ADDLESHAW GODDARD

UCL

TRANSPORT FOR LONDON

RETAIL TRAVELUTION

TECHNOLOGY IN RETAIL & TRANSPORT

Speakers

Nathan Marsh	Intelligent Mobility Director, UK & Europe – Atkins
Russell Goodenough	Client Managing Director (Transport Sector) – Fujitsu
Damon Rosamond-Lanzetta	Partner – Addleshaw Goddard
Lauren Payne	Associate – Addleshaw Goddard

RETAIL TRAVELUTION

TECHNOLOGY DEVELOPMENTS IN RETAIL & TRANSPORT

Nathan Marsh
UK & Europe Director, ATKINS

January 2018

INTELLIGENT MOBILITY with ATKINS

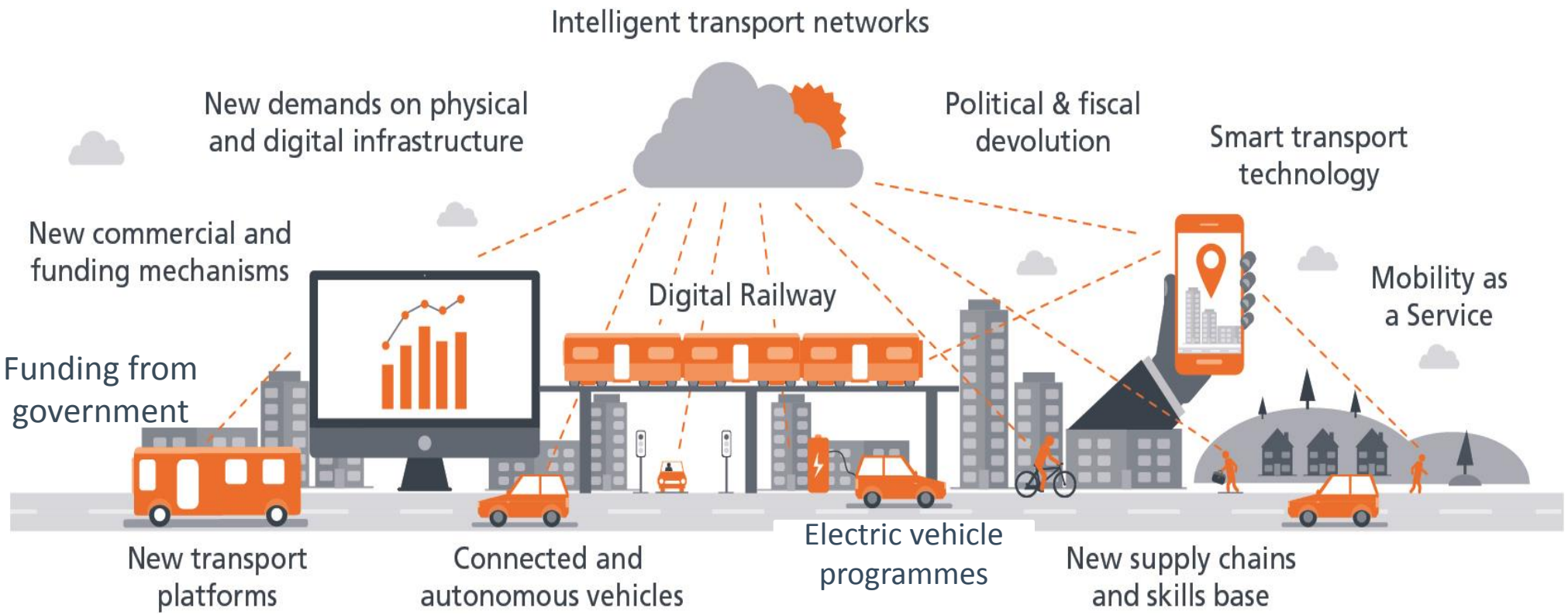
ATKINS
Member of the SNC-Lavalin Group

STRATEGIC CONTEXT

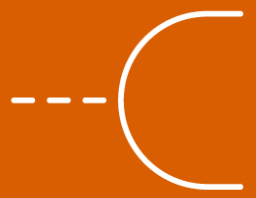
MAIN TRENDS BEYOND QUESTION:

- Population growth
- More cities
- Bigger cities
- Climate change
- Water and food shortage
- Air quality
- Congestion
- Everything as service
- Tech innovation and progress
- Ethics as a new premium

CONTEXT – TRANSPORT & MOBILITY



- Physical, digital **and** commercial ecosystems – converging…
- Data, cyber & connectivity @ **key commercial enablers**
- **Strengthen** ethics and customer



WE NEED TO ADAPT TO FLEXIBLE MOBILITY

WHAT MAIN CHANGES ARE WE FACING?

THE SECTOR IS FACING 3 TRENDS AND 4 FACTORS THAT DRIVE PROGRESS:

Mobility as a Service (MaaS) and new smart transport platforms

Big data, cyber resilience & AI

Connected and Autonomous Vehicles (CAVs) and re-imagined physical infrastructure

FOUR MAIN FACTORS:

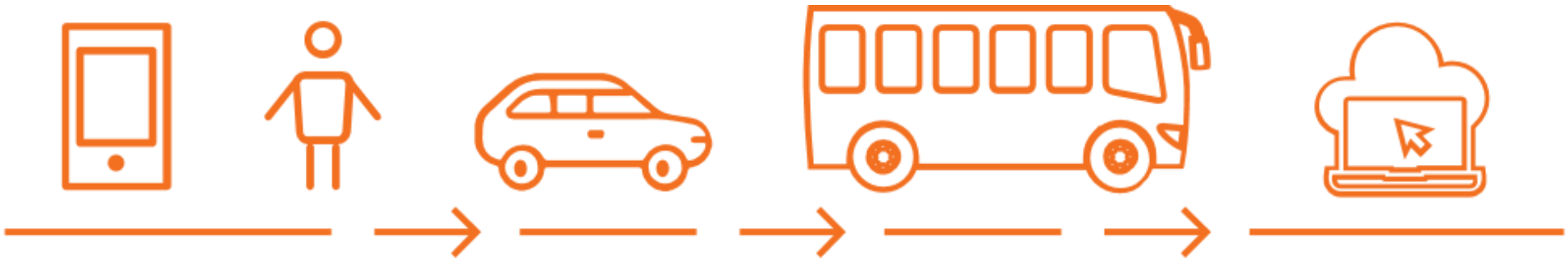
- **PHYSICAL –** changes to existing road and other physical infrastructure
- **DIGITAL/DATA –** created, commercialized, analysed, shared and secured
- **COMMERCIAL –** new business models, FDI, asset maintenance and operational arrangements (including insurance, legal/regulatory)
- **HUMAN –** consequences of these on customer behavior

