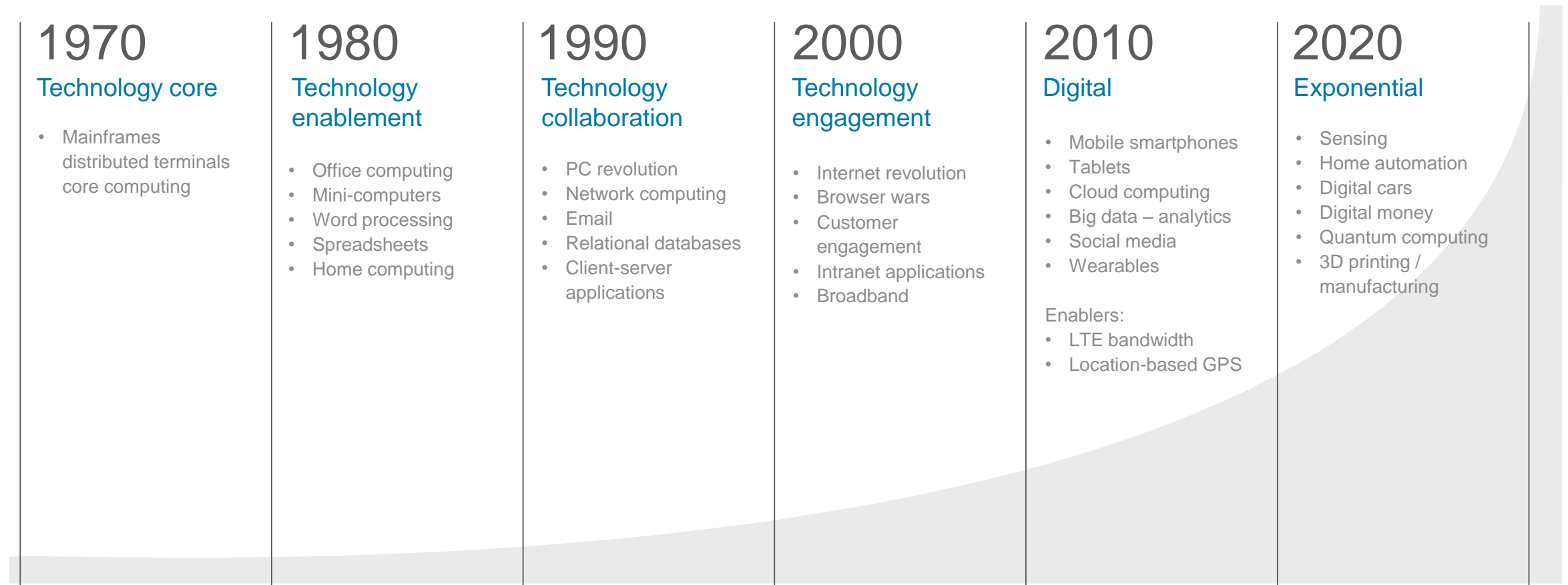# Mobile as a catalyst for change

April 2016

Conor Maguire
TfL Mobile Lead

Technology cycles

Technology eras are characterised by exponential growth and connectivity.

1970
Technology core

- Mainframes distributed terminals core computing

1980
Technology enablement

- Office computing
- Mini-computers
- Word processing
- Spreadsheets
- Home computing

1990
Technology collaboration

- PC revolution
- Network computing
- Email
- Relational databases
- Client-server applications

2000
Technology engagement

- Internet revolution
- Browser wars
- Customer engagement
- Intranet applications
- Broadband

2010
Digital

- Mobile smartphones
- Tablets
- Cloud computing
- Big data – analytics
- Social media
- Wearables

Enablers:
- LTE bandwidth
- Location-based GPS

2020
Exponential

- Sensing
- Home automation
- Digital cars
- Digital money
- Quantum computing
- 3D printing / manufacturing

