Next generation transport in London

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Topics for today

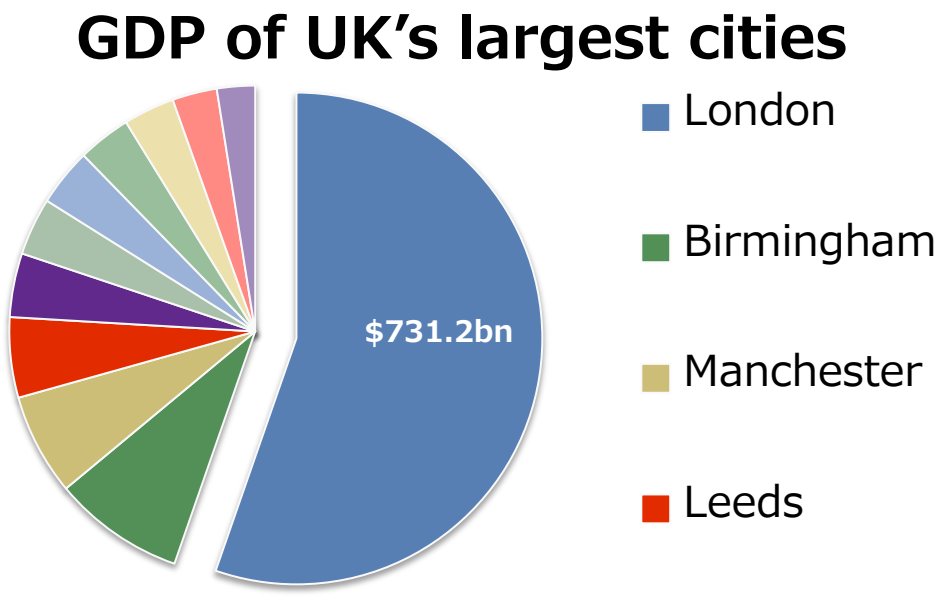
Challenges faced by London

Intelligent Transport Systems for Connected Mobility

Vision for automation in London

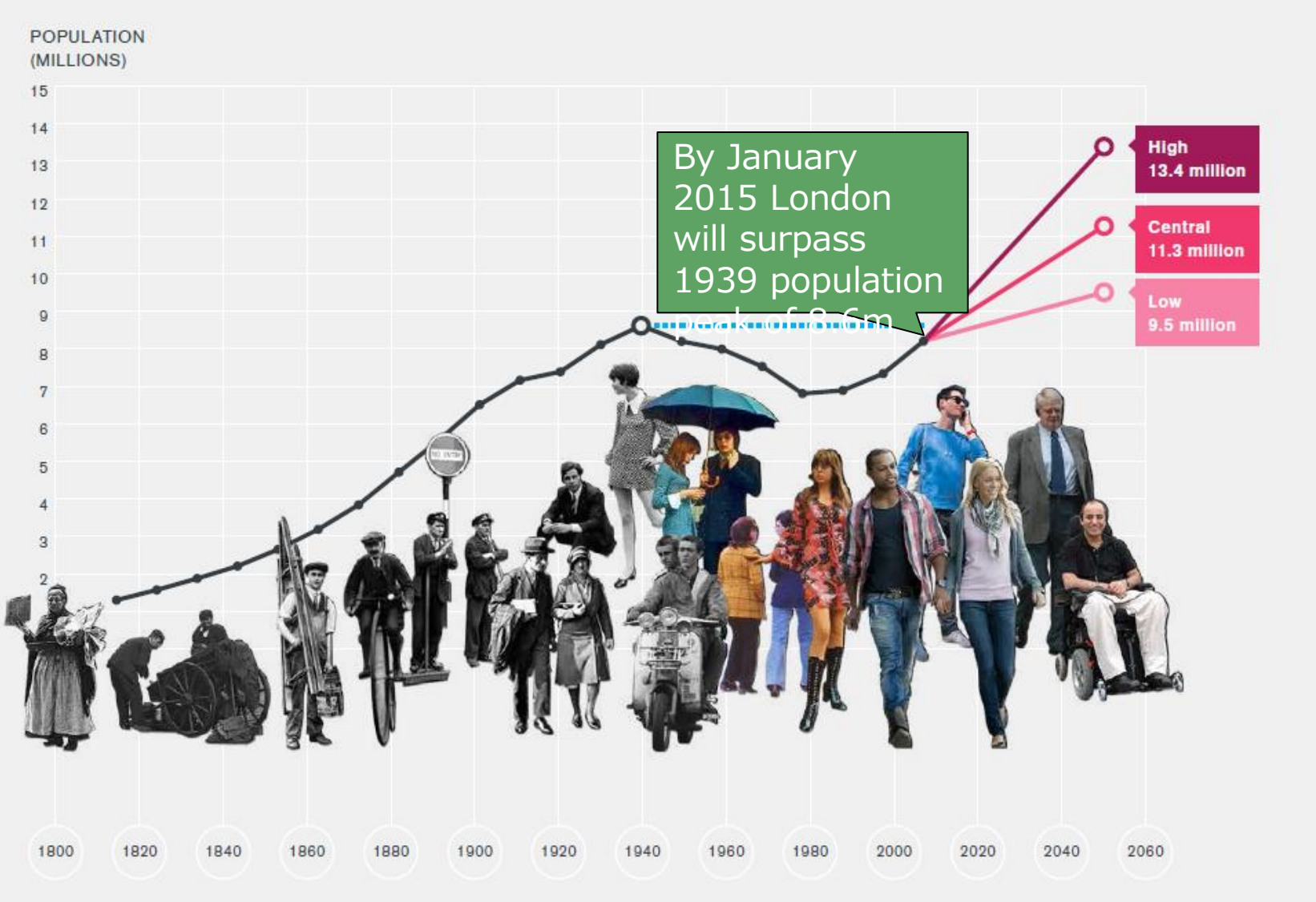
London in the context of the UK

- 8.4m residents and growing
- 30 million visitors per annum
- 28.7 million journeys per day
- 75 per cent of all UK rail journeys start or end in London or South East
- London's GDP is larger than the next 10 largest cities combined
- London is host to the European headquarters of more of the World's Top 250 companies than any other European city



