



Smart ticketing – what rail passengers want

July 2013

Foreword

Passengers are increasingly coming to expect services to be delivered to them in smarter ways as technology becomes a bigger part of everyday life.

We believe that the introduction of smarter ticketing in public transport could make life easier – and cheaper – for passengers. For this to happen though, it is essential that any smarter ticketing schemes are well designed and properly implemented.

In order to make sure that the passenger is at the heart of the development – that products are designed for ease of use rather than what is convenient to administer – we have started a wide-ranging research programme on smart ticketing, on behalf of the Department for Transport (DfT).

Over the next 18 months we will further explore needs and attitudes before smart ticketing is introduced more widely, and evaluate existing and pilot smart ticketing schemes. The reports we produce will provide guidance for transport operators setting up smartcard schemes.

This report, the first in the programme, considers views and needs around smarter ticketing among rail commuters in the South East. It is particularly relevant because smart tickets will be available for use on all rail services, across all operators in the region, under the South East Flexible Ticketing programme (SEFT).

Our in-depth study has found that there is clearly an appetite for smarter ticketing among commuting rail passengers, both in terms of moving the ticket format from paper tickets for added convenience, and in being able to access more innovative and flexible ticket types as a result, so saving money.

While the research focussed on the South East, and includes respondents who are generally familiar with Oyster in London, the results are relevant nationwide and indicate some key principles that any introduction of smart ticketing should address.

The expectation or requirement of smart ticketing is that it should deliver on seven key attributes.

Value for money: Participants expected that smart ticketing would involve some kind of cost saving, either via cheaper fares or new cost-effective tickets and products.

Convenience: Smart ticketing needs to be a convenient option that is easy to use.

Simplicity: Simplicity is important, especially for those unfamiliar with smart technology or smart ticketing.

Security: Participants were concerned about the security of smart ticketing, so need to be reassured that it is addressed in the design of any system.

Flexibility: Alongside a convenient and easy-to-use system, participants wanted smart ticketing to be flexible on ticket options, purchase methods and account management.

Tailoring: In addition to new products enabling participants to tailor their smart ticket products to their needs, tailored management of their smart ticketing account is also desired.

Leading edge: Participants are clear that the introduction of smart ticketing is a shift into a more technology-focussed way of ticketing. Many of them are keen that the technology used is forward-thinking, although this is less of a concern for some than the other perceived essentials.

While the respondents were mainly positive, there were numerous questions on the concept and practicalities. Areas which prompted questions included:

- how the purchasing would work
- how smart tickets should be used
- what would happen if anything went wrong
- security concerns.

It is clear that there is a need for extensive communication and education before any smart systems are launched, so that passengers are informed about how it works. Alongside this, there will need to be understanding and flexibility from train operators and extensive support from and for their staff as such schemes are rolled out.



Smart ticketing research

A qualitative study on behalf of Passenger Focus

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Summary

An overview of the key research findings

1 Management summary

1.1 Key insights

Overall, participants were receptive to the idea of smart ticketing and were keen to understand how it would work in practice. When thinking about the introduction of smart ticketing, and preferences for how this would work, there were seven key factors that influenced participants' attitudes and views:



Value for money: Value for money was a key influence on ticket choice at the moment, and remained as important when considering smart ticketing. Participants expected that smart ticketing would involve some kind of cost saving either via cheaper fares or new cost-effective tickets and products.

Convenient: Smart ticketing needs to be a convenient option that is easy to use. Participants wanted a ticketing system that made life easier, rather than complicating their commute. When thinking about convenience, participants noted that they would like a system where it is easy to purchase tickets, manage their smart ticket account and use their ticket.

Simple: Simplicity is important, especially for those unfamiliar with smart technology or smart ticketing. These people are most likely to need education regarding how smart ticketing would work, and a simple system is likely to support them in moving to smart ticketing.

Secure: Participants were concerned about the security of smart ticketing. When thinking about smartcards, participants raised concerns regarding the security of their personal data – especially any details that will be printed and visible on the card. When thinking about mobile ticketing and Wave and Pay, many expressed concerns around the safety and security of their mobile phone or credit card, and the potential risk of theft when using these.

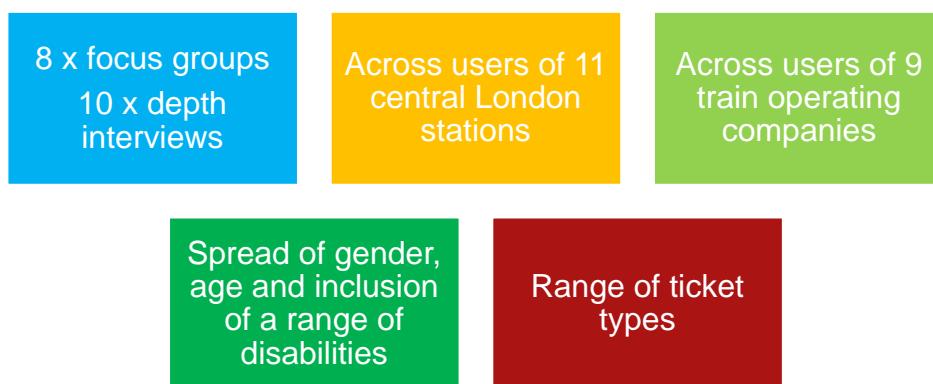
Flexible: Alongside a convenient and easy-to-use system, participants wanted smart ticketing to be flexible. They wanted the ability to choose and purchase new products and tickets that offered flexible travel options. They also wanted flexibility with managing their smart ticketing account including being able to buy and load tickets onto their smartcard at a range of stations in advance and at the last minute.

Tailored: In addition to new products enabling participants to tailor their smart ticket products to their needs, tailoring in managing their smart-ticket account is also desired. It is clear that many seek the ability to manage online, and via an

app. Participants noted that they would like to choose how they prefer to manage their account (online, app, text message), and would look for reassurances that this will be tailored to be compatible with the technology they own, for example Apple and Android compliant).

Leading edge: Participants are clear that the introduction of smart ticketing is a shift into a more technology-focused way of ticketing. So they are keen that the technology used is forward-thinking. This is particularly important for those who are familiar with smart technology and smart ticketing, and who saw this as an opportunity for train companies to lead the way in ticketing technology rather than replicate existing systems. These participants generally tended to be more positive towards the idea of smartcards and mobile ticketing.

1.2 Method and sample



1.3 Current ticket use

Participants were using a range of tickets. This included those with season tickets, those who purchased weekly or daily tickets and those who used Oyster Pay As You Go (PAYG) card. Ticket choice was typically driven by value for money and convenience.

Value for money was an important factor when thinking about current ticket choice and participants were keen to know how smart ticketing would offer value for money; there was an expectation that some kind of cost saving or cost benefit would be offered with smart ticketing.

Avoiding queues at stations was often given as a key reason for buying tickets in advance. A desire to reduce time spent queuing at a ticket office, or a ticket vending machine (TVM) meant that participants tried to plan ahead when they needed to get a new ticket, for example by getting to the station early one day, or purchasing the ticket at the weekend to avoid commuter traffic.

1.4 Attitudes to smart ticketing

Participants whose commute involved travelling within central London were familiar with, and used, the Oyster card system. They had a better understanding of how smart ticketing works and found it easier to envisage a range of benefits and drawbacks of a smart ticketing system.

Among non-Oyster card users there were mixed levels of knowledge and understanding of how a smart ticketing, specifically a smartcard, system could work.

Regardless of experience with smart ticketing, participants expected that there would be some kind of cost benefit to them in moving to smart ticketing from paper tickets. The assumption that there would be some kind of financial benefit was driven by the view that there would be greater onus on the passenger to purchase tickets and manage their account online, therefore reducing the amount of work and staff required by the train companies. With this in mind, some participants suggested that a cost saving on tickets purchased via smart ticketing would redress this balance.

For frequent users of the Underground or London buses, an integrated system was considered 'ideal and essential' and these passengers were keen to avoid holding multiple smartcards all covering different modes and routes of travel. One solution for all was required.

While participants were keen that train companies introduce smart ticketing, there were some reservations about whether train companies currently have the capabilities and capacity to do so. Negative commuter experiences of delays and congestion meant that they lacked trust in train companies to deliver smart ticketing.

Participants' experience and use of technology such as smart mobile phones and tablets clearly affected views on smart ticketing. Those who were familiar with, and therefore confident in, the capabilities and functions of smart technology typically expressed greater comfort with and expectations for a smart ticketing system.

1.5 Appetite for smart ticketing

Participants were particularly keen to note that they expected smart ticketing to have some kind of cost benefit and envisaged cheaper fares, or new products that would enable them to make their commute more cost efficient. Other benefits they mentioned often focused on ways in which smart ticketing would offer greater convenience and simplicity. The durability of a smartcard appealed to those who currently found it frustrating and time-consuming to replace paper season tickets on

a regular basis, and the ability to avoid queues by purchasing tickets easily in advance was seen as an improvement to current ticketing options.

1.6 Barriers to smart ticketing

Lack of clarity regarding the benefit of moving to smart ticketing was a key barrier for many participants. This highlighted the need for any benefit of smart ticketing to be clearly communicated to customers so that they fully understand how smart ticketing can enhance or improve their commute. This was particularly the case for those who were attached to paper ticketing, and lacked confidence in how smart ticketing would work in practice.

Another key barrier mentioned across the research was raised by those unfamiliar with smart ticketing; those who had not used the Oyster card system in London. These participants raised concerns about how smart ticketing would work in practice, with particular fears about how problems or faults with smartcards, ticket vending machines (TVMs) and ticket barriers would be resolved.

Some participants also queried how any smart ticketing system would be integrated across train companies and Transport for London (TfL). Some originally assumed that smart ticketing would be specific to the train company which raised concerns about what would happen if you had a choice of train companies for your journey. These participants felt that restricting smart ticketing to specific train companies would complicate the ticketing process and therefore deter them from adopting smart ticketing.

1.7 Smartcard functionality

Participants assumed that a smartcard would work and look like an Oyster card. Many were familiar with this type of smartcard, for example with loyalty cards and membership cards of local libraries, gyms, etc. This reinforced comfort in using this type of smartcard for everyday interactions, including travel.

There was an assumption that participants would be able to apply for a smartcard online. This was a familiar format and convenient as they could do it at home or at work. Some suggested that they would like to be able to apply for a smartcard via a smartphone app.

Participants envisaged that they would be able to purchase a ticket either online or at a TVM. Whilst comfortable with buying a ticket through these channels, participants wanted reassurance that they would be able to access help and support if something went wrong.

Many assumed or suggested that there would be some kind of online account management that would enable them to monitor and manage their smartcard.

When prompted with the different ways in which this could be enabled, participants expressed different views depending on their personal preference and technology ownership. For example, those with a smartphone were most likely to express preference for an app, whilst those with traditional non-smartphones (feature phones) were interested in text messages.

Expectations and suggestions for how to manage aftercare often depended on whether the query was immediate and how important its resolution was for immediate onward travel. For situations that arose at stations which could affect their ability to complete a journey, participants strongly agreed that some kind of staff presence would be needed.

A small number of participants felt that a telephone helpline provided a good option as it would enable them to express their problem to a person. In particular, those with a visual impairment felt that telephone would be a good alternative to face-to-face support.

1.8 Smartcard products

Participants were shown ideas for potential new products that could be used with smart ticketing. These are shown below:

Potential new products (1)		Potential new products (2)	
Tailored Season ticket	<ul style="list-style-type: none"> Purchase a season ticket on a smartcard. If you travel outside of peak times (7am-10am and 4pm-7pm) this would entitle you to a discount. Your travel times are recorded and if you travel outside of peak times a discount is calculated and credited to your smartcard. 	Post Pay	<ul style="list-style-type: none"> Use the smartcard to travel when you need to. Cost of this travel will be billed regularly to the holder's account.
Carnet	<ul style="list-style-type: none"> Purchase 'x' number of days of travel or 'x' number of individual trips in advance. These tickets have a cost saving: buy 12 tickets but pay for 10. These are then stored on your smartcard and you use them as and when you need to. For example, buy 12 x day returns from St Albans to Blackfriars and use these and when you need to. 	Stored Travel	<ul style="list-style-type: none"> Upload a chosen amount of money on the smartcard. Use this money to pay for travel as and when needed. (Pay as you go).
		3-day season ticket	<ul style="list-style-type: none"> Buy a ticket valid for a month that allows you to travel any 3 days per week.

Participants were very positive towards the ideas for new products and felt that these would be a real benefit of holding a smartcard. It was agreed that some kind of cost saving was expected, with Oyster card users noting that Oyster had set the precedent for this.

Participants were very positive towards the potential money savings they could make with a tailored season ticket. Many felt that it would be particularly useful on Thursday and Friday evenings when they tended to leave for home after peak times due to social engagements.

The idea of a carnets was spontaneously mentioned or suggested by participants. Some currently used a carnets ticket on First Capital Connect, whilst others had used a similar type of ticketing scheme in European cities and felt that it would be a

good product. The key benefit of a carnet was the flexibility it offered, and participants also responded extremely favourably to the easy-to-see cost saving element.

While some agreed that post pay was a convenient option that would be useful in emergencies and if they did not have any cash to purchase a ticket, most expressed concern over the lack of control that this option provided. This was particularly the case for those who liked to keep a clear view on their budget, and worried about the idea of receiving a large unplanned bill at the end of the month. Their concerns were somewhat alleviated by the suggestion that a cap could be put in place to limit the amount of money that could be spent, but this further encouraged participants to consider post pay as an emergency option.

The idea of stored travel was familiar to participants who identified it as a version of PAYG. Familiarity with this type of scheme led to general comfort and a positive response towards this product. Many noted that they liked the control on spending that it offered.

The suggestion of a three-day season ticket was popular amongst part-time commuters who felt that this type of product would best fit their journey requirements. These participants suggested that there should be the opportunity to tailor this type of ticket to best meet passenger needs, with some noting that a two-day season ticket would be better, and others preferring a four-day ticket.

When presented with the concept of a smartcard which could be combined with their Disabled Persons Railcard to enable the discounted travel, the reactions were very positive indeed. The Disabled Railcard with an additional one for a companion was seen as a very good idea. They were particularly reassured that the second card would have their name on it and that it could only be used if they were travelling as well. Ideally these participants would like to be able to buy weekly, monthly or annual season tickets using their Disabled Railcard, so smartcard technology appears to present the ideal solution.

1.9 Mobile ticketing

Overall mobile ticketing feels more simplified and up-to-date. Participants were positive to the *idea* of mobile ticketing but slightly mixed when considering how it would actually *work*. Generally mobile ticketing is seen as convenient and easy to access simply because most people have mobile phones nowadays. Participants assumed that they would be able to buy tickets using a smartphone app on an ad hoc basis while they are on the go, taking the stress out of journey planning and ticket purchasing.

