

# TfL Ticketing App

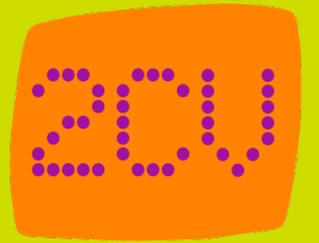
Debrief

September 2015

# Contents



- 1 Introduction
- 2 Research headlines
- 3 Current usage and needs
- 4 Responses to Ticketing App proposition
- 5 Moving forwards



# Introduction

# Research background



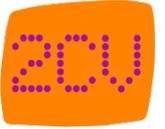
- TfL's Customer Experience Team are considering the development of a TfL Ticketing App that delivers against customer ticketing needs
  - The app is intended to provide customers with specific tools/information that will facilitate the management of their ticketing requirements
- Following research to capture the customer perspective on the future of fares and ticketing\* and the broader travel apps market\*\* (and how customer expectations and needs have evolved) there was a need to **explore and understand customer attitudes toward a specific Ticketing App** and its features
- Qualitative research was commissioned to **evaluate the TfL Ticketing App proposition with customers** to understand its appeal and how to best develop it



\* *The Future of Fares – 2CV May 2015*

\*\**TfL powered app overview - market analysis and customer perspective – 2CV July 2015*

# Objectives



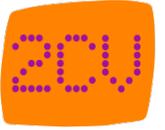
**Business question**

- How can a TfL Ticketing App that delivers relevant, tailored ticketing solutions be developed to best improve customers' experiences? Is what TfL can offer now enough to meet customers' expectations?

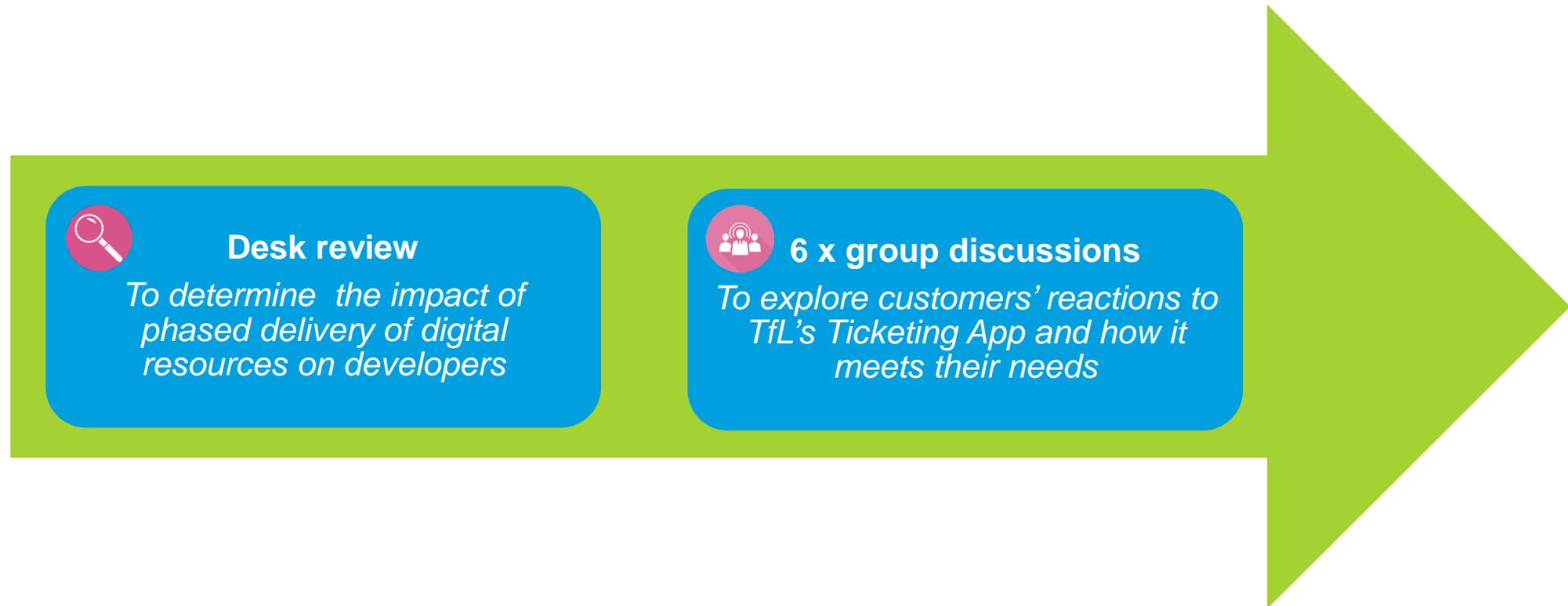
**Research objectives**

- Explore reaction to and engagement with the TfL Ticketing App proposition
- Understand customers' expectations and wishes regarding the ticketing functionality
- Understand how and why customers prioritise non-ticketing functionality of the App
- Provide guidance for improvements / development of the app for the next phase of development
- Explore what might motivate customers switch to online and likely propensity to use the app
- Understand customer attitudes to an initial pilot phase, which may not include the full functionality of the app
- Understand whether there is any reputational impact in going to market 'early' or launching with a pared back version
- Explore the impact of a Ticketing App on TfL reputation and customer satisfaction

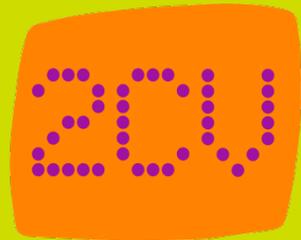
# Methodology



A mixed method qualitative methodology was used to explore customer perceptions of the Ticketing App proposition

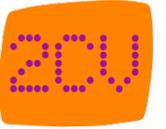


Detailed sample structure is in the appendix of this document



# Headlines

# Research headlines



**While customers currently feel relatively well served by TfL and other travel information, there is an appetite and interest in a Ticketing App from TfL**

- The app solves a problem and delivers against a core need not being met (buying tickets and managing spend on the go), particularly for PAYG Oyster and contactless customers
- It reflects current digital ways to pay that are quick, easy and intuitive, eg online shopping / PayPal

**Customer expectations around how the app will deliver key benefits** are high and failure to meet these expectations will impact on take up and use – particularly for universal fast load

