

## Future of Urban Mobility Strategy

### Question 1

We have identified above the main technologies and trends that we believe will affect urban mobility in the coming decades. Are there any missing?

The main trends identified in the call for evidence are in line with the trends that have given rise to the TravelSpirit community and establishment of the TravelSpirit Foundation.

The TravelSpirit Foundation was established in Manchester, UK, in 2016 to provide an open framework to ensure that new integrated mobility services are universally accessible. Notable founding member organisations included Plannerstack (Netherlands), MaaS Global (Finland), La Fabrique des Mobilities (France) and UK organisations Alliance Manchester Business School, Alstom, Department for Transport, Ordnance Survey, Mydex CIC, Alstom, Ordnance Survey, Transport for Greater Manchester and Transport API.

To achieve our ambitious aims for the emerging future of mobility - within the UK and across the globe - we set out to build a global network of transport operators, software developers, businesses, policy makers, planners and activists across the mobility and technology sectors.

Naturally, this global network is diverse, featuring a range of entities with different aims and objectives, but we are united by a shared vision for open and accessible mobility. This vision is underpinned by four core values:

1. **Universal Mobility:** We believe that an integrated, connected, multi-modal transport system provides the path to sustainable and equitable transportation for all.
2. **Open Innovation:** We believe in an open innovation model, that rewards sharing of information that serves others, even our competitors, and brings benefits to all.
3. **Global Community:** We believe that by connecting coders, planners, activists, and policy-makers through a global network, we are better equipped to tackle the toughest mobility and transport challenges.
4. **Local Benefit:** We believe that our work must be grounded in its ability to demonstrate positive change by and for local communities and regions.

Our organisation, and its vision, has now established itself across Europe, North America, South Africa and in Singapore, with 50+ member organisations and a following of 5000+ individuals.

A key trend that is missing from the current "Future of Urban Mobility Strategy", relevant to

TravelSpirit's mission, is the emergence of the global tech giant data monopolies, whose power and influence, by the data they harvest and exploit, dwarf what is possible at a city, region or even National level.

These data monopolies have already globalised logistics, retail and the media, and are now set on globalising transportation. The interplay of data monopoly interest in transportation alongside global tech start-up activity has been overall a positive driver for change - however we should not be complacent that this is inevitably the case.

A second key trend is for an increasing number of "new mobility services" technology start-ups, who on one hand are helping disrupt and shape transportation for the better, while on the other hand have little regard, appreciation or understanding of public policy and/or the need for an integrated approach to transport delivery at a local level, to maximise economic and social benefits to communities and work towards meeting air pollution and climate change targets.

For example, risk-taking technology start-ups, backed by eye-watering investment capital are clashing with the culturally risk-adverse public service and public transport sectors, who have often failed to focus on customer needs over inward looking political and operational concerns.

A third trend, which is intimated, but not explicit in the current strategy, is the convergence of transportation that is taking place - with private taxi, community transport, public transport and private transportation becoming increasingly intermixed and digitised. This is creating pressures on existing transport mode-based regulation and funding structures.

Our observation is that existing UK transport providers and cities are not innovating at a sufficient pace, nor engaging enough with a transforming transport market place and new market entrants in the most positive or constructive way.

At the same time, across the globe, the activities of new technology companies are leaving behind a wake of "market disruptions" - and often not always achieving the best transport outcomes when this would demand a greater level of collaboration, co-ordination and sharing with authorities and other transport providers than is viewed as worth-while to support their technology and data oriented business models. We also have several progressive cities, such as Oxford, Newcastle, Manchester and Birmingham, making pro-active steps to engaging with the innovation agenda, and exploring new business models.

Two recent events, happening right here in the UK, highlights the very real and present underlying tensions and opportunities that the trends in this Future of Mobility paper are having on our local, regional and national transport infrastructure:

1. The withdrawal by TfL of Uber's taxi licences in September 2017

<https://www.theguardian.com/technology/2017/sep/22/uber-licence-transport-for-london-tfl>

2. The withdrawal by Mobike from Manchester in September 2018

<https://www.dezeen.com/2018/09/06/mobike-dockless-bike-sharing-manchester-vandalism-transport-design-news/>

Providing further analysis or comment on these particular events would detract from our main arguments, which are:

- we anticipate the frequency of such events to significantly increase across the whole country over the years to come;
- in order to prepare appropriate policy responses, it is essential to appreciate the reality of transport in the 21<sup>st</sup> century – it is increasingly global, and many of the key actors involved in the UK transport system are big data monopolies and global tech startups
- these technology players on one hand don't necessarily understand, or care for, the intricacies of local, regional or even national transport policy thinking, and on the other, often hold much greater data and levels of customer insight than individual cities, regions, or even national government.