A MAAS MOMENT…

Real-time personalised mobility service:

- **Anticipates/plans** for customers specific needs
- **Integrates** all types of mobility choices seamlessly
- **Presents choices** in integrated manner from A to B based on user preferences
- **Includes:** journey planning, easy purchase, flexi-pay, managed user experience – **ALL IN ONE**
- **Account-based**: ability to buy service (bundle to suit preferences) from provider that 'looks after them' at all stages of journey

Shift from block provision of transport to flexible, customer-centred means of providing 'managed' mobility



CONVERGENCE OF TRENDS ACROSS RETAIL & MOBILITY

8 TRENDS THAT ARE IMPACTING MOBILITY & RETAIL SECTORS

Internet of Things' 50 billion devices requires connectivity, storage and AI triage

Transport Companies to Data/Energy Companies

Rise of 'on demand' digitally enabled "…as a services"

MaaS and EV/CAV convergence

Control Centres – network operations, fleet & vehicle maintenance and incident management

Data Visualisation, modelling and asset commercialisation

Disruption and network management, addressing congestion

Robust, secure and resilient network, to maintain user and investor confidence

SIX AREAS OF FOCUS FOR RETAIL & MOBILITY

THE PHYSICAL, DIGITAL AND COMMERCIAL FOCUS AREAS

Regulation and legislation needed for retail & mobility

Bring customers, citizens and stakeholders with you

Consider all-mode connectivity

Impact on roads, highways pricing etc

Convergence of retail and passenger mobility

Network design and operation

BRINGING IT ALL TOGETHER

MANAGING DISRUPTION IN RETAIL & MOBILITY

- Design new mobility schemes with other retail partners;
- Mega trends are inevitable;
- Data and digitization will change the landscape;
- Watch Amazons evolution;
- Digital ethics to support standards;
- New business models and fractional ownership;
- Smart Cities – connecting the connected networks;
- Funding & Financing – new players;
- Government – policy, oversight & enablement / regulatory, Insurance and Legal.

GET INVOLVED WITH iM

TALK TO OUR IM TEAM

Visit our website
www.atkinsglobal.com/im

Join our conversation on Twitter
#Atkinsmobility

LinkedIn
Search for the **intelligent mobility group**

Email
intelligent.mobility@atkinsglobal.com

Technological developments in retail and transport

Russell Goodenough

Technology in a Transforming Britain

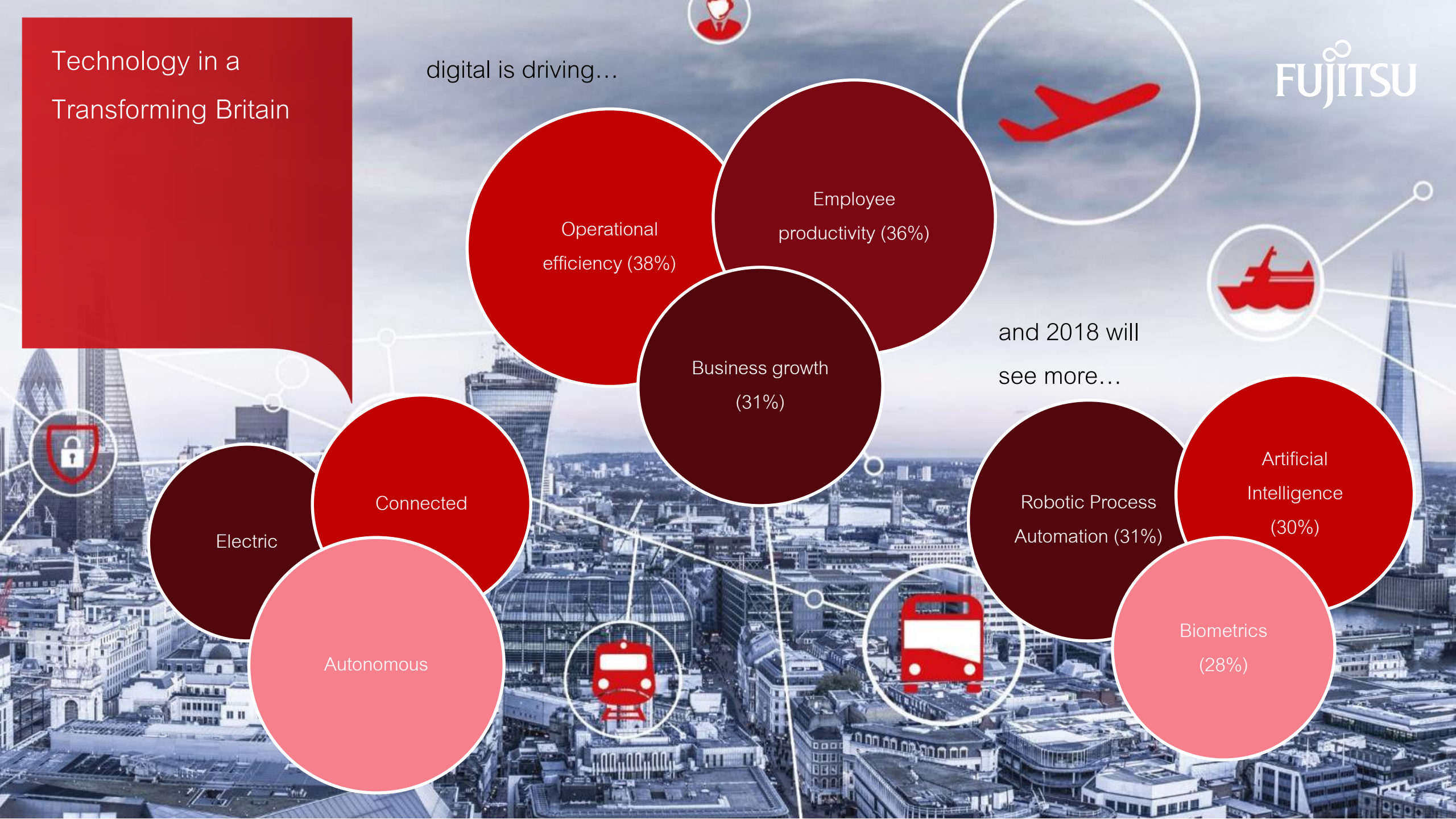
digital is driving…

- Operational efficiency (38%)
- Employee productivity (36%)
- Business growth (31%)

