

Smart ticketing – mobile apps

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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, properly implemented and clearly communicated.

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 are undertaking 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 third in the programme of research exploring passengers' needs and attitudes to smart ticketing, considers passengers' use of apps in public transport, and particularly on rail. The first piece of research in the programme was *Smart ticketing – what passengers want* and the second was *Smart ticketing – the Oxford SmartZone*.

A combination of focus groups and individual interviews looked at rail passengers' current use of apps (rail, public transport and others) and their reactions to existing apps and potential enhancements, including some which could accompany smart tickets. The research took place in London, Oxford, Brighton and Stockport.

Our study found that many passengers use and love some apps as they provide shortcuts to managing daily life.

In general terms, for any app to be successful, it should be focused, presented clearly and cleanly, up to date and accurate, and be positioned as a mobile version of a more detailed on-line version. It should also be offered by a trusted provider and ideally be able to be customised by the user.

Yet, there is surprisingly limited awareness of rail apps currently, even among train commuters who regularly use numerous other apps. When passengers were shown current rail and travel apps, these were generally well liked and some potential improvements were also welcomed. We would urge providers of apps to promote their apps and encourage use as passengers can find them to be a tremendous help in information gathering and ticket purchase.

However, apps will never appeal to all: many do not have smartphones or tablets and others who have them do not wish to use them for these kind of activities. So it is important that traditional forms of communication and support for passengers, including staff, are maintained alongside apps and other technological advances.

Passenger Focus

“There must be an app for that!”

Smartphone and tablet applications for rail passengers

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Contents

1. Management summary	1
1.1 Background and methodology.....	1
1.2 Summary of findings	1
1.2.1 Rail apps: fitting into passengers' lives and journeys	1
1.2.2 Specific functions of rail apps	2
2. Background	4
3. Rail passengers' use of apps in general.....	6
3.1 Current usage of apps	6
3.2 Features of successful and unsuccessful apps	9
3.3 Paying for apps.....	12
3.4 Accessing apps	13
4. Rail apps: the current landscape.....	15
4.1 Rail passengers' current familiarity with apps	15
4.2 Existing usage of rail apps	18
4.2.1 Frequent rail journeys.....	18
4.2.2 Less frequent rail journeys.....	19
5. Passenger feedback on specific features of rail apps.....	21
5.1 Planning / researching a journey.....	21
5.2 Purchasing rail tickets.....	24
5.3 Carrying an 'm-ticket'	27
5.4 Checking live status and live departure/arrival boards	28
5.5 Checking information during a journey	29
5.5.1 Live journey progress	29
5.5.2 Multi-leg information	31
5.6 The role of apps during disruption to rail services	32
5.6.1 Planned/known disruption.....	32
5.6.2 Unplanned disruption.....	33
5.6.3 Disruption for which passengers are eligible for compensation.....	34
5.7 Potential future uses of apps	35
5.7.1 Additional information for planning a journey	35
5.7.2 Interacting with train companies	36
5.7.3 Mobile apps and smart ticketing	36
6. The app 'provider'	39
7. Appendices.....	41
A. Summary of sample structure	41
B. Discussion guides.....	44
B (i) Mini focus groups among app users	44
B (ii) Focus groups among very light/non-users of apps	53
C. Stimulus used in the research.....	61

1. Management summary

1.1 Background and methodology

The Department for Transport (DfT) is undertaking research around smart tickets and other ticketing solutions, and related technology such as mobile apps and websites. As part of this, qualitative research was carried out among rail passengers to understand their requirements for the content and functionality of smartphone apps. This will help to inform further app development in the rail industry.

This research involved discussion of broad issues relating to rail apps, and of some specific features of existing apps. A range of passenger types were included, including those who are already familiar with rail apps, those who use apps but not for travel, and those who do not use apps (but have smartphones or tablets). The research also included a range of passenger types in terms of their journey purpose, routes used, and frequency of use.

This report provides the findings from the research, looking first at rail passengers' use of apps in general (i.e. not necessarily transport-related), then at the role of apps within rail travel, and passengers' feedback on some existing rail apps.

1.2 Summary of findings

1.2.1 Rail apps: fitting into passengers' lives and journeys

- There is great momentum behind app usage, and now is the right time to be ensuring the rail industry is up to speed in this arena.
- Apps are useful, and loved, when they provide short-cuts to managing daily life; therefore successful rail apps must be:
 - focused
 - presented clearly and cleanly
 - up to date and accurate
 - a snapshot of a more detailed online version (in terms of content, interface and presentation).

Ideally, apps will also have the potential for customisation, and will have a 'cool' or clever element to them.

- Currently, awareness of rail apps is low, but on the whole passengers are very positive about existing offerings, when they are introduced to them. Generating greater awareness and take-up is therefore necessary, as it can genuinely benefit passengers. In particular, announcing apps on train company or other rail websites and other major passenger interfaces (such as on posters at stations) will be important in generating this awareness.
- Paying for rail apps feels inappropriate for many passengers. This is for three key reasons:
 - rail travel is often viewed as a 'service' about which information is a 'right'

- passengers feel they already pay a great deal of money to train companies, and therefore begrudge additional fees for information which they expect to be part of the service
- information about rail services is freely available from other sources.

Despite this, paid-for rail apps do already exist and are used. This research did indicate that, for frequent users in particular, an invaluable rail app can be worth a fee.

- Apps for rail travel may never appeal to all rail passengers: many passengers do not have smartphones or tablets, and even among those who do, they do not necessarily download and use apps on those devices. Therefore ‘traditional’ forms of communication at stations and on trains, including staff, retain their necessity alongside apps and other new technologies.
- The ‘owner’ or provider of an app has an important role in whether passengers are aware of the app in the first place, and whether the app has credibility.
 - Ideally this provider will be a credible company which the passenger has dealt with successfully before. For example train company-branded apps.
 - However, there is currently a lack of knowledge as well as disbelief around the fact that train companies can provide information and sell tickets for other operators’ services as well as their own. This means that, for some passengers, app providers such as National Rail Enquiries and thetrainline are preferred because they are perceived to be independent.
 - Although different passengers have varying preferences for the provider of their app, the current mix of options seems appropriate and these different preferences are well-catered for. It therefore does not seem necessary for anyone to introduce a completely new app to replicate functionality and fill any gaps. Promoting awareness and take-up of existing apps on offer should be a higher priority.

1.2.2 Specific functions of rail apps

- The nature of apps lends them to accessing concise pieces of information while on the move. Therefore it is logical that passengers find the most intuitive function of apps for rail travel is quickly checking live information such as train progress/status, departure/arrival details and next leg details, which are relevant at the moment.
- Other existing functions are used less often, but are still useful and it is right that they are available
 - Journey planning features are useful in their own right, especially since it is possible to save common journeys. They can also be crucial for last-minute changes of plan during disruption.
 - Features for purchasing and carrying tickets have a niche appeal currently due to low awareness and some concerns about security and practicality. However, for most passengers the benefits outweigh any security risks, meaning that as use of mobile ticket technology grows, these features have potential to be very popular. Reassurance that all journey options and

tickets are offered is likely to aid take-up, as is increased confidence among passengers that rail staff will have the knowledge and equipment to accept tickets carried on a mobile.

- At times of disruption
 - Apps should provide information on how a journey is affected in terms of timings, and proactive, customisable alerts should be available if disruption is anticipated in advance.
 - Bespoke advice for individual passengers and their own journeys would be ideal, but this is not always practical or expected. Instead, apps' journey planners and live information features can allow users to find their own alternatives, especially if apps can be developed with multi-modal capability. Importantly, other information sources – especially staff (i.e. human interaction) – will also remain crucial.
 - Features to help smooth the process of claiming compensation will be very popular.

The concept of smart ticketing is popular with rail passengers, and managing a smart ticket account through an app will be logical. However, much work will be needed in launching, raising awareness and successfully integrating the two concepts before it is intuitive and beneficial for passengers to use smart tickets and apps together within a rail context.

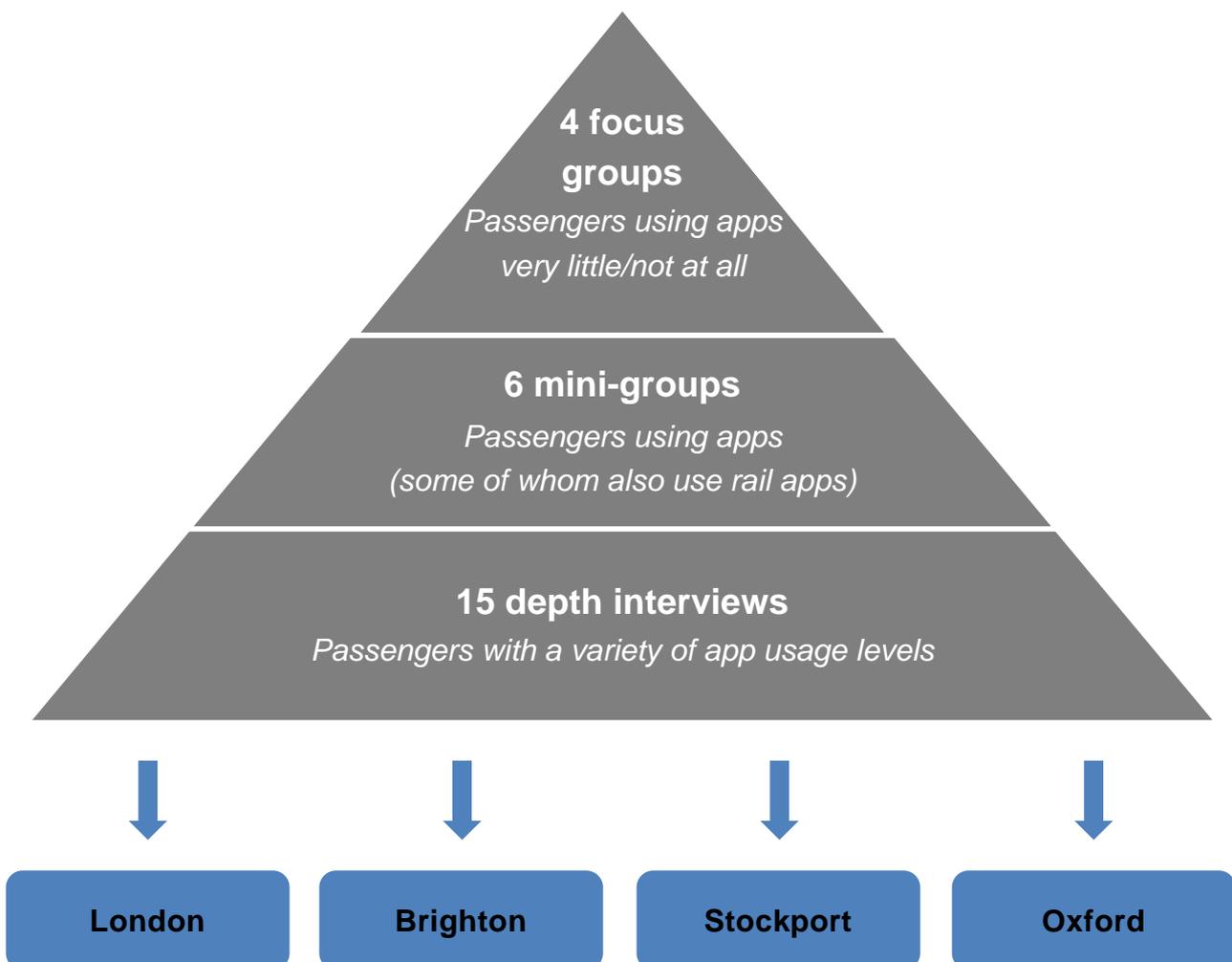
2. Background

The DfT, via Passenger Focus, is currently undertaking a wide programme of research around smart tickets and other ticketing solutions across the transport industry.

To complement this, the DfT and Passenger Focus also wanted to investigate other ways in which technology can be used to improve rail passengers' experience, in particular the role of websites and apps.

Research was therefore carried out to understand passenger requirements for the content and functionality of apps, to help inform and influence the direction of rail industry app development in a way which is of most benefit to passengers. In addition, the research explored rail passengers' current use of apps and mobile internet, both for transport and non-transport related uses, to help put the role of rail apps into this wider context.

Qualitative research was conducted, in March 2013, among rail passengers who use smartphones:



Research was carried out in London, Brighton, Stockport and Oxford. This enabled coverage of passengers using a variety of rail routes for different types of journeys, and inclusion of passengers with different types of exposure to existing new technology in the rail industry, particularly smart tickets. For instance, Oxford and Brighton have smart tickets on buses, London has the well-established Oyster scheme and a variety of apps related to London transport services, and the train operators in each of the four areas include some which already provide their own apps, and some which do not. More detail on the sample composition for this research is given in Appendix A.

The group sessions enabled discussion of the broad issues relating to rail apps, and of some specific features of existing apps. The depth interviews enabled more detailed exploration of existing rail apps and their functions. Screenshots demonstrating features of a wide variety of existing rail and transport apps were used to aid participants' discussions, and participants' own smartphones and apps were used during the depth interviews.

Mini-group (i.e. group of four) participants also downloaded and tried out specific rail apps in advance of their group discussions, which enabled an informed discussion of rail apps based on at least some prior experience. The apps which participants downloaded in advance are given in Appendix C, although a wide range of apps were referenced during the sessions in addition to the ones downloaded by participants themselves.

This report provides the findings from the research, looking first at rail passengers' use of apps in general, then at the role of apps within rail travel, and passengers' feedback on some existing rail apps.

