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## How does website design in the e-banking sector affect consumer attitudes and behaviour?

Philip Raymond Walker

PhD

**References and Appendices** 

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Appendices

# <u>Consumer knowledge</u>

<i>Computer sophistication &amp; Computer knowledge:</i>	<ul> <li>Knowledge of computers;</li> <li>Knowledge of the internet;</li> <li>Knowledge of security issues;</li> <li>Knowledge of bank procedures;</li> <li>Knowledge of interest rates;</li> <li>Confidence in using technology;</li> <li>Confidence in transaction process.</li> </ul>
<i>Consumer experience of online transactions:</i>	<ul> <li>Consumer knowledge of online banking procedures;</li> <li>Previous experience of online banking.</li> </ul>
Consumer Knowledge of trustees:	<ul> <li>Previous experience of bank using local branch;</li> <li>3<sup>rd</sup> party report of online bank (e.g. Which report)</li> </ul>

# Consumer Drives

Motivation of consumer:	<ul><li><i>Purpose of the application;</i></li><li><i>Level of personal involvement.</i></li></ul>
Willingness to accept risk	• Clear judgment of risks and benefits.
Consumer need:	<ul> <li>Extent of need;</li> <li>Urgency of need;</li> <li>Speed of response;</li> <li>Desirability of a positive outcome.</li> </ul>
<i>Consumer attitude:</i>	<ul> <li>Acceptance of technology;</li> <li>Acceptance of online trading;</li> <li>Purchasing behaviour;</li> <li>Loyalty and Commitment.</li> </ul>
Consumer expectations:	<ul> <li>Satisfaction for process and outcome;</li> <li>Expectation for positive outcome;</li> <li>Novelty/entertainment value;</li> </ul>
Consumer mood:	Emotional state of consumer.

# Consumer Perceptions

<i>Perceived risk/uncertainty</i>	<ul> <li>Unreliable internet connection;</li> <li>Lack of security controls (password/username/ encryption);</li> <li>Lack of privacy controls;</li> <li>No security seals;</li> </ul>
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	<ul> <li>No online/telephone/address - contact/support;</li> <li>No bank policy statements (e.g. lost card/identity fraud/phishing);</li> <li>No "peace of mind" guarantees;</li> <li>No official regulatory control information;</li> <li>No data protection guarantee/policy;</li> <li>Uncertainty of transaction success;</li> <li>Unclear online dialogues/instructions;</li> <li>Information unclear/inaccurate/obsolete;</li> <li>No antivirus/hacking/malware/crimeware protection;</li> <li>Unknown bank;</li> </ul>
Perceived value of benefits:	<ul> <li>Advantage of online transaction;</li> <li>Access to more information;</li> <li>Cheaper cost;</li> <li>Increased choice;</li> <li>Speed of response.</li> </ul>
Perceived trustworthiness:	<ul> <li>Security seals;</li> <li>Security controls - password/username/encryption;</li> <li>Clear banking policy statements - security/privacy /lost card/identity fraud;</li> <li>Antivirus/hacking/malware/crimeware protection;</li> <li>Professional website;</li> <li>Clear/up to date/understandable/accurate information and online dialogues;</li> <li>"Peace of mind" guarantee;</li> <li>Official regulatory control information;</li> <li>Aesthetically pleasing website.</li> </ul>
Perceived quality:	<ul> <li>Website structure;</li> <li>Website aesthetics;</li> <li>Quality of service;</li> <li>Professionalism of design and content.</li> </ul>
Usability:	<ul> <li>Ease of navigation;</li> <li>Ease of reading content;</li> <li>Ease of data input;</li> <li>Easy of understanding content;</li> <li>Ease of locating required information.</li> </ul>
Security and privacy:	<ul> <li>Perception of risk;</li> <li>Perceived honesty;</li> <li>Perceived integrity;</li> <li>Perceived uncertainty of outcome;</li> <li>Perceived privacy policy and implementation;</li> <li>Perceived security of website;</li> </ul>

Appendix 2- Extrinsic	factors influencing	user usage of E-banking
repending 2 Entrinisie	ractors minacheng	

# <u>Design</u>

<i>Aesthetics:</i>	<ul> <li>Organization and balance of content;</li> <li>Selection of backgrounds;</li> <li>Selection of colours;</li> <li>Selection of graphics;</li> <li>Selection of fonts;</li> </ul>
Professionalism:	<ul> <li>Good design:</li> <li>Incorporating ease of navigation;</li> <li>Easy location of content;</li> <li>Appropriate use of colour;</li> <li>Appropriate use graphics;</li> <li>Appropriate and readable font;</li> <li>Accuracy of information;</li> <li>Currency of information;</li> </ul>

# Function

<i>q</i>	<ul> <li>Ease of navigation;</li> <li>Ease of locating required information;</li> <li>Ease of reading information;</li> <li>Conformance with user expectations;</li> <li>Compliance with disability legislation;</li> <li>Error free and error handling;</li> <li>Links to other sites;</li> <li>Currency of information;</li> <li>Web traffic handling and capacity.</li> </ul>
Security:	<ul> <li>Use of user names and passwords;</li> <li>Encryption of communications;</li> <li>Compliance with official regulatory control;</li> <li>Clear statement of bank policy;</li> <li>Clear statement of consumer and bank responsibilities.</li> </ul>

# Knowledge

Internet presence:	•	<i>Prominence of appearance within search engine hit lists;</i>
	•	Selection by multiple search engines;
	•	Links from associated sites;
	•	Online advertising;
	•	Site location;
	•	Branding;

	<ul> <li>Site longevity;</li> <li>Communications and interaction;</li> <li>Multiple trading channels;</li> <li>Adoption of technology.</li> </ul>
Reputation (personal or 3 <sup>rd</sup> party):	<ul> <li>Establishment of a proven reputation for service delivery;</li> <li>Positive security for consumer and retailer;</li> <li>Competitive prices and variety;</li> <li>Good online reviews/satisfaction ratings in comparison sites and blogs;</li> <li>Community relations/charitable work;</li> <li>Problem resolution;</li> <li>Financial probity;</li> <li>Integrity;</li> <li>Benevolence;</li> <li>Personal or 3<sup>rd</sup> party experience with the retailer.</li> </ul>
Familiarity	Personally known bank.

#### Social Factors

Legal & regulatory Control	<ul> <li>Proscribed merchandise;</li> <li>Access restrictions to specified information;</li> <li>Digital rights;</li> <li>National/local security implications;</li> <li>Compliance with local and international legislation;</li> <li>Financial constraints.</li> </ul>
Transaction context	<ul> <li>Consumer and retailer location;</li> <li>Service availability;</li> <li>Multiple channel of operation.</li> </ul>
Cultural Context	<ul> <li>Personal service;</li> <li>Gender restrictions;</li> <li>Age restrictions;</li> <li>Social level restriction</li> <li>National biases</li> </ul>
Political context	Government censorship.
Religious Context	Religious Restrictions.

#### Online Environment

Reliability of equipment:	•	Consumer PC available;
	•	Consumer PC fully functional;

	<ul><li>Consumer PC reliable;</li><li>Consumer PC network equipped.</li></ul>
Reliable software:	<ul> <li>Consumer PC equipped with all required software;</li> <li>Consumer PC software fully functional;</li> <li>Consumer PC software not infected.</li> </ul>
Reliable connection:	• Reliable on demand connection through dial-up broadband or wifi;
Secure connection:	<ul> <li>Connection free from interception or manipulation;</li> <li>Encrypted communications.</li> </ul>

#### Abdul-Rahman & Hailes (1997) Risk, Uncertainty; Aladwani (2001) Privacy, service quality, security; Ambrose & Johnson (1998) Trustee ability, benevolence and integrity, perceived trustworthiness; Araujo & Araujo (2003) Perceived trustworthiness; Bauer & Hein (2006) Perceived risk; Perceived usefulness and ease of use; Chau & Lai (2003) Cheung & Lee (2000) Perceived trustworthiness; Collins (2006) Perceived trustworthiness; Corbitt, Thanasankit & Yi (2003) Perceived market orientation, website quality, technical trustworthiness, user experience, honesty, privacy, security, website attributes. uncertainty, vulnerability, dependence; Doney & Cannon (1997) Trustee credibility, benevolence, capability, prediction, transference; Eggar (2000) Interface properties, attitude, familiarity, reputation, transparency, appeal, usability & content; Eggar (2001) Transaction value, perceived risk; Einwiller et al (2000) Risk, uncertainty, experience, positive expectation; Flavian & Guinaliu (2006) Perceived security privacy policy, perceived honesty, benevolence; Fogg (2001) Ease of use, expertise, trustworthiness, tailoring Grabner-Krauter & Kaluscha (2003) Trustee credibility, reliability, emotional comfort, privacy and quality; Hoffman et al (1999) Security & Privacy; Hu Lin Zhang (2002) Perceived security Kini & Choobineh (1998). Information, risk involved; Koufaris & Hampton-Sousa (2002) Perceived usefulness, ease of use and trustworthiness; Laukkanen (nd) Risk; Law (2007) Perceived security;

#### Appendix 3 - Identified trust determinants

Lee & Turban (2001)	Perceived trustworthiness;
Littler & Melanthiou (2006)	Perceived risk, security risk, financial risk, social risk, psychological risk;
Luarn & Lin (2005)	Perceived credibility, Perceived ease of use, perceived usefulness, perceived self efficacy, perceived financial cost;
McKnight & Chervany (2002)	Trustee ability, benevolence, integrity;
McKNight Choudhary Kacmar (2002)	Web environment risk, reputation, site quality
Mukherjee Nath (2003)	Trustworthiness, perceived risk, usability, technical performance, reputation, shared value, communication, opportunistic behaviour
Olsen & Olsen (2000)	Cultural factors, risk, expectations, benevolence, information source;
Pavlou (2003)	Perceived usefulness, ease of use, trustworthiness, risk and reputation;
Polatoglu Ekin (2001)	Reliability, benefits, access
Reigelsberger (2003)	Perceived trustworthiness
Reigelsberger Sasse (2002)	Risk, reputation, website quality, consumer experience
Reigelsberger Sasse Mccarthey (2005)	Ease of use, reputation, honesty, fairness
Reigelsberger Sasse Mccarthey (2007)	Perceived risk, professionalism, reliability, ability
Robins Holmes (2008)	Website aesthetics
Rotchanakitumnuai Speece (2003)	Trustworthiness, perceived risk, perceived security, technology failings, legal shortcomings
Roy Dewit Aubert (2001)	Lack of security, lack of privacy, interface design, propensity, ability, benevolence, integrity
Sathye (1998)	Perceived benefits, ease of use, perceived risk, consumer awareness, availability
Tan & Thoen (2001)	Perceived trustworthiness, experience, understanding;
Sillence et al (2004)	Perceived trustworthiness;
Schmidt Liu Sridharan (2009)	Perceived usability, webpage design, webpage performance, webpage aesthetics.
Shankar Sultan Urban (2002)	Perception of risk & vulnerability, trustor expectation

	of trustee benevolence, uncertainty
Suh & Han (2002)	Perceived usefulness, perceived ease of use;
Wang et al (2003)	Perceived ease of use, perceived usefulness, perceived credibility;
Yousafzai et al (2003)	Perceived usefulness and ease of use

Appendix 4 – Study 2 Documentation

Appendix 4 Study 2 Parts A & B Instructions to Participants

# **Online Banking Services**

You will be shown six web pages of different banks offering inline banking services. Each web page will be displayed for 20 seconds. After you have seen all of the web pages I would like you to assess the online services offered by each bank by circling the appropriate number in the list below. The basis of your assessment should be whether you would use the online services offered by each bank.

	I Would Use the online services of this bank									
	Strongly Agree	Disagree	Neither agree or	Agree	Strongly Agree					
ASB Bank										
Bank One										
Barclays										
HSBC										
Lloyds TSB										
Standard Life										

Appendix 4 Study 2 Part A Questionnaire

Participant Name Gender: Age:
-------------------------------

You are about to be shown 6 images displaying the initial online webpages for the following 6 banks. After you have seen these images could you rate these banks on the basis of whether you would use their online banking service.

Rating Scale	Never	Unlikely	Possibly	Probably	Definitely
ASB Bank					
Bank One					
Barclays Bank					
HSBC					
Lloyds TSB					
Standard Life Bank					

Please indicate how much attention you paid to the contents of each screen								
Rating Scale	Little Attention	Poor Attention	Average Attention	Good Attention	Very Good Attention			
ASB Bank								
Bank One								
Barclays Bank								
HSBC								
Lloyds TSB								
Standard Life Bank								

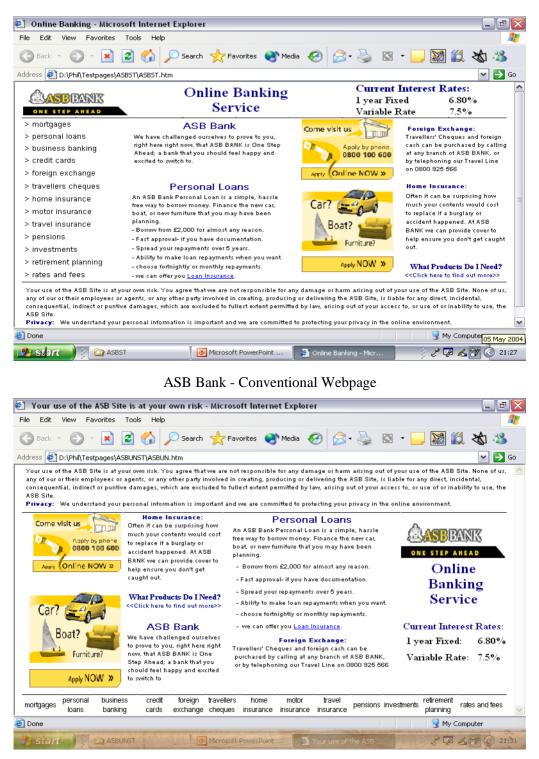
Please indicate approximately how much of each screen's content you read								
Rating Scale	0%	25%	50%	75%	100%			
ASB Bank								
Bank One								
Barclays Bank								
HSBC								
Lloyds TSB								
Standard Life Bank								

	Screen layout	Text Style	Text Content	Graphics Style	Graphics Content	Colour	Menu Choices	Knowledge of Bank	Security & Privacy
ASB									
Bank One									
Standard Life Bank									
Barclays									
Lloyds-TSB									
HSBC									

Please state which of the following features of the displayed screen you based your decision (tick all that apply

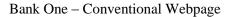
Thank you for participating in this experiment. If you have any queries or issues that you wish to raise, please feel free to do so with the researcher.

