RETAIL TRAVELUTION

CITITES OF THE FUTURE

Speakers

Scott Wilding	Principle Planner for Freight Delivery – Transport for London
Wendy Spinks	Commercial Director – HS1
Paul Minto	Energy & Utilities Partner – Addleshaw Goddard
Dr James Paskins	UCL Office of the Vice-Provost (Research)

London and freight: The context, its challenges and opportunities

EVERY JOURNEY MATTERS

Agenda

1. London, how its governance works

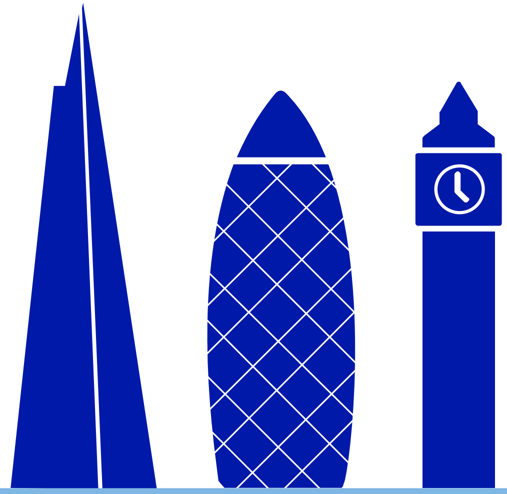
2. London’s growth

3. Context of London’s freight

4. What is freight doing

5. What can we/ are we doing about it

1. London's government

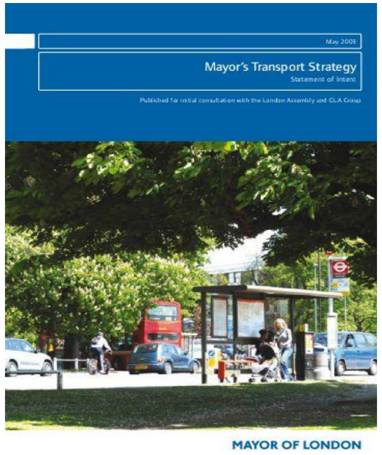


Context: How TfL and London Government works

The Mayor: Elected every 4 years – each producing a manifesto

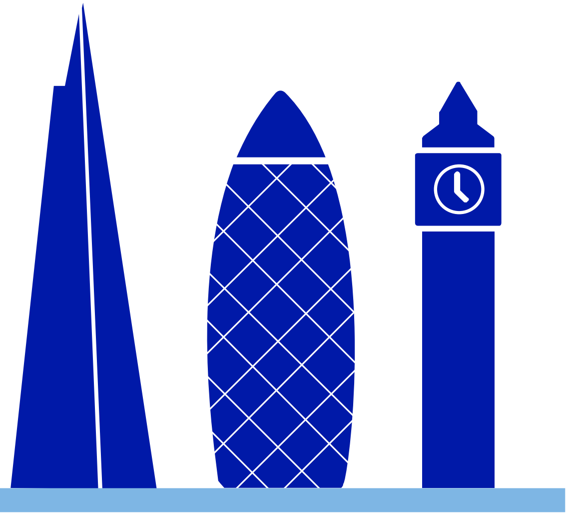
GLA

Transport for London

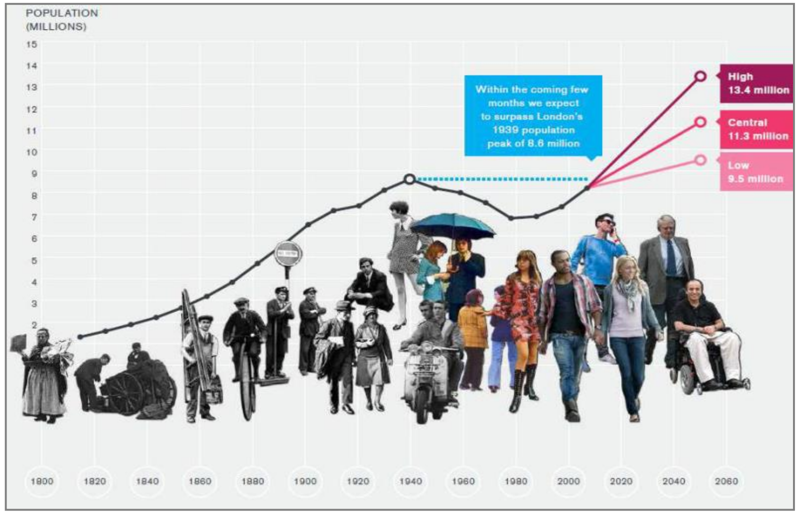


33 independent Boroughs

2. London’s growth

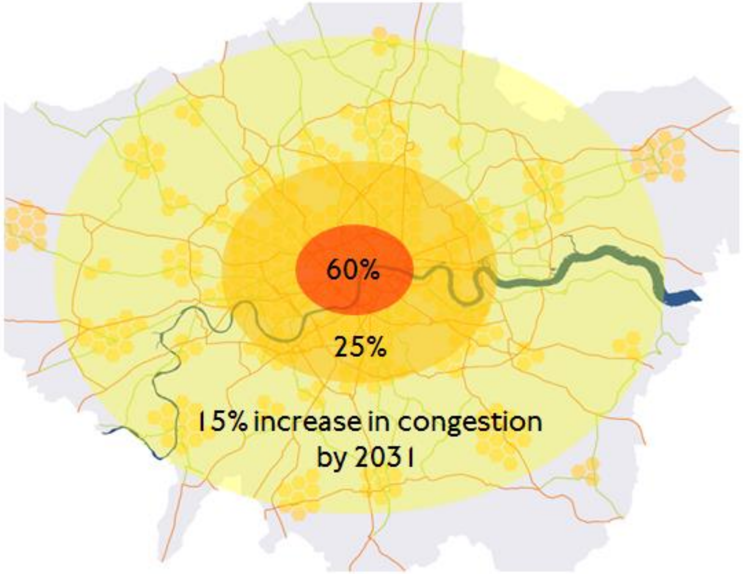


London’s growth and our key challenges

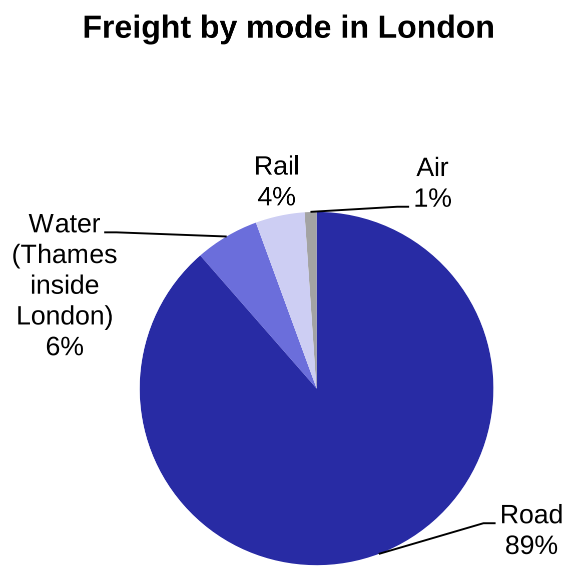


- **Employment growth:** 680,000 more jobs in the next 20 years.
- **44 per cent of total** jobs created in central.
- **42,000 homes PA** needed to sustain population growth

- Without interventions London faces rise in road congestion
- Conventional tools to tackle road based congestion becoming more limited
- New policy tools needed to tackle these issues.

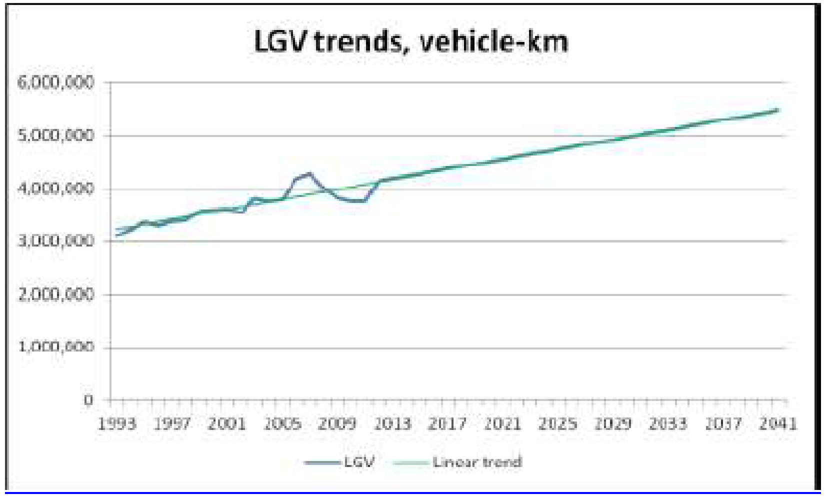


London’s freight context

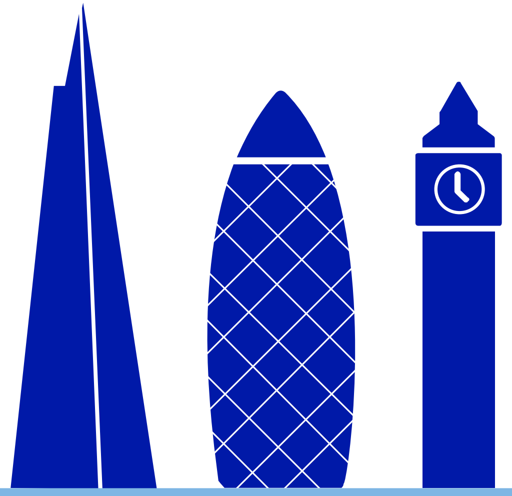


- Van traffic in London has been growing year on year since 1990’s and is predicted to grow by another **20% to 2030**
- **50%** of all freight trips in Central London occur 07:00 – 13:00.
- Less than **15% of freight trips** occur overnight and **40% of peak AM** traffic in Central London is construction related

