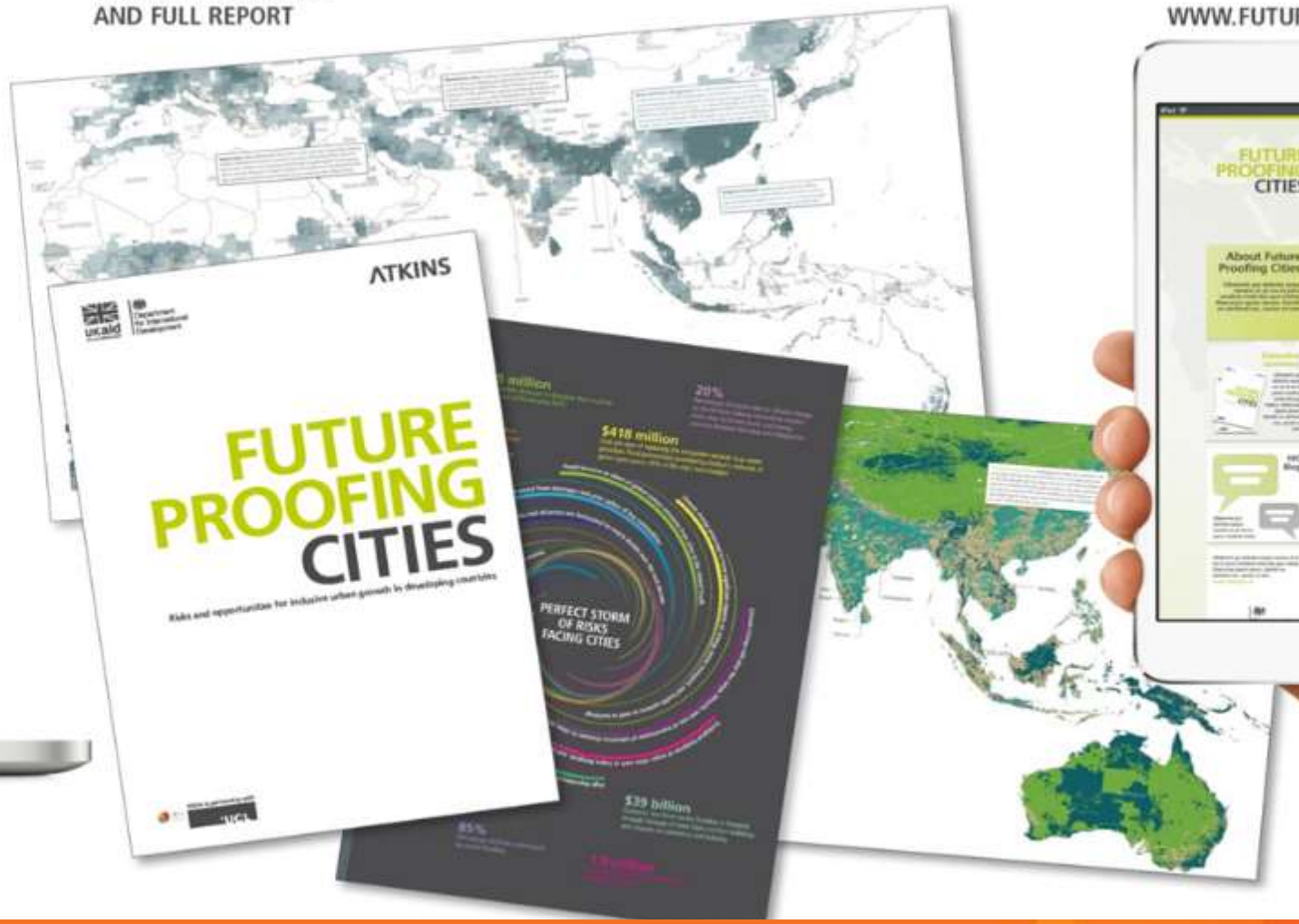