The super disruptors since 2010

Enabling the Digital Era

MOBILE ANALYTICS CLOUD SOCIAL
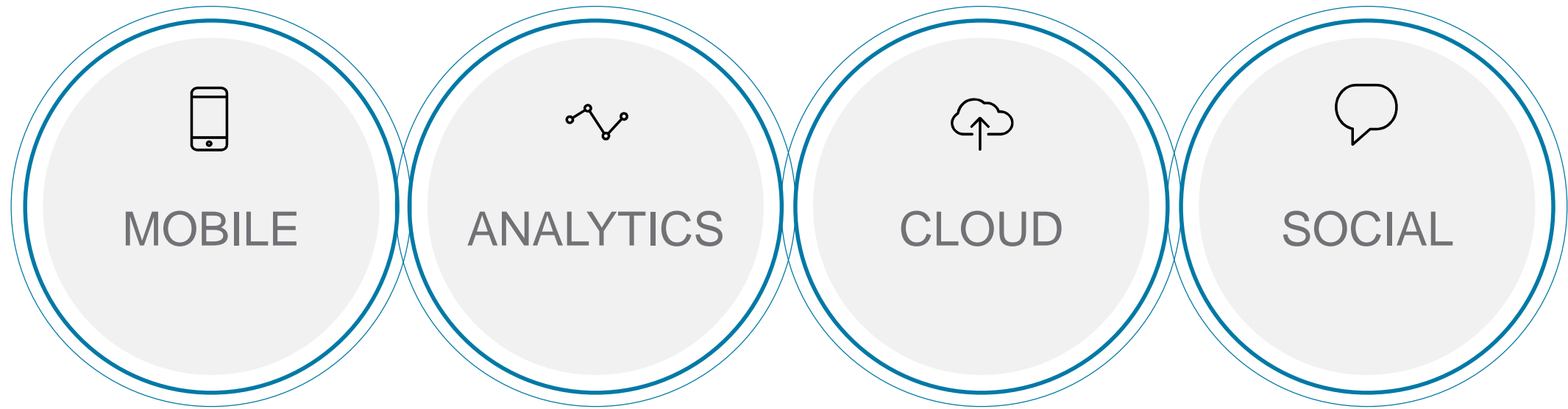
Every journey matters

Transport for London in numbers

1.3 billion passenger journeys on the Tube

140 million on The Overground

30.9 million passenger journeys made by Tram

2.4 billion by buses

2.1 billion journeys on foot

5 million people on the Emirates Air Line

The Challenge

TfL Already Mobile

Surface:
- Bus Operations x 300
- Enforcement x 600
- Bus Infrastructure x 30
- Roads x 30
- Traffic x 10

R&U:
- LU JNP Assets x 1,500
- LU COO Operations BlackBerrys x 700
- LU COO Asset Performance x 300

TfL:
- Knowledge workers BlackBerrys x 5,000
- Other small local investments
- Some BYOD

Issues:

- Parochial/local approaches
- Ungoverned beyond local budgets
- Significant duplication:
- Inability to leverage existing investments/deals
- Mainly end-of-life assets
- Limited security
- Until 2013, no alternative

The Context

MARKET
PULL

BUSINESS
CHANGE

TECHNOLOGY
PUSH

Delivering to customer experience
& becoming self funded

Mobile Vision

Every Journey Matters

Access to tools and information

that they need

at the time they need them

wherever they need them

Enable our people

To better collaborate

And communicate

Provide a flexible service

Value for Money

Perform a variety of functions

Few devices as possible

Supports Delivery Outcomes

evolving in line with TfL's service delivery strategies

Wave 1- Utilise

Mobile Base Service

IM Mobile Programme
Mobile team future planning, architecture, and project rollouts

Wide selection of device specific accessories

3G O2 provided 3G Cellular network
High speed external browsing and connectivity

Wi Fi Access to Corporate Wi-Fi
At tube stations and head offices

Use of device on Personal, Home, Private, and Corporate wireless networks

Virtual Private Network
Access TfL services when outside the corporate network

source Transport for London
Access to TfL Intranet

OneLondon Email
Calendar, Contacts, and Tasks

Latest Mobile Devices
to support your role requirements

Self Help
Access to online training and support materials

24/7 Service Desk

Technical Support and expertise
IM and Suppliers providing excellent support for devices and apps

Corporate App Store
Access to TfL's Corporate App Store for internally distributed Apps

App Store
Access to Apple's App Store to install your own choice of applications

OneLink Succeed Together **OneSpace** Transport for London
Access to SharePoint sites