TravelSpirit Foundation was established to respond to the trends already identified by this paper, alongside the additional trends highlighted in our response above. Through 2 years of community growth, consultation and global think-tank activity, we, and our community, firmly believe that to address these trends, and deliver transformation in mobility in a way that achieves the desired outcomes outlined in this "Future of Urban Mobility Strategy", it is essential to consider and prioritise the following actions, which we expand upon further in our response to Questions 2-9:

1. Support and develop a culture of open collaboration within the UK transport industry, as part of a wider business transformation agenda to achieve greater diversity, inclusion, technical know-how across the UK transport sector.
2. Promote the Adoption of Open Technologies within UK urban infrastructure, opening up the playing field and supporting a healthier level of market competition for ITS procurements, and in line with the government's own Open Standards policies;
3. Develop solutions and standards for trusted data, customer data portability and system inter-operability;
4. Support our global call for an Open Internet of Mobility.

## Question 2

We want our urban infrastructure to support these trends and deliver benefits to society. What changes are required to urban infrastructure?

### Adoption of Open Technologies

Many of the technological solutions being deployed for Mobility as a Service (Maas), Connected & Autonomous Vehicles (CAV) and other transport applications are being developed using open source technologies.

In CAV a North American community member, Open Motors have partnered with Renault to open source the Twizy Electric Vehicle Hardware platform see <https://www.openmotors.co/>. Another highly successful North American Open Source project, Hyperledger, provides open source code for any developer to create enterprise-standard blockchain solutions for business. The Hyperledger project has already created open source global code libraries to track physical objects in a real-world supply chain. See <https://sawtooth.hyperledger.org/docs/core/nightly/0-8/examples/supplychain/overview.html>.

Hyperledger is also a member of a wider automotive alliance for open blockchains, called the Mobility Open Blockchain Initiative (MOBI), co-founded by Ford, Renault, GM, BMW and IBM. See <https://www.dlt.mobi/>.

In MaaS, the journey planning systems in Finland and Netherlands are built with open source code - that can be shared by developers across the world. See <https://digitransit.fi/en/> and <http://www.plannerstack.org/>. This means that any enhancements to the code base, in terms of intelligent algorithms and security measures, shared and tested globally.

In the UK, Open APIs such as TransportAPI and the bus services API provided by Transport for the West Midlands are making a difference to travellers now. The Google General Transit Feed Specification has quickly become established as a world standard.

Furthermore, open source software such as MatSIM and QGIS are having practical applications for policy makers.

This is not surprising. Open source code helps procurements focus on securing highly skilled engineers, rather than commercial contracts linked to proprietary systems, that slow the pace of innovation and constrain the potential to scale solutions and integration across modes, borders and competing services. Furthermore, they enable higher levels of system interoperability and adoption of common data standards.

We believe that the systems that operate our urban infrastructure will be best served if adoption of Open source technologies became the default standard for operating intelligent mobility services, in time replacing the need and expense of proprietary systems. While we have come to this view from the perspective of what is required to achieve a future mobility that is integrated, seamless and customer orientated, our suggestion is also in line with the government's own Open Standards policies, which note that:

*"Open Standards are one of the most powerful tools we have to open up government. They make it possible for the smallest supplier to compete with the largest. They make data open for any citizen to audit. They unlock the transformative power of open source software."*

- see <https://www.gov.uk/government/publications/open-standards-principles/open-standards-principles>

To do so we need leadership from government on promoting the use of open source technologies in public sector led Intelligent Transport System (ITS) procurements and in the data and technology requirements for procurements and funding of transport services - something already achieved in, for example, the Pensions sector and the Government Digital Service.

### **Electrically-Assisted Pedal Cycles (e-Bikes)**

Our physical urban infrastructure remains severely inadequate to support the most desirable transport outcomes of the trends identified in this consultation. In our view this is to achieve a step-change in the levels of walking and cycling; that not only deliver significant health benefits, but are the most effective way of reducing congestion and related air-pollution problems on our roads; as well as creating the necessary net reduction in transport related CO2 emissions.