3. Rail passengers' use of apps in general

3.1 Current usage of apps

For most participants in this research, smartphone and tablet apps were a useful addition to their lives. They provide shortcuts to the most essential information and functions. This includes content, such as entertainment, which they usually access using a desktop computer or laptop. Specifically, apps also allow access to these things when logging onto a computer is not possible or convenient. Therefore, for most participants, rail apps were seen as an extension to a website, with a specific purpose.

“I see an app as being there for the essentials; to make your life quicker... An app's not for browsing.”

London, commuter, heavy app user

“...using the app for it is just a more condensed version [of a full website].”

Oxford, commuter/leisure, fairly heavy app user

“What I love about apps is that they're simple... They're there to do a particular job. There isn't extraneous [content] everywhere – if you go to a website there's so much information about so many different things... Obviously it can't do anything complicated but you don't need it for anything complicated. The simplicity of it is just a beautiful thing.”

Oxford, business, heavy app user

Of course, there are also variations – and extremes – around this. For a minority of those who took part, apps are the main way to access information and carry out tasks, such as online banking and management of online accounts with various service providers.

“I couldn't live without my travel apps.”

London, commuter, very heavy app user

“I would never think of going on to Google to look at Sky Sports or the BBC to read the paper. I would just click the app and it's there instantly.”

Stockport, commuter, heavy app user

“I hardly use my laptop anymore...”

Oxford, business, heavy app user

“[Before apps] life was more longwinded.”

London, business, very heavy app user

And for some, apps appear in all aspects of daily life:

“I wake up and read the news in bed [on my phone].”

Oxford, business, heavy app user

The research also included groups of passengers who used apps very little or not at all, even though they did use a smartphone. There were a number of reasons for this.

- A lack of awareness about apps (either what they are or what different types of app exist)

“I know what an app is but I’m not sure I quite get what apps really are and why they are so good.”

Brighton, leisure, light/non-app user

- A feeling that apps do not fit with an individual’s lifestyle

Usually this resulted from an assumption that apps are mainly for entertainment, and so can be seen as ‘a waste of time’. However, some participants felt that apps were unnecessary for them when all of their needs were met by laptops and other devices.

“I have five kids so I don’t get any time at all and wouldn’t spend spare time on working out my phone and playing around with the features.”

Brighton, leisure, light/non app user

“I think because I am very office based and therefore always near a computer I still use my iPhone as a phone primarily. My laptop is on at home all the time so [there is] not much time when there is no computer access to fill with my phone.”

Brighton, commuter, light/non app user

“It’s just never interested me...I’m not one of these people who just sit on Facebook all day.”

London, commuter, light/non app user

- No ‘gap’ that could be filled by an app – or at least no awareness of such a gap

“I know my routes and timetable very well so [there’s] no need to be looking up info on the go. If something went wrong I think I would prefer to look and find staff... staff would give me more confidence than an app.”

Brighton, commuter, light/non app user

“It’s just your first thought to go onto Google and go on the internet [rather than an app].”

Stockport, leisure, fairly light app user

“I haven’t really heard of many that make me think I really want to download them.”

London, commuter, light/non app user

- Conscious distrust of apps – either in their usefulness or potential to cost money inadvertently. Please note, stories related to this had been prevalent in the news at the time of research.

“Is an app more up to date than information at a train station? I would just assume that people working in the train or in the station have the most up-to-date information as an app would be behind.”

Brighton, leisure, light/non app user

“I’m a bit distrusting of them as well. I’ve been reading quite a lot about people getting massive phone bills. My wife’s got an iPhone with loads of apps on it for the kids and I’m just waiting for them to click on something...”

London, commuter, light/non app user

Notwithstanding these barriers to apps for a minority, this research indicated that there is a strong momentum behind the use of apps. Rail passengers who are light or non-users of apps were significantly more difficult to find and recruit for the research which is telling in itself, and even among some lighter app users there was some enthusiasm, and acknowledgement of a ‘snowball’ effect – once you start using apps, you find more ways to use them, and so on.

“I’m quite new to it so I’ve just started doing the whole Facebook thing. I’m getting slightly sucked into that on the train, rather than reading a book like I always did.”

Oxford, commuter, light app user

Many of the lighter app users also suggested that they had started using a few apps as a result of being upgraded to smartphone when they had renewed their contract with their mobile operator. Most handsets are now smartphones. Their use of apps was not a conscious choice but something which simply happened. Since there is momentum behind smartphones themselves¹, we might reasonably expect this alone to continue to drive the usage of apps.

Given this apparent momentum behind take-up and usage of apps for more and more purposes, now appears to be a good time to be reviewing current app provision in the rail industry, and ensuring that rail is ‘up to speed’ with other industries in this respect.

¹ In its 2012 Technology Tracker, Ofcom reported an 8% rise in smartphone usage from 2011 to 2012.

3.2 Features of successful and unsuccessful apps

Research participants talked about the apps which they use and like, and about apps which have problems. The features and characteristics of these 'great' and 'poor' apps should be kept in mind when developing new rail apps or continuing to improve on existing ones.

The key characteristics of favoured apps included:

- succinct summaries of key information whilst on the move
- allowing individuals to keep up to date with key information (such as news headlines). Big brand providers such as the BBC and Sky were mentioned frequently.

“[BBC] It’s visually cleaner and quicker at getting at info.”

Brighton, leisure, light app user

- The ability to keep on top of personal information
This includes, for instance, bank balances and straightforward transfers, and other personal logs such as fitness trackers.

“I usually do it [banking] all from my phone because it’s a lot easier to get into.”

Stockport, commuter, fairly heavy app user

- Shortcuts to information needed ‘in the moment’
For instance, services such as real time bus information were popular (and particularly well-liked and prevalent amongst research participants in London).

“It uses GPS, so you can then sit in the house and know the next bus is going to come in 10 minutes so there is no point waiting in the driving rain for 10 minutes.”

London, leisure, light app user

- Very focused content (not including extraneous information)
Apps for services such as LinkedIn and internet banking were often cited as good examples since they enable users to view key pieces of information, but without all the additional features, images, and advertising which appear on the website version, which would slow down interaction on a mobile phone interface.

“[An app I have where] you can combine all your bank accounts into one place and set up spreadsheets and monitor spending.”

Brighton, leisure, fairly heavy app user

- The ability to customise which information appears, and which features are enabled
Customisation is particularly important to aid the app’s focus and relevance to individual users where a lot of information or features could be included within an app. The Met Office app was cited as doing this well, allowing users to save ‘favourite’ locations for which they frequently wish to know the weather.

“I’m interested in what’s relevant just to me. So if an app is just giving you alerts and messages that are important to you... that’s useful.”

Oxford, commuter, fairly light app user

- Provided by a well-known, trustworthy brand
Many research participants felt that when they knew an app was ‘official’ from a certain company, this provided reassurance about its usefulness and credibility. This was particularly true for apps through which users might make financial transactions or input other personal information.

“I’m fine with online banking because I know my NatWest is really secure... and anything that’s linked to PayPal is fine because you have to put passwords in.”

London, commuter, light/non app user

- A familiar interface
Some research participants, for example, described a preference for Google’s Map app over standard map apps which come with non-Android smartphones, partly because they were more familiar with using the Google map interface on desktop computers previously.

“To me there’s nothing flashy about it, which is a good thing – it’s functional. It is very much like using the website, it’s very familiar... you see things in the same layout but just in a more easy to use format.”

Oxford, commuter, fairly light app user

- Having a ‘clever’ feature
For instance, the Shazam app was mentioned frequently. Its straightforward premise is to recognise a piece of music being played on the radio or sound system and tell the user what the music is. This seemed to delight users, simply for being quite a clever function.

“I just think it’s very clever. You hear a song, Shazam it and then you can download it straightaway to your phone.”

Brighton, leisure, fairly heavy app user

- Entertainment value
Although not a focus for this research, many participants held gaming and social media apps amongst their favourites. In particular, many used these types of apps as a way to pass time while travelling. Arguably this existing use of apps whilst travelling means that, in theory, the use of rail apps could be a fairly easy shift for many people.

“Apps help fill time when travelling as something to do.”

Brighton, commuter, light app user

In summary, the characteristics of a good app (in priority order) were:

1. Focused and straightforward
2. From a trustworthy provider
3. 'Clever'

Conversely, smartphone users can also be quick to delete or forget about apps which don't serve their purpose well – and crucially, if they do not do so immediately. This tendency is amplified by the fact that apps are easily accessible, are often free, and face competition from similar apps created by different developers.

Common characteristics of apps which 'fail' included:

- Not instantly intuitive

“Two clicks and not what you want then I won't use it again.”

Brighton, commuter, fairly heavy app user

“I'm impatient with apps. I don't want lots of security or it being difficult to get into.”

Brighton, commuter, fairly heavy app user

- Apps which simply do not work, have a 'bug' or any kind of inaccuracy

“If there is a mistake I would never use it again.”

Brighton, commuter, light/non app user

“[If it] closes itself down, feels unreliable. Sometimes it is slow and stuttery.”

London, commuter, fairly heavy app user

- Showing too much information, or unclear presentation
Apps which appear to simply replicate rather than distil a website fall into this category.

“Too cluttered with poor aesthetics and doesn't look inviting.”

Brighton, leisure, fairly heavy app user

“It feels like a PC application [on a mobile]... chances are you are using something like that in a 'panic' and fat fingers, small keys mean it is not easy to navigate around.”

London, business, light app user

- Use of jargon or unfamiliar language
Some of the non-users of apps in this research were unnerved by requests such as 'allow push notifications' when they first downloaded an app – for people who do not understand what appears to be 'jargon', this can cause them to abandon an app.

- Apps which cost money
Payment for apps clearly does not put everyone off, and it can be very appropriate for some apps. However, payment is a barrier for some, and requests for payment to upgrade apps can result in users using them less often or deleting them.
Payment for apps is covered in more detail in section 3.3.

“On some of the free ones you think you’re downloading something really good then up pops this thing saying ‘Upgrade now’ and it’s really irritating.”

Stockport, leisure, fairly light app user

3.3 Paying for apps

There are many apps currently on the market which need to be paid for, and so most smartphone users are familiar with the concept of paying for apps. Furthermore, most of the participants in this research were happy to pay a small fee for an app which would be genuinely useful to them, or genuinely entertaining, if a game or entertainment app.

“If I really want it and it isn’t free, then I will [pay for it]. I don’t see £2 as being major.”

London, commuter, heavy app user

“If you really need that app then you think ‘Ok, I’m going to pay....’ It’s better than having the basic ones that are free.”

Stockport, leisure, fairly light app user

There is also an acknowledgement among many app users that free and paid-for versions of the same apps have their separate benefits and drawbacks. Paid-for apps usually have more content and functionality, while free apps sometimes incorporate advertising in order to subsidise them, which can be annoying.

Despite a general acceptance of paid-for apps, the research sample also included a small core of people who felt that, on principle, it is never acceptable to have to pay for an app. We can assume therefore that the population of smartphone users as a whole will reflect this.

“I’ve never paid for an app I don’t think, ever.”

London, commuter, very heavy app user

“I think all software should be free.”

Oxford, business, heavy app user

Interestingly, this research did indicate a general sense that rail apps should be free to download, even among those who were more accepting of paid-for apps in general.

This is for three key reasons:

- many felt that rail apps are a way of helping passengers (customers) to interact with train companies (service providers), that is they are simply another part of the service
- rail passengers frequently feel that they pay a lot of money for rail tickets in the first place, and so it can feel unjust to be asked to pay again for information
- the same information (timetables, live updates, disruption information and so on) is available elsewhere, such as online, at stations or via other free versions of apps, meaning a user could simply go to another source to avoid paying for it.

“It’s a benefit for them for you to have their app... like trains and banks and stuff, they can’t expect you to pay for them. ... I don’t really think you should ever have to pay for a utilities-type app... I mean anything sort of train-like or banking.”

London, commuter, very heavy app user

“It’s part of the service like being able to go on their website to get information. It’s an extension of that I think.”

London, commuter, fairly heavy app user

“We spend so much money on our travel as it is...”

London, commuter, very heavy app user

“The thing with paying for apps is that you can just go on the internet with your phone and do stuff and find train times...”

Stockport, leisure, fairly light app user

Of course, there are already some rail apps which need to be paid for, and these do already have a market, suggesting that rail apps can serve a genuinely valuable purpose which some are willing to pay for. However, future development of apps should take into consideration the appropriateness of charging a fee, and how this will feel to passengers and customers.

3.4 Accessing apps

When making the decision to download an app, individuals are influenced by a range of different factors, the main ones being:

- Word of mouth
Hearing friends or colleagues talk about an app they like, or actively recommending an app.
- A company’s website
Many participants described using a service online via a desktop computer, and being alerted by the website itself that an app for the same service exists. This also provides a degree of reassurance that an app is the ‘official’ one.
- Magazine or newspaper articles
About the best new apps, or lists of ‘top ten apps for xxx...’ and similar.

- General browsing
Including recommendations from within the smartphone provider's app store.
- Reviews
Reviews are very frequently used as an additional tool, especially when choosing between versions of a similar app. However, most of those who took part in this research also had a good understanding of some of the drawbacks of reviews, such as subjectivity, partiality, and the need for a reasonable number of reviewers.

“I like the fact that other people have tested them out first and rated them.”

London, commuter, very heavy app user

“If the star rating's rubbish then I probably won't bother with it.”

Stockport, commuter, fairly heavy app user

“You've got to be a bit careful with stars and ratings... I've been using tripadvisor for a while now and you do start to clock the ones that are real and the ones that seem ... to be a friend of the hotelier.... And you start to get a feel for them when you read the app ones as well.”