- London’s roads are getting safer and cleaner
- Cycling is **up 1,000%** since 2003 – limited markets for cycle freight. Cyclists and vans only mode predicted to grow on road network

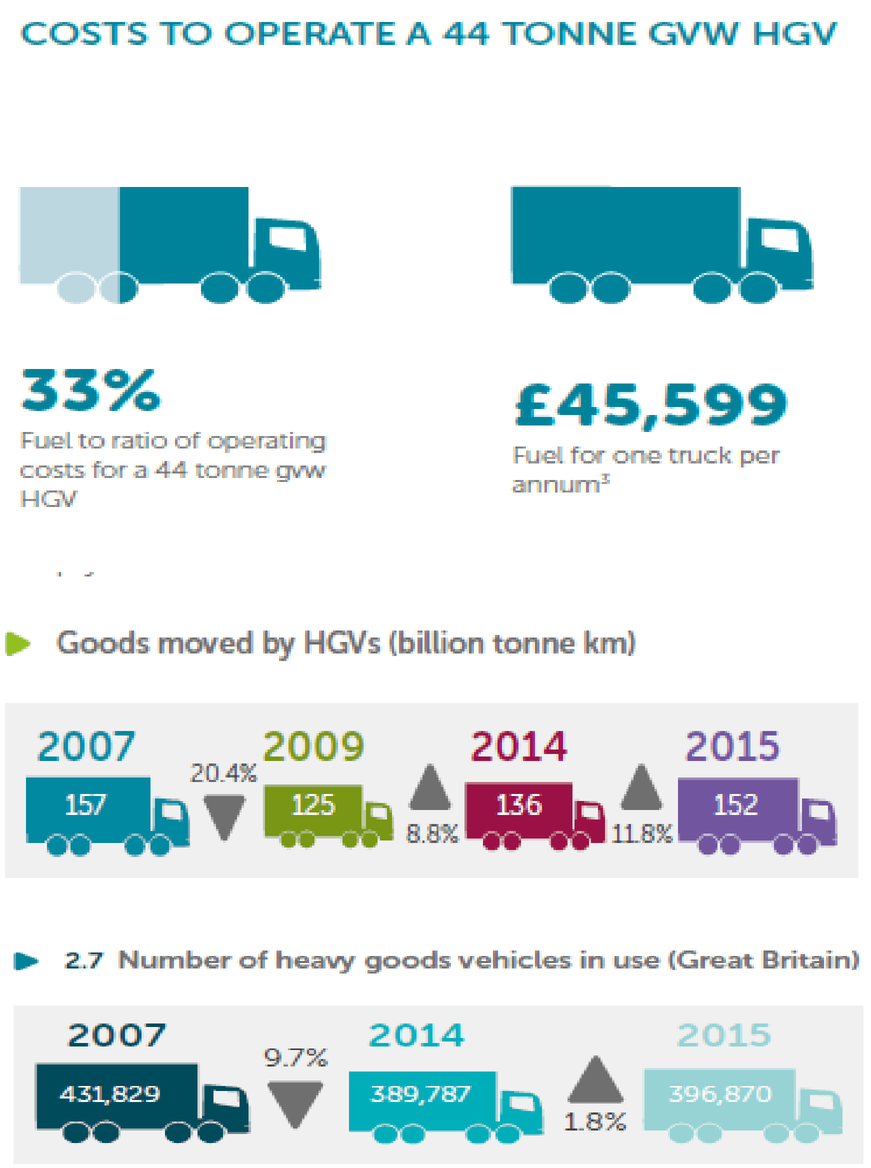


3. Freight context



Freight economics

- The annual turnover of the UK logistics industry is £1 trillion
- The number of people working in the UK logistics industry is 2.54 million. In London this sector employs 210,000 people
- The average profit margin of the top 100 hauliers was 4% in 2016
- Average HGV fleet size is 4.3 vehicles per operator
- Half of London household expenditure (£79 billion in 2013) relies on road freight

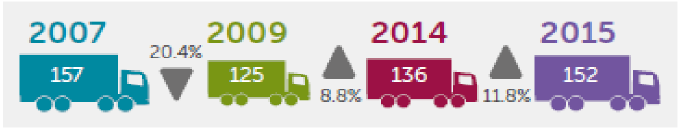


Freight industry: Fact sheet

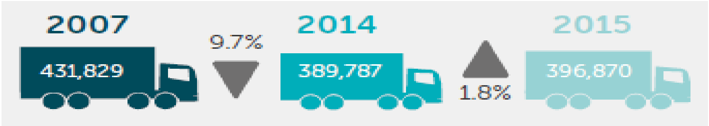
Freight traffic is hard to reach as there are very many small scale operators

- 56% of all vans are privately owned
- The average size of HGV operator fleet is 4.3 vehicles
- The number of people employed in the industry is falling
- There are 179,298 logistics companies

Goods moved by HGVs (billion tonne km)



2.7 Number of heavy goods vehicles in use (Great Britain)

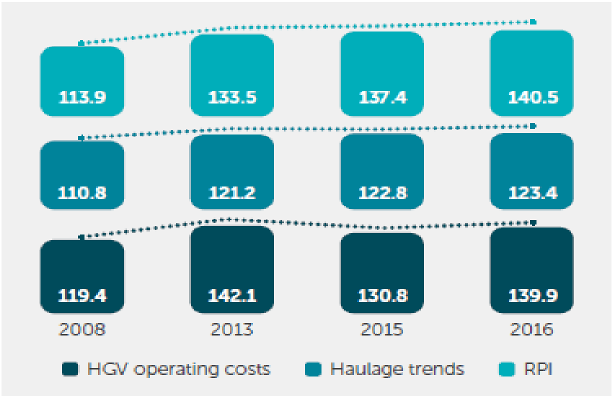


COSTS TO OPERATE A 44 TONNE GVW HGV

33%
Fuel to ratio of operating costs for a 44 tonne gvw HGV

£45,599
Fuel for one truck per annum[3]

2.11 Index of trends in operating costs and haulage rates 2008–2016

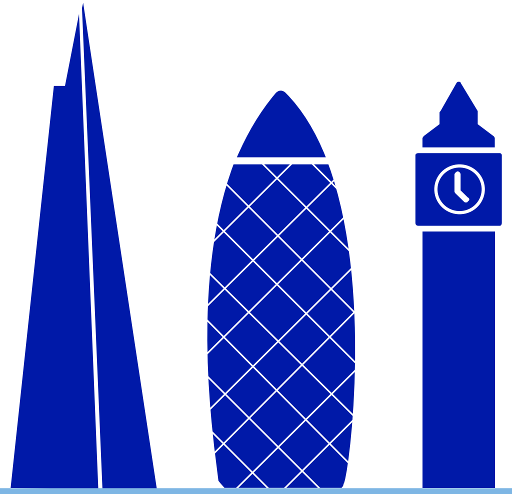


	Road transport industry	2012	2013	2014	2015	2016	Most recent year-on-year change
19	Reported profit margin of top 100 road hauliers	1%	3%	3%	4%	4%	→
20	Number of goods vehicle operator licences	80,894	77,732	75,595	77,002		↑

The annual turnover for the UK logistics sector is £1 trillion

In 2016 the number of individuals working in logistics was around 2.54 million, which equates to approximately 8 per cent of the UK workforce. Around 365,000 are non-UK nationals (14 per cent) of which 290,000 are EU nationals (11 per cent)

4. What is freight doing in London?



Data Findings: *What's currently on the Road Network*

30%
Of peak trips are freight

Does peakiness present an opportunity?