Reactions to the types of mobile ticketing were varied. Those who have used QR codes on their phone are more familiar with the idea but have had mixed

experiences. Whilst many felt that the technology is easy to use, the scanning process can be quite time consuming. Visually impaired respondents also raised concerns about this technology as they would require assistance at the barriers to make sure they made contact with the validator.

Most preferred the ticket image solution because it includes details of the journey, however, concerns around the battery life of their smartphone outweighed the benefit as a standalone ticketing solution.

To address concerns around battery life, participants were shown another mobile ticketing option. This involved a sticker or tag being attached to the phone that would then 'sync' with the smartphone meaning if the phone runs out of battery the tag would still work.

As well as resolving battery-life concerns, participants thought the tag would make it easier to scan. However, many questioned the aesthetics and the likelihood that smartphone users would want to put such a sticker on their phone. Other concerns centred on risk of theft or accidentally dropping or damaging the phone; given the cost of some handsets it is perhaps not surprising that there is some anxiety around this.

Participants were also shown a Wave and Pay concept to understand potential concerns and barriers to this form of ticketing. Some participants were already familiar with Wave and Pay and some also saw it as a way to avoid queues – both of which were described as benefits of the concept.

However, while there is some familiarity with the concept, there are practical queries and also some concerns around the security of financial transactions and potential room for errors. There is a strong feeling that there is scope for mistakes with charges particularly if linked directly to their credit or debit card. There were also questions regarding avoidance of being charged if they are passing through a barrier using an alternative ticketing option.

Participants also wanted to know what products would be available to use with a Wave and Pay system and some queried how a season ticket would work on a Wave and Pay. Some also raised questions around proof of purchase and how they would present their card to the ticket inspector.

Research background

An overview of the research background. This section also details the research objectives, research approach and methodology, and the sample.

2 Research background

Passenger Focus is the independent body whose aim is to protect the interests of Britain's rail passengers, England's bus and tram passengers outside London, and England's coach passengers on scheduled domestic services.

Passenger Focus is committed to evidence-based campaigning and research to ensure it fully understands the needs of passengers. In doing this, Passenger Focus, as part of its wider vision, is able to influence both long and short-term decisions and issues that affect passengers, and to help passengers through advice, advocacy and empowerment.

Passenger Focus has seven objectives, which underpin its vision and mission:

- making a difference for all passengers
- tackling examples of poor passenger service
- improving access to services for passengers with particular needs
- promoting good practice in complaint handling and providing advice and advocacy to rail complainants
- increasing awareness of Passenger Focus and its influence with stakeholders
- building and delivering effective representation for passengers
- boosting Passenger Focus' capacity and capability to secure the best deal for passengers.

As part of the commitment to ensuring that the needs of passengers are recognised and understood, Passenger Focus was asked by the Department for Transport (DfT) to design and manage a research project assessing rail passengers' views and needs with regards to smartcards and other ticketing solutions in the South East. This research will be used by the Department of Transport and the Association of Train Operating Companies (ATOC) to inform any smart ticketing introduction across train operating companies (TOCs).

A number of train companies operating within and around the South East area are currently trialing different types of smartcard ticketing with small numbers of passengers using specific lines or services. These pilots will be extended over the course of 2012 and 2013 to include larger areas of the network and a wider number of ticket types. A selection of ticketing options currently being piloted was selected to test during the research, to drive discussion and idea generation.

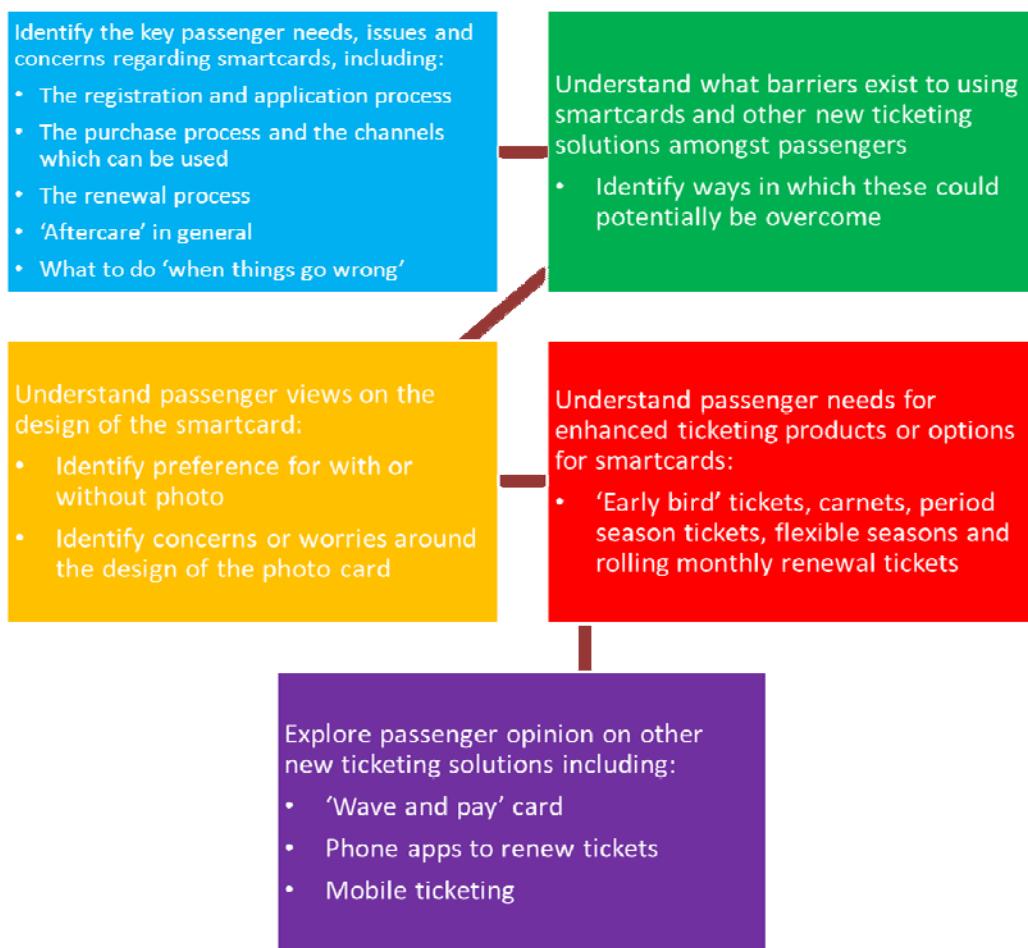
DfT asked Passenger Focus to conduct this research in order to provide the train operating industry with a 'white label' product for smartcard ticketing that offered guidance on setting up smartcard schemes in the future. This research has also been designed to provide evidence for the DfT's future investment plans in automatic ticket gate upgrades, communications upgrades and validators.

This report builds on previous research conducted by Passenger Focus in 2008 exploring the future of smart ticketing.¹

3 Research objectives

The overarching objective of the research was to assess rail passengers' views and needs with regards to smartcards and other ticketing solutions.

Within this, the research sought to:



¹ *Ticketing for the future? Research into ticketing technology* - <http://www2.passengerfocus.org.uk/news-and-publications/document-search/document.asp?dsid=1470>

4 Research methodology

A qualitative methodology was used to gain in-depth insights into consumers' attitudes and opinions around smart ticketing for rail travel. The approach enabled the research to fully explore people's experiences of rail travel and ticketing, and identify ways in which these could be improved. Further, qualitative research provided an open and creative environment for participants to discuss and generate ideas around smart ticketing, and how they would like this to work in practice.

A mixed method approach using focus groups and depth interviews was used to engage as many different rail users as possible.

4.1 Focus group discussions

Eight focus groups, each lasting one and a half hours, provided a creative forum for discussing personal experiences of rail ticketing, and for generating insights into how participants would like to be able to purchase and use tickets in the future. The focus groups used stimulus materials to generate debate and help participants to consider different designs and features that could potentially be incorporated into the design of smart tickets. A series of slides showing images and concepts, from what the smart ticket could look like to the ways in which tickets could be loaded onto the smartcard, were used to assist in generating insights. Participants were asked for their spontaneous opinions about different design ideas and features before being shown pre-designed concepts and ideas, and discussing whether or not this matched their expectations.

4.2 Individual depth interviews

To understand and explore the views and experiences of disabled rail users, a series of 10 individual face-to-face interviews, each lasting one hour, was carried out with disabled participants. An individual interview offered a more private and comfortable space to discuss how smart ticketing would affect the way they use rail services, and whether the potential designs met their expectations.

4.3 Strengths and limitations of qualitative research

Using qualitative methodology to explore attitudes towards smart ticketing allowed researchers to gather insights about what people want from a smart ticketing service. This qualitative approach created a forum where people could describe, discuss and debate their attitudes and feelings towards smart ticketing.

The main strength of this approach was that it allowed participants to give their opinions in an open and spontaneous way. While the groups and individual interviews followed a clear structure, participants were not required to limit themselves to multiple choice answers as they would be in a quantitative survey, and responses were therefore full, rich and nuanced.

However, there are limitations to the approach used: qualitative research emphasises self-expression and insight over numerical outcomes, and therefore relies on detailed discussion with a relatively small sample; although the research was carried out with a range of people, this sample cannot be considered representative of the general public. The findings reported in this document focus on how participants felt about smart ticketing.

5 Research sample

5.1 Focus groups

The sample for the focus groups was based up on rail users commuting into London from outer areas and was divided into segments on the basis of the train companies they were travelling with and the mainline London stations they travelled into. The table below shows the main sample criteria:

Group 1	Group 2	Group 3	Group 4
All travel into: <ul style="list-style-type: none">• Marylebone using Chiltern• Paddington using First Great Western Mix male and female Aged 20-35 years	All travel into: <ul style="list-style-type: none">• Victoria or London Bridge using Southern or Southeastern Mix of male and female Aged 20-35 years	All travel into: <ul style="list-style-type: none">• Marylebone using Chiltern• Paddington using First Great Western Mix male and female Aged 30-55 years	All to travel into: <ul style="list-style-type: none">• Euston using London Midland• Kings Cross using FCC North Mix of male and female Aged 20-35 years
Group 5	Group 6	Group 7	Group 8
All travel into: <ul style="list-style-type: none">• Blackfriars, London Bridge or City Thameslink using FCC South or Southeastern Mix of male and female Aged 30-55 years	All travel into: <ul style="list-style-type: none">• Fenchurch Street using C2C• Liverpool Street using Greater Anglia Mix of male and female Aged 30-55 years	All travel into: <ul style="list-style-type: none">• Liverpool Street using Greater Anglia• Fenchurch Street using C2C Mix of male and female Aged 20-35 years	All travel into: <ul style="list-style-type: none">• Waterloo using South West Trains Mix of male and female Aged 30-55 years

There was a number of further sampling characteristics present within the groups:

- journey type: participants were required to be commuting into stations at least three times per week from areas across the South East
- attitudes towards technology: within each group, participants varied in their attitudes towards technology use, from those who felt very uncomfortable using technology to people who defined themselves as being 'early adopters' of new technology
- Oyster card usage: at the outset of the research it was decided to incorporate a mix of Oyster users and non-users. However, it became clear that people who commuted using an Oyster were unable to see a benefit of the smart tickets being tested in the research. For this reason, a decision was made to only include commuters using any type of paper tickets to make their commute into London. Paper tickets could be any type of ticket, from daily to annual season tickets.

5.2 In-depth interviews

The participants who took part in the in-depth interviews included people with a range of physical and sensory disabilities as well as people with learning difficulties. Whilst we aimed to conduct 10 interviews at the outset, the end result was that we conducted interviews with 11 disabled participants. The table below shows a breakdown of sample characteristics.

Gender	Disability	Ticket type	Destination stations
<ul style="list-style-type: none"> • 5 x male • 6 x female 	<ul style="list-style-type: none"> • 4 x mobility impairment • 4 x sensory impairment • 3 x learning difficulty 	<p>All were using paper tickets to commute to London</p> <ul style="list-style-type: none"> • 6 x daily tickets • 2 x annual tickets • 2 x weekly tickets • 1 x monthly ticket 	<ul style="list-style-type: none"> • Charing Cross • Fenchurch Street • Victoria • Kings Cross • Liverpool Street • Marylebone • Waterloo

Similarly to the focus group participants, the depth interview participants differed in their attitudes to technology and their previous experience of using Oyster cards. The majority also used disabled persons railcard or had a London Freedom Pass², which allows the holder to use the majority of public transport in London free of charge.

² <http://www.londoncouncils.gov.uk/services/freedompass/default.htm>

Main research finding

Detailed discussion of the findings

6 Current ticket use

Participants were using a range of tickets including season tickets, weekly or daily tickets and Oyster card Pay As You Go (PAYG). Ticket choice was typically driven by value for money and convenience.

6.1 Value for money

Participants described how they calculated the cost of their travel and then worked out which ticket was most cost-effective. Those commuting five days a week and in stable employment chose an annual season ticket. Some participants bought this via a work scheme which enabled them to pay for the ticket over a 10-month period. Some preferred to buy shorter season or weekly tickets based on personal budgeting preferences or because they were in temporary employment. Finally, some preferred to buy daily tickets or use Oyster card PAYG because they had a fluctuating working pattern.

"I use carnet, you buy ten tickets for the price of nine, because I only work three days per week..."

Commuter, group four, aged 20-35 years

"[Oyster PAYG] works out a bit cheaper just to top it up rather than to get the season ticket because I don't use it seven days a week..."

Commuter, group one, aged 20-35 years

Value for money continued to be an important factor when thinking about smart ticketing. In particular, participants were keen to know how smart ticketing would offer greater value for money when compared to paper ticketing; there was a clear expectation that some kind of cost saving or cost benefit would be offered with smart ticketing.

6.2 Convenience

Avoiding queues at stations was often a key reason for buying tickets in advance. A desire to reduce time spent queuing at a ticket office, or a ticket vending machine (TVM), meant that participants tried to plan ahead when they needed to get a new ticket. For example, they would get to the station early one day, or purchase the ticket at the weekend, to avoid commuter traffic.

Participants felt that smart ticketing would offer greater convenience, particularly noting the ease of touching in and out instead of inserting a paper ticket and the durability of a smartcard when compared to paper tickets, which often needed replacing on a regular basis. However, they were also keen to understand any convenience that would be offered in terms of managing smart ticketing and any time efficiency for ticket purchasing.

"It would be quicker to get through the barriers [with a smartcard]..."

Commuter, group six, aged 30-55 years

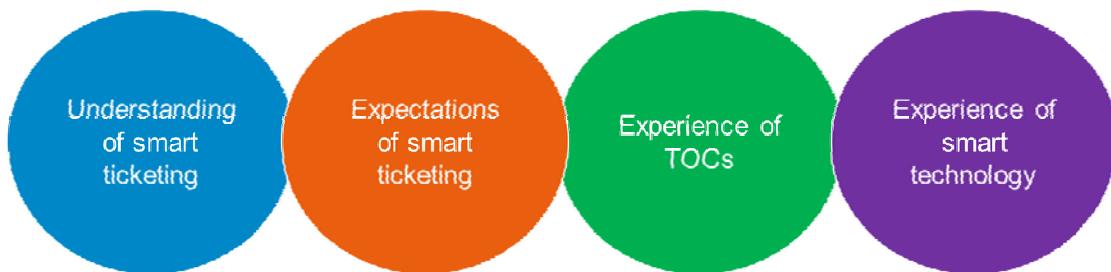
“Just having everything in one place instead of having cards for this that and the other.”