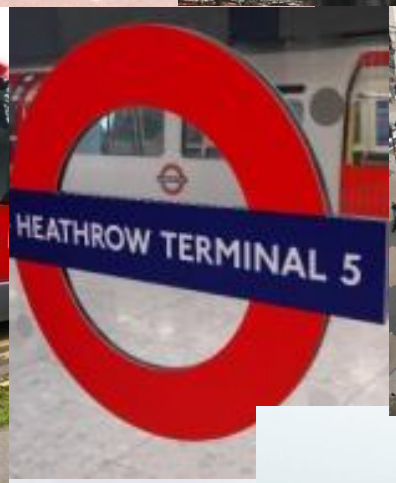
Transport for London

London is growing



TfL Surface Transport

- Road Network
  - Traffic Signalling
  - Traffic Management
  - Road Maintenance
  - Cycle Superhighways
  - Congestion Charging



- Public Transport
  - Buses
  - Cycle Hire
  - Dial-a-ride
  - River Boats
  - Taxi-Private Hire Licensing
  - Coach Station and Parking

Transport for London

Big, red and reliable

The importance of the bus

Buses: 8,500 strong bus fleet operating across 700 routes and serving 19,000 bus stops;

Assets: 50 bus stations;

Passengers: 2.4 billion per annum;

Employment: 24,500 bus drivers, tens of thousands more in supporting roles and in UK manufacturers;