**A phased deliverable strategy can work provided it focuses on and delivers:**

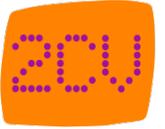
- Ticketing features are prioritised (purchase; ticket management; ticketing problem resolution; viewing balances)
- Followed by non-ticketing elements

**Delivery of these features is likely to drive online adoption as well as impact positively on TfL's reputation**



## Current usage and needs

# Customers feel well served by apps for travel solutions



- Third party transport apps are improving journeys and customers feel very well served in **Journey planning** (eg Citymapper) and **service status** (eg bus checker) apps
- **Fewer customers are aware of account management / ticketing apps** (eg balance checking / refunds), however, they are highly desirable and **customers think that TfL should be behind them**
  - Customers feel that **TfL are the only trustworthy source** for an account management / ticketing app
- When thinking about the **future of apps that offer travel solutions**, customers want:

**Joined-up**  
information

**Seamlessness**  
across devices  
and formats

Information that  
can **improve the**  
**journey**  
**experience**

Information that is  
truly **'actionable'**  
and **intelligently**  
**pushed**

Customers have high expectations of transport apps and particularly for TfL to provide one that is best in class

# TfL are the only trustworthy source for an account management / Ticketing App

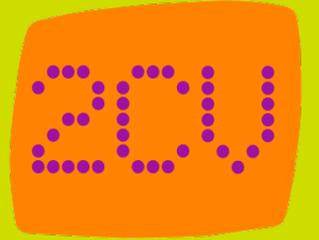
- Some customers are **already using account management / Ticketing Apps provided by third parties**
  - There are numerous Apps out there, but **few customers are aware that they exist**
- When customers hear about account management / Ticketing Apps, **they show great interest**, particularly in terms of being able to **check balances** and **track spending**
  - But many are **surprised** and sometimes **disappointed** to learn that they are **not created by TfL**

Oyster Balance & Refund			London Oyster Contactless
TfL Fare Calculator			Oyster Oyster and Contactless
Oyster Info Pro			Oyster on the Go!

*"I had no idea there were apps that did that, I want to get it!"*

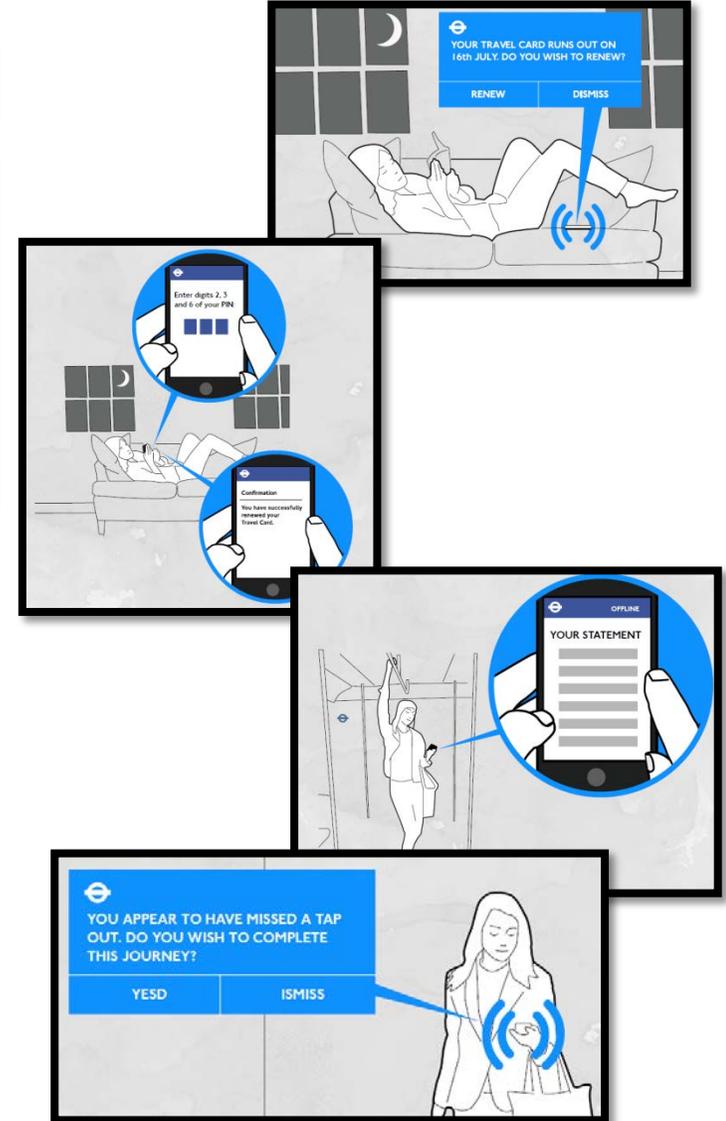
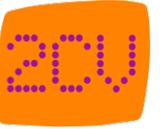
*"I need to keep an eye on what I am spending on my contactless card so that app sounds helpful [oyster, oyster and contactless]"*

*"I am really surprised that this is not TfL's app [Oyster Info Pro] why does anyone else have the permission to do this? TfL need to monitor these things and do it themselves"*

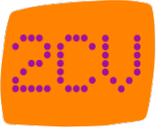


# Responses to Ticketing App proposition

# Examples of visual stimulus



# Overall concept of a TfL Ticketing App resonates with customers



## SOLVES A PROBLEM

Customers cannot buy tickets **'in the moment'** or **'on the go'**

The need to nominate a station / pick up next day does **not reflect current 'ways to pay'**

*"As far as I know, there's nothing that lets me top up like this. The way the website does it is too slow. This feels instantaneous."*

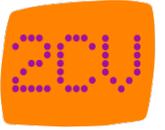
## GAP IN MARKET

TfL 'ticketing' app feels like a new tool that **helps customers buy and manage** their tickets with **ease and convenience**

Nothing like this exists

*"This is new. This isn't already out there. There are two or three really great apps that help me plan journeys."*

# Ticketing App likely to drive adoption of online behaviour



- While the ticketing features are currently of more interest to specific audiences, the app is likely to drive customers online
- The app's ability to deliver solutions to existing issues is key, namely ....
  - Buying tickets through an app negates need to queue
  - Closing incomplete journeys and getting refunds quickly and easily



