire* can "put the blame on someone" (Black *et al*., 2002), to the call centre worker.

MAXIMISING FINANCIAL RETURNS

Complex, long-term products, such as investments or mortgages, compete on multiple factors, not just price. People unfamiliar with these products feel more comfortable delegating the responsibility of research and product choice to another human, not to a website which does not engender confidence or trust. These complex products were unfamiliar, so participants did not fully understand the factors and therefore there was a high risk of making a poor product choice (Frambach *et al*., 2007). These are also long term products, so the impact of a mistake is potentially much higher. In these instances, an independent adviser,

family member, or a bank adviser was seen as a source of information who can be relied upon.

When participants had loyalty and trust for their bank, or for a close friend of family member, then they felt comfortable prioritising control and other compatibility values by skipping independent research or comparison activities altogether and trusting the advice and recommendation from others.

CHAPTER 5.   DISCUSSION

Consumers have embraced digital banking. For many people e-banking is the default channel that has replaced branches, phone calls and paperwork. The previously chapter reported the results within a simple model of human values (Table 1) with accompanying evidence and examples of behaviours. This chapter builds upon the results, using the values to answer the two original aims of this project: 1. *Motivations*: 'What influences people's behaviours when choosing digital and analogue financial channels?' And 2. *Impact*: 'How may this influence people's responses to emerging financial technologies?' The chapter ends by considering limitations of this study.

5.1.   Motivations

The results identified seven human values that impact channel choice, grouped into two broad themes: *compatibility* and *assurance*. The effect that the human values had on behaviours was often influenced by nuanced contextual factors. This discussion explains people's actions and behaviours by reframing the human values as *goals* using the established framework of modelling goals from Cooper, Reimann & Cronin's *goal-directed design methodology* (Cooper, Reimann, & Cronin, 2007). Goals are both a predictor of behaviour and the directing force to fulfil underlying "motives and temperaments" (Elliot, 2006). Cooper *et al*. align three levels of goals – *experience-goals, end-goals*, and *life-goals* (Cooper *et al*., 2007) – to Norman's three levels of emotional and cognitive processing – *reactive/visceral*, *routine/behavioural*, and *reflective* (Norman, 2005; Ortony, Norman, & Revelle, 2005). These levels interact on motivation, considered to be one of "the internal control mechanisms of behaviour" (Ortony *et al*., 2005).

Figure 1 illustrates the original seven human values with a vertical scale representing the strength of external or internal influences on the values. Values

have also been clustered into the three types of goal (some values spread across two goals). External factors mainly influence end-goals, and internal factors influence life- and experience-goals. The 'Inspectability' value is equally influenced by external and internal factors.
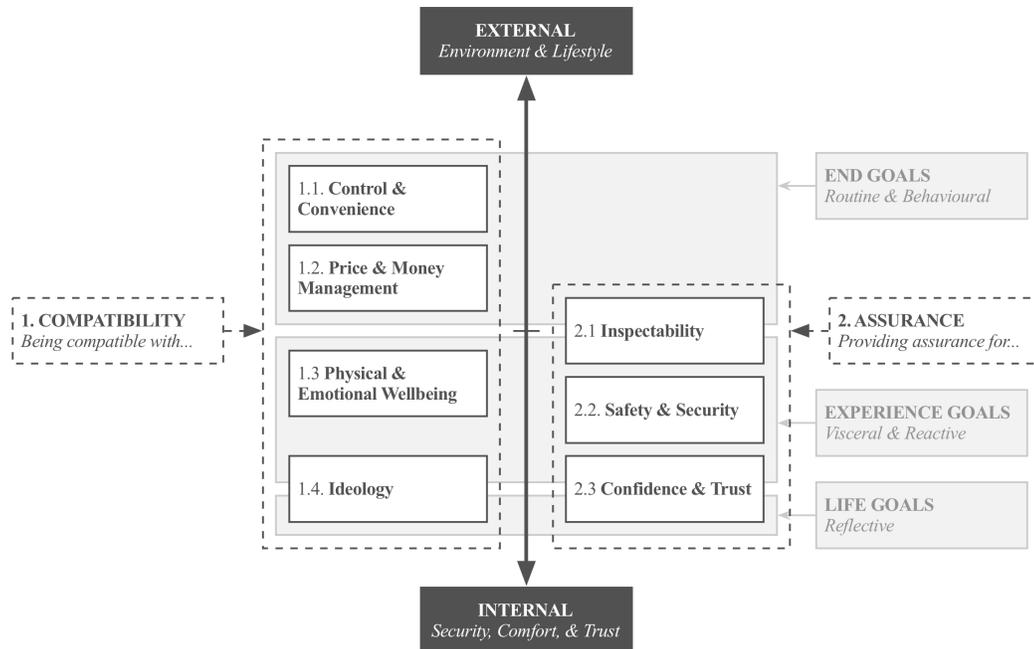
Figure 1 - Model of human values in banking with internal/external influences and goal clusters

Within this section, the results are revisited below in the contexts of experience-, end-, and life-goals, and the related visceral, behavioural, and reflective factors.

5.1.1. Experience-goals

The interviews gathered evidence that the current generation of banking technologies are failing to appeal to people at a positive reactive level, whilst regularly promoting negative emotions. The significant human values that impact

experience-goals are: Physical & Emotional Wellbeing, Ideology, Inspectability, Safety & Security, and Confidence & Trust.

Queuing in branch, over the phone or at an ATM, raises anxiety pressures and safety fears. This increased anxiety reduces cognitive performance as people's thoughts become preoccupied with stimulus-driven processing instead of goal-driven processing (Derakshan & Eysenck, 2009; Eysenck, Derakshan, Santos, & Calvo, 2007), disadvantageous when trying to learn how to use an unfamiliar ATM. Branch and ATM banking also brings physical safety fears: it is considered unsafe to carry large amounts of cash, or use ATMs when it is quiet or at nighttime. With these anxieties over traditional methods, people are drawn to online banking in a relaxed, un-pressured environments; or using credit- and debit-card or electronic transfers instead of handling large amounts of cash.

People mostly use ATMs for withdrawing cash but for anything more complex (eg. depositing cash or cheques), people prefer a human cashier for comfort and reassurance. There is comfort from the social contact and reassurance from observing and inspecting the physical transaction behind the cashier counter. Some people lament the loss of social contact, potentially feeling uncomfortable using machines (as their home computer or mobile phone is not fast or responsive) and the metal, emotionless ATMs do little to replicate the "spirit" of humans (P8, *Derrick*). These people will always feel discomfort and reject any electronic methods, the prospect of new biometric security measures (Gompertz, 2014) are particularly uncomfortable and unwanted. Machines, notably ATMs, have a lack of comfort that cultivates distrust, and sometimes "embarrassment" (P9, *Audrey*) when using them.