Commuter, group six, aged 30-55 years

7 Attitudes to smart ticketing

Participants were generally receptive to the idea of smart ticketing. During the focus groups there was a great deal of engagement in discussions about how smart ticketing might work, highlighting the high degree of interest in this type of ticketing.

The research identified four key drivers of attitude towards smart ticketing:



7.1 Understanding of smart ticketing

Experience of using smart ticketing for public transport was mixed across the research. Those whose commute involved travelling within central London were familiar with - and used - the Oyster card system. These participants, as we would expect, had a better understanding of how smart ticketing works and found it easier to acknowledge a range of benefits and drawbacks of a smart ticketing system.

“I like the flexibility in the Oyster... [You] can use the tram as well and if you use the bus it's a lot cheaper.”

Commuter, group five, aged 30-55 years

Some participants had an Oyster card but used this very occasionally for days out in London or the occasional work meeting. Whilst these participants understood and had direct experience of smart ticketing, they were less familiar with the functions of how smart ticketing works. These participants tended to have less confidence in smart ticketing, and had more queries about how it would work.

Among non-Oyster card users there were mixed levels of knowledge and understanding of how a smart ticketing, specifically a smartcard, system could work. Some participants had very low awareness and understanding, meaning that they had a greater number of queries regarding smart ticketing, and clearly were on a steeper learning curve compared with other participants included in the research.

"I don't trust [smartcards]...the Oyster cards have so many problems. I've been fined for forgetting to touch out."

Commuter, group eight, aged 30-55 years

One participant had used m-ticketing (mobile ticketing with a QR code) on Chiltern. This had been for a one-off day-return journey. This participant's experience had been very positive, and they were interested in using m-ticketing (if available) for future journeys, including their daily commute.

Key finding:

The introduction of smart ticketing would need to reflect the broad range of current knowledge and awareness of smart ticketing systems. It is clear that some passengers would require education and support in understanding and using smart ticketing.

7.2 Expectations of smart ticketing

There were mixed expectations for smart ticketing. Generally speaking, Oyster card users tended to have higher expectations of features and functionality because they were familiar with the system and had a more informed basis of understanding.

Regardless of experience with smart ticketing, participants expected that there would be some kind of cost benefit to moving to smart ticketing from paper tickets. Rationale for this view was often based on the knowledge that travelling with an Oyster card made journeys cheaper when compared to travelling with paper tickets. The assumption that there would be some kind of financial benefit was also driven by the view that with smart ticketing there would be greater onus on the passenger to purchase tickets and manage their account online, therefore reducing the amount of work and staffing required by the train companies. With this in mind, some participants suggested that a cost saving on tickets purchased via smart ticketing would redress this balance.

"I'm hoping it would be like a PAYG Oyster where you get a cheaper fare for single journeys."

Commuter, group four, aged 20-35 years

"If you paid pay as you go for 12 months, then you got some kind of discount from that."

Commuter, group three, aged 30-55 years

Attitudes towards the degree of integration with other transport options and providers were a topic of much debate in some of the focus groups. Desire for integration was necessarily driven by individual need for using additional forms of transport as part of a daily commute, or on a regular basis. Those who frequently used the Underground or London buses were keen for a smart ticket that would enable ticketing and travel for these, as well as for train journeys. For these

passengers, an integrated system was considered 'ideal and essential' and they were keen to avoid holding numerous smartcards covering different modes and routes of travel; one solution for all was sought.

"If it was specific to a train company then I wouldn't be interested in that at all."

Commuter, group two, aged 20-35 years

"[It's] not very versatile if you have to have different cards for different elements of your journey."

Commuter, group five, aged 30-55 years

Those who infrequently or never used other forms of transport were less concerned about an integrated system, although were keen to note that full integration would be 'ideal but nice to have' rather than 'ideal and essential'.

Expectations of smart ticketing were also driven by participants' expectations in terms of technology generally and the capabilities of any smart ticketing system. Some participants – particularly those who were tech savvy and already using technology such as smartphones and tablets – felt that train companies were behind the curve in adopting and implementing smart ticketing. These participants felt that smartcard technology was 'old news' and suggested that smart technology meant that advancements could be made in ticketing; these participants were keen to know more about mobile phone and Wave and Pay ticketing options.

Participants who were less familiar with technology were less confident in the idea of mobile or Wave and Pay ticketing. These participants tended to own feature mobile phones rather than smartphones and had more concerns regarding different types of smart ticketing. These concerns were typically rooted in fears regarding the security of physically using a mobile phone or credit card as a ticket, and these participants were less confident in the practicalities of how this technology would work. Further concerns regarding mobile and Wave and Pay ticketing are detailed later within this report.

Key finding:

There are clear expectations that smart ticketing would offer some kind of cost benefit and savings.

Key finding:

Expectations regarding features and functionality of smart ticketing is driven by experience of smart ticketing (mainly the London Oyster card system), and experience of smart technology more broadly, for example, use of smartphones and tablets.

7.3 Experiences of train companies

When thinking about smart ticketing, participants naturally thought about the ability of train companies to introduce and deliver this. Whilst participants were keen that train companies introduce smart ticketing, there were some reservations about whether they currently have the capabilities and capacity to do so. Negative commuter experiences of delays and congestion meant that they lacked trust in train companies to deliver smart ticketing.

"I don't trust Southwest Trains to get me to work on time so why would I trust them on this?"

Commuter, group eight, aged 30-55 years

When reflecting on delays, experienced participants noted that these were not only experienced on trains but also at stations. Queues at TVMs and problems with barriers not working were often cited as reasons for delays. Participants were concerned that these would be amplified and prevent the smooth running of a smart ticketing system.

"You can get two or three trains coming into Marylebone and it is a nightmare trying to get through the barriers. Most of us have got the gold card [paper] tickets, so by the time you put them in and take them out everybody else can be going through."

Commuter, group three, aged 30-55 years

Congestion was also considered a problem which participants worried could be made worse with the introduction of smart ticketing. Participants noted that congestion at barriers at busy stations during peak times often led to bottleneck situations which participants worried would negatively impact on smart ticketing.

Finally, some participants were keen to note that they felt that ticket prices increased every year without visible signs of improvement to their commute. Many felt that despite increased ticket fares they had seen reduction in staffing at stations, infrequent ticket checks and overcrowded trains. With this in mind, participants queried whether train companies could cope with the introduction of smart ticketing.

"It's frustrating when people use the paper cards because I'm not convinced the tickets are checked on the train, the inspectors they haven't got time to be looking properly at all the tickets..."

Commuter, group six, aged 30-55 years

There was some discussion amongst participants about the reason for train companies deciding to move to smart ticketing. Some suggested that it was an environmental rationale and a way to reduce the number of paper tickets. Others felt that moving to smart ticketing was linked to the reduction of staff – particularly at stations – and a cost-cutting exercise. This raised some concerns about the level of staffing at stations that would be available during any transition to smart ticketing.

Participants felt that staff support would be vital to address queries, problems and concerns when using smart ticketing.

Key finding:

It is clear that some commuters would require reassurances that train companies have the appropriate capacity and capabilities to introduce smart ticketing efficiently and effectively. As part of this, reassuring commuters about the availability of staff to support smart ticketing would be important.

7.4 Experience of smart technology

Experience and use of smart technology such as smartphones and tablets clearly affected views on smart ticketing. Those who were familiar with and confident in the capabilities and functions of such technology typically expressed greater comfort with and expectations for a smart ticketing system.

Smartphone owners tended to show greater interest in Wave and Pay, usually because they had direct experience of this, or had seen or heard about it in the press. Those with experience tended to have used Barclays or NatWest systems. These participants also tended to show more interest in mobile ticketing and described how they enjoyed using their smartphone for a range of functions and were comfortable with the idea of extending this to ticketing. These smartphone users also had greater expectations for any supporting management system that might run alongside smart ticketing. For example, they expected the provision of an application (with Apple and Android compatibility) that would enable them to manage their account. Further detail regarding expectations for account management is detailed later within this report.

"I've got an app for Starbucks. I just hold up my iPhone on their little device and the reader then takes it out."

Commuter, group six, aged 30-55 years

Feature phone owners tended to be less familiar with the range of functionality available with smart technology, and their phones tended to have limited functions including SMS, photographs and storing/listening to music. These participants had fewer expectations and were less comfortable with the idea of smart ticketing being linked to/reliant on mobile phones.

"That's [Wave and Pay's] a bit worrying – what if you lose your wallet?"

Commuter, group two, aged 20-35 years

Those familiar with and confident in smart technology raised some queries regarding the technical aspects of linking mobile phones to smart ticketing. These queries were:

- Reliance on network coverage. Participants queried how linking smart ticketing to mobile phones could be achieved in areas with poor reception or lack of Wi-Fi

access. Some suggested that there should be Wi-Fi hotspots on trains or at stations to ensure people are able to use their phones.

- Loss of battery life. Whilst participants who used their phones for a range of functions agreed that they tended to be good at charging their phone on a regular basis, there were concerns about what would happen if their phone ran out of battery power. Some suggested that there should be phone charging facilities available at stations.

“You could be robbed – you’ve got a phone in your hand.”

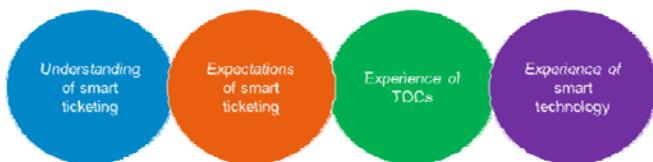
Disabled commuter, depth interview, aged 27 years

Key finding:

Smartphone users clearly had a greater understanding of smart technology and, whilst keen to integrate smart ticketing with their own mobile – either via mobile ticketing, or being able to manage a smartcard account via an app - they sought reassurances that this would be compatible across different operating systems, and that they would have adequate network reception to use this at stations and on trains.

8 Passenger mindsets

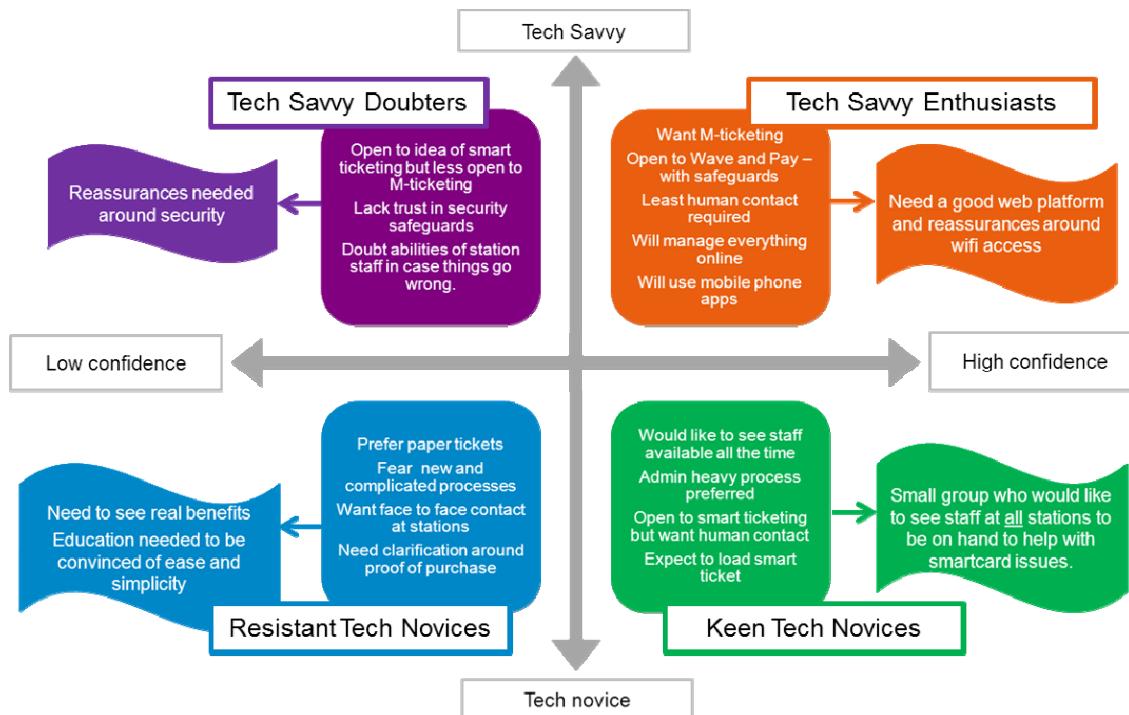
In exploring different factors that impact on attitudes towards smart ticketing, we have identified four key passenger mindsets.



These mindsets are based on two key attitudes:

- confidence in smart ticketing (horizontal axis in diagram below)
- experience in smart technology (vertical axis in diagram below).

These mindsets are shown in the diagram below, and fully explained beneath this.



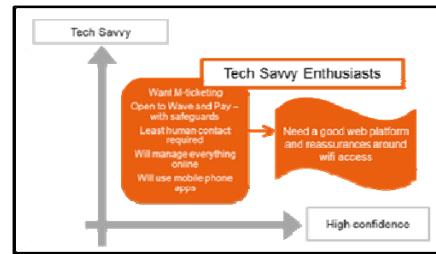
These four mindsets were developed to summarise attitudinal characteristics of various groups in the sample. Each mindset has been assigned a name which broadly describes its attitudes towards and experiences of smart technology and smart ticketing.

Based on qualitative findings, mindsets are not statistically valid but represent patterns in the qualitative data. Therefore it is not appropriate to attach a numerical value or size to each mindset described. We should bear in mind that there may be some movements across these mindsets, and that an individual will not necessarily stay in one mindset over a long period of time, but is likely to move across these. The diagram above provides a snapshot of the types of mindsets we came across.

It should be noted that demographic details do not ‘map’ directly onto these mindsets. Indeed, we found that experience of technology was most likely to drive attitudes towards smart ticketing, and we should reflect that experience is not dependent on demographics. For example we should not expect all younger people to be familiar with smart technology or expect that older people will be less familiar as age is not an appropriate indicator of technology use.

8.1 Tech savvy enthusiasts

Tech savvy enthusiasts know their smart technology, and are enthusiastic about using it. They are smartphone users and some also own tablets. They typically use apps on a daily basis, and prefer to manage things via these apps or online. With this in mind, this group were least likely to require face-to-face support with getting or managing their smart ticket.



This group also had high levels of confidence in smart technology in general, including smart ticketing; most of its members were familiar with the London Oyster card system and have used it themselves. They already buy train tickets online or via apps, have used Wave and Pay for other purchase types and are keen to try m-ticketing.