*"I don't use the site to renew my Oyster at the moment because it's a slow . Being able to just launch through an app would be great"*

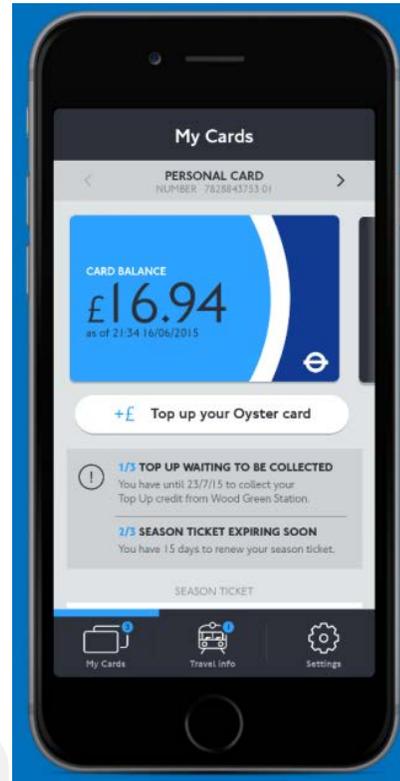
*"If you can buy or top-up tickets people wouldn't have to faff about queuing on a Monday morning. "*

*"I've never bothered claiming for a refund because it looks so tedious to do. Phone here, send this and that. If I can just do it via an app, that'd be great "*

# A ticketing app has the potential to simplify the perceived and actual complexity of the fares system

## Fares and ticketing are not straightforward

- Peak vs off peak / capping unclear
- Customers do not always feel that fares are managed **fairly** and **transparently** (value for money)



SIMPLE AND EASY TO USE

PROACTIVELY COMMUNICATE WHEN THERE ARE ISSUES

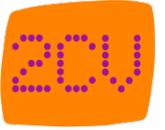
FARES MUST BE TRANSPARENT

MAKE CUSTOMERS FEEL CONFIDENT IN SYSTEM

HELP CUSTOMERS ORGANISE AND MANAGE TRAVEL

*“The pricing [of tickets] is a bit of a mystery to be honest. I never fully understand capping. I have found out that there’s not just a daily cap on contactless fares but also a weekly cap, which means if I use it then I shouldn’t pay more than a weekly Oyster. Is this true?”*

# There is an expectation that an app for travel / ticketing is fairly easy to do and that TfL should already have this in place



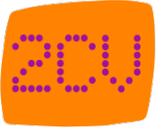
- Customer experiences around **technology** and **paying for goods** is **only getting better** in other areas of life, eg PayPal, Contactless, Apple Pay, E-wallets
  - It is an area that is ever changing and customers are comfortable with these new ways of paying
  - How these solutions are being delivered **impacts on their expectations of an app from TfL**
- Customers feel that **TfL should be a part of creating / offering easy ways to pay** (they have seen this with Contactless) and **keeping up with customer service trends**
- There is little awareness of apps that currently offer these solutions, eg Oyster Info Pro and an **unmet need in paying for travel in this way**



*“It’s just the way things are going isn’t it? Everything is moving to apps, everything is getting quicker and more efficient. TfL should be looking to do this too”*

*“I think it makes complete sense to pay this way, we already pay for so much through our phones so it’s to be expected that this is coming!”*

# Core target audience for ticketing features are PAYG Oyster and contactless users



- **PAYG Oyster:** delivers against the need to manage Oyster and to top-up quickly and conveniently



- Ability to check balance (and receive notifications) and pay are most appealing
- Perceived ease of topping up leads to expectation this will be **quick / instantaneous**
- Ease of resolving incomplete journeys and applying for refunds appeals

- **Contactless:** A similar positive response to PAYG Oyster users

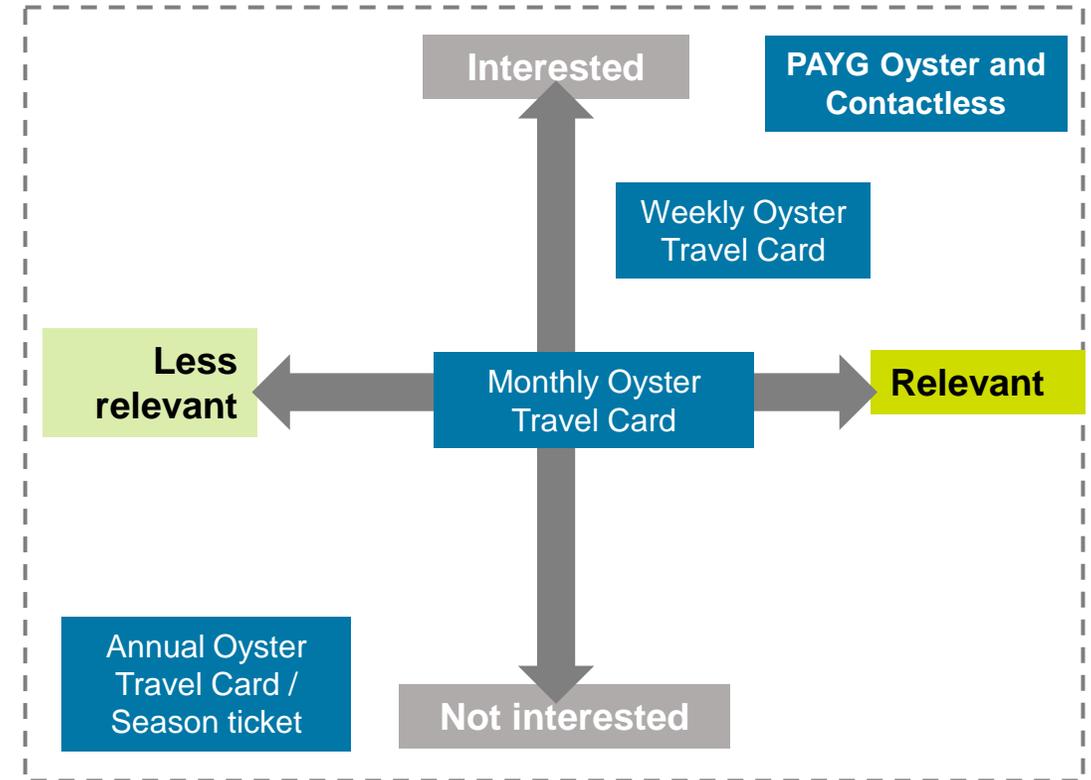


- Delivers **ability to track spending** in a way that fits into current management of finances
- Journey history provides clarity, transparency and confidence regarding spending