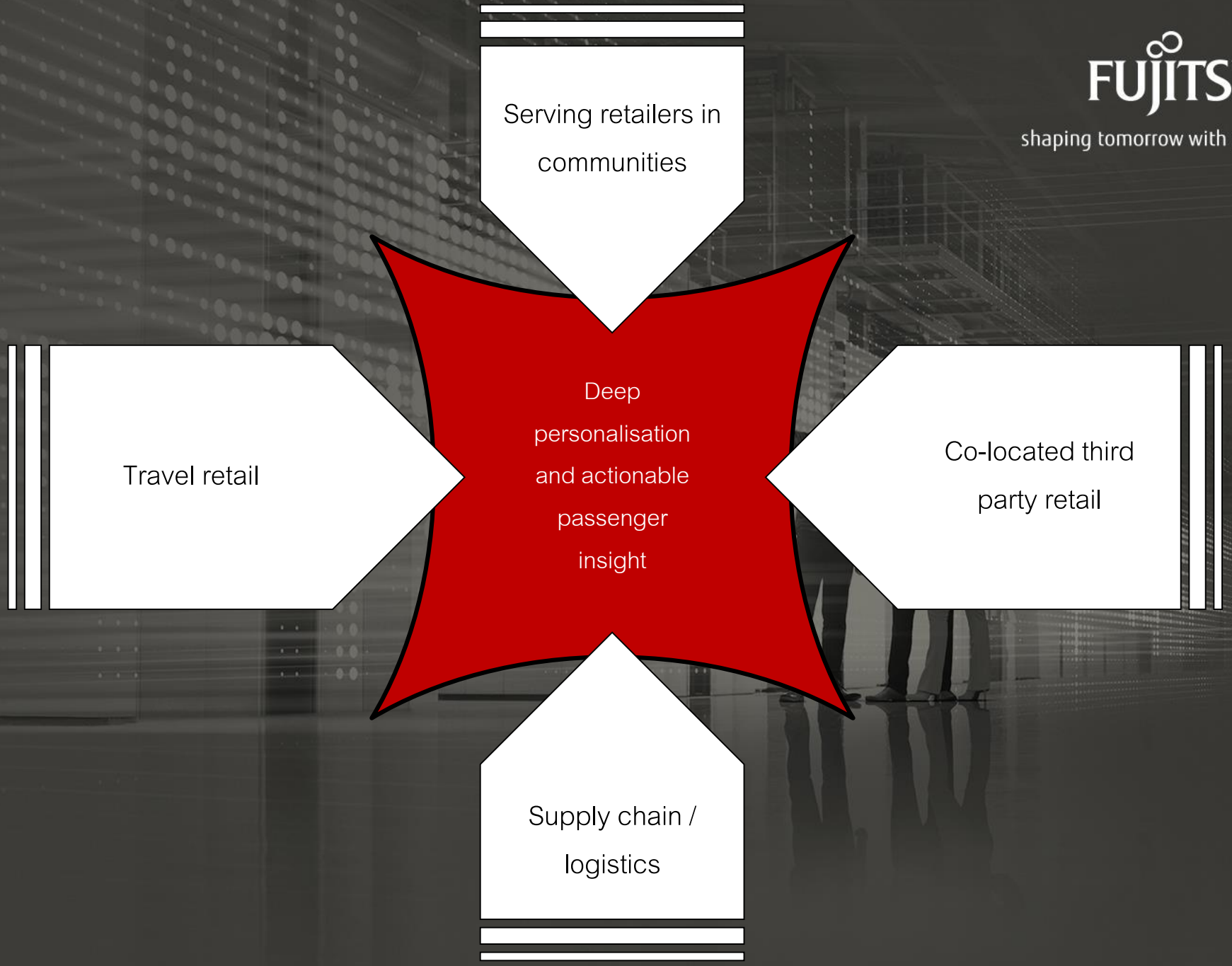
and 2018 will see more…

- Robotic Process Automation (31%)
- Artificial Intelligence (30%)
- Biometrics (28%)

- Electric
- Connected
- Autonomous



Four forces driving convergence and collaboration



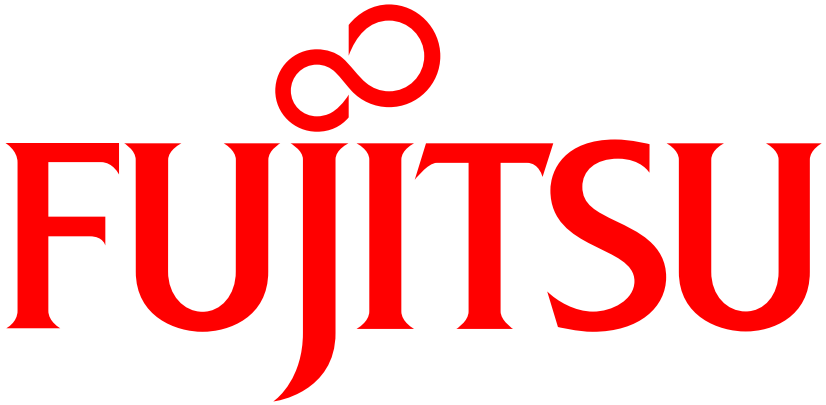
FUJITSU
shaping tomorrow with you

Converging agendas

- Customer experience matters more than ever
- Closer convergence between front of house and the back office
- Being reactive is no longer an option

Digitising transport and converging sectors

- Mobility as a Service
- Account Based Travel
- Hyperconnectivity
- Autonomy and artificial intelligence