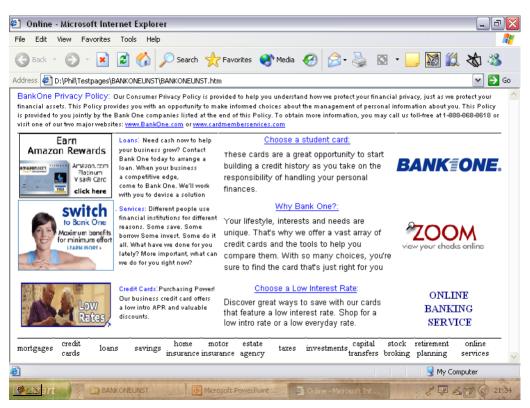
#### Appendix 4 Study 2 Parts A and B Test Webpages



ASB Bank - Unconventional Webpage

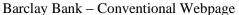


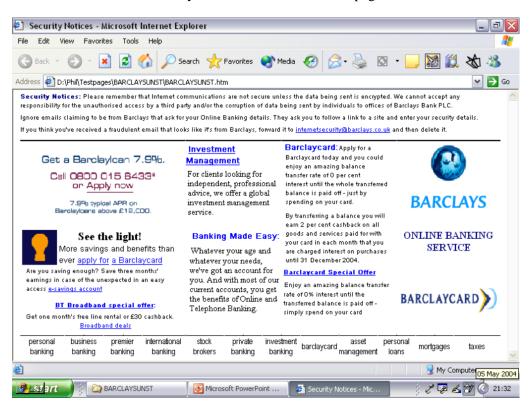




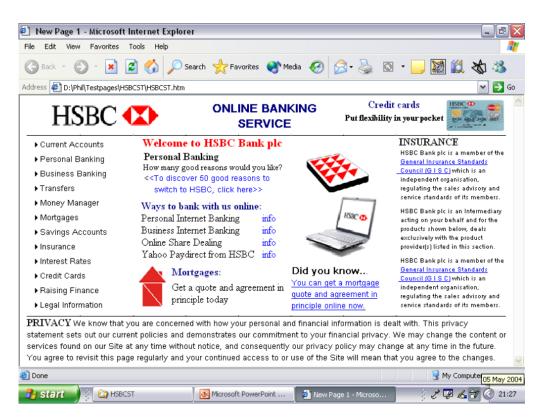
Bank One – Unconventional Webpage



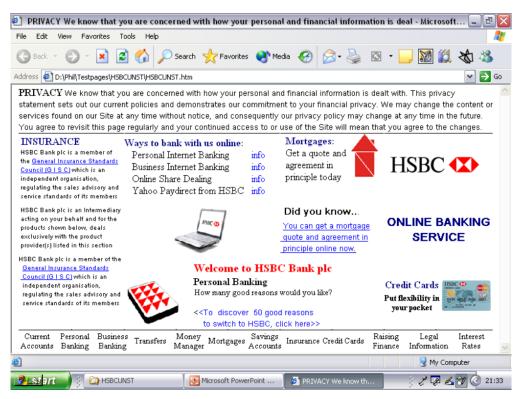




Barclay Bank - Unconventional Webpage



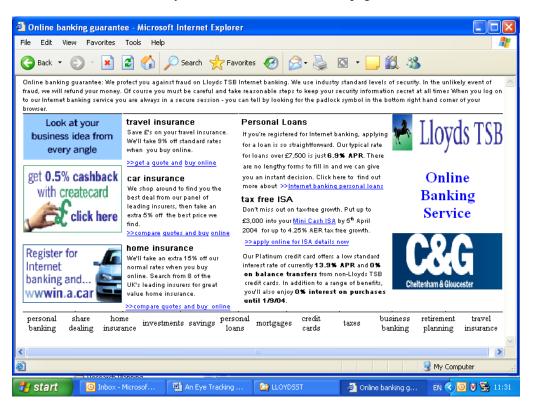
HSNC - Conventional Webpage



HSNC - Unconventional Webpage

	vice - Microsoft Internet Explorer								
File Edit View Favori	ites Tools Help								
🕝 Back 🝷 🕥 🐇 🛛	🗴 💈 🏠 🔎 Search 🤺 Favorites 🍕	کا 😓 د😂 🛚	9 - 📃 (	<b>12</b> - 28					
📌 Lloyo	IS TSB Online Ban	king Servic	e	C-8.C Cheltenham & Gicucester					
personal banking	Our Platinum credit card offers a low standard interest	Register for	6	car insurance We shop around to find you the					
▶ share dealing	rate of currently <b>13.9% APR</b> and <b>0% on balance</b> <b>transfers</b> from non-Lloyds TSB credit cards. In	Internet banking and		best deal from our panel of leading insurers, then take an					
▶ home insurance	addition to a range of benefits, you'll also enjoy O <b>%</b> interest on purchases until 1/9/04.	wwwin.a.c		extra 5% off the best price we					
▶ investments	Online Saver: Apply online now for an Online	Leel et a		find. <u>&gt;&gt;compare</u> <u>quotes and buy</u> <u>online</u>					
▶ savings	<u>Saver</u> and qualify for an interest rate bonus of 0.50% p.a. gross/0.25% AER on balances from £250.	Look at y business ide		home insurance We'll take an extra 15% off our					
▶ personal loans	Personal Loans using Internet Banking: If you'r registered for Internet banking, applying for a loan is s			normal rates when you buy online.					
▶ mortgages	straightforward. Our typical rate for loans over £7,500 i	overy em	igie	Search from 8 of the UK's leading insurers for great value home					
▶ credit cards	just 6.9% APR. There are no lengthy forms to fill in and we can give you an instant decision. Click here to			insurance. >>compare quotes and buy online	<u>id</u>				
▶ taxes	find out more about <u>Internet banking personal loans</u>	get 0.5% ca		travel insurance					
business banking	Don't miss out on tax-free growth. Put up to £3,000 int your Mini Cash ISA by 5 <sup>th</sup> April 2004 for up to 4.25%	with create	ecard	Save £'s on your travel insurance. We'll take 9% off standard rates when					
▶ retirement planning	AER tax free growth. Apply online now	clie	ck here	you buy online. <u>&gt;&gt;qet a quote a</u> <u>buy online</u>	nd				
▶ travel insurance									
fraud, we will refund your m	Online banking guarantee: We protect you against fraud on Lloyds TSB Internet banking. We use industry standard levels of security. In the unlikely event of fraud, we will refund your money. Of course you must be careful and take reasonable steps to keep your security information secret at all times When you log on to our Internet banking service you are always in a secure session - you can tell by looking for the padlock symbol in the bottom right hand corner of your browser.								
<					) >				
۲				😼 My Computer					
	box - Microsof 🛛 🕎 An Eye Tracking 🏻 😂		🎒 Online Ba	anking S EN 🔇 🕑 😒	11:30				

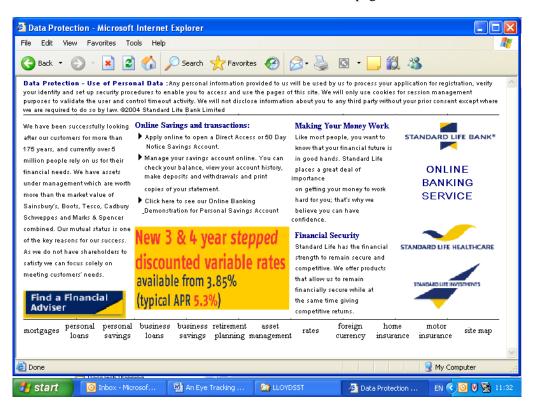
Lloyds TSB - Conventional Webpage



Lloyds TSB - Conventional Webpage



Standard Life – Conventional Webpage



Standard Life - Unconventional Webpage

# Appendix 5 – Study 3 Documentation

# Appendix 5 – Study 3 Parts A & B Test Order

Participant No. & Condition	Bank Presentation Order	Participant No. & Condition	Bank Presentation Order	Participant No. & Condition	Bank Presentation Order
1SLU	DWI	39SHC	IWD	72SLU	DWI
2SLC	IDW	40SHU	WDI	73SHU	DIW
3SHU	WDI	41SLC	IDW	75SHC	WDI
4SHU	DIW	42SHC	WDI	76SLU	IDW
5SLC	IDW	43SLC	WID	77SLU	WID
6SLU	DWI	44SLC	WID	78SHU	IWD
7SLC	WID	45SLC	DWI	79SHU	DIW
8SLC	WID	46SLU	DWI	80SHC	WDI
9SHC	IWD	47SHU	IWD	81SLU	IDW
10SHU	IWD	48SHU	WDI	82SLC	WDI
11SHU	WDI	49SLU	IDW	83SHC	IWD
13SLU	WID	50SHC	DWI	84SLC	DWI
14SLC	WID	51SHU	IWD	85SLU	IDW
15SHC	WDI	52SLC	IDW	86SHU	WDI
16SHC	IWD	53SHC	DIW	87SHU	IWD
17SHU	DIW	54SLU	DWI	88SLU	IDW
18SLU	WID	55SLC	DWI	89SHC	DIW
22SLU	IDW	56SHC	IWD	90SHU	DIW
23SHC	IWD	57SLU	IDW	91SLU	DWI
24SHU	WDI	58SHC	DIW	92SLU	DWI
25SLC	DWI	59SLU	WID	93SLU	DWI
26SHU	IWD	60SHU	WDI	94SHU	WDI
27SLU	IDW	61SLC	WID	95SHU	DIW
28SLU	WID	62SHU	WDI	96SHC	WDI
30SLC	WID	63SLU	WID	97SLC	DWI
31SHU	DIW	64SHC	IWD	98SHC	DIW
32SLC	DWI	65SHU	IWD	99SHC	DIW
33SLU	IDW	66SHC	DIW	100SLU	WID
34SHC	WDI	67SHC	DIW		
35SHC	WDI	68SHC	IWD		
36SLU	IDW	69SLC	WID		
37Sslc	WID	70SHC	IWD		
38SLU	DWI	71SHU	IWD		

Appendix 5 - Study 3 Parts A & B – Consent Form



School of Psychology and Sports Science Online Bank Evaluation - Study 2



#### Informed Consent Form

I have read and understand the "Instructions for Participants" relating to this study and I agree to take part.

I understand that my responses will be recorded anonymously and will contribute to data which may be published in papers and conference presentations.

I understand that my participation is entirely voluntary, that I am free to refuse to participate in the study and that, if I agree to participate now, I may change my mind and withdraw at any time should I wish to do so.

I wish to continue with this study and to complete the questionnaire  ${\ensuremath{\mathring{}}}$ 

Signed:

ate:

Signed

Rese rcher:

Date:

#### Appendix 5 - Study 3 Parts A & B – Debriefing Sheet



School of Psychology and Sports Science Online Bank Evaluation - Study 3



PACTLAB

# School of Psychology and Sports Science

Northumbria University

Newcastle upon Tyne NE1 8ST

User Involvement - debriefing sheet

Your participant number \_\_\_\_\_

Many thanks for taking part in this study. This information is intended to give you more information concerning the aims of the study. The study was designed to examine how internet users scan and assess the usability of online banking websites and in particular how user involvement affects such scanning processes. The eye-tracking data will help understand how users scan and extract information from web sites and the questionnaire will help us to understand how internet users evaluate and make decisions on the information viewed

May I remind you that the information that you gave will be treated with the strictest of confidence, at no point will you be identified in the research and we will not be able to provide any information on your own individual performance.

If you have any questions regarding the questionnaire please contact Philip Walker (philip.walker@unn.ac.uk). You are also reminded of your right to withdraw from the study at any time. If you choose to do so, please contact me using the email address above. Let me know the participant code you were assigned and then I will ensure that all your data will be destroyed.

Thank you for your participation.

Appendix 5- Study 3 Parts A & B – Participant Instructions



School of Psychology and Sports Science Online Bank Evaluation - Study 2



# **Internet Banking Sites**

### Instructions

You have been given £50000/£100 to invest. You will view three internet banking sites and I want you to decide, on the basis of the information they contain, which Bank you select to invest this money. The bank web pages will be displayed one after the other and you will have 30 seconds to view each page. During the experiment your eye movements will be tracked to determine which web page contents you view. When you have seen all three you will be asked to complete a questionnaire on your internet usage.

If you have any questions concerning these instructions please ask the researcher. On completion of the questionnaire please feel free to ask any questions concerning the purpose of the experiment.

# Appendix 5 - Study 3 Part A – Questionnaire

Name:	Age:	Gender: M F	Occupation:	Number:
-------	------	-------------	-------------	---------

#### Internet Usage (please circle the appropriate answer)

a) I use the internet	Daily	Weekly	Monthly	Occasionally	Never
b) I would class myself as	Expert	Confident	Average	Occasional	Non
	User	User	User	User	User

#### Internet Web Sites (please circle the appropriate answer)

Internet Web Sites	Strongly				Strongly
	disagree				agree
I use the internet mainly at home	1	2	3	4	5
I use the internet mainly at work/college	1	2	3	4	5
I use the internet primarily to find information	1	2	3	4	5
I use the internet primarily to buy goods and services	1	2	3	4	5
I use the internet primarily for email purposes	1	2	3	4	5
I am careful which web sites I visit	1	2	3	4	5
I do not always believe what I read on the internet	1	2	3	4	5
I would seek advice concerning which sites to use	1	2	3	4	5
I check the security of web sites I deal with	1	2	3	4	5
I am comfortable using the internet	1	2	3	4	5
I often find it difficult to find the information I need	1	2	3	4	5
I am comfortable giving financial details over the internet	1	2	3	4	5
I would purchase goods and services over	1	2	3	4	5
I would only make purchases from companies I know	1	2	3	4	5
I do not read all the contents of web pages	1	2	3	4	5
Web page layout is important	1	2	3	4	5
The text style on web pages is important	1	2	3	4	5
I always read the site policy statements	1	2	3	4	5
I use graphics to judge web page contents	1	2	3	4	5
I use animations to judge web page contents	1	2	3	4	5
I dislike web pages with too much information on them	1	2	3	4	5

# Internet Banking (please circle the appropriate answer)

Banking Web Sites					Strongly
					agree
I would use internet banking	1	2	3	4	5
I believe that internet banking is safe and secure	1	2	3	4	5

I would only use online banks I know	1	2	3	4	5
I understood all the information on bank websites	1	2	3	4	5
I believe the information on bank websites	1	2	3	4	5
I would not bank with unknown internet banks		2	3	4	5
I would invest money with internet banks		2	3	4	5
I would borrow money from internet banks	1	2	3	4	5

### Post – Webpage Display Questions

Bank Webpages (please circle the appropriate answer)

WBS Bank	Strongly				Strongly
	disagree				agree
I recognize WBS bank	1	2	3	4	5
I would use WBS bank for online banking	1	2	3	4	5
I would invest money with WBS Bank.	1	2	3	4	5
I would apply for a loan with the WBS Bank	1	2	3	4	5
I like the WBS web site (Please give reason)					

IBS Bank	Strongly				Strongly
	disagree				agree
I recognize IBS bank	1	2	3	4	5
I would use IBS bank for online banking	1	2	3	4	5
I would invest money with WBS Bank.	1	2	3	4	5
I would apply for a loan with the WBS Bank	1	2	3	4	5
I like the IBS web site (Please give reason)					

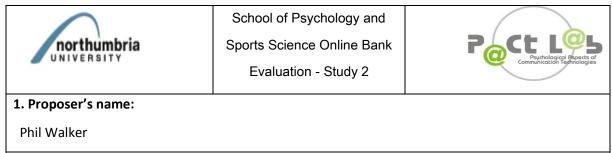
DBS Bank	Strongly disagree				Strongly agree
I recognize DBS bank	1	2	3	4	5
I would use DBS bank for online banking	1	2	3	4	5
I would invest money with WBS Bank.	1	2	3	4	5
I would apply for a loan with the WBS Bank	1	2	3	4	5
I like the DBG web site (Please give reason)					

# Interest Rate and Security Details (please tick the appropriate answer)

Web Site Details	WBS	IBS	DBG
Which Bank had the highest interest rate for deposit accounts?			
Which Bank had the lowest interest rate for deposit accounts?			
\Which Banks had secure web sites?			
Which banks allowed you to register as an online customer			

Thank you for participating in this experiment. If you have any queries or issues you wish to raise, please feel free to do so with the researcher

Appendix 5 - Study 3 Part A and B Ethics Forms



2. Project title:

# An eye tracking study of user perception of web pages under conditions of increased user involvement.

#### 3. Rationale for the study (maximum 200 words):

Dual process theories predict that the cognitive processing of a message varies with the degree of user involvement to its content. Low involvement results in superficial levels of processing using heuristics or message attributes; higher involvement results in deeper consideration of message contents requiring greater cognitive effort. Measurement of cognitive loading and level of involvement has usually been carried out using questionnaires and rating scales. However, pupillary diameter has been shown to increase with the cognitive load and offers an alternative way of assessing user involvement with and consideration of web page contents. This study will use eye tracking to measure the effect of user involvement on web page scanning strategies and to determine whether the level of cognitive processing is reflected in the scanning pattern, object fixation times and pupillary diameter.