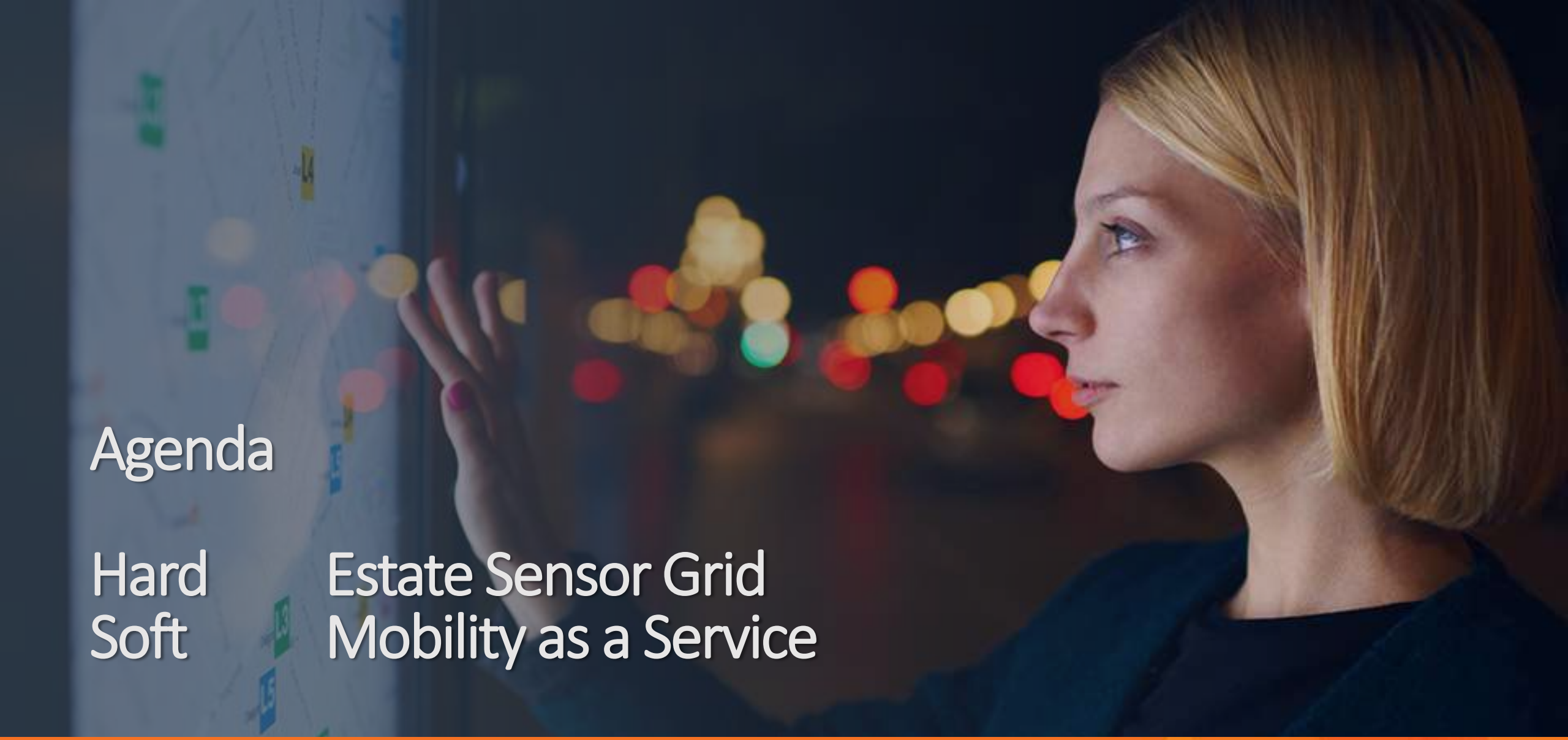
LAUNCH EMAIL

