AUTO-ID CENTRE

EXECUTIVE BRIEFING

Public Policy: Understanding Public Opinion

Helen Duce

ABSTRACT

The Auto-ID Centre's EPC™ network has been created as a supply chain innovation with applications focused within manufacturing and retail supply chains up to the point of sale. Although applications beyond point of sale have not been part of the Centre's charter, this technology will have an impact on consumers, as the products they buy will contain EPC™ tags.

As the Centre prepares to launch its EPC™ network it is therefore important to anticipate how the public will perceive this new technology, to anticipate any concerns and to explore ways in which the network can be improved, in order to ensure consumer's confidence.

A research study was commissioned with consumers and opinion formers across Europe, Asia and the US. This document outlines the research plan and presents the results and recommendations.

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Biography

Helen Duce
Director Europe

Helen graduated from Lancaster University, England with a BSc in Marketing and Psychology. She joined Unilever in the UK as part of their UCDMS (Unilever commercial development management training scheme) working for Matteson Walls and Van Den Bergh Foods as a Brand Manager. In 1996 she was transferred to Lipton in New Jersey, where she managed the North America beverage business innovation portfolio. In 2000 she joined a new division of Unilever called the Digital Futures Lab as the Digital Innovation Manager. Here she was responsible for driving the adoption of new digital technologies within Unilever. In 2001 Helen returned to her native UK to start her own, small consultancy called Prophetics.

Helen joined the Auto-ID Centre in September 2001. Based at the European Centre at the University of Cambridge she is the Director for Europe.

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1. BACKGROUND

The Auto-ID Centre's EPC™ network has been developed as a supply chain innovation with applications focused within manufacturing and retail supply chains up to the point of sale. Although applications beyond point of sale have not been part of the Centre's charter, this technology will have an impact on consumers as the products they buy will contain EPC™ tags. As the Centre prepares to launch its EPC™ network it is therefore important to anticipate how the public will perceive this new technology, to anticipate any concerns and to explore ways in which the network can be improved, in order to ensure consumers confidence.

A research study was commissioned with Consumers and opinion formers across Europe, Asia and the US. This document outlines the research plan and presents the results and recommendations.

2. THE RESEARCH PLAN

A research plan was designed that included both consumer research and opinion former interviews.

2.1. Consumer Research

Whilst the EPC™ network is intended as a B2B innovation only, consumer's opinions are very important. Understanding their thoughts, reactions and concerns surrounding EPC™ technology requires a method of research called 'qualitative' research.

Qualitative research brings groups of consumers together and gives researchers the opportunity to have a two way dialogue. It is used when it is important to understand 'how' people feel about certain things and 'why' they feel that way. Often what people say they think or feel is not what they really believe. Trained researchers are qualified at digging beneath people's initial reactions and really unlocking where, why and how opinions are formed. Interviewing consumers in groups is also useful as it mirrors how opinions are formed – rarely does one person create an opinion in their own mind, most often opinions are formed through interacting with others and talking and debating about issues in a social environment. Qualitative research does not quantify opinions, nor is it intended to be representative of everyone's views. It also requires interpretation, it is just as important to note 'how' someone says something as it is to note what they say.

Research groups were conducted in the USA, UK, France, Germany and Japan. The table below provides details:

Table 1: Qualitative Research Group Plan

COUNTRY	CITY	# OF GROUPS	RESPONDENT SPECIFICATION	
USA	Boston & San Francisco	4	Group 1	Younger families
			Group 2	Older singles
UK	London & Manchester	4	Group 1	Empty nester females
			Group 2	Pre-family males
FRANCE	Tours & Paris	4	Group 1	Empty nester females
			Group 2	Pre-family males
GERMANY	Frankfurt	4	Group 1	Females with young family
			Group 2	Males with older family
JAPAN	Tokyo	4	Group 1	Married women
			Group 2	Single working men

The objectives of the consumer research were to:
a) Gain an understanding of how the technology is perceived.
b) Capture the overall impression of the technology (positive, neutral, negative)
c) Gauge some sense of magnitude or rank order regarding:
   – Motivating benefits
   – Areas of nervousness
   – No go areas
d) Expose them to possible benefits of the technology and gauge their reactions
e) Expose them to negative elements of the technology and gauge their reactions

2.2. Opinion Former Interviews

Opinion formers, such as academics, advocacy groups, journalists etc. play a key role in influencing consumer opinion. They also have a close understanding of how consumers think, feel and react. Influential individuals were identified within each geographic region, and came from a very broad background including sociologists, journalists, politicians, lobbyists and academics.