An independent groups design will be used where participants will be asked to invest low/high amounts of money in an online bank. They will view home pages of three online banks and their scanning strategies recorded. A pre and post test questionnaire will be used to assess the individual level of involvement and the assessment criteria used when rating the banks.

4. Will an undergraduate be involved in data collection,	
e.g. as a research assistant?	NO
5. Is approval required from another Ethics Committee (e.g. NHS)?	NO
If approval is required from another Ethics Committee what is the current	status of your
application?	N/A
6. Is the proposed study a continuation of an existing study that has alrea approval?	ady received ethical
	YES

Mixed – approximately 60, aged 16+, Students & general population

8. In the case of healthy volunteers how and from where will they be sought?

Participants will be recruited on an opportunity basis from students/staff/visitors to Northumbria University

9. Will participants receive any payments/expenses?

If so please outline:

NO

NO

NO

**10.** What significant discomfort (physical, social, or psychological), inconvenience or danger may be caused? None

#### **11.** What particular ethical problems do <u>you</u> think there are in the proposed study?

Some participants may experience visual fatigue symptoms through scanning a sequence of web pages. Anonymity is ensured at all times and of course participants will be reminded of their right to withdraw from the study.

# **12.** What measures will be adopted to protect participant anonymity, and where appropriate confidentiality?

Participants will not be asked for their names or contact details. They will be assigned a participant code in order that their data can be identified and removed if they chose to withdraw from the study at a later date.

#### **13.** How will consent from the participant be sought?

Attached consent form added to web page with agreement option – participants need to agree to be able to complete the questionnaire.

#### 14. Does the study involve a physical/physiological intervention

(e.g. drugs, oxygen, exercise)?

If so please provide brief details

15. Does the study involve any form of deception

If so, please provide a brief justification

#### 16. What (if any) copyright tests (paper-and-pencil or software)will be used:

iViewX software for analysing eye tracking data, SPSS for analysing eye tracking and questionnaire data.

17. Proposed start date:	30/01/06
18. Proposed end date:	14/02/06
Declaration by the research	er
I confirm that the information	tion provided in this form is accurate. I have considered the ethical

I confirm that the information provided in this form is accurate. I have considered the ethical issues and I am satisifed that the project does not violate the ethical guidelines of the University. I understand that I may not proceed with data collection until this form has been formally approved. And until all participants have provided written first-person informed consent (where appropriate). I understand that I may not make changes to the project without approval of a resubmitted form.

With this document I include the following:	
with this document i include the following.	
	<i>,</i>
Instructions for participants.	$\checkmark$
Informed consent form	$\checkmark$
Debriefing form	$\checkmark$
Any in-house questionnaires to be used in the project	
Any in-house questionnalies to be used in the project	•
A completed technical support form	$\checkmark$
Signature of proposer:	
Date:	
5442.	
ETHICS COMMITTEE ACTION	

# **Project Title:**

#### Proposer:

Category	Action
1. Approved without modification	Proceed with data collection
2. Approved with modification	Modify information and resubmit form to Chair of Committee, proceed with data collection
3. Rejected for resubmission	Resubmit form

Signature of Chair of Ethics Committee:

Date:

# ETHICS REMINDERS

• Make sure that you get voluntary, written first-person informed consent.

Appendix 5 – Study 3 Parts A & B – Resources

# Appendix 9



School of Psychology and Sports Science Online Bank Evaluation -Study 2



1. Proposed date for start of study: January 2006Proposed date for endof study: February 2006

2. Do you require a specialist room/laboratory? YES If a specialist room is required, which one?

Eye-tracking Lab: COCO Room NB156E

3. Do you require any specialist equipment? <u>YES</u> If so please list below:

*iViewX Eye-tracking system* 

<u>4. Do you need technical support during testing (e.g. blood taking etc)?</u> NO

If so please list below:

5. Will you be using standardised tests/questionnaires? YES NO

If so please list below:

6. Will you require specialist computer software to be installed?

YES

If so please list below:

iViewX data analysis software

7. Will you require in-house software programming?

<u>YES</u>

If so please briefly describe below:

Visual Basic program required to sequentially present a series of web pages through a web browser using a preset parameter file (Incorporating appropriate error trapping procedures)

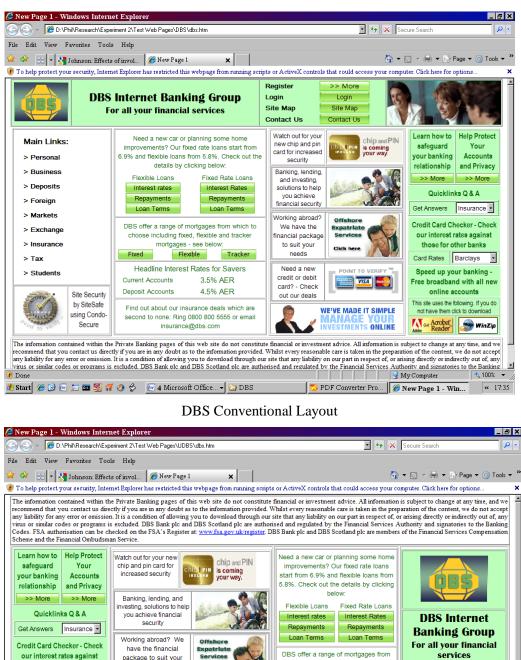
Researcher Signature:

Date:

Order Sequence	High - Low Involvement	Conventional - Unconventional Layout	DBS Bank	IBS Bank	WBS Bank	Visual Basic Parameter File
1	High	Conventional	1	2	3	CPARAM1
2	High	Conventional	2	3	1	CPARAM2
3	High	Conventional	3	1	2	CPARAM3
4	Low	Conventional	1	2	3	CPARAM4
5	Low	Conventional	2	1	3	CPARAM5
6	Low	Conventional	3	2	1	CPARAM6
7	High	Unconventional	1	2	3	UPARAM7
8	High	Unconventional	2	3	1	UPARAM8
9	High	Unconventional	3	1	2	UPARAM9
10	Low	Unconventional	1	2	3	UPARAM10
11	Low	Unconventional	2	1	3	UPARAM11
12	Low	Unconventional	1	2	3	UPARAM12

# Appendix 5 – Study 3 Parts A & B – Webpage Presentation Order

#### Appendix 5 Study 3 Parts A & B – Test Webpages

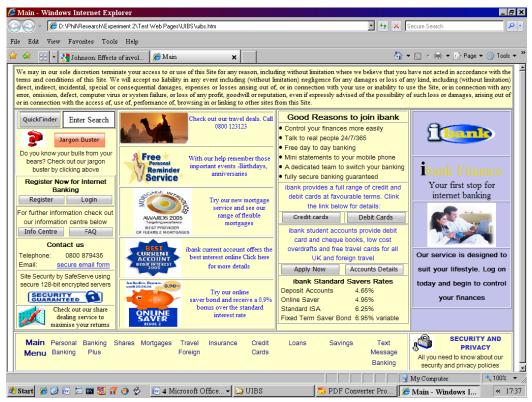




DBS Unconventional Layout

Personal Banking <ul> <li>Control your finances more easily</li> <li>Taik to real people 24/7/865</li> <li>Free day to day banking</li> <li>Mini statements to your mobile phone</li> <li>A dedicated team to switch your banking</li> <li>fully secure banking guaranteed</li> </ul> <ul> <li>With our help remember those more the simportant events - Birthdays and debit cards at favourable terms. Clink the link below for details:</li> <li>Insurance</li> <li>Credit cards</li> <li>Ibank student accounts provide debit cards and cheque books, low cost overdrafts and free travel cards for all UK and foreign travel</li> </ul> <ul> <li>Ibank student Savers Rates Depois Accounts 4.65%</li> <li>Online Saver 4.95%</li> <li>Standard ISA 6.25%</li> <li>Mandard ISA 6.25%</li> <li>Mandard ISA 6.25%</li> <li>Mandard ISA 6.25%</li> </ul> <ul> <li>Insurance for the Bond of Cards</li> <li>Insurance incomments and free may cards for all UK and foreign travel</li> <li>Insurance incomments and free travel cards for all UK and foreign travel</li> </ul> <ul> <li>Insurance incomments and free travel cards for all UK and foreign travel</li> <li>Insurance incomments and free travel cards for all UK and foreign travel</li> <li>Insurance incomments and free travel cards for all UK and foreign travel</li> </ul> <ul> <li>Insurance incomments and free travel cards for all UK and foreign travel</li> <li>Insurance incomments and free travel cards for all UK and foreign travel</li> <li>Insurance incomments and free travel cards for all UK and foreign travel</li> <li>Insurance incomment a</li></ul>	🕥 👻 🌈 D:\Phil\Research\	Experiment 2\Test Web Pages\IBS\IBS.htm		🖌 🐓 🗙 Secure Search 🔰				
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Yur First stop for internet banking       Itestyle. Log on today and beg control your finances         Main Menu       Cood Reasons to join ibank       Itestyle. Log on today and beg control your finances         Personal Banking       Control your finances more easily       Itestyle. Log on today and beg control your finances         Banking Plus       Control your finances more easily       Itestyle. Log on today and beg control your finances         Shares       Control your finances more easily       Call to real people 24/7/365       Itestyle. Log on today and beg control your finances         Mortgages       Taik to real people 24/7/365       Free day to day banking       Itestyle. Log on today and beg control your finances         Mortgages       Mini statements to your mobile phone       A dedicated team to switch your banking       Itestyle. Log on today and beg control your finances         Insurance       Credit cards       Ibank provides a full range of credit and debit cards at favourable terms. Clink the link below for details:       Itestyle. Log on today and beg control your finances         Iterat Message Banking       Ibank student accounts provide debit cards at norourable terms. Clink the link below for details:       Itestyle. Log on today and beg control your finances         Iterat Message Banking       Ibank student accounts provide debit cards at fire control today terms and free travet cards for all UK and foreign trave!       Itestyle contains the terms and free travet cards for all UK and foreign trave!	fo help protect your security, I:	nternet Explorer has restricted this webpage fror	m running scripts or Activel	C controls that could access your comp	outer. Click here for options			
• Control your finances more easily           • Credit cards tam to switch your banking           • With our help remember those         inportant events - Birthdays and         Anniversaries           • Do you know your buils fi         your bears? Check out o         jargon Buste          Mortgages           • fully secure banking guaranteed           • With our help remember those         inportant events - Birthdays and         Anniversaries           Register Now for Inter         Banking          Insurance           Credit cards           Loans           Credit cards           Loand           Loand           Register Now for Inter         Banking           Register Now for Inter         Banking             Loans           Loans           Loand free travel cards for all         UK and free travel cards for all         UK and free travel cards for all         UK and freeingly mark <td< th=""><th>Î</th><th>)</th><th></th><th></th><th>le. Log on today and begin to</th></td<>	Î	)			le. Log on today and begin to			
<ul> <li>Minis statements to your mobile phone</li> <li>A dedicated team to switch your banking</li> <li>fully secure banking guaranteed</li> <li>bank provides a full range of credit and debit cards at favourable terms. Clink the link below for details:</li> <li>Insurance</li> <li>Credit cards</li> <li>Ibank student accounts provide debit cards and cheque books, low cost overfarts and free travel cards for all UK and foreign travel</li> <li>Security and Privacy</li> <li>Iyou need to know about our security and privacy policies</li> <li>Wex Alls Provides</li> <li>Wex Alls Provides</li> <li>Wex Alls Provides</li> <li>Maint Statements to your mobile phone</li> <li>A dedicated team to switch your banking duaranteed</li> <li>Ibank provides a full range of credit and debit cards at favourable terms. Clink the link below for details:</li> <li>Credit Cards</li> <li>Ibank student accounts provide debit cards and cheque books, low cost overfarts and free travel cards for all UK and foreign travel</li> <li>Apply Now Accounts Details</li> <li>Ibank Standard Savers Rates Deposit Accounts 4.65%</li> <li>Online Saver 4.95%</li> <li>Standard ISA 6.25%</li> <li>Standard ISA 6</li></ul>		Control your finances more easily     Talk to real people 24/7/365	11 M	currency deals.	QuickFinder Enter Search			
Mortgages       Try our new mortgage         Ibank provides a full range of credit and debit cards at favourable terms. Clink the link below for details:       Try our new mortgage service and see our range of fickble mortgages at variable rates to suit your needs       Register Now for inter Banking         Insurance       Credit cards       Debit Cards       Ibank student accounts provide debit cards and free travel cards for all UK and foreign travel       Iwarable rates to suit your needs       Register Now for inter Banking         Icard and cheque books, low cost overdrafts and free travel cards for all UK and foreign travel       Ibank student accounts provide debit cards and free travel cards for all UK and foreign travel       Ibank current accounts offer the secure email       Ibank current accounts offer the secure email         Ibank Student Savers Rates       Deposit Accounts 4.65%       Deposit Accounts 4.65%       Try our online saver bond and receive a 0.9%       Standard ISA 6.25%         Iverset Borner       Standard ISA 6.25%       Standard ISA 6.25%       Standard ISA 6.25%       The or the books are also	, in the second s	Mini statements to your mobile phone     A dedicated team to switch your banking	Reminder	important events - Birthdays and	Do you know your bulls from your bears? Check out our jargon buster by clicking above			
Credit Cards       Ibank student accounts provide debit card and cheque books, low cost overdrafts and free travel cards for all UK and foreign travel       Ibank student accounts provide debit card and cheque books, low cost overdrafts and free travel cards for all UK and foreign travel       Ibank student accounts offer the student privacy       Ibank current accounts offer the best online interest rates. Click here for more details       Ibank student accounts offer the secure email         Security and Privacy Iyou need to know about our security and privacy policies       Apply Now       Accounts Details         Ibank Standard Savers Rates Deposit Accounts       Deposit Accounts 4.65% Online Saver       Try our online saver bond and receive a 0.9% boms over the standard interest available citck here for more details       Ste Security by SafeSave saver bond and receive a 0.9% boms over the standard interest available citck here for more details		ibank provides a full range of credit and debit cards at favourable terms. Clink	A CONCEPTION OF CONCEPTION	service and see our range of				
Loans       Outrait and refe travel cards for all Overdrafts and free travel cards for all UK and foreign travel       Description       best online interest rates. Click here for more details       Contact us         Security and Privacy       Apply Now       Accounts Details       Try our online saver bond and receive a 0.9%       State Security by SafeSeve saver bond and receive a 0.9%       State Security and privacy policies       Escurity and privacy       Try our online saver bond and receive a 0.9%       State Security and privacy policies       State Security and privacy policies       State Security and privacy policies       State Security and privacy policies       Contact us         We ARE PROUT State of the mB ond       6.25%       State Security and privacy       Contact on privacy       Contact us		ibank student accounts provide debit	Targeting excellence BEST PROVIDER	needs	For further information check our our information centre below Info Centre FAQ			
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	Privacy Il you need to know about our security and privacy policies	ibank Standard Savers Rates           Deposit Accounts         4.65%           Online Saver         4.95%           Standard ISA         6.25%	Instructors Borrus until 30.06.06 ONLINE SAVER ISSUE 2	saver bond and receive a 0.9% bonus over the standard interest rate. Other bonds are also available click here for more	Site Security by SafeServe using secure 128-bit encrypted servers SECURITY CONTROL OF CONTROL CONTROL OF CONTROL OF CONTROL OF CONTROL dealing service to maximise your returns			
e may in our sole discretion terminate your access to or use of this Site for any reason, including without limitation where we believe that you have not acted in accordance with								

iBank Conventional Layout



iBank Unconventional Layout



#### WBS Conventional Layout



WBS Unconventional Layout

No of Land			% of Banks	Informational Graphics + Logo		Illustrative Graphics		Aesthetic Graphics		Textual Graphics			Animated Graphics					
Area Averages	Entries	Graphics	Containing Graphics	Yes	% of Banks	% of Screen	Yes	% of Banks	% of Screen	Yes	% of Banks	% of Screen	Yes	% of Banks	% of Screen	Yes	% of Banks	% of Screen
UK Banks	51	51	100%	51	100%	6.9	45	88%	23.3	4	8%	7.9	28	55%	12.3	22	43%	19.0
UK Building Societies	51	112	100%	51	100%	7.2	47	92%	26.6	7	14%	19.3	37	73%	22.0	25	<b>49</b> %	16.5
North American Banks	112	148	100%	106	<b>9</b> 5%	7.3	103	92%	26.7	28	25%	17.5	72	64%	19.2	36	32%	20.0
Indian Sub Continent Banks	148	148	100%	148	100%	6.4	146	<b>99</b> %	38.4	20	14%	20.6	132	89%	27.9	125	84%	21.3
Australia and New Zealand	29	29	100%	29	100%	9.0	29	100%	26.7	8	28%	15.0	26	90%	19.7	21	72%	15.2
African Banks	104	104	100%	104	100%	5.4	102	98%	30.8	13	13%	15.4	94	90%	25.7	74	71%	15.1
European Banks	408	408	100%	408	100%	7.1	362	89%	25.5	148	36%	17.4	310	76%	21.5	197	48%	17.8
Middle East Banks	188	188	100%	187	<b>99</b> %	7.3	183	97%	37.8	60	32%	18.5	174	93%	30.7	142	76%	20.5
Far East and Asian Banks	289	289	100%	289	100%	8.6	286	<b>99</b> %	38.7	79	27%	15.5	284	<b>98</b> %	39.9	199	<b>69</b> %	22.8
Ave	153	164	100%	153	99%	7%	145	<b>9</b> 5%	31%	41	22%	16%	129	81%	24%	93.4	61%	19%