shaping tomorrow with you

ADDLESHAW GODDARD

Retail Travelution

A Legal Viewpoint

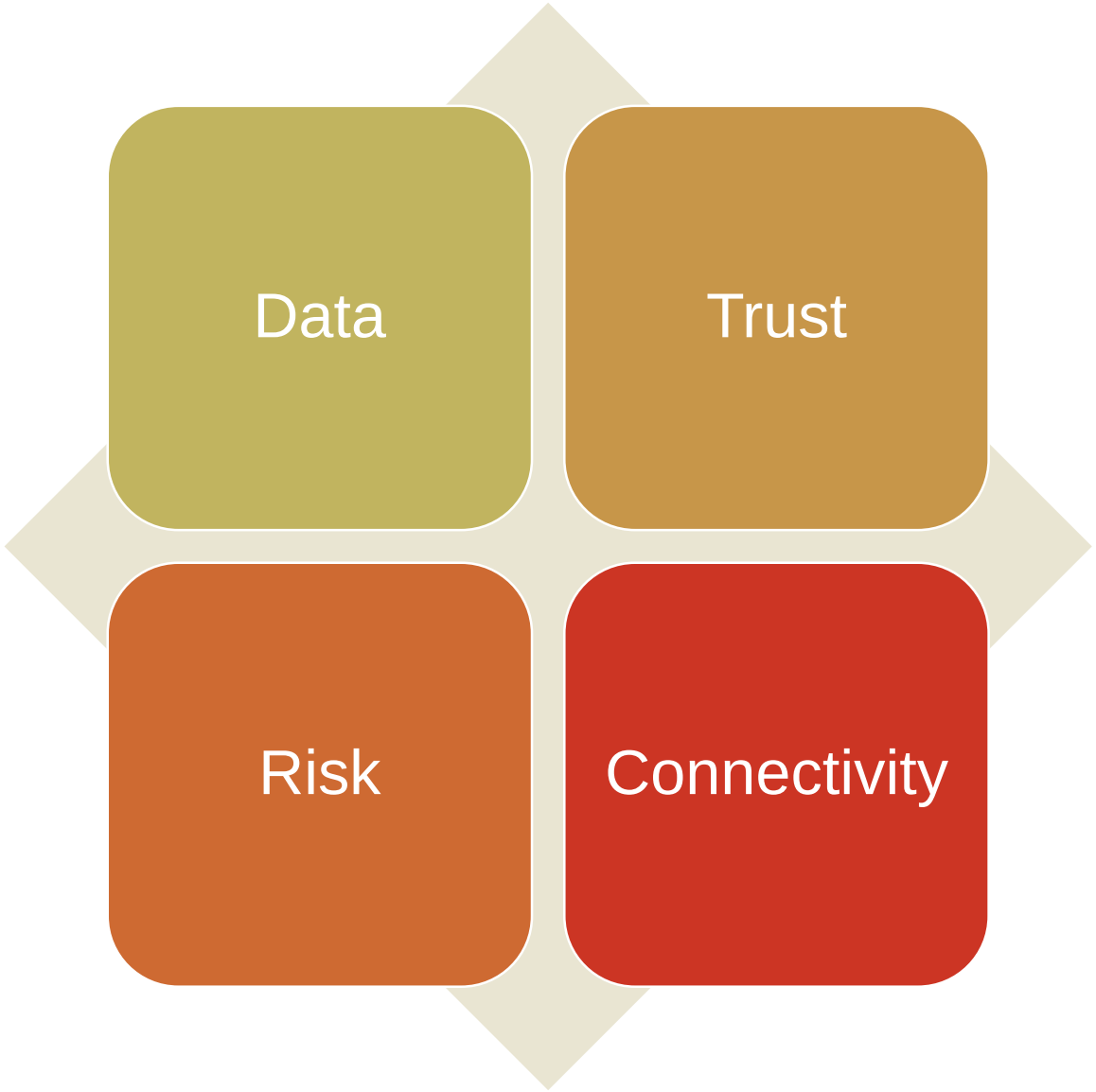
ADDLESHAW GODDARD

Future Travel Model

ADDLESHAW GODDARD

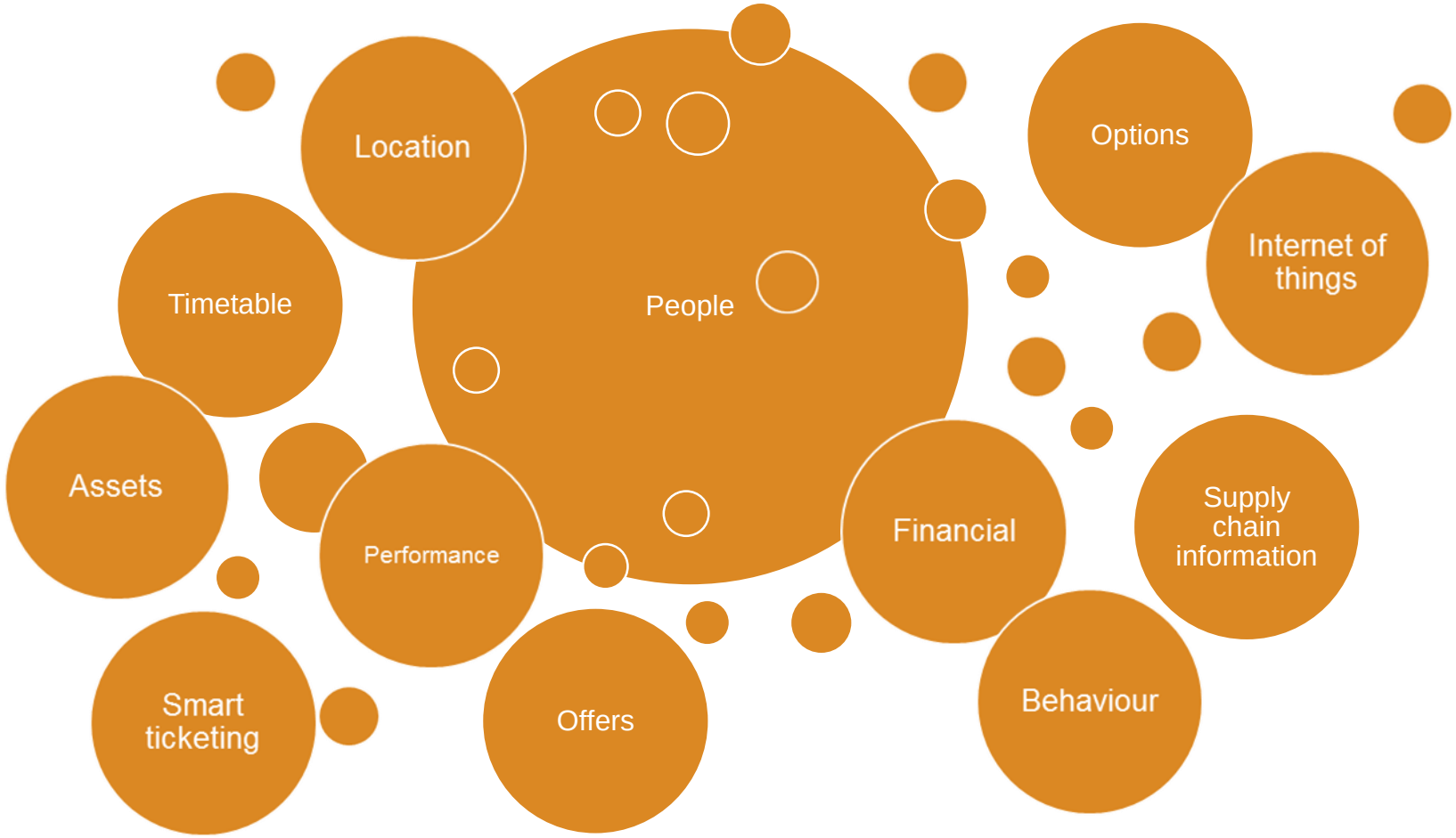
Future Travel Model?