One on one interviews were conducted to allow for a more in-depth and focused dialogue. The witnesses were probed for their own opinions as well as for their views on how they believed consumers would react.

A full list of who was interviewed can be found in Appendix A.

The objectives of these interviews were to:
a) Understand and anticipate the range of consumer's opinions
b) Scope out all key direct and tangential issues and ramifications
c) Identify the most likely consumer hot buttons and how concern might be mobilized

3. THE RESEARCH PROCESS

3.1. Consumer Groups

A discussion guide was created and used in each group. This can be found in Appendix B.
Each group followed a similar process:

1. Warm-up and Introductions: This introduces the respondents to the process and each other.
2. Social overview: To get consumers to discuss their attitudes towards multi-corporations, brands and government in order to provide a context for later discussion and provide a base line of their attitudes and beliefs.
3. Technology: Understand their attitudes towards technology in general to provide a context and baseline for later discussion.
4. Introduce the 'concept' of the Auto-ID Centre's proposed technology and gauge their spontaneous reactions to it.
5. Prompt positives and negatives in regard to the concept to see where they take it when asked.
6. Introduce possible benefits associated with the technology (if not spontaneously mentioned previously). Discuss each one, gauge level of response and try and rank in terms of importance.
7. Introduce potential negatives associated with the technology (if not spontaneously mentioned previously). Discuss each one, gauge level of response and try and rank in terms of importance.

8. Gauge overall reaction after exposure to all positives and negatives. Attempt to gain a sense of how they feel and what they would actually do, if anything based on these feelings.
9. Gain feedback on how they feel we can reassure consumers about the technology being developed.
10. Close.

The order of point 6 and point 7 were rotated in each group to remove any order bias.

The stimulus used to introduce the technology and the list of benefits and drawbacks are listed in Appendix C.

All groups were conducted in the local regional language and carefully interpreted by local experts. The stimulus was also translated.

Figure 1: Auto-ID Centre Research group Boston, US

3.2. Opinion Formers Interviews

One on one interviews were conducted with the opinion formers using the same discussion guide and stimulus.

4. THE RESEARCH FINDINGS

4.1. Consumer Research: Overall Findings

They see this as a business innovation
The initial response to the 'base technology' is neutral. On consideration, most consumers see the benefits as for business only and they are not sure why they are even being asked to comment. Based on the stimulus they were given they see benefits to themselves as negligible.

While this is generally good news, the lack of clear benefits to consumers could present a problem in the 'real world'. If consumers are made aware of any negatives (in the real world this could happen through negative press coverage) they have no benefits to balance their feelings against. For example, in Europe there is a large controversy over the health dangers of mobile phones, however mobile phone usages is on the up. This is because this technology has many benefits to consumers (convenience) and these benefits clearly over rule the very strong negatives. In the case of EPC™ network there are currently no clear benefits by which to balance even the mildest negative, so any negative press coverage, no matter how mild would shift the neutral to a negative.

– "The store will benefit more than the consumer" AMERICA
– "It's totally inoffensive, it's not going to do anything for me" FRANCE
– "What's in it for me?" JAPAN

They want a choice
The biggest inflamer surrounding the EPC™ network is that Consumers feel that they have no personal choice and this leads to a strong negative reaction. The EPC™ network is quite different from other well received technology such as mobile phones or the Internet because it is an always on, 'silent' technology. It is perceived to be similar to Nuclear Power and GMO Food in that the potential negatives exist regardless of one's personal decision. Virtually all groups spontaneously said that they wanted a **choice** and that the 'chip should be able to be killed'.

– "Once we leave the store it should be deactivated" FRANCE

Their biggest concern is abuse
Generally, the fears that consumers have around this technology are emotional and of the unknown, 'what could happen in the future?'. They have little problem with what is actually being developed – but they have a big problem in how it may be abused. Quelling these fears is extremely difficult because they are based on an 'unknown future', are purely emotional and appear to be quite deep rooted. In this case discussing any benefits or using rational argument is largely ineffective and is perceived as 'spin'. Once consumers are concerned, they remain concerned, no matter what we tell them.