Deploy Devices

Governance

BUSINESS

DELIVERY

TECHNOLOGY

SOURCING
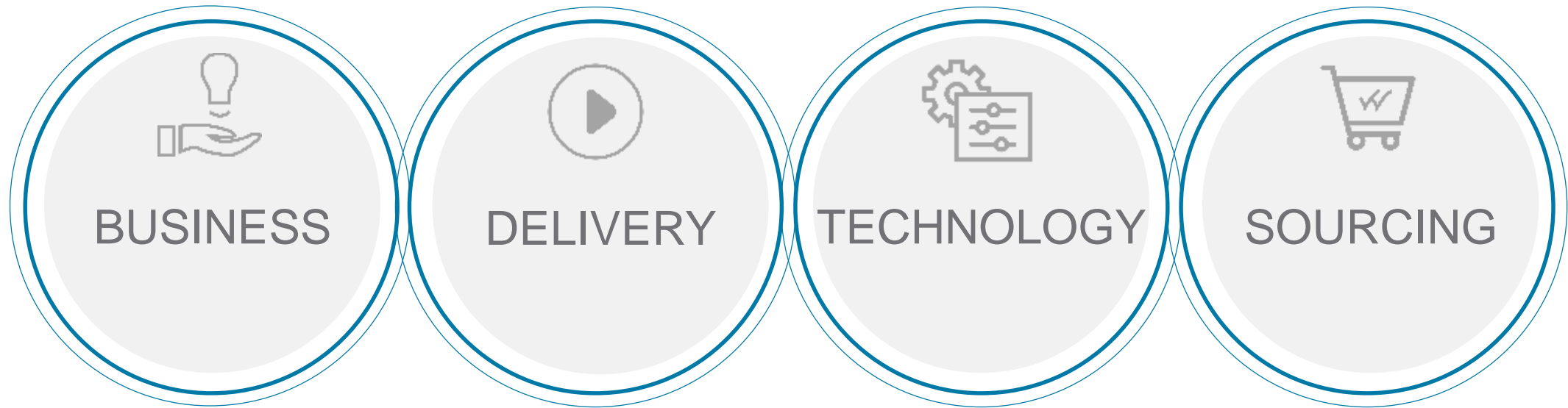
App needs assessment

Wave 1 review
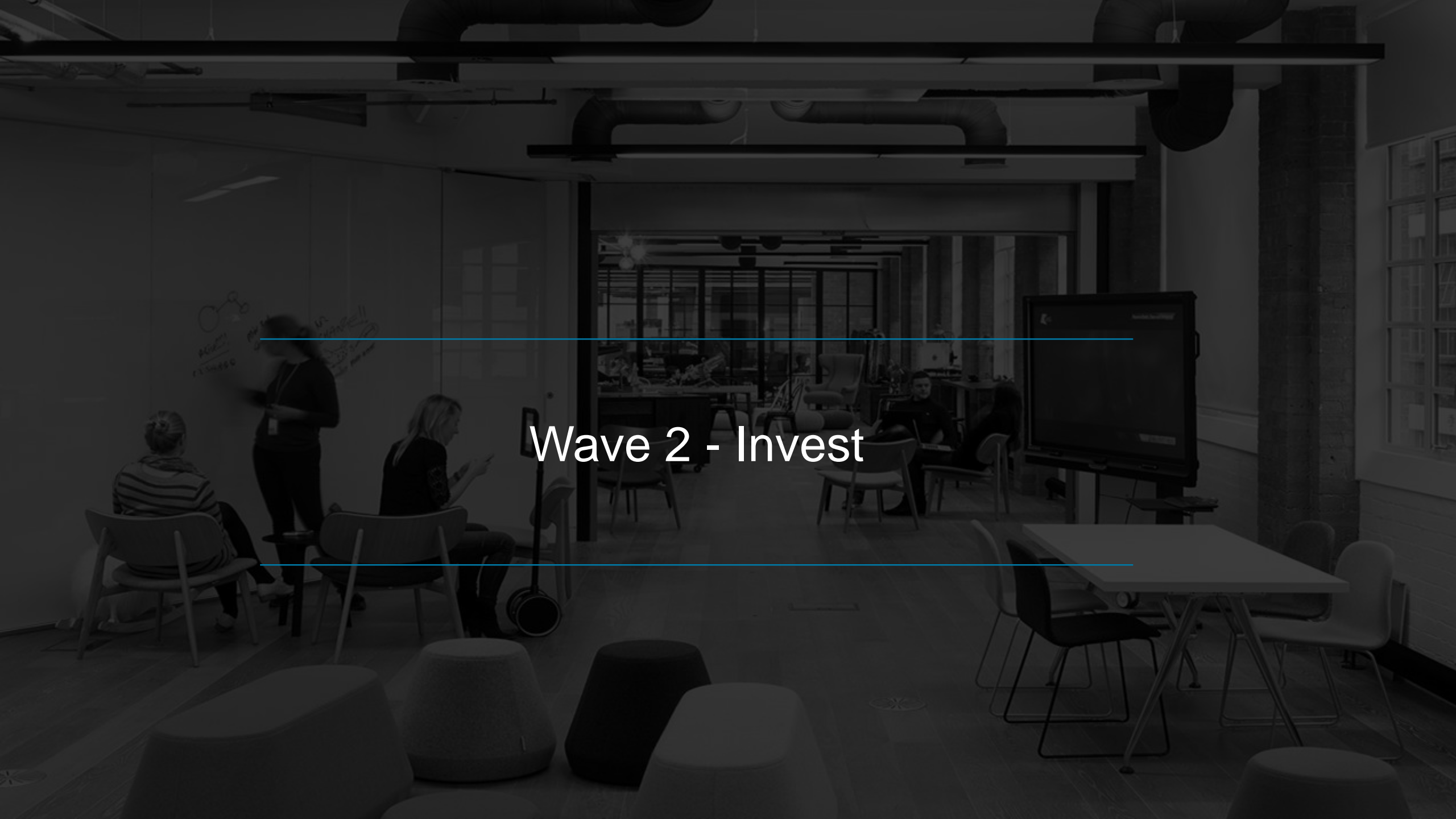