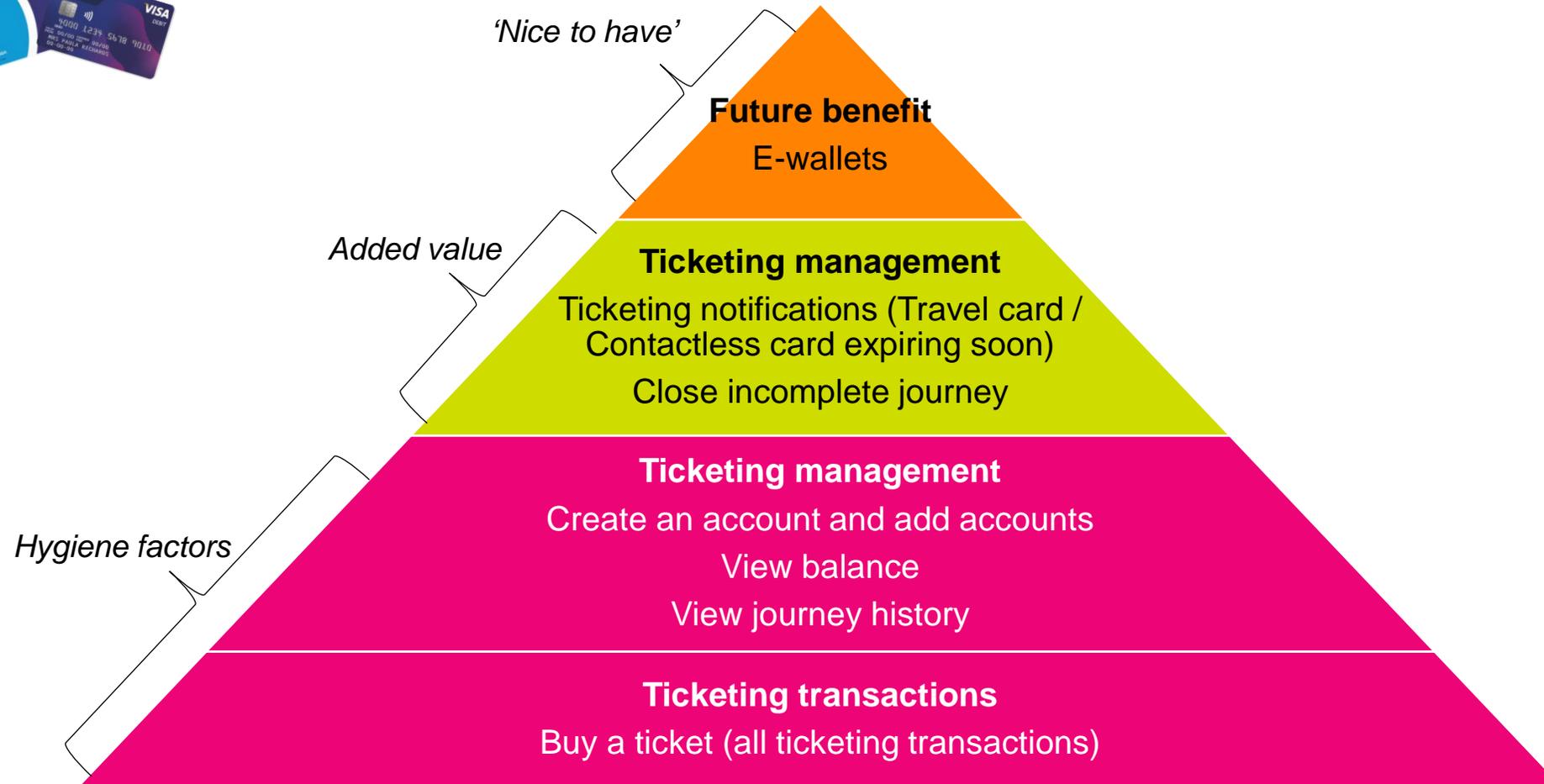
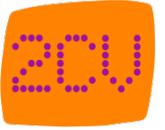
- **Season tickets:** Responses more muted with ticketing functions delivering less overall



- Expiry notification currently delivered via email or gateline PODs so doesn't feel like a core need
- Ability to renew ticket via app of some interest if ticket **ready straightaway**
- Closing incomplete journeys feature liked but on its own not enough to drive use

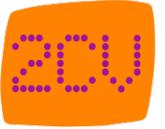


# Customers' needs for ticketing features are focused on transactions and management



Launch of the app needs to take customer hierarchy into account. Failure to deliver hygiene factors will impact on customer satisfaction. Failure to deliver added value could impact on desire to download

# Ticketing features are a priority and not currently being delivered



## CUSTOMER DESIRABILITY

LOW

MEDIUM

HIGH

*Features considered too niche and are dismissed as irrelevant*

Apple Watch version of app

*Features that customers appreciate, but are not the 'hook' for getting the app*

Failed auto top-up notification

Failure to collect PAYG top-up or new season ticket notification

Access to 'E-wallet'