Oxford, business, heavy app user

“The trouble with the Google's Play marketplace is that anyone can leave a review, including the developers, or friends of developers or whatever. So if I look at an app and it's only got a few reviews I tend to be a bit more sceptical. But if there's one that's very popular and it's got thousands of reviews I'll flick through the latest 10 or so reviews and just have a quick look. If there's one with only two or three stars then I'll look through the reviews to see why.”

London, commuter, fairly heavy app user

Clearly some of these factors are outside of the control of the app providers themselves. However, for rail app providers, ensuring that apps are announced via passenger interfaces is controllable, and will be important to maximise take-up. This includes train company websites and other websites used by passengers, but also other key interfaces such as posters and other signage at stations and on board trains. Seeking 'listings' presence within magazines and app stores will also be useful.

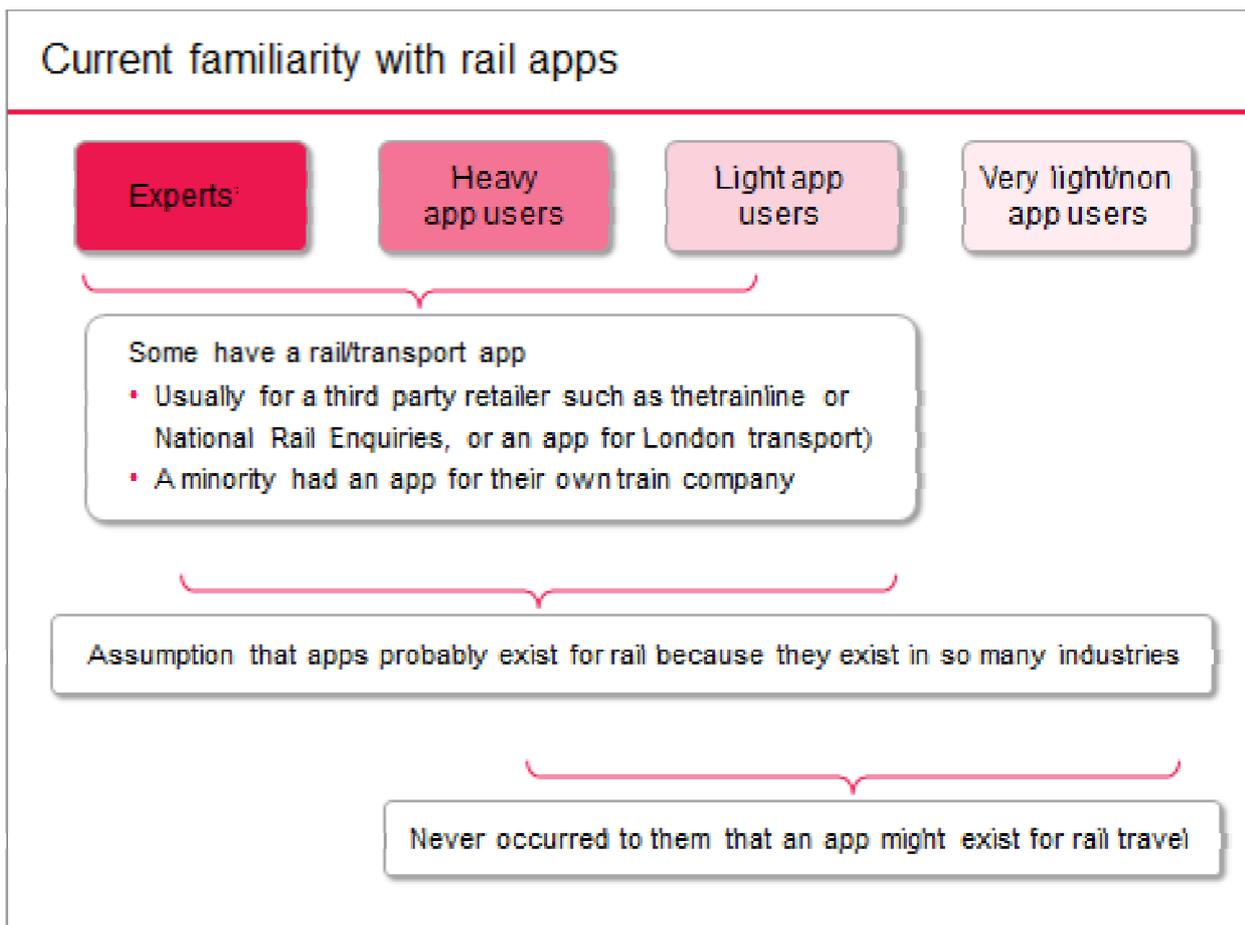
4. Rail apps: the current landscape

4.1 Rail passengers' current familiarity with apps

This study deliberately included rail passengers with different levels of app usage generally, and a variety of experience and awareness of rail apps specifically. The participants in the research can be placed into the following broad groups, according to their engagement with apps in general, and other technology.

- 'Experts'
 - use (rather than simply have) 20+ apps
 - likely to have more than one smartphone
 - regularly install new/replacement apps, even if these are subsequently deleted
 - usually try out new technology products before others, actively look for new technology products and services, and tend to tell other people about technology products and services.
- 'Heavy app users'
 - use 20+ apps
 - may have more than one smartphone
 - regularly install new/replacement apps, even if these are subsequently deleted.
- 'Light app users'
 - use fewer than 15 apps.
 - only download new apps when they are anticipated to be genuinely useful (or fun), and rarely download a new app to replace one which works reasonably well (don't seek out improved apps).
- 'Very light/non app users'
 - use a maximum of three to four apps, often only those which come as standard with the smartphone
 - very rarely download new apps, if at all; have not downloaded any apps within last month.

The following diagram illustrates the level of familiarity that each of these groups tended to have with rail and/or transport apps in particular:



As we would expect, people who are heavier users of apps in general are more likely to have rail apps than lighter users, or at least have some awareness that they are available. However, a substantial number of research participants were unaware that rail apps exist at all – including some of those who use other types of apps regularly, such as commuters and other frequent rail users.

Some who took part in the research observed that, in their view, the rail industry does not appear to be as technologically advanced as other industries such as banking and retail, meaning that they did not intuitively link the concept of smartphone apps to rail travel, until this research brought it to their attention. This indicates that more could be done to build greater awareness of existing rail apps.

Among those who did already have a rail app, apps for London transport services were the most common (even among some people living in other areas of the country), followed by ‘generic’ apps such as those for thetrainline or National Rail Enquiries (NRE).

Indeed, having apps for “the Tube”, or Transport for London (TfL) in general, is more common than for rail. The concept of apps for the Tube seems quite intuitive to passengers, in comparison to apps for trains. This may be linked to the prevalence of other types of technology already in use in the TfL area, such as smart ticketing

(Oyster), real-time information in stations and at bus stops, and the level of connectivity between transport modes across the capital.

Apps for a specific train company were fairly uncommon among participants in this research, although commuters were more likely to have an app for their usual train company than for a 'generic' retailer or information provider like NRE. The brand or provider of an app is important, and is discussed in more detail in section 6.

- Overview of passenger opinion of apps for rail travel

Despite the relatively low saliency of rail apps, those who had already experienced a rail app were positive about the one, or ones, they had used. Similarly passengers who had not come across rail apps before were, almost universally, enthusiastic about the various examples of rail apps which they were introduced to during the research.

“I hadn't realised there were specific apps for that purpose, so that's why I would have used the laptop. But now that I've ... looked at this CrossCountry app and how ridiculously good and simplistic it is...”

Stockport, leisure, fairly light app user (not used rail before)

“[This interview] has probably prompted me to look at one of these apps because it seems straightforward, easy, quicker. You know, you're not going on to a website... [which has] a lot of not-relevant information ... this is [good] for on the move.... you go straight to ... the page that you're looking for.”

London, commuter, fairly heavy app user (not used rail before)

“I have to say the one you asked us to download is brilliant. I really wish I'd had that last summer!”

London, commuter, very heavy app user (not used rail before)

“First impression: it's simple, it does what it says on the tin; the buttons are big and bold. I thought, 'Ok, it works'.”

Stockport, leisure, fairly light app user (not used rail before)

“I find it perfect for me. Once you're used to it it's just so simple. I find it really accessible. It just makes my life a hell of a lot easier if I have to look for train times ... It's never been something that's let me down.”

Oxford, leisure, fairly heavy app user (rail app user)

“Nice. Clear. Easy to use. And quick. All the information is there as well.”

Oxford, business, heavy app user (rail app user)

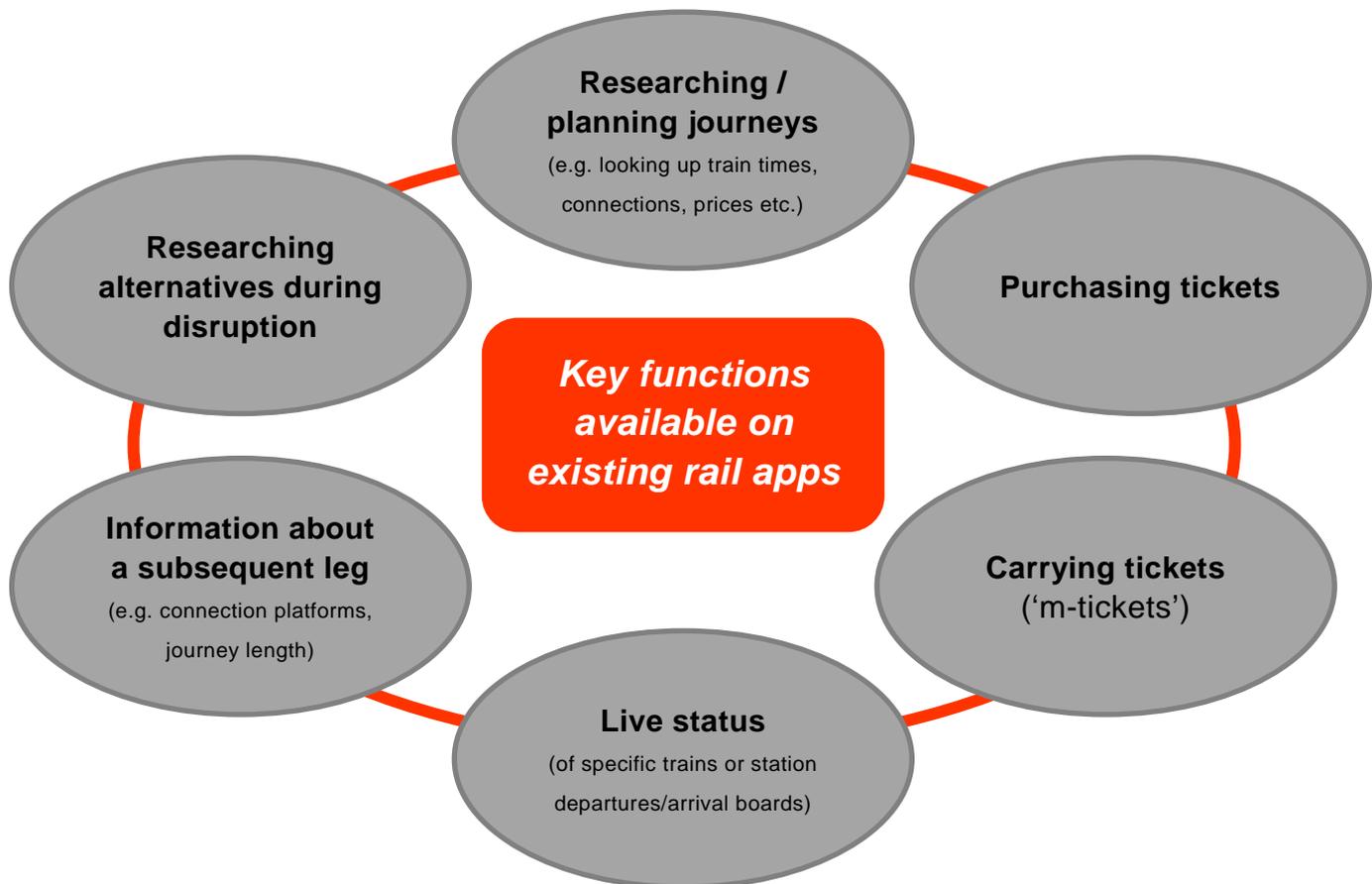
“It's pure app as you expect it. It's got dead easy buttons, you know what you're tapping. It's exactly what you want, direct to it.”

Stockport, leisure, light app user (rail app user)

The overwhelmingly positive reaction to rail apps from these passengers confirms that raising their profile will be worthwhile, as this indicates that greater take-up of rail apps could genuinely improve rail travel for many.

4.2 Existing usage of rail apps

The rail apps which are currently available generally provide the functions below.



Of these available functions, existing users of rail apps tended to use some more than others, and there were some functions which were used very little. These usage patterns were strongly linked to the type and frequency of a journey.

4.2.1 Frequent rail journeys

Those making the same journey frequently, such as commuters, made quite heavy use of the live information features available in their apps, in particular the live information about train services before boarding. Most of the time these passengers used the app to look at whether their usual train to or from work was on time or not, and they tended to do this as they were getting ready to leave home or work, or while on the way to the station. Some also used the app to check the platform number of their intended train, although for these frequent travellers, trains usually leave from the same platform (or there is only one possible platform), meaning this was extremely useful, but for a niche.

“When you’re legging it down Baker Street and if you quickly look on an app and find out your train’s delayed by 10 minutes, that’s good to know... you can just chill out a bit!”

London, commuter, very heavy app user (rail app user)

“I was in a meeting the other day [and] when [client] went out for some coffee, I checked [thetrainline app] and thought, that train is running 10 minutes late.”

London, business, light app user (rail app user)

This existing usage of rail apps by frequent travellers fits with the kinds of information that they need on a daily basis. For instance, most have little need to ‘plan’ a journey since they are very familiar with it, and since many use season tickets, they purchase these only when needed, and usually need to purchase from a station ticket office.