- Almost 30 per cent of all morning peak (CCZ) movements are freight, but only 17% across the whole day

15%
Of freight trips are at night

Overnight is cheaper – but customers want mornings

- Almost half of freight trips occur in the 07:00 – 13:00 period, but only 15% overnight.

x5
More vans than HGVs

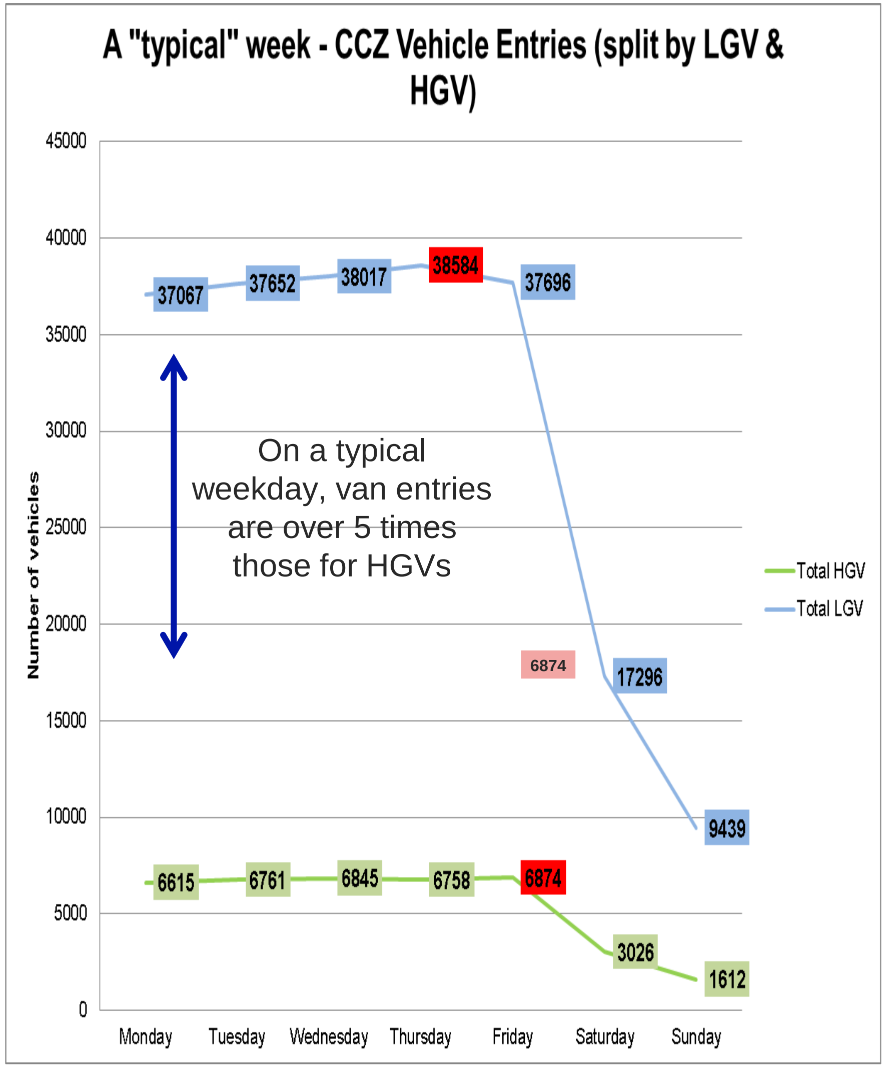
There are x5 as many vans as HGVs

- Vans have grown considerably while HGVs have been static

2030?

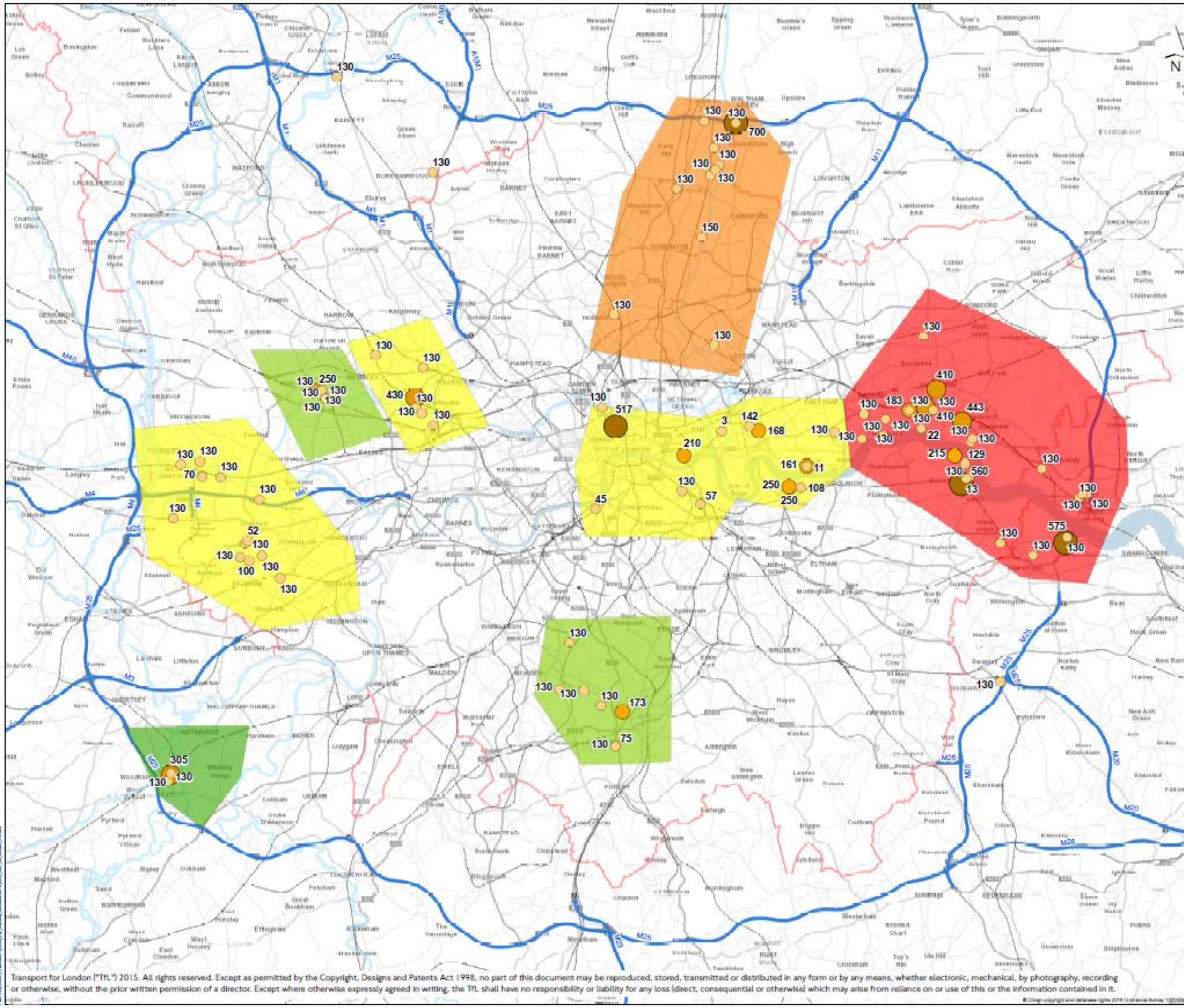
What does the future hold? More vans.

- HGV growth is static; vans are forecast to grow by around 22%.
- Vans are flexible, less regulated and customer are more demanding



On a typical weekday, van entries are over 5 times those for HGVs; Saturdays are half weekday and Sundays half again

Freight traffic movement

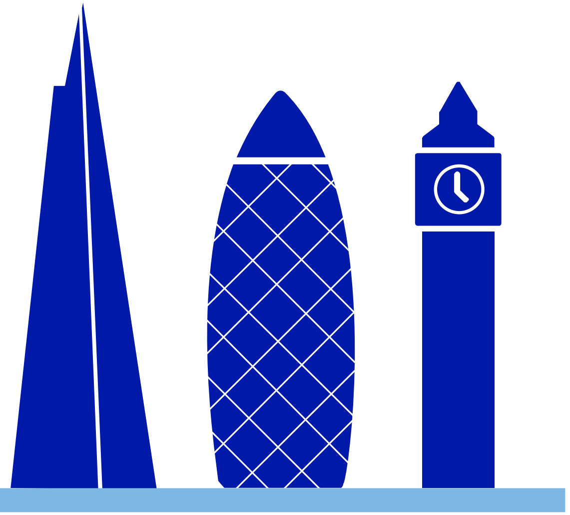


Boroughs with most freight movements:

- Havering
- Ealing
- LBBD

Borough with most DC's is LBBD

5. What can we do?



The MTS and London Plan – our goals for freight

Safer: located *“Vision Zero”*

Target: 60% reduction in KSI by 2022 on 2005

Key policy: Banning zero star vehicles by 2020 and creating DVS standard and;

To reach vision zero by **2041**

Cleaner: located *“Zer “Zero Emissions”*

Target: By 2025 greater charging for non ULEV

Key policy: ULEZ by 2019 in CL and 2020 for all London

To reach zero emissions by **2050**

Fewer trips: located ‘Efficient Delivery and Servicing”

Target: 10% reduction in freight trips in CCZ during AM peak by 2026

Key policy: No single tool

- Restrict personal deliveries
- Procurement
- Re-timing
- **Water and rail**
- Consolidation – in all forms
- Charging

To reach 10% fewer trips by **2026**

London Plan: Protecting the land which allows the freight industry to survive and grow

Opportunities for freight: Keeping London moving

Collaboration: Need to work with all partners to ensure London works

Light goods on rail and water/ more water and rail deliveries: Using pax services to deliver time sensitive goods into Central London

Behaviour change: Promotional campaigns and procurement– banning personal deliveries in congestion zones

TfL's own estate: Can we use surplus TfL land to grow/ stimulate innovative delivery and servicing methods? Pilots 2018