Appendix 6 - Website Graphics Survey - Summarized Results

Overall % White	Coloured	Background	Overall % of	Strong Colour (Yes)	Strong Colour	
Space	Yes	% of Banks	Screen Coloured		(No)	
19.8	36	71%	44.6	19	16	
25.5	33	<b>6</b> 5%	46.8	19	15	
35.4	77	<b>69</b> %	47.9	36	41	
21.6	118	80%	49.2	57	61	
24.8	19	66%	41.3	6	13	
25.1	69	66%	40.5	36	35	
23.2	278	68%	52.0	136	142	
23.5	140	74%	55.6	74	66	
21.3	177	61%	37.2	59	117	
24.5	105.2	68.8%	46.1%	49.1	56.2	

Appendix 7 – Study 5 Documentation

Appendix 7 – Study 5 Parts A & B Ethics Form

ETHICS SUBMISSION I	FORM					
1. Project/Programme Title: User Perception of Web	Page Informational Graphics					
2. Is this: a single study ✓	,					
a programme of studies						
3. Name of Principal Applicant: Philip Walker						
To maintain the independent review process please research team involved with the study:	also identify all the members of the None					
4. Who is conducting the project (delete as appropria	ate)? POSTGRADUATE					
5. If a student please state your programme of study	r: Ph.D.					
If a student or PGR please state your supervisor:	Pam Briggs					
6. Where will the research be conducted?						
on University property	$\checkmark$					
outside of the University						
If the study is being conducted at a different institution (e.g. another University, a School etc) then you must produce proof that you have received appropriate permission (e.g. a letter, an email) from the relevant institution(s), before your submission can be approved. <u>Give this to the Chair when you submit your final documentation</u> .						
If the study/programme is being conducted outside of the University but not in an institution (e.g. someone's home, a public place) then you must ensure that you have conducted an appropriate risk assessment and submitted this with your application (see item 17).						

## 7. Rationale for the study or programme (approx 300 words):

A survey of internet banking websites reveal that all use graphics in a variety of ways but which can can be categorized under three general headings: informational graphics, illustrative graphics and aesthetic graphics. Informational graphics includes the use of graphs, logos, comparison charts and graphically manipulated or graphically incorporated text to pass information to users. Accordingly, banking information may be presented to website users either textually or graphically.

The dual process theories predict that the cognitive processing of such information varies with the degree of user involvement to its content. Low involvement results in superficial levels of information processing using heuristics or message attributes; higher involvement results in deeper consideration of message contents requiring greater cognitive effort. Measurement of cognitive loading and level of involvement has usually been carried out using questionnaires and rating scales. Possible alternative measures include pupillary diameter which has been shown to increase with the cognitive load and off screen fixation time which can vary up to 50% of total viewing time.

This study will use eye tracking measures and questionnaires to determine the effect of user involvement and graphical – textual presentation of information to the perception and subsequent recall of information and assessment of web page usability. It is suggested that higher involvement will decrease participant use of heuristics and message attributes for the experimental tasks and increase likelihood of more cognitively intensive consideration of web page contents. This will be reflected in changes to scanning strategy, increased pupillary diameter and on screen viewing time. The effect of graphical/textual information presentation is expected to result in increased fixation time and pupillary diameter when attention is focused on relevant web page interest rate objects. In terms of questionnaire results the involvement factor and graphical presentation of information should result in higher assessment ratings of web page usability and improved retention scores for interest rate information.

8. Detailed description of the proposed methodology (e.g. procedure, materials, software, measurement tools etc) for the study/programme (approx 500 words):

A 3 factor mixed design will be used; the between participants factors will be high/low involvement and graphical/textual presented information. The within participants factor will be bank website home pages.

Participants will view the home pages of four unfamiliar online banks containing deposit

and loan interest rate information within a general mix of website menu, banking service, security/legal information and illustrative graphics. This general information will be the same for both textual and graphical conditions. For the high/low involvement factor participants will be asked to invest large/small amounts of money into an online bank with the purpose of maximising their return on the investment. The graphical and textual information factor will comprise deposit interest rate information presented either textually or graphically. Textual interest rate information will be displayed in the format of a comparison table with other online banks interest rates using the standard font used on the webpage. The graphically presented information will provide the same interest rate information in the format of a comparison graph also containing the interest rates of other online banks. The areas within the web page of the graphical and textual will be the same size.

Experimental documentation comprises a set of participant instructions and consent form, pre and post-test questionnaires and a post-experimental debriefing form. Equipment used will be two PC's and an IviewX eye-tracking system. The first PC will control and display a series of four online bank web pages. The second PC, linked to the IViewX system, is used to control, record and subsequently analyze eye-tracking data. Software will comprise Iview X eye tracking equipment calibration, control and analysis software. Presentation and browser software is used to display, time and randomly vary web page presentation order to obviate any presentation order effects. Four bank web pages constructed in a standard format containing the same information but differing in the interest rate information located in the central area of the web page

Participants will be allocated randomly, using data from www.random.org, to each of the four experimental conditions: involvement/textual high information; high involvement/graphical information; low involvement/ textual information; low involvement graphical information. Participants will be given a set of instructions advising them to invest money in the bank of their choice in order to maximise investment return and told that following presentation of all four web pages they will be asked to recall the interest rate information for each bank. Each participant will be asked to complete and a brief pre-test questionnaire asking their level of internet usage, online banking usage, criteria they use to assess web page usability, bank interest rates and which bank they would use for investment purposes.

On completion of the pre-test questionnaire the use of the lview X eye-tracking equipment is calibrated for each participant and the four web pages each displayed for 30 seconds in a random order during which their eye movements will be recorded. The

participants will not be required to perform any actions during the testing phase other than to extract the information required for their interest rate decision from the web pages viewed. The post-test questionnaire is given to record participant recall of interest rate information, selection of which banks in which investments would be made and assessment of the usability of each bank and the criteria used.

## 9. Will an undergraduate be involved in data collection,

## e.g. as a research assistant?

NO

If so it is the supervisor's responsibility to ensure that they are fully aware of all ethical procedures and issues.

**10.** Is approval required from another Ethics Committee (e.g. NHS) NO

If approval is required from another Ethics Committee what is the current status of your application?

**11.** Is the proposed study a continuation of an existing study that has already received ethical approval? Yes

**12**. Participant information (number, age, sex, and whether vulnerable):

Mixed –approximately 60, aged 16+, Students & general population. No vulnerable participants will be tested

If more than one study is proposed provide separate information for each.

13. In the case of healthy volunteers how and from where will they be sought?

Participants will be recruited on an opportunity basis from students/staff/visitors to Northumbria University

14. Will participants receive any payments/expenses? No

If so please describe:

**15. What significant discomfort (physical, social, or psychological), inconvenience, or danger may be caused?** The relatively short display period and small number of web pages to be displayed will not cause any visual discomfort for the participants. The IviewX eye tracking system uses an infra-red eye movement recording system which will cause

participant no ill effects.

16. What measures will be adopted to protect participant anonymity, and where
appropriate confidentiality? Each participant will be allocated a number dependent
upon the experimental condition to which they are assigned. Personal information
recorded will be age, sex and basic information concerning internet usage. Participants
will be given their number on the debriefing sheet and this can be used to remove
participant data later should they request this
<b>17. Have you consulted the appropriate Risk Assessment Form(s)?</b> YES
If YES, which document(s) (insert the relevant code numbers): COMPUTER_01
What is the overall risk rating? Minor
If NO, you will need to complete a new Risk Assessment Form and include it with your
submission
18. If the study/programme falls under the Human Tissue Act, has Ruth Steinberg been
informed NO
<b>19.</b> Proposed start date(s) and approximate duration: 20.6.08 – 20.7.08

## Check List for Principal Applicant.

I attach the following documents (where appropriate):

2 signed and dated Ethics Screens	
A letter of confirmation from an external institution	
A Risk Assessment Form	$\checkmark$
Participant information, consent and debrief forms	$\checkmark$
Response to Ethical Issues Form	$\checkmark$

## Declaration by the researcher

I confirm that the information provided in this form is accurate. I have considered the ethical/risk issues and I am satisfied that the project does not violate the ethical guidelines of the University or cause undue harm to investigator and participants. I understand that I may not proceed with data collection until this form has been formally approved, and until all participants have provided written first-person informed consent (where appropriate). I understand that I may not make any changes to the project without prior approval from the Chair of the SEC.

Signature of proposer:	Date:
Signature of supervisor (if necessary):	Date:

This submission has been assessed by two independent reviewers, and all ethical issues have been addressed. A Risk Assessment has been conducted. This submission has now been passed by the Chair of the School Ethics Committee

Signature of Chair:

Date:

Appendix 7– Study 5 Parts A & B Participant Information Sheet



## **PARTICIPANT INFORMATION.**

TITLE OF PROJECT: An Eye-Tracking Study of User-Web Page Interaction (Graphics – Textual Information

Participant ID Number:

Principal Investigator:

Philip Walker

Investigator contact details: Email: philip.walker@unn.ac.uk

This project is funded by:

Not Applicable

Number of participant points / payment:

## INFORMATION TO POTENTIAL PARTICIPANTS

### 1. What is the purpose of the project?

User assessment and recall of information has been shown to be affected the level of involvement in tasks undertaken. Similarly it can be affected by the way information is presented and Banking Web Sites use both graphics and text to convey information to users. This study aims to investigate both involvement and mode of information presentation (Graphics or Text) to user attention, perception of graphical and textual information and subsequent assessment and recall of web page information. Eye tracking equipment will be used to measure attention and perception of web page information and questionnaires to assess usability and recall of presented web site information.

## 2. Why have I been selected to take part?

You are an adult internet user who is familiar with browser software and a variety of different internet web sites and web page layout. You have no significant visual defects and have agreed to take part in this study.

## 3. What will I have to do?

Testing will take place in the COCO lab on the first floor of the Northumberland building and will take approximately 20 minutes. Initially you will complete a preliminary questionnaire to determine your exeprience of internet usage and whether you use internet banking. You will then view a series of Bank web site home pages with the task of selecting which banks you would use to invest a cash sum. Your eye movements will be recorded to identify which parts of the web page you view in order to carry out this task. On completion you will complete another questionnaire to assess the usability of web page viewed and your recall of the information presented.

# 4. What are the exclusion criteria (i.e. are there any reasons why I should not take part)?

Any chracteristics of your eyes which prevent recording of your eye movements e.g.some types of contact lenses, interference of tracking due to eyelashes or heavy framed spectacles.

## 5. Will my participation involve any physical discomfort?

No – the eye tracking equipment is located away from the participant and the short testing period will not cause any visual fatigue effects.

# 6. Will my participation involve any psychological discomfort or embarrassment?

No

## 7. Will I have to provide any bodily samples (i.e. blood, saliva)?

No

## 8. How will confidentiality be assured?

You will be assigned a participant number to identify your experimental data. The collected eye tracking data together with the questionnaire responses will be summarised on spreadsheets, compressed and stored on password controlled computer files in accordance with the Data Protection Act and can only be identified by participant number.

The consent form containing your signature and participant participant number together with all paper questionnaire data will be stored separately from the experimental data so that you cannot be identified from your experimental data.

## 9. Who will have access to the information that I provide?

The researcher: Philip Walker

Supervisors:

Prof. Pam Briggs Dr Chris Dracup

### 10. How will my information be stored / used in the future?

Information from the the eye tracking data files will be summarised and entered into a series of summary spreadsheets together with your participant number. All electronic summary data will be compressed, password protected and stored on computer. Paper documentation including questionnaire responses and consent forms will be stored separately in a locked cabinet. The data will be used in the writing of a PhD thesis and possibly published in a scientific journal or in a conference presentation in a format that precludes identification of individual participants.

11. Has this investigation received appropriate ethical clearance?

Yes

## 12. Will I receive any financial rewards / travel expenses for taking part?

No

## 13. How can I withdraw from the project?

Simply ask for your data to be removed from the results spreadsheet giving your participant number.

## 14. If I require further information who should I contact and how?

Philip Walker on university extension 7244 or by email using philip.walker@unn.ac.uk

Appendix 7 – Study 5 Parts A & B Informed Consent Form



### **INFORMED CONSENT FORM**

TITLE OF PROJECT: An Eye-Tracking Study of User-Web Page Interaction (Graphics – Textual Information

Participant ID Number:

## Please read and complete this form carefully.

please tick	
<i>if applicable</i>	
I have read and understood the Participant Information Sheet.	
I have had an opportunity to ask questions and discuss this study and I	
have received satisfactory answers.	
I understand I am free to withdraw from the study at any time, without	
having to give a reason for withdrawing, and without prejudice.	
I agree to take part in this study.	
I would like to receive feedback on the overall results of the study at the	
email address given below. I understand that I will not receive individual	
feedback on my own performance.	
Email address	
Signature of participant Date	
(NAME IN BLOCK LETTERS)	

Signature of researcher	Date
(NAME IN BLOCK LETTERS)	

Appendix 7 Study 5 Parts A & B – Participant Debrief Form



## PARTICIPANT DEBRIEF

## TITLE OF PROJECT: User Perception of Web Page Informational Graphics

Participant ID number:

Principal Investigator:

Philip Walker

Investigator contact details: Email: philip.walker@unn.ac.uk

### 1. What was the purpose of the project?

The level of personal involvement in a task has been shown to affect the way in which that task is undertaken. Higher involvement results in more thought being given to completion of a task whereas lower involvement leads to less consideration of the task or its outcome. In addition, previous research has suggested that users take little account of web page graphics when assessing web page usability. These two factors of involvement and mode of information presentation are expected to impact on the tasks you have just completed by affecting the way in which web pages are viewed and the extent to which the information presented is later recalled.