ADDLESHAW GODDARD



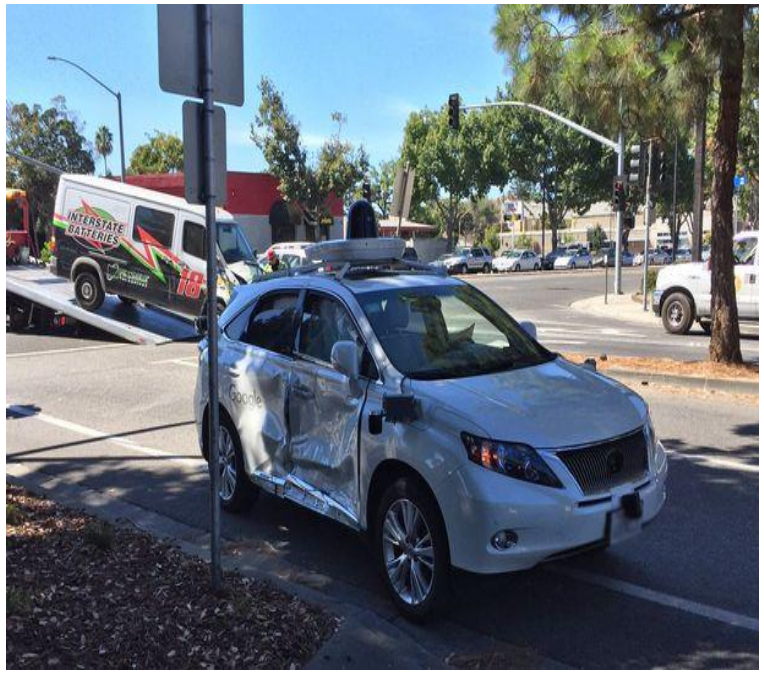
ADDLESHAW GODDARD

Data



ADDLESHAW GODDARD

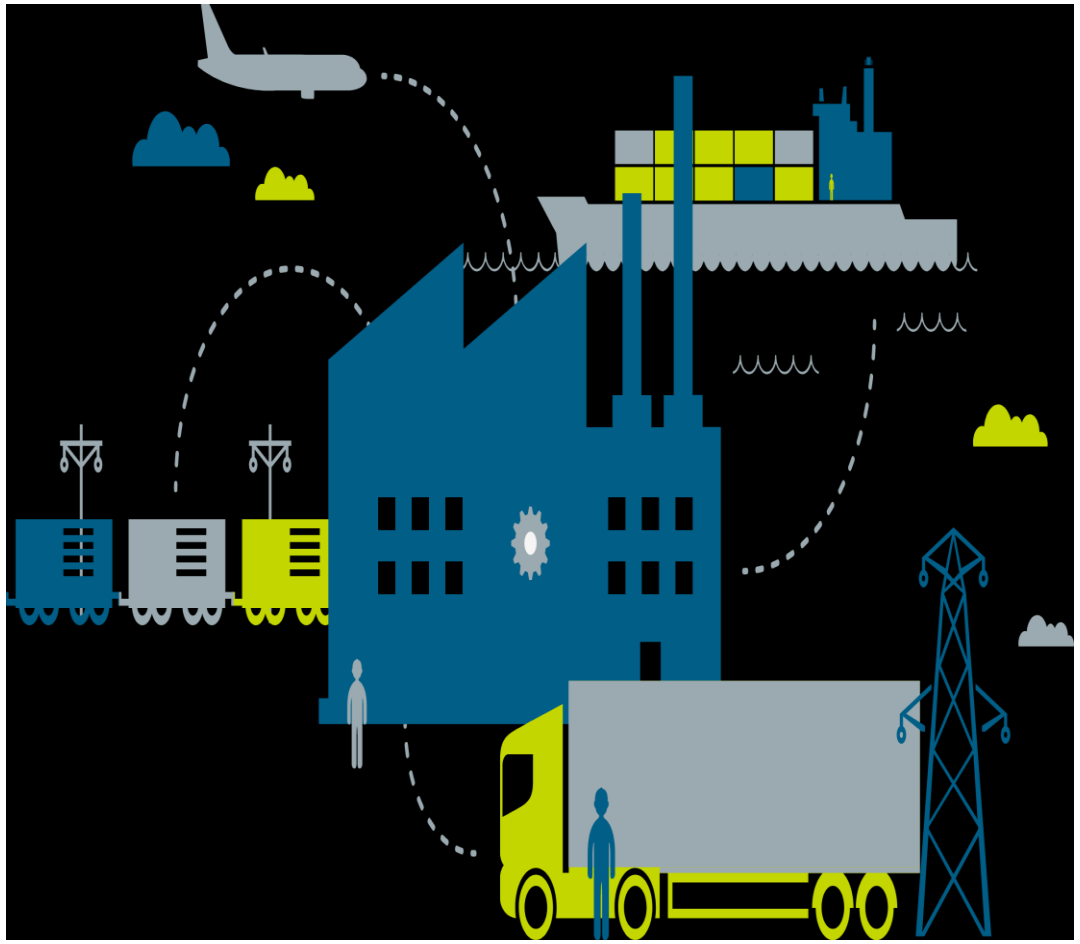
Risk

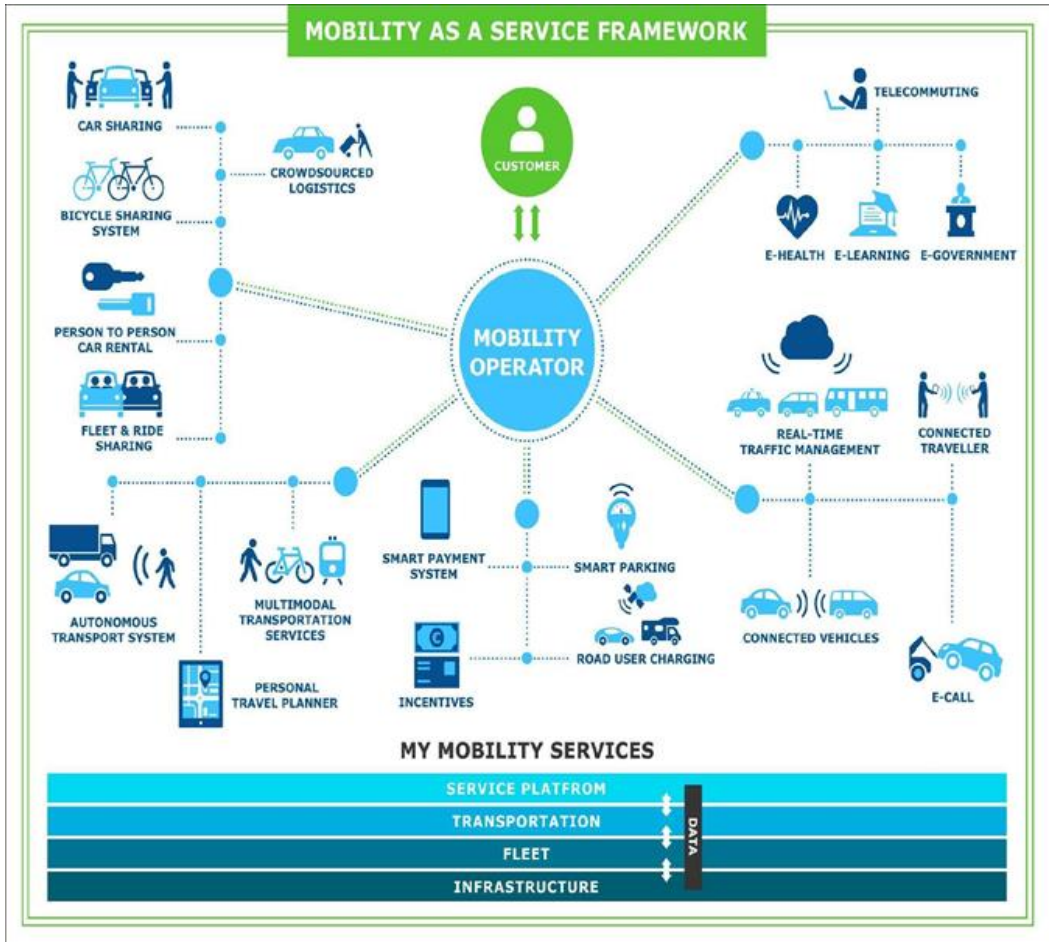


- **Takata fined $1bn in US over exploding airbag scandal**
- **Fire risks prompt tumble dryer recall**
- **BMW recalls a million cars in North America**
- **Haggis and black pudding recalled over botulism fears**

ADDLESHAW GODDARD