– "I mean, I am playing cynic for a moment. I can guarantee that they will be able to read through steel" UK
– "A company, a government, a rogue state, a 19 year old in his parents' attic will try and hack this for fun, for power" AMERICA
– "I don't think it will be restricted to products... it will be linked to personal information" JAPAN
– "The limited range? I reject that promise... In the future, the technology will develop. It will leave you naked" JAPAN

They don't see the benefits for them
While the possible benefits were explored in each group at length, nothing seemed to really motivate or inspire. In fact the presentation of benefits seemed to automatically lead consumers to think of negatives. The presentation of the benefits caused consumers to realize some of the implications and

application of the technology they had not considered before. This immediately led to concern, suspicion and fear. The benefits also made consumers feel we were trying to sell the technology or to 'spin' it, and this also led to a negative reaction.

On balance they are negative but apathetic
At the end of the groups once all the negatives and benefits have been discussed the response was slightly negative. Whilst consumers expressed concern they seemed to resign themselves to the inevitability of it. They seemed apathetic and it appeared that emotion did not run high enough to motivate them to do anything about their concerns. This does not mean that they could not be fired up, but it did appear that it would take considerable prompting.

Internationally the reaction was fairly consistent with US, Japan & Germany more negative than UK & France.

4.2. Consumer Research: Key Concerns

There were a number of hot areas where consumers expressed concern:

Privacy
As expected, concerns about privacy were paramount. These concerns manifested themselves in three main ways:

TRACKING ME
Clothing was a major inflamer. Consumers assumed that tags would be embedded into clothing as opposed to on a tag they could remove. Tagging their clothes was tantamount to tagging them personally. This was by far the greatest concern expressed in groups.

– "I'd feel naked if people know what I'm wearing"
– "I could be tracked by the clothes I'm wearing"

KNOWING WHAT I BUY
Violation of privacy was used to describe how consumers believed that companies or governments would be able to know what they were buying. There was a fear of being 'spied' on:

– "Companies or the government will be able to monitor everything I buy and spy on me"
– "Someone could see everything I buy by reading my trash"

PERSONAL SECURITY
This included fear of muggers knowing what was in their shopping bag and attacking them personally in the street. More often it centred on thieves being able to know what was in their home by reading through their walls.

– "muggers could know what is in my shopping bag or if I'm wearing a Rolex"
– "the technology will improve to allow people to read through the walls"

Health
Especially in Europe, the effect of the EPC™ network on health was a key worry. This seemed to be based on recent conflicting press coverage about the possible ill effects of mobile phones and an alleged link to brain tumours. As the EPC™ technology uses radio waves it was a natural connection for consumers to make. Unlike mobile phones there are no positive benefits to counteract the negative concerns:

– "I'm worried that mobile phones are bad for you – and these things will be everywhere"

Unemployment

Unemployment and effects on labour was also seen as an important issue, especially in Germany and Japan which are in the midst of a recession.

– "people will lose jobs"

4.3. Consumer Research: Key Regional Findings

United States

Overall response was neutral to negative. The number one concern was privacy in relation to violation of anonymity (knowing who I am), of knowledge (knowing what I buy), and consent (gathering and using information about me without me knowing). Generally they saw little personal benefit to themselves. Negative concerns were around their belief that it would be abused and a general feeling of 'how far will this go?' There was a request for the technology to be regulated but at the same time a distrust of the ability for those regulations to be upheld.

Japan

Overall response was negative (more so than US, UK and France). Opinions were neutral when they saw the technology as a B2B initiative, but once they recognized the ramifications of the chip living past the check out counter, they then became negative. The biggest objection was around privacy, in relation to personal safety (stalkers and perverts). Their fears stemmed from an utter lack of trust in institutions, both public and private. Two recent, highly published events really affected their receptiveness to the technology and made them extremely suspicious. There had been recent focus in the media on privacy issues with several incidents where data had been leaked by hackers or sold by unscrupulous people. They were therefore especially concerned over the lack of clarity about who owns the database and who would be responsible for the protection of their privacy rights. Due to a recent BSE scare and the abuse of labelling laws, there was a lack of trust in manufacturers that made them believe there is an ulterior motive at play. They were suspicious about the technology because of the lack of concrete consumer benefits, yet the technology would directly impact them against their own will. They also believed that the technology could not be properly regulated or protected.