4.2.2 Less frequent rail journeys

Rail app users who made less frequent journeys also found the live departure and live status information functions useful, but were also more likely to have used the features showing live progress of trains, either for interest or to help with meeting friends or family and planning ahead.

Some of these people had also used their apps to help research a forthcoming journey, i.e. to look up the different options, including which station to start and end at, and the different times and prices. However, only a small number had actually made a decision about which train to catch while using their app, and very few had actually purchased a ticket via an app. This indicates that currently passengers who are familiar with rail apps see them as being predominantly for information, rather than for action.

“Depends how much detail I wanted it in.... I’m likely to use the laptop just out of habit. If I just needed a brief overview then I’d just use my phone if it’s in reach.”

Oxford, leisure, fairly heavy app user (rail app user)

“I normally find the journey first [using the app], but because it’s often for work I would probably book the ticket at my desk and then print out the thing.”

Stockport, commuter, heavy app user (rail app user)

“Just to check my journeys. I don’t tend to use it to book [tickets].”

Oxford, leisure, fairly heavy app user (rail app user)

A very small number of research participants were deliberately recruited as they had used a barcode ticket on their smartphone, rather than a paper ticket (please note, even these had been purchased online and sent to the mobile phone, rather than purchased via an app), and the use of apps to find out about subsequent legs or to help during disruption was uncommon.

All of this suggests that some functions of rail apps are perhaps more intuitively useful to passengers than others, and therefore these are perhaps the areas which should be focused on in any awareness-building about rail apps in general. However, there are also a number of functions within apps which even their users are not aware of, or are slightly uncomfortable with (such as payment for tickets, as covered in section 4.2). App providers may therefore consider addressing these issues.

“You might actually be able to [buy tickets through the app], I don’t know. I haven’t looked into it.”

Stockport, commuter, fairly heavy app user (rail app user)

At no point in discussions about current or future use of rail apps did connectivity to the internet arise spontaneously as a problem or concern for passengers. This is surprising given that travel apps are often designed to be used in transit when mobile data coverage is not always consistently available. In part, the overlooking of issues relating to connectivity could be due to the relatively low levels of take-up amongst passengers currently, meaning they have had very limited, if any, exposure to such problems. One potential example is the failure of a link to onward journey information due to a loss of data connection when travelling. However, even amongst heavy app users who reported using apps when travelling, even if these were not rail-related, connectivity did not seem to be a top of mind concern. In future, the more apps are relied on by passengers for journey information and ticketing, the more important it will become that passengers are able to establish a reliable connection whilst on the move.

The next section of this report covers rail passengers’ feedback on specific features of apps in more detail, followed by their feedback on and suggestions for potential future developments.

5. Passenger feedback on specific features of rail apps

5.1 Planning / researching a journey

The journey planning functions which are provided within existing rail apps met a very positive reception from passengers who participated in this research, whether they had previously used any rail app or not. Images of some typical journey planner screens in apps are shown at the bottom of this page.

Journey planner functions in apps were felt to be intuitive, they present information in a similar way to online journey planners which many passengers are familiar with, and participants felt that the apps provide the most relevant information about different journey options, namely start and end times and locations, number of interchanges, journey duration, and price. The apps also enable useful shortcuts such as remembering recent journey searches or the ability to save favourite journeys, and predictive text when typing in stations.

Some passengers also appreciated the feature in some apps which allows a user to choose 'all' stations in large cities such as London, Manchester or Birmingham, for when a passenger might not know which station serves the route line they will need.

“Dead simple. Dead easy to use.”

Stockport, commuter, fairly heavy app user

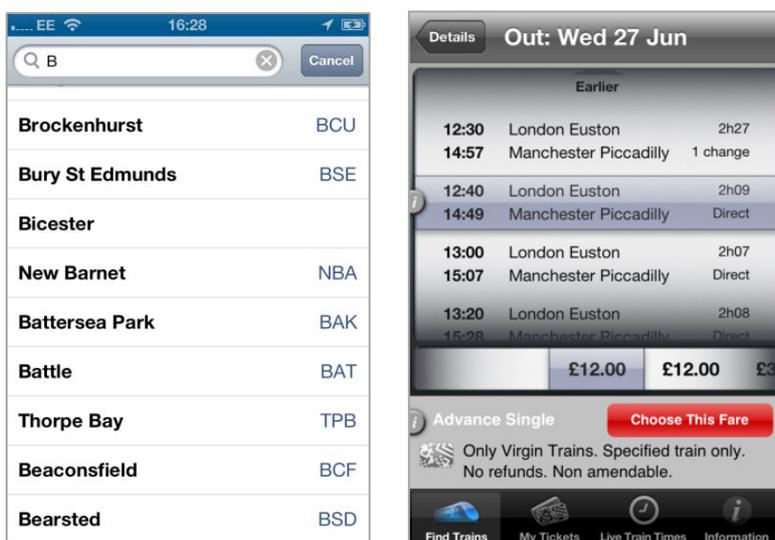
“I really liked it. It enabled you to type just ‘London’ to just ‘Birmingham’ [rather than specific stations]... so it doesn’t assume any knowledge whatsoever. If you’re from Mars you can use it.”

Oxford, commuter, light app user (not used rail before)

“It was good. I planned a fictitious journey and it gave me lots of options and information and advice.”

Oxford, commuter, very light app user (not used rail before)

Examples of screens used within journey planning functions of existing rail apps:



Participants also made some other observations about how existing journey planners might be optimised further.

- In the example shown on the right of the previous page, the prices for the journey options are shown horizontally along the bottom of the screen, with the other journey details presented vertically and a row for each individual journey. Some other apps present prices vertically, showing the cheapest fare for each journey alongside the journey details themselves. There was generally a slight preference for this over the horizontal presentation above, although this is essentially a personal preference and both options are provided widely in the current market and both tastes are well catered for.
- Some people suggested that other pieces of information might be of interest to help choose between journey options. These included the availability of catering, toilets, seat reservations, Wi-Fi or cycle storage on board, or the typical levels of crowding. Of course, the inclusion of additional information needs to be balanced against the desire for apps to appear focused and clutter-free. Many participants were interested in the ability to customise apps to help with this, and/or to provide 'additional' information in a separate screen – the small 'i' symbol shown in the right-hand example above was felt to be an intuitive notification that more information could be accessed by tapping the phone on that point.

Although passengers were generally very positive about the journey planner functions in apps, many did have some concerns about relying on an app for this purpose, and using apps to make concrete decisions about journeys. This reflects the real experience of those already using these features of apps, as described in section 3.3. Many see apps as a source of information, but do not make final decisions or go on to actually purchase via their apps. Key barriers to using app journey planners more fully fell into two main areas.

- Firstly, the types of journeys which are planned in this way tend to be relatively infrequent, or not wholly familiar to the passenger. There might also be several different possible ticket types for the journey, which can be confusing or at least requires thought. This means that some passengers feel they need to research the options quite carefully.

“It is an absolute minefield [to buy train tickets]; you’ve got to be able to concentrate.”

Oxford, commuter, light app user

“Say I wanted to travel to Manchester, I wouldn’t necessarily know what train, what operator, what stations I could go from ... so I need to go on the internet and literally type ‘London to Manchester’... Sometimes with apps ...you have to know bits of information in advance [so this is less practical in an app].”

Commuter, very heavy app user

Given this perceived need to research journeys carefully, many participants felt more comfortable in making decisions about their travel online via a desktop computer. This was partly due to the size of the screen compared with a smartphone, meaning the different options are easier to see and evaluate, and partly due to the environment in which you might be – as opposed to when using a smartphone, when you may be in public and may be easily distracted.

“You’re using [a computer/laptop] in your own environment whereas on your phone you could be anywhere.”

Oxford, commuter, light app user

“I tend to examine prices and have four screens open.”

Oxford, commuter, light app user

“[Planning works better on a computer because] there’s quite a lot of information on there so it’ll probably be a bit congested on a small phone and better on a tablet or computer just to make more sense of it.”

Stockport, commuter, heavy app user

“I feel like apps are slightly more restricted to what you can do on the internet [desktop/laptop]. Bigger screen. It’s so much easier.”

London, commuter, heavy app user

Secondly, for some there is a feeling that an app might not be as ‘official’ as a website. The important implications of this are that some passengers are concerned that apps might show only a selection of the different price options, or that apps branded to a specific train company might favour its own services, or even only present its own services. For these passengers, this means that app users might miss out on the best prices.

“I wonder if it was South East Railway [sic] they would show the offer [advance ticket option]. I would [only] expect my own train company to have all the offers.”

London, commuter, very heavy app user

Some participants in the research also claimed to have experience of this, stating that they had not been able to find certain discounts or offers (and sometimes specific railcard discounts) when using a journey planner in an app.

“None of these apps are very clear what discount there is. I can’t see that there is a way of buying a disabled railcard.”

Brighton, leisure, disabled and light app user

Because of the assumption that a train company’s own app might favour its own services, there was a preference among a substantial number of participants for apps to be provided by less ‘partial’ brands such as thetrainline or National Rail Enquiries.

In summary, this research indicates that app journey planners are most intuitively useful for providing a brief idea of train options, but for actual decisions about travel and for purchase of expensive journeys an undisturbed setting where a larger screen can be used currently feels more appropriate for many passengers. Nonetheless, journey planner functions do have appeal for many and could become more popular; and at the very least they have a role as a useful 'back-up', even for sceptics.

“Like say if you’re busy ... if I can get that done on the train going home I would probably do it. If it’s going to take 15 or 20 minutes ... I can get it out of the way.”
London, commuter, light/non app user

5.2 Purchasing rail tickets

The topic of using an app to actually purchase rail tickets generated much debate among research participants.

Many raised concerns about the security risks involved, which fall into two categories.

- Risks with information storing and sharing
Some passengers were uncomfortable with storing payment information within the app in case of theft, and were more likely to set up an account online which could then be accessed via the app, although a small number were uncomfortable with storing payment or other personal information anywhere. Other secure payment options, especially PayPal, were suggested frequently as a potential solution to this. The feeling that apps are not as 'official' as other platforms also influences passengers' confidence in using an app for payment.

“I feel like it’s just giving away control to someone else. I know it’s slightly irrational but I think there’s [sic] just so many elements of our lives that we do give up in terms of our identity and everything and it makes me feel a bit uncomfortable.”

London, business, light/non app user

“I’m a bit paranoid about storing information on [my phone]. It really depends... it [sometimes] makes me panicked when I put all my details in.”

London, commuter, light/non app user

“For me it’s the not being 100% certain that it’s going to go through or that it’s not going to charge my card twice. It might be totally wrong, but that’s what it is for me.”

Stockport, commuter, heavy app user

- Practical security risks
Some felt that the process of entering payment card details into a phone, in public, could be an invitation for theft.

“Say you’re on the bus or train or something and you’re trying to enter all your details someone could see your card and your phone.”

London, commuter, light/non app user

From the practical point of view, some passengers felt that having to input payment information on a phone would be difficult and 'a hassle' when out and about, and there is potential to make a mistake due to the perceived 'limited' options on the screen, and the size of keys/input fields. Since rail journeys can be very expensive, making a mistake could have significant financial consequence for the individual.

“I buy things online, but with trains I need to make sure I am not making a mistake as if you get the time, date wrong, trying to get your money back is a nightmare.... I don't have issues with paying online, it is ... getting the right ticket.”

London, business, very heavy app user

Ultimately, most agreed that payment via an app would involve setting up a payment method in advance, probably via a desktop computer. This would be practical and appealing for many.

Despite most participants having an awareness and some concern about security risks, the majority were willing to accept these, feeling that the convenience of payment via apps could outweigh the potential risks. Two observations in particular helped to cement this trade off.

- Some participants had been the victim of card crime or fraud in the past and in most cases this had made them more relaxed about all types of electronic payment, because usually banks are found to be supportive and able to refund lost money quickly, and they had experienced this.
- There is a consciousness that people are generally becoming more used to paying for goods and services online or via other apps. Therefore while many have security concerns about this at present, they themselves acknowledge that they are likely to become more confident and relaxed about it in the near future – this is exactly what has happened with online banking and online payments already for many people. Of course this was not the case universally – some people are never likely to be comfortable with inputting personal information, and don't even do this on desktop websites – but the majority felt that making payments via apps would inevitably grow.

“On iTunes if I want to buy [something]... all I have to do is put my password in and it's remembered all my bank details. We do it every day.”

London, commuter, light/non app user

In summary, very few of those already using rail apps had ever actually made a transaction via their app, and paying for tickets via an app is not currently one of the 'core' functions that passengers anticipate using it for. However, their feedback does indicate that this is an extremely useful function for a few passengers currently. It may become more popular as more and more passengers use rail apps. Therefore, it is an option which has potential, but needs to be promoted more to encourage take-up and allay passengers' concerns.

One observation made by some participants related to the National Rail Enquiries app specifically. This app, like the NRE website, allows users to view and choose from all journey and ticket options, but then redirects them to a separate retailer to make the payment transaction itself. This means that users are taken from the app to a website, for example a train company's website, so all of the benefits of an app are lost at the critical point. This can be very frustrating, and worse, the websites which users are redirected to are not necessarily optimised for mobile use.

“Rubbish. I think you should be able to [make the payment] within the app. Clicking on ‘Buy Now’ just takes you to a website... I don’t think that’s very good...because apps are generally quicker and easier to use. If I’ve got loads of time I probably would [continue through with payment on website], but you’re going to have to enter in all of your personal details and your bank details to buy a ticket... whereas on things like a Groupon app it’s literally two clicks and you’ve bought it because it saves all your card details and you do it within the app.”