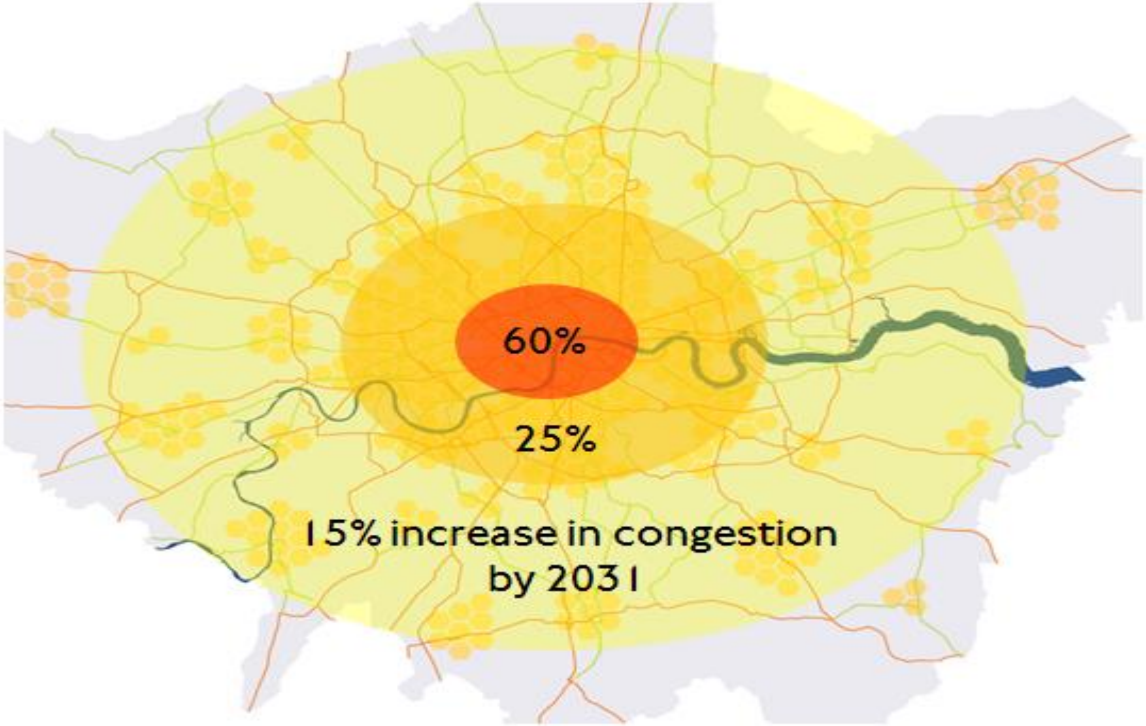
Retime: Moving deliveries out of the peak

Take away points

- Influence the **customer:** 5p bag charge – 80% fall

- Move away from **over reliance** on **road transport** for all or some of the overall journey

- **There is no “silver bullet”** , but If we do nothing......................



Contact

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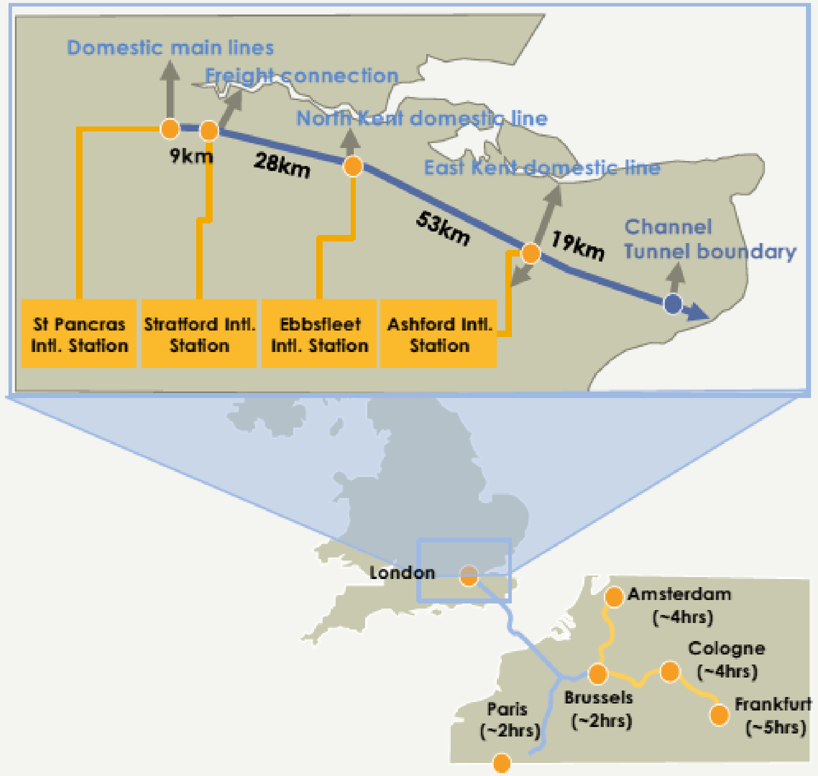
HIGH SPEED

January 2018

Introduction to HS1

UK Infrastructure - a catalyst for change

The Physical Infrastructure



Who we are

- 30 year concession (2010) to operate and maintain HS1 and its 4 stations
- Shareholders - Infra Red Capital management, HICL and Equitix
- 46 strong team with a business model set around Contract Management
- Commitment to handback in as good a condition as we inherited
- Drives a strategy to Protect, Enhance and Grow.

HS1 is vital to its stakeholders, customers and the community

HS1 Local Catalyst

St Pancras International

- **1,900 new homes**
- **10 new public squares**
- **3m sq. ft. of office space**
- **500,000 sq. ft. of retail & restaurants**

Stratford International

Newham/Stratford Redevelopment

- £22bn investment
- 35,000 new homes
- 100,000 new jobs
- Olympic Park and Westfield Stratford (3rd largest shopping centre in the UK)
- Stratford will be on Crossrail

Ebbsfleet International

Ebbsfleet Garden City

- 15,000 new homes
- 30,000 new jobs
- 1.2m additional passengers

Swanscombe (Paramount) Theme Park

- Opening expected 2022
- Promoters expect 15m visitors per year
- 4.0m additional passengers

Ashford International

- McArthur Glen premium shopping outlet – development of 100,000 sq. ft. of retail space
- 3,400 new homes at Ashford
- Ashford high speed service extensions e.g. Hastings

HIGH 1 SPEED

A different approach

HIGH SPEED

A new vision for an old building

Bold and Brave

- The first station development to accommodate and integrate significant amount of retail space
- …………Including a Champagne bar!
- Competing with airports
- Setting new standard for experiences for commuters

Impact

- Passenger growth on HS1 at 7.9% CAGR compared to 5% on classic network
- A destination in its own right 13% visitors aren't catching a train
- Consistently ranked at the top of the National Rail Passenger survey over 7 years.

HIGH 1 SPEED

The station environment

Understanding Our Passengers...

47% **of visitors that are leisure travellers;** business travellers account for 12%

62% **of St Pancras customer base are categorised as AB** (managerial, professional etc.)

90 **minutes spent in the station on average by international visitors** compared to 35 for commuters

25% **of retail sales accounted for by commuters**, despite making up 33% of visitor numbers

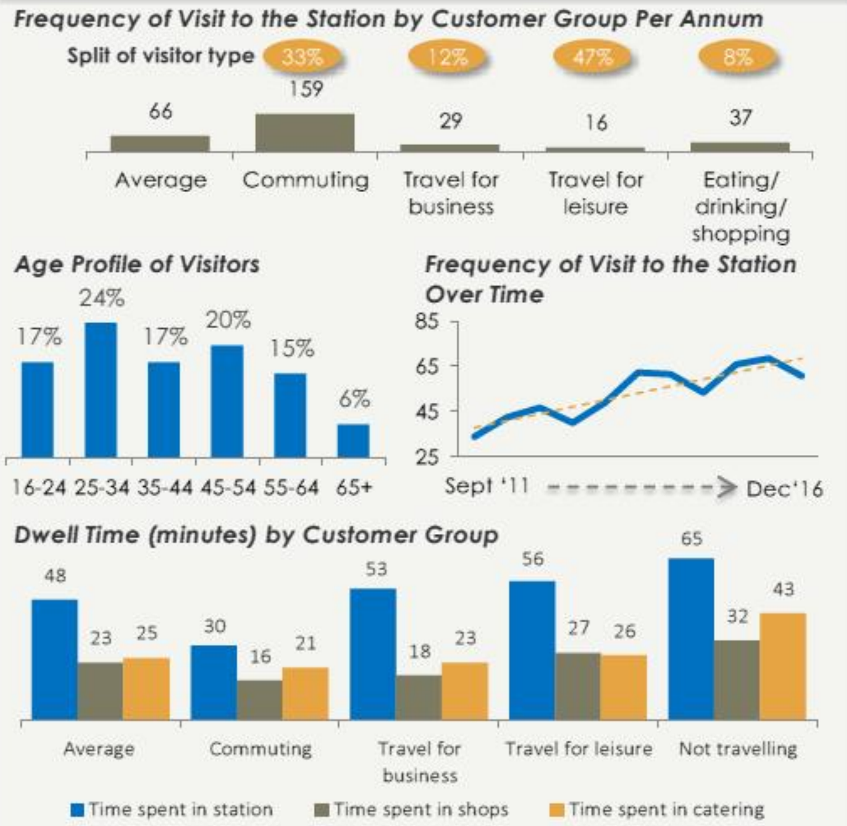
...To Anticipate Their Wants

HS1 consistently works to improve passenger experience,

HIGH SPEED

St Pancras' Retail Offering Is Unique

St Pancras Customers



Prime retail offering in the heart of London serving travellers and the local community

Offering a Differentiated Customer Experience…

Terrace Wires Project

Elton John Performance

Customer Feedback

You Retweeted

Jeff Roberts @_jmroberts · Mar 10

Ok, I'll just say it: I really like St Pancras station.

1 1 7

Edward Dawes
@edward_dawes
Follow

@SourcedMarket in St Pancras has amazing food and beautiful coffee. By far the best coffee shop you'll ever find in a train station.