Germany

Overall response was negative. There was a much higher level of concern than elsewhere in Europe. The main concerns were about health and safety and this technology contributing to what they termed as 'Electrosmog'. Second to health was privacy concerns, and this focused around people knowing what one owned and seeing into ones house. Germany, like Japan, is suffering from a recession and the general mood was very negative. Because of this the effect this technology would have on unemployment and the economy in general was very concerning for consumers. There was spontaneous talk of killing the chip. There was some positive interest in tags providing more information about food products and food safety. Overall, whilst the response was negative, most claimed that they would be unlikely to do anything about this technology if it was adopted.

France

Overall response was neutral to negative. The two main concerns were health and privacy. Privacy related to people knowing what they bought and knowing the state of their health. There was a great deal of trust in the government and an overriding belief that the government would look after them and create laws to protect them. It was believed that the French government would not permit this technology to exist in their country if it was not proven safe. Health issues related to radio waves and recent press coverage about mobile phones. There was spontaneous talk of killing the chip in store or self kill. Most would accept it grudgingly as they believe they would have no say.

United Kingdom
Overall response was neutral to negative. The main concern was privacy in regard to being personally tracked and monitoring what they bought. There were also some concern about health and the link to mobile phones. They perceived little benefit for consumers but many felt they would do little to resist it if it was implemented.

4.4. Opinion Formers Interviews: Overall Findings

The most surprising finding from the Opinion Former interviews was that their opinions and attitudes mirrored those of the consumer groups. It was predicted that these 'experts' and 'professionals' would have a less emotional, more informed reaction – however this was not the case. Apart from expressing their own views and opinion on the technology the Opinion Formers provided advice and feedback on how the technology might be received by the general public.

4.5. Opinion Formers Interviews: Key Regional Findings

US Interviews
In the US the experts believed that the key determination of how the technology would be received would be the Media treatment.

– "the single most critical success factor to the roll out of this technology is the media"

Second to this was how the technology would be perceived by: Financial analysts, special interest groups, politicians and journalists.

OTHER ADVICE INCLUDED
– Consumer's desire for choice cannot be under estimated.
– Consumers and the Press are unlikely to believe that the network will not be abused and will look for regulations and controls for reassurance.
– The experts believed that the media would do extensive research and they stressed how important it was for all communications from and about the Centre to be consistent (especially in relation to emotive issues such as reader range).
– It was felt that all references to 'smart homes' should be avoided as this would perpetuate consumer's concerns.
– They felt strongly that moving forward without communicating 'killing the chip' could result in a backlash.
– It was suggested that the Centre should at least formally document the issues related to health and ideally that the Centre should conduct or commission it's own research into this area.
– The Centre should liaise with OSHA.

Japan Interviews
While there was some consistency with the US there were a few areas of differences:

– It is important to the success of this technology that it is seen as being developed locally. There is a social movement against imported technology trends, especially those seen as coming from the US.
– There is a widespread mistrust of both government and organization. It seems organizations and companies have let consumers down and there have been many recent scandals (e.g. in proper food product labelling related to BSE). This has led to a deep mistrust of information provide by government and organization and a lack of faith in these institutions to safeguard consumer's concerns. It was felt by the expert that this presented a difficult backdrop for the introduction of the EPC™ network.

– Japanese consumers can be very easily mobilized without a lot of media or special interest group intervention. It seems one bad report or interview with a respected expert can cause an instant, mass reaction. This is not an organized reaction – consumers will individually simply stop purchasing something. This reaction can be based on very little evidence or information.

Europe Interviews
Europe was in line with the findings from the US with one exception.

– In Germany the Expert Witnesses were more positive about the technology. They especially felt that consumer associations would be positive about the technology (and maybe even endorse it) as it has the potential to provide consumers with more information about products.

5. RESEARCH RECOMMENDATIONS

Based on the results of both the consumer groups and the Opinion Former interviews the following recommendations have been made:

A. The Centre needs to address a broad number of concerns, not just privacy. The three main areas of concerns are:

PRIVACY
Privacy incorporates a wide number of different issues. The areas of most concern to the public are the ability of the new network to track them personally, to gather information about their purchasing habits and to compromise their personal security. Many of these concerns can be alleviated through offering consumers a choice and by ensuring there are controls and regulations around the use of the network (see below).