Stockport, commuter, fairly heavy app user

5.3 Carrying an 'm-ticket'

Many passengers who took part in this research were very enthusiastic about the concept of m-tickets, at least in principle. The ability to carry a train ticket on a smartphone was felt to be convenient, and potentially time-saving.

“You don’t want to keep [paper tickets] in your pocket because you think you might drop them [but]... you get to the barrier and [have to] start rooting through your purse... Whereas if you just got your phone out it would be easier.”

Stockport, commuter, fairly heavy app user

“Certainly when... there’s a queue or you’re at the station a bit late... it would make it a lot easier.”

Oxford, commuter, fairly heavy app user

“A scanner/barcode thingy for travel... really useful... I [used similar] abroad recently... it’s amazing, you’re not looking for bits of paper you just go straight through.”

London, business, very heavy app user

Passengers do perceive some potential problems, however – most of which may only be short-term hurdles rather than genuine barriers to using this feature of smartphones.

Research participants’ main concern was battery life, as most smartphones are known to need re-charging fairly frequently (at least currently).

“If you have a journey with multiple trains and multiple ticket inspectors and if your phone has died on the train... you’re stuck. I’d like the option of printing out the ticket.”

London, commuter, light/non app user

“I’d be happy with it. But how many times has your iPhone... run out of battery?”

Stockport, leisure, fairly light app user

Many also had doubts about how well train companies would cater for customers using this ticket format. They worried that staff may not be fully trained in the technology or that the scanner technology itself could let users down – this could potentially negate the convenience (and therefore the whole point) of m-tickets.

“Do the guards know all about it, how does it get through a barrier?”

London, business, fairly heavy app user

“As long as you can swipe it... because if you [have to] start showing it to somebody you’re going to lose the whole logic of it.”

Stockport, commuter, fairly heavy app user

Other issues included:

- the potential for theft when taking a smartphone out in public in order to scan it at a ticket barrier, although many dismissed this concern, since using a smartphone to make a call requires taking it out in public
- the time it takes for a ticket to be sent to your phone following purchase. Some had experienced a time lag when topping up smart tickets (for use on buses), which had knocked their confidence about using this type of function in an app immediately before making the journey.

It is worth noting that, although not the focus of the research, the group sessions involved some discussion around smart ticketing more broadly, in order to explore how smart tickets might be used in conjunction with smartphone apps. Generally, the convenience and other advantages of smartcards were felt to be similar to those of m-tickets, but without the potential problems identified above. Therefore, while m-tickets will appeal to a niche among passengers at present (and may grow), in the short term smart tickets are likely to be favoured by a larger group of people.

5.4 Checking live status and live departure/arrival boards

As mentioned earlier, checking on live information is the most common use of rail apps by those who already use them, and was the most intuitive use for those who were introduced to them for the first time as part of this research.

Apps are of course, by their nature, intended to be used when on the move, or when a desktop computer or laptop is inconvenient. Therefore as highlighted in section 2.2, the most appreciated apps include those which provide quick, simple facts at a glance. So it makes sense that apps appear to lend themselves well to 'live status' information in the rail context, for journeys where the user already knows some of the basic facts. For example, which station they are departing from and roughly what time.

“If you have a relative or friend coming... and you're waiting for their train to get in I'd look at arrivals.”

Oxford, commuter, light app user

“Once you'd typed in that journey it would remain [saved] on the page and you could just click ... to see how the trains were going or when the next one was. I like that, the live checking.”

Oxford, business, light app user

Some suggested apps might go further and alert users to delays on a usual journey.

“There's been late night engineering works on my route so the last train's changed a few times. And because I know all the train times in my head, I've often got there and thought 'damn', because I didn't bother looking in the day and now it's going to take me an hour and a half to get home in the cold. If something was to alert me, I'd definitely use it then. But I don't want to have to use the app if I have to go into it. If it was the same as text alerts then maybe I'd use it. Anything I have to go into... I'm probably not going to bother.”

London, commuter, light/non app user

In particular, some passengers observed that apps providing live status information would be very useful at smaller stations where electronic information boards or members of staff are not present. Some also saw potential for apps to help passengers identify relevant trains for their own destination, when trains themselves may be terminating further on.

“I suppose if you’re at a smaller station like the one near my house that doesn’t have that digital information... if it was late I’d probably use it.”

Stockport, commuter, heavy app user

“If say you want to travel to Swindon, well the train isn’t going to Swindon, it’s going to Bristol... so why don’t they tell you [when you purchase] what train you’re getting on rather than just what destination you’re going to [app can help with this as it is possible to search for all trains calling at, say, Swindon, and the app will also show the final destination of each of those trains].”

Oxford, business, heavy app user

The most intuitive type of live information, as illustrated by the comments above, is related to train times. However, some passengers also strongly appreciated the fact that apps can show platform information as part of live departures/arrivals boards, even if they used this as an initial check to know which part of a large station to walk towards, and then ultimately confirmed the platform via electronic boards.

“Good to know if you are changing from Clapham Junction and only have a minute and a big footbridge to go over – [it’s good to know] if you have to turn left or right at the top of the stairs.”

London, business, heavy app user

“It gives you a bit more confidence though. You’re gonna stroll through [Manchester] Piccadilly and you know you’re looking for platform four, but you still look up at that big board to check that it still says platform four. It’s probably just human nature.”

Stockport, leisure, fairly light app user

Despite the clear role that passengers perceive for apps in providing live information, some passengers will always prefer or need to speak to a member of staff – apps will be an additional source of information, but can never be considered as a replacement.

“Although I know they hardly ever know what’s happening, there’s something reassuring about speaking to a person.”

London, commuter, light/non app user

5.5 Checking information during a journey

5.5.1 Live journey progress

In addition to showing live departures/ arrivals information, apps also allow users to check the progress of a train whilst it is on the move. Few of the research participants

expected to see a feature like this in an app, because it is not something that they are currently used to. Being able to follow your train within an app was therefore seen by some as a 'gimmick'. Nevertheless, many saw it as a feature that was nice to have.

“I thought it was pretty clever that they knew in real time that it was going to be delayed.”

Stockport, leisure, fairly light app user

“I like this as well that it tells you what time it gets into each station. It’s good, because I am a bit of a geek. Tells you what stations you are stopping at which is always good to know.”

London, business, very heavy app user

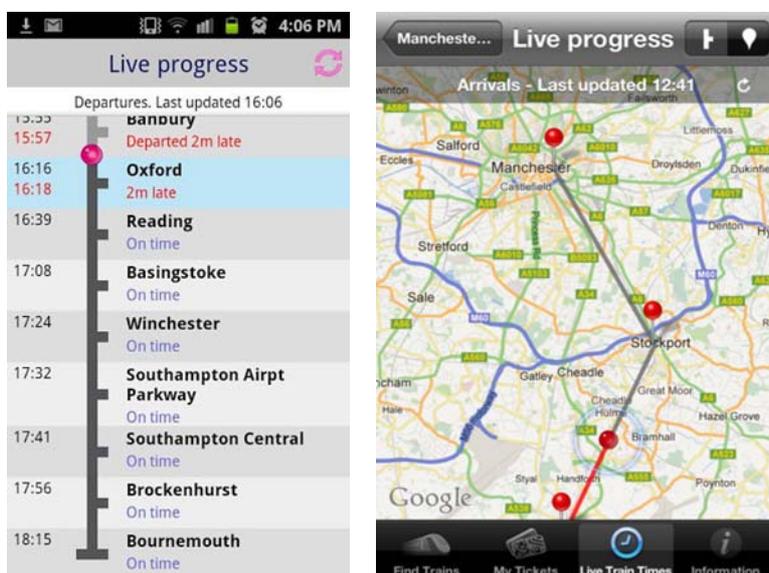
This feature in apps could therefore be said to provide the 'clever gimmick' quality which many people appreciate in apps, as discussed in section 2.2.

Additionally, some did see it as having a specific use.

“If you’re at the station and you’re meeting someone and the train’s not there then I think that [the app] would definitely come in handy.”

London, business, light/non app user

Please note, there was a fairly strong consensus that a schematic style map (as shown below on the left) was more constructive and informative than seeing the train’s geographical location (like the one on the right). The schematic style was usually felt to be clearer and actually more relevant because more information can be included.



Examples of 'live progress' presentation within existing rail apps

5.5.2 Multi-leg information

Another form of live information during a journey that research participants were shown was checking information about the next leg of your journey through a 'journey manager'. Those who were shown this feature were mildly enthusiastic about it, with some commenting on useful features and making suggestions such as:

- it is useful to know how much time is available for a change over
- it would be useful to know the platform, tube line or bus stop location for the next leg
- it would be useful to know whether an interchange station has certain facilities, for example, cafés and toilets
- multi-modal (combining different forms of transport) capability is good to see.

In particular, many passengers spontaneously mentioned the desirability of multi-modal capability, both within 'journey manager' features, and within travel apps more generally.

"I go to Sunderland ... so it would be really useful to see all the way from London, to Newcastle, then to Sunderland [on the Metro]."

London, leisure, light app user

The Transport for London journey planner (example below) seems to have set a precedent when planning a multi-modal journey, even among passengers who access this online rather than through an app. This tool may have raised expectations that it should be possible to plan multi-modal journeys within and between other areas of the country. Related to this, some participants also advocated the ability to type in a postcode for a start and end point to a journey, rather than a specific station, in order that an app might recommend the most direct route, including allowing for a drive or walk to a starting station.

The screenshot shows the TfL online journey planner interface. At the top, it displays 'Journey details (Edit)' and 'Travel preferences (Edit)' with icons for wheelchair, pedestrian, and bicycle. Below this, the origin and destination are listed: 'From Paddington' and 'To Salisbury Square', with a departure time of 'Leaving on Fri 12 Apr 2013 at 15:27'. The main section is titled 'Choose a route' and contains a table with five route options. Each row includes a route number, departure and arrival times, duration, and icons representing the transport modes used (e.g., tube, bus, walk). A 'VIEW ALL >>' button is located at the bottom right of the route list.

Route	Depart	Arrive	Duration	Interchanges	Action
1	15:25	15:57	00:32		View details >>
2	15:28	15:59	00:31		View details >>
3	15:29	16:01	00:32		View details >>
4	15:34	16:02	00:28		View details >>
5	15:34	16:06	00:32		View details >>

Earliest | Earlier | Later | Latest [VIEW ALL >>](#)

Example of journey planner screen within TfL online journey planner tool

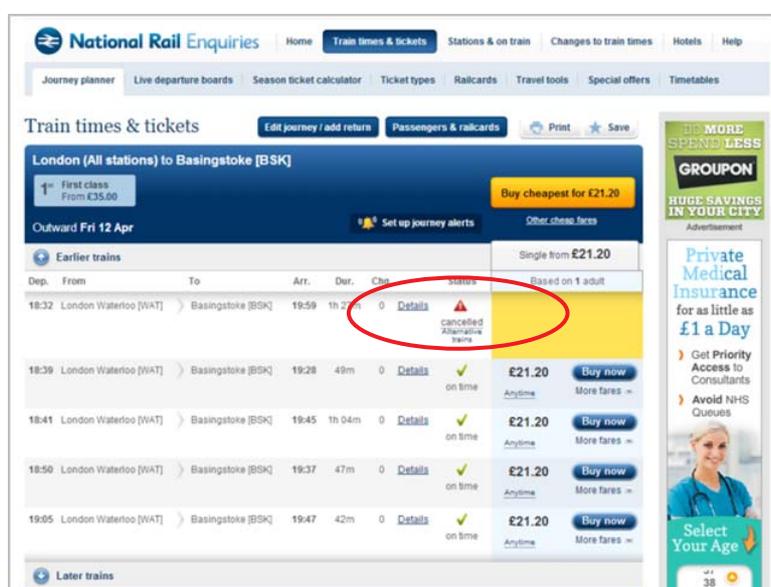
5.6 The role of apps during disruption to rail services

One potential role of rail apps which received mixed reactions in the research was their helpfulness when disruption occurs. Passengers' requirements from apps and any information source depended on the type of disruption. When there is planned or known disruption, passengers expect some kind of warning, and this expectation would extend to their rail app if they had one. However when delays or disruption occur during a journey and are unknown, passengers had different expectations.

5.6.1 Planned/known disruption

When disruption is known about, passengers' expectations were different for journeys they made frequently compared to for less familiar journeys.

For planned disruption that affects an unfamiliar journey, many passengers will plan in advance and would expect a warning at the planning stage. For apps, this means they expect a clearly visible notification on the journey planning screen, similar to what many are used to when using online journey planners like the one shown below.



Online journey planner screen, clearly notifying the passenger of disruption to one of the journey options

For familiar journeys, passengers are unlikely to plan in advance like this, but they expect to be informed about upcoming disruption. For example, disruption caused by planned engineering work. From an app, they would expect to receive an alert based on the fact that the app knows the details of their usual journey.

This is also the case for disruption which may not be planned, but is known about before the passenger leaves work or home for the station. An example of this would be cable theft or bad weather affecting services at that time. In this instance, again most participants felt that an app should alert passengers that a usual journey was disrupted.

Some research participants were also keen that that app alerts are not so frequent that they become intrusive. The ability to customise alerts in terms of which routes and train times are covered, and the timing and frequency of the alert, is therefore desirable.

Consideration should also be given to how the alert appears on the mobile phone screen. Small icons in the corner of the screen, as opposed to larger visuals which might obscure other things on the screen, were popular.

5.6.2 Unplanned disruption

When disruption is not known about before the passenger leaves for the station, the ideal would be for an app to provide all the answers to individual passengers, for their own specific journeys. However, research participants actually had little genuine expectation that an app will provide bespoke information in a genuinely timely manner, to help resolve the situation for them.