Whilst members of this group are likely to be early adopters of smart ticketing, they still required reassurances regarding:

- how train companies will ensure capabilities and capacity to deliver smart ticketing effectively and efficiently
- what safeguards will be in place to ensure systems like Wave and Pay will be secure when used for travel.

This group would need a good web platform to enable them to manage their smart ticket and, alongside this, adequate Wi-Fi access at stations and on trains to use this web platform whilst on the move via their smartphone or tablet.

Case study: Edward commutes on Chiltern and the London Underground

Edward commutes into Marylebone five days a week. From Marylebone he uses the London Underground to London Bridge. Edward has an annual paper ticket for his Chiltern journey and uses an Oyster card for the journey from Marylebone to London Bridge.

Edward is a keen smartphone user. He has a personal iPhone and a work BlackBerry. He uses a number of travel apps on daily basis to check whether his trains are running on time. This includes the Chiltern app and a Tube app. He also has an app to monitor his Oyster card account, and uses Google Maps to help plan unplanned journeys on public transport.

Edward is extremely positive towards the idea of smart ticketing for his commute. For him, a key benefit would be that he would no longer need to use a paper ticket; he frequently needs to replace his annual paper ticket as it stops working, and welcomes a system where this is no longer required.

Edward is very comfortable with the idea of a smartcard but is also keen to use m-ticketing. He has used m-ticketing once before, with Chiltern on a one-off journey. He found the experience to be simple, straightforward and easy, and would be keen to use this more in the future. Whilst Edward is also open to the idea of Wave and

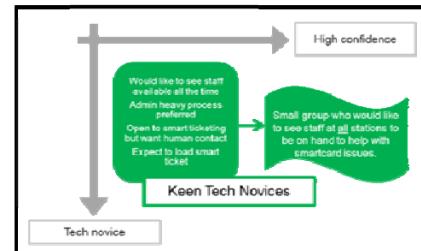
Pay he is less assured of how this would work from a security aspect, but would be keen to learn more.

Edward has high expectations for how any online management for a smart ticketing account would work. He would expect to be able to access this via a web browser or app. As he owns both an iPhone and BlackBerry he was keen to suggest that any app should be both Apple and Android compliant. Ideally, Edward would like to be able to register both phones to his account and envisages that he would be able to use either of these for m-ticketing; if one phone ran out of battery power he would like to be able to use the other as a backup. Because Edward is familiar with the capabilities of his phone he would choose to manage his account via an app on his iPhone but would choose text message alerts to be sent to his BlackBerry, as he finds the apps slow to use on this device. He would like text messages to advise him of any delays or problems with his usual commute, and to inform him of his account balance and let him know when his ticket is due for renewal. He would like an app to integrate many of the services that he currently uses a range of apps to access. This includes information about his usual commute, updates on how London Underground lines are running and other account management features such as balance checking, buying tickets and accessing a journey history.

8.2 Keen tech novices

Keen tech novices typically had limited experience in smart technology, but were keen to know more about how it would work, and how it could be applied to smart ticketing. Whilst some were open to the idea of mobile ticketing and Wave and Pay, most envisaged they would choose to use a smartcard. These participants have often seen other people using smart ticketing (on the London Underground), which has piqued their curiosity. They also found it easier to imagine a range of benefits to smart ticketing when compared to paper ticketing, which further encouraged them to consider smart ticketing as a beneficial and preferred ticketing solution. Key benefits cited by this group included:

- removing the need for paper tickets which often need replacement
- having your ticket on one easy to use and access card
- quick to use at ticket barriers.



The group also felt that smart ticketing is more forward-thinking and in line with its expectations of how technology is being used to improve many services currently.

Whilst interested and keen on the idea of smart ticketing, their lack of knowledge regarding smart technology in general meant that these participants were likely to require face-to-face support and education at least during the introduction of smart ticketing. These participants felt that it is important to provide staff at stations to help with smart ticketing, and noted that they would feel more at ease in adopting this technology if they knew that staff would be on hand to help with any queries, or resolve any issues.

Case study: Liz commutes with South West Trains

Liz works part-time and commutes from Reading to Waterloo three days a week. She currently buys paper tickets for her journeys. When she arrives at Waterloo she walks to her office.

Liz is interested in smart technology but doesn't use any herself. Her children both have a smartphone and keep telling her she should get one. Liz is always interested to see what the children can do with their smartphones and is keen to have a go herself but is waiting for the contract to run out on her current feature phone.

Apart from travelling into London for work, Liz travels into London once or twice a month to go shopping or meet up with friends. She always uses a paper ticket for this which she buys at Reading station. She knows about the London Oyster card system but thinks that it isn't really worth getting an Oyster card because she doesn't use the Underground on a regular basis.

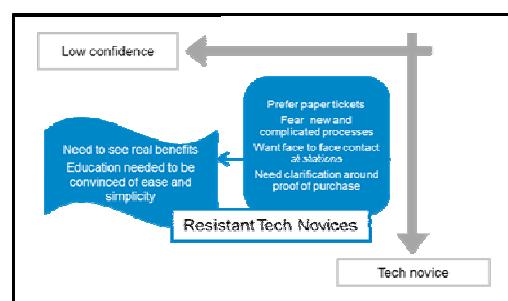
Liz has heard of Wave and Pay for buying things in shops and thinks that her debit card is able to offer this service but hasn't had time to find out about it properly and doesn't really understand how it works. She has not heard of mobile ticketing.

Although not a current smart-ticket user, Liz is interested in how it works and can see the advantages of having a smartcard instead of a paper ticket. For her, it would be easier to load tickets onto a smartcard rather than buy individual paper tickets all of the time. She also thinks it would be quicker to use a smartcard at the barriers which would be useful when there are lengthy queues.

Whilst Liz envisages she would take up any introduction of smartcards on her commute, she is a little nervous about trying this for the first time; smart technology is not something she has tried before and she is worried she might get something wrong. She feels that the presence of staff will be important in reassuring her that there is someone at hand to help if she has a question, if the smartcard does not work, or if the barrier is not working.

8.3 Resistant tech novices

Resistant tech novices are not engaged in smart technology and are unsure about any move to smart ticketing. They were more comfortable with how ticketing works at the moment, they were more resistant to change, and were likely to need proof of tangible benefits to encourage them to take up smart ticketing.



Resistant tech novices fear new and complicated processes, and their lack of experience with smart technology and smart ticketing meant that the idea of moving to smart ticketing was, at face value, unappealing.

This group not only required some degree of motivation to move to smart ticketing, but would also need education and support in using smart ticketing. When considering the smart-ticketing options discussed during the research, this group was most open to the idea of smartcards and displayed less enthusiasm towards mobile ticketing and Wave and Pay.

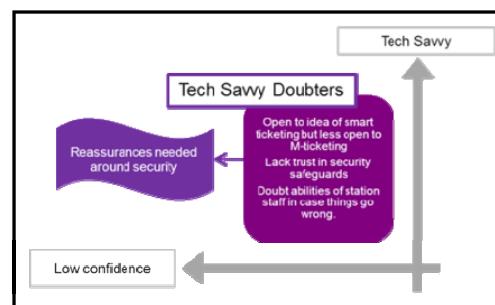
The things that this group found appealing were cost savings and greater convenience.

Case study: Phil commutes with First Capital Connect (FCC)

Phil travels in to London on FCC three days a week using a Carnet. He doesn't own an Oyster card as he feels he doesn't need one. He prefers paper tickets and knows how they work. The Carnet, in particular, gives him the flexibility on the days he travels in to London and he doesn't see how his experience will be improved by the introduction of smart ticketing. Phil struggled to understand the concept of the smartcard and the point of replacing the paper ticket with a smartcard. He's very security conscious and fears that smartcards could make it easier for hackers to get his personal details or send him unwanted spam. Phil thinks the whole system of smartcards is too advanced and doesn't think everyone is ready for it yet.

8.4 Tech savvy doubters

Tech savvy doubtters were familiar and confident users of smart technology, but were not fully comfortable with the idea of smart ticketing. While being able to imagine a number of benefits to using smart ticketing, including greater convenience and being able to manage an online account, the lack of confidence in smart ticketing felt among this group often manifested itself in a range of queries about how the smart ticketing would work in practice, and how security would be ensured.



The key barrier to using smart ticketing among this group was doubts concerning security. Many members of this group were worried about what happens if a smartcard is lost. Security concerns were amplified when they thought about mobile ticketing and Wave and Pay options; these were unpopular among this group, as its members feared theft of a mobile phone or credit card at ticket barriers, or noted that they simply felt less safe having to use these to navigate barriers.

As a result of this, smartcards were the favoured option among this group, and whilst participants sought reassurances regarding security, they were very positive towards this type of system.

It should be noted that this group tended to raise queries about smart ticketing and are likely to require support from staff during any introduction of smart ticketing, and in any instances where something goes wrong.

Case study: Vicky commutes with Southern

Vicky commutes from East Croydon to London Bridge five days a week. When she arrives at London Bridge she walks to work. She occasionally travels within London for meetings and uses a PAYG Oyster card for this. She currently buys weekly travel cards for her commute, as this is how she prefers to budget.

Vicky has a smartphone which she feels lost without and uses for everything.

Vicky is positive towards the idea of a smartcard for her commute. She often forgets to throw away her weekly ticket and ends up with a handbag full of paper tickets which can get confusing. A smartcard would be more straightforward and also allow her to buy her weekly ticket online in advance rather than turn up at the station early every Monday morning and queue.

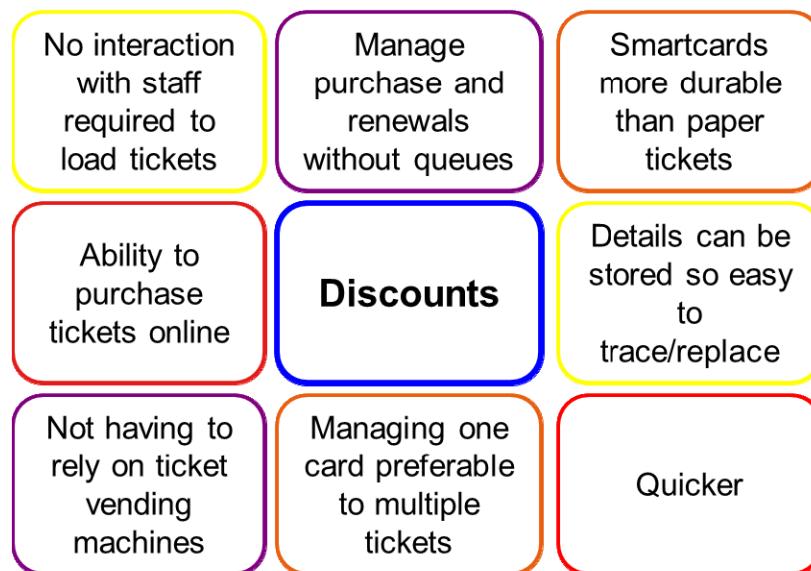
However, she is a little concerned about how this would work and isn't sure about what will happen if she lost her smartcard. This concern is even greater when she considers the idea of mobile ticketing. Vicky feels that using her mobile as her ticket could make her a target for thieves. She is attached to her phone and therefore averse to any idea that she feels could put her phone at risk.

When thinking about Wave and Pay Vicky highlights the same concerns regarding security. She is also very mindful of her budgeting and feels that it would be easy to lose track of spend via Wave and Pay, which is another reason why she feels it is not for her.

Overall, Vicky is keen on the idea of a smartcard but would like reassurances regarding security aspects, and feels that it will be important to have staff available at the station to help if anything goes wrong.

9 Appetite for smart ticketing

When thinking about smart ticketing, participants raised a number of benefits of introducing this type of system for their commute. These are provided in the diagram below.



Overall, participants were particularly keen to note that they expected that smart ticketing would have some kind of cost benefit and envisaged cheaper fares, or new products that would enable them to make their commute more cost-efficient. Other benefits often focused on ways in which smart ticketing would offer greater convenience and simplicity. The durability of a smartcard appealed to those who currently found it frustrating and time-consuming to replace paper season tickets on a regular basis, and the ability to avoid queues by purchasing tickets easily in advance was seen as an improvement to current ticketing options.

“[You would have] easier access to tickets without having to wait for the ticket office to open... in Radlett the ticket office isn’t always open.”

Commuter, group four, aged 20-35 years

“I use a paper ticket for my yearly ticket but obviously, you can’t read [the information] anymore, and you get such attitude from [staff], who say, ‘you can’t read it anymore’ and I think, ‘well, make a better card then!’”

Commuter, group four, aged 20-35 years

“Because I have to claim expenses quite a lot it’s quite easy because you can get a report every eight weeks and it tells you where you went and you can just cut and paste what you need rather than hang on to a hundred tickets, which just get lost in your pocket.”

Commuter, group one, aged 20-35 years

10 Potential barriers to smart ticketing

There were a number of concerns regarding smart ticketing.

Lack of clarity regarding the benefit of moving to smart ticketing was a key barrier cited by many. This highlights the need for any benefit to be clearly communicated to customers so that they fully understand how smart ticketing can enhance or improve their commute. This was particularly the case for those who were attached to paper ticketing, and lacked confidence in how smart ticketing would work in practice.

Another key barrier was how smart ticketing would work in practice, with particular fears regarding resolution of problems with faults with smartcards, TVMs and ticket barriers. These concerns were mentioned across all groups and were most commonly raised by those unfamiliar with smart ticketing, those who had not used the Oyster card system in London.

“The downside – when the barriers don’t actually work...when that happens that’s really infuriating, especially when you’ve queued and you’ve then got to go queue somewhere else.”

Commuter, group six, aged 30-55 years

It is clear that there is a need for clear explanation and education regarding how smart ticketing will work, and what support would be provided for any problems encountered.

Some participants also queried to what extent any smart-ticketing system would be integrated across train companies and TfL. Some originally assumed that smart ticketing would be train company-specific, which raised concerns about what would happen if you had a choice of operator for your journey. These participants noted that restricting smart ticketing to specific train companies would complicate the ticketing process and deter them from adopting smart ticketing.

“It could still be messy because you’ve got Oyster card and you’ve got their [c2c’s] card as well, so it would be easier if it was all on one.”

Disabled commuter, depth interview, aged 27 years

“If you miss their [train company’s specific] train and the next one comes and it’s a different company then it’s a lot of messing around.”

Commuter, group five, aged 30-55 years

11 Smartcard functionality

11.1 Smartcard design

Participants assumed that a smartcard would work and look similar to an Oyster card. Many envisaged that it would be credit card sized and were positive towards this as they thought it would be easy to carry around and to keep safe.

“[I imagine it would look like] an Oyster but with my face on it.”

Commuter, group seven, aged 20-35 years

When participants were shown examples of the Southern Key card and the Stagecoach smartcard (see right), there were no surprises.