24,500 bus drivers

YEAR OF THE BUS 2014

TRANSPORT FOR LONDON

EVERY JOURNEY MATTERS

Investing in innovative public transport technology

Europe's largest hybrid bus fleet is in London

Electric Bus Trials

Wireless electric bus charging

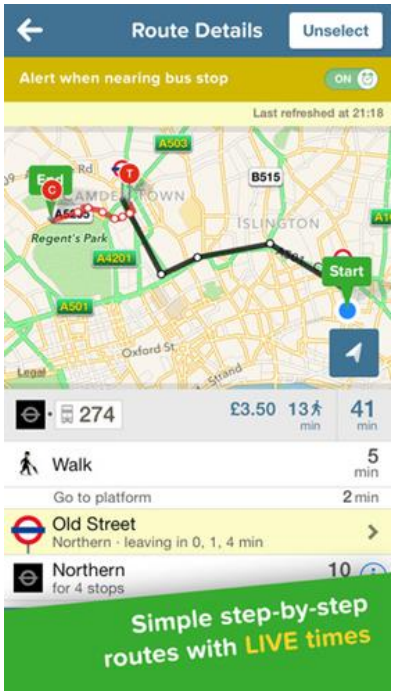
Blind-spot detection

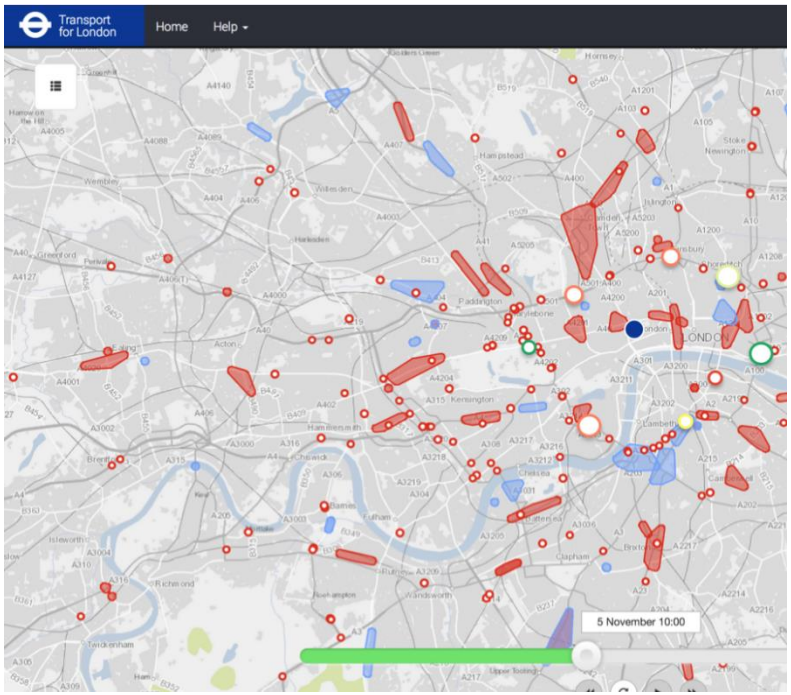
Intelligent Speed Adaptation

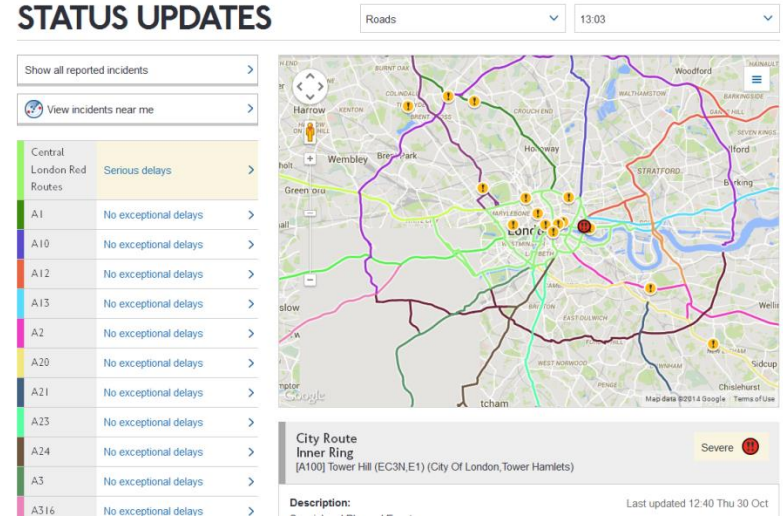
Transport for London

Big and Open Data at TfL

- London's Smart Ticketing system 'Oyster' is used nearly two billion times a year
- Data analytics is at the heart of our decision making
- We have 27 open data streams that the public and developers can access