Some showed sympathy with train companies, understanding that it is difficult to provide up to date information that is specific to each passenger.

“I think if it’s something they can’t have planned for then I think you understand that none of the information is going to be up to date because it’s just carnage.”

Stockport, leisure, fairly light app user

Others were cynical about train companies’ ability or inclination to provide genuinely helpful information via an app, due to perceived poor track records in keeping customers informed in other ways. These passengers therefore did not trust train companies to deliver information to an app.

“The problem with the apps is that they’re linked to a website and so they’re web based, so unless somebody bothers to update the website, it makes no difference.”

London, commuter, light app user

Nevertheless, even if an app is not expected to provide bespoke information relevant to an individual’s journey, apps can still be useful during unplanned disruption for:

- monitoring the progress of trains – live status information allows you to start planning alternatives as early as possible, if necessary
- planning alternatives using the existing journey planner.

This does not require a separate area or feature within apps, but does require knowledge and familiarity with the existing features that can be used for this purpose. Existing behaviour and familiarity with the Transport for London journey planner indicates potential for apps to be really useful in this context, and this usefulness will be increased if apps are able to deal with multiple modes by offering the alternatives that the TfL website currently does.

“Sometimes I still have to go back to TfL[’s website]... if I’ve missed the train [and need to find alternatives].”

London, business, light app user, 60s

5.6.3 Disruption for which passengers are eligible for compensation

One issue that research participants were asked about was the role of apps in aiding passengers to claim for claim for compensation when delays occur.

Passengers welcomed any improvement in the compensation process, which is felt to be difficult and sometimes deliberately obstructive at present.

“That’d be cool if it was easy to claim for compensation. They make it as difficult as possible to claim compensation a lot of the time... you’ve got to always prove the fact that the train was late or something happened.”

Oxford, business, heavy app user

In particular, the passengers were keen for apps to alert users automatically to their eligibility to claim, based on the fact that the app had the details of a planned journey, as well as the actual outcome of that journey. They also liked the idea that apps could help with the claim process itself, either by directing the user to a website in order to submit a claim form, or by allowing the user to submit a claim form from the app itself.

“You probably would have to have bought the ticket on the app because they’re not going to give you a refund unless you can prove you bought the ticket. But you could still maybe submit a claim request [through your phone]... It’d be nice if it submitted the claim form so that you got it in time.”

London, commuter, light/non app user

Interestingly, many participants liked these ideas because they demonstrate accountability and openness from the rail industry. This was a separate, and often equally valuable, benefit to receiving tangible, financial compensation.

Another way in which apps might help passengers who are eligible for compensation would be to automatically credit the user’s account with the compensation value. This idea was met with a great deal of cynicism that train companies would be willing to do so, and some also worried about the use of payment details, similar to the concerns raised about paying for tickets via apps. As such, a feature where apps trigger an automatic refund was not popular and is not an important future development point.

“If it was really clever and if people did look after customers then they’d automatically credit the money back to your account. That’s never going to happen in this day and age though. It can happen: it’s physically possible. But it won’t.”

London, commuter, light/non app user

“An instant ‘Compensate me now’ button would be brilliant. They would never do it though: it’d cost them a fortune.”

Oxford, business, heavy app user

5.7 Potential future uses of apps

A number of new uses for rail apps were specifically discussed with passengers.

5.7.1 Additional information for planning a journey

While planning and researching a journey, passengers suggested some extra pieces of information that would be useful.

- An indication of the typical crowding level of particular trains

“It might be useful to have something saying this train tends to be busy, because I don’t think I’d have booked that train if I knew it would be that busy.”

Stockport, leisure, fairly light app user

Please, note that interest in the crowding on trains was limited to typical crowding, rather than live levels of crowding for a train that they might be about to catch. The latter was felt to be irrelevant in two ways. Firstly, it is rarely helpful to know that a train you are about to board is crowded meaning this would simply be a negative piece of information. Secondly, the level of crowding could change on arrival at the next station.

- The availability of on-board facilities such as catering, and quiet or cycle carriages

“Facilities, and is it a fast train or a slow train.... You could have a tiny little icon for bar, Wi-Fi, anything like that... If you’ve got the choice you can make an informed decision.”

London, business, very heavy app user

“I think information on the train... like whether it’s got Wi-Fi, whether it’s got plug sockets ... whether it’s got food.”

London, commuter, very heavy app user

- The closest station for a direct route to minimise the number of changes and journey time
- Offers and discounts when buying a ticket through an app

“The only issue I have is the particular discounts and offers are not actually on here.”

London, business, very heavy app user

Many spontaneously expressed a desire for better offers and discounts when buying a ticket through an app. Some wanted app-exclusive offers, but most were keen that the best value tickets should be available on apps as they are online – and many were worried that this was not the case.

5.7.2 Interacting with train companies

Passengers were explicitly asked about the potential for 'checking in' to trains for a number of purposes.

Some were interested in this idea if it provided access to some kind of reward or a way of improving comfort. For example, if you could check in to a loyalty scheme in order to claim rewards, or upgrade into First Class for a small fee.

“I can see another scenario as well. Like sometimes you’re on the train and it’s shoulder to shoulder, there’s nowhere to sit down and you think ‘You know what, I’m really tired and it’s an hour journey’, if you could maybe get your phone and swipe it to get into First Class.... for £10 [for example].”

Oxford, business, heavy app user

Passengers were far less enthusiastic about checking in for any social media reason or to provide information to the train company about passenger number.

Passengers did suggest that apps to could be used to give instant feedback to train companies about their service. This idea arose during discussions regarding service disruption but some also saw it as an opportunity to give instant positive feedback.

“I think it would be wonderful if any company at any point actually did honestly say: ‘We want more instant feedback on your experiences. What are you experiencing right now because you can tell us right now’ [through your phone].”

Oxford, business, heavy app user

5.7.3 Mobile apps and smart ticketing

This research did not focus on smart ticketing. However, the principle of smart tickets was explained in order to gain opinions on using an app in conjunction with a smart ticket, and the participants' reactions were almost universally positive and largely reflected what has been found in other research around smart ticketing.

In particular, passengers observed the benefits below:

- convenience – not needing to carry multiple tickets for journeys with more than one leg
- convenience – not having to queue to buy at a station
- more hard-wearing than paper tickets – especially useful for commuters using season tickets
- assumption that you would automatically be charged the cheapest price for the journeys you made, as with Oyster in London
- the potential for making multi-modal journeys using one ticket, as can be done using Oyster in London.

Use of an app alongside a smart ticket felt like a logical way to manage a smart ticket account, alongside a more conventional online option. Most of the app users in the research were happy to manage an account through their phone in other sectors, for example banking and gambling, and many could also easily imagine using an app to

help manage an Oyster account. Managing a smart card with an app therefore seemed like a very natural progression.

“To me it would be useful because it’s similar to my bank app: if I need to just have a quick look without logging on and on the go.”

London, commuter, fairly light app user

“If I commuted every day I’d want an app like that without a doubt. I can be lying in bed Sunday night and I think I need my ticket for Monday morning. There we go, bought it and I’ve already got the card in my hand so I can just jump on the train.”

Stockport, commuter, heavy app user

“If you’re doing several journeys in a day and you’ve just got your phone, you can access [your smartcard account] rather than going back home or to work [to check on a computer].”

London, commuter, fairly light app user

“Useful for people who only have pay-as-you-go Oyster, who sometimes get to the station and realise they’ve forgotten to top up.”

London, commuter, light app user

Although there are several obvious benefits to smart tickets, and managing a smart account via an app is logical, the research did highlight that there is some work to be done before these two technologies can be used together more effectively.

As this report has described, apps for rail travel have strong potential to help passengers, but there is currently little awareness that they are available, and what they can be used for. Similarly, the potential benefits of smart tickets are not easily recognised by some passengers in the context of rail travel. In particular, the concept of loading multiple tickets (such as one season ticket for a daily commute plus other tickets for ad hoc weekend leisure journeys) onto a single card was not anticipated by participants in this research – they had to be told about this and the notion explained. Even after explanation, some initially struggled to understand this idea initially, although it was more easily grasped by those familiar with Oyster in London.

Because the idea of loading different tickets onto the card was not totally intuitive, some initially assumed that a smart ticket would operate mainly as a pay-as-you-go ticket. This caused two key concerns:

- you would need to put a lot of money on it, to make it viable for longer journeys
- concern that you would be paying the ‘walk-up’/‘on the day’ price, and not be able to benefit from discounted prices that you might get if purchased in advance.

There were also some questions raised about how smart tickets would be used for journeys across more than one train operator.

These issues, for both smart tickets and apps, need to be addressed in order to embed both technologies with rail travel first, before they can be used well in conjunction with each other.

6. The app ‘provider’

This research highlighted that the brand or name behind an app is important to smartphone users.

When choosing which app to download, especially for important journeys, familiarity with the provider of the app is very important. This is essential for the app users to be aware of, or be able to find an app in the first place, and for trust and credibility. Trust influences whether or not an app is downloaded in the first instance, as opposed to researching reviews for example, and which features are used – especially those relating to personal or payment details.

“I tend to get apps when they’re advertised by the [same company’s website... so] I know it’s a ‘real’ app.”

London, commuter, heavy app user

The issue of security and credibility was highlighted in particular by passengers’ comments relating to Red Spotted Hanky’s app. This rail ticket retailer has a relatively small market share and as such is not a well-known brand name compared to some others in the market; this impacts on the perception of credibility for the app.

“The security is not right on here. It doesn’t look safe plus we don’t know the brand. It looks nice and easy to use but ... I’d probably prefer to use a brand I know.”

Brighton, commuter, fairly heavy app user

In addition, it is worth noting that this app uses bright colours, which passengers liked. However they felt that the use of lots of different colours on different screens was a little chaotic and suggested a lack of professionalism.

Familiarity can also be important in terms of using different apps. Several participants commented on the similarities in content and presentation between many of the existing rail apps which was felt to be a good thing as you can easily pick up a different one if you wish to, and use it fairly easily.

Because familiarity is so important, many passengers indicated that they would default to the app for their usual train company when downloading an app for the first time, or the relevant train company for a particular route if they knew it. Similarly they would default to thetrainline/National Rail Enquiries if they habitually use this online.

“I just use thetrainline because I’ve always used thetrainline.”

Oxford, commuter, heavy app user

Although train companies themselves are felt to be an intuitive provider of rail apps, passengers in the research highlighted some problems with using train company apps. There was a strong assumption that an operator’s own app would only show journey information for its own services, would only manage ticket purchase for its own services, or would only show the more expensive and less attractive ticket options for

competitors. These are key reasons why some will prefer an 'umbrella' app such as thetrainline or National Rail Enquiries.

"I wouldn't even think to use the Chiltern one for an area that I knew they didn't cover."

London, commuter, very heavy app user

"If I was going to do that I think I'd probably use thetrainline or Red Spotted Hanky because I don't think Chiltern would give you the best price because they don't go to Manchester."

London, commuter, heavy app user

Once it was explained to participants that all train companies can provide information and sell tickets for other operators' services as well as their own, they accepted and understood this easily. Universally, participants were unconcerned about TOCs sharing information for this purpose, or of TOCs sharing journey history information.

"Will this only work in the North... does it only have Northern stations on it?... [after explaining that the app will cover whole country] I think that's quite impressive. That's pretty cool that it's part of a [national] database... yes I would download it. I'm going to keep it [on my phone]."

London, business, light/non app user

"That's good, I like that idea. That's really good and perhaps they need to make that clear on the app... To show all the different train companies is really useful because that's what you want."

Oxford, commuter/leisure, Fairly heavy app user

"As long as I'm not bombarded with information by those other companies then I'm quite alright with it. But if I start getting offers and all the rest of it I'd get annoyed."

London, business, light/non app user

The concept of sharing information from a central database and the ability to purchase tickets for any operator from any other operator will need to be spelled out to most users of the apps if they are to make full use of apps in this way.

In particular, work will also be required to reassure passengers that train companies will show competitor journey details when they compete directly with the app owner. Passengers would also like apps to show discounts and special offers from other rail operators, but as a minimum expect that apps would make them aware that other TOCs operate on a given route and so may offer different fares.