Setting up a new account

Add an Oyster card / Contactless card to account

Ticket notifications

*Features that will ultimately get customers downloading the app*

Buy tickets

View PAYG balance

Self serve for refunds (for an incomplete journey) via the app

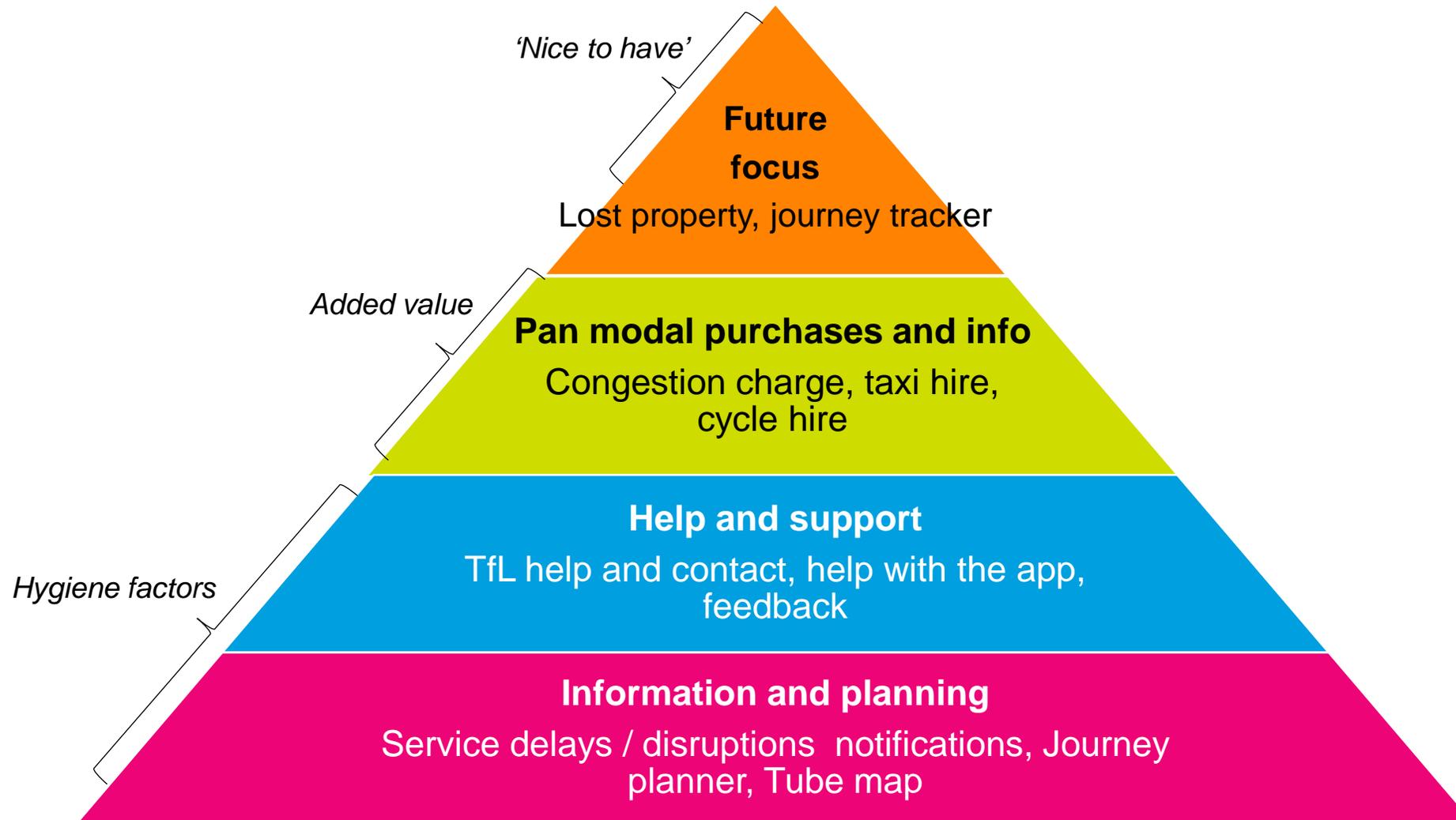
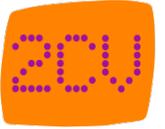
Incomplete journey notification

View journey history

### CUSTOMER SUGGESTIONS

- Reporting a lost card
- Zone checker / alerts (to see where TfL 'ticket' covers)
- Instant top-up load, pick up at any station / any mode
- Change selected top-up station

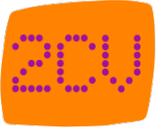
# Non-ticketing needs focus on ability to travel more effectively



These features would exist in a very competitive space - customers already feel very well served by apps that give them travel information and help them plan their journeys



# Key watch outs that will need to be addressed



## Universal fast-load is what customers expect and 24 hours to receive top-ups or a new season ticket is disappointing

- No different to what is currently available via the website
- Counter to perceptions of existing payment models (immediate, 'in-the-moment')

## Uncertainty regarding process of closing journey / applying for refunds

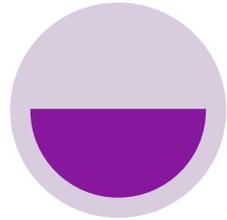
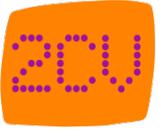
- Potential abuse of system - want reassurance that this will not be exploited
- Whether TfL will give honest claimants benefit of the doubt – need clarity re the process
- Speed of notifications – want clarity on how long after journeys they will receive notification
- Speed of refunds – want to know turnaround for payment

*“24 hours!? That’s pointless. I might as well keep using the ticket machine. At least I can get my ticket when I want it”*

*“When would they tell me I hadn’t closed my journey? That’s not clear from this story board*

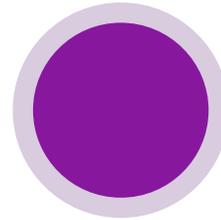
*“Would they just close my journey on my word? Is that how this works? What if people lie? How will they check”*

# A phased approach is possible, but the first phase must deliver against 'high desirable' features



## Phased delivery

- + **Low Risk.** Because there is no hard and fast deadline, the organisation can make updates as planned / prioritised
- + **Steady Performance.** The organisation has more time to adjust, refine and develop
- **Lack of Focus.** Deliverables occur over an extended period and so benefits are experienced in a 'drip-feed' way as opposed to all at once