ITS for Traffic Management

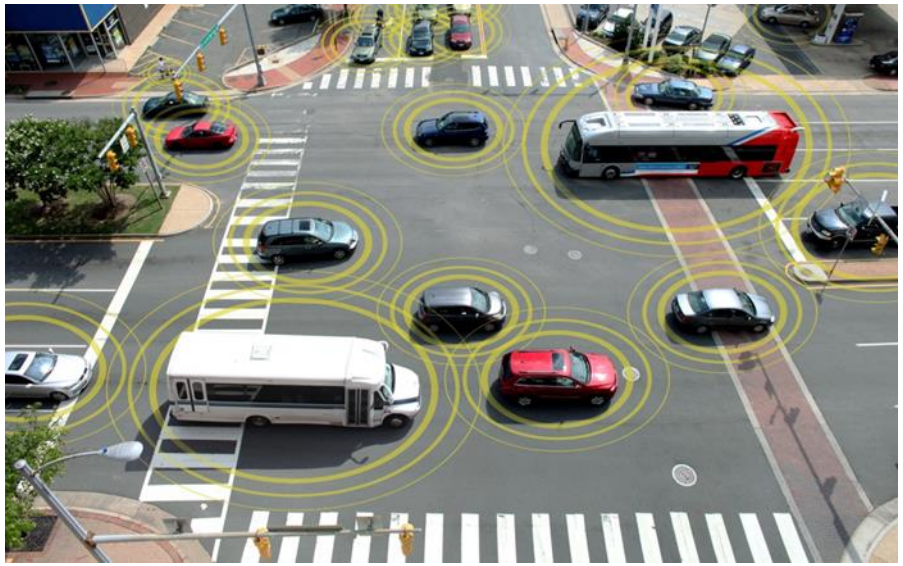
SCOOT – Smart Traffic Signalling

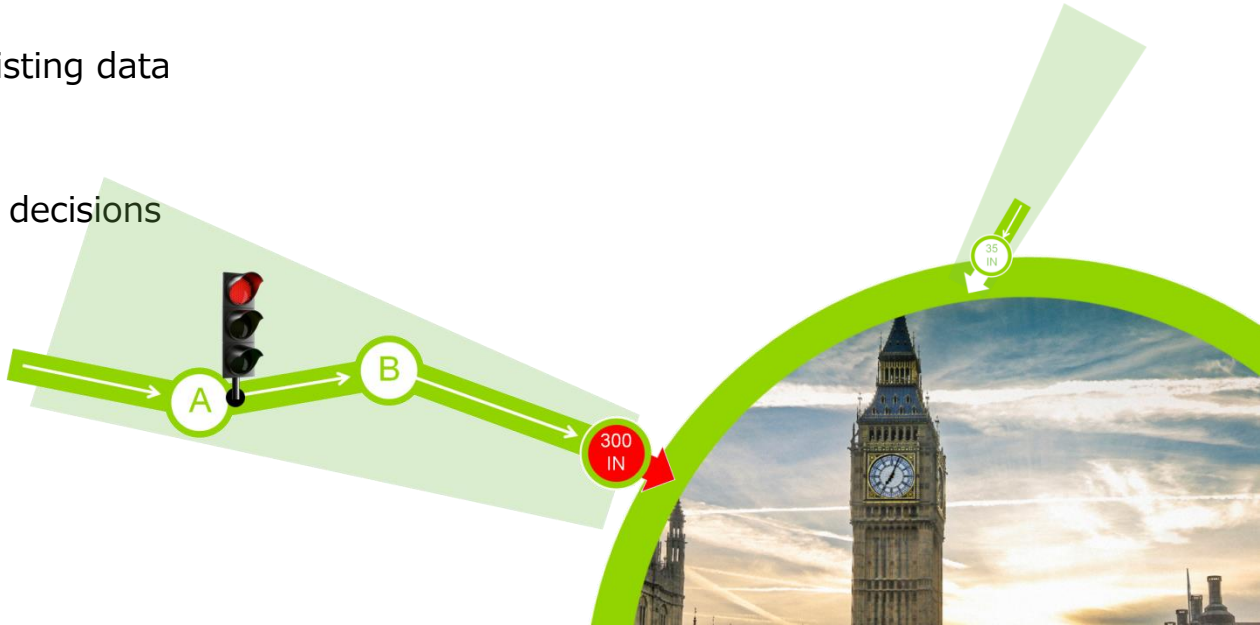
Real Time Origin Destination Analysis

Travel Demand Management

Surface Intelligent Transport Systems

- Data Sources & Sensors
  - collect more information on what is happening
- Data Sharing & Storage
  - process & share new & existing data
- Enhanced Systems
  - summarise data for better decisions