7. Appendices

A. Summary of sample structure

A (i) Eight mini focus groups among app users

London	<p>Group 1</p> <ul style="list-style-type: none"> - Chiltern Railways commuters - Age 26-40 - Heavy app users 	<p>Group 2</p> <ul style="list-style-type: none"> - Virgin business travelers - Infrequent rail travelers (e.g. once a month) - Age 41-60 - Heavy app users ('experts')
Oxford	<p>Group 3</p> <ul style="list-style-type: none"> - CrossCountry business travelers - Frequent rail travelers (e.g. once a week min, for any reason) - Age 26-40 - Heavy app users 	<p>Group 4</p> <ul style="list-style-type: none"> - First Great Western commuters - Age 41-60 - Not heavy app users
Brighton	<p>Group 5</p> <ul style="list-style-type: none"> - Southern leisure travelers (half have choice to use FCC also) - Frequent rail travelers (e.g. once a week min, for any reason) - Age 26-40 - Heavy app users 	<p>Group 6</p> <ul style="list-style-type: none"> - Commuters (to London) - Not heavy app users
Stockport	<p>Group 7</p> <ul style="list-style-type: none"> - Virgin leisure travelers - Infrequent rail travelers (e.g. once a month) - Age 26-40 - Not heavy app users 	<p>Group 8</p> <ul style="list-style-type: none"> - First TransPennine Express/Northern commuters - Age 41-60 - Heavy app users

The mini groups and focus groups also included quotas on:

- Usage of multiple smartphones or tablets (all respondents in the research used at least one smartphone, regardless of app usage)
- Usage of rail/transport apps specifically
- Previous use of m-tickets (heavy app-user groups only)
- Usage of other technologies, including contactless payment cards, smart tickets (e.g. Oyster or smart bus tickets in Oxford), and phones with NFC technology

Further definition on app usage definitions is as follows:

‘Experts’

- Use 20+ apps
- Likely to have more than one smartphone
- Regularly install new/replacement apps, even if delete them
- Usually try out new technology products before others, actively look for new technology products, and tend to tell other people about technology products

‘Heavy app users’

- Use 20+ apps
- May have more than one smartphone
- Regularly install new/replacement apps, even if delete them

‘Light app users’

- Use fewer than 15 apps
- Only download new apps when really think it will be useful, and rarely download a new app to replace one which works ok (i.e. don’t seek better apps)

‘Very light/non-app user’

- Use max three to four apps
- Very rarely download new apps, if at all; have not downloaded any apps within last month

A (ii) Four focus groups with very light/non-users of apps

London	<p>Group 9</p> <ul style="list-style-type: none"> - Use smartphone but don't download any apps - Commuters - Age 26-40 	<p>Group 10</p> <ul style="list-style-type: none"> - Use apps but not rail/travel apps - Business travelers - Frequent rail travelers (e.g. once a week min, for any reason) - Age 41-60
Brighton	<p>Group 11</p> <ul style="list-style-type: none"> - Use smartphone but don't download any apps - Leisure - Infrequent rail travelers (e.g. once a month) - Age 41-60 	<p>Group 12</p> <ul style="list-style-type: none"> - Use apps but not rail/travel apps - Commuters (to London) - Age 26-40

A (iii) 15 depth interviews

- Smartphone users, use apps, and open to using rail apps
- 5 x already use a rail app
- 10 interviews to include exploration of TOC apps; 5 interviews to cover others like The Trainline, Red Spotted Hanky
- 4 x age 18-25, 4 x 26-40, 4 x 41-60, 3 x 61+
- 3 x Oxford, 3 x Brighton, 3 x Stockport, 6 x London (including 2 x live in Greater Anglia region, e.g. Chelmsford, and 2 x live in far south east region, e.g. Maidstone)

B. Discussion guides

B (i) Mini focus groups among app users

1 hour, 45 minutes

Section A: intro (5 mins)

- Introduction and thank respondents for taking part
- Explain purpose of research:
 - To find out about rail passengers' use of smartphone apps and mobile internet, and their current and potential role as part of rail travel
 - Brief background to Passenger Focus
- Confidentiality issues/reassurances
- Permission to record

- Housekeeping – including:
 - turn phone to silent, and even though you will spend some time looking at your phone, please ignore texts/calls/emails during this session
 - check you are on the Wi-Fi here/have a good signal (NB we will ask hosts to set respondents up with Wi-Fi when they arrive, before going into the group)

- BRIEF: Respondents work in pairs to introduce each other:
 - Personal details
 - If you could have an app for anything, what would it be? (What features would it have, what content/interface/presentation would it have?)

Section B: general app usage (20 mins)

1. Overview of current app usage

- Tell me about how you use your smartphone – which different functions do you use

- What about apps:
 - Look at your phone now – how many apps do you have (which you downloaded, not including email or web browser apps, for example, that it came with)
 - How many do you actually use?
 - What are they?

- Describe a typical day: which apps or mobile websites do you use...
 - when you first wake up
 - as you get ready for work
 - on the way to work, during the day
 - in the early evening
 - in the late evening
 - at other times?
 - Which apps used on a daily vs ad hoc basis?

- What would it be like if you didn't have some of those apps?
- What was/were the first apps you ever downloaded?
 - How has the types of apps you download changed? Why?
- Apart from the one we asked you to download, what was the most recent app you downloaded?
 - Why did you download it? Why did you need/want it?
 - What exactly made you download that one rather than a similar one?
 - PROMPT IF NEEDED: e.g. reviews, recommendations or articles in magazines/websites, word of mouth, etc?
 - Have you kept and used it – why/why not?
 - How did you find out about it?
 - Is this typical? How do you usually find out about and decide upon apps?
 - Did you pay for it?
 - Is that typical for you?
 - What are your thoughts on paying for apps like this?
 - Which apps should be free, which apps should be paid for?

2. Specific features

- Looking at your phone again, which apps do you love?

Moderator – discourage respondents from talking about e.g. games/music apps here – we want to know how apps are useful, and the ways in which apps are good rather than just because people are interested in the subject.

 - What exactly about that app do you love?
 - Are there specific features which are brilliant – why?
 - PROMPT IF NEEDED: are there specific xxxx which are great – why?
 - pieces of content
 - ways you use/interact with the app
 - ways of presenting information/content
 - Describe these things to the rest of the group
 - Do others have an app like that?
 - What do you think about that?
 - Could that be used for other apps you have? What difference would it make?
 - Moderator: note examples of great features for later
- And which apps annoy you, or have problems?
 - Repeat as above
 - Why do you have these apps on your phone if they have problems?
 - Have you looked for alternatives?
 - If yes – what has been the outcome?
 - If no – why not?

Section C: rail information/ticket purchase (15 mins)

Put your phone away for a moment, we're going to change the subject....

1. Rail travel behaviour and attitudes

Throughout this section: moderator note on a flipchart notable 'points' within a rail journey, especially points where information is accessed, where passengers interact with TOC/other rail organisation, or where problems occur.

- Think about train journeys that you have made recently:
 - Tell me about how you actually went about planning and making that journey
 - And what information you needed to find along the way?
 - PROMPT IF NEEDED:
 - How did you plan that journey – what information sources did you use?
 - Where/how did you purchase the ticket?
 - How did you find the right platform when at the station?
 - How did you know whether the train was on time?
 - For each:
 - Is that typical?
 - What was it like – good/bad points?
 - How could it have been better?
- Think about the last time you were delayed/had a train cancelled?
 - How did you find out that there was a problem?
 - What did you think about that?
 - How could it have been improved, in terms of....?
 - When you found out
 - How you found out
 - What information you were given
 - How the problem was resolved

2. Rail apps

- If not come up above:
 - Could you use an app on your smartphone for any of these things
 - (refer to flip chart)?
 - Which aspects of the journey would it be useful for, and which not – why?
 - Moderator: explore specific uses for commuters vs other travellers; probe explicitly on differences if participants make both types of journey
- If come up above:
 - What's good about an app for this, rather than [other source of information/interaction/purchase channel/traditional ticket, etc]?
 - Would others in the group use an app for this?
 - Which other aspects of the journey could an app be useful for, and which not – why?
 - Moderator: explore specific uses for commuters vs other travellers; probe explicitly on differences if participants make both types of journey

- Apart from the one we asked you to download, have you ever used an app for anything to do with rail?
 - Describe it/them to the rest of the group – what is it for, good/bad points, specific features used/not used, things you would like to do with it/them but can't?
 - How much do you use the app(s)? (do you still have it/them?)
 - Reactions from others in the group?
 - Compare to other (rail) apps group members have – good/bad points
 - Would others get that app – why/why not? What about if you made a different type of train journey?
 - How did you find that rail app?
 - Did you read the reviews?
 - Why/Why not?
 - Having used it, do you agree with them?
 - Why did you decide to download it?
 - Did you try others before settling on one – tell us about that?
- If some in group are positive about using rail apps generally and some negative:
 - Encourage advocates to 'convert' the sceptics
 - Encourage sceptics to argue their case
- Have you used apps for other types of travel?
 - Describe to the group – what used for good/bad points, specific features used/not used?
 - Any differences in using apps for this type of travel, versus rail travel?

Section D: specific app (pre-task) (15 mins)

- We asked you to download the xxx app in advance of this session
 - Overall thoughts about it?
 - PROMPT with screen shot/screen on tablet (front/home screen)
 - Opinions about the areas of the app offered/visible, presentation, etc
 - Comparisons to other rail/travel – or non-travel – apps that you use?
- When you looked for it:
 - Was it easy to find?
 - What did you search for?
- We asked you to plan a journey from xxx to xxx
 - How easy was that?
 - What did you think about the information you were given – content/presentation/interface?
 - PROMPT with screen shot/screen on tablet:
 - what did you like about this?
 - number of rows of information?

- exactly what information you can see – do you need all of it, is there anything missing?
 - What about actually inputting the information, in order to get to that point?
 - Prompt with stimulus and explore as above
 - What about the ticket purchase section?
 - Prompt with stimulus and explore
- We asked you to find out what platform the train would leave from, and whether the train was on time
 - How easy was that?
 - What did you think about the information you were given – content/presentation/interface?
 - Prompt with stimulus and explore
- What other areas of the app did you look at?
 - What was interesting/useful – why?
 - What was easy to use – why?
 - And vice versa – why?
- What improvements would you make to this app?
 - Functions that it could do better?
 - Functions that it doesn't do but should?
 - Changes to the presentation?
 - Changes to the way you use it – e.g. where on the screen you tap/swipe, grouping of information into one/different areas within the app?
 - What could the makers of this app learn from other apps you use and like?
- If you really travelled on [TOC], would you use this app, or one like it? / Do you think you'll now look for a similar app for your own TOC/journeys?
 - Why/why not? (is it because of the app or because you don't see a role for rail apps generally)?
 - Encourage positive respondents to try and 'convert' the others, and vice versa

Section E: other rail/travel apps (25 mins)

Here are some other examples of apps for rail travel....

- Show stimulus for 2-3 other apps, including
 - TfL example
 - NRE/Trainline (if not covered already, i.e. groups 3 & 6)
 - Other TOC app
 - Example of app which allows you to store & carry a ticket (if not covered by the example they downloaded)
- Tell me your thoughts about the xxx shown here:
 - Content
 - Interface, how you use it
 - Presentation

- Why is that important / why do you like that?
 - What about it is better than the one you all downloaded?
 - What is worse?
 - Which features are really essential in these apps; which are 'nice to have'; which should be removed?
- How do these apps compare to others you have? (including rail apps specifically for those who have them)
 - Going back to some of the features you said that you love about apps you have: can those ideas be used for rail travel apps?
 - How?
 - Why would that be good?
- Explore use of apps further with relation to (NB this may be covered in section D):
 - Finding information
 - Purchasing a ticket
 - Storing and carrying a ticket
 - Managing your relationship with train companies
 - For each:
 - What benefits does that have?
 - What disadvantages?
 - Which types of journeys would this be useful for?
 - Have you/would you use this function – why/why not, what was the experience like
 - Have you come across this kind of function in other apps?
 - Show stimulus if needed, e.g.
 - Finding information: apps for restaurant/cinema/music or game download options and reviews
 - Purchasing ticket: Shopping apps, e.g. supermarket; banking apps; booking flights
 - Store/carry ticket: airline apps with boarding card, voucher barcode for a restaurant discount, etc
 - Account management: Sky Go/Sky Plus, Skype, Paypal, banking, supermarket (saved favourites)
 - How do these apps compare to using a similar function for rail travel?
- What other things would you like to be able to do with apps for rail travel, which is not offered by these examples?
- What are the benefits of a rail app which covers different train companies (like NRE/Trainline/RSH etc), versus an individual train company's app?
 - Which would you prefer to use?
 - Would you have both – why, what purposes do they fulfil?

Section F: other issues (15 mins)

Some of these issues are likely to come up naturally as part of the previous sections, but included here as a checklist for the moderator to ensure discussion at the end if not already covered

1. Potential future uses (may have come up in section E)

- Explore the following:

NB before introducing the first set of ideas below, explain concept of smart-tickets

- *I.e. you could be able to travel on overground trains using a card similar to an Oyster card, instead of a paper ticket. Instead of buying a new physical ticket for different journeys, you would pay for the ticket and this would be loaded onto your smartcard*
- *BRIEFLY check appeal of a smartcard concept as warm up to...*
- Using the app on your phone to manage a smartcard 'account', e.g. purchasing specific tickets, topping up, monitoring journey history, etc.
- Ability to register for delay/repay if your train is delayed
 - Merits of automatic registration versus manually confirming that you were on the delayed train?
 - How should compensation be credited to you?
- (For groups who get into the concept of smart tickets/apps quickly):
 - Storing and carrying your ticket via an app on your phone
 - Using this technology, automatic charging to your account when you wave your phone at a ticket barrier or similar (like Oyster automatic top up), versus manually going into the app and purchasing a ticket
 - 'Checking in' on board the train by...
 - waving phone to reader at your seat/near doors
 - tapping a button on the app to tell it you have boarded
 - What benefits might 'checking in' have?
 - PROMPT if needed, e.g.
 - 'Crowd source' information about crowding, etc.
 - Register your eligibility for special offers/rewards (e.g. London Midland Foursquare initiative)
 - Subsequent ability to alert you when train reaches destination (in case you fell asleep)
 - Preference for checking in using a rail/TOC app versus social media providers like Facebook/Foursquare
 - Accessing other information about your train journey, e.g.

- Track record in terms of punctuality
 - Live information about how many people are in each carriage/where seats are available
(use Dutch stimulus if needed; probe on where within app such info would appear, e.g. journey options screen or 'additional info' screen about a specific train. NB this app also allows you to see crowding by carriage, and info about where quiet/catering/disables access/bicycle storage carriages are)
 - Journey Manager (use stimulus)
 - Menu for on board catering (and ability to pay for snacks/drinks via the app, or to order a meal in First Class)
 - Facilities, transport options, local directions and other information about destination station
- What would be the benefits and disadvantages?
 - Would you do this – why/why not?
 - Would it be for certain types of journey and not others? Which, why?
 - Have you used anything similar to this before in other apps or other devices (e.g. smartcards). How does using it in this context compare?