Traditional cycling, although a healthy option is often an unviable alternative to the car or public transport for the commute - due to hills, the distances involved and the need for showering facilities at the place of work. Electric bikes overcome each of these barriers, and with the evidence of adoption from other parts of the world, could dramatically increase the value-for-money calculations for investment in cycling infrastructure across the UK's congested urban cities.

We are glad to see that the trend of rapidly falling battery prices and improvements in energy density and electric motors have been captured in the "Cleaner Transport" trend, and that the global e-bike sales phenomenon has been highlighted, upfront, in the "New Modes" trend. We would suggest, though, that it needs to be highlighted the degree to which the UK is lagging far behind other markets, including France, Italy, Germany and the Netherlands.

This disparity and relatively weak home-market for e-bikes, is naturally hurting the competitiveness of UK-based e-bike manufacturers and retailers. This is despite, the mounting evidence from other countries of the mode-shift opportunity (from private automobile) that e-bikes represent, given their longer range and convenience compared to conventional bikes, for the peak-time commute. With increased flexible working patterns driving people away from season-ticket based public transport products back onto our congested roads, there is a need to promote e-bikes in the UK as a road efficient private transportation option, and part of an overall move to Mobility as a Service lifestyles that are less dependent upon the private car for peak-time commutes.

See recent article on Ubers change of focus from taxis to bikes:  
<https://www.bbc.co.uk/news/business-45317025>

See evidence of major e-bike retail growth in mainland Europe <https://www.bike-eu.com/sales-trends/nieuws/2018/03/e-bike-sales-soared-in-eus-main-markets-10133378>

### Question 3

What evidence do you have to enhance our overview of the impacts of these trends on cities and their use of urban space? Are any impacts missing?

Recent concerns about data privacy, sparked by the implementation of GDPR and the Cambridge Analytica revelations, are likely to continue, and will be subject to fierce debate. Mobility data is one of the most unique identifiers a person can have, giving information on where they live, work, and spend their leisure time. As well as being integrated with financial records.

New technologies are emerging that enable people to have greater control over their data, and utilise it in a way that is of benefit to them. An example of such a technology is blockchain, where Travelspirit is working in collaboration with Iconic Blockchain (*on the TSio Protocol - see our Whitepaper 6*) and the Transport Systems Catapult (*see <https://ts.catapult.org.uk/blockchain/>*) on ways of achieving a decentralised MaaS system. The aim our work in this area is to support a return of control and ownership of transport data to the individual to whom it belongs, and at the same time solving a trust problem amongst competing mobility providers with respect to the aggregation / integration of services to the customer. If data privacy is to be the defining issue of the coming internet age, there is no reason why the mobility sector will be immune to this.

#### **Whitepaper 6: TSio Protocol: The Open Internet of Mobility**

<https://travelspirit.foundation/resources/whitepaper-6-tsio-protocol-the-internet-of-mobility/>

We also note that the evidence base needs to be developed further, as new mobility services are developed, trialled, and most importantly are scaled to a wider operation. The most critical gaps that require further observational research to determine impacts are as follows:

- Impacts of mobility services on transport poverty and the accessibility of key services;
- Observable impacts of new mobility services on the operational business models of existing transport providers;
- The value new mobility services can generate for statutory transport services, such as Home to School transport.

#### Question 4

What possible market failures might emerging technologies and trends give rise to that could require intervention by Government?

There are two major market failures that we anticipate, and believe can be avoided with government intervention.

#### **Monopoly**

As discussed in our response to Q1, a key trend to be addressed is the emergence of new types of monopoly power. Monopolies and monopoly activities are not uncommon in transport markets, as evidenced by the Competition Commission's Local Bus Services market investigation, and the House of Commons' Transport Select Committee Inquiry into Rail Franchising. In both cases, such activities have negatively impacted consumers in terms of available choice of mobility services.

This will primarily emerge through the dominance of closed technological and business ecosystems. Whilst Travelspirit realises the value of closed ecosystems to gain competitive advantage and for companies to develop offerings desired by consumers, openness must be at the heart of the future mobility ecosystem. This is so barriers to market entry remain low, and that different elements of the ecosystem are able to interconnect with one another.

#### **Fragmented Transport System**

As also discussed in our response to Q1, a key trend is the emergence of an increasing number of technology start-ups and new mobility services, that do not necessarily have the motivation or inclination to collaborate, share and integrate with other services. Extreme examples of this have occurred amongst bike-sharing companies in China. Even without this type of excessive waste and added congestion, it is clear that without a focus on customer data portability, system interoperability and a cross-sector commitment from public, private and community transport to share and collaborate - it is unlikely, regardless of technology progress, that customers will enjoy seamless and integrated transport in an increasingly complex mobility environment.