## 2. How will I find out about the results?

If you leave your email address on the consent form then general results will be copied to you on completion of the study. Alternatively contact the researcher (Philip Walker) on University extension 7244 or online at <a href="mailto:philip.walker@unn.ac.uk">philip.walker@unn.ac.uk</a>

### 3. Will I receive any individual feedback

No – Only a overall summary of the results following statistical analysis can be provided 6 weeks after the experiment has been completed

### 4. What will happen to the information I have provided?

Data from the eye tracking files and participant numbers will be entered onto summary spreadsheets and then statistically analysed to determine the effects of

participant involvement and the use of information graphics. The spreadsheets and statistical analyses will be compressed and password protected on a secure computer. No personal details will be recorded on these files. All paper documents (consent forms and questionnaires will be store in locked cabinets and be destroyed securely after 6 months.

### 5. How will the results be disseminated?

All results will be include in a PhD thesis and a research paper or conference presentation may be written detailing the nature of the experiment together with an analysis of the experiment results.

6. Have I been deceived in any way during the project?

No

# 7. If I change my mind and wish to withdraw the information I have provided, how do I do this?

Simply request the removal of your experimental results quoting the participant number you were given on the debriefing sheet you were given.

If you have any concerns or worries concerning the way in which this research has been conducted, or if you have requested, but did not receive feedback from the principal investigator concerning the general outcomes of the study within a few weeks after the study has concluded, then please contact Professor Kenny Coventry via email at kenny.coventry@unn.ac.uk, or via telephone on 0191 2437027.

## Appendix 7 Study 5 Parts A & B - Risk Assessment Proforma

Risk Assessment for testing using a computer for prolonged periods of time	Code: COMPUTER_01
<b>Procedure:</b> Participants will be required to spend time sitting of time.	ng at a desk in front of a computer for a period
Hazards	Risks and Specific Control Measures
Sitting for long periods in the same sitting position may cause discomfort.	Minor (C1xL2= R2). Researcher will ensure that participants sit using appropriate computer chairs and that the height and position of the chair is in line with university health and safety policy. Computer monitor will be adjusted to ensure its position is optimal for each participant to obviate the risk of positional discomfort. Researcher will also monitor the participants throughout the testing session for evidence of discomfort where upon a break in testing will be commenced.
Prolonged testing using a computer may cause eye strain.	Trivial. (C1xL1= R1). To reduce the risk of eye strain, participants will be instructed to complete the session wearing any corrective lenses if applicable. Ambient light level will be checked to ensure that details on computer monitor are clearly visible. Researcher will ensure that regular breaks in testing occur.
Prolonged testing using a computer may cause headaches.	Minor (C1xL2= R2). If participant reports a headache the session will be halted either permanently or until the individual feels ready to continue.
Participants may be become frustrated at the time taken to complete the study.	Trivial (C1xL1=R1). Participants will be briefed on the approximate duration of the testing before they consent to take part. Breaks will be allowed.
Risk Evaluation (Overall):	1
Minor.	
General Control Measures:	

- 1. Strict adherence to the agreed protocol.
- 2. Researcher to ensure that the participants take regular breaks where possible.

10/06/08

**Emergency Procedures:** 

None

## Monitoring Procedures:

Researcher and participant compliance is monitored throughout.

### Assessment Record:

Initial Risk Assessment conducted by: Philip Walker:

**Review Period: Annual** 

Reviewer signature:

Risk Assessment for testing using IviewX eye tracking equipment	Code: EYETRACKING_01			
<b>Procedure:</b> Participants will be required to view a target scousing the IviewX Eye Tracking System.	ene whilst having their eye movement tracked			
Hazards	Risks and Specific Control Measures			
Sitting for long periods in the same sitting position may cause discomfort.	Minor (C1xL2= R2). Researcher will ensure that participants sit using appropriate chairs and that the height and position of the chair is in line with university health and safety policy. Where used, the computer monitor or display equipment will be adjusted to ensure its position is optimal for each participant to obviate the risk of positional discomfort. Researcher will also monitor the participants throughout the testing session for evidence of discomfort where upon a break in testing will be commenced.			
Prolonged testing using a computer monitor or other display equipment may cause eye strain.	Trivial. (C1xL1= R1). To reduce the risk of eye strain, participants will be instructed to complete the session wearing any corrective lenses if applicable. Ambient light level will be checked to ensure that details on computer monitor or display equipment are clearly visible. Researcher will ensure that regular breaks in testing occur.			
Prolonged testing using a computer monitor or other display equipment may cause headaches.	Minor (C1xL2= R2). If participant reports a headache the session will be halted either permanently or until the individual feels ready to continue.			
Participants may be become frustrated at the time taken to complete the study.	<b>Trivial (C1xL1=R1)</b> . Participants will be briefed on the approximate duration of the testing before they consent to take part. Breaks will be allowed.			
The infra-red beam used by the eye tracking equipment may cause eye irritation.	<b>Trivial (C1xL1=R1.</b> Participants will be advised that the tracking equipment does not present any risk to vision. Participants displaying any			

	evidence of irritation to the eyes or
	reluctance to the use of the equipment may
	withdraw from the study at any time.
Use of a chin rest to ensure accuracy of eye tracking	Trivial (C1xL1)=R1. Chin rest will be located as
system may cause irritation to participants face or result	close to participants chair as posible and its
in discomfort due to chin rest location or height.	height adjusted to the optimal position for
	participant comfort. If the chin rest causes
	irritation then it will be suitable padded to
	eliminate the problem. Participant will also be
	monitored for any evidence of discomfort and
	will be given breaks to obviate any positional
	or chin rest contact problems.
	of chill rest contact problems.
Risk Evaluation (Overall):	
Minor.	
General Control Measures:	
1. Strict adherence to the agreed protocol.	
2. Researcher to ensure that the participants ta	ake regular breaks where possible.
Emergency Procedures:	
None	
Monitoring Procedures:	
Researcher and participant compliance is monitore	ed throughout.
Assessment Record:	
Initial Risk Assessment conducted by: Philip Walke	er: 7/07/08
Review Period: Annual	
Reviewer signature:	

ISSUE RAISED	BY WHOM	RESOLUTION (or justification if
		not resolved)

Appendix 7 Study 5 Parts A & B - Response To Ethical Issues Raised By Reviewers.

Appendix 7 Study 5 Parts A & B – Participant Instructions

### **Participant Instructions**

## **Internet Banking Sites**

#### Instructions

You have been given £50000/£100 to invest. You will view three internet banking sites and I want you to decide, on the basis of the information they contain, which Bank you select to open a deposit account and invest this money. The bank web pages will be displayed one after the other and you will have 30 seconds to view each page. During the experiment your eye movements will be tracked to determine which web page contents you view. When you have seen all three you will be asked to complete a questionnaire on your internet usage.

If you have any questions concerning these instructions please ask the researcher. On completion of the questionnaire please feel free to ask any questions concerning the purpose of the experiment.

Participant Number	Random Number	Parameter	Page	Involvement	Graphics	Notes
		File	Sequence		Text	
1IT	6	Param2	CDS	I	Т	
2NT	8	Param2	CDS	N	Т	
3NT	16	Param4	SDC	N	Т	
4NG	15	Param4	SDC	N	G	
5IG	9	Param3	DSC	I	G	
6NT	24	Param6	DCS	N	Т	
7NG	11	Param3	DSC	N	G	
8IG	21	Param6	DCS	I	G	
9IT	10	Param3	DSC	I	Т	
10IG	1	Param1	SCD	I	G	
11NT	4	Param1	SCD	N	Т	
12IT	18	Param5	CSD	I	Т	
13NG	23	Param6	DCS	N	G	
14IG	13	Param4	SDC	I	G	
15NG	19	Param4	SDC	N	G	
16IT	14	Param4	SDC	I	Т	
17IG	5	Param2	CDS	I	G	
19NT	20	Param5	CSD	N	Т	
20NG	7	Param2	CDS	N	G	
21IT	22	Param6	DCS	I	Т	
22NG	3	Param1	SCD	N	G	
23IG	17	Param5	CSD	I	G	
24NT	12	Param3	DSC	N	Т	
25IT	2	Param1	SCD	I	Т	
26NT	4	Param1	SCD	N	Т	
27NT	16	Param4	SDC	N	Т	
28NG	7	Param2	CDS	N	G	
29IG	1	Param1	SCD	I	G	
30IT	22	Param6	DCS	I	Т	
31NT	24	Param6	DCS	N	Т	
32IG	21	Param6	DCS	I	G	
33IG	13	Param4	SDC	I	G	
34IT	14	Param4	SDC	I	Т	
35IT	6	Param2	CDS	I	Т	
36NG	15	Param4	SDC	N	G	

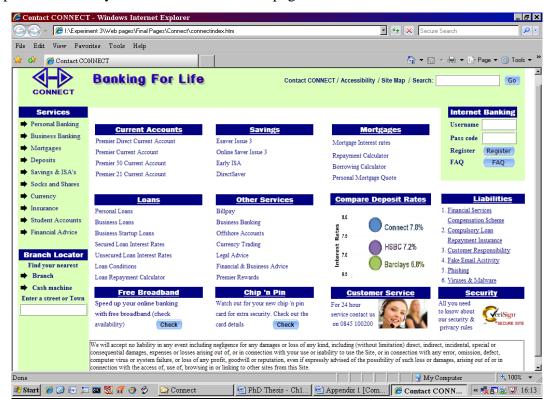
Appendix 7 Study 5 Parts A & B – Webpage Presentation Order

37IT	18	Param5	CSD	I	т	
38IG	17	Param5	CSD	I	G	
39IT	10	Param3	DSC	I	Т	
40NT	12	Param3	DSC	N	Т	
41IG	5	Param2	CDS	I	G	
42NG	19	Param5	CSD	N	G	
43NT	20	Param5	CSD	N	Т	
44IG	9	Param3	DSC	I	G	
45NG	23	Param6	DCS	N	G	
46NT	8	Param2	CDS	N	Т	
47NG	3	Param1	SCD	N	G	
48IT	2	Param1	SCD	I	Т	
49NG	11	Param3	DSC	N	G	
50IG	1	Param1	SCD	I	G	
51IG	21	Param6	DCS	I	G	
52NT	24	Param6	DCS	N	Т	
53NG	15	Param4	SDC	N	G	
54NT	20	Param5	CSD	N	Т	
55NG	23	Param6	DCS	N	G	
56NG	7	Param2	CDS	N	G	
57NG	3	Param1	SCD	N	G	
58NT	8	Param2	CDS	N	Т	
59IG	13	Param4	SDC	I	G	
60IT	6	Param2	CDS	I	Т	
61IT	2	Param1	SCD	I	Т	
62IG	17	Param5	CSD	I	G	
63NG	14	Param4	SDC	N	G	
64IT	18	Param5	CSD	I	Т	
65NG	11	Param3	DSC	N	G	
66IT	22	Param6	DCS	l	Т	
67IG	5	Param2	CDS	l	G	
68NT	16	Param4	SDC	N	Т	
69NT	4	Param1	SCD	N	Т	
70NG	19	Param5	CSD	N	G	
71IT	10	Param3	DSC	I	Т	
72IT	2	Param1	SCD	I	Т	
73IG	9	Param3	DSC	I	G	
74IG	1	Param1	SCD	I	G	

75IT	2	Param1	SCD	I	т	
76IG	21	Param6	DCS	I	G	
77NT	24	Param6	DCS	N	Т	
78NT	12	Param3	DSC	N	Т	
79IT	18	Param5	CSD	I	Т	
80NG	3	Param1	SCD	N	G	
81IG	17	Param5	CSD	I	G	
82NG	7	Param2	CDS	N	G	
83IT	22	Param6	DCS	I	Т	
84NG	23	Param6	DCS	N	G	
85IT	14	Param4	SDC	I	Т	
86IG	9	Param3	DSC	I	G	
87IG	13	Param4	SDC	I	G	
88NG	19	Param5	CSD	N	G	
89NG	11	Param3	DSC	N	G	
90IG	5	Param2	CDS	I	G	
91NG	5	Param2	CDS	I	G	
92NT	20	Param5	CSD	N	Т	
93NT	4	Param1	SCD	N	Т	
94IT	10	Param3	DSC	I	Т	
95IT	6	Param2	CDS	I	Т	
96NG	11	Param3	DSC	N	G	
97IG	9	Param3	DSC	I	G	
98NT	12	Param3	DSC	N	Т	
99NG	3	Param1	SCD	N	G	
100IT	6	Param2	CDS	I	Т	
101IG	13	Param4	SDC	I	G	
	Parameter 1 file:	18	18	48	53	
	Parameter 2 file:	17	17	52	47	
	Parameter 3 file:	18	18			
	Parameter 4 file:	16	16			
	Parameter 5 file:	15	15	n = 48	G = 53	
	Parameter 6 file:	16	16	l = 52	T = 47	
	totals:	100	100			

Possible Bank						
order:	SCD	CDS	DSC	SDC	CSD	DCS
Parameter File:	1	2	3	4	5	6

Test condition 1:	Involvement	Graphic	SCD	S = Speedbank
Test condition 2:	Involvement No	Text	SCD	C = Connect
Test condition 3:	Involvement No	Graphic	SCD	D = Digibank
Test condition 4:	Involvement	Text	SCD	
Test condition 5:	Involvement	Graphic	CDS	
Test condition 6:	Involvement No	Text	CDS	
Test condition 7:	Involvement No	Graphic	CDS	
Test condition 8:	Involvement	Text	CDS	
Test condition 9:	Involvement	Graphic	DSC	
Test condition 10:	Involvement No	Text	DSC	
Test condition 11:	Involvement No	Graphic	DSC	
Test condition 12:	Involvement	Text	DSC	
Test condition 13:	Involvement	Graphic	SDC	
Test condition 14:	Involvement No	Text	SDC	
Test condition 15:	Involvement No	Graphic	SDC	
Test condition 16:	Involvement	Text	SDC	
Test condition 17:	Involvement	Graphic	CSD	
Test condition 18:	Involvement No	Text	CSD	
Test condition 19:	Involvement No	Graphic	CSD	
Test condition 20:	Involvement	Text	CSD	
Test condition 21:	Involvement	Graphic	DCS	
Test condition 22:	Involvement No	Text	DCS	
Test condition 23:	Involvement No	Graphic	DCS	
Test condition 24:	Involvement	Text	DCS	