EXECUTIVE SUMMARY AND FULL REPORT



WWW.FUTUREPROOFINGCITIES.COM



Agenda

Hard
Soft

Estate Sensor Grid
Mobility as a Service

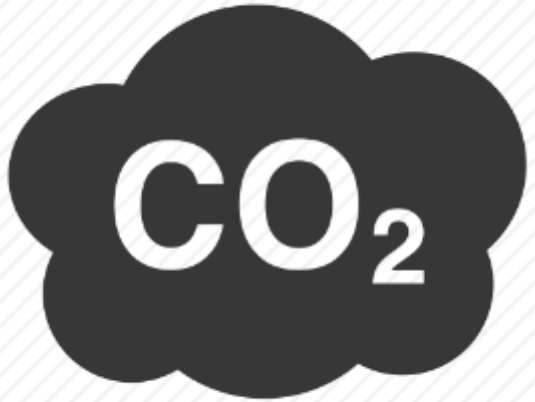
INTELLIGENT MOBILITY with ATKINS

ATKINS

600 heartbeats

100 watts
16 calories

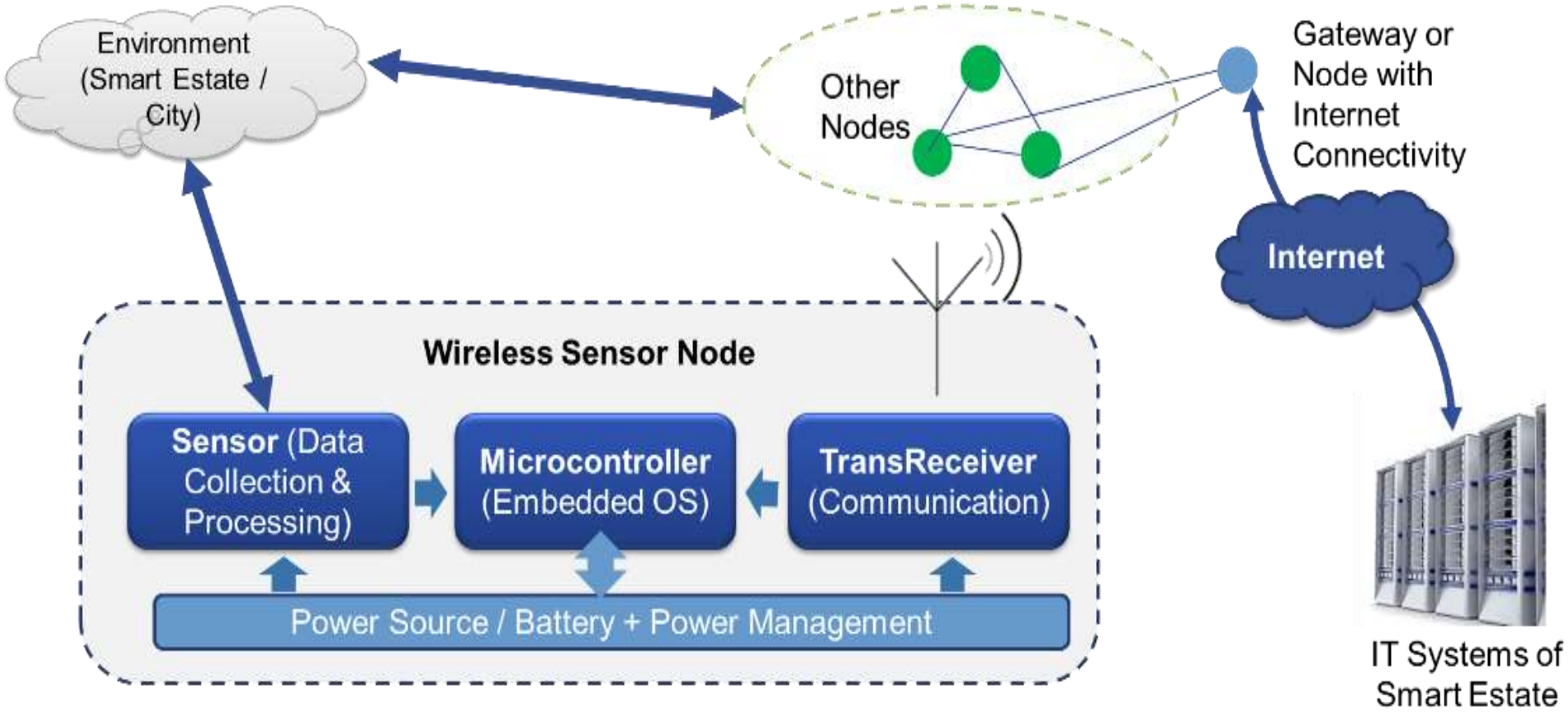
10 grams



See how Fitbit can help you exercise, eat, sleep & live better

Take a quiz to find the right tracker for you

Learn why people love the Fitbit app



Estate Sensor Grid

Trumpton* Council
Digital Parking and Digital Asset Management

*(*fictitious name. Pop 150,000 = Putrajaya x2)*

INTELLIGENT MOBILITY with ATKINS

ATKINS

1. The Challenge – parking in Trumpton

How can we address the following challenges and increase parking revenue?

ATKINS

OVER CAPACITY

A number of car parks in the urban areas will be operating over capacity in the future, including multiple locations across Trumpton.

USER EXERIENCE

Frustrations around locating and paying for a car parking space can worsen the journey experience of transport users.

REDUCE CONGESTION

Lack of availability of parking can increase traffic delays and disruption on the network and worsen journey time reliability.

POOR AIR QUALITY

As the number of available parking spaces decreases the search time increases, this contributes to congestion and worsens air quality in these urban areas

LIMITED SCOPE FOR REDEVELOPMENT

There is limited scope for providing additional car park capacity in the urban centre

…and in doing so maximise parking revenue.

im INTELLIGENT MOBILITY with ATKINS

2. The Solution – Digital Parking

A digital parking solution will reduce the need to invest in new infrastructure

ATKINS

appyparking
ONE PLACE FOR EVERY SPACE

Data management

- The data management system provides data in a visual format.
- Use of data and recommendations drawn from it can better inform the benefits & use case for wider roll out.
- Interpretation of data also gives rise to better network management and more efficient asset management.

Infrastructure

- Installation of parking bay sensors.
- Sensors communicate with mobile app by Bluetooth.
- Responsible for processing payments when car in bay covering sensor.
- Simple and cheap to install, battery life of 5+ years.