People have fears of technology making mistakes, especially when in unsafe or unfamiliar environments, or when using unreliable equipment or software.

Inspectability is low as it is not easily to check mistakes because transactions do not appear on mobile or online banking until several hours later. To reduce the fears in unsafe or unfamiliar scenarios, people adopt safety strategies: *replacement* (eg. spending online with a credit instead of debit card for increased protection); *hesitance* whilst evaluating safety; or outright *avoidance* if considered unsafe or unclear (eg. people are aware of the contactless technology in their cards, but they avoid it and continue using Chip & PIN).

But most safety strategies are out of people's control. The default response to online security is accepting and delegating security to the banks' procedures and technology, a practice explained by Dourish *et al*.: "Impressions formed about institutions such as banks' concern with physical security (locked vaults and armed security guards) are carried over to online security," (Dourish *et al*., 2004). People experience annoyance and frustration when helplessly locked out of online accounts or their cards blocked due to a security flag, crime, or procedure.

In contrast, traditional cheques engender a positive visceral experience: they are particularly comforting and reassuring for their tangibility, universality, and symbolism. Despite this comfort, people nearly exclusively use the convenient electronic methods and only use cheques in exceptional circumstances (eg. accepting money from an older person or for a business transaction).

5.1.2. End-goals

End-goals and are often the design focus of interactive products (Cooper *et al*., 2007). However, some electronic channels designed to meet end-goals conflict with other experience- and life-goals and people use the channels in unexpected ways. The significant human values that impact end-goals are: Convenience & Control, Price & Money Management, and Inspectability.

GETTING A GOOD DEAL permeates product purchase and payment channels. People are driven towards online channels because they are faster and easier to compare multiple deals than on the phone or high-street. However, sometimes convenience, speed, and closure is prioritised above price (eg. people will request loans from their home banks instead of spending time comparing online quotes).

Control & convenience is a strong influence on end-goals. This study agrees with the Background research that identified 'convenience', 'speed', and 'accessibility' as important marketing points that drive online banking adoption. People prioritise control & convenience to optimises many financial behaviours within their busy lives. This can drive people offline if there is a more convenient or faster offline channel, such as making routine visits to a local high-street branch, or instinctively phoning a personal adviser for quick advice.

King, in his influential book Bank 2.0 (King, 2010), explains the importance of control in online banking through Maslow's hierarchy of needs (Maslow, 1943), a theory of motivation that describes humans' five basic needs as: physiological, safety, love, self-esteem, and self-actualisation. New technologies are more efficient, King argues, giving people self-esteem from "using our time more wisely", and providing more time to service self-actualisation needs.

There was no evidence from the interviews to agree with King's assertion that "using our time more wisely" brings self-esteem, however the analysis explains self-actualisation gains. Most participants expressed indifference, boredom and avoidance towards banking and finance; without intrinsic enjoyment channel choice is dominated by concern with other values. The influence of the two interconnecting values 'control' *and* 'inspectability' combined provides people with fast completing of tasks, a means of observing task closure, and therefore a

quick escape to occupy minds and bodies on other (self-actualisation) tasks in their lives.

Inspectability is crucial to providing a sense of closure that all is running smoothly and is trustworthy. The ability to inspect banking transactions, account statuses, product features, and small print is a core assurance value. Therefore, people are drawn towards technologies (ie. online, mobile, text alerts, and ATMs) that provide on-demand inspectability. This need for inspectability is perpetuated by people's distrust for machines and software. Security breaches and transaction mistakes are irregular but fixing them is hugely inconveniencing and the negative memories "linger" (Jordan, 1998). The availability of on-demand technologies have encouraged new monitoring routines and people have begun to expect transparency from all of their financial products and services.

5.1.3. Life goals

Without intrinsic pleasure, banking is nearly always detached from the rest of people's lives. Money, of course, plays an important role, and it is the banks that provide the facilitation mediums for money. The interviews did not provide much evidence of using banking technologies for life-goals, people were often driven offline. The significant human values that impact end-goals are: Ideology and Confidence & Trust.

People use banking technologies to facilitate end-goals, not life-goals. The earlier described '*getting a good deal*' end-goal applies to products that are simple, price or feature comparable, and familiar (eg. loans, credit cards, or new accounts). Briggs and colleagues identified the factors of "credible" (expertise and impartiality) and "predictable" (comparing amongst several sites) (Briggs, Burford, De Angeli, & Lynch, 2002) that were were particularly important with

this study's interviewees when discussing the impartiality, accuracy, and suitability of online research.

Complex products can have a large impact on life goals (eg. mortgages, long-term investments, or pensions) and these are not easily comparable. Without knowledge of these unfamiliar products it is difficult to evaluate them or trust online information, and risks of making poor decisions are high. To harmonise with life-goals people prefer face-to-face advice and will delegate product research, even decision-making, to an adviser. This explains the preference for financial advisers identified in the multi-channel research (Black *et al*., 2002; Howcroft *et al*., 2002) to reduce the risk of potential losses (Frambach *et al*., 2007). Corritore and colleagues explain the "risk" factor: high levels of control result mean low perceived risk, and lower levels of control produce higher risk (Corritore, Kracher, & Wiedenbeck, 2003). Therefore risks are higher when people's knowledge of complex products is low, and they then seek advice. People place trust in their questions being answered honestly, building personal relationships, and recognising social cues and body language.

Finally, the area where technology can meet life-goals is with ideology. Of course, those who value social human interactions can reject technology to meet their ideologies. The opposing ideological tenets are that of 'innovativeness' and 'optimism' to new technology. These are both drivers of Technology Readiness (Parasuraman, 2000). 'Innovativeness' is a self-reflective view and 'optimism' the opinion that technology increases "control, flexibility and efficiency". A sense of innovation and optimism are drivers to banking technology, even for those who aren't early adopters. However, even the most innovative and optimistic will abandon a banking technology if it fails to deliver an experience-, end- or life-goal.

5.2. Impact

The compatibility and assurance values were based on recent interviews, and therefore closely support the current generation of financial channels, technologies, and ecosystems. Future banking paradigms and emerging technologies may dramatically alter the financial landscape and human value systems. Figure 1, the model of human values in banking, highlights how compatibility values are susceptible to change as most of these respond to external factors: environments, lifestyles, and existing methods. Assurance values are deep internal feelings of safety, security, and trustworthiness, yet the earlier discussion on motivations revealed these values can be influenced by the visceral experiences of using technology.

Unless people's financial attitudes change in ways that cannot be predicted, the identified values help to facilitate a discussion on the future impact that new fintechs may have. This section considers the human values across three behaviour sets that represent a spread of financial services: payment activities, delegation activities (when researching complex products), and offline activities (for day to day banking).