Transport for London

London 2012 – Cooperative ITS on the road network

The Challenge: Effective road network management

•£40m investment state of the art cooperative traffic signals that prioritised game fleet traffic and sent traffic signalling information to the fleets' dashboards.

The Result: Games vehicles achieved journey times **30% faster** than normal

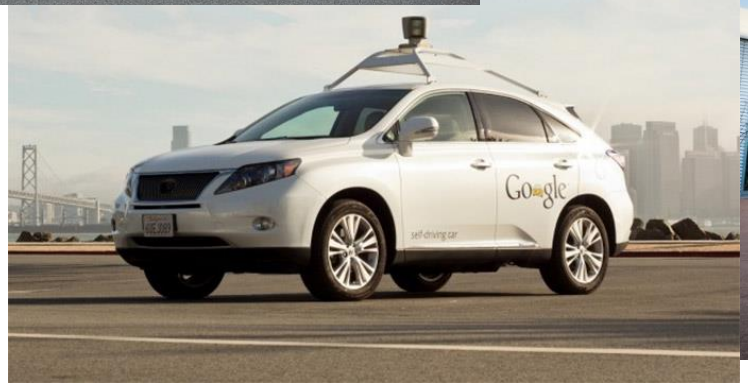
Technology integration and aspirations

Potential Impacts of Connected Mobility in London

- **Improved Freight Operations**
- **‘Big Data’:**
  - **Real Time Network Information**
- **Reduced Congestion**
- **Reduced Journey Times**
- **‘Last Mile’ solution**

Transport for London

Autonomous Vehicles are the Ultimate Form of Connected Mobility



The First Autonomous Vehicle

Challenges for Automation in the Urban Environment

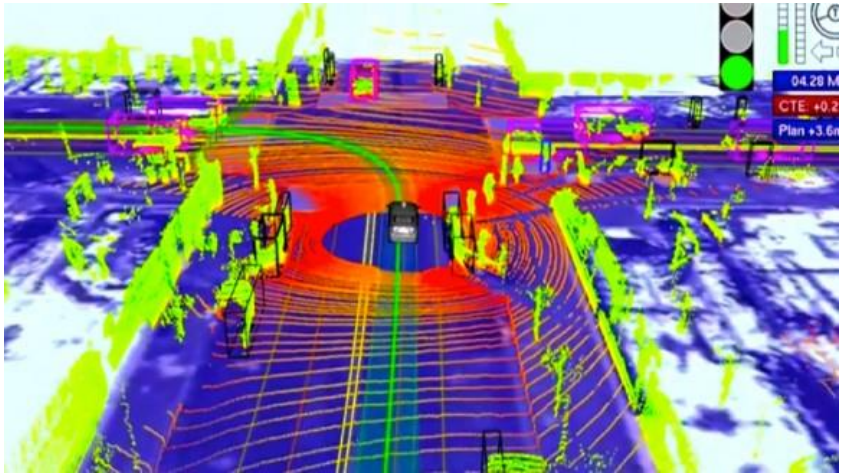
Automation is harder than in the Highway environment

There is a huge variety of vehicle types on the road, cars, buses, taxis, bicycles and pedestrians

New technologies can cause disruption to existing market

Liability, public acceptance and road safety concerns.

Due to these difficulties, safety benefits from partial automation can be more effective in the short term



Key Messages and Next Steps

- ✓As a globally competitive city London is perfect for pioneering technologies.
- ✓Transport in London has pioneered the use of technology to improve public transportation.
- ✓ The centralised control over London's huge public transport network allows us to launch new markets for such technology, as we did successfully with Oyster.
- ✓Transport for London wants to work more closely with vehicle manufacturers to develop mutually beneficial C-ITS and automation