LESSONS LEARNED
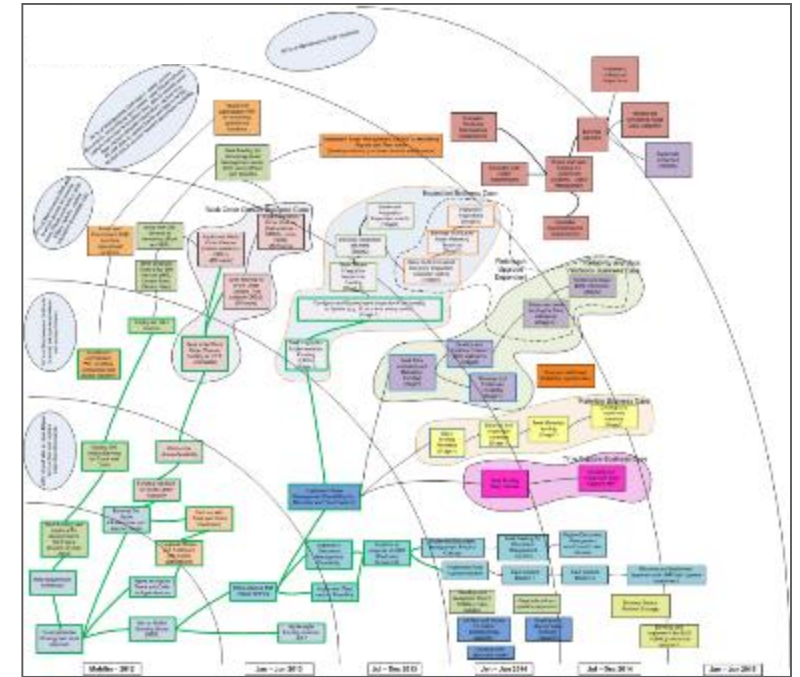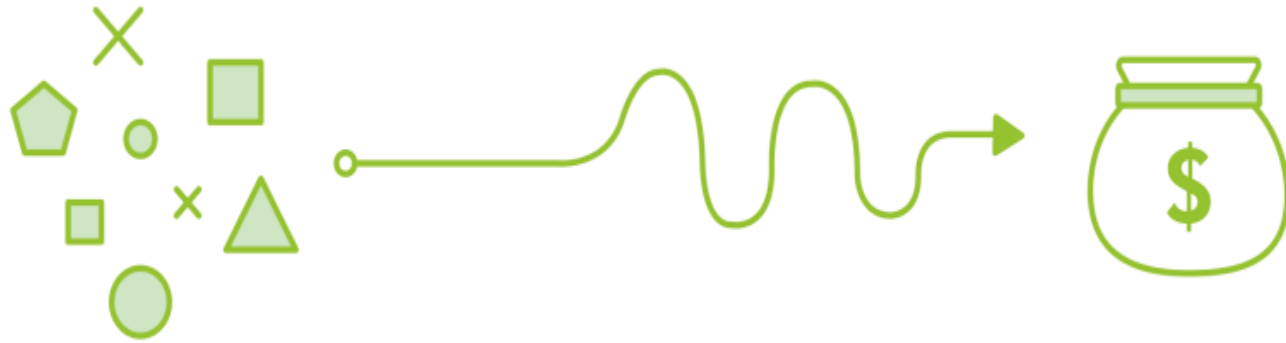
- Existing teams / functions have difficulty with a new paradigm