5.2.1. Payment activities

This study's interviewees had an appetite for using their mobile phones as money or for payment, however mobile payment technologies, whether peer-to-peer or to merchants, have so far not been popular. Globally, despite people's awareness of mobile technologies, most surveyed people are "unwilling to try" them (Bertrand & Ahmad, 2014). The media is rightly critical of the competing technologies without consistency across different 'wallets' so it is impossible to pay an incompatible peer (Cellan-Jones, 2014b). And all of these technologies

have separate, complicated registration processes (Frommer, 2011). These are clear failings in the users' perceptions of control and confidence.

Both government-sponsored and private organisations are attempting to bring consistency to the market. Two emergent payment technologies will be compared below that have received significant media attention for their novel approaches to convenience and trust building.

5.2.1.1. *Paym*

The UK Payments Council recently launched 'Paym', a scheme that works across UK banks for peer-to-peer payments using mobile phone numbers (Payments Council, 2014). Consumers must register through their own bank, then use the bank's mobile app to make payments. This is similar to cheques where individual banks provide the cheques that link to a centralised system. This appeals to a variety of the human values.

- Due to standardisation across banks, there is potential for high levels of convenience and speed, paying people at any time and from any location with just their mobile number.

- Paym may appeal to the ideologically traditional. Once overcoming registration barriers, a payment can be made immediately in-situ and is potentially more social than visiting an ATM for cash or writing a cheque.

- There is direct inspectability of the transaction in people's bank accounts.

- Transactions are facilitated within mobile banking apps and people already feel comfortable delegating security to their banks' methods.

5.2.1.2. Apple Pay

Apple recently announced their solution to payments, Apple Pay (Apple Inc., 2014), initially aimed at the US market without contactless or Chip & PIN technologies. The system will allow users to store credit- and debit-card details on their iPhone, then pay in stores using by holding their phone up to special contactless readers. The system can also facilitate online shopping payments via enabled iPhone apps. Apple is marketing the convenience of not having to rummage through a waller or purse to find cards and the safety of not handing a card over to another person or website. However, where Paym relies on people's existing relationships with their peers and banks, the human values with a third-party system are more complex and may attract or detract from the technology.

- A large community of users already trust Apple with their payment details for making iTunes or App Store purchases (Frommer, 2014), so existing users conveniently bypass a complex registration process that other mobile wallets suffer with. Apparently, additional cards can be conveniently added to the system by taking a photograph.

- The ideologically innovative will be optimistic about experimenting with this new technology. As it will require minimal registration, the barriers to entry are low.

- However, people currently adopt avoidance strategies as new system initially introduces fear and anxiety, and it is more comfortable to continue with existing methods and practices.

- The technology will only succeed if it builds and maintains confidence & trust; it must always be accurate, reliable, and inspectable. Even minor failures, point of confusion, or opaqueness will introduce discomfort and users will revert back to their physical cards.

Even before its announcement, industry commentators were optimistic about Apple Pay. In a BBC editorial, Cellan-Jones believed that improved security will drive usage to the new Apple scheme: "[If] a mobile phone could identify its owner and therefore provide the shopper, the bank, and the retailers with a guarantee of a secure transaction, then that could be a game-changer," (Cellan-Jones, 2014a). The results of this study (with UK participants) conflict with this opinion. Security concerns only detract people from using a technology or method. With people's practice of delegating security to their banks (eg. using credit cards that provide insurance when online shopping), *good security* is not a motivator towards using a new technology unless the user believes their existing system to be un-secure.

5.2.2. Delegation activities

People place confidence in machines and software for simple, familiar and low risk tasks, and confidence in humans for complex, irregular and high risk tasks. Delegation to machines or people is mainly concerned with confidence & trust. Technology has an opportunity to raise people's confidence that it can deliver on accuracy and financial returns for previously human-mediated tasks. There are currently very few technologies that people trust for this delegation, but a noteworthy example of this for investing is described below.

5.2.2.1. *Nutmeg*

London-based Nutmeg is a cost-effective website alternative for people who would ordinarily pay for investment advice with a face-to-face financial adviser (Nutmeg, 2014). Using friendly language and imagery it replicates the adviser experience with literature on its trustworthiness and credibility; human experts pick funds for the investment portfolios. A dialogue wizard on the website questions the customer's needs, step by step, to recommend the best investment

portfolio, simulating intelligence. This experience contributes to the human values in several ways.

- This is a self-service website that crucially provides 24/7 control & convenience.

- Nutmeg offers on-demand portfolio inspectability via its web interface, something an adviser does not directly provide.

- By replicating the conversation between customer and adviser, Nutmeg builds confidence & trust in their portfolio recommendations.

- However, the provided advice may empower the price conscious customer with a basis for seeking competing advice or recommendations on other sites or channels.

- Despite Nutmeg's efforts to showcase their human credentials, some people may still seek an adviser for the trust only placed in a face-to-face conversation.

5.2.3. Offline activities

A multi-channel ecosystem that includes traditional technologies and offline activities will become increasingly important for all members of society. This includes people who are ideologically opposed to technology using only older channels, and the innovative and optimistic who may begin to experience technology anxiety and fatigue if methods and channels change too frequently. An example of retaining a traditional method was reversing the decision to scrap cheques in the UK due to "widespread criticism" (BBC News, 2011). This then led to the continuation of cheques and plans for shorter clearing times and paying-in by mobile phone or tablet (HM Treasury, 2014). Away from fintech, the industry is considering new models of branch experiences that meet human values, some notable examples are provided below.

5.2.3.1.   *Metro Bank*

Metro Bank has improved opening hours giving people the control to bank at times convenient to them. They also provide instant card and cheque book printing in branch, something that requires several days' turnaround with other banks (Metro Bank, 2014). Their strategy is appealing to customers who prefer banking in branch.

5.2.3.2.   *Mobile branches*

Mobile branches are being trialled by Royal Bank of Scotland. These are branches in converted vans that drive from site to site at scheduled times each week as a "community service" (Milligan, 2014) for the elderly.

5.2.3.3.   *Branch lounges*

The final alternative is to re-position branches from a place where transactions are carried out to a place where consumers can build a relationship with their bank through lounge-like environments and un-pressured banking or product browsing. Virgin Money is employing this strategy on the high street (Virgin Money, 2014) to promote the values of physical & emotional wellbeing alongside confidence & trust building.

5.3.   Limitations

The simple model of human values in Figure 1 used throughout this discussion should be considered a 'first pass' based on thematic analysis of ten interviews. It is subject to the following limitations.

5.3.1. Interview protocol

Participants were loosely briefed on the interview topic, however many potentially felt uncomfortable and were unfamiliar with discussing money, banking and their behaviours verbally. Banking is not a central to people's lives

and they rarely think about or discuss their actions with other people. Discussions were held out of context, over a desk or kitchen table, so interviewees were reliant on their distant memories of events, and they often required prompting from the interviewer to recall their behaviours and rationale.