Sandra Webber
@SandraKudos
Follow

At the train station with fab shops and cafes #StPancras could spend a fortune

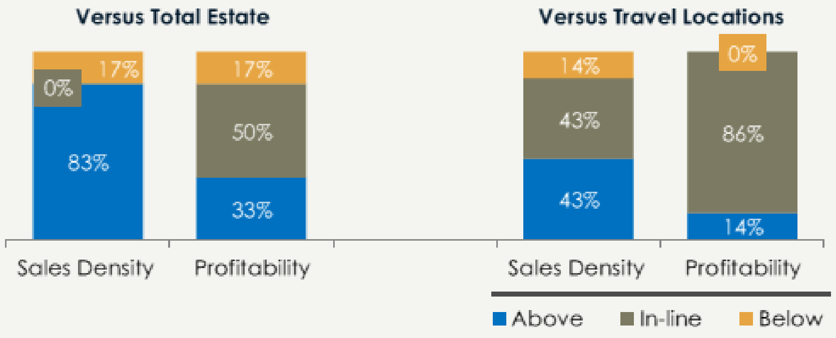
St Pancras has been transformed into a destination in its own right offering retail, dining and a range of arts events

HIGH SPEED

…Which Translates to a Differentiated Retail Environment

Why Our Tenants Renew

How Does Your St Pancras Store Perform Relative to the Rest of Your Estate?



How Well Does Your Store Perform in St Pancras?

"We've had double digit growth in St Pancras since we opened. We are currently trading at plus 20% in St Pancras."

"Our store in St Pancras has never not shown growth."

"St Pancras is among our top 10 transport hubs, which are in themselves among our top 10 overall locations within our portfolio."

Unique Retail Offering

Selection of St Pancras Tenants

FORTNUM & MASON

SOURCED MARKET

JO MALONE LONDON

MAC

GANT

John Lewis

Cath Kidston

L.K.Bennett London

PINK THOMAS PINK JERMYN STREET LONDON

Le Pain Quotidien

TED BAKER LONDON

CHANEL

Calvin Klein

Our tenants love St Pancras and their stores outperform, driving a premier brand portfolio

HIGH SPEED

Our Strategy Is Delivering But We Cant Stand Still

HS1's Retail Business Model

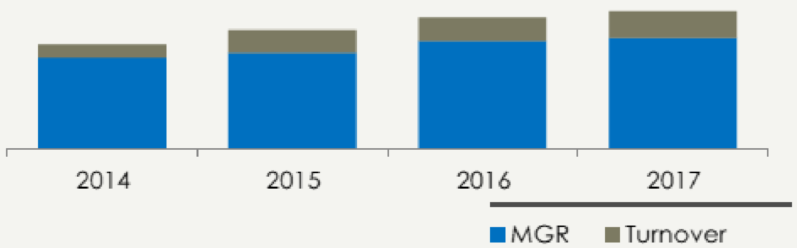
- HS1 **retail income** is earned from **leases** under which retailers pay rent as a **percentage of turnover**
- Rent is subject to a **minimum guaranteed rent (MGR)**

5-10 years: typical lease length

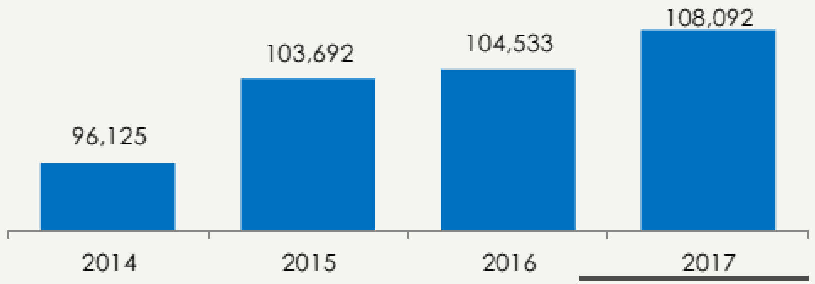
- Most leases subject to **rent review annually or mid-lease**
- **Turnover rent** is rent earned over and above the MGR

Continually Growing Retail Income Whilst Optimising sq. ft.

St Pancras Retail Income (Nominal £m)



St Pancras Space (sq. ft.)



HS1 management has delivered change within the mix every year to meet the customer needs

Source: HS1 performance data, Javelin Group analysis

Managing Change

Changing Consumer Habits

- Technology is changing customer behaviour
- Commuters are time poor
- Customer want to spend time 'doing things'.
- Getting true omni channel to work

High footfall/high density

- Frequent deliveries,

- works for small stores and accommodates Click and Collect

- Fresh, Fast, and New

Keeping pace with change is critical

HIGH SPEED

Future…

Greater Emphasis on Experience

- More theatre in store
- Greater product knowledge
- More personalised service…

and that may simply mean quick!

Ability to React to Trends

- Agile supply chain
- Creative visual display
- Tailored to the environment

Thinking Ahead

- Landlords and tenants collaborating
- Appetite to pilot new things
- Embracing technology

Thank You for Listening

HIGH SPEED

Future cities – road transport policy

Paul Minto, Partner

Transport Policy

- Norway – 35 % EV new car registration
- Paris - all ULEV by 2030
- USA – VW emissions case - $10bn settlement , inc $2bn "Electrify America"
- UK - Clean Air Zones

ADDLESHAW GODDARD

Singapore

- Population 5.6 m
- Highly developed economy
- Land reclaimed from sea
- 15% of land is under roads
- “least corrupt”
- “authoritarian government”

ADDLESHAW GODDARD

Land Transport Authority

- Electronic Road Pricing
- In-Vehicle Unit
- Autonomous Vehicle Initiative
- Certificate of Entitlement

ADDLESHAW GODDARD

Certificate of Entitlement

VEHICLE CATEGORY		CATEGORY A Cars (Up to 1,600cc and maximum power output not exceeding 97kW)	CATEGORY B Cars (Above 1,600cc or maximum power output above 97kW)	CATEGORY C Goods Vehicles & Buses	CATEGORY D Motorcycles	CATEGORY E Open (All except motor-cycles)	TOTAL
A1)	Vehicle Population As at 31 Dec 2016	318,081	283,137	154,507	142,514		898,239
A2)	Net Increase allowed per quarter [0.25% x vehicle population / 4] [a]	198	176	96	89	17 [b]	576
(A)	**Increase in Vehicle Population**	**198**	**176**	**96**	**89**	**17**	**576**
B1)	Total vehicle de-registrations (from Jul to Sep 2017)	10,977	8,959	3,807	2,806	-	26,549
B2)	Contribution of de-registrations to Category E (10% of B1) [c]	-1,097	-895	-380	- [d]	2,372	-
(B)	**Replacements of De-registered Vehicles**	**9,880**	**8,064**	**3,427**	**2,806**	**2,372**	**26,549**
C1)	Adjustments for change in taxi population [e]	-	-	-	-	917	917
C2)	Adjustments for replacements under Early Turnover Scheme [f]	-	-	-2,087	-	-231	-2,318
C3)	Expired COEs [g]	3	6	20	158	2	189
(C)	**Adjustments**	**3**	**6**	**-2,067**	**158**	**688**	**-1,212**
Total Quota for Nov 2017 to Jan 2018 Bidding Exercises (A + B + C)		**10,081**	**8,246**	**1,456**	**3,053**	**3,077**	**25,913**
Average Monthly Quota for Nov 2017 to Jan 2018 Bidding Exercises		**3,360**	**2,748**	**485**	**1,017**	**1,025**	**8,635**
Monthly Quota for Aug 2017 to Oct 2017 Bidding Exercises		3,630	2,570	888	954	1,080	9,122

EV car sharing

- Launched December 2017 by Blue SG
- 50 car parks
- 125 electric cars
- 200 charging points

ADDLESHAW GODDARD

Car ownership?

The Ioniq Electric (left) is priced at S$149,988 with COE, and boasts a battery range of 280 km. In 2014, BMW (above) was the first car maker to offer electrified vehicles for sale here, with its i3 electric city car, and the i8 plug-in hybrid sports coupe. PHOTOS: BIG FISH PUBLISHING

Electric car population surges 380% in 2017

Electrified vehicles grew quickly in number last year, and 2018 will see the introduction of many more such cars. BY DERRYN WONG

Singapore

COULD 2018 be an electrifying year for cars in Singapore? Falling prices and new models from various car makers could propel battery power into the mainstream, after car-sharing companies and BMW's electrified iPerformance range helped the sales of such cars to surge in 2017.

Electrified vehicles refer to plug-in hybrid electric vehicles (PHEVs) and cars that run only on battery power.

A PHEV combines a fossil fuel engine with a battery-driven motor, and typically has a smaller battery for electric-only trips of up to 50 km, before switching to petrol for longer distances. Battery powered electric vehicles (BEVs), also known as fully-electric vehicles (EVs), are powered solely by an onboard battery, and need to be charged to run.

As at the end of last year, there were 520 such cars in Singapore, a sharp increase of 380 per cent from only 137 at the close of 2016. Of the 383 electrified vehicles that joined the car population here last year, the majority (298 units) were registered by car-sharing services such as BlueSG.

The rest were made up of PHEVs and EVs from various car brands such as Mitsubishi and BMW. The latter accounted for 73 sales by itself. Such cars still make up only a tiny proportion of cars on the road here, at just 0.09 per cent of the 574,443 passenger cars in 2017.