User interface

- Mobile Application.
- Customer experience is better so more likely to use.
- Increases revenue generation by providing a seamless mechanism for parking payment.
- Allows user to drive direct to parking space thus minimising congestion on the network.

im INTELLIGENT MOBILITY with ATKINS

2. The Solution – Digital Parking

LIDAR data collects information on the following assets in detail

LIDAR Demo

Bus Shelter	Roundabout	Seating (benches)
Bus Stop Sign	Signal Controlled Junction	Comms Cabinets
Dog Bin	Stop and Give Away	Advertising Boards
Litter Bin	Traffic Calming	Cycle Racks (all)
Car Club Bay	Traffic Island	Street Name Plate
Disabled Bay	Tram Marking	Telegraph Pole
Doctor Bay	Waiting Restriction	Gullies
Footway Parking Bay	Worded and diagrammatic marking	Speed Bumps
Limited Waiting Bay	Yellow Bar Marking	Carriageway
Loading Bay	Yellow Box Junction Marking	All Parking/CPZ Signs
Motorcycle Bay	School Markings	Arrow and Lane Destination
Pay and Dispaly Bay	White Bar Markings	Bus Markings
PrePaid Tickey Bay	Pay and Display Ticket Machine	Cycle Marking
Permit Holder Bay	Paot Box	Double Yellow Line
Shared Use Bay	Public Telephone Box	Longitudinal Line
Taxi Rank	Bollards	Pedestrian Crossing
All Regulatory Signs	Guard Rail	Railway Level Crossing
All Warning Signs	Dropped Kerbs/Driveways	Road Stud
Safety Fencing	Footway	Highway Trees (on pavement only)

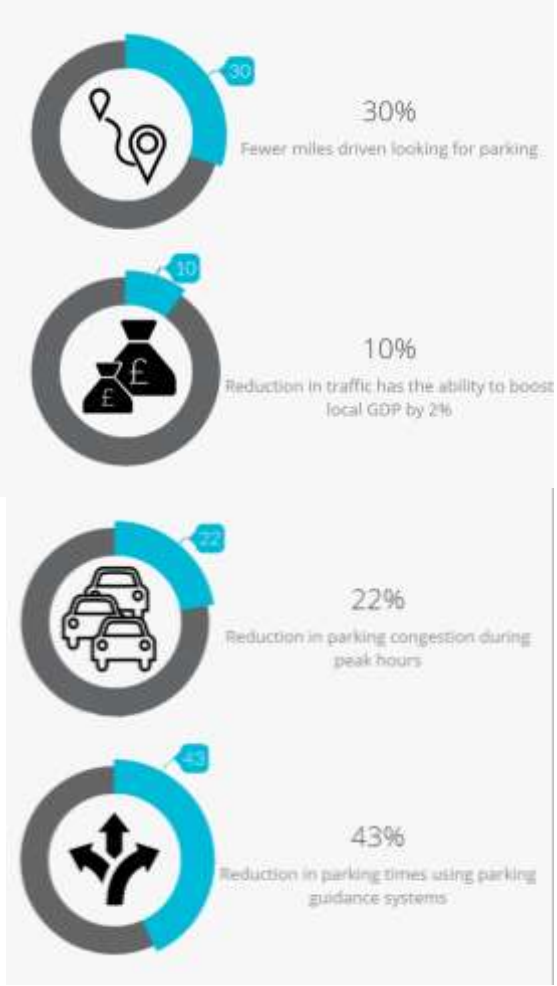
ATKINS

- It's possible to interrogate the point cloud data and extract every asset visible to the human eye.
- Table shows sample of what can be extracted.
- Data can be represented in corporate GIS map.

im INTELLIGENT MOBILITY with ATKINS

2. The Solution – Digital Parking

Benefits



Case Studies

Westminster City Council

- Data identified that saturated and under-used parking spaces often exist close to each other. Exposing real-time bay availability overcame this supply-demand mismatch.
- Drivers spending less time searching for parking and staying **10%-15%** longer.

Applied case study extrapolated for Trumpton

10-15% can mean a big increase in revenue for Trumpton. The actual figure is expected to be more than this as there is more room for improvement than in Westminster.

- Trumpton's budget for parking revenues in 17/18 is **£7.83m**
- **25%** increase to this is **£2 million**
- Factor in the efficiency savings from:
- Reduction to enforcement officers **(£0.1m pa**)
- **50%** reduction in costs of the appeals process **(£0.13m pa**)

There is the potential for £2.2m net parking revenue gain pa.