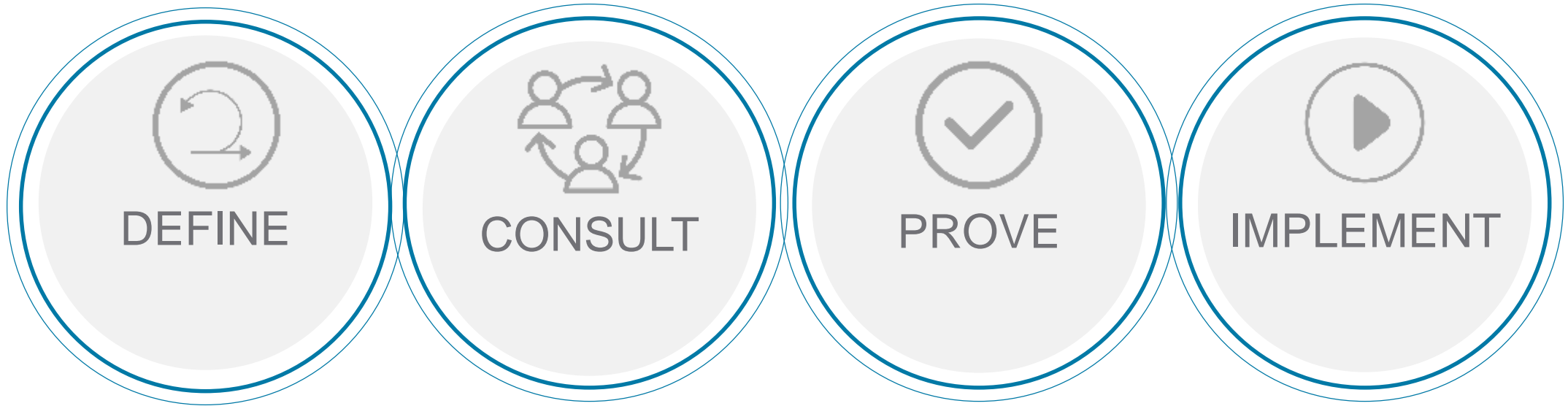- Demonstrate through doing

- Establish a re-charge model

SUCCESSES

- Consumer app helped to resolve Northern Line incident