Connectivity

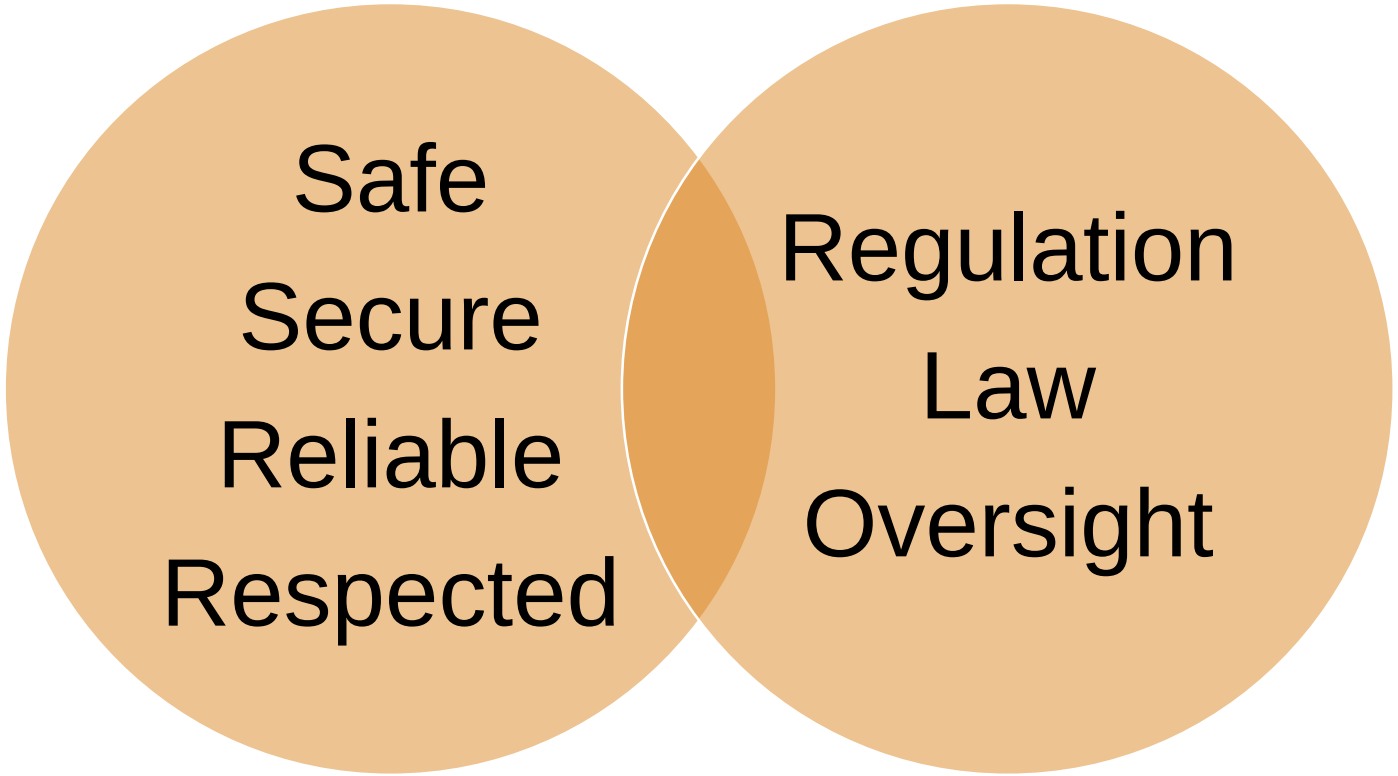




ADDLESHAW GODDARD

Trust

Data, Money, People, Goods



Contact

Damon Rosamond-Lanzetta
Commercial Partner, Addleshaw Goddard
0207 880 5695
damon.rosamon-lanzetta@addleshawgoddard.com

Damon is a partner at Addleshaw Goddard providing legal advice on IT, commercial, digital and outsourcing transactions in the Public Sector, Retail and Financial Services.