Recruitment was through convenience sampling and therefore all participants had a connection to the interviewer. Participants were honest in their language and forthcoming with experiences, but they may have been eager to please, biasing the severity of scenarios to please the interviewer. This eagerness is a common from interviewees (Rogers, Sharp, & Preece, 2011).

All participants were from South East England, and only one was an ethnic minority. The sample did not represent UK-wide cultural diversity.

5.3.2. Qualitative analysis

The background research in this domain was skewed towards the marketing journals and their use of acceptance and adoption theories, there was risk that the interviews and analysis would suffer from a theoretical bias. The first five interviews had a detailed discussion guide based on the theoretical grounding. After a first-pass thematic analysis of these interviews, the discussion guide was rewritten to encourage openness and reflection, however, the evaluator's subjectivity may have been skewed (Adams, Lunt, & Cairns, 2008).

The number of interviews was limited to ten for time and budgetary (incentive) constraints. At this point in the study the interview felt theoretical saturation, however further interviews or repeat analysis of existing data may reveal additional themes and refinement to the model.

5.3.3. Temporal effects

The final, and most important limitation, was that the qualitative study spanned a period of two years, with one group of interviews in 2012 and another in 2014. There were some subtle changes in banking technology in that time – mobile banking apps and new ATMs – which led to some loss of continuity over the methods and channels discussed in the interviews. The analysis aimed to compensate for this by highlighting any temporal themes and effects.

CHAPTER 6.   CONCLUSION

The last two decades has seen huge transformation in the UK banking industry with online banking, self-service products, and cashless spending. The industry is understandably optimistic about the future of financial technologies, investing heavily in innovations and optimisations to their electronic channels (Khatri, 2014). With high levels of use and huge financial investment, the HCI research community has been surprisingly hands-off, leaving the discussion to the marketing journals whose concerns are often driven by the population's quantitative consensus on technology, instead of taking a human-centred approach. Identifying this gap in the research landscape, this study aimed to evaluate the current banking environment from a qualitative, human-centred basis.

After ten qualitative interviews and an in-depth thematic analysis, seven overlapping human values were identified that were grouped into two broad themes: compatibility and assurance. These values have direct impact on perceptions to technology and resultant behaviours. Throughout the previous Discussion, the values were applied to a goal-directed design methodology to explore motivations behind people's behaviours. Whilst security, trust, convenience and other characteristics of digital banking technologies had been discussed in the previous literature, their compound effects have not been considered until now. This study analysed the unique human values in real life contexts that motivate behaviours and actions towards any of the offline and online channels. Additionally, selected future technologies and activities were evaluated in the context of the values; this highlighted certain opportunities and obligations that banking channels have. Acknowledging that the model is a 'first-pass' into exploring this topic, the model and values have demonstrated their applicability to the current banking paradigms and foreseeable future of finance.

6.1. Implications

6.1.1. For designers and researchers

As previously mentioned, the HCI community has not taken much interest in financial technologies, despite the widespread use and huge societal impact. Up until now, practitioners and researchers investigating this topic have relied on the agendas of marketeers, highly specific HCI research (usually focused on disadvantaged communities), the banking industry's optimistic reports, or their own colleagues and industry networks. This study has potential implications and contributions in three areas. First, the Results section of this report provides many inspiring real world examples of technology in use, with interesting nuances and contexts. Second, the Discussion establishes a robust and flexible model, (grounded in inductive analysis of interview data, not based on theories) that can be used to inspire evaluations or used in discovery stages of user-centred design. Third, it is hoped that the HCI research community will be prompted to treat this important topic with the attention it deserves, through critiquing this study (if published to a wider audience), or using other qualitative methods to explore human-centred themes.

6.1.2. For the financial services industry

Whilst banks and fintech startups are enthusiastically pushing forward with new innovations, many of these come from technology or marketing agendas, and are not human-centred; the earlier cited example of the failures in mobile payments is an example of this non-human-centred approach. This study has demonstrated that even successful technologies do not appeal to the full breadth of values, potentially driving people to other channels or increasing the sense of weariness and distrust in these technologies. Specifically, a channel that only benefits a single value or characteristic is unlikely to be successful. There are

three recommendations to the financial industry. The first is to consider and design for the full breadth of human values in any individual technology or channel. Second, as society as a whole increasingly invests in technology, new paradigms and ecosystems may emerge, affecting humans in unexpected ways. It becomes important to explicitly design for human values, potentially by starting projects with an "understand" stage that considers environments, cultures, existing activities, and all potential impacts of the new innovation (Harper *et al*., 2008; Sellen *et al*., 2009). The third recommendation is to continue investing in offline, tangible, and social methods that have an important role in people's interaction with money. The simple model presented in this study is a start to thinking about human-centredness, but constructing new theories using affective frameworks or other design methodologies is equally appropriate.

6.2. Further research

Due to the novelty of this research and use of a qualitative methodology in this domain, there are many areas of further research. Throughout analysis and the latter interviews, the evaluator felt theoretical saturation had been reached, however, it is possible that replicating this methodology with participants with diverse demographic qualities or financial backgrounds could refine the theoretical model with new connections and narratives. Therefore, one area of further research is to repeat this study to validate results or triangulate the findings (Rogers *et al*., 2011). Other qualitative or quantitative methods may be equally valid to explore similar themes to this study.

To avoid bias, the analysis and discussion of findings remained grounded in the inductive, latent findings of the research. Other models and frameworks were purposefully ignored. Therefore, there is potential to compare this model with the established innovation frameworks, such as the Technology Diffusion Model

(Rogers, 1995), Technology Acceptance Model (Davis, 1989), or Technology Readiness Index (Parasuraman, 2000). It is possible that this study's model complements these frameworks, other analytical frameworks (Blandford, Green, Furniss, & Makri, 2008; Blandford, Keith, Connell, & Edwards, 2004), or other affective frameworks, for example designing for pleasure (Jordan, 1998) or the technology as experience framework (McCarthy & Wright, 2004).

In the two years between the first and second groups of interviews, the interviewer observed an undercurrent of fatigue, discontentment, and some concern at the pace of technology from the second group of interviews. It is an anecdotal observation from the interviewer, but it draws attention to the fast pace the industry is moving in. A longitudinal study over a longer period of time may prove helpful in understanding consumers' changing perceptions over time. Although there are a number of existing research studies into banking spread over many years, the majority of these are quantitative, asking closed questions which cannot capture subtle shifts in people's weariness or optimism over time.

Finally, participants were interviewed over a table and asked to verbally describe their experiences. An additional area of further research is for empirical ethnography, diary study, or other observation-based techniques that will potentially capture people's spontaneous and mundane activity, not just the memorable or critical incidents.