Many were familiar with this type of smartcard, for example, with loyalty cards and membership cards (e.g. local library, gym, etc.). This reinforced comfort in using this type of smartcard for everyday interactions, including travel.



“That’s quite good because I have a ticket and I have a photo card so I have two different things...one card...I think that’s good.”

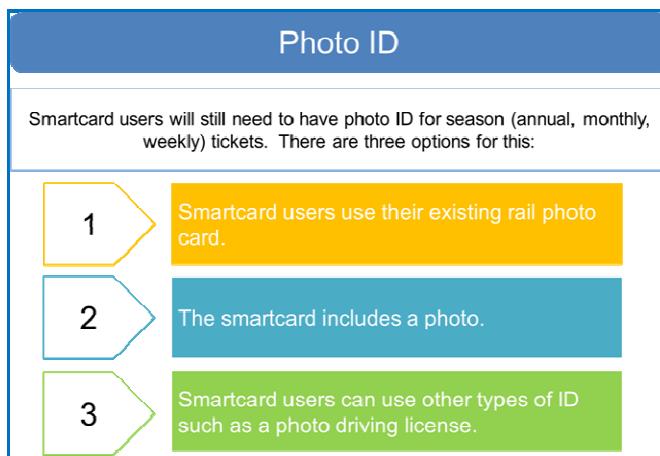
Commuter, group four, aged 20-35 years

A small number of participants suggested that the smartcard could be smaller, similar to the key fob sized loyalty cards. While many agreed that this would be a convenient option, most expressed concern that it would be easy to lose, and overall there was stronger preference for a credit card sized smartcard.

“[I imagine] a credit card sized. Unless you had it like you have your Tesco club card on a key fob?”

Commuter, group seven, aged 20-35 years

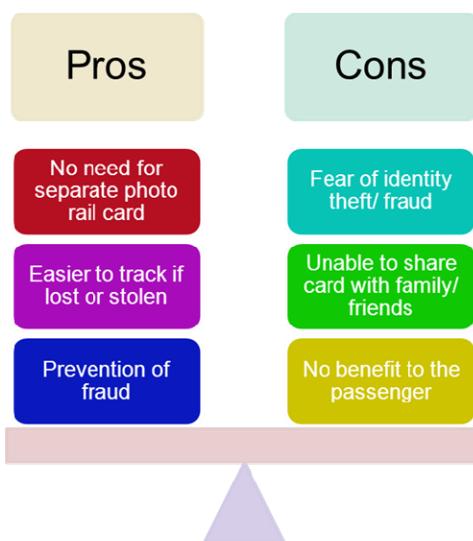
When thinking about the smartcard design, participants spontaneously queried whether the smartcard needed to include the owner's name and photograph.



Participants were shown some information regarding photo ID requirements (see left) to outline some of the potential options for use and inclusion of photo ID.

Overall, participants had mixed views about providing their name and photograph, although all were in agreement that if photo ID was required, the easiest option would be option 2 (the smartcard includes a photo).

The diagram below summarises both the positives and drawbacks associated with including a name and photo ID on your smartcard.



When thinking about the benefits of including a name and photo ID on a smartcard, participants agreed that it would make the smartcard easy to track if lost or stolen and would make it difficult for a stolen or lost card to be used by someone else. They felt that this would support the prevention of fraud but were keen to note that, to be effective, this would need to be policed by station staff checking smartcards. A small number of participants voiced some scepticism towards this, as they only had their photo ID card checked on a couple of occasions over the past few years. Finally, some participants agreed that inclusion of photo ID on a smartcard would be beneficial if some kind of photo ID was required; having everything in one place was considered to be the easiest and most convenient option.

"I think I'd rather have [my photo] on the card. I think if I was going to use it as a monthly travel card it may as well just be on there if you've got to have it anyway."

Commuter, group two, aged 20-35 years

"At least they know it's you using it and no-one else. Someone could pinch it you know and if it's got in the wrong hands at least they'd know it's not them."

Disabled commuter, depth interview, aged 43 years

When thinking about the drawbacks of including a name and photo ID on a smartcard, some participants expressed concerns regarding identity theft and fraud. These tended to be risk-averse people who chose to keep a tight control on the use of their personal data in day-to-day life, and preferred to minimise the range of places detailing their personal information. Other participants suggested that a drawback of including a name and photo ID was the loss of opportunity to share their smartcard with family members and friends.

Finally, some participants simply questioned whether there was any passenger benefit to inclusion of their name and photograph on the smartcard. These participants rationalised that if their card was registered via a registration number detailed on the smartcard itself, there was no reason for any additional personal information to be visually printed on the smartcard. These participants assumed that if a member of staff wished to clarify and check that the card belonged to them, they would be able to scan the card, or use the registration number to access personal details remotely, rather than need them to be visually provided on the card itself. A small number of participants concluded that a requirement to include a name and photo on a smartcard was driven by train company protocol and of no direct benefit to the passenger.

"If you think about driving licenses, if somebody was to copy that, they could use it for ID so I think that would be my only drawback really."

Commuter, group three, aged 30-55 years

"If it's got your photo on why does it need your name as well?"

Commuter, group seven, aged 20-35 years

11.2 Getting a smartcard

Spontaneously participants suggested that they would expect to be able to get a smartcard at a ticket office, but after consideration agreed that online applications for a smartcard had greatest appeal. Participants were shown the following details, and then discussed their views on the different channels for obtaining a smartcard.

Getting a smartcard without a photo 1

There are two ways people could get a smartcard without a photo

Current customers who have a monthly or longer season ticket are sent a smartcard 1-4 weeks before their season ticket is due for renewal.

The smartcard is loaded with their relevant data.

Customers can then upload their new ticket/ season pass to the card.

Customers who currently buy other types of tickets (weekly and day-of-travel tickets) will be able to apply for a smartcard.

They can apply online via the train company website and a smartcard is sent to them in the post.

Getting a smartcard without a photo 2

Customers (who use any type of ticket) will also be able to apply in person using a paper application form which they hand in at a ticket office.

They will be given a temporary paper ticket by the ticket office to use while they wait for their smartcard to arrive.

They will then be able to collect their permanent smartcard from the ticket office, or request for it to be sent to their place of work in the post.

Getting a smartcard with a photo

To get a smartcard with a photo you will need to apply online. You will be asked to upload a passport-style photograph.

All fields marked * are mandatory.

Mobile:	<input type="text"/>
Gender:	<input type="text"/> Male
Date of Birth:	<input type="text"/> 04 April 1970
Postcode:	<input type="text"/> CR9 5GA <input type="button" value="Lookup address"/>
Address Line 1*:	<input type="text"/> The Go-Ahead Group plc, Go-Ahead
Address Line 2*:	<input type="text"/> 26-28 Addiscombe Road
Address Line 3*:	<input type="text"/> Croydon
Please provide your photograph: <input type="button" value="Browse"/> <input type="file"/>	
<small>Photos are required for annual season tickets and child smartcards. Photos must be in a passport style portrait format, clearly showing your face head on as per the example shown and below 100KB in size.</small>	
<input type="button" value="Register"/>	

11.2.1 Getting a smartcard online

Participants assumed that they would be able to apply for a smartcard online. This was a familiar format (with participants noting that they currently apply online for a range of things), and convenient as they could do it at home or at work. Some suggested that they would like to be able to apply for a smartcard via a smartphone app.

There was no surprise among participants that an application for a smartcard with a photo would need to be made online. Most were comfortable with the idea of uploading a photo, with many mentioning that they had done this previously on other sites, for example uploading photos to Facebook, and uploading photos to register for event tickets. A few participants had queries about how the photo would be validated and how the train company would ensure the uploaded photo was actually of the person registering. Others wanted greater clarification around what type of photo would be required and how similar to a passport photo it needed to be; these participants suggested some actual examples of appropriate photos. Other participants focused more on the technical aspect of uploading a photo and queried whether the upload function would include an inbuilt cropping tool, which they felt would be useful. Others suggested that there should be an option to use a webcam or smartphone camera to take a photo to directly upload.

“Even if you haven’t got a computer at home, you’ve got one at work so you can do this in a matter of minutes. It’s easy and clean and done.”

Commuter, group six, aged 30-55 years

“I think it’s easier... if you’re allowed to just get someone to take a photo of you off your iPhone with some white wall behind you then I think that would be OK.”

Commuter, group one, aged 20-35 years

A small number of participants queried whether there would be any other option for registering for a smartcard with a photograph. These participants were keen to note that online registration may not be suitable for everyone, especially those without internet access. Whilst it was recognised that this may only comprise a small group, there was some social anxiety that any systems put in place recognise that online application may not be possible or suitable for all rail passengers.

11.2.2 Getting a smartcard by post

Most participants were comfortable with the idea of their smartcard being sent out in the post. However, some had previous experience of things being lost in the post, and they voiced a preference for collection at a designated station/ticket office.

“I’d rather get post than queue up at the train station. Queues on certain days are horrendous.”

Commuter, group six, aged 30-55 years

“It’s beneficial [to get it through the post] if you’re doing a journey you’ve got to plan for but if you [need to] go to London tomorrow and go here there and everywhere then it’s not going to work.”

Commuter, group two, aged 20-35 years

Focusing specifically on the transition to smartcards, participants with monthly or longer season tickets were asked how far in advance of their ticket renewal they would like to be sent a smartcard. There were mixed views regarding this. Those with annual tickets, who liked to plan well in advance, preferred three to four weeks. However, many felt that between one and two weeks would be adequate.

11.2.3 Paper application

Whilst participants felt that it was beneficial to have the option for paper application – especially for those with limited internet access – overall it was agreed that they were most likely to apply online. Many felt that the proposed paper application process seemed long-winded and complex and felt that it would prove an admin-heavy task for them and for the train company involved.

“I have to say I prefer going to the ticket office [to apply for my card].”

Commuter, group three, aged 30-55 years

“At least if you go there [to the station] they do it for you, even if you have to pay a small amount, at least you know you’re getting it about right...if we had to do that ourselves and we get it wrong, then we have to wait and pay over the odds another week or God knows how long.”

Commuter, group three, aged 30-55 years

Participants who were risk-averse when it came to identity theft and fraud noted that they preferred to apply via a secure online site rather than complete a paper form.

11.2.4 Further queries

When thinking about the transition to smartcards, participants raised a number of queries. A key concern was what would happen if they chose to move to smartcard technology part-way through an annual ticket. In this instance they were keen to understand the process of activating their new smartcard and cancelling their paper ticket. They wanted this to be a seamless process.

“Maybe when your smartcard arrives you have to activate it online and that would deactivate your other one?”

Commuter, group seven, aged 20-35

Other participants raised queries about how getting or having a smartcard would work if you bought your annual ticket through a work scheme.

“What happens if you do it through work? I can’t imagine them [work] going through everything online.”

Commuter, group four, aged 20-35 years

Finally, some participants queried whether it would be possible to acquire blank smartcards at TVMs or at local shops. These questions were often driven by experiences of getting PAYG Oyster Cards at newsagents.

11.3 Registration

Participants were positive towards the idea of registering their smartcard and most assumed that this would be linked to the application process. Many envisaged there would be some kind of activation process when they received their smartcard that would tie in with the details provided at the application stage. Participants thought that this was likely to be similar to credit card activation. Whilst most were keen on the idea of registration, it was clear that participants felt that this should be an option, recognising that some people may prefer not to register.

The key benefit of registration was seen as the ability to quickly resolve issues with lost and stolen smartcards. If registered, participants assumed that a lost or stolen card could be quickly traced and stopped, and that they would be provided with a new card. Another benefit of registration was the ability to access journey history which was highlighted as a key benefit for those who envisaged they might use their smartcard on work journeys and would need to access this information to claim expenses. Other participants suggested that registration would make ticket checks quicker and that ticket inspectors would be able to access information linking the card to the individual to check that the card was being used by the right person.

“If you lose it you can get your money back or a new card sent to you.”

Commuter, group two, aged 20-35 years

“It [used to be] so much easier to register [your Oyster] because they used to do it right there and then at the TfL underground, but they don’t do that anymore; you’ve got to go online and I think that’s probably deterred people to register it.”

Disabled commuter, depth interview, aged 27 years

11.4 Smartcard deposit

There was a strong degree of resistance towards the idea of paying a deposit for a smartcard. Many participants felt that their ticket cost should include this, especially those who purchased annual season tickets and felt that they were making a significant financial investment. Those most open to the idea of a deposit were those who recalled paying a deposit for their Oyster card. For these participants, the Oyster card system had set a precedent for a deposit and between three and five pounds was considered acceptable. There were some queries regarding how the Oyster deposit scheme worked, with some suggesting that the deposit went towards the small amount of credit that was available on an Oyster card. Others noted that you could claim your deposit back if you returned your Oyster card and suggested that this model be replicated if a deposit was required for a smartcard.

“Why should I [pay a deposit]? I don’t pay a fee for my credit or visa cards – what’s the difference?”

Commuter, group four, aged 20-35 years

“I don’t see why an annual cardholder spending £4k a year should fork out an extra fiver to get a replacement card.”

Commuter, group one, aged 20-35 years

Participants were provided with three options for how any deposit scheme could work (see right). Overall, participants preferred the third option: nobody pays a deposit but everyone would be charged if they need to replace their card. Participants felt that they would be likely to be careful with their smartcard (especially those with an annual ticket) and did not envisage they would need a replacement. Whilst participants were open to the idea of paying for any required replacements in this situation, they were keen to note that they would not expect to pay for a replacement if there was a fault with the card that was beyond their control.

“If there’s a fault with the card that’s not down to you or if it breaks ... I don’t think I should pay.”

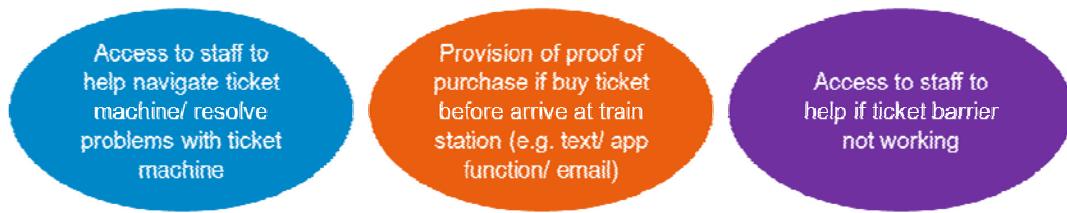
Commuter, group six, aged 30-55 years

11.5 Buying a ticket

Participants envisaged that they would be able to purchase a ticket either online or at a TVM. They were provided with the following information about how ticket purchasing could work:

Buying a ticket at the station	Buying a ticket before you get to the station
<p>Customers will be able to buy tickets on their smartcard by using a ticket vending machine. This will be available for day tickets and weekly tickets.</p> <p>Customers will also be able to use ticket vending machines to renew monthly or longer season tickets. But the first time you buy this ticket you will not be able to use a ticket vending machine.</p> <p>Customers will not be able to buy a ticket on their smartcard from a ticket office.</p> <p>There are a small number of stations without a ticket vending machine. At these stations customers will not be able to buy a ticket on their smartcard at the station.</p>	<p>Customers will be able to buy tickets in advance online or via the telephone.</p> <p>This will work in the same way as buying a paper ticket. You choose which ticket you want to buy and then choose the option ‘load my ticket to my smart media’. You specify which type of smartcard you hold and then enter the 18 digit code on your smartcard. You will need to specify which location you want to upload the ticket.</p> <p>There are two potential options for then loading the ticket on to your card at the station:</p> <ol style="list-style-type: none"> 1. Touch-in the card at the ticket vending machine. 2. Touch-in the card at the ticketing gate.