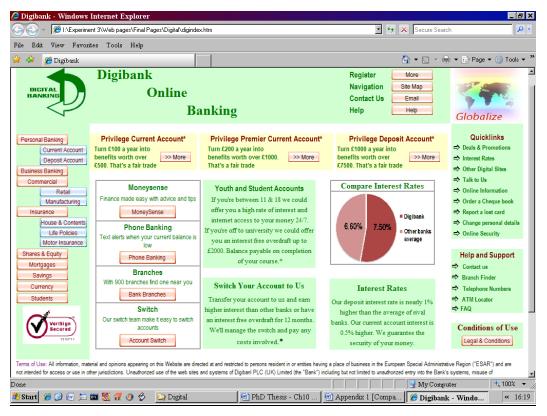


#### Appendix 7 - Study 5 Parts A & B Test Webpages

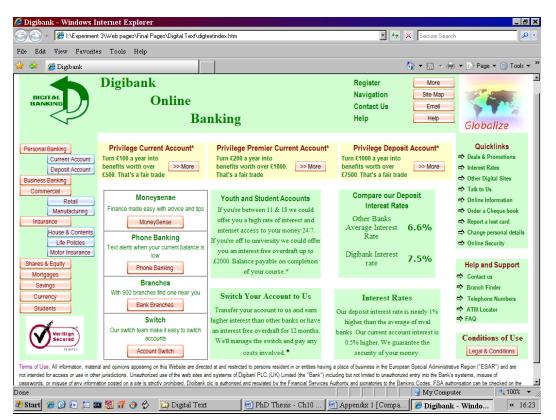
#### Connect Graphic Info



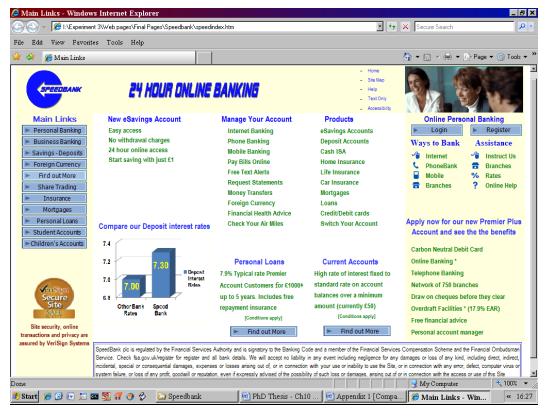
#### Connect Text Info



Digibank Graphic Info



Digibank Text Info



### **Speedbank Graphic Info**

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le Edit View Favorite	s Tools Help	·		
r 🍄 🏾 🏉 Main Links				🟠 🔻 🗟 👻 🖶 👻 Page 🔻 🎯 Tools 🔻
<b>SPEEDBANK</b>	24 HOUR ONLIN	e Banking	- Home - Site Map - Help - Text Only - Accessibility	R. One
Main Links  Personal Banking Business Banking Savings-Deposits Foreign Currency Fird out More Share Trading Insurance Mortgages Personal Loans Student Accounts Children's Accounts	New eSavings Account Easy access No withdrawal charges 24 hour online access Start saving with just £1	Manage Your Account Internet Banking Phone Banking Mobile Banking Pay Bills Online Free Text Alerts Request Statements Money Transfers Foreign Currency Financial Health Advice Check Your Air Miles	Products eSavings Accounts Deposit Accounts Cash ISA Home Insurance Life Insurance Car Insurance Mortgages Loans Credit/Debit cards Switch Your Account	Online Personal Banking         Login       Register         Ways to Bank       Assistance         Internet       Instruct Us         PhoneBank       Branches         Mobile       % Rates         Branches       Online Help         Apply now for our new Premier Plus         Account and see the the benefits         Carbon Neutral Debit Card
Ste security, online transactions and privacy are assured by VeriSign Systems	Compare Our Interest Rates Speedbank Interest Rate 7.3% Rival Banks Interest Rate 7.0%	Personal Loans 7.9% Typical rate Premier Account Customers for £1000+ up to 5 years. Includes free repayment insurance [Conditions apply] Find out More	Current Accounts High rate of interest fixed to standard rate on account balances over a minimum amount (currently £50) [Condition apply] [Find out More Code and a member of the Financial Servic	Online Banking * Telephone Banking Network of 750 branches Draw on cheques before they clear Overdraft Facilities * (17.9% EAR) Free financial advice Personal account manager es Compensation Scheme and the Financial Ombudsman
ne	Service. Check fsa.gov.uk/register for register a incidental, special or consequential damages, exp	nd all bank details. We will accept no liabilit enses or losses arising out of, or in connect	y in any event including negligence for an on with your use or inability to use the Site	y damages or loss of any kind, including direct, indirect, to rin connection with any error, defect, computer virus or if or in connection with the access or use of this Site My Computer + 100%

Speedbank Text Info

## Appendix 7 Study 5 Part A Questionnaire

## **Pre-Webpage Display Questions:**

Participant ID:	Age	Gende	er: M F	Occupation:			Numbe	er:
Section 1: Internet Expe	rience (P	ease circle	the approp	riate answe	r)			
a) I use the internet		Daily	Weekly	Monthly	(	Occasio	onally	Never
b) I would class myself	as	Expert User	Confident User	Average User		Occasi Use		Non User
Section 2: Internet Webs	ites (Plea	se circle th	e appropria	te answer)				
Intern	et Web S	ites		Strongly disagree				Strongly agree
I use the internet mainly a	at home			1	2	3	4	5
I use the internet mainly a	at work/co	llege		1	2	3	4	5
I use the internet primarily	/ to find in	formation		1	2	3	4	5
I use the internet primarily	/ to buy g	oods and se	rvices	1	2	3	4	5
I use the internet primarily	/ for emai	purposes		1	2	3	4	5
I am careful which web si	tes I visit			1	2	3	4	5
I do not always believe w	hat I read	on the inter	net	1	2	3	4	5
I would seek advice conc	erning wh	ich sites to u	Jse	1	2	3	4	5
I check the security of we	b sites I d	eal with		1	2	3	4	5
I am comfortable using th	e internet			1	2	3	4	5
I often find it difficult to fin	d the info	rmation I ne	ed	1	2	3	4	5
I am comfortable giving fi	nancial de	tails over th	e internet	1	2	3	4	5

Section 3: Goods and Services (please circle the appropriate answer)

Goods and Services	Strongly disagree				Strongly agree
I would purchase goods and services over the internet	1	2	3	4	5
I would only make purchases from companies I know	1	2	3	4	5

Section 4: Web Site Contents (please circle the appropriate answer)

Web Site Contents	Strongly disagree				Strongly agree
I do not read all the contents of web pages	1	2	3	4	5
Web page layout is important	1	2	3	4	5
The text style on web pages is important	1	2	3	4	5
I always read the site policy statements	1	2	3	4	5
I use graphics to judge web page contents	1	2	3	4	5
I use animations to judge web page contents	1	2	3	4	5
I dislike web pages with too much information on them	1	2	3	4	5

## Section 5: Online Banking Bank Websites (please circle the appropriate answer)

Banking Web Sites	Strongly disagree				Strongly agree
I would use internet banking	1	2	3	4	5
I believe that internet banking is safe and secure	1	2	3	4	5
I would only use online banks I know	1	2	3	4	5
I understood all the information on bank websites	1	2	3	4	5
I believe the information on bank websites	1	2	3	4	5
I would not bank with unknown internet banks	1	2	3	4	5
I would invest money with internet banks	1	2	3	4	5
I would borrow money from internet banks	1	2	3	4	5

## **Post-Webpage Display Questions:**

Section 6: Bank Web Sites Assessment (please circle the appropriate answer)

WBS Bank	Strongly disagree				Strongly agree
I recognize WBS bank	1	2	3	4	5
I would use WBS bank for online banking	1	2	3	4	5
I would invest money with WBS Bank.	1	2	3	4	5
I would apply for a loan with the WBS Bank	1	2	3	4	5
I would trust the WBS web site (Please give reason)					A

IBS Bank	Strongly disagree				Strongly agree
I recognize IBS bank	1	2	3	4	5
I would use IBS bank for online banking	1	2	3	4	5
I would invest money with IBS Bank.	1	2	3	4	5
I would apply for a loan with the IBS Bank	1	2	3	4	5
I would trust the IBS web site (Please give reason)					

DBS Bank	Strongly disagree	Strongly disagree			Strongly agree
I recognize DBS bank	1	2	3	4	5
I would use DBS bank for online banking	1	2	3	4	5
I would invest money with DBS Bank.	1	2	3	4	5
I would apply for a loan with the DBS Bank	1	2	3	4	5
I would trust the DBS web site (Please give reason)			•		

## Section 7: Webpage Content Recall (please tick the appropriate box)

Web Site Details	WBS	IBS	DBS
Which Bank had the highest interest rate for deposit accounts? (tick one box)			
Which Bank had the lowest interest rate for deposit accounts? (tick one box)			
Which Banks had secure web sites? (tick all that apply)			

## Section 8: Attention Level

Please indicate how much attention you paid to the contents of each screen										
Rating Scale	Little Attention	Poor	Average	Good	Very Good					
Connect Bank										
DigiBank										
SpeedBank										

## Section 9: Webpage Content Read (please tick the appropriate box)

Please indicate approximately how much of each screen's content you read						
Rating Scale	0%	25%	50%	75%	100%	
Connect Bank						
DigiBank						
SpeedBank						

## Section 10: Screen Characteristics (please tick the appropriate box)

Please state which of the following features of the displayed screens you based your decisions									
	Screen Layout	Text Style	Text Content	Graphics Style	Graphics Content	Colour	Menu Choices	Knowledge of Bank	Security & Privacy
Connect Bank									
DigiBank									
SpeedBank									

## Section 11: Interest Rate Importance (please tick the appropriate box)

Please indicate how much bank interest rates affected your assessment					
Rating Scale	Not at all Important	Slightly Important	Fairly Important	Quite Important	Very Important
Connect Bank					
DigiBank					
SpeedBank					

## Appendix 8 - Study 6 Documentation

Participant Number	Random Number	Parameter File	WebPage Sequence	Involvement	Security	Notes
1IN	6	nonsecparam2	IWD	I	Ν	
2NN	8	nonsecparam2	IWD	N	N	
3NN	16	nonsecparam4	DWI	N	Ν	
4NS	15	secureparam4	DWI	N	S	
5IS	9	secureparam3	WDI	I	S	
6NN	24	nonsecparam6	IDW	N	Ν	
7NS	11	secureparam3	DIW	N	S	
8IS	21	secureparam6	IDW	I	S	
9IN	10	nonsecparam3	DIW	I	Ν	
10IS	1	secureparam1	DIW	I	S	
11NN	4	nonsecaram1	DIW	N	N	
12IN	18	nonsecaram5	WID	I	N	
13NS	23	secureparam6	IDW	N	S	
14IS	13	secureparam4	DWI	I	S	
15NS	19	nonsecparam4	DWI	N	S	
16IN	14	nonsecparam4	DWI	I	Ν	
17IS	5	secureparam2	IWD	I	S	
19NN	20	nonsecparam5	WID	N	N	
20NS	7	secureparam2	IWD	N	S	
21IN	22	nonsecaram6	IDW	I	N	
22NS	3	secureparam1	DIW	N	S	
23IS	17	secureparam5	WID	I	S	
24NN	12	nonsecparam3	DIW	N	N	
25IN	2	nonsecparam1	DIW	I	N	
26NN	4	nonsecparam1	DIW	N	N	
27NN	16	nonsecparam4	DWI	N	N	
28NS	7	secureparam2	IWD	N	S	
29IS	1	secureparam1	DIW	I	S	
30IN	22	nonsecparam6	IDW	I	N	
31NN	24	nonsecparam6	IDW	N	N	
32IS	21	secureparam6	IDW	I	S	
33IS	13	secureparam4	DWI	I	S	
34IN	14	nonsecparam4	DWI	I	N	
35IN	6	nonsecparam2	IWD	I	N	
36NS	15	secureparam4	DWI	N	S	
37IN	18	nonsecparam5	WID	I	N	
38IS	17	secureparam5	WID	I	S	
39IN	10	nonsecparam3	DIW	I	N	
40NN	12	nonsecparam3	DIW	N	N	
41IS	5	secureparam2	IWD	I	S	
42NS	19	secureparam5	WID	N	S	

## Appendix 8 Study 6 - Order of Participant Testing

	1					1
43NN	20	nonsecparam5	WID	N	N	
44IS	9	secureparam3	DIW	l	S	
45NS	23	secureparam6	IDW	N	S	
46NN	8	nonsecparam2	IWD	N	Ν	
47NS	3	secureparam1	DIW	N	S	
48IN	2	nonsecparam1	DIW	I	Ν	
49NS	11	secureparam3	DIW	N	S	
50IS	1	secureparam1	DIW	I	S	
51IS	21	secureparam6	IDW	I	S	
52NN	24	nonsecparam6	IDW	N	N	
53NS	15	secureparam4	DWI	N	S	
54NN	20	nonsecparam5	WID	N	N	
55NS	23	secureparam6	IDW	N	S	
56NS	7	secureparam2	IWD	N	S	
57NS	3	secureparam1	DIW	N	S	
58NN	8	nonsecparam2	IWD	N	N	
59IS	13	secureparam4	DWI		S	
60IN	6	Nonsecparam2	IWD	-	N	
61IN	2	nonseccparam1	DIW		N	
6215	17	secureparam5	WID		S	
63NS	14	secureparam4	DWI	N N	S	
64IN	18	nonsecparam5	WID		N	
65NS	10	secureparam3	DIW	N	S	
66IN	22		IDW		N	
67IS	5	nonsecparam6 secureparam2	IWD		S	
68NN	16	nonsecparam4	DWI	N	N	
69NN	4		DIW	N	N	
		nonsecparam1			S	
70NS 71IN	19 10	secureparam5	WID DIW	N I	N N	
	2	nonsecparam3				
72IN	_	nonsecparam1	DIW		N	
73IS	9	secureparam3	DIW		S	
74IS	1	secureparam1	DIW		S	
75IN	2	nonsecparam1	DIW		N	
76IS	21	secureparam6	IDW	 	S	
77NN	24	nonsecparam6	IDW	N	N	
78NN	12	nonsecparam3	DIW	N .	N	
79IN	18	nonsecparam5	WID		N	
80NS	3	secureparam1	DIW	N	S	
81IS	17	secureparam5	WID	I	S	
82NS	7	secureparam2	IDW	N	S	
83IN	22	nonsecparam6	IDW		N	
84NS	23	secureparam6	IDW	N	S	
85IN	14	nonsecparam4	DWI	I	N	
86IS	9	secureparam3	DIW	I	S	
87IS	13	secureparam4	DWI	I	S	
88NS	19	secureparam5	WID	N	S	
89NS	11	secureparam3	DIW	N	S	

90IS	5	secureparam2	IWD	I	S	
91NS	5	secureparam2	IWD	I	S	
92NN	20	nonsecparam5	WID	Ν	Ν	
93NN	4	nonsecparam1	DIW	Ν	Ν	
94IN	10	nonsecparam3	DIW	I	Ν	
95IN	6	nonsecparam2	IWD	I	Ν	
96NS	11	secureparam3	DIW	N	S	
97IS	9	secureparam3	DIW	I	S	
98NN	12	nonsecparam3	DIW	N	Ν	
99NS	3	secureparam1	DIW	N	S	
100IN	6	nonsecparam2	IWD	I	Ν	
101IS	13	secureparam4	DWI	I	S	

Participant Counts	Param1 =1 8	DIW = 18			
	Param2 = 17	IWD = 17			
	Param3 = 18	IDW = 18			
	Param4 = 16	DWI = 16			
	Param5 = 15	WID = 15	N = 48	S = 53	
	Param6 = 16	IDW = 16	I = 52	N = 47	
	Total = 100				

Bank Names	D: DBS		I: iBank		W: Web	o Bank
Possible Bank order:	DIW	IWD	DIW	DWI	WID	IDW
Parameter File:	1	2	3	4	5	6

Test condition 1:	Involvement	Secure	DIW
Test condition 2:	Involvement	Non-Secure	DIW
Test condition 3:	No Involvement	Secure	DIW
Test condition 4:	No Involvement	Non-Secure	DIW
Test condition 5:	Involvement	Secure	IWD
Test condition 6:	Involvement	Non-Secure	IWD
Test condition 7:	No Involvement	Secure	IWD
Test condition 8:	No Involvement	Non-Secure	IWD
Test condition 9:	Involvement	Secure	DIW
Test condition 10:	Involvement	Non-Secure	DIW
Test condition 11:	No Involvement	Secure	DIW
Test condition 12:	No Involvement	Non-Secure	DIW

Test condition 13:	Involvement	Secure	DWI
Test condition 14:	Involvement	Non-Secure	DWI
Test condition 15:	No Involvement	Secure	DWI
Test condition 16:	No Involvement	Non-Secure	DWI
Test condition 17:	Involvement	Secure	WID
Test condition 18:	Involvement	Non-Secure	WID
Test condition 19:	No Involvement	Secure	WID
Test condition 20:	No Involvement	Non-Secure	WID
Test condition 21:	Involvement	Secure	IDW
Test condition 22:	Involvement	Non-Secure	IDW
Test condition 23:	No Involvement	Secure	IDW
Test condition 24:	No Involvement	Non-Secure	IDW

Appendix 8 Study 6 Parts A & B - Ethics Forms



## ETHICS SUBMISSION FORM

1. Project/Pro	gramme Title: User Involvemen consideration of		ct upon the perception and curity Information		
2. Is this:	a single study	$\checkmark$			
	a programme of studies				
3. Name of Princi	oal Applicant:		Philip Walker		
To maintain the ir	ndependent review process ple	ase also ident	tify all the members of the		
research team inv	olved with the study:		None		
4. Who is conduct	ing the project (delete as appr	opriate)?			
5. If a student ple	ase state your programme of s	tudv:	POSTGRADUATE		
-	PGR please state your superviso	-	Pam Briggs		
6. Where will the	research be conducted?				
	on University property	$\checkmark$			
	outside of the University				
If the study is being conducted at a different institution (e.g. another University, a School etc) then you must produce proof that you have received appropriate permission (e.g. a letter, an email) from the relevant institution(s), before your submission can be approved. <u>Give this to the Chair when you submit your final documentation</u> .					
	amme is being conducted outs		•		
	omeone's home, a public place) propriate risk assessment and s	-	-		

### item 17).

### 7. Rationale for the study or programme (approx 300 words):

Fogg's Prominence Interpretation theory identifies user expectations and user involvement as being significant factors in both his prominence and interpretation processes by which users view and interpret webpage content. Fogg describes user involvement as affecting the prominence process and user expectation as affecting the interpretation process. However previous studies have shown that user expectation can also impact the prominence process by affecting user webpage scanning strategies.