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APPENDIX A. PARTICIPANT INFORMATION SHEETS AND CONSENT FORMS

Information Sheet for Participants in Research Studies

You will be given a copy of this information sheet.

Title of Project: **People's use of financial and banking technologies**

This study has been approved by the UCL Research Ethics Committee as Project ID Number:

Name, Address and Contact Details of Investigators:

Robert Nicolaides & Ann Blandford
UCL Interaction Centre,
Malet Place Engineering Building (8th floor),
Gower Street,
London WC1E 6BT
Email: robert.nicolaides.10@ucl.ac.uk

We would like to invite you to participate in this research project. You should only participate if you want to; choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part, please read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or you would like more information.

Details of Study:

This study is part of an MSc dissertation project that aims to investigate how adults research and use financial information on the web and other channels. You will be interviewed on your experiences.

Please be as honest and descriptive as possible, however do not feel obliged to disclose any personal or sensitive financial information. Please let the interviewer know if at any stage you feel uncomfortable with the questioning.

The interview will be recorded. Confidentiality and anonymity will be maintained, and it will not be possible to identify you in any publications.

The interview will last for approximately 30 minutes.

It is up to you to decide whether or not to take part. If you choose not to participate, you won't incur any penalties or lose any benefits to which you might have been entitled. However, if you do decide to take part, you will be given this information sheet to keep and asked to sign a consent form. Even after agreeing to take part, you can still withdraw at any time and without giving a reason.

All data will be collected and stored in accordance with the Data Protection Act 1998.

Researcher notes, additional clauses:

§ If you do decide to take part, please let us know beforehand if you have been involved in any other study during the last year.

Informed Consent Form for Participants in Research Studies

(This form is to be completed independently by the participant after reading the Information Sheet and/or having listened to an explanation about the research.)

Title of   **People's use of financial and banking technologies**
Project:

This study has been approved by the UCL Research
Ethics Committee as Project ID Number:

Participant's Statement

I …………………………………….....................................

agree that I have

§   read the information sheet and/or the project has been explained to me orally;
§   had the opportunity to ask questions and discuss the study; and
§   received satisfactory answers to all my questions or have been advised of an individual to contact for answers to pertinent questions about the research and my rights as a participant and whom to contact in the event of a research-related injury.

I understand that I am free to withdraw from the study without penalty if I so wish, and I consent to the processing of my personal information for the purposes of this study only and that it will not be used for any other purpose. I understand that such information will be treated as strictly confidential and handled in accordance with the provisions of the Data Protection Act 1998.

Signed: Date:

Investigator's Statement

I, Robert Nicolaides,

confirm that I have carefully explained the purpose of the study to the participant and outlined any reasonably foreseeable risks or benefits (where applicable).

Signed: Date:

Researcher notes, additional clauses:

• I understand that my participation will be taped/video recorded, and I am aware of, and consent to, any use you intend to make of the recordings after the end of the project.
• I understand that the information I have submitted will be published as a report. Confidentiality and anonymity will be maintained, and it will not be possible to identify me from any publications.
• I understand that I am being paid for my assistance in this research and that some of my personal details will be passed to UCL Finance for administration purposes.

APPENDIX B.   INTERVIEW DISCUSSION GUIDES

2012 first round discussion guide

Current money management strategies (paper-based, computer-based, no money management).

- How do you currently manage your day-to-day finances?
    - o How do you keep track of your spending?
    - o How do you keep track of your incomings and outgoings?
    - o Which, if any, methods and technologies do you use to help you manage your day-to-day finances?
    - o Pen and paper? ATMs? Phone banking? Internet banking? 3rd party aggregation site? Spread sheets? Accountancy software? Any others?
- Why do you choose to use that method over other methods?
    - o What do you think the advantages or disadvantages are of using that method compared to other methods?
    - o Thinking back to the first time you used that method, what motivated you to use it, or try it out?

Methods of interacting with the bank for day-to-day transactions (online banking, phone banking, ATMs, or branch). Request critical incident.

- How do you currently interact with your bank for day-to-day transactions?
    - o What do you interact with your bank for? What kind of requests do you make, what information do you need from them, what do you want to tell them?
    - o Which, if any, methods and technologies do you use to help you interact with your bank?
    - o ATMs? Phone banking? Internet banking? In branch? Letters/post?
- Please give me a recent example of when you have had to interact with your bank for your day-to-day banking?
- How does technology help or hinder the way you interact with your bank for day-to-day transactions.

Exploration of the reasons behind those methods (motivations, first use, advantages/disadvantages of those methods, including: trust/risk/security, cost, utility, ease of use, convenience, ethics, social contact, familiarity with other technologies).

- You've mentioned [methods] ways of interacting with your bank, can you tell me why you chose those methods over other methods?
    - o Which other methods do you think are available to you to interact with your bank?
    - o What are the advantages and disadvantages of using method?
- Thinking back, why did you first choose that method? What motivated you?

Recent experiences with buying financial products. Request critical incident.

- Tell me what you do when you are researching or buying new financial products.

- Please give me a recent example of when you have researched or bought a new financial product?

    o What was the product?

    o What were your research methods?

    o How did you make the decision of which product to buy?

    o How did you buy that product?

    o How have you maintained or monitored that product since buying it?

- How did you use the internet, other channels or technologies in this transaction?

    o How did technology help or hinder your transaction?

Exploration of the reasons behind channel choice (motivations, first use, advantages/disadvantages of the channels, including: financial product choices, complexity, social contact, risk).

- You've mentioned [methods] ways of buying financial products, can you tell me why you chose those methods over other methods?

    o Which other methods do you think are available to you to research and buy financial products?

    o What are the advantages and disadvantages of using method?

- Thinking back, why did you first choose that method? What motivated you?

Current methods of payment (cash, credit card, cheques, electronic transfer, electronic wallet, etc.).

- What payment methods do you use?

- In which occasions do you use different payment methods?

    o How does the product, service, medium, merchant or situation affect the method of payment?

- What are the advantages and disadvantages of using method?

- Thinking back, why did you first choose that method? What motivated you?

Perceptions of participants' future interaction with money, their bank, and financial services.

- How do you see yourself managing your money and finances five years in the future?

- How do you see yourself interacting with your bank for day-to-day transactions five years in the future?

- How do you see yourself researching and buying financial products five years in the future?
- How do you see yourself paying for products and services five years in the future?

2014 second round discussion guide

Introduction and ice-breaker

5–10 minutes

1. Tell me about the most recent thing you've done to do with banking or finance?

    1. *Prompt for different transactions:* "The last time you…"

        1. "Did some kind of 'day to day' banking or financial management,
        2. "Purchased a new financial product or service,
        3. "Paid for something, anything."