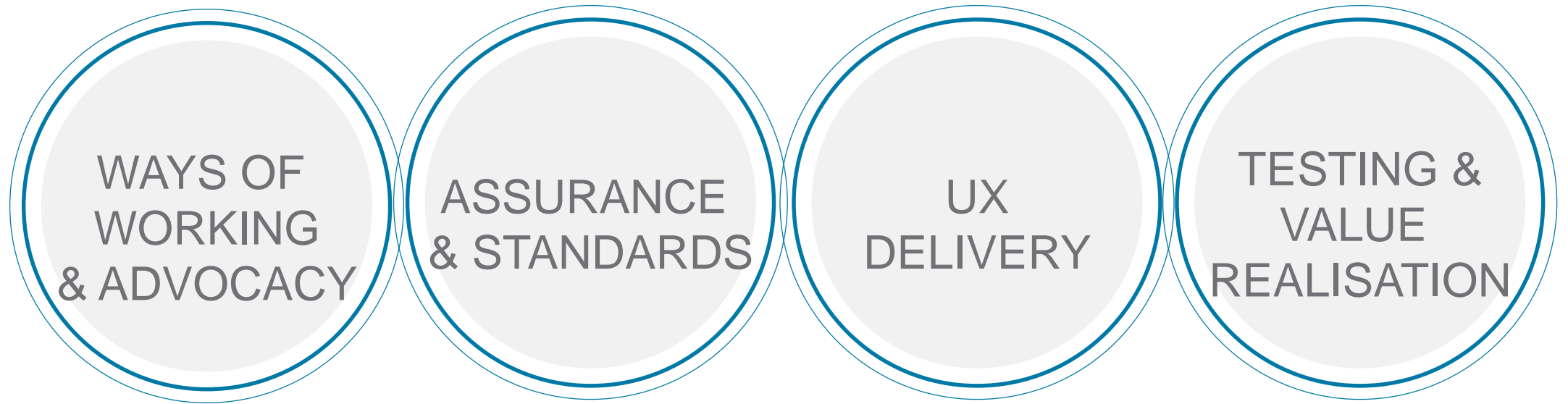
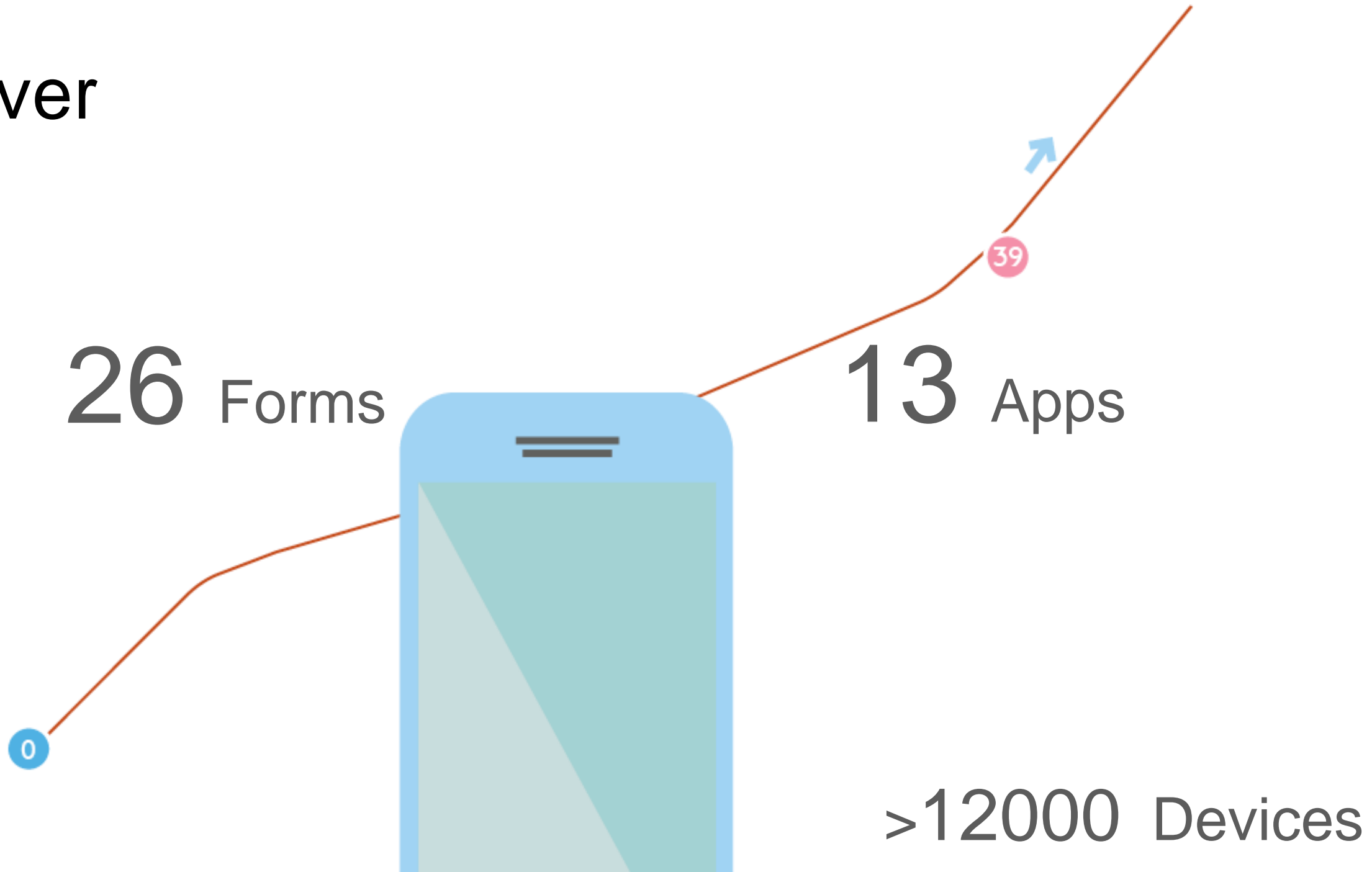- Replaced aging Blackberry devices
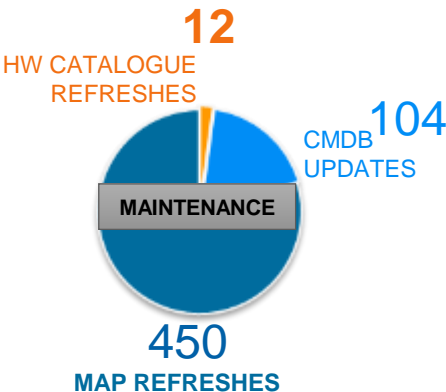
Wave 2 - Invest