User expectations for internet usage may be broadly split into two categories: Personal Expectations and Features of Service Expectations. Of this latter group, user expectations for privacy and online security would be expected to be high for online banking and other online financial transactions. However a previous study showed that user assessments of bank webpage usability rated security below familiarity with banking organisation and webpage characteristics such as layout, text style, graphics, menu and colour in importance. This study also showed that few users read webpage information dealing with user responsibilities and bank security, policies and liabilities. Personal involvement has been demonstrated to affect the way in which message information is viewed, processed and assessed. Low involvement results in superficial levels of information processing using heuristics or message attributes and high involvement requires more attention to message details and a deeper, more cognitively demanding consideration of message content.

The effect of increased personal involvement upon user expectations is not clear although greater involvement would be expected to raise the general level of both personal and service aspect expectations. This is expected to result in a more critical consideration of webpages using their content rather than their attributes and differences in trust scores for the different levels of involvement conditions. When participants are primed to consider website security the absence of website security information is also expected to adversely affect user webpage assessments resulting in lower trust scores. Similarly, differences in webpage scanning strategies may be found where participants attempt to locate missing security information. In order to investigate these hypotheses, this study will use eyetracking measures and questionaires to examine: 1. Whether the presence of involvement upon webpage scanning strategies; 3. Whether the presence of security information impacts upon user assessment of webpage trust 4. Whether the level of involvement affects webpage trust; 5. The effect of involvement on the subsequent recall of interest rate information, 6. Whether the level of personal involvement affects user

perception, consideration and assessment of webpage security information.

# 8. Detailed description of the proposed methodology (e.g. procedure, materials, software, measurement tools etc) for the study/programme (approx 500 words):

A 3 factor mixed design will be used; the between participants factors will be high/low involvement and security information present/absent. The within participants factor will be bank website home pages.

Participants will view the home pages of four unfamiliar online banks containing deposit and loan interest rate information within a general mix of website menu, banking service details and illustrative graphics. Apart from the presence or absence of security information webpage content will be the same for both conditions and all will follow the same organisational layout. The security information present webpage hold security information and logo present in a prominent position with a neutral graphic occupying this position for the security information absent condition. For the high and low involvement factor participants will be asked to invest large or small amounts of money into an online bank with the purpose of maximising both the security of the investment and the interest returned.

Experimental documentation comprises a set of participant instructions and consent form, pre and post-test questionnaires and a post-experimental debriefing form. Equipment used will be two PC's and an IviewX eye-tracking system. The first PC will control and display a series of four online bank web pages. The second PC, linked to the IViewX system, is used to control, record and subsequently analyze eye-tracking data. Software will comprise Iview X eye tracking equipment calibration, control and analysis software. Presentation and browser software is used to display, time and randomly vary web page presentation order to obviate any presentation order effects. Four bank web pages constructed in a standard format containing the same information but differing in presence/absence of security information located in the right hand area of each page and interest rate information located in the central area of the web page

Participants will be allocated randomly, using data from www.random.org, to each of the four experimental conditions: high involvement/security information; high involvement/no security information; low involvement/security information; low involvement/no security information.

Participants will be given a set of instructions advising them to invest money in the bank of their choice ensuring the security of their deposit and maximising investment return. High involvement participants will be told that following presentation of all four web pages they will be asked to recall the interest rate information for each bank and rate each bank for its trustworthiness. Each participant will be asked to complete a brief pretest questionnaire asking the level and usual purpose of their internet usage, confidence in internet information and transactions and criteria used to assess web page trust.

On completion of the pre-test questionnaire the use of the lview X eye-tracking equipment is calibrated for each participant and the four web pages each displayed for 30 seconds in a random order during which their eye movements will be recorded. The participants will not be required to perform any actions during the testing phase other than to extract the information required for their interest rate decision from the web pages viewed. The post-test questionnaire is given to record participant recall of interest rate information, selection of which banks in which investments would be made, bank security arrangements, assessment of the usability of each bank and the criteria used for this assessment.

Recorded information for analysis will comprise time to locate and fixation times for interest rate and security information together with time spent looking off screen. Questionnaire results will use the specific questions dealing with interest rate and security related information to determine the effects of involvement and security information on webpage trustworthiness and the remaining questions to examine the effect and relative importance of other webpage characteristics on usability. With the recent events in the banking sector, the overall participant assessment for security related information will be compared with that of a previous study to determine if there are any changes resulting from these events.

#### 9. Will an undergraduate be involved in data collection,

#### e.g. as a research assistant?

NO

If so it is the supervisor's responsibility to ensure that they are fully aware of all ethical procedures and issues.

10. Is approval required from another Ethics Committee (e.g. NHS

NO

If approval is required from another Ethics Committee what is the current status of your application?

**11.** Is the proposed study a continuation of an existing study that has already received ethical approval?

YES

**12. Participant information (number, age, sex, and whether vulnerable):** Participants of Both sexes – approximately 60, aged 16+, Students & general population. No vulnerable participants will be tested

If more than one study is proposed provide separate information for each. 13. In the case of healthy volunteers how and from where will they be sought? Participants will be recruited on an opportunity basis from students/staff/visitors to Northumbria University 14. Will participants receive any payments/expenses? NO If so please describe: 15. What significant discomfort (physical, social, or psychological), inconvenience, or danger may be caused? The relatively short display period and small number of web pages to be displayed will not cause any visual discomfort for the participants. The IviewX eye tracking system uses an infra-red eye movement recording system which will cause participants no ill effects. 16. What measures will be adopted to protect participant anonymity, and where appropriate confidentiality? Each participant will be allocated a number dependent upon the experimental condition to which they are assigned. Personal information recorded will be age, sex and basic information concerning internet usage. Participants will be given their participant number on the debriefing sheet and this can be used to remove participant data later should they request this 17. Have you consulted the appropriate Risk Assessment Form(s)? YES If YES, which document(s) (insert the relevant code numbers): COMPUTER 01 EYETRACKING 01 What is the overall risk rating? Minor If NO, you will need to complete a new Risk Assessment Form and include it with your submission 18. If the study/programme falls under the Human Tissue Act, has Ruth Steinberg been informed (delete as appropriate) NOT APPLICABLE

19. The University operates a traffic light system to determine project risk – see							
Northumbria University Research Ethics and Governance Handbook 2007-2008, p 5 (a							
copy is stored within PSS Ethics/PGR Information). Using those guidelines how would							
you rate your ethics submission overall (tick the appropriate box)?							
Red 🗌 Amber 🗸 Green 🗌							
20. Proposed start date(s) and approximate duration:							

#### After Ethical Review.

After the ESF has been reviewed by the independent reviewers, take a hard (signed and dated) copy to the Chair of the School Ethics CommitteeI and (where appropriate) include the following documentation:

- 2 signed and dated Ethics Screens
- A letter of confirmation from an external institution
- A Risk Assessment Form
- Participant information, consent and debrief forms
- Response to Ethical Issues Form

#### Declaration by the researcher

I confirm that the information provided in this form is accurate. I have considered the ethical/risk issues and I am satisfied that the project does not violate the ethical guidelines of the University or cause undue harm to investigator and participants. I understand that I may not proceed with data collection until this form has been formally approved, and until all participants have provided written first-person informed consent (where appropriate). I understand that I may not make any changes to the project without prior approval from the Chair of the SEC.

Signature of proposer:	Date:
Signature of supervisor (if necessary):	Date:

This submission has been assessed by two independent reviewers, and all ethical issues have been addressed. A Risk Assessment has been conducted. This submission has now been passed by the Chair of the School Ethics Committee

Signature of Chair:

Appendix 8 Study 6 Parts A & B – Participant Information



#### PARTICIPANT INFORMATION.

TITLE OF PROJECT: The effect of Security Information on User Assessment of Webpages

Participant	
ID Number:	

Principal Investigator: Philip Walker

Investigator contact details: Email: philip.walker@unn.ac.uk

This project is funded by: Self

Number of participant points / payment:

#### INFORMATION TO POTENTIAL PARTICIPANTS

#### 1. What is the purpose of the project?

User website assessment and recall of information has been shown to be affected by the level of user involvement in tasks undertaken. Similarly, website assessment may be affected by the perceived security and policies of the website. This study aims to investigate both user involvement and website security information to user attention, perception of security and financial information and subsequent assessment and recall of web page information. Eye tracking equipment will be used to measure attention and perception of web page information and questionnaires to assess usability and recall of presented web site information.

#### 2. Why have I been selected to take part?

You are an adult internet user who is familiar with browser software and a variety of different internet web sites and web page layout. You have no significant visual defects and have agreed to take part in this study.

#### 3. What will I have to do?

Testing will take place in the COCO lab on the first floor of the Northumberland building and will take approximately 20 minutes. Initially you will complete a preliminary questionnaire to determine your exeprience of internet usage and whether you use internet banking. You will then view a series of Bank web site home pages with the task of selecting which banks you would use to invest a cash sum. Your eye movements will be recorded to identify which parts of the web page you view in order to carry out this task. On completion you will complete another questionnaire to assess the usability of web page viewed and your recall of the information presented.

## 4. What are the exclusion criteria (i.e. are there any reasons why I should not take part)?

Any characteristics of your eyes which prevent recording of your eye movements e.g. some types of contact lenses, interference of tracking due to eyelashes or heavy framed spectacles.

#### 5. Will my participation involve any physical discomfort?

No – the eye tracking equipment is located away from the participant and the short testing period will not cause any visual fatigue effects.

# 6. Will my participation involve any psychological discomfort or embarrassment?

Ν

#### 7. Will I have to provide any bodily samples (i.e. blood, saliva)?

No

#### 8. How will confidentiality be assured?

You will be assigned a participant number to identify your experimental data. The collected eye tracking data together with the questionnaire responses will be summarized on spreadsheets, compressed and stored on password controlled computer files in accordance with the Data Protection Act and can only be identified by participant number.

The consent form containing your signature and participant number together with all paper questionnaire data will be stored separately from the experimental data so that

you cannot be identified from your experimental data.

#### 9. Who will have access to the information that I provide?

The researcher:

Philip Walker

Supervisors:

Prof. Pam Briggs

Dr Chris Dracup

#### 10. How will my information be stored / used in the future?

Information from the the eye tracking data files will be summarized and entered into a series of summary spreadsheets together with your participant number. All electronic summary data will be compressed, password protected and stored on computer. Paper documentation including questionnaire responses and consent forms will be stored separately in a locked cabinet. The data will be used in the writing of a PhD thesis and possibly published in a scientific journal or in a conference presentation in a format that precludes identification of individual participants.

#### 11. Has this investigation received appropriate ethical clearance? Yes

#### 12. Will I receive any financial rewards / travel expenses for taking part? No

#### 13. How can I withdraw from the project?

Simply ask for your data to be removed from the results spreadsheet giving your participant number.

**14. If I require further information who should I contact and how?** Philip Walker on university extension 7244 or by email using philip.walker@unn.ac.uk

Please note however that it might not be possible to withdraw your individual data if the data has already been analysed/published – so please contact the investigator within one month of the project end date if you do wish to withdraw your data". Appendix 8 Study 6 Parts A & B – Informed Consent Form



#### **INFORMED CONSENT FORM**

#### Project Title: User Involvement and its effect upon the perception and consideration of Webpage Security Information

Principal Investigator: Philip Walker

Participant Number:

Please tick where app	olicable
I have read and understood the Participant Information Sheet.	
I have had an opportunity to ask questions and discuss this study and I have received satisfactory answers.	
I understand I am free to withdraw from the study at any time, without having to give a reason for withdrawing, and without prejudice.	
I agree to take part in this study.	
I would like to receive feedback on the overall results of the study at the email address given below. I understand that I will not receive individual feedback on my own performance.	

Signature of participant	Date
NAME IN BLOCK LETTERS)	

Signature of researcher	Date
(NAME IN BLOCK LETTERS)	

Appendix 8 Study 6 Parts A & B - Participant Debrief



#### PARTICIPANT DEBRIEF

TITLE OF PROJECT: User Involvement and its effect upon the perception and consideration of Webpage Security Information

Principal Investigator: Philip Walker

Investigator contact details: Email:philip.walker@northumbria.ac.uk

Participant Identification Number: \_\_\_\_\_

#### 1. What was the purpose of the project?

The level of personal involvement in a task has been shown to affect the way in which that task is undertaken. Higher involvement results in more thought being given to completion of a task whereas lower involvement leads to less consideration of the task or its outcome. However the role of user involvement and perceived website security on website trustworthiness assessment is less clear. These two factors of user involvement and website security are expected to impact on the tasks you have just completed by affecting the way in which web pages are viewed and the extent to which the information presented is later recalled.

#### 2. How will I find out about the results?

If you leave your email address on the consent form then general results will be copied to you on completion of the study. Alternatively contact the researcher (Philip Walker) on University extension 7244 or online at <u>philip.walker@morthumbria.ac.uk</u>

#### 3. Will I receive any individual feedback

No – Only a overall summary of the results following statistical analysis can be provided 6 weeks after the experiment has been completed.

#### 4. What will happen to the information I have provided?

Data from the eye tracking files and participant numbers will be entered onto summary spreadsheets and then statistically analysed to determine the effects of particpant involvement and the use of information graphics. The spreadsheets and statistical analyses will be compressed and password protected on a secure computer. No personal details will be recorded on these files. All paper documents (consent forms and questionnaires will be store in locked cabinets and be destroyed securely after 6 months.

#### 5. How will the results be disseminated?

All results will be included in a PhD thesis and **a** research paper or conference presentation may be written detailing the nature of the experiment together with an analysis of the experiment results.

#### 6. Have I been deceived in any way during the project?

No

### 7. If I change my mind and wish to withdraw the information I have provided, how do I do this?

Simply request the removal of your experimental results quoting the participant number you were given on the debriefing sheet you were given.