HEALTH & SAFETY
Health concerns were the second most emotive issue with consumers, especially in Europe and Japan. It is important that the Centre be fully aware of all the issues in this area and be prepared to comment on them. There is a need to develop messages for the public regarding definitive health effects of the network.

IMPACT ON LABOUR
The Centre needs to understand the impact the launch of its technology will have on employment and be prepared to comment.

B. It is essential that the public is offered a choice.

The clearest recommendation from the research is that consumers must have a choice. Consumers understand that this is a business innovation and can see the benefits. But they also believe that it will impact them if EPC™ tags remain 'live' beyond the point of purchase.

This choice must take two forms. First, it must be clear when and where the technology is being used. Second, there must be an option to 'kill' the tag at point of sale.

C. Consumer reassurance is dependant on creating guidelines, policies, regulations or controls for the use and application of the technology.

The research made very clear that we must be able to offer consumers reassurance that the network is in some way regulated. Without a very clear statement about regulations and controls consumer's fears of the potential abuse of the system will remain unchecked. The areas of biggest concern focused on:

– Reader range and the ability for the Centre to control this in the future. Consumers feared that anyone could 'zoop' up a reader to be able to read through doors and walls.
– Access to readers and any rules that would define who could buy a reader. The fear is that thieves could also buy readers and use them to steal.
– Access to information and how this would be managed. What rules and control would be in place to ensure only 'authorized' personnel could access information?
– The link between EPC™ data and their personal information (from their credit card) and this information becoming accessible to anyone, either legally (CRM) or illegally (spies).

D. The Centre needs to more clearly communicate what it does.

The research provides a lot of guidance on how the Centre can more responsibly communicate its work. Recommendations around communication include:

– It should be clearly communicated that we are developing a Business focused innovation ONLY.
  – Smart Homes should not be referenced as they are seen as ludicrous or invasive by consumers and they raise more negatives than positives.
  – Talking about the technology as an improved barcode helps consumers understand what it will be used for and helps alleviate concerns.
  – Clearly referencing that the technology has existed for many years and giving examples of how it is currently being used helps consumers understand and feel more comfortable about the technology.
– Any attempt to 'sell' the technology, the vision or the consumer benefits exacerbates consumer's concerns about the network.
– The Centre should clearly communicate that consumers will have a choice. The details of exactly how a choice will be offered need to be resolved, but they should include methods of how the public will know when and where the network is being used and how the option to kill the tag will be executed.
– The Centre should communicate what regulations and controls will be used to safeguard the network from potential abuse.
– The Centre should also communicate information regarding the effects of the network on health and safety, and on labour issues, once these issues are better understood.
– It is imperative that the Centre's messages be communicated positively and proactively.
  Once consumers become negative they remain so, therefore it is vital that we control the dialogue from an early stage.
– Consistency of the information disseminated is extremely important. It is important that anyone who communicates on the Centre's behalf delivers approved consistent messages.

6. CONCLUSIONS

The research showed that initially consumers see the EPC™ Network as a business innovation with little benefit to themselves. On the whole they feel slightly negative and apathetic towards the technology.

On further consideration, consumers do believe that this technology will impact them as they will be buying product with EPC™ tags attached. This raises a number of concerns. Their main concern is that they do not have a choice as to when or where the technology is used or as to how it will impact them. Their second concern is that they believe that the system will be abused and that this will have a negative effect on them, especially in regards to their privacy. Consumers are also concerned about the health effects of the network and the implication this technology will have on employment.

It appears that these concerns can be overcome by:
– Offering consumers a choice by ensuring that they will be made aware of when and where the network is being used and offering them an option to kill the tag.
– Creating some sort of governance around the use of the network, whether this be guidelines, policies, regulations or controls.
– Having a better information about the issues relating to health effects and the impact on employment.
– Responsibly and proactively communicating the Centre's work.

The information from this research will be used to prepare a paper on Public Policy. This document will address the issues outlined in this paper and present a recommended action plan.