3. Where to Start – our offer

A trial in Trumpton

ATKINS

Indicative Total Cost

~ £200 – 250k

Approx. RM 1m

500-700 sensors deployed across Trumpton with the aim of managing capacity at Car Park A Car Park B

PHASE 1 OUTPUTS

1. Digital Parking + Digital Asset Management Platform
2. Mobile Parking App and sensor based on street mobile parking payment
3. High quality up to date Parking Data & Asset Data

PHASE 1 DELIVERABLES

LIDAR & Parking Technical Report

1. Parking analysis recommendations
2. Asset data analysis recommendations
3. UTMC Integration Options Analysis

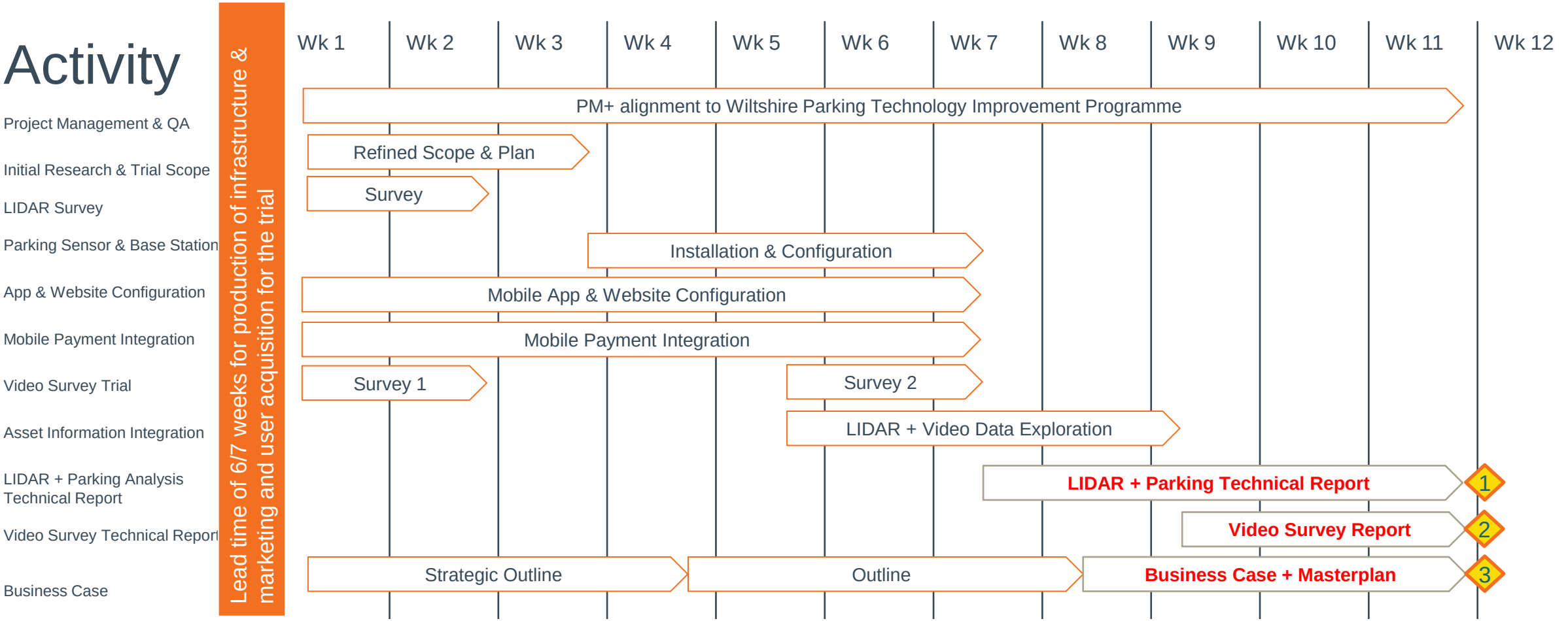
Business Case & Masterplan

1. Business case for solution covering: Benefits Analysis; Economic Options Appraisal; Financial Options; Commercial Options;
2. Phase 2 scope & preparation and wider Masterplan for solution
3. Phase 2 funding options & procurement strategy
4. Go/No Go for Phase 2

im INTELLIGENT MOBILITY with ATKINS

3. Where to Start – our offer

A high level overview of our proposal in Trumpton



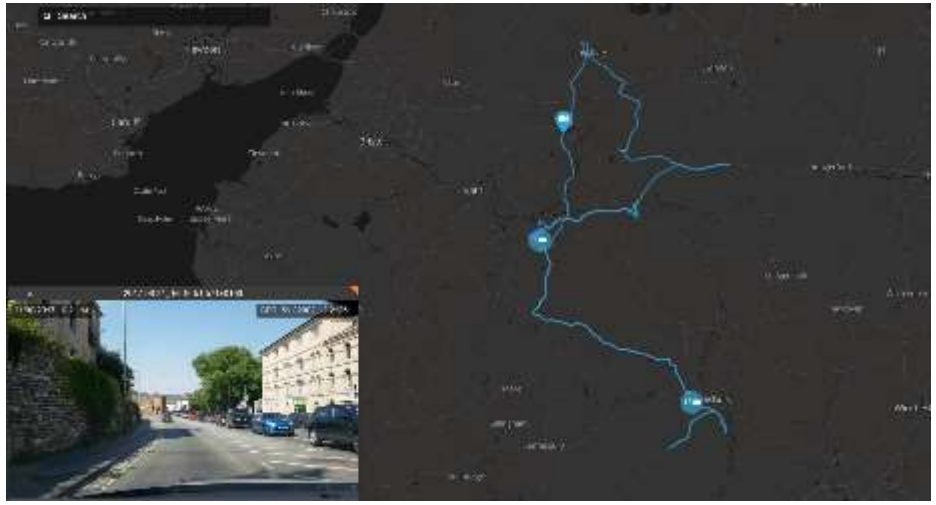
4. Digital in Trumpton – an example case study