"We believe the sales figures imply Singaporeans are still open to considering EVs and PHEVs, which is a move in the right direction. At the same time, it indicates that we still have a very long way to go before there is significant adoption in Singapore," said Preeti Gupta, director of corporate affairs for BMW Group Asia.

BMW was among the first major car makers to go big on electrification, both around the world and in Singapore. In 2014, it was the first car maker to offer electrified vehicles for sale here, with its i3 electric city car, and the i8 plug-in hybrid sports coupe.

In September last year, it was the first to offer a full range of PHEVs in Singapore, marketing plug-in hybrid versions of five models under the iPerformance Automobiles sub-brand.

Globally, the German premium marque met a sales target of 100,000 electrified cars last year, and said that it has a 10 per cent market share for such vehicles.

Yet, even as BMW enjoys a head-start, the race to put electrified cars on the road is heating up this year.

The first BEV from a mass-market brand was launched by Hyundai at the Singapore Motorshow on Jan 11. The Ioniq Electric is priced at S$149,988 with COE, and boasts a battery range of 280 km.

It costs an estimated S$2.90 to cover 100 km in an Ioniq Electric, while the same distance would cost around five times as much in a petrol car. Komoco Motors, the car's importer, estimates that after three years of ownership, the low running costs of the Ioniq would outweigh the higher upfront costs of buying one, compared to a regular sedan.

Renault will put BEV ownership within even easier reach when it launches the Zoe, a compact hatchback that is currently undergoing approval for local sale. It has a quoted range of 400 km and is expected to be priced around S$130,000 with COE.

Nissan showcased its second-generation Leaf BEV hatchback at the Singapore Motorshow, as well.

"It's not a question of 'if' but 'when'," Ron Lim, head of sales and marketing at Nissan distributor Tan Chong Motors, told *The Business Times*, when asked if the Leaf would go on sale in Singapore.

In the luxury segment, Mercedes-Benz will offer plug-in versions of two of its most popular sedans, the C 350 e and E 350 e. Porsche plans to sell six different plug-in hybrid versions of its Panamera, which includes the most powerful model available, the range-topping 680 hp Panamera Turbo S E-Hybrid.

BMW intends to roll out a sportier version of the i3, the i3 S, as well a convertible version of the i8, the i8 Roadster.

While car makers put more electrified models on sale, however, there are hurdles for the industry to overcome. The perennial problem of where to charge an EV or PHEV is still a concern for some drivers.

"The lower cost per km, compared to petrol, is quite attractive to someone like me who drives a lot – but the initial cost, the charging time and availability of charging stations are still big issues," said Adrian Mah, 38, an insurance agent who currently drives a Japanese sedan.

The current public charging network is still nascent. Greenlots, a service provider, currently has 50 stations at 31 locations, while the charging network used by EV sharing company BlueSG, will only partially be open to the public. For now, that restricts EV and PHEV sales largely to private property owners who are able to install their own chargers.

Yet, what is happening in Singapore is part of an accelerating trend towards electrification elsewhere. BMW says that by 2020, it will expand its range to offer 25 electrified cars, while arch-rival Mercedes-Benz intends to produce an electrified version of every model it sells by 2022. This week, Ford announced plans to make 40 such vehicles available within the same timeframe.

Perhaps the industry's push for electrification will help to address what is still a chicken-and-egg problem in Singapore: there are too few charging stations, but too few electrified cars to justify building more.

With buyers able to choose from at least 10 more electrified cars this year, at least the car industry is busy laying its eggs.

FUTURE CITIES & GRAND CHALLENGES

James Paskins

UCL Grand Challenges

Changing World

- Growing population who are increasingly urban
- Connected world, globalised markets and global pandemics
- Fast paced innovation, “Move Fast and Break Things”
- Environmental degradation and a warming world
- Global threats and nationalist political movements
- Siloed thinking and governance
- Single bottom line thinking

UCL 2034 – Six Principal Themes

1. Academic leadership
2. Integrating of research and education
3. **Cross-disciplinary approach to global challenges**
4. Accessible, publicly engaged organisation
5. London's Global University: in, of and for London
6. Delivering global impact

UCL Grand Challenges

London's Global University

~7000 Academic, research and teaching staff

+ Track record of innovation
+ Radical, liberal, utilitarian tradition
+ London location
+ Global perspective

= **Opportunity & obligation to address major problems**

UCL Grand Challenges

UCL Grand Challenges

Global Health
GCGH (since 2008)

Sustainable Cities
GCSC (since 2009)

Intercultural Interaction
GCII (since 2010)

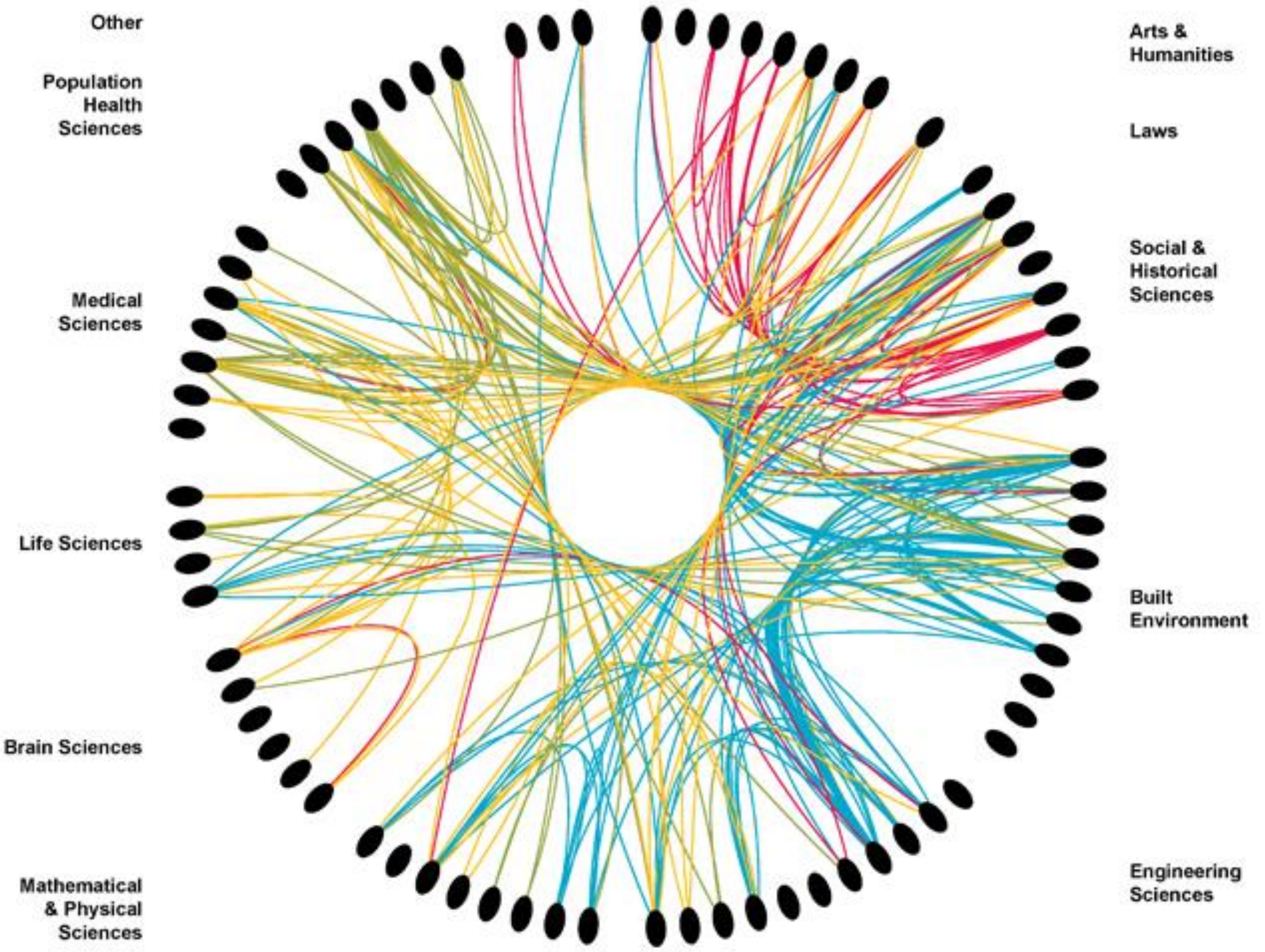
Human Wellbeing
GCHW (since 2011)

Justice & Equality
GCJE (since 2016)

Transformative Technology
GCTT (since 2016)

UCL Grand Challenges

Connections 2008–2015



UCL Grand Challenges

Office of the UCL Vice-Provost (Research)

- Doctoral School
- Grand Challenges and UCL London Agenda
- UCL Public Policy
- Research Coordination & Facilitation Teams
- Research Integrity & Evaluation
- Research Impact & Communications
- Research Platforms
- Research Domains

UCL Grand Challenges

Sustainable Cities

UCL Grand Challenge of Sustainable Cities

- More people live in urban areas than rural areas
- UN estimate that 5 billion people will live in urban areas by 2030
- Changing climate
- City research vital for a prosperous, safe and sustainable future
- Faculties covering everything from the built environment and engineering, through law and medicine, to philosophy and art.
- Cross-disciplinary research with societal impacts
- Engagement with communities, business & policy makers

UCL Grand Challenges

Transformative Technology

- There are now more mobile devices (over 7 billion) than people
- 90% of the data on the internet has been created since 2016
- Technological advances impact every part of society
- Disruptive technology
- Advances in AI
- Responsible innovation (vs move fast and break things)
- Governance that keeps pace with innovation
- What can we learn from previous transformations?