2. Personal information

- Are you comfortable with entering your personal information:
 - About the journeys you plan to make (e.g. searching for journey option)
 - In order to purchase tickets, i.e. payment information
- What better ways are there to do this?
- What about storing this information?
 - What are the benefits/disadvantages of storing information for quick access next time?
 - Differences between storing journey information versus personal and payment information?
 - Do you do this with other apps you use (e.g. Amazon one-click, banking apps)? What is the difference?
 - Where is the information stored – in the cloud (online), or on the phone only? What are the implications of that to you?
- If you made a journey which involved 2 different train companies, or if you wanted to look at your whole journey history covering more than one train company... (i.e. what do respondents think about sharing information? – don't prompt initially)
 - Would you expect to do that within the [TOC] app?
 - Why/why not?
 - If not – where would you expect to do it?
 - PROMPT IF NEEDED:
 - Would you have any concerns about the train companies sharing that information in order for you to be able to do this?
 - Why/why not?
 - If concerned – what would be a solution to this?

- If you used two separate train companies' apps to book two different journeys....
 - Would you expect the information to look the same?
 - Would you expect the content of information provided to be the same?
 - Why is this important / why does this not matter?
 - What are the merits of having one 'generic' app to cover all train companies, versus:
 - Having individual apps for separate train companies
 - Having several apps to choose from, at both generic and individual train company level?

Section G: conclude (10 mins)

- Invite questions from observers if time
- Will you go away from this session and download any of these or other rail apps?
 - Which ones? One you've seen, or will you look for another?
- If you could specify a rail app:
 - What would be the top 3 features that it must have?
 - What other considerations should be made?
- Thank and close

B (ii) Focus groups among very light/non-users of apps

1 hour, 45 minutes

Section A: intro

- Introduction and thank respondents for taking part
- Explain purpose of research:
 - To find out about rail passengers' use of smartphone apps and mobile internet, and their current and potential role as part of rail travel
 - Brief background to Passenger Focus
- Confidentiality issues/reassurances
- Permission to record

- BRIEF: Respondents work in pairs to introduce each other:
 - Personal details
 - Describe an app that you have which you really love, and why.

Section B: General app usage

- Tell me about how you use your smartphone – which different functions do you use
 - Describe a typical day: at which points do you use your phone, and what for exactly?
 - Where do apps fit in? To what extent do you download and use apps, compared to other functions?

Groups 9 & 11 (non/light app users):

- Tell me what you know and think about apps:
 - What kinds of things are they used for?
 - What do you think about using apps in those ways?
 - What kind of people use apps in general, and different kinds of apps?
- Why are apps less important to you/why don't you use them?
 - PROMPT IF NEEDED, e.g.:
 - not relevant to me – why not?
 - never get round to downloading / wouldn't occur to you / trust issues / payment issues / don't know how to, etc...
 - use mobile internet (instead) – if so, what is it used for, why use mobile internet rather than apps?
- Why did you get a smartphone rather than a more basic phone?
- Which apps do you have? Why?
- Which kinds of apps are you aware of?
 - PROMPT if needed: some people use apps for..... banking, shopping, games, tracking calories, tracking expenditure or gas/electricity, etc.....
 - Are you interested? Why/why not?

- If I really wanted to persuade you to try a new app, what kinds of things would I have to say?

Groups 10 & 12 (app users)

- Look at your phone now – how many apps do you have (which you downloaded, not including email or web browser apps, for example, that it came with)
 - How many do you actually use?
 - What are they?
 - Which ones do you really love – why?
 - What would it be like if you didn't have some of those apps?
 - What was/were the first apps you ever downloaded?
 - How has the types of apps you download changed? Why?
- What was the most recent app you downloaded?
 - Why did you download it? Why did you need/want it?
 - What exactly made you download that one rather than a similar one?
 - PROMPT IF NEEDED: e.g. reviews, recommendations or articles in magazines/websites, word of mouth, etc?
 - Have you kept and used it – why/why not?
 - How did you find out about it?
 - Is this typical? How do you usually find out about and decide upon apps?
 - Did you pay for it?
 - Is that typical for you?
 - What are your thoughts on paying for apps like this?
 - Which apps should be free, which apps should be paid for?

Section C: rail information/ticket purchase

Changing the subject for a moment....

1. Rail travel behaviour and attitudes

Throughout this section: moderator note on a flipchart notable 'points' within a rail journey, especially points where information is accessed, where passengers interact with TOC/other rail organisation, or where problems occur.

- Think about train journeys that you have made recently:
 - Tell me about how you actually went about planning and making that journey
 - And what information you needed to find along the way?
 - PROMPT IF NEEDED:
 - How did you plan that journey – what information sources did you use?
 - Where/how did you purchase the ticket?
 - How did you find the right platform when at the station?
 - How did you know whether the train was on time?
 - For each:
 - Is that typical?
 - What was it like – good/bad points? How could it have been better

- Think about the last time you were delayed/had a train cancelled?
 - How did you find out that there was a problem?
 - What did you think about that?
 - How could it have been improved, in terms of....?
 - When you found out
 - How you found out
 - What information you were given
 - How the problem was resolved

2. Rail apps

- Could you use an app on your smartphone for any of these things (refer to flip chart)?
 - Why/why not?
 - Which aspects of the journey would it be useful for, and which not – why?
- Have you ever used an app for anything to do with travel, or rail specifically?
- OR: have you ever heard of an app for rail travel?
 - Describe it/them to the rest of the group – what (do you think) it is it for, good/bad points, specific features, things you would like to do with it but can't?
 - OR, if never used or come across a rail app: If an app existed for rail travel, describe what you would expect from it?
- Reactions from others in the group?
 - Compare to other apps group members have – good/bad points
 - Would you get such an app (if it existed) – why/why not? What about if you made a different type of train journey?
- How would you find such an app?
- Would you read the reviews (are you aware of reviews), and other information?
 - Why/Why not?
- If some in group are positive about the idea of using rail/travel apps generally and some negative:
 - Encourage advocates to 'convert' the sceptics
 - Encourage sceptics to argue their case
- Any differences in using apps for rail travel versus other types of travel?

Section D: Specific rail apps

For non-user groups, this section should initially focus on an app for a train company/journey the group is familiar with

- I'd like you to look at some pictures of an app for xxx
 - PROMPT with screen shot/screen on tablet (front/home screen)

- Opinions about the areas of the app offered/visible, presentation, etc
- Comparisons to other travel/non-travel apps that you use?
- Which of these things looks the most useful/interesting?
 - PROMPT using screen shots / app on tablet, for various areas on the app, starting with areas of most interest to group
 - Finding train times & prices / journey options, for familiar journey
 - Purchasing a ticket
 - Live departures from local station
 - Live progress of a train you are on/someone you are picking up is on
 - Journey history
- Overall thoughts about each function of the app?
 - Probe on content/presentation/interface
 - What's good about this?
 - What could be different/better?
 - What is essential/nice to have/confusing
 - What would you use this for?
- Overall evaluation of the app:
 - Which bits of the app are really good?
 - And really bad?
 - Why?
- How do you do this/find this information currently without an app? How is this different/better/worse than the way you do this currently?
- Would you use this app (or one like it) in reality, for this type of journey?
 - What about other types of journey?
 - Why? (because of the app or because you don't see a role for rail apps generally)?
 - Encourage positive respondents to try and 'convert' the others, and vice versa
- What improvements would you make to this app?
 - Functions that it could do better?
 - Functions that it doesn't do but should?
 - Changes to the presentation?
 - Changes to the way you use it – e.g. where on the screen you tap/swipe, grouping of information into one/different areas within the app?
 - What could the makers of this app learn from other apps you use and like?

Section E: Other rail/travel apps

- Here are some other examples of apps for rail travel
Show stimulus for other apps (number of different example will depend on group's familiarity with apps generally), including
 - TfL example
 - NRE/Trainline (if not covered already, i.e. groups 3 & 6)

- Other TOC app
- Example of app which allows you to store & carry a ticket
- Tell me your thoughts about the xxx shown here:
 - Content
 - Interface, how you use it
 - Presentation
 - Why is that important / why do you like that?
 - What about it is better than the first one?
 - What is worse?
 - Which features are really essential in these apps; which are 'nice to have'; which should be removed?
- How do these apps compare to others you have?
 - Going back to some of the features you said that you love about apps you have: can those ideas be used for rail/travel apps?
 - How?
 - Why would that be good?
- Explore use of apps further with relation to (NB this may be covered in section D):
 - Finding information
 - Purchasing a ticket
 - Storing and carrying a ticket
 - Managing your relationship with train companies
 - For each:
 - How do you do this currently?
 - What benefits does an app have over this?
 - What disadvantages?
 - Which types of journeys would this be useful for?
 - Would you use this function – why/why not?
- Have you come across/heard of this kind of function in other apps?
 - Show stimulus if needed, e.g.
 - Finding information: apps for restaurant/cinema/music or game download options and reviews
 - Purchasing ticket: Shopping apps, e.g. supermarket; banking apps; booking flights
 - Store/carry ticket: airline apps with boarding card, voucher barcode for a restaurant discount, etc
 - Account management: Sky Go/Sky Plus, Skype, Paypal, banking, supermarket (saved favourites)
 - How do these apps compare to using a similar function for rail travel?
- What other things would you like to be able to do with apps for rail travel, which is not offered by these examples?

- What are the benefits of a rail app which covers different train companies (like NRE/Trainline/RSH etc), versus an individual train company's app?
 - Which would you prefer to use?
 - Would you have both – why, what purposes do they fulfil?

Section F: other issues – IF TIME (less important for non-users)

Some of these issues are likely to come up naturally as part of the previous sections, but included here as a checklist for the moderator to ensure discussion at the end if not already covered

1. Potential future uses (may have come up in section E)

Explore the following:

NB before introducing the first set of ideas below, explain concept of smart-tickets

- *i.e. you could be able to travel on overground trains using a card similar to an Oyster card, instead of a traditional paper ticket. Instead of buying a new physical ticket for different journeys, you would pay for the ticket and this would be loaded onto your smartcard*
- *BRIEFLY check appeal of a smartcard concept as warm up to...*
- Using the app on your phone to manage a smartcard 'account', e.g. purchasing specific tickets, topping up, monitoring journey history, etc.
- Ability to register for delay/repay if your train is delayed
 - Merits of automatic registration versus manually confirming that you were on the delayed train?
 - How should compensation be credited to you?

(For groups who get into the concept of smart tickets/apps quickly):

- Storing and carrying your ticket via an app on your phone
- Using this technology, automatic charging to your account when you wave your phone at a ticket barrier or similar (like Oyster automatic top up), versus manually going into the app and purchasing a ticket
- 'Checking in' on board the train by waving phone to reader at your seat/near doors
- Accessing other information about your train journey, e.g.
 - Track record in terms of punctuality
 - Live information about how many people are in each carriage/where seats are available
 - Menu for on board catering (and ability to pay for snacks/drinks via the app, or to order a meal in First Class)
 - Facilities, transport options, local directions and other information about destination station
- What would be the benefits and disadvantages?
- Would you do this – why/why not?
- Would it be for certain types of journey and not others? Which, why?

- Have you used anything similar to this before in other apps or other devices (e.g. smartcards). How does using it in this context compare?

2. Personal information

- Are you comfortable with entering your personal information:
 - About the journeys you plan to make (e.g. searching for journey option)
 - In order to purchase tickets, i.e. payment information
- What better ways are there to do this?
- What about storing this information?
 - What are the benefits/disadvantages of storing information for quick access next time?
 - Differences between storing journey information versus personal and payment information?
 - Do you do this with other apps you use (e.g. Amazon one-click, banking apps)? What is the difference?
 - Where is the information stored – in the cloud (online), or on the phone only? What are the implications of that to you?
- If you made a journey which involved 2 different train companies, or if you wanted to look at your whole journey history covering more than one train company...
(i.e. *what do respondents think about sharing information? – don't prompt initially*)
 - Would you expect to do that within the [TOC] app?
 - Why/why not?
 - If not – where would you expect to do it?
 - PROMPT IF NEEDED:
 - Would you have any concerns about the train companies sharing that information in order for you to be able to do this?
 - Why/why not?
 - If concerned – what would be a solution to this?
- If you used two separate train companies' apps to book two different journeys...
 - Would you expect the information to look the same?
 - Would you expect the content of information provided to be the same?
 - Why is this important / why does this not matter?
 - What are the merits of having one 'generic' app to cover all train companies, versus:
 - Having individual apps for separate train companies
 - Having several apps to choose from, at both generic and individual train company level?

Section G: Conclude

- Invite questions from observers if time
- Will you go away from this session and download any of these or other rail apps?
 - Which ones? One you've seen, or will you look for another?
- If you could specify a rail app:
 - What would be the top 3 features that it must have?
 - What other considerations should be made?
- Thank and close

C. Stimulus used in the research

Participants in the mini groups (all app users) were asked to download the following apps in advance of the group session, and try out some of the features:

London	Group 1 Virgin Trains app	Group 2 First TransPennine Express app
Oxford	Group 3 The Trainline app	Group 4 Virgin Trains app
Brighton	Group 5 Chiltern Railways app	Group 6 Red Spotted Hanky app
Stockport	Group 7 First Great Western	Group 8 CrossCountry app

Screen shots from the following apps were also used in discussions with all types of groups, and in the depth interviews:

- Virgin Trains
- First TransPennine Express
- First Great Western
- First Capital Connect
- Chiltern Railways
- Cross Country
- The Trainline
- Red Spotted Hanky
- National Rail Enquiries
- MyTrains
- Oyster Balance

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Passenger Focus is the operating name of the Passengers' Council