Trial – Exploring DAM with technology

ATKINS

Overview

- Trial being undertaken in Trumpton.
- Live video capture technology – constantly records for an entire journey & software automatically begins uploading to mapping interface when connected to Wi-Fi.
- Automated asset data identification, via machine AI, and displayed on web portal.
- The aim is to remove single point in time data and enable dynamic survey data, which will constantly be refreshed.



Potential Benefits Include

Simple & cheap to implement

Trumpton can collect their own data – Atkins provide QA

Real time data

Multi uses for the same data set

Asset location, type and attributes available via web portal providing access to multiple stakeholders

Asset monitoring, deterioration profiling, life cycle, change control possible

INTELLIGENT MOBILITY with ATKINS

Mobility as a Service (Maas)

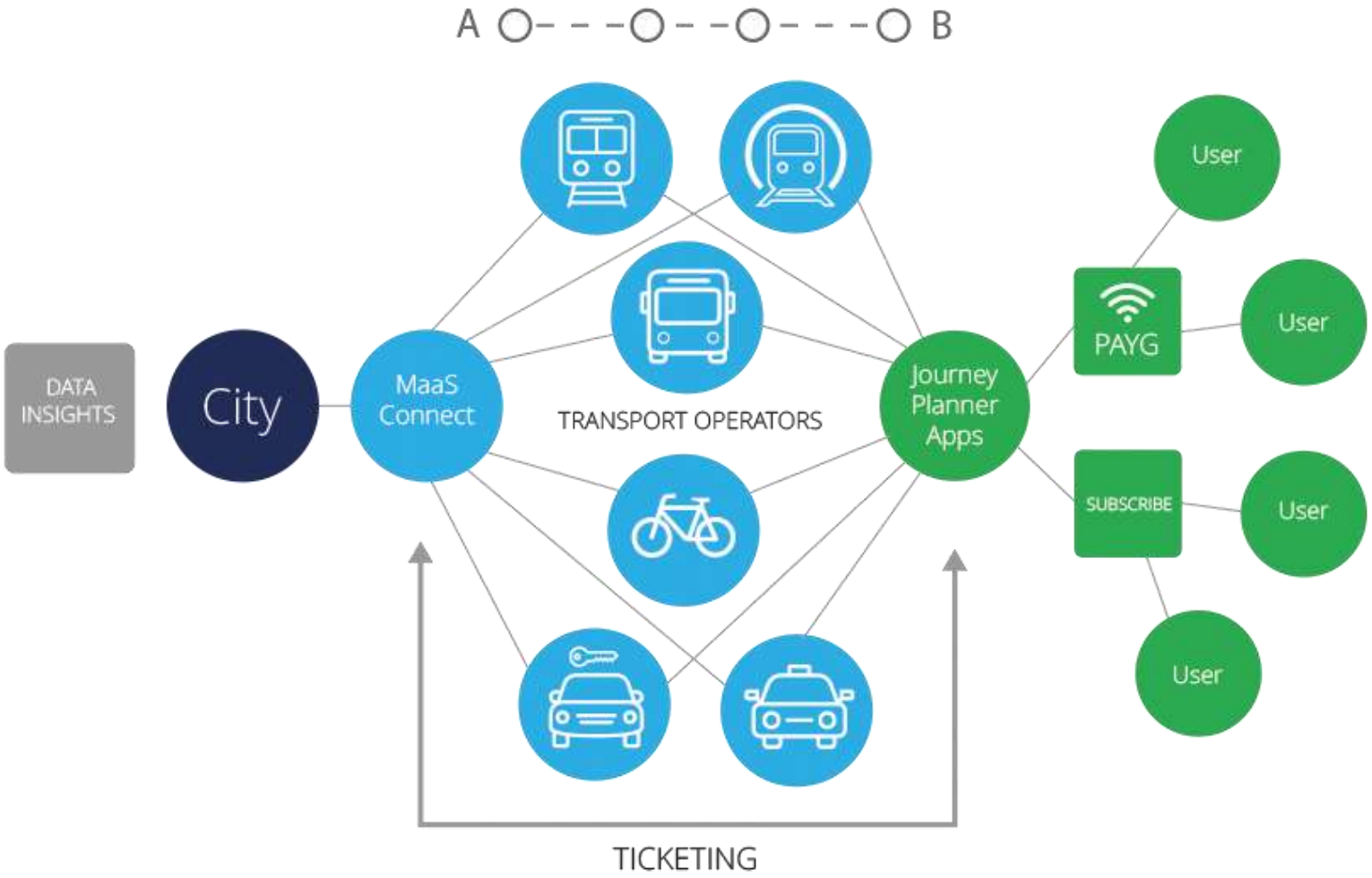
Could the world's leading cities and their mobile workers face a threat to their quality of life and prosperity?