While comfortable with buying a ticket online or at a TVM, participants wanted reassurances that they would be able to access help and support if something went wrong. The types of support they wanted were:



It is clear that staff training and staff reaction to any problems or queries regarding smartcards would be important during the transition to smart ticketing, and also to ensure that the system runs smoothly. With this in mind, participants had some concerns over not being able to purchase a ticket at a ticket office. This was a particular issue for participants who currently preferred to use ticket offices, and those who were unsure how else they could access a ticket if there were lengthy queues at a TVM, or if the TVM was not working. Reflecting these concerns, participants again highlighted how important they felt the training and provision of staff would be.

"I just feel that there should be a person there to help if you have any queries."

Commuter, group four, aged 20-35

11.5.1 Online

Participants were comfortable with the idea of buying a ticket online and mentioned a number of benefits including convenience, familiar way of buying tickets, the ability to avoid queues at the station, and the ability to buy and plan ticket purchases in advance. However, there were some queries about how online purchases would work. Many wondered how far in advance of their travel passengers would be required to buy the ticket. There was a desire for an immediate/short turn-around between purchasing the ticket and then being able to use it. This was particularly the case for those who expected they could purchase a ticket via an app on their way to the station, and then use that ticket once they arrived at the station.

"I think [buying online] would be fine even if you can only top up at the barrier because you have to go through it anyway."

Disabled commuter, depth interview, aged 27 years

When thinking about the drawbacks of buying tickets online there were concerns about this being appropriate for last-minute journeys, or when they needed to make a ticket purchase without internet access or connection. With this in mind,

participants were clear in their desire for alternative options to be easily and readily available. Participants who were most tech savvy suggested that an app would be a useful resource to help people purchase last-minute tickets whilst on the move.

11.5.2 Using a TVM

Similarly, participants were comfortable with the idea of purchasing a ticket on their smartcard at a TVM. The key benefit of this was that it was considered a familiar and easy option. However, there was some debate regarding whether current provision of TVMs at stations would be able to cope with the demand this would put on the machines. Many felt that current provision did not have the capacity, or reflect the capability needs for operating a smartcard system. Some participants suggested that the number of TVMs be increased at stations, and it is clear that many will require reassurances that TVMs are able to manage a new smart ticketing system.

“If you’re topping up for the first time and spending £3000, I wouldn’t be comfortable doing that at a ticket machine - I’d want to speak to someone I think.”

Commuter, group four, aged 20-35 years

“Obviously for speed go to a ticket machine, that would be your first priority but sometimes there are huge queues there or it’s not working so there should be the option to be able to buy it at the ticket office.”

Commuter, group three, aged 30-55 years

11.5.3 Uploading a ticket to a smartcard

Participants were asked about options to upload a ticket onto their smartcard at a TVM or ticket barrier. Some participants queried whether this would or should be required. Many were familiar with auto-transfer technology such as transferring of funds across bank accounts, and queried why the smartcard system could not use this technology.

With participants seeking automatic ticket transfer, they felt that touching in at a TVM or barrier was inefficient and unnecessary. The requirement to specify a station to upload a ticket to a smartcard further fuelled concern that the smart ticketing system was not using the most useful or up-to-date technology available. Many were concerned that their plans would change, and they would be tied to ‘collecting’ their ticket at a specific station where in reality, this was inconvenient.

“If you do it online as soon as they’ve received your payment you expect them to automatically be topped up.”

Commuter, group three, aged 30-55 years

"It's just going to cause unnecessary delays and queues... it's going to cause absolute chaos. It's bad enough at the moment when you get a few people questioning the ticket guards at the barriers. It just causes a prolonged backlog."

Commuter, group six, aged 30-55

There were mixed levels of comfort with updating a smartcard via a TVM or a barrier. Those who were most tech savvy tended to be most confident often because they simply had a higher degree of confidence in technology in general. Those who had used the Oyster card, or used a similar updating system with their Oyster card, also tended to be more comfortable with the idea. Those least confident were those who lacked confidence in technology, and felt they needed more information and more reassurances about how the system would work, and what would happen if for some reason the smartcard did not load.

11.6 Using the smartcard

Using the smartcard

Customers will need to 'touch-in' and 'touch-out' at all times.

Staff on trains will have hand-held equipment that enables them to check/ read smartcards.

Participants assumed that they would need to touch in and touch out their smartcard, so the information shown to them during the research came as no surprise (see left).

However, it did raise a few queries and concerns. Participants were keen to note that they felt that there were not enough barriers at stations to support this type of system, and were worried that queues would increase at stations. Some

highlighted concerns about what would happen if the barriers had a fault or were not working; in this instance staff presence was considered key and participants expected that any fault or failure with the smartcard technology would be resolved by a member of staff.

"It would be useful if it was on the train so if you didn't get a chance to tap-in then obviously if you've got points on the train then you can do that as well."

Commuter, group one, aged 20-35 years

During the research, participants were asked for their views regarding the data security of any smartcard-tracking data. For example, the data collected that records where a smartcard is used to touch-in and touch-out and therefore identifies an individual's journey. Participants did not raise this as a spontaneous concern. Even when prompted, very few participants considered this to be a problematic element of smartcards. Overall, participants agreed that this type of data would be safeguarded by the Data Protection Act, and felt that train companies would be legally obliged to keep this data secure and safe. Participants further

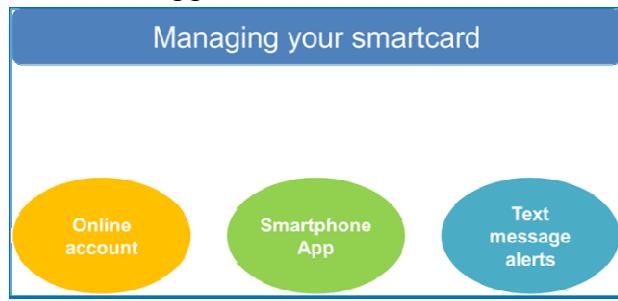
assumed that this data would not be sold on to any other company or used to sell products and services to passengers.

“As long as they don’t sell it... then I don’t care.”

Commuter, group five, aged 30-55 years

11.7 Managing your smartcard

Many participants spontaneously assumed and suggested that there would be some kind of online account management system that would enable them to manage their smartcard. When prompted with the different ways in which this could be enabled (see right), participants expressed different preferences depending on personal preference and technology ownership. For example, those with a smartphone were most likely to express preference for an app, whilst those with feature phones were interested in text messages.



Those interested in an online account mentioned the formats and features of online accounts they held for bank accounts, PayPal accounts and Oyster card as good examples. When thinking about an app, participants mentioned features that enabled them to look up timetables and find out about any delays as useful (the Trainline, train company specific and Oyster apps were mentioned as examples) and suggested that these features also be included in any online management for a smartcard. The types of features and functions desired are shown below:



Those with a preference for text messages felt that there were a number of messages that they would find useful including:

- alerts on the balance of their smartcard account
- reminders for ticket renewal
- alerts regarding delays on usual journey/train line/tube line.

It should be noted that text message alerts were considered an ‘opt-in’ service. Whilst many were positive towards this idea, some saw text messages as an intrusion into their personal space and expected to have a choice regarding whether they received these.

"I'd like a breakdown of what I use so I can monitor what I'm actually spending."

Commuter, group two, aged 20-35 years

"I'd want to be able to check journey history, see what my balance is and buy a new journey through it."

Commuter, group eight, aged 30-55 years

11.8 Aftercare

Expectations and suggestions for how to manage aftercare often depended on whether the query was immediate and how important resolution was for immediate onward travel.

For situations that arose at stations and could affect ability to complete a journey, participants strongly agreed that some kind of staff presence would be required and needed. Examples for when face-to-face staff help would be needed included:

- problems with TVMs/unable to purchase ticket/unable to upload ticket at TVM
- problems with barriers/unable to get through the barrier/unable to upload ticket at barrier
- smartcard lost or damaged whilst at the station/on the train
- smartcard not working.

In these situations, participants felt that access to a trained member of staff would be important. They further suggested that stations that were currently unstaffed would need to be staffed, especially if barriers were put in place. Many worried that they would be stuck at an unmanned station with a faulty smartcard or barrier which would prevent them from safely exiting the station.

Most felt that non-immediate queries could be resolved via an online management system or an app. Participants felt that these channels would be appropriate for the following types of queries:

- report a lost or stolen smartcard
- purchase a ticket renewal/resolve any problems relating to a ticket renewal
- check smartcard balance/raise and resolve any problems relating to smartcard balance
- check journey history/raise and resolve any problems relating to journey history or being over-charged
- claim money back if season ticket is forgotten/lost
- change personal details.

"I'd want to be able to go to the ticket office and they give you a new one on the spot."

Commuter, group seven, aged 20-35 years

"[I'd want to speak to] someone in a kiosk who knows what you are talking about."

Commuter, group five, aged 30-55 years

While most participants agreed that these queries could be resolved online or via an app some voiced a desire for some kind of face-to-face support. Some suggested that face-to-face support could be provided at a small number of hub stations, for example larger or more central stations.

Finally, a small number of participants suggested a telephone helpline. These felt that telephone provided a good option as it would enable them to express their problem to a person, without the requirement for it to be face-to-face. In particular, those with a visual impairment felt that telephone would be a good alternative to face-to-face support (although face-to-face would be their preference).

12 Smartcard products

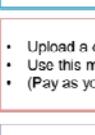
During the research, participants were asked which products they would expect to be able to load onto a smartcard. Participants assumed that they would be able to load any existing product onto a smartcard and there was some expectation that there might also be some new or different products available.

12.1 Potential new products

Participants were provided with the following information regarding potential new products. This information is detailed below. Participants were very positive towards the ideas for new products and felt that these would be a real benefit of holding a smartcard. It was agreed that some kind of cost saving was expected, with Oyster card users noting that Oyster had set the precedent for this.

Overall there were a couple of queries regarding these products.

- Participants queried whether they would be able to load more than one product onto their smartcard at any one time. Some felt that this would be useful, for example – they could have stored travel in addition to their season ticket for journeys that took them outside of their usual ticket.
- Some participants wondered whether the products and smartcards would only be applicable to one train company. This was particularly top of mind for those who had a choice of train company, and currently held a ticket that enabled them to use whichever one they chose for their commute. These participants noted that it would be important for them to be able to continue to do this with a smartcard and were resistant towards the idea of a train company-specific smartcard that only allowed travel with that individual train company.

Potential new products (1)		Potential new products (2)	
 Tailored Season ticket	<ul style="list-style-type: none"> Purchase a season ticket on a smartcard. If you travel outside of peak times (7am-10am and 4pm-7pm) this would entitle you to a discount. Your travel times are recorded and if you travel outside of peak times a discount is calculated and credited to your smartcard. 	 Post Pay	<ul style="list-style-type: none"> Use the smartcard to travel when you need to. Cost of this travel will be billed regularly to the holder's account.
 Carnet	<ul style="list-style-type: none"> Purchase 'x' number of days of travel or 'x' number of individual trips in advance. These tickets have a cost saving: buy 12 tickets but pay for 10. These are then stored on your smartcard and you use them as and when you need to. For example, buy 12 x day returns from St Albans to Blackfriars and use these and when you need to. 	 Stored Travel	<ul style="list-style-type: none"> Upload a chosen amount of money on the smartcard. Use this money to pay for travel as and when needed. (Pay as you go).
		 3-day season ticket	<ul style="list-style-type: none"> Buy a ticket valid for a month that allows you to travel any 3 days per week.

12.1.1 Tailored Season Ticket

Participants were very positive towards the potential money savings they could make with a tailored season ticket. Many felt that it would be particularly useful on Thursday and Friday evenings when they tended to leave for home after peak times due to social engagements. However, this product was most positively received by those who had the option of flexible working hours. There were a few suggestions across the research that this tailored approach be made applicable to weekends and some felt that being able to mix and match peak and off-peak tickets would be beneficial.

“Travelling home usually is off-peak for me so being able to do half and half would be really good.”

Commuter, group four, aged 20-35 years

“If you’re out after work having a drink that means you can save some money!”

Commuter, group one, aged 20-35 years

12.1.2 Carnet

The idea of a carnets was spontaneously mentioned and suggested by participants. Some currently used a carnets ticket on First Capital Connect, whilst others had used a similar type of ticketing scheme abroad and felt that it would be a good product to have available for their own journeys. The key benefit of a carnets was the flexibility it offered, and participants also responded extremely favourably to the easy to see cost saving element. Carnets were particularly liked by part-time workers.

“That’s a very good idea. I like that a lot... That’ll do for me.”

Commuter, group three, aged 30-55 years

12.1.3 Post pay

Post pay received mixed views. Whilst some agreed that post pay was a convenient option that would be useful in emergencies and if they did not have any cash to purchase a ticket, most expressed concern over the lack of control that this option provided. This was particularly the case for those who liked to keep a clear view of their budget, and worried about the idea of receiving a large, unexpected bill at the end of the month. Concerns were somewhat alleviated when it was suggested a cap be put in place to limit the amount of money that could be spent, but this further encouraged participants to consider post pay as an emergency option. Some participants worried what would happen if a post pay-enabled smartcard was lost; these participants envisaged people using post pay to make unlimited journeys until the smartcard was identified as lost and stopped. In this instance, it was agreed that there would need to be clear guidelines in place regarding responsibilities for unauthorised journeys made.

“If you could limit this... so you didn’t get a nasty surprise.”

Commuter, group five, aged 30-55

“It’s just another way for people to get in debt... What happens if you didn’t pay? Do you get debt collectors at your door?”

Commuter, group two, aged 30-55

12.1.4 Stored travel

The idea of stored travel was familiar to participants who identified it as a version of PAYG. Familiarity with this type of scheme led to general comfort and a positive response towards this product. Many noted that they liked the control on spend that it offered. The appeal of PAYG as a standalone product on a smartcard was strongest among part-time commuters, whilst others saw it as an add-on that would stand alongside a season or weekly ticket, for unexpected journeys.

“Nice to be able to see how much they’ve taken so you know you’re being charged correctly... you could go to the machine and see the journeys you’ve made.”