UCL Grand Challenge of **Transformative Technology**

UCL Grand Challenges

Smart cities

- IT as a way to deliver a city's goals
- Enables innovative ways to deliver services:
  - Supporting healthy lives instead of treating illness
  - Enabling mobility instead of providing transport
- Who owns the data?
- Retrofitting a smart city
- No two cities are the same
- Smart cities and urban mobility

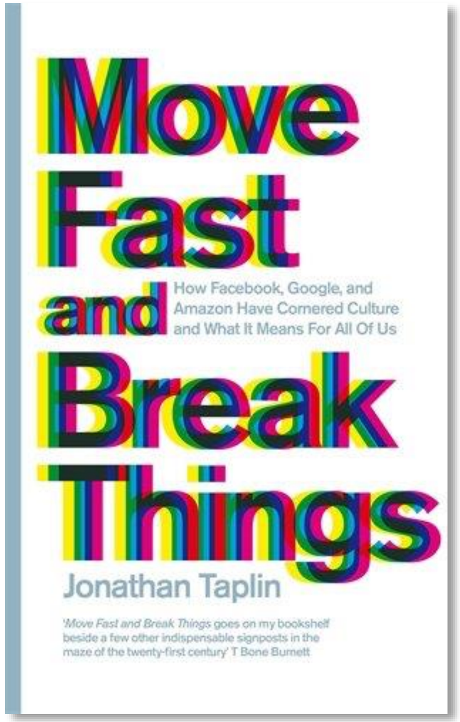
UCL Grand Challenges

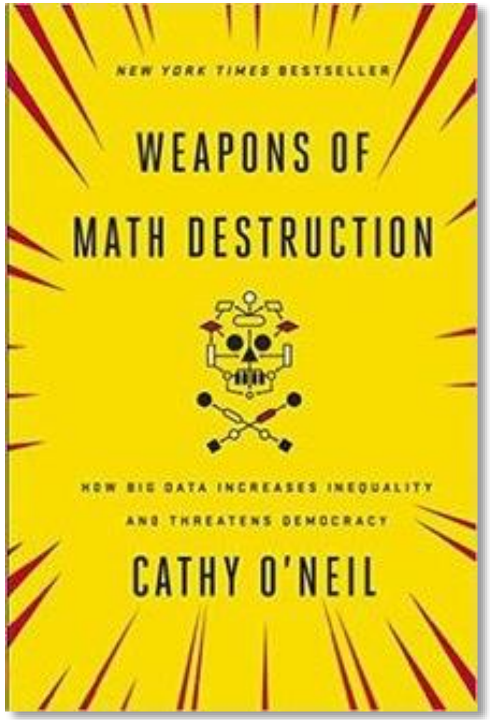
Urban Mobility

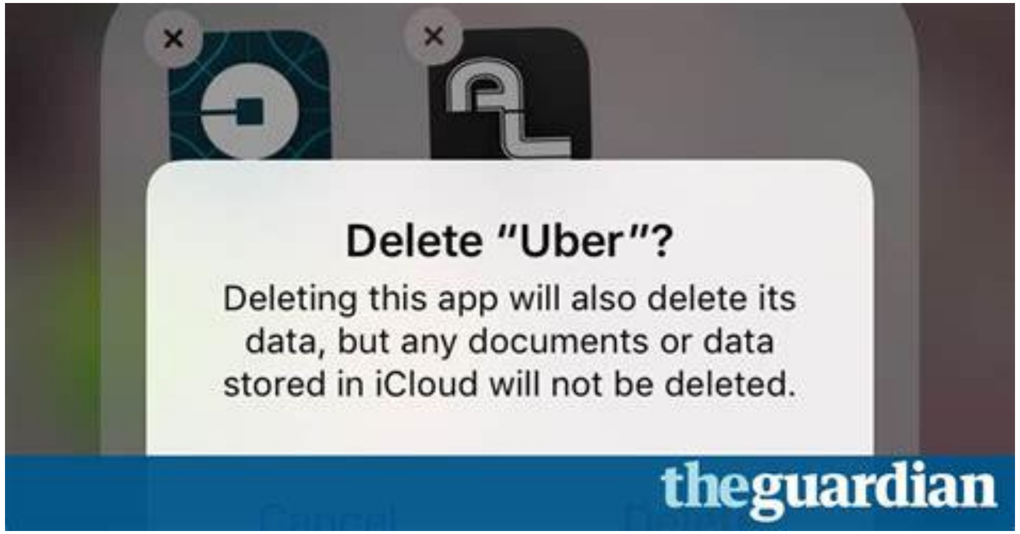
- Public transport
- Private cars
- Taxis
- Ride hailing services
- Walking and cycling
- Delivery vehicles
- Autonomous vehicles

AI & Automation

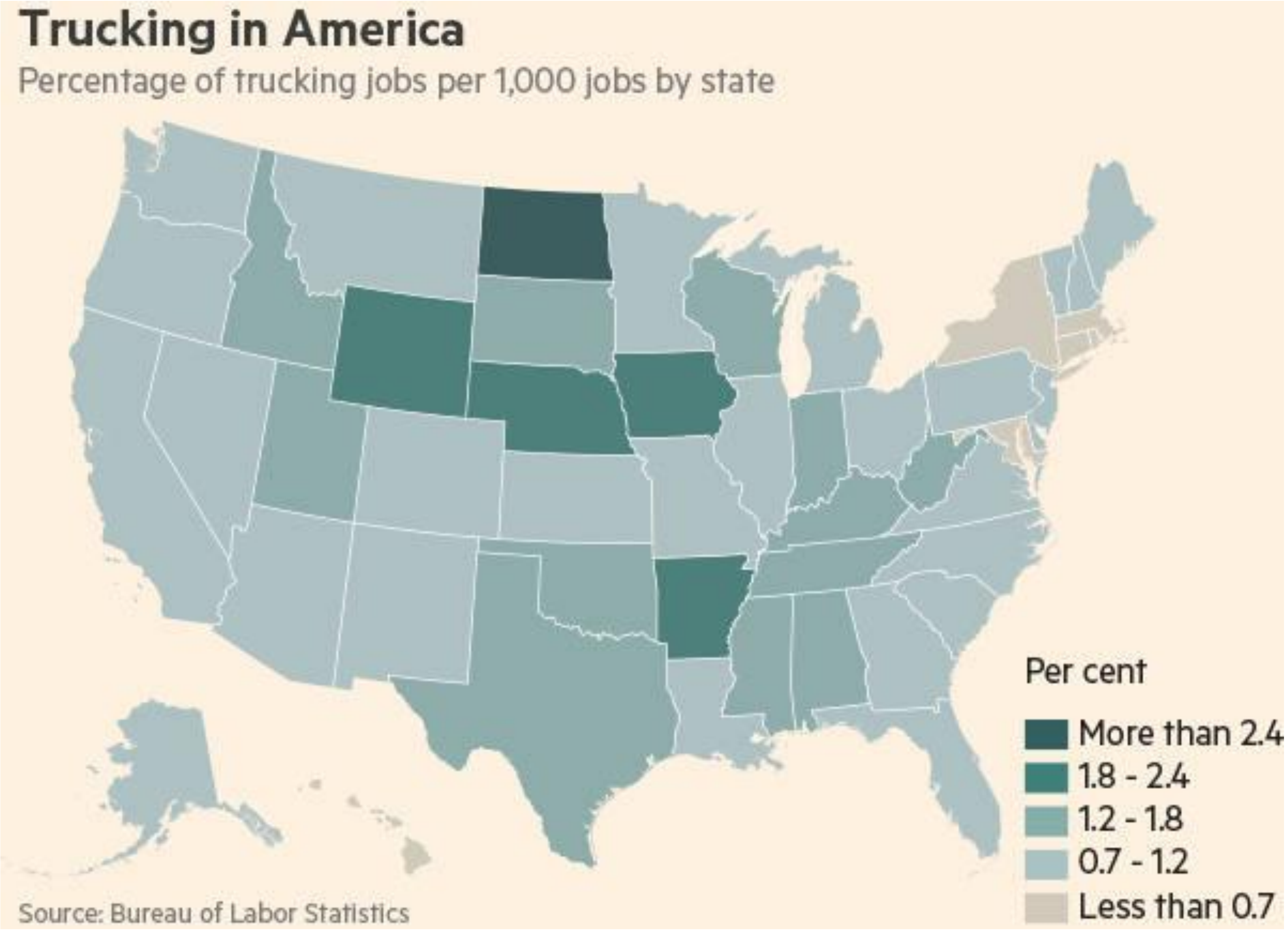
- Myth of objectivity
- Disruption
- Ethics







UCL Grand Challenges



Out of road: driverless vehicles and the end of the trucker

New self-driving technology threatens an American way of life

www.ft.com/content/2d70469c-140a-11e7-b0c1-37e417ee6c76

UCL Grand Challenges

(Some) Grand Challenges

- Housing
- Economy
- Energy
- Water
- Green space
- Resilience
- Climate change
- Governance
- The future of work
- Health
- Wellbeing
- Engagement
- Migration
- Mobility
- Justice and Equality