Mobility As A Service
unlocking smarter A to B transport

INTELLIGENT MOBILITY with ATKINS

ATKINS

Example Maas system – digital transport network integration



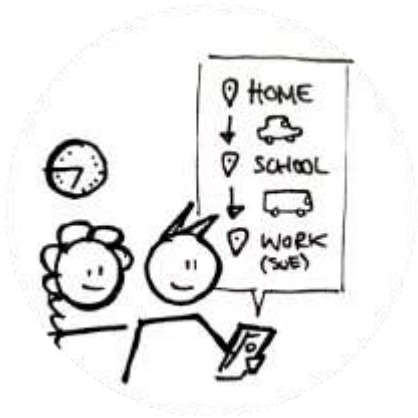
ATKINS

Users can pay for multi-modal journeys with a single account - paying per trip or via a monthly subscription.

Transportation services from public and private providers are combined through a unified gateway that creates and manages a complete journey from A to B.

5 step core MaaS Connect customer journey

PLAN JOURNEY A TO B



Plan steps

Tom and Sue need to get their daughter to school for 8:30am.

'One Journey' provides a status update and suggests the best alternative, based on your preset preferences (eg speed, comfort, mode).

YOUR OPTIMAL JOURNEY

Easy routes

'Alternative options are available: take a short bus from a stop 8mins from home, or access a local carclub car, which can be left near to school or at the train station.

Simply tap in and out with smartphone (or card).

EASY WAYFINDING

Stay on track

'OneJourney' gives Tom and Sue continuous information on where to go to connect between different transport types, and live wait times.

'Frictionless' journeys makes it easier to choose public transport over car.

RE-ROUTING

Preempt problems

'OneJourney' features auto-rerouting and delay repayment.

If Tom's train is delayed, he will be notified and offered suggestions on how to proceed.

FULL JOURNEY COVERED

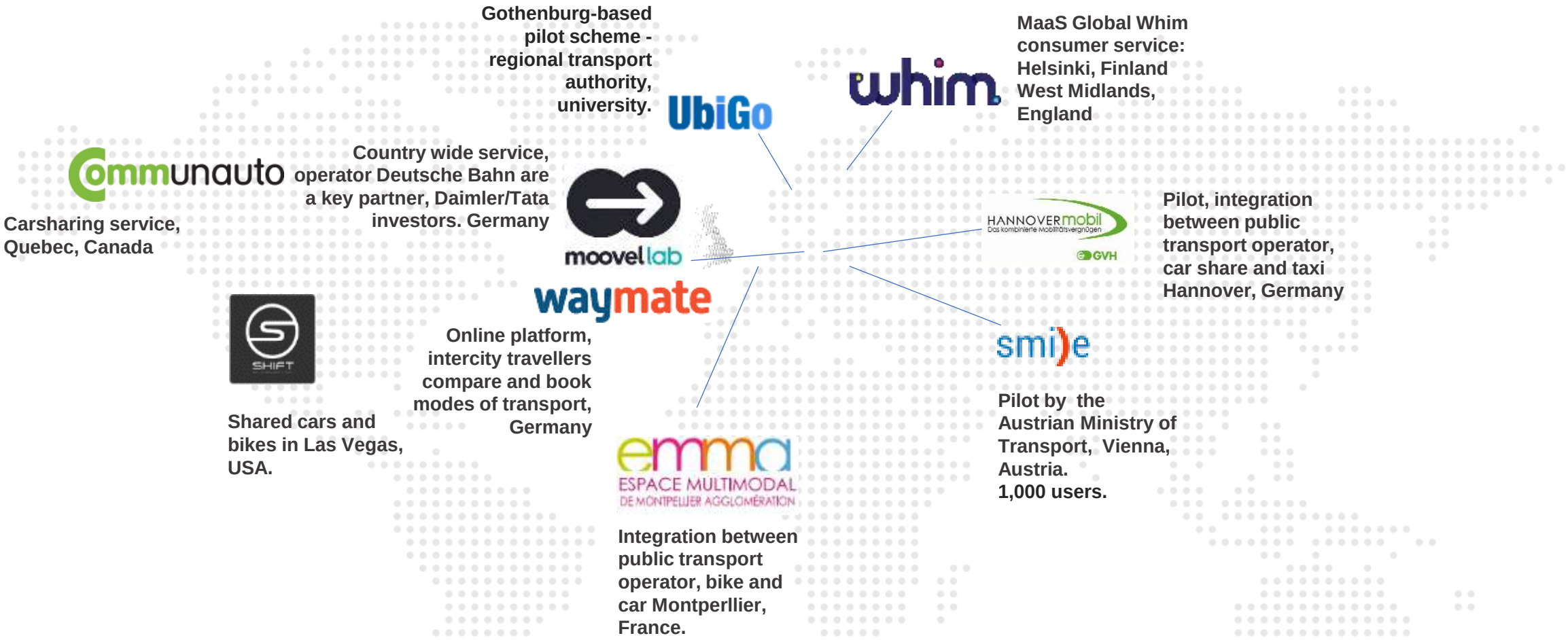
Switch in flight

Tom and Sue's subscription covers end-to-end journeys; changing to bus, tram or bike is simple.