Commuter, group four, aged 20-35 years

12.1.5 Three-day season ticket

The suggestion of a three-day season ticket was popular amongst part-time commuters who felt that this type of product would best fit their journey requirements. These participants suggested that there should be the opportunity to tailor this type of ticket to best meet your needs, with some noting that a two-day season ticket would be better, whilst others preferring a four-day ticket. There was some discussion across the groups regarding what would happen to any unused days within the month period, with most thinking that any such days should be carried forward to the next month.

“Great idea, especially for people who work part time.”

Commuter, group eight, aged 30-55

12.2 Disabled Persons Railcard

Disabled participants were asked about their experiences of current ticketing and their thoughts on smart ticketing. They were also presented with a new idea for how the Disabled Railcard could work with smart ticketing.

Disabled Railcard
Disabled railcards can be uploaded onto smartcards.
The disabled railcard holder will be issued with two smartcards.
Their own smartcard will be flagged to ensure that their tickets are discounted.
<p>The second card will be used by the person accompanying the disabled railcard holder.</p> <p>The second card means that the person accompanying also gets the discount.</p> <p>The second card will have the name of the disabled railcard holder on it.</p>

The reactions to the disabled railcard concept were very positive indeed. Some insight gathered on the current ticketing situation in relation to Disabled Railcards explains this reaction well. The following case study provides a good example.

Case study: Sarah

Sarah is registered blind and is accompanied by her guide dog Jasper on her commute to work five days a week on the c2c from Southend to Fenchurch Street. She has a Disabled Persons Railcard which she uses to purchase a paper ticket every morning from the counter. When asked why she didn't buy a weekly or a monthly ticket, Sarah said that she didn't know if she'd get the Disabled Railcard discount on the ticket.

"I use paper ticketing at the moment and I have a disabled railcard so I get the discount fare but I can only buy the paper tickets daily. I'm not even sure if I can get the discounts on a weekly so that's why I do it that way rather than getting a weekly or monthly ticket."

She has to get up extra early every morning to avoid the queues at the ticket counter and this can make her daily commute quite challenging.

"It's quite awkward because sometimes I'm in a rush as well in the morning, [and you've] got to queue up... I have to go to the ticket counter because I'm not able to use the machines."

The barriers at Fenchurch Street are always manned and they open them for her in the mornings. However, evenings can be a bit hit and miss and Sarah has to ask other passengers to help her with tickets at the barriers. She'd rather do this herself.

"At the moment I get passengers to help me put my ticket through because it's a paper ticket and I don't know which way round it goes. I'd like to be able to do it myself."

When presented with the concept of smart ticketing, which could be combined with their Disabled Railcard to enable the discounted travel, the reactions from disabled passengers were very positive indeed. The Disabled Persons Railcard with an additional one for a companion was seen as a very good idea. They were particularly reassured that the second card would have their name on it and that it could only be used if they were travelling as well. However, there were some questions around how payment of the tickets for the second railcard would work.

"It sounds good but I wouldn't want to end up paying twice... I can envisage having two cards in my name, maybe I'm being silly but I can envisage problems with that."

There is a strong feeling that the companion card should not be linked to any credit card and should only be topped up using cash over the counter. However, the Disabled Railcard holder's smartcard can be linked to a credit card to allow season tickets to be added either at the counter or over the telephone.

Ideally these participants would like to be able to buy weekly, monthly or annual season tickets using their Disabled Persons Railcard, so smartcard technology appeared to present the ideal solution.

In terms of the design of the smartcard, a photocard was seen as extra security. For visually impaired passengers it was important that it has a raised surface or perhaps Braille to allow the user to hold it the right way for tapping in and out.

"As long as there was some kind of raised area on the front of the card... there'd need to be some kind of Braille or identifier that you can tell where it is..."

Telephone contact was particularly important for visually impaired passengers who rely on National Rail Enquiries for train times and ticket costs. While smartphone apps, text messaging and online accounts were ideal ways of managing smartcards for most, some disabled participants expressed a desire for a telephone option to manage smartcards.

"I'm using them as my eyes to help me do things that I would have no idea what to do."

"Useful to have a call centre just in case smartphone app isn't working."

"Because you're not always able to get to the computer or you're not always able to use the iPhone and with the phone you've got the choice of speaking to someone as well."

Disabled participants used smartphones in a variety of ways. With some using the iPhone and Siri and voice over technology and wireless Braille displays there was an expectation that mobile ticketing would deliver a similar service. Other smartphone users relied on call centres to retrieve emails and text messages so would expect a similar service from the train operating companies.

It is important that any m-ticketing system is compatible with all mobile phone platforms and operating systems. However, some expressed concern at train operators' capacity to do this and would need to be reassured that train companies have the technological expertise to ensure that it all works properly.

"They (train companies) don't know anything about apps. It's down to developers so if you don't employ people that know a lot about apps then they're not going to have the know-how."

"Need to make sure the phone and technology work with voice-over."

12.3 Family Railcard

While not prompted as part of the research, some queries regarding the use of a Family Railcard on a smartcard were spontaneously raised. Participants envisaged that a Family Railcard would be purchased and loaded onto a smartcard. However, they wondered how this would then work when they arrived at the train station and needed to go through the ticket barrier. They queried whether the barrier would then know to let more than one person through. This query further highlighted to participants the need for station staff to be at hand for queries and instances where the touch-in, touch-out system did not work or was unclear.

12.4 Delay Repay

Participants were asked for their views regarding the potential for a smartcard system to automatically calculate delay repay and appropriately credit the smartcard account or provide a discount on the next season ticket. They were extremely positive towards this and felt that it went some way towards tackling difficulties with the current compensation process. Many felt that the current process was admin-heavy and a 'hassle'.

"At the moment you can't be bothered to go online and fill out the whole form and then you just get in the post that single ticket..."

Commuter, group four, aged 20-35 years

In addition to making the process easier, some participants also felt that an automatic calculation of compensation could encourage train companies to address problems with delays. Furthermore, they felt that it would provide excellent PR for train companies.

While very positive towards the idea, a few participants expressed some scepticism around whether train companies would really be willing to put this in place. Others simply queried how the scheme would work in practice, especially those who had a choice of train company to make their commute and wondered how train companies would know which train they had been planning to board.

“Good idea, but how often are they 30 minutes late – you just get on another one.”

Commuter, group two, aged 20-35 years

12.5 Loyalty rewards

The idea that smartcards could be linked to loyalty rewards was not surprising. Many agreed that loyalty schemes and rewards were something that most large companies and organisations did, and seemed to be a natural evolution for train companies. Participants were keen on the idea that, as regular passengers, they could receive benefits and suggested a range of ways for how this could work. Some envisaged that points could be collected for each ticket purchased with a smartcard and there were a variety of suggestions for how these points could be used including travel with that train company, travel in general (not limited to particular train company) and links to other companies or organisations such as supermarkets and cinemas.

“Well before FCC took over there was always a 5% renewal discount – probably good to have some sort of discount.”

Commuter, group four, aged 20-35 years

13 Mobile ticketing

Participants were shown some alternative forms of smart ticketing and asked to consider whether they would use them in the future and to discuss their barriers and motivations with engaging this form of smart ticketing technology.

One of these forms of smart ticketing is mobile ticketing, also known as ‘m-Ticket’.

Alternative smart ticketing 1	Alternative smart ticketing 2
Mobile ticketing	
<ul style="list-style-type: none"> • Mobile ticketing is also known as ‘mTicket’. • It allows your mobile phone to be used as your train ticket. 	<ul style="list-style-type: none"> • One option for using your mobile phone would be to have a tag which you attach to your mobile phone. The tag looks like a sticker. • This would sync with your mobile phone and you would tap it in when you travel. • If your mobile phone ran out of battery power the tag attached to your mobile phone would still work.
<ul style="list-style-type: none"> • You buy your ticket on your phone anyway at any time. You then use your mTicket in one of two ways: <ol style="list-style-type: none"> 1. A bar code is sent to your phone and you scan this on a special reader at the station or it is scanned by train staff using a hand-held device. 2. You receive an image of your ticket on your phone which is used like a paper ticket. 	<ul style="list-style-type: none"> • Another option is that your mobile phone is used to tap in and tap out. • There would be no bar code to scan. • Your phone would be recognised by the ticket reader by a signal.

Overall, mobile ticketing feels more simplified and up-to-date. Participants were positive about the *idea* of mobile ticketing but slightly mixed when considering how it would *actually work*.

Generally mobile ticketing is seen as convenient and easy to access simply because mobile phones are carried by most people currently.

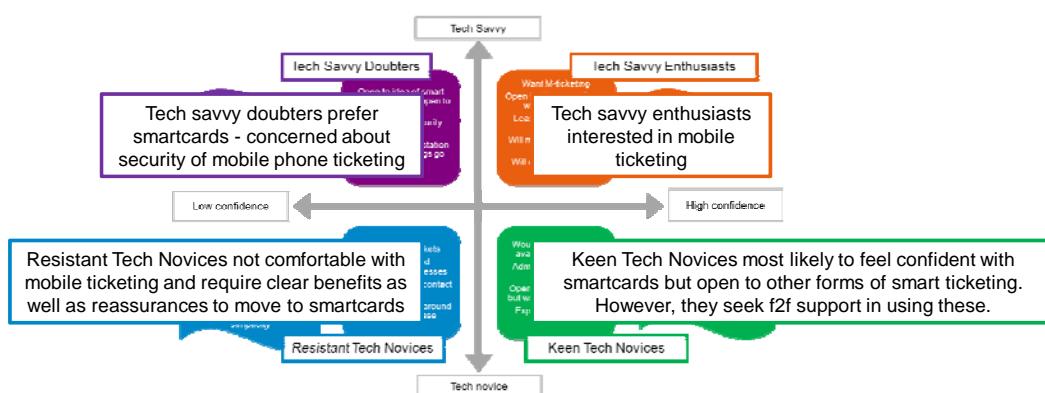
"The airlines do it now, when I go with British Airways I've got their app and it does your boarding pass on to your iPhone. I like it because I've got the confidence that I'm not going to lose my boarding pass but actually the staff prefer paper because it's quicker for them."

Commuter, group six, aged 30-25 years

By having the ticket on a mobile phone it is assumed that there would be no need to use a TVM or to have to upload the ticket, making the journey planning and commute smoother. It should be stressed that there was an expectation of immediacy, so that if a ticket was purchased via their mobile phone then they would receive the ticket immediately.

Participants assumed that they would be able to buy tickets using a smartphone app on an ad hoc basis whilst they were on the go, taking the stress out of journey planning and ticket purchasing.

However, not everyone was keen on mobile ticketing and the varying levels of enthusiasm amongst participants towards mobile ticketing are clearly illustrated below:



As well as attitudinal barriers, their concerns focus on everyday practicalities such as technology failing them, damage or loss of their handset.

"I just have this vision at the busy barrier, dropping your phone on the floor and it like getting trampled on."

Commuter, group one, aged 20-35 years

"Even tapping out at stations like [NAME], sometimes they are really quiet and if you're getting your phone out at night and tapping in and out someone could just be there."

Commuter, group one, aged 20-35 years

"Phones can get pinched whereas your ticket, well it's in your trouser pocket."

Commuter, group three, aged 30-55 years

"What about if your battery died?"

Commuter, group eight, aged 30-55 years

Even amongst enthusiasts, questions were raised about how mobile ticketing would work in practice. Some worried that smartphone batteries are prone to run out quickly so this could mean that they would not be able to access their ticket, and therefore have no proof of purchase. Quite closely linked to this is the risk of no signal; the recent O2 outage caused inconvenience to millions of customers and this follows the problems that BlackBerry customers experienced in late 2011. While these were isolated incidents, it is worth considering any future impact on mobile ticketing and how the train companies would manage this. Given the concerns around battery life and network coverage, participants placed some value on mobile ticketing being used as a back-up for the smartcard.

Participants were shown two types of on-screen mobile ticketing. One had an electronic image of the actual ticket, and another showed a QR code that would require scanning (see right).

Reactions to the types of mobile ticketing were varied. Those who have used QR codes on their phone are more familiar with the idea but have had mixed experiences. Whilst many felt the technology is easy to use, they felt the scanning process can be time-consuming. Visually-impaired respondents also raised concerns about this technology as they would require assistance at the barriers to make sure they made contact with the validator.

Most preferred the image because it includes details of the journey, however, concerns around battery life outweighed the benefit as a standalone ticketing solution.



"I just think it would be easier to read from a barcode."

Commuter, group six, aged 30-55 years

"I have used that for a separate journey... through Virgin... for that one-off journey that was separate from [work commute] it was useful but I'm not sure it would work every day."

Commuter, group four, aged 20-35 years

"If your card is broken I can see it working as a backup as it would be the same thing on your phone."

Commuter, group four, aged 20-35 years

Alternative smart ticketing 2

- One option for using your mobile phone would be to have a tag which you attach to your mobile phone. The tag looks like a sticker.
- This would sync with your mobile phone and you would tap it in when you travel.
- If your mobile phone ran out of battery power the tag attached to your mobile phone would still work.



- Another option is that your mobile phone is used to tap in and tap out.
- There would be no bar code to scan.
- Your phone would be recognised by the ticket reader by a signal.

To address concerns around battery life, participants were shown another mobile ticketing option. This involved a sticker or tag being attached to the phone that would then 'sync' with the mobile meaning if the phone runs out of battery the tag would still work (see left).

As well as resolving battery-life concerns, participants thought the tag would make it easier to scan. However, many questioned the aesthetics and the likelihood that smartphone users would want to put a sticker on their phone. Other concerns centred on risk of theft or accidentally dropping or damaging the phone; given the cost of some handsets, it is perhaps not surprising that there is some anxiety around this.

"Why would you want to put a sticker on your phone?"

Commuter, group one, aged 20-35 years

"I like the fact that if your battery goes down. That's a good idea. The only uncertainty about that someone could just come up and grab your phone and use it all over."

Commuter, group six, aged 30-55 years

"Nice idea but you're suddenly going to end up with five tags. I've already got one for Barclaycard and then you'll get one from the train company and the next thing you know you'll end up with five stickers on your phone."

Commuter, group four, aged 20-35 years

14 Wave and Pay ticketing

Participants were also shown a Wave and Pay concept to understand potential concerns and barriers to this form of ticketing (see right). The main benefits of Wave and Pay were that it is already familiar to some participants and some saw it as a way to avoid queues.

However, while there was familiarity with the concept, there were also concerns around the security of financial transactions and room for error. There was a strong feeling that there is potential for mistakes with charges more of a concern when linked directly to their credit or debit card. There were also questions around how to avoid being charged if they are passing through a barrier using an alternative ticketing option. Participants also wanted to know what products would be available to use with it and some queried how a season ticket would work on a Wave and Pay. Some also raised questions around proof of purchase and how they would present their card to the ticket inspector.

Alternative smart ticketing 3	
Wave and Pay	<ul style="list-style-type: none"> • A 'wave and pay' card allows you to make contactless payments using a standard credit card or debit card.
<ul style="list-style-type: none"> • The payment is secure. • There is no need to sign or enter your PIN, instead you hold your card in front of a special contactless card reader to make a payment. • This is used like a 'pay as you go' card – money is automatically deducted when you make a journey. 	