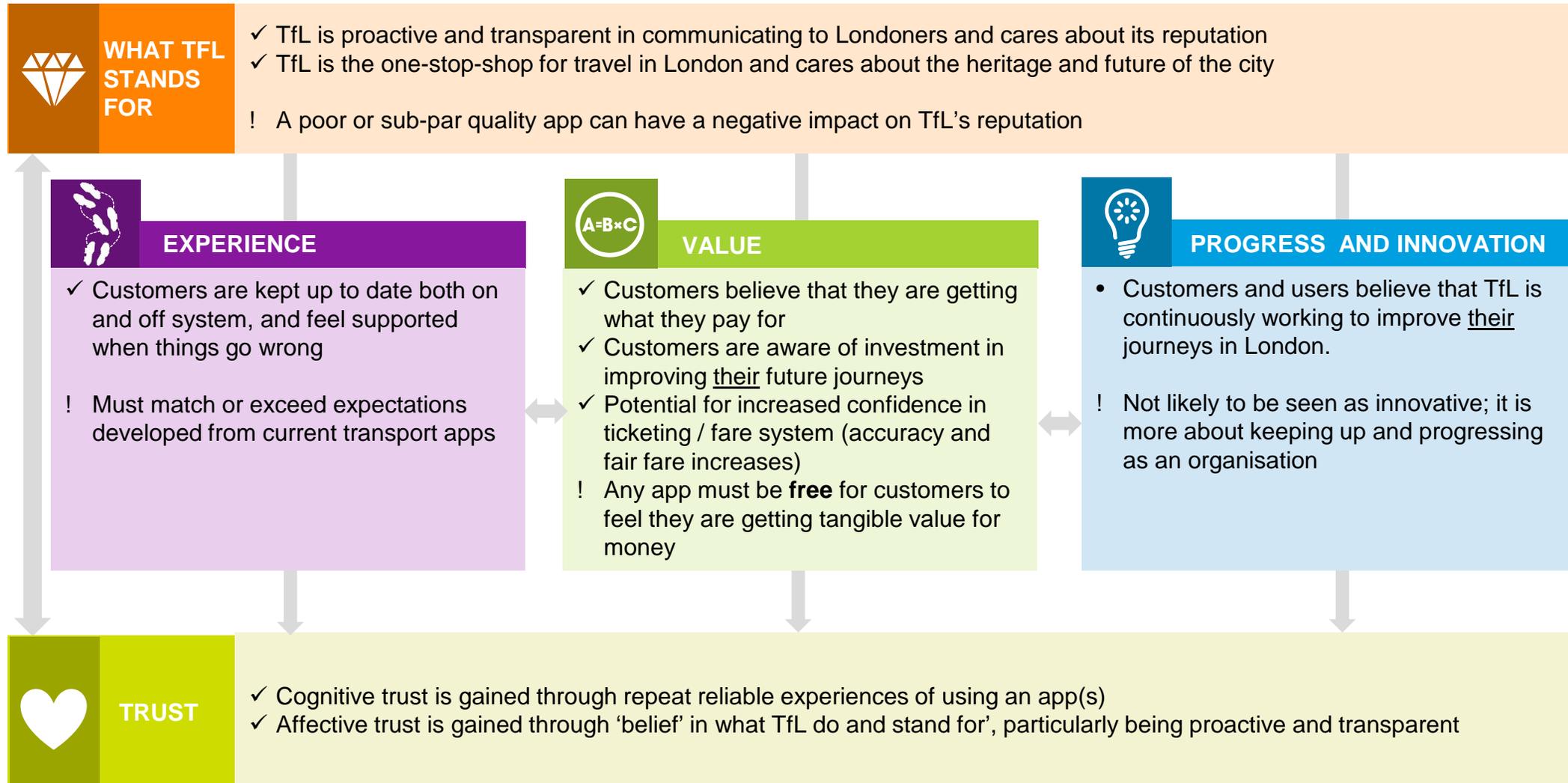
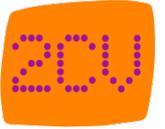


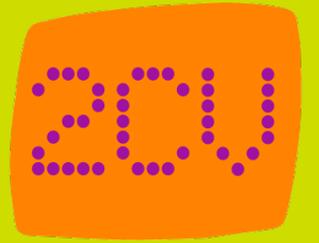
## Big bang

- + **A clear focus.** Delivery encompasses all prioritised features and customers experience the benefits all at once, giving a clear USP and 'TfL' experience
- **Higher Risk.** Unrealistic expectations may cause focus to be more on the deadline and less on planning. The organisation may not be ready for the launch by the given date.

Customers expected this app 'yesterday'

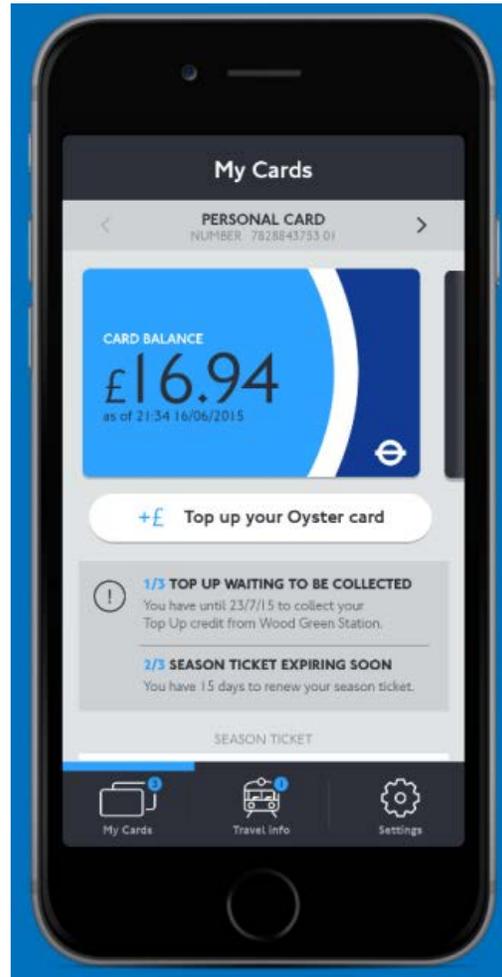
# Potentially a very positive impact on reputation if the app is 'done well'





# Moving forwards

# Significant potential for app to meet a need not currently being delivered in the marketplace

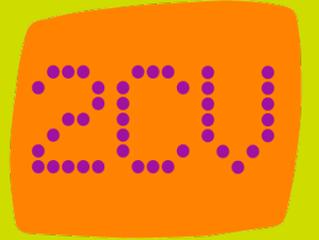


**Customers expected this app yesterday**  
They are confused as to why a ticketing app doesn't already exist (few Oyster apps do not allow customers to buy tickets on the go)