Damon has recently advised a FTSE 100 company on various projects to improve the efficiency and performance of its vehicle fleet including projects relating to fuel management, fleet scheduling and driver behaviour. He has also advised on the IT and IP elements of various projects in the transport sector, including on the management system for one of the biggest transport infrastructure projects in Europe.

ADDLESHAW GODDARD

Delivery Drones

Will they take off?

Lauren Payne
23 January 2018

ADDLESHAW GODDARD

The questions:

1. Hype:
    - Why all “the hype” around delivery drones?
2. Viability:
    - Could delivery drones actually change the logistics business model?
3. Regulatory and operational challenges:
    - What are they and can they be overcome?

ADDLESHAW GODDARD

1. Hype

- Amazon etc…
- Predictions
- Government Policy

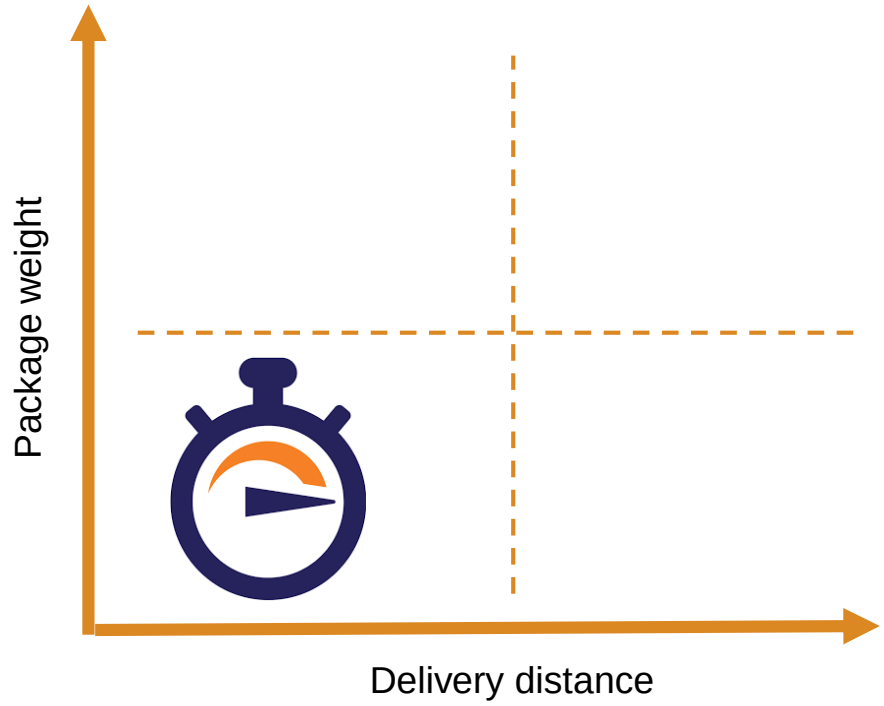
ADDLESHAW GODDARD

2. Viability

Operational

Can delivery drones compete with conventional deliveries (e.g. delivery trucks)?

- Weight
- Range/route
- Speed
- ‘The milk run’ last mile delivery economics:
  - Route density - number of drop offs you can make on a delivery route
  - Drop size - the number of parcels per stop on the milk run



ADDLESHAW GODDARD

2. Viability

Cost

Are delivery drones a cost-effective alternative to road transport?

Consider a 5lbs package being delivered 10 miles

- Current cost to company between $2.50 – $3 per delivery
- Latest research estimating “all-in” cost of drone delivery to be in $0.88 – $1.74 range

But – this is based on assumptions such as:

- **Regulatory approval**
- Scalable systems and traffic management solutions
- 1000s of drones in operation

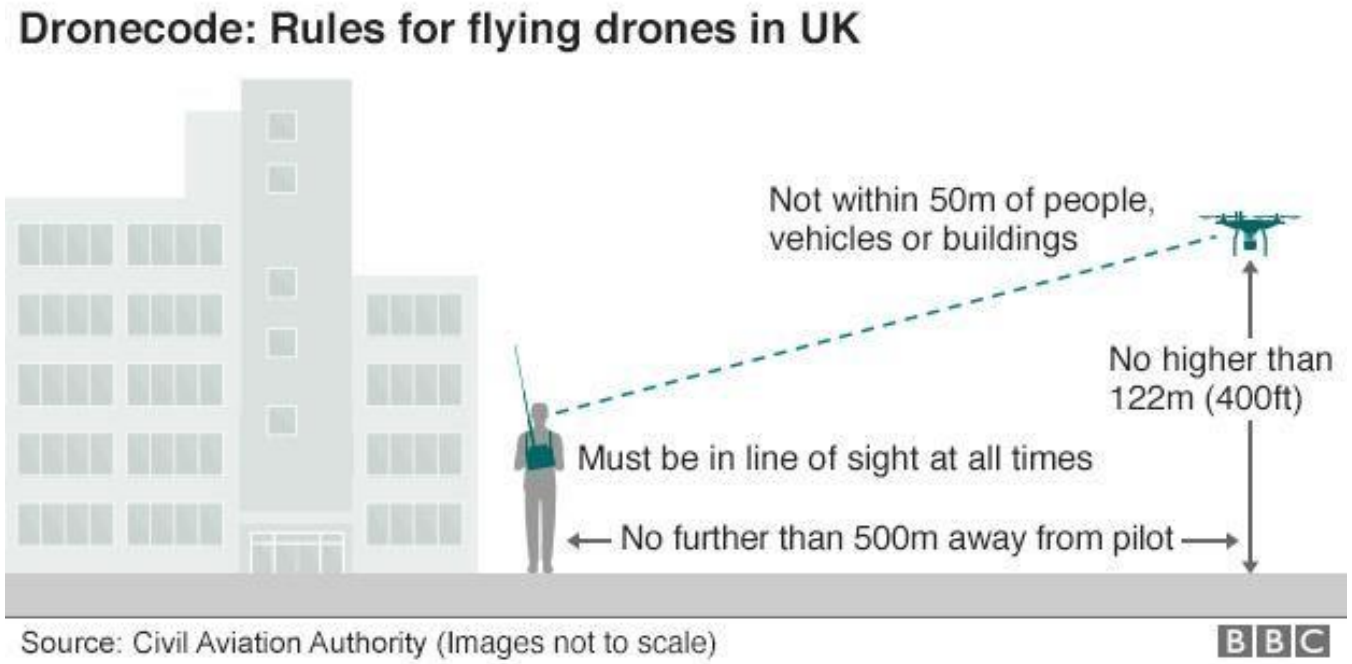
Examples of cost-effective delivery drone projects	
Matternet Lesotho	✓
Swiss Post	✓
Swiss World Cargo	✓