Implement Agile

DEFINE

CONSULT

PROVE

IMPLEMENT

Design a central function focusing on UX

Establish an integration capability

Deliver

26 Forms

13 Apps

>12000 Devices

Support

12,000 OPERATIONAL USERS **20,000** DEVICES

10 PRODUCT LINES

BYOD

600 NEW DEVICE REQUESTS

2000 ACCESSORY REQUESTS

SERVICE REQUESTS

2000 APP REQUESTS

4 OS UPGRADES

RELEASE

450 APP REPACKAGES

INTEGRATION WITH EXISTING SERVICES

SSO

12 HW CATALOGUE REFRESHES

104 CMDB UPDATES

MAINTENANCE

450 MAP REFRESHES
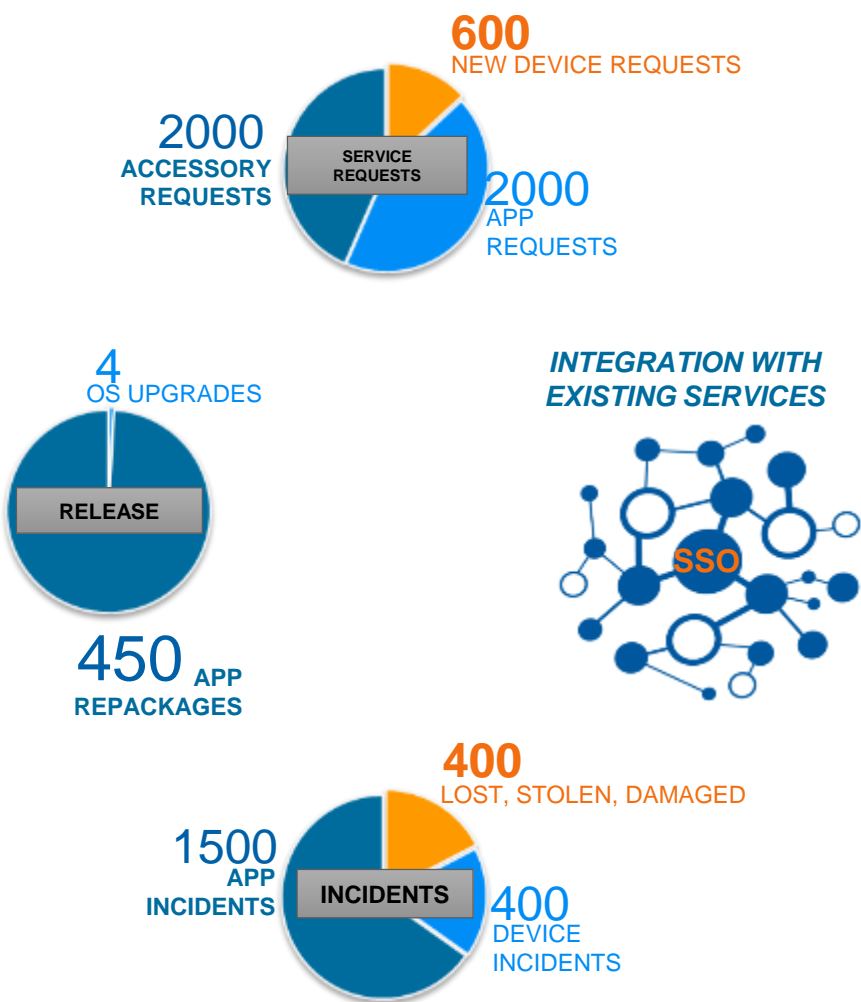
SERVICES

MDM
Mobile Device Management secures configures and allows support of devices wirelessly