**Universal fast load is a must have**  
Without it, it will not deliver against the core need to buy tickets on the go

**Core audience are PAYG Oyster and Contactless customers**  
Season ticket holders see less value and benefit to them

**Innovation through app and website is the quickest win to drive online use**  
Customers see the benefits and will likely lead to customers changing behaviour and moving more online

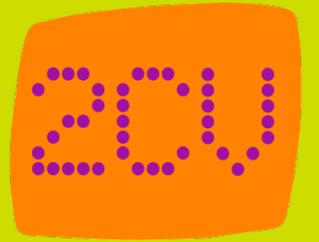


**Thank you**

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# Appendix

# They feel best served in ‘journey planning’ and ‘service status’, with a range of best in class apps to choose from



★★★★★  
**Phenomenal** An app that actually takes the human brain and how it thinks into consideration.. Very easy to use and full of features that makes the journey convenient and easy as possible.. Some really smart tools and you also get schedules for all public transport in your area.. Very difficult to describe into words how good this app is. Try it to believe it

★★★★★  
**THE best** Brilliant public transport app. Easy to use UI. Quick. Comprehensive.

★★★★★  
**Simply perfect** I don't know where I would be without this app, as a disabled person this app has been my only guide for years



★★★★★  
**Great little app** Very fast, intuitive and got the right information where you want it. Very few clicks to navigate around the UI.

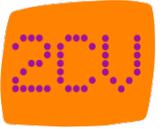
★★★★★  
**Great** Works well. Info on tube status. Doesn't require data to look at map so can use whilst underground. Routing very useful too



★★★★★  
**Great app** Really good app for bus service and the app picks up your locations and the nearest stops well worth having

★★★★★  
**Awesome** Finally a bus app that is easy to use, feature rich and looks pretty to boot.

# Examples of third party Ticketing Apps



**Oyster balance**

Welcome Back, BORIS

My sun card  
Card No: 056268452486

**Incomplete Journey**

- On 3rd Dec 2013 you touched in at Wimbledon [National Rail], but did not touch out.

**Season tickets**

- 7 Day Travelcard Zones 1 to 4  
Start date: Monday, 16 December 2013  
End date: Sunday, 22 December 2013
- Monthly Travelcard Zones 1 to 6  
Start date: Monday, 6 January 2014  
End date: Wednesday, 5 February 2014

**Pay as you go**

- Balance: £5.60
- Auto top up: £20.00

Updated at 20:06:20 20 December 2013

Journey history	Refresh
Manage Auto top-up	Add/renew/top-up ticket

Please note, it may take several hours to receive the actual Oyster card.

**Oyster ticket shops near map centre**

NEWAGENTS  
48 OLD COMPTON STREET, SOHO, LONDON, W1D 4UA

**Select card number**

- WIFE CARD  
056153384922
- DAUGHTER  
056268344577
- My sun card  
056268452486
- 056343643486



**OysterOyster & Contactless!**

Balance!  
TopUp!  
Refunds!

Email Address

Password

Save Account

Login Sign Up

Can't Login? Reset Password

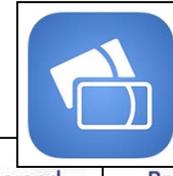
**Your Cards**

Oyster - 055172204165

Visa - xxxxxxxxxxxx 8580

Journeys Cards Refresh

Topup / Travelcards / Refunds



**Instantly access Balance and Travelcard details on the go**

**Browse your journey history and monitor expenses**

**Easily access all your cards from one place**

**Locate the nearest station and top up point**

**Balance**

Martin Top-up

Card number 055120754444

Pay & Go

£ 17.55

**Journey history**

Wednesday, 02 April 2014 Charge: £ 0.00

09:13 - 09:40	High Street Kensington to Sloane Square	0.00	Balance: 5.60
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Tuesday, 01 April 2014 Charge: £ 3.20

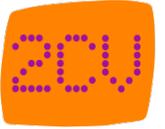
18:45 - 19:05	Action Town to Wood Lane	-1.60	Balance: 5.60
08:56 - 09:32	Shepherd's Bush (Central line) to Acton Town	-1.60	Balance: 7.20

**Oyster cards**

- Me Card number: 055120751111
- Clara Card number: 055120752222
- Elizabeth Card number: 055120753333
- Martin Card number: 055120754444

Stations Ticket stops

# Key suggestions from customers that they have high desirability for



*“The cost of single fares changes from zone to zone. Be good to be able to check this via an app”*

Reporting a lost card

Zone checker / alerts – to see where TfL ‘ticket’ covers

Instant top-up load, pick up at any station / any mode

OR

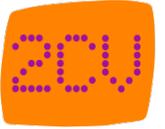
Change selected top-up station

*“This would be very reassuring and feels more instant, instant is what you want when you lose things! It would be great to cancel the Oyster so quickly so no-one else can use it”*

*“I’d like the flexibility to change my pick-up station. That’d be brilliant”*



# Desk review case studies

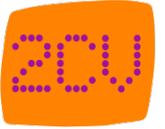


# Case study: Transforming a dashboard application into a Microsoft IT Modern App – a phased approach

- **Situation:** Microsoft’s learning and development dashboard lacked the design elements required to provide a good user experience on modern devices
- **Solution:** To deliver a modern app designed and delivered around a user-centric, seamless experience.
- **Phased approach:** Microsoft IT took a **phased approach** to deploying the new, modern Role Guide app. Phasing allowed Microsoft IT to move a key enterprise application to an app format, and then to gradually phase features into the app while scaling out the infrastructure and ensuring performance. The following table highlights what happened during each phase:

Phase	Scope	Features	Technologies	Key Learnings
<b>Phase 1 Initial Release</b>	<ul style="list-style-type: none"><li>•First and best release goal</li><li>•Scenario-focused engineering</li><li>•Modern user experience</li></ul>	<ul style="list-style-type: none"><li>•Touch-first browsing</li><li>•Start screen tile</li><li>•Focus on content</li><li>•Share data with other apps</li></ul>	<ul style="list-style-type: none"><li>•CSS, HTML5, and JavaScript</li><li>•Reuse existing foundational elements</li><li>•Lazy loading</li></ul>	<ul style="list-style-type: none"><li>•Include design changes to fit modern design principles.</li></ul>
<b>Phase 2 Stability and Performance</b>	<ul style="list-style-type: none"><li>•Address existing issues</li><li>•Address user feedback</li></ul>	<ul style="list-style-type: none"><li>•Responsive UI design</li></ul>	<ul style="list-style-type: none"><li>•Asynchronous design</li><li>•Client-side cache</li><li>•IndexedDB</li><li>•Service layer cache</li><li>•AppFabric cache</li></ul>	<ul style="list-style-type: none"><li>•Leverage caching extensively.</li><li>•Design to keep transactions over the wire minimal.</li></ul>
<b>Phase 3 Additional Features</b>	<ul style="list-style-type: none"><li>•Peak adoption</li><li>•Increase reliability and stability</li></ul>	<ul style="list-style-type: none"><li>•Consumerise service layer</li><li>•Schema optimization</li><li>•Interoperability increased with scalable services and leaner schema</li></ul>	<ul style="list-style-type: none"><li>•Microsoft SQL Server 2012</li><li>•Web API</li></ul>	<ul style="list-style-type: none"><li>•Rewiring with new services layer and schema is almost like developing a v1.0 app.</li><li>•Recommend thinking from the ground up when designing modern apps.</li></ul>
<b>Phase 4 Cloud Enablement</b>	<ul style="list-style-type: none"><li>•Available off the corporate network (CorpNet)</li><li>•Content published to new ecosystem on the cloud</li></ul>	<ul style="list-style-type: none"><li>•App available anytime/anywhere</li><li>•Auto scale feature available with cloud infrastructure</li><li>•Manageability and maintainability of the application is increased</li></ul>	<ul style="list-style-type: none"><li>•Azure hosted services</li><li>•Windows Azure SQL Database</li><li>•Windows Azure Cache Services</li><li>•Azure Blob Storage</li><li>•Windows Azure Media Services</li></ul>	<ul style="list-style-type: none"><li>•Complexity of the system is increased if on-premises and Azure systems must be maintained with real-time data integrity.</li><li>•Recommend moving to Azure without on-premises dependencies, if possible.</li></ul>

# Microsoft's best practices



## Plan for change

- Paramount focus must be given to ensure enough time is set aside for stabilisation post-release—especially for large, transformational projects
- Designs that keep the non-functional requirements along with the functional requirements in mind and provide good scalability and fault tolerance options help ensure a smaller stabilisation phase.

## Phase your implementation

- Phasing is something we recommend for enterprises looking at moving a key enterprise application to an app. Re-evaluate the application's features and design to fit modern app guidelines and principles, introducing ease of use.
- Plan on scaling out infrastructure to increase scalability and performance.

## User experience design is paramount to adoption

- Invest in designing a user experience that adheres to modern design principles. Utilise scenario-focused engineering techniques, and then bring in user experience designers to help guide you in terms of what your app will look like with your feature set.
- A good design:
  - Provides users with an actionable \ interactive home screen
  - Avoids complex user controls
  - Uses live tiles to provide real-time updates and alerts

## Design for scalability and performance

- Ensure you design your application to minimise any impact to your network
- Design for asynchronous traffic and stability
- Transmit only required data with correct data model
- Design for failure -smartly handle connectivity error scenarios by pre-checking with internal sites and ensuring users get details in case of connectivity failure
- Implement distributed caching to increase scalability
- Use client cache to reduce network traffic and user interface fluidity, providing a seamless and non-disruptive experience for the user moving from disconnected to connected mode.

## Acknowledge adoption curve when evaluating improvements

- If your enterprise supports a gradual adoption of a new app, you must keep in mind there is always an adoption curve for new experiences
- At initial release, the volume of users on the new app experience is not high enough to trigger some performance bottlenecks
- Realise that it is only as you get to or near the peak of the adoption curve that you start seeing performance issues—when you really want the app to be stable as that is when you really want to drive adoption

# Case study: HR software deployments: ‘Big bang’ or phased roll-out?

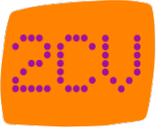
## ▪ Construction consultancy - big bang approach:

- *“We introduced all our changes at once so it was just painful the once. There was not a long embedding-in process where you have to introduce a change, then get over that, then introduce some more change, then get over that and so on,”*
- Doing it this way meant that the pain was felt by everyone in one go, not least because the system was designed to minimise the integration issues that could result from a phased approach
- Downfall - lots of change at once. You can't do everything you want in one hit. You have to be decisive.
- Biggest learning point: *“keep it simple as you can get carried away”*

## ▪ University of Wolverhampton – phased roll-out approach:

- Wanted to have better integration between the admin systems and reduce the number of systems as well as improve our management information and reduce cost.
- *“The benefits of a phased approach is that users are able to adapt to change gradually so that change management is less problematic”*
- *“Our old systems were so archaic that if we had gone for a ‘big bang’, we’d have alienated a lot of users who would have struggled to cope with the changes.”*
- Benefits of introducing the system are “realised more slowly”
- *“Our benefits have been on a drip feed. That is a problem in some respects because you get a perception among users that we’ve spent a lot of money in buying software, but the pace of change is too slow. There is also an on-going training burden,”*

# Phased roll-out approach to introducing new features / updates



- **Phased roll-outs** mean that app developers can release a new feature or design to a portion of users to get early feedback / QA before releasing it to 100% of the user base
- Phased rollouts **save mobile teams from releasing buggy updates or bad user experiences to their entire user base**. This strategy also allows teams to release updates or hotfixes without waiting for App Store review. During the phased rollout, PMs can measure their key performance indicators (KPIs) in real-time and take action based on those measurements.
- This is most commonly used to do three things:
  - Measure the impact of a new release, feature or experience
  - Roll back a new feature or experience if it introduced bugs or wasn't received favourably
  - Test / evaluate multiple versions of a new feature or experience
- Phased rollouts can:
  - Give you confidence to release a new update to 100% of users
  - Discover bugs you didn't know earlier without frustrating 100% of your users
  - Allow you to roll back buggy updates immediately without waiting for code review
  - Ease your users into a new experience in phases
  - Help you understand how different segments of users respond to the new release

This can minimise negative impact to reputation by ensuring a 'user-first' development process