Critical incidents

30–45 minutes

1. Please describe to me a recent, memorable experience you've had with banking or finance.

    1. Some kind of 'day to day' banking or financial management

        § *Prompts:*

            1. What were you doing, and why?

                § Step-by-step

            2. What made the experience memorable?

            3. What were the methods, channels or *interactions*? (Human- or technology-based?)

            4. Good or bad experience? Why was it good or bad?

            5. Why did you choose those methods?

    1. What is your usual method?
    2. How does it compare to the alternative methods?

                        § Advantages and disadvantages

            6. How could the experience be improved?

            7. What do you now do differently after that experience?

        2. "Purchasing a new financial product or service

            § *Prompts:*

                1. What were you doing, and why?

                    § Step-by-step

2. What made the experience memorable?

3. What were the methods, channels or *interactions*? (Human- or technology-based?)

4. Good or bad experience? Why was it good or bad?

5. Why did you choose those methods?

   0. What is your usual method?

   1. How does it compare to the alternative methods?

      § Advantages and disadvantages

6. How could the experience be improved?

7. What do you now do differently after that experience?

3. "Paying for something, anything"

   § Bills, peer-to-peer payments, credit, debit, cash, etc.

   § *Prompts:*

   1. What were you doing, and why?

      § Step-by-step

   2. What made the experience memorable?

   3. What were the methods, channels or *interactions*? (Human- or technology-based?)

   4. Good or bad experience? Why was it good or bad?

   5. Why did you choose those methods?

      0. What is your usual method?

      1. How does it compare to the alternative methods?

         § Advantages and disadvantages

   6. How could the experience be improved?

   7. What do you now do differently after that experience?

2. What was the worst experinece you've ever had with your bank, a financial product, banking in general, buying something, etc.?

   o *Prompts:*

1. What were you doing, and why?

   § Step-by-step

2. What made the experience so bad?

3. What were the methods, channels or *interactions*? (Human- or technology-based?)

4. Why did you choose those methods?

        0. What is your usual method?

        1. How does it compare to the alternative methods?

        § Advantages and disadvantages

5. How could the experience be improved?

6. What do you now do differently after that experience?

  3. What was the best expereince?

     o *Prompts:*

0. What were you doing, and why?

        § Step-by-step

1. What made the experience so good?

2. What were the methods, channels or *interactions*? (Human- or technology-based?)

3. Why did you choose those methods?

        0. What is your usual method?

        1. How does it compare to the alternative methods?

        § Advantages and disadvantages

4. How could the experience be improved?

5. What do you now do differently after that experience?

Future banking and wrap up

10–15 minutes

  1. How does technology help or hinder with:

    1. 'Day to day' banking or financial management,

    2. Purchasing a new financial product or service,

    3. "Paying for things.

  2. Thinking about the future of banking and finance, how do you think things will be different 5 years in the future?

     o *Prompts:*

       1. How would you *like* things to be different?

       2. How do you think things will *actually* be?

APPENDIX C.   SAMPLE INTERVIEW TRANSCRIPT

P3, *Ted* on 24th August, 2012 at 14:00.

I: So I wanted to start by asking you about your current money management strategies. So how do you currently manage your day to day finances?

Pretty lackadaisically, really. Using… I probably use my online account to check, you know, comings and goings… probably in conjunction with monthly statements.

I: Is that the paper statements they send you?

Yeah.

I: So how do you keep track of your spending?

I generally just do a quick scan online. I mean, to be honest I'm quite lazy at checking those things, so it's only when something out of the blue happens I go online.

I: So what would you say is out of the blue? Why might you check online?

Yeah, so normally… quite often having a look if I'm doing another transaction, for example, I live in a shared house, so… you know, various people pay different bills. So if I'm transferring money to and from, I then normally have a little scan through to just check everything seems to be in order… Or if I've make a big transaction, I go and just double check it was as it should be.

I: So how do you keep track of your incomings and your outgoings on your account? Is it through just online banking or occasions?
Yeah, it is online banking yeah, entirely online banking. Because my bank kind of break it down quite, you know, to incomings and outgoings columns and… I just generally look at the totals to work out if I'm living within what I should be.

I: And do you use any other methods and technologies, such as, you know anything on paper, or any lists or ATM statements.

No, to be honest, I've never used the ATM thing. I'll be 100% honest, I'm actually moving house at the moment and I just realised how much paperwork I actually got from the bank that's almost completely redundant, virtually a suitcase full of paperwork and statements that I've never actually used for anything because I can do it online.

I: Okay… so why do you choose to use online banking and checking your statements, or why don't you check more frequently?

I'd say it's probably convenience it's the main thing… I mean when it first came in, I'll be honest, I was terrible at remembering passwords 'cause two different passwords and various security codes and things like that, and I found it hard to keep up with, you know, just remember what everything was. But obviously since you get a bit more internet savvy over the years, it's just become easy to check at work, you know, 'cause, for example, where we work here there's no bank branches within probably, I dunno, 5–10 mile radius, there is no options to check it other than online.

I: Thinking about when you first started using online banking, what motived you to use it?

Just necessity I think. But I was, yeah I was probably a bit of an old granny in terms of I didn't like the idea of doing stuff online in case of some sort of fraud or you know, a Trojan bug whatever watches what you're doing… but yeah, just various offices where they've been located just moved away from high street branches, so it's been near impossible to go into a high street branch. 'Cause we also work weekends as well sometimes and there's no option to go in then. Basically more and more things just become necessity and that's the only way I can process a lot of things.

I: What kind of things were they stopping you from doing in the high street and start doing online, can you remember?

Yeah, it was things like… well, don't think it was necessarily stopped it, but setting up and cancelling standing orders, things like that… yeah, it's just not that feasible at all really to go in and do it face to face… it's become easier and easier to just do it online, you know, just literally type it in and have everything set up our cancelled. What else can I say… I would say… it is probably literally only transactions that I'd done that for.

I: Okay, so how do you currently interact with your bank for day to day things, what kind of things would you need to get in touch with them with, and how would you do that?

I kind of just use the one bank for literally everything I need so, for example recently, which was quite out of the blue, I was having to use them to… I was trying to get a mortgage, so I was using them to try and set up a mortgage and they, you know, sorted out a surveyor through the bank who also didn't work out for   me   at   all,   it   went   that   way. Recently, also, I had a wallet stolen so I've had to speak to them about re-getting cards, resetting security. And but, other than that I don't really, probably a bit boring, in terms of I don't really go to the extremes of running out of money or coming into much money. Normally they don't really need to have too many dealings with me.

I: Would you say most of your contact is via the online banking, just the day to day transactional stuff?

Yeah. Entirely. I mean my local branch is still, according to the bank the one I set up when I was 18 years old, at my parents home town, which I haven't lived at for… a long time… I'm 32 now. So according to all the security questions and stuff, you know, I branch in a small place in Kent. So, 'cause everything I do nowadays here is done online, so… I don't have any face to face dealings at all.