ADDLESHAW GODDARD

3. Regulatory Framework

UK Rules

- Drones are considered to be aircraft:
  - Air Navigation Order, CAA oversight
- Aircraft must be:
  - Within the visual line of sight (normally taken to be within 500m horizontally and 400ft vertically) of its remote pilot (i.e. the 'person in charge' of it).
  - Away from congested areas, aircrafts and airports and at least 50m from **any people, vehicles and structures**.
- A 'Permission' is required from the CAA for all flights that are being conducted for aerial work (i.e. paid-for operations)



ADDLESHAW GODDARD

3. Regulatory Framework

Challenges for potential delivery drone operators

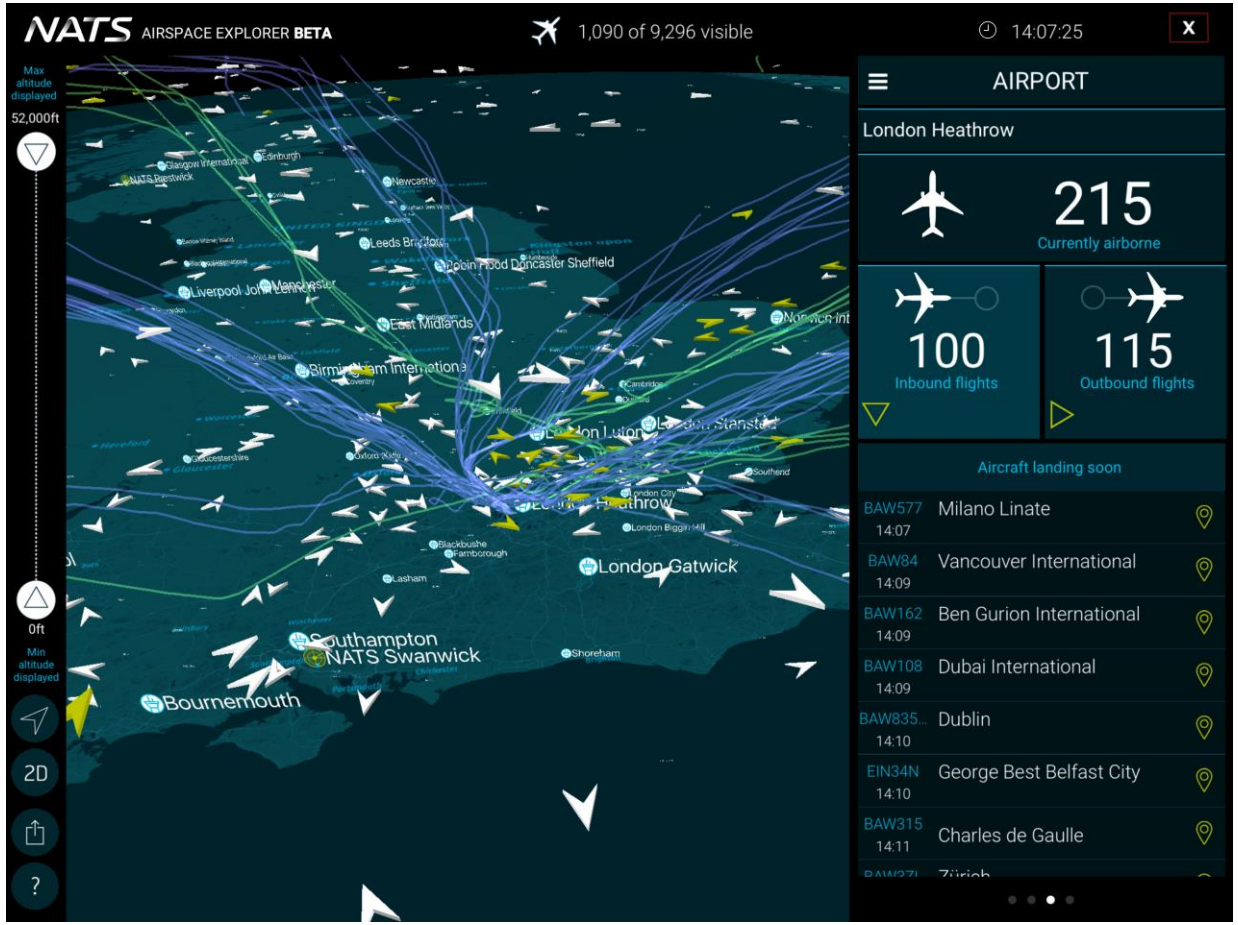
- Firstly, regulations require an additional Permission if the operator intends to fly the drones beyond these parameters
- Secondly, “Non-Standard” permissions are required if additional operational risk, such as BLOS and/or automated operations
  - Will require approved Operating Safety Case (OSC)
  - This includes an operating manual, systems details and full **risk** assessments and mitigation plans
    - Google failsafe innovation with batteries and rotors
    - Amazon “self-destruction” innovation

ADDLESHAW GODDARD

3. Regulatory Framework

Airspace challenges

- 8000 flights per day
- 6 spatial layers / categories of controlled airspace



Source: https://nats.aero/blog/2017/05/hidden-secrets-uk-airspace-airspace-classifications/

ADDLESHAW GODDARD

3. Regulatory Framework

New Rules for Drones

- Focus on targeting safety of leisure use of drones
  - Compulsory registration over 250 grams
  - Mandatory use of flight apps
  - Mandatory safety awareness tests (including leisure users)
  - Police powers to request registration documents and ground / retain a drone
  - No fly zones, possibly geofencing and 400ft limit

ADDLESHAW GODDARD

3. Regulatory Framework

Remaining legal challenges

- The safety case – need a model for potential commercial drone operators to follow
  - Cyber security
  - Liability and Insurance
- Fundamental air law challenges remain: Section 76(1) of the Civil Aviation Act 1982 in relation to trespass and nuisance

ADDLESHAW GODDARD

4. Conclusion

Will delivery drones take off?

- Current viability for **some markets** subject to regulatory/technology development
- “Amazon model” not yet viable and will require higher degree of regulatory/technology development
- Market confidence in the potential (“when”, not “if”)
- Regulatory barriers are removable
  - Companies actively working on technical innovations to support an operational safety case for delivery drones … as we speak!

ADDLESHAW GODDARD

UCL

TRANSPORT FOR LONDON

RETAIL TRAVELUTION