MAM
Mobile Application Management provides ability to deploy, monitor and support applications remotely

APP FACTORY
Buy, build or customise applications for use on mobile devices

SELF SERVICE
Self Service Portal provides a personalised rapid and interactive support, information and collaboration tools

400 LOST, STOLEN, DAMAGED

1500 APP INCIDENTS

INCIDENTS

400 DEVICE INCIDENTS

12~20 FTEs

** Not included in model – Hardware Refreshes

Wave 2 review

LESSONS LEARNED

- Co-location is critical – separation beneficial

- Test Automation is necessary

- UX is key

- Industry standards are helpful

- Delivery model with external suppliers is OK but perhaps not Agile

- Competition with suppliers would be helpful

- Ship fast: < 6 months

- Built patterns

- Consider TCO when deciding on OS / Tech stack

- Prioritisation challenge

Wave 2 review

SUCCESSES

- Approx 8000 forms submitted delivered est. savings of 15000 hours

- Incident reporting app est. savings of 8 – 10k hours / year

- Fault reporting app est. saving of 16 – 20k hours / year

- Set new standards for service and support

- Peer community support

- Azure competency utilised beyond mobile

Wave 3 – Transform and embed

Transform

Fftf-S

New Operating Model

5000 users

Improved customer intimacy + Operational benefits

Asset Management

Full process lifecycle mobilised

Singular interface across multiple teams / users

Significant operational efficiencies

Enforcement

New Operating Model
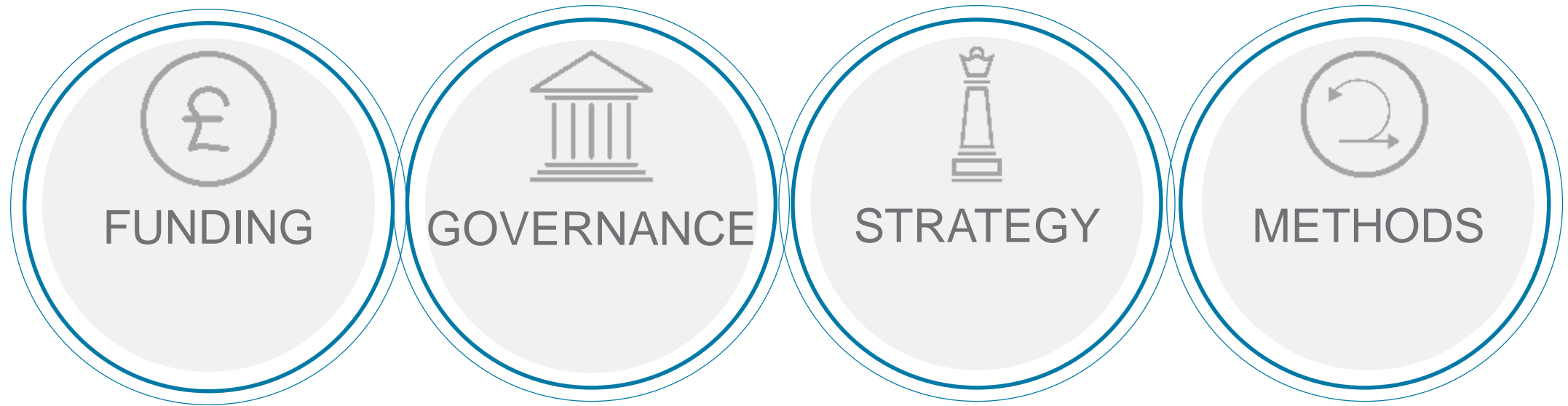
Reduction in devices

Improved Staff morale

IM

New delivery method

Exemplar Service and Support capability

Cloud services

Embed

The Organisation has shifted

MARKET PULL

BUSINESS CHANGE

TECHNOLOGY PUSH

What's next?

Exponential technologies
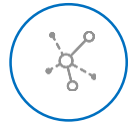
Artificial Intelligence

Connected Home

3D Printing

Crypto-Currencies

Mobile Payments

Wearables
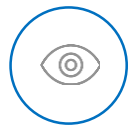
Genomics

Sensing – Internet of Things

Robotics

Drones

Electric and Connected Cars

Oculus Rift

Thank You!