No need to worry about cash or the cost of a bus.

ATKINS

Mobility as a Service transport innovators emerging



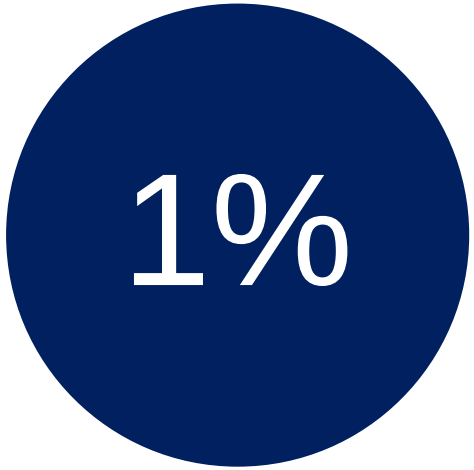
ATKINS

What kind of modal shift behaviour would be needed?

Example behaviour change numbers for Trumpton

If just 10,000 people

made 3 extra public transport journeys every month



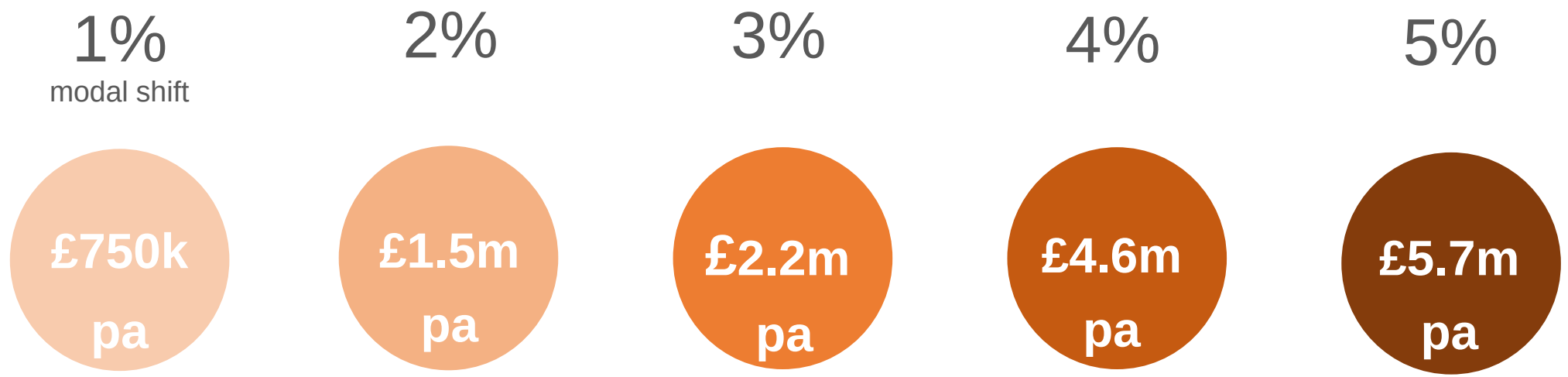
the reduction in car journeys would be equivalent to 1% modal shift

Based on achieved shift across comparative mobility schemes a 1% shift represent a modest target

*Note that the figures presented on this slide are approximate.

ATKINS

Increasing modal shift drives economic benefits: Trumpton



Approx. RM 4m

Approx. RM 30m

DfT decongestion and environmental Present Value calculation method, from road km reduction. Modal shift mapped against Trumpton population figures.

Assumed value benefits: decongestion, infrastructure, accidents, local air quality, noise, greenhouse gases, VoCs

Could MaaS work?

(Cambridge UK)

INTELLIGENT MOBILITY with ATKINS

ATKINS

The ZUME experiment

Regular Cambridge commuters shared journeys from their home to the Park and Ride

- Provided 118 journeys
- Occupancy averaged 1.3 and maximum was 3
- Participants travelled over 1000 miles and made over 100 bus journeys
- At least 3 people hadn’t used the Park and Ride for their commute before

Atkins ‘Zume’ conclusions

Possible to get people to switch from commuting in their own car to our service

The two week trial opened new transport partner opportunities

Genuine interest from public – 60 people contacted us with interest in taking part


ATKINS