"Please note however that it might not be possible to withdraw your individual data if the

data has already been analyzed/published – so please contact the investigator within one

month of the project end date if you do wish to withdraw your data".

If you have any concerns or worries concerning the way in which this research has been conducted, or if you have requested, but did not receive feedback from the principal investigator concerning the general outcomes of the study within 2 few weeks after the study has concluded, then please contact Professor Kenny Coventry via email at kenny.coventry@northumbria.ac.uk, or via telephone on 0191 2437027.

### Appendix 8 Study 6 Parts A & B

#### Risk Assessment Proforma

Risk Assessment for: Testing using a computer for prolonged periods of time	Code: COMPUTER_01
Risk Assessment for testing using lviewX eye tracking equipment	Code: EYETRACKING_01

#### **RESPONSE TO ETHICAL ISSUES RAISED BY REVIEWERS.**

ISSUE RAISED	BY WHOM	RESOLUTION (or justification if not resolved)

Appendix 8 Study 6 Parts A & B – Participant Instructions

### **Internet Banking Sites**

#### Instructions

You have been given £50000/£100 to invest. You will view four internet banking sites and I want you to decide, on the basis of the interest rate and security information they contain, which Bank you select to open a deposit account and invest this money. The bank web pages will be displayed one after the other and you will have 30 seconds to view each page. During the experiment your eye movements will be tracked to determine which web page contents you view. When you have seen all four you will be asked to complete a questionnaire on your internet usage.

If you have any questions concerning these instructions please ask the researcher. On completion of the questionnaire please feel free to ask any questions concerning the purpose of the experiment.

#### Appendix 8 Study 6 Parts A Questionnaire

#### Pre webpage Display Questionnaire:

Participant ID	Age	Gender	М	Occupation
Do you currently have a bank Account		Yes	No	

Section 1 - Internet Usage (please circle the appropriate answer)

a) I use the internet	Daily	Weekly	Monthly	Occasionally	Never
b) I would class myself as	Expert User	Confident User	Average User	Occasional User	Non User

#### Section 2 - Internet Web Sites (please circle the appropriate answer)

Internet Web Sites	Strongly disagree				Strongly agree
I use the internet mainly at home	1	2	3	4	5
I use the internet mainly at work/college	1	2	3	4	5
I use the internet primarily to find information	1	2	3	4	5
I use the internet primarily to buy goods and services	1	2	3	4	5
I use the internet primarily for email purposes	1	2	3	4	5
I am careful which web sites I visit	1	2	3	4	5
I do not always believe what I read on the internet	1	2	3	4	5
I would seek advice concerning which sites to use	1	2	3	4	5
I check the security of web sites I deal with	1	2	3	4	5
I am comfortable using the internet	1	2	3	4	5
I check user responsibilities on site I deal with	1	2	3	4	5
I often find it difficult to find the information I need	1	2	3	4	5
I am comfortable giving financial details over the internet	1	2	3	4	5
I check website owners responsibilities and policies	1	2	3	4	5

#### Section 3 – Good and Services (please tick the appropriate answer)

Goods and Services	Strongly disagree				Strongly agree
I would purchase goods and services over the internet	1	2	3	4	5
I would only make purchases from companies I know	1	2	3	4	5

Section 4 – Webpage Contents Assessment (please circle the appropriate answer)

Web Site Contents	Strongly disagree				Strongly agree
I do not read all the contents of web pages	1	2	3	4	5
Web page layout is important	1	2	3	4	5
The text style on web pages is important	1	2	3	4	5
I always read the site policy statements	1	2	3	4	5
I use graphics to judge web page contents	1	2	3	4	5
I use animations to judge web page contents	1	2	3	4	5
I dislike web pages with too much information on them	1	2	3	4	5

#### Section 5 – Online Banking Assessment (please circle the appropriate answer)

Banking Web Sites	Strongly disagree				Strongly agree
I would use internet banking	1	2	3	4	5
I believe that internet banking is safe and secure	1	2	3	4	5
I would only use online banks I know	1	2	3	4	5
I understood all the information on bank websites	1	2	3	4	5
I believe the information on bank websites	1	2	3	4	5
I would not bank with unknown internet banks	1	2	3	4	5
I would invest money with internet banks	1	2	3	4	5
I would borrow money from internet banks	1	2	3	4	5

### Post Webpage Display Questionnaire:

#### Section 6 - Bank Webpages Assessment (please circle the appropriate answer)

WBS Bank	Strongly disagree				Strongly agree
I recognize WBS Bank	1	2	3	4	5
I think WBS Bank is secure	1	2	3	4	5
I would use WBS Bank for online banking	1	2	3	4	5
I would invest money with WBS Bank.	1	2	3	4	5
I would apply for a loan with the WBS Bank	1	2	3	4	5
I would trust the WBS web site (Please give reason)					

IBS Bank	Strongly disagree				Strongly agree
I recognize IBS Bank	1	2	3	4	5
I think IBS Bank is secure	1	2	3	4	5
I would use IBS bank for online banking	1	2	3	4	5
I would invest money with IBS Bank.	1	2	3	4	5
I would apply for a loan with the IBS Bank	1	2	3	4	5
I would trust the IBS web site (Please give reason)				<u>I</u>	

DBS Bank	Strongly disagree				Strongly agree
I recognize DBS Bank					
I think DBS Bank is secure	1	2	3	4	5
I would use DBS bank for online banking	1	2	3	4	5
I would invest money with DBS Bank.	1	2	3	4	5
I would apply for a loan with the DBS Bank	1	2	3	4	5
I would trust the DBS web site (Please give reason)					

### Section 7 – Webpage Contents Recall (please tick the appropriate box)

Web Site Details	WBS	IBS	DBS
Which Bank had the highest interest rate for deposit accounts? (tick one box)			
Which Bank had the lowest interest rate for deposit accounts? (tick one box)			
Which Bank webpages were secure and displayed security information (tick all that apply)			

Section 8 – Attention Level (please tick the appropriate box)

Please indicate how much attention you paid to the contents of each screen								
Rating Scale	Little Attention	Poor Attention	Average Attention	Good Attention	Very Good			
DBS Bank								
IBS Bank								
WBS Bank								

Please indicate approximately how much of each screen's content you read								
Rating Scale	0%	25%	50%	75%	100%			
DBS Bank								
IBS Bank								
WBS Bank								

#### Section 9 – Webpage Contents Read (please tick the appropriate box)

#### **Section 10 – Screen Characteristics** (please tick the appropriate box)

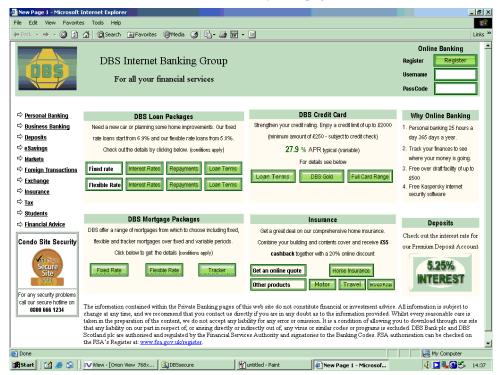
Please state which of the following features of the displayed screens you based your decisions									
	Screen Layout	Text Style		Graphics Style	Graphics Content	Colour	Menu Choices	Knowledge of Bank	Security & Privacy
DBS Bank									
IBS Bank			•						
WBS Bank							1		

Please indicate how much bank interest rates affected your assessment								
Rating Scale	Not at all Important	Slightly Important	Fairly Important	Quite Important	Very Important			
DBS Bank								
IBS Bank								
WBS Bank								

#### 🚰 New Page 1 - Microsoft Internet Explore - 8 × 🔕 🙍 🚮 🔯 Search 📷 Favorites 🎯 Media 🧭 🛃 🕳 ன 🐨 📼 Online Banking . DBS Internet Banking Group Renister Usem For all your financial services PassCode 🗢 Personal Banking DBS Loan Packages DBS Credit Card Why Online Banking ⇔ <u>Business Banking</u> Need a new car or planning some home improvements. Our fixed Strengthen your credit rating. Enjoy a credit limit of up to $\pounds 2000$ 1. Personal banking 25 hours a ⇔ <u>Deposits</u> rate loans start from 6.9% and our flexible rate loans from 5.8%. (minimum amount of £250 - subject to credit check) day 365 days a year. ⇔ <u>e Savings</u> Check out the details by clicking below. (conditions apply) 2. Track your finances to see 27.9 % APR typical (variable) where your money is going. ➡ Markets For details see below Fixed rate Interest Rates Repayments Loan Terms 3. Free over draft facility of up to Foreign Transactions £500 DBS Gold Full Card Rang Loan Terms ⇔ <u>Exchange</u> Flexible Rate Repayments 4. Free Kaspersky internet ⇔ <u>Insurance</u> security software ⊏> <u>Tax</u> → <u>Students</u> DBS Mortgage Packages Deposits Insurance DBS offer a range of mortgages from which to choose including fixed, Get a great deal on our comprehensive home insurance. Check out the interest rate for **DBS Annual Report** flexible and tracker mortgages over fixed and variable periods. Combine your building and contents cover and receive £55 our Premium Deposit Account Click below to get the details (conditions apply) ANNUAL Separ cashback together with a 20% online discount 5.25% Flexible Rate Fixed Rate Tracker Get an online quote Home Insurance INTEREST For a copy of our annual Motor Travel Inseet Rass Other products report 0800 666 1234 The information contained within the Private Banking pages of this web site do not constitute financial or investment advice. Whilst every reasonable care is taken in the preparation of the content, we do not accept any liability for any error or omission. It is a condition of allowing you to download through our site that any liability on our part in respect of, or anising directly or indirectly out of, any virus or similar codes or programs is excluded. DBS Bank plc and DBS Scotland plc are authonised and regulated by the Francial Services Authority and signatories to the Banking Codes. FSA authorisation can be checked on the FSA's Register at: <u>www.fsa.gov.uk/register</u>. Done My Computer 😹 Start 🛛 💋 🥭 🗐 🗍 🔽 Wiew - [Orion View 768x... 🔯 DBSnonsec Yuntitled - Paint New Page 1 - Microsof... 🅀 🚬 🔩 🔕 🌫 🛛 14:36

#### Appendix 8 Study 6 Parts A & B - Test Webpages

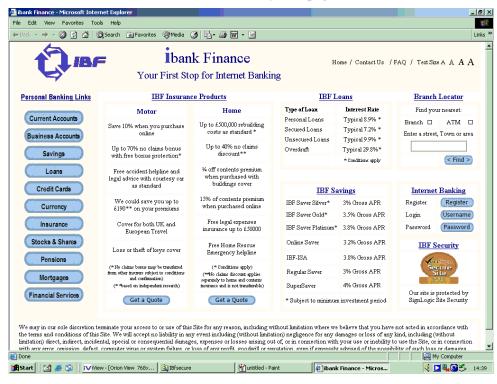
#### DBS No-Security Webpage



DBS Security Webpage

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Personal Banking Links	IBF Insuran	ce Products	IBF L	oans	Branch Locator
	Motor	Home	Type of Loan	Interest Rate	Find your nearest:
Current Accounts Business Accounts	Save 10% when you purchase online	Up to £500,000 rebuilding costs as standard *	Personal Loans Secured Loans Unsecured Loans	Typical 8.9% * Typical 7.2% * Typical 9.9% *	Branch 🗆 ATM 🗆 Enter a street, Town or are
Savings	Up to 70% no claims bonus	Up to 40% no claims discount**	Overdraft	Typical 29.8%*	
Curringo	with free bonus protection*			* Conditions apply	< Find >
Credit Cards	Free accident helpline and legal advice with courtesy car as standard	% off contents premium when purchased with buildings cover	IBF Sa	vings	Internet Banking
Currency	We could save you up to	15% of contents premium when purchased online	IBF Saver Silver*	3% Gross APR	Register Register
currency	£190** on your premiums	•	IBF Saver Gold*	3.5% Gross APR	Login Username
Insurance	Cover for both UK and European Travel	Free legal expenses insurance up to £30000	IBF Saver Platinum*	3.8% Gross APR	Password (Password
Stocks & Shares	Loss or theft of keys cover	Free Home Rescue	Online Saver	3.2% Gross APR	IBF Annual Report
Pensions	Loss of ment of keys cover	Emergency helpline	IBF-ISA	3.8% Gross APR	winZip
Mortgages	(* No claims borns may be transferred from other insurers subject to conditions	(* Conditions apply) (***No claims discount applies	Regular Saver	3% Gross APR	anzip
	and confirmation) (**based on independent research)	separately to home and contents insurance and is not transferable)	SuperSaver	4% Gross APR	To read our annual report you will need to download
Financial Services	Get a Quote	Get a Quote	* Subject to minimum	investment period	the WinZip program above
he terms and conditions of this mitation) direct, indirect, incide	eminate your access to or use of this Site. We will accept no liability in an intal, special or consequential damag comuter vinus or system failure, or	y event including (without limita es, expenses or losses arising ou	tion) negligence for any d t of, or in connection with	amages or loss of any your use or inability t	kind, including (without o use the Site, or in connection

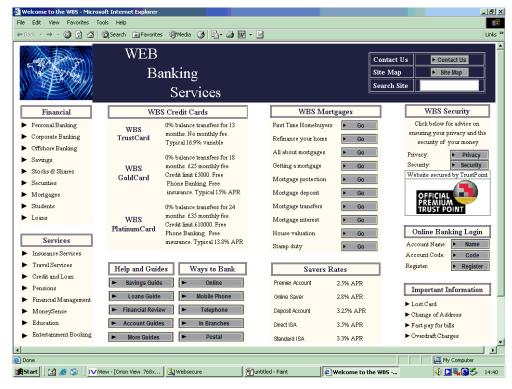
iBank No Security Webpage



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	WEB Ba	nking Services		Contact Us Site Map Search Site	► Site Map
Financial	WBS	Credit Cards	WBS Mortgage	es	WBS Child Accounts
<ul> <li>Personal Banking</li> <li>Corporate Banking</li> </ul>	WBS TrustCard	0% balance transfers for 13 months. No monthly fee. Typical 16.9% variable	First Time Homebuyers	Go	WBS offer a secure account for your child's education func For details ring 0845 900 760
<ul> <li>Offshore Banking</li> <li>Savings</li> <li>Stocks &amp; Shares</li> <li>Securities</li> <li>Mortgages</li> </ul>	WBS GoldCard	0% balance transfers for 18 months. £25 monthly fee. Credit limit £3000. Free Phone Banking. Free insurance. Typical 15% APR	All about mortgages All about mortgage Mortgage protection Mortgage deposit	Go Go Go Go	SAVINGS PLAN
<ul> <li>Students</li> <li>Loans</li> <li>Services</li> </ul>	WBS PlatinumCard	0% balance transfers for 24 months. £35 monthly fee. Credit limit £10000. Free Phone Banking. Free insurance. Typical 13.8% APR	Mortgage transfers Mortgage interest Mortgage interest Stamp duty	Go Go Go	Online Banking Login
<ul> <li>Insurance Services</li> <li>Travel Services</li> </ul>	Help and Guide	ways to Bank	Savers Rates		Account Code: Code Register: Register
<ul> <li>Credit and Loan</li> <li>Pensions</li> <li>Financial Management</li> </ul>	<ul> <li>Savings Guide</li> <li>Loans Guide</li> </ul>	Online     Mobile Phone		6 APR	Important Information
MoneySense	Financial Review			% APR	Change of Address
<ul> <li>Education</li> <li>Entertainment Booking</li> </ul>	<ul> <li>Account Guides</li> <li>More Guides</li> </ul>	In Branches     Postal			<ul> <li>Fast pay for bills</li> <li>Overdraft Charges</li> </ul>

WBS No- Security Webpage



WBS Security Webpage