APPENDIX A: OPINION FORMER INTERVIEWS

Europe

United Kingdom
– Dr Chris Warhurst, Lecturer in Sociology at Strathclyde University
– Charlotte Cornish, Head of Research at The Future Foundation

France
– Dr Patrick Martovich, Consultant to the National Commission for Technology and Liberty
– Sacha Kechichian, Technology writer for various magazines
– Allaine Bellone, Brand Consultant for 'new economy' organisations such as owners of web 'portals'
– Christian Huard, President of the French Association for the Defense of Consumers

Germany
– Gudrun Kopp, Liberal Faction in German Bundestag, Speaker for Consumer Affairs
– Frank Cornelius, Member of Social Democratic Faction, responsible for Consumer Affairs
– Pia Gaßmann, President of Federal Association of Housewives
– Helke Heidemann-Peurer, Head of Commercial Law Dept. at Fed Consumer Association
– Manfred Dinger, Referee Retail Trade & General Services at VZBV
– Klaus Klomann, Referee Electronics at VZBV

Asia

Japan
– Mr Sugimoto Testuo, Sophia University Professor of Consumer Psychology
– Mr Ogisako Ichiro, Media Development Manager, HUKUHODO ad planner
– Mr Muto Masahiro, Sociological Consulting Dept. NOMURASOKEN think tank
– Mr Nemoto Noriaki, Konan University Professor of Marketing & Consumer Behaviour, Kobe

North America

USA
– Noel Marts, Sociologist. Worked for The Coca-Cola Company for more than 20 years
– Andrea Hershatter, Cultural Anthropologist, Lecturer & Consultant, Goizueta Business School
– Paul Pendergrass, Communications Consultant/author. Previously PR for The Coca-Cola Company USA
– Talal Debs, Harvard University/Cambridge University in the Philosophy of Physics
– Steve Grimm, Radiation Safety Officer, Crawford Long Hospital, Environmental Health and Safety Office
– James T. Cox, Attorney at Law, specialist in Health Law
– Jennifer Jarratt & John B. Mahaffie, Futurists. Author of 2025: Global Society Reshaped by Technology
– Joy Nicholas, Vice President, Research and Emerging Technologies, Food Marketing Institute
– Mark Roberti, Freelance Journalist. Expert on RFID
– Erin O'Brien, Communications Expert on Health and Privacy. Consulted to WebMD

APPENDIX B: CONSUMER RESEARCH GROUP DISCUSSION GUIDE

Introduction/Warm-Up: 10 minutes

Our objective here is to introduce the qualitative process to the respondents and give them a chance to get "warmed-up" and feeling comfortable. We will ask respondents to introduce themselves and tell us a bit about themselves, their work and their families.

Social Overview: 10 minutes

The objective here is to gather general attitudes regarding respondent feelings towards multi-national corporations, brands and retailers and government. The purpose here is to create a context for the later conversation and to establish a baseline of respondent attitudes.

– How would they describe the current mood in society?
– What are they finding exciting? What is disappointing to them? Is there anything that upsets them?
– What are the current "hot topics" being talked about? Why?
– What's become important in the last year? Less important?
– [**If time allows**] Thinking over the last five years, what has changed for them? Thinking forward five years what do they see changing? Why?

Technology: 30 minutes

The objective here is to gather general attitudes towards technology. The purpose is to create a context for the later conversation and to establish a baseline of respondent attitudes.

– What's new in technology? [**If time allows**] Probe for wireless, 3G, Internet and broadband.
– How is technology changing?
– How is technology impacting them in their daily lives?
– What advantages are they drawing from technology? What drawbacks or disadvantages has it created for them?
– In looking forward to future technological developments what benefits do they see? What issues do they anticipate?

RFID: 20 minutes
The objective here is to introduce the concept and explore initial reaction to it. The discussion will begin by introducing the written concept and having respondents react to it by completing the sentence, "Based on what you have just read, how do you feel about this idea?"

– Was anyone aware of anything similar to this? What?
– Beginning with those who feel positive, gather initial reactions? What made you react that way?
– What do they understand this idea to be? What does it mean to them? Does it remind you of anything?
– How would they describe it to someone else?
– What do they see as immediate benefits? Drawbacks? **If no drawbacks emerge, probe for what could be imagined as a negative.**
– What effect, if any, will this have on your life?

Benefits and Hurdles in-depth: 45 minutes

The objective here is to explore the concept with respondents to see what they perceive as its advantages and disadvantages. The discussion will be very open allowing respondents to ideate any benefits or issues that may be inherent in the concept for them. Consumers to note their individual benefits

Benefits
– Thinking more about the benefits, what are they and how would they derive any advantage from them?
– Do they see any additional benefits from this as time goes on, say one year out? Five years out?
– Specifically probe RFID regarding the following: Ask: **"Why do you say that?"**
    – Items in stock.
    – Locating items: in stores, in community, at home.
    – Smart homes/appliances.
    – Recycling.
    – Healthcare, etc.
– Given all the benefits, which are key?
– What is important about these benefits? **Rank order**.