“Wave and Pay wouldn’t take in to account people like me, season ticket holders. I’m going to get a set fee but the whole idea is it’s going to give me the full fare every day. It’ll cost me an arm and a leg.”

Commuter, group eight, aged 30-55 years

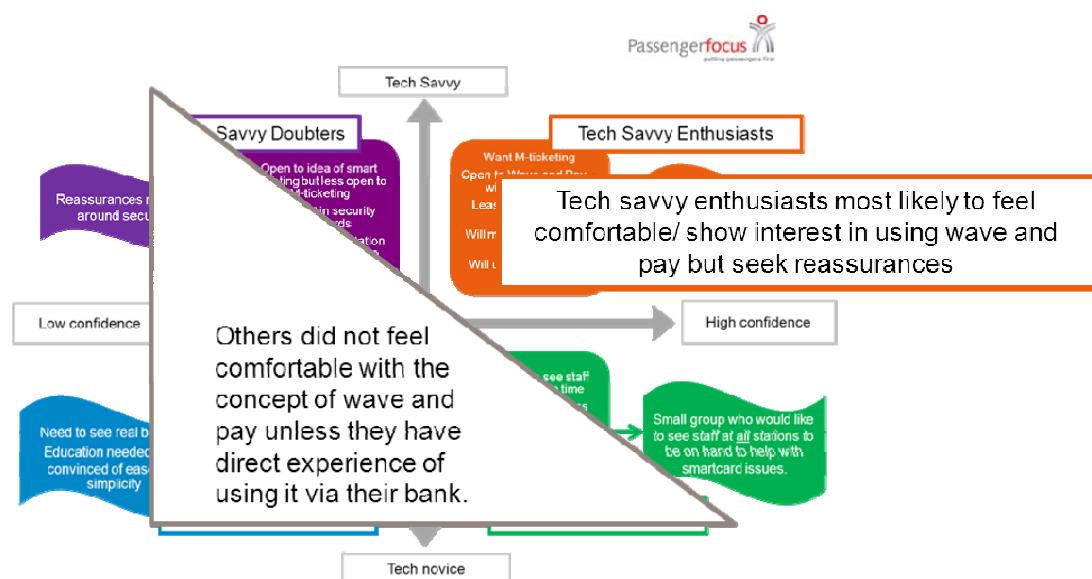
“I don’t think I’d like to use it because when you do use your card it’s either with a pin or then online you have security whereas this, there’s no security at all.”

Commuter, group one, aged 20-35 years

“I would use that because I use it already.”

Commuter, group two, aged 20-35 years

The following diagram shows the appetite for Wave and Pay voiced across the research across the different mindsets. As shown, it was clear that those with most knowledge about technology and confidence in smart ticketing – Tech Savvy Enthusiasts – were most open to the idea of Wave and Pay although they wanted reassurances regarding how it would work in practice and be made secure. Other mindsets were less open to this idea, with many dismissing it for not being secure; these participants disliked the idea of using the credit card for other types of transactions. Amongst these mindsets the only people who were clearly open to the idea of Wave and Pay were those who had prior experience of using it.





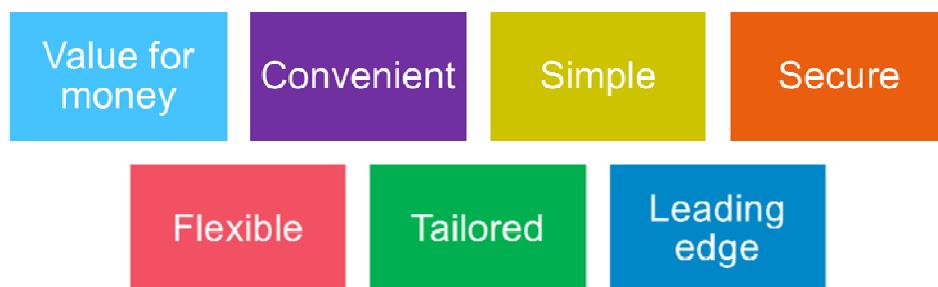
Key insights

The research conclusions

15 Key insights

15.1 What are the important factors when thinking about smart ticketing?

Overall participants were receptive to the idea of smart ticketing and were keen to understand how it would work in practice. When thinking about the introduction of smart ticketing, and preferences for how this would work, there were seven key factors that influenced participant attitudes and views:



Value for money: Value for money was a key influence on ticket choice at the moment, and remained as important when considering smart ticketing. Participants expected that smart ticketing would involve some kind of cost saving, either via cheaper fares or new cost-effective tickets and products.

Convenient: Smart ticketing needs to be a convenient option that is easy to use. Participants wanted a ticketing system that made life easier, rather than complicating their commute. When thinking about convenience, participants noted that they would like a system where it is easy to purchase tickets, manage their smart ticket account and use their ticket.

Simple: Simplicity is important, especially for those unfamiliar with smart technology or smart ticketing. These people were most likely to need education regarding how smart ticketing would work, and a simple system is likely to support them in moving to smart ticketing.

Secure: Participants were concerned about the security of smart ticketing. When thinking about smartcards, participants raised concerns regarding the security of their personal data – especially any details that would be visible on the card. When thinking about mobile ticketing and Wave and Pay, many expressed concerns around the safety and security of their mobile phone or credit card, and the potential for theft when using these.

Flexible: Alongside a convenient and easy-to-use system, participants wanted smart ticketing to be flexible. They wanted the ability to choose and purchase new products and tickets that offered flexible travel options. They also wanted flexibility with managing their smart-ticketing account to include being able to make ticket purchases at the last minute and being able to upload tickets at a range of stations.

Tailored: In addition to new products enabling participants to tailor their smart ticket products to their needs, tailoring in managing their smart-ticketing account is also desired. It was clear that many sought the ability to manage online, and via an

app. Participants noted that they would like to choose how they prefer to manage their account (online, app, text message), and looked for reassurances that this would be tailored to be compatible with the technology they own, for example Apple and Android compliant.

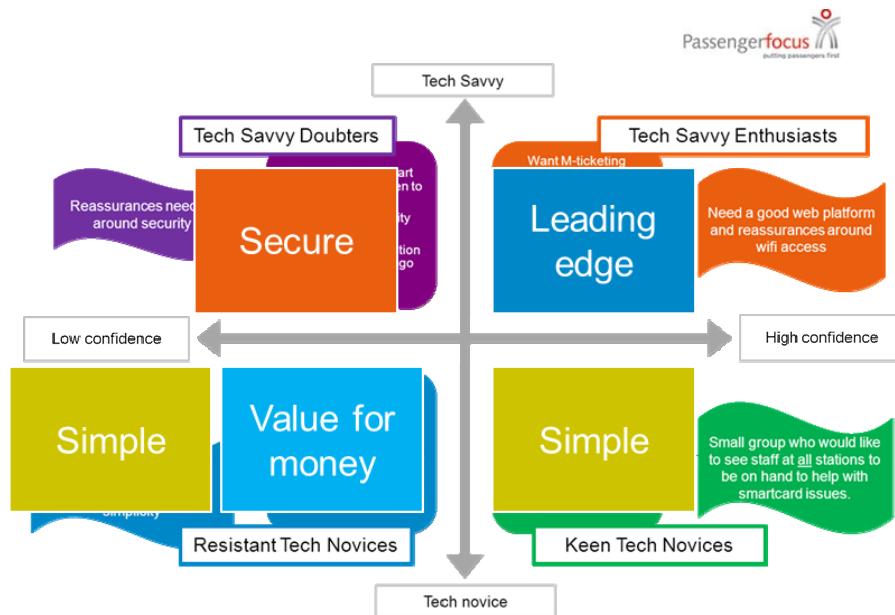
Leading edge: Participants were clear that the introduction of smart ticketing was a shift into a more technology-focused way of ticketing. So they were keen that the technology used is forward-thinking. This was particularly important for those who were familiar with smart technology and smart ticketing, and who saw this as an opportunity for train companies to lead the way in ticketing technology rather than replicating existing systems. These participants tended to be more positive towards the idea of smartcards and mobile ticketing.

15.2 Who thinks these factors are important?

While all of the factors detailed above have some universal appeal, it is clear that some were more relevant and particularly desired by some key groups of participants.

Below we have shown where there was particular relevance of factors across the passenger mindsets. As discussed earlier, these qualitative mindsets summarise attitudinal characteristics of groups in the research sample and are based on two key attitudes:

- confidence in smart ticketing (horizontal axis in diagram below)
- experience of smart technology (vertical axis in diagram below).



Tech Savvy Doubters (top left quadrant)

Tech savvy doubters were familiar with smart technology but expressed concerns regarding the security of any smart ticketing system, particularly citing concerns regarding the printing of name and photograph on a smartcard, and using valuable mobile phones or credit cards as tickets. This group in particular would need reassurances regarding the security of any smart ticketing system.

Resistant Tech Novices (bottom left quadrant)

These participants were unfamiliar with smart technology and lacked confidence in smart ticketing – often because they have not used it and had many queries about how it would work in practice. These participants required clear benefits to encourage them to move to smart ticketing. This included clear ways in which smart ticketing would provide value for money, and reassurances that it would be a simple system to use.

Keen Tech Novices (bottom right quadrant)

Whilst keen tech novices were keen on the idea of smart ticketing, they lacked experience and familiarity with smart technology, and therefore needed a simple smart ticketing system that is easy to use and understand.

Tech Savvy Enthusiasts (top right quadrant)

Familiar with smart ticketing (typically the Oyster system but with a couple having tried m-ticketing), and welcoming to the idea of smart ticketing, tech savvy enthusiasts were keen that any introduction of smart ticketing would use leading-edge technology which would provide a good user experience that is compatible with the smart technology they own.

15.3 How do the proposals for smart ticketing deliver these factors?

The table below details reactions to the smart ticketing proposals. Reactions are structured by the seven factors that people thought about when considering smart ticketing. The table shows which elements of smart ticketing met customer needs (likes), which caused concern (concerns), and where there were suggestions for how customer needs can be met (needs/suggestions).

	Value for money	Convenient	Simple	Secure	Flexible	Tailored	Leading edge
Likes	<ul style="list-style-type: none"> • New products • Delay repay • Loyalty scheme 	<ul style="list-style-type: none"> • Buy ticket in advance • Avoid queues • Apply and manage online 	<ul style="list-style-type: none"> • All on one card • Touch in/ out easy • Durable card 	<ul style="list-style-type: none"> • Ability to register • Online management • Photo ID 	<ul style="list-style-type: none"> • New products • Online management 	<ul style="list-style-type: none"> • New products • Different management options 	<ul style="list-style-type: none"> • Different smart technology options • Online management
Concerns	<ul style="list-style-type: none"> • Deposit cost 	<ul style="list-style-type: none"> • Capacity and capability of TVMs/ barriers • Lack of auto-transfer for uploading tickets 	<ul style="list-style-type: none"> • What if something goes wrong? • Can be confusing for those new to smart ticketing 	<ul style="list-style-type: none"> • Photo and name on card • Security of mobile/ credit or debit card 	<ul style="list-style-type: none"> • Ease of getting tickets for last minute journeys • Nominating station for uploading card 	<ul style="list-style-type: none"> • Different preferences for smart technology 	<ul style="list-style-type: none"> • Some are not comfortable with mobile and wave and pay tickets
Needs/ suggestions	<ul style="list-style-type: none"> • Clear financial benefit for using smart ticketing (esp. Oyster users) 	<ul style="list-style-type: none"> • Increased number of TVMs/ barriers • Reassurances re capacity and capability • Auto-transfer of tickets • Efficient and easy online system • Telephone option for sensory impaired. 	<ul style="list-style-type: none"> • Education and support for those new to the system. • Support/ help from staff when things go wrong at station. 	<ul style="list-style-type: none"> • Reassurances regarding data use • Rationale for photo/ name • Clear routes for resolving lost/ stolen card/ mobile/ credit or debit card 	<ul style="list-style-type: none"> • Auto-transfer of tickets • Online tools that enable quick and easy ticket purchase/ management 	<ul style="list-style-type: none"> • Suite of ticket options. • Choice for which smart technology you prefer to use • Choice for management option 	<ul style="list-style-type: none"> • Choice for which smart technology you prefer • Online management including app and text message that has number of functions

15.4 What are the overall customer needs?

Taking an overall view of attitudes towards smart ticketing, concerns, and preferences it is clear that there are five key customer needs that should be addressed with any introduction of smart ticketing.

15.4.1 Financial benefit of moving to smart ticketing

There was an assumption that smart ticketing would involve some kind of cost saving to the customer. Participants were keen to see the financial benefit of moving to smart ticketing, and those most resistant to the idea of moving to smart ticketing would likely be persuaded by a financial benefit.

15.4.2 Reassurances regarding capabilities and capacity

Participants expressed some concerns regarding train companies' capability and capacity for introducing a smart ticketing system. These were often focused on the number and reliability of ticket vending machines (TVMs) and barriers. It was clear that some reassurances would be needed with regards to how these would work, along with solutions for how to overcome any issues regarding TVMs/ barriers not working.

Thinking further about capabilities, there were also some clear expectations in terms of the technology that would be used to enable smart ticketing. Those who were confident and familiar with smart technology expressed an interest in mobile ticketing. They showed more limited interest in Wave and Pay.

Finally, when thinking about capabilities it is clear that some participants expected an integrated ticketing system that could be used across train companies and TfL/Oyster card zones. This desire was voiced by those who have a choice of train companies for their regular commute, and those who currently use Oyster to travel across London as part of their commute.

15.4.3 Reassurances regarding security

Security was a key issue, and clearly top of mind for many. These participants wanted reassurances that any smart-ticketing system will be secure and protect their personal data. Concerns were also raised regarding the safety of using high value items such as mobile phones or credit cards as tickets. Some reassurances regarding the security of this is likely to alleviate some concerns and make these ticketing options more attractive to some, but many would simply be unwilling to use this method.

15.4.4 Education and support

The research highlights the range of smart technology and smart ticketing experiences among the general public, and therefore the range of knowledge and comfort levels that they would bring to any new smart ticketing system. It is clear that some would require education about the concept of smart ticketing and its basic functionality.

Ongoing support would also be required. Many participants expressed concerns regarding what would happen if they had a problem such as their smartcard stopping working, or problems with TVM or barrier. They felt that in these instances there should be a member of staff available to provide help and resolve their query. Across the research participants clearly expected that staff would be available to help and provide support.

15.4.5 Online tool/management system

Individuals anticipated that they would be able to manage their smart ticketing account online or via smart technology or mobile phone. The main activities participants felt it would be useful to be able to do online, including ticket purchasing and renewal, viewing journey history, getting timetables and accessing details of planned and unplanned delay and disruption. Participants wanted to manage this via their choice of technology; mobile phone, smartphone, or tablet.

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