I: So when you had to get in touch with them about the mortgage, or when your wallet was stolen, was that via email or was it on the phone?

That would probably be over the telephone, to be honest. 'Cause again I'd use the internet probably to find out the telephone number, 'cause when the wallet was stolen I was slightly in the middle of nowhere with the wallet that had all the useful contacts and everything in it, so I just went on the internet and rang them through that way.

I: Okay, so what, any other technologies do you use to interact with your bank, is it ATMs or…?

ATMs, yeah.

I: Is that just for cash, or do you do any other things?

Just for cash, I've never pushed any other buttons.

I: Phone banking?

Never.

I: You mentioned you had a big stack of post at home that you've never really looked at, it's all been a waste, do you ever send letters back and forth or…?

No, to be honest, no.

I: So what would you say are the reasons why you predominantly use online banking, why is it so much better?

Again, I don't know if it is, but it has the feel of being instant. You know, from my side I can push a button that says, you know, I've fulfilled my obligation to pay x or y, again, you know, when you read the small prints it's not normally that case, but at least it feels like I've done that whereas, as I said, to take time out of your day to go and physically get hold of money and give people it, you know, it doesn't feel as quick. Also, to be 100% honest, I don't really like the amount of paper work I do get through from the bank. I do get letters virtually every fortnight or a week, about some offer, something that generally, if I was honest, if I never received it again I'd be absolutely fine with that. And it's sort of the same with bank statements to be honest with you… I don't know id it's it's a throwback to the past, but everyone said 'oh, keep 3 years worth of your statements', but I don't know, I've never ever been asked to produce 3 years worth, I don't know what it's for. But yeah, I've got, like I said, a lot of paper that is probably a bit of a waste and environmental issue and all that that I don't see any use for.

I: Are there any disadvantages to using online banking?

Disadvantages… yeah, it's probably the method of security I would say. I've got a code that I'd never remember off the top of my head. That it came with a little credit card sized 'write your code on this' sort of form that I've got in my wallet and when my wallet was stolen, instantly I lost the means to get on my online banking. Which meant I couldn't cancel anything online, I couldn't do anything online. Yeah, 'cause I've found whenever I've been burgled or what have you, they seem to take all the same things at once, so it's been a problem to get online. Other than that it's just possibly the old fashioned factor of just not having seen someone face to face and knowing that you've seen them put something in the pile, but that said, I've never had an issue with online banking. There's never been security problem or a payment problem, I'm quite happy with that.

I: Okay, explain to me what was this old fashioned thing?

Yeah, well I'm probably a bit behind the times, in that I do like to, you know, I've never even used one of when you write the cheque out and deposit the money down the street, whatever; I'd always queue up, even if it took time, just 'cause when it comes to money and stuff I like to see that it's, you know, gone to the right person, they've put it in the right pile… I suppose it does make money seem a bit virtual, just figures move. But I've never been a victim of online crime, so that's probably totally old fashioned.

I: Okay, can you give me a recent example of when you've had to buy… or research and buy new financial products. So I'm interested in, kind of, what you go through when you are researching a new financial product and how then you actually go through to purchase it.

Probably use the internet for all my research, to be honest with you. Yeah,recently I was looking for a mortgage, so I went on, in that particular example, I went on a few consumer advice websites, I think I used BBC and Which and read their guides to the basic criteria and how to understand the terms. And then from there, I went on to some money comparison websites, to see if I could, sort of, decipher what they were on about, what seemed the best deal. And then in that particular example I went back to my bank and said 'yeah, what can you do?' It turned out they were the best deal so I never actually had to use the online things.

I: Okay, so how did you know they were the best deal?

In that particular case, because it was so, I dunno, personal and unique to me, I suppose, it mean that they, because they knew, I had banked with them since I was like 10, it meant a lot of the other issue that were thrown up by using online companies, no using other banks sort of were avoided, for example, you know a lot their, you know, the wage slips and some of the questions the other ones were asking, you know, they had all that information to hand so they could offer me the product straight away pretty much. As well, I think when I was using one of those price comparison things, you know, I started to find… it's the classic thing, things that look good at first encounter, once you start delving into it and reading the small print, a lot of the… a lot of things aren't upfront on those websites, it got quite frustrating, you know, it was like you find a product with an interest rate that was okay, or, you know, with terms that seemed okay. And then hidden away there was an excess fee that then you had to pay interest on that made it less competitive than the more expensive ones at the bottom of the list, which… so… I didn't find using those things that helpful.

I: Do you actually go through and buy this mortgage with the bank?

Yeah, I did, yeah.

I: And that was all handled in branch, or on the phone?
That was all handled by telephone. But unfortunately the valuer valued the property ten grand less than we'd agreed on, so the bank wouldn't lend me, as it turned out, wouldn't lend it to me without me finding this extra ten thousand pounds. It was… just one of those things.

I: But you still managed to find the extra money and go through to buying this property?

Oh no, at that point it fell apart.

I: So have you actually managed to find a new mortgage since?

No, other circumstances came in and meant now moving wasn't right time… I got so far down the line and had to go back to square one really. I need to do all the research all over again.

I: Is that, are you researching another house, you mean?

Yeah.

I: That's a shame. Was that…?

But then all the rates change as well, so then you got to go back, I suppose, to do all the, go back to all the price comparison things.

I: It sounds to me you used the internet to do some initial research and technology to get a feel for what the rates, kind of, were, but then you were very reliant on trusting what your bank was telling you after?

Yeah, I mean that's probably fair to say… even though it's probably the most money you're ever going to spend, it gets to a certain point when you're having the same conversation with 'x' amount of people, you just, you know, there is… it seems to be the best one I found, I'm just gonna stick with it, that is fair to say, yeah. I probably wasn't… you know, I could probably have continued searching and possibly found something slightly better. But as I said, I just found, because rates and things change and there are so many variables, I just… I found one that suited, and everything was agreed, it was, yeah, convenience above anything else probably.

I: So what would you say would be the advantages and disadvantages of internet research, and the advantages and disadvantages of the interactions you had with your bank?

I think the main advantage of going into your bank is that you can actually sit with someone and then as you ask questions, you know, they're more organic… and you can actually have a conversation, and then, it's I suppose it's more of an issue, more of a feeling of trust. Because, I can ask anything that's on my mind. Whereas with an internet thing, I guess someone's sat down and worked out what the most probable questions are going to be, but, you know, the possible problems or possible questions, but they're slightly more rigid, which might not be as helpful as just sitting down with someone face to face and talking to them. And I guess small print as well, I did find deals online when I was reading up that seemed perfect, you get through a certain amount of, you know, say you're doing a conversation by telephone, you've given them all of your information so, you know, you feel like you've given them your name, address, all the sort of things that you probably wouldn't want to give out… then that product, some small print you didn't see, might not be available to you, and I've wasted telephone money, time, blah, blah, blah. At least when someone's there they can just say to you 'you've done the wrong tack, go this way'.