Drawbacks
– Thinking about drawbacks, what are they/ or what could they be and how would they impact on them? Ask: **"Why do you say that?"**
– Given all the concerns or issues, which are key? How might they rank order them?

We will then explore the following specific areas and issues in greater detail, probing of any issues or concerns that did not emerge in the previous unprompted discussion.

Here are some other things that people have said about this new technology….Read out all the potential concerns that people might have – consumers to note their top 3 concerns. Around each area to note how it could be best addressed, relativity etc.

Privacy: 95 minutes

a) Corporations gathering information about me, what I buy and send me junk mail.
b) What is the potential that hackers or criminals might access RFID information through the Internet?
c) Other people could find out what's in my house by reading through walls.
d) How might RFID effect privacy in general? What might it mean that products you purchase/use own could be linked directly to you?
e) In home monitoring of how I use/buy products by companies/government.

– Where is privacy vis-à-vis other issues or concerns?
– How is privacy impacted by RFID? **We will probe on this and the issues that follow in reference to at home versus CCTV versus over the Internet Vs Identity cards.**
– **For all the issues above:** How do privacy concerns vary according to environment or circumstance? Given a situation what is acceptable, not acceptable or simply okay? How do they measure their concern?
– What would alleviate or remove their concerns with privacy? If the privacy concern could not be totally removed what would reassure them? What would make that reassurance credible?

Customer Relation Data Aggregation
– Specifically probe RFID regarding the aggregating of customer relations information and how they feel this maybe impinging on their lives?

Health
– Specifically probe RFID regarding the following:
   f) What about EMF (electro-magnetic fields) and its possible effect on health, especially considering the increased exposure to EMF as a result of companies and stores using RFID?
   g) Are there any issues with RFID and pregnant women?

– What would alleviate or remove their concerns with health risks? If the health concern could not be totally removed what would reassure them? What would make that reassurance credible?

Other Issues
– Specifically probe regarding the following:
   h) The potential that RFID will cause a loss of jobs or even entire classes of employees?
   i) The potential that RFID will be abused by criminals, blackmailers, terrorists, etc. by either using the RFID chip or the data that is being aggregated by the RFID database? What about criminals developing technologies to exploit or contradict RFID?
   j) Fatter margins for retailers.
   k) Will the readers be reliable?
   l) What if the Internet crashes?
   m) How do they feel about one more thing to deal with? Is RFID just too much or even too futuristic to deal with just now and why?

– How will RFID change the retail experience? Will it make it better or worse and how? What specific concerns regarding the check-out process and the paying for goods come to mind and why? **We will attempt to reassure respondents and minimize any concerns about payment issues and RFID.**

– What will the adoption of RFID mean to people when it comes to questions of choice and the exercise of control over their own lives? What legal protections are in place now? What protections would need to be developed?

– What would alleviate or remove their concerns with these risks? If these concerns could not be totally removed what would reassure them? What would make that reassurance credible?

– How do they see any or all of these issues/concerns as time goes on, say one year out? Five years out?

– Given what they know, how does RFID compare with the current bar code? **We will remind respondents that how they vote is how they will shop tomorrow. We will then probe the vote to see why it went the way it did and what might have changed their vote.**

Communication: 20 minutes

The objective here is to explore how best to communicate the RFID concept.

– Given all we've discussed, how do the respondents think this should be talked about? What story
  should be told here?
– What words or phrases should be used? What benefits should be highlighted? What disadvantages
  should be addressed? What benefits or disadvantages should not be discussed and why?
– What would they like to know more about? Why?
– What would reassure them the most? Why? What would make that reassurance credible? Why?
  What is the tone of the communication and why?
– How would they "sell" this idea to others? What would make that an effective approach?
  Would it work for them? Why or why not and what would work for them if that wouldn't?
  – **Probe, if not discussed already, the idea of the deactivated or dead chip or "killing" the chip
    versus saving the chip and its use at home.**

Closure: 5 minutes

Our objectives here are to revisit any previous areas of interest for clarification and to give respondents
the opportunity to ask questions or raise issues of mutual interest and bring closure to the discussion.