UCL Grand Challenges

Transformative Cities

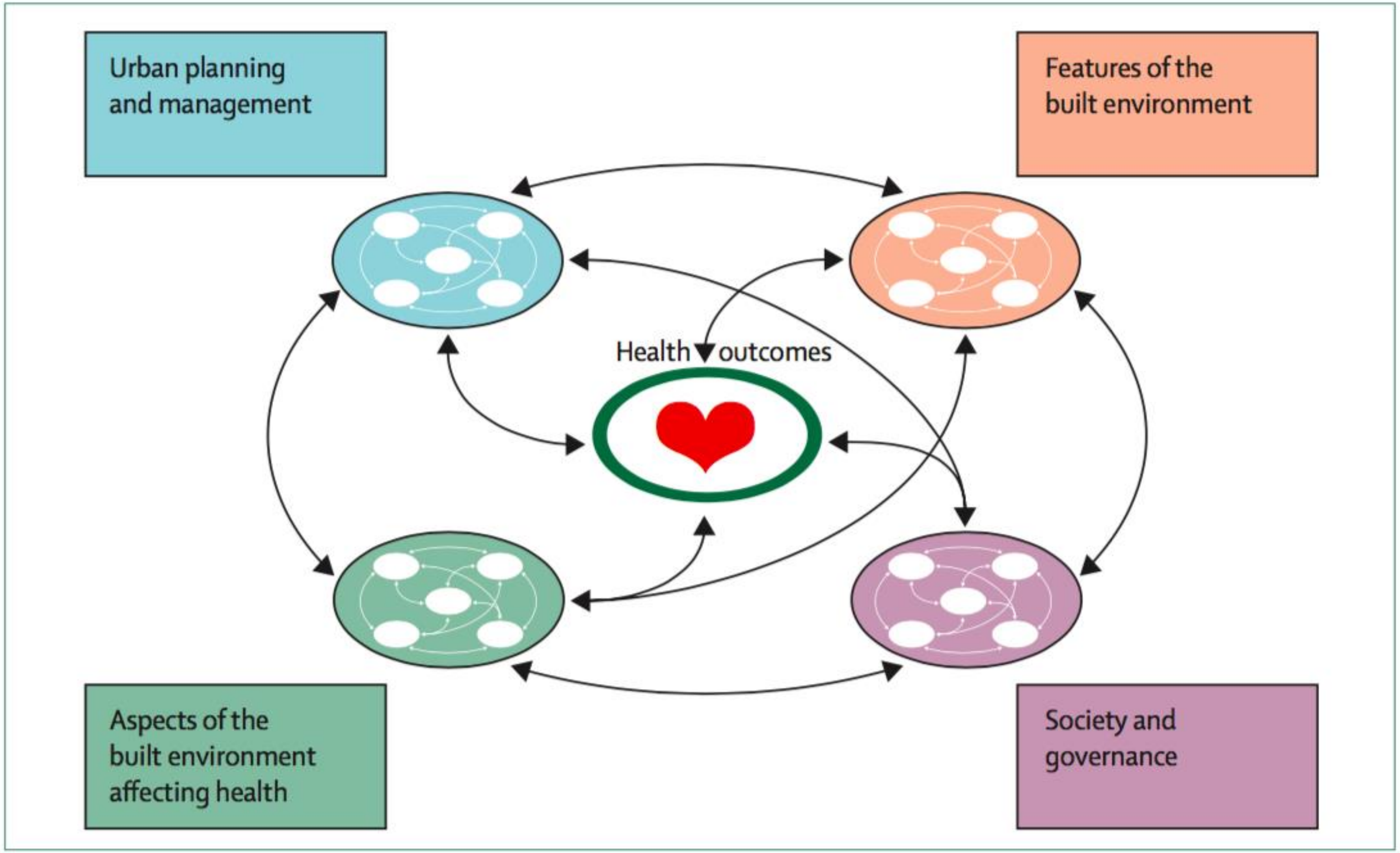
Building a Global Urban Science
nature sustainability
UCL

- UCL/Nature Commission on Urban Science
- Urban Science–Urban Policy interface
- Transboundary threats
- Rise of nationalism
- Widespread urban innovation
- Networks of cities
- Integrated, problem-focused study

Read the full report here:
www.nature.com/articles/s41893-017-0013-9

UCL Grand Challenges

UCL–Lancet Commission: Shaping Cities for Health

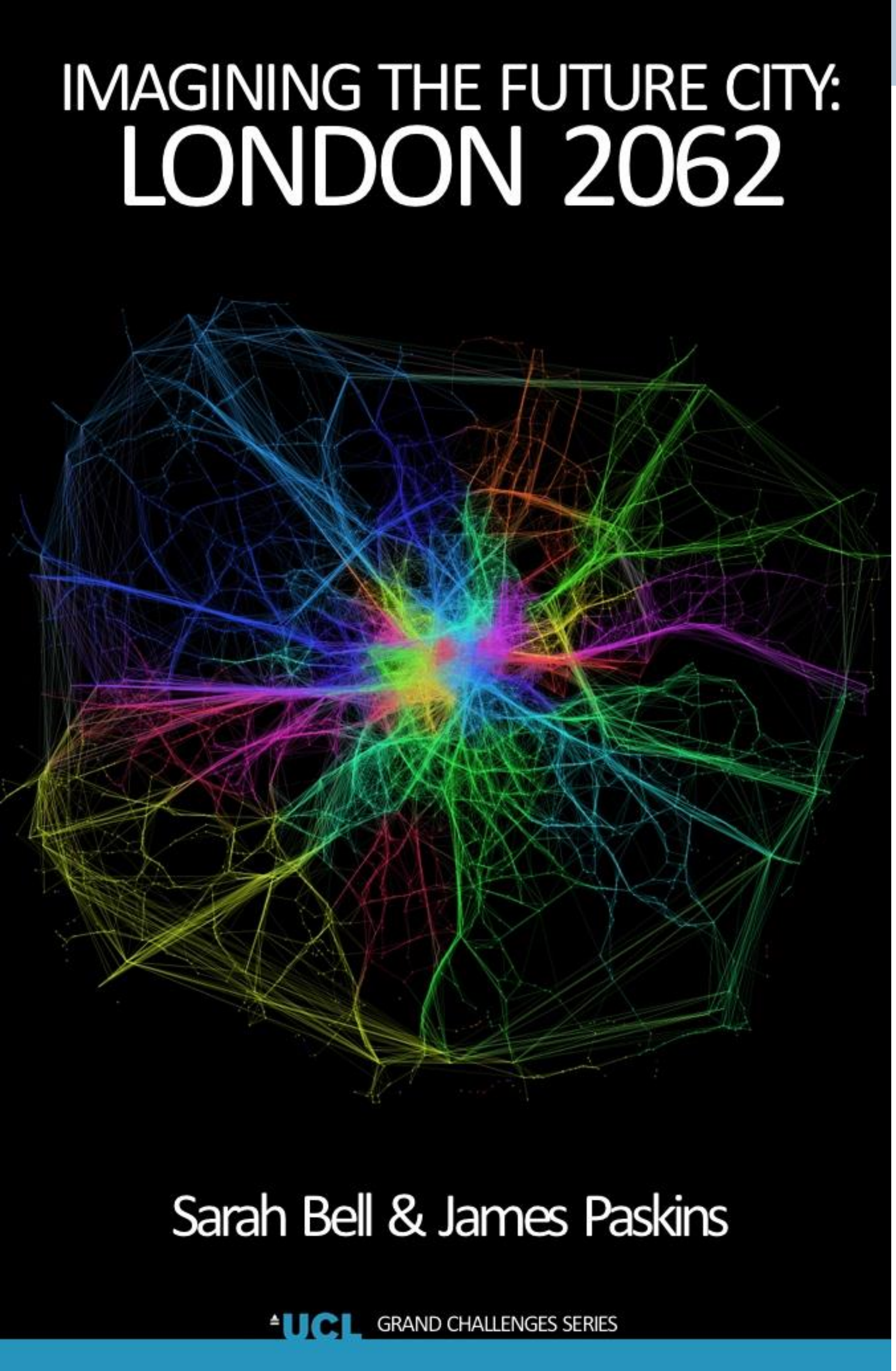


Healthy Cities Summary

- Cities are complex systems, health outcomes are emergent properties
- Urban advantage in health has to be actively promoted & maintained
- Inequalities in health outcomes should be recognised at urban scale
- A linear or cyclical planning approach insufficient for complexity
- Urban health planning needs to use experimentation
- Evaluation/self reflection plus dialogue between stakeholders

Full report: www.ucl.ac.uk/healthy-cities/outputs/lancet

UCL Grand Challenges



Imagining the Future

- Connections, Things, Power & Dreams
- Food
- Energy
- Population
- Water
- Economy
- Housing

Download a free copy here:
www.ubiquitypress.com/site/books/10.5334/bag/

UCL Grand Challenges

Future UCL—UCL East

- Located on the 2012 London Olympics site
- 11 acres and provide at least 125,000m^2 of space
- Widening participation and community engagement
- 2019 construction begins
- www.ucl.ac.uk/ucl-east/

Contact Details

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- UCL Grand Challenge of Transformative Technology
- UCL London Agenda

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ADDLESHAW GODDARD

UCL

TRANSPORT FOR LONDON

RETAIL TRAVELUTION