I: So you did a bit phone enquiries as well.

Yeah.

I: So thinking back, what first motivated you to use the internet to do some of the research?

Probably number 1, convenience, because I could research outside traditional bank hours. I could do it at night, for example, like after I finished work. Yeah, because I didn't geographically have to be located somewhere I could go to the bank, that suited me. And plus, rightly or wrongly, it seems to have, it seems to be the place where you can get the most information. Obviously when you're looking at things that aren't in your field of expertise, you don't, you know, never quite sure who the right persons to ask questions are, but with the internet, you know, again you're probably prompted down certain routes that you take that you feel that you can, you know, ask the right, you can find out various information that you want and you can get feedback, you can get, from other people.

I: And you mentioned you used the phone as well, what prompted you to move onto using the phone?

In most of those cases it forced you to, yeah, just basically said.

I: And what motivated you to eventually go into branch to speak to your bank?

Once I had settled on them as the preferred, whatever the word is, the preferred supplier… just probably an old fashioned, just wanting to speak to someone.

I: Did you actually go into branch or did you phone them up?

With that one, actually I didn't need to go in to the see man I spoke to, no I didn't need go into the branch, that was done by telephone.

I: But then the surveyor is the only person you actually spoke to face to face?

No the surveyor, he did everything by post actually.

I: You weren't even there when he want to the property to look at it?

No.

I: So, some brief questions about now the current ways that you pay for things. What current payment methods do you use?

I'd probably say cash or card, the only two I use. That's a debit card, not a credit card.

I: So which are the different occasions you use different payment methods?

I'd say it was a case of whatever is in my pocket, really. If I have the cash I pay in cash, but if I have the card I'd use card… no rhyme or reason to it really. Obviously if it was a big payment I always use card.

I: Debit card still?

Yeah.

I: Okay. So what would you say are the advantages and disadvantages of using cash or card?

The advantages of using a card is definitely ease. 'Cause, you know, I guess you can… I've never had problem using a card in terms of it being, I think my card's a visa one and it's sort of accepted anywhere, even abroad. Never, ever had a problem using it. The only frustrating thing with cards is usually is suppliers' fees, you know, when they either an ATM or the person in the shop or pub or what have you makes you spend more than you want to. Other than that… but I use, if it's just small amounts, I'd normally always use cash, 'cause, again, I dunno, it feels safer; I'm not giving it to some random person to… I probably use my card in bigger stores.

I: Now, thinking back… did you ever use cheques, by the way?

No.

I: Thinking back when you first started using cards, I know you're probably at that age group when they've been embedded in how you use them, but do you remember when you started using cards more than cash, or what motivated you to use cards?

Yeah, I probably can remember. First started using cards more when I first got a credit card, and… it was an easy way to spend. I guess, I dunno, yeah I probably did get brought up using cash, it just got to the point I think, everywhere, suddenly suppose when everywhere started accepting cards, there's very few places you would go now that they wouldn't accept it, so…

I: You don't use credit cards anymore?

No.

I: Why not?

'Cause I used them when I was younger and then instantly saw how easy it was to, you know, overspend. And I… yeah, I cut them all up after a year. I never got into trouble as I could see that it was an easy route. And I've got, I do use my current account for everything, it's got an overdraft if I needed to make a big purchase and, yeah, everything is covered the same way.

I: And final questions. How do you see yourself managing your day to day spending, day to day finances 5 years into the future?

Day to day finances, again, I'd imagine it's all going to be, all going to be online again. I mean, hopefully, yeah I won't be using bank statements anymore, 'cause as I said, I never really thought about receiving physical paper things 'til I was moving house recently and I've got folders upon folders of things, that I dunno know if it's just an old fashioned idea that you need to keep hold of these things. I still in 32 years never come across a situation where someone's said 'show me a bank statement from 3 years ago', it's never happened. People seem to accept everything online, a scan or PDF or what have you. I mean, even when I was doing the mortgage, they said, oh, you know, 'prove you've got a payslip or anything like that' and they just wanted a scan of a payslip, no one wants, wanted it, I receive it electronically anyway, so there was no paperwork there, yet again.

I: How do you see yourself interacting with your bank for day to day interactions in the future?

Yeah, I guess, I mean to be honest, contact with the bank has got less and less and less over… since I can remember, they used to sort of ring you up and make you come in branch, and you had to sit there while they try to flog you various things, that, you know, products and accounts, and things like that, sort of dressing it up as a face to face meeting, but those sort of things seem to dying down, I only really contact them when I need something. So I imagine, yeah, yet again, I image contact will go down with the bank which is probably how I'd prefer it to be honest with you.

I: Why would you prefer it?

Because I hate, well, I hate being sold things I don't want. If I wanted to change something, as we were saying earlier I got all of the tools at my disposal to find out how to do that, I probably wouldn't do it because someone asked me to come and said 'oh, what about this?', you know, I'd never make a decision just spur of the moment like that. I'd see what the options were and then change if I wanted to, and if I didn't I'd just stick with what I've got.

I: How do you see yourself researching and buying new financial products 5 years in the future?

Yeah, I mean, I can't imagine too much, I don't know, but I can't imagine will change between now and then. So probably using the same techniques as we've got at the moment. Yeah, just using consumer websites and comparison websites that find out the product I want and then find out the most cost effective way of doing it.

I: And how do you see yourself paying for products and services 5 years in the future?

I'd say, I don't know why, it seems more futuristic that everything will be done using cards. It seems to be every time I get a new card sent through there's some new… things on it, you know, I can't remember what it's called now, there's one at the moment where you touch it on a thing and it takes the payment, rather than typing in. Everything is getting a little bit more futuristic, but basically the same

really, just using a card. Everyone seems to predict that cash won't be as valid, but I think, yeah, it will probably still be the same mixture of cash and cards.

I: Right, those are all the questions I wanted to ask you, do you have any other comments on what we've been talking about?

About the banking thing? The only frustration I'd say, I don't know if it's related to it, the main frustration is when everything is done remotely is when there's a problem. Just trying to think, for example, I had my wallet stolen, when I went in a branch, and wanted to cancel my cards, and they said to me 'what's your account number?' and it was written on my card, so… something seemed bizarre in terms of how it worked, you know, you have all information in one place and when you lose that one thing it's not very flexible in terms of… 'cause I had my passport, everything stolen, I couldn't prove my identity, and I needed that to cancel my card. So… yeah, I just think things like security at some point, I don't know how, but have to be improved. 'Cause I mean, asking for your mother's maiden name and stuff in this day and age, it's not very hard with Facebook to find out these sort of things, they don't seem very high tech. Other than that it all seems fairly straight forward.

I: Great. So, that's it.