APPENDIX C: CONSUMER STIMULUS

What is it?

It is the new barcode. Instead of the familiar printed strip, a tiny silicon chip (no bigger than a grain of sand) holds a unique number that identifies a product. Compared to a barcode, it can store much more information and can be read much more easily

When is it coming?

It is going to be rolled out over the next few years, starting with supermarkets and regular shopping products. A lot of the technology is still being developed and tested, and the introduction is expected to be very gradual. [Eventually, it will extend to other areas like healthcare, government, finance; in fact anywhere where it's important to be able to identify objects].

Who is behind it?

The technology is called RFID (radio frequency identification) and is being developed by a consortium called the Auto-ID Centre. The Centre is based in the Massachusetts Institute of Technology (MIT), a leading university in the USA. It's backed by a range of manufacturers and retailers such as P&G, Gillette, WalMart and Tesco. You can find out more at their website (www.autoidcenter.org).

Tell me a bit more about the technology

There are three parts:
1. A tiny electronic chip plus a small antenna in the form of a tag attached to a product (or any object). The chip contains a unique identifying number (the Electronic Product Code™, or EPC™).
– The tag is embedded in products or packaging at their time of manufacture.
– The tag works like a catseye in the road: it has no power source of its own, so is only visible when you 'shine' a radio wave on it.

2. A reader 'zaps' the tag with a radio wave. The tag replies with its unique identifying number.
– The reader works by sending radio waves to the tag and then 'reading' the number reflected back. It works on a frequency similar to mobile phones, but because the tag has no power of its own, a tag can only be read from a few feet away.
– To help with warehouse and grocery store inventory management, there will need to be a whole network of readers put in place, with one every few feet.

3. An internet-based data management system that takes the identifying number from the reader and 'decodes' it, to provide more information about the object.
– The data management system works like a telephone directory in reverse – give it a number and it then identifies the name and address of where all the information that relates to that number is stored e.g. place of manufacture, time made.
– The system sends the number and then receives information back about it over the internet.

So what are the Advantages?

There are a number of advantages that will emerge as the system is rolled out over the next few years.

For manufacturers and retailers...

SMARTER STOCK MANAGEMENT
Keeping track of stock, making sure it doesn't go missing and ends up in the right place at the right time is a complex, costly task. Instead of having to swipe each product individually, the tag readers can read groups of products at the same time. This means factories and shops will be able to do stock takes much more quickly and efficiently.

For shoppers...

PRODUCT AUTHENTICITY
Each product will have a unique number that will identify exactly where and when it was made. With the aid of in-store scanners and screens, this will help people to check the freshness of food or whether a shirt is genuine Prada or not. And manufacturers will be able to rapidly recall faulty goods and identify fake, potentially dangerous goods.

FASTER SHOPPING
You'll be able to pass your supermarket trolley through a reader and be given your bill instantly without having to take any products out.

ALWAYS FIND WHAT YOU WANT
Improvements to stock management mean you'll always find what you're looking for on the shelves.

COST SAVINGS
The system will result in big cost reductions for factories and shops, so you can expect cheaper prices in store.

So what are the are the advantages beyond shopping?

Smarter Homes
When home appliances like cookers and fridges can be connected up to the internet, these devices will monitor the products in them – helping you keep stocks in your fridge and make shopping lists for you, or warning you if you put a silk item in the whites wash.

Combating Fraud and Counterfeiting
Eventually the tags will extend beyond supermarket products. So when somebody tries to sell you a second-hand car, you'll be able to tell instantly if any parts are not original, and whether they're approved spares. Likewise, you'll know straightaway if it's a fake Rolex or a pirated DVD.

More Efficient Recycling
The big problem with recycling is sorting out waste. A tag-reading sorter will be able to distinguish green glass from brown glass or polyethylene from polypropylene.

Better healthcare

In the Emergency Room, maybe the defibrillator that should be to hand is actually 2 floors way. It takes ten minutes to find it, by which time it's too late. In the hospital of the future, staff will know instantly where it is. In-home care will also be improved, with the technology helping to manage and monitor medication; ensuring things are taken correctly and on time.

Improved Security

The tags provide another way of uniquely identifying an object, so that might include passports, driver's licenses, credit cards, even bank notes.