See <https://www.theatlantic.com/photo/2018/03/bike-share-oversupply-in-china-huge-piles-of-abandoned-and-broken-bicycles/556268/>

## Question 5

We are committed to a transport network that works for everyone. What role should Government play in helping ensure that future transport technologies and services are developed in an inclusive manner?

Given the global dynamics at play, it is essential that the Government plays an active role in shaping the Future Mobility agenda for the UK, and needs to state not just that inclusivity should be considered as part of the development of Future Mobility, but it must be at its heart.

The clearest way that government can do this is through providing funding for early stage technology services and open source developments that have tackling social exclusion as their aim. A notable recent example was the SBRI funding call for tackling rural transport accessibility in Monmouthshire, as well as the pioneering work on accessibility being undertaken by MaaS Scotland. Such investments need to be scaled up, and quickly.

The existing legislative framework may be sufficient to ensure that those who do not develop services in an inclusive manner can be held to account through the legal system. However, government may play a role, through the Knowledge Transfer Networks, of disseminating best practice.

We would also urge Government to intervene, in a thought leadership capacity, and place user needs and user-centred design at the heart of the Future of Mobility. Government can play a role like few others in engaging vulnerable communities, and ensuring that they can be involved in the development and design of Future Mobility solutions. Open source communities of coders and programmers can subsequently build, modify, and scale solutions, following the lead of the Government's Digital Service.

## Question 6

How can Government ensure that future urban transport systems support people's wellbeing and flourishing, healthy communities?

Achieving this will require government to work collaboratively with local authorities across the UK, providing them with the support and where necessary the powers to leverage the benefit of new mobility services. Whilst government will set the national agenda and outcomes that it desires, it is in our towns and cities where the battle for wellbeing and healthy communities will be won or lost.

New mobility services provide significant opportunity to make more effective use of our transport networks and of the available supply of vehicles. Accelerating electrification of the vehicle fleet will improve air quality in our cities. But reducing the total number of vehicles by leveraging new technologies such as blockchain to more efficiently allocate demand to supply will have the biggest impact. Work by the International Transport Forum, for instance, estimates that the deployment of new mobility services and autonomous vehicles could reduce the number of vehicles in cities by 40%.

Government needs to provide local authorities with the tools and powers to enable the development of open ecosystems for new mobility services in their areas. Travelspirit itself has taken this first step with MaaS Lab by developing an Openness Index (*see our Whitepaper 2*), to at least provide cities with the base knowledge that they need to develop strategy. But this needs to go further. This could include:

- Supporting user-centred design in policy making and in practical application of all mobility services, including leading by example (e.g. the DVLA);
- Giving cities greater control over the specification of their public transport networks, and how they interact with new technology services;
- Mandating open and publicly available APIs on timetables, fares, real time running, and other factors of relevance to consumers as a condition of public service operation of any type of transport service (*see our Whitepaper 7*);
- Continue to roll out and improve the quality of transport open data provided by the UK government, and if necessary mandate local authorities to do the same;
- Provide financial and skills support to local authority transport departments and services in fields such as data science, open source solutions, user centred design, and emerging technologies.

### **Whitepaper 2: Openness in MaaS Index**

<https://travelspirit.foundation/resources/whitepaper-2-travelspirit-index-of-openness-in-mobility-as-a-service/>

### **Whitepaper 7: Openness in paying for transport**

<https://travelspirit.foundation/resources/openness-in-paying-for-transport-travelspirit-white-paper-7/>

## Question 7

What role should Government play in understanding, shaping and responding to public attitudes to emerging technologies and services?

This is where the value of openness comes into its own. Earlier in 2017 we published our “**Case for Openness in Mobility as a Service**” which presents our arguments in full. See our *Whitepaper 1*: <https://travelspirit.foundation/resources/whitepaper-1-open-or-closed-the-case-for-openness-in-mobility-as-a-service/>

Furthermore, our vision, for an Open Internet of Mobility (see our response to Q9) is underpinned by a desire to ensure that the future of mobility is a truly democratic and inclusive one. Consequently, UK government should wholly embrace openness in future mobility services since the benefits of doing so are many fold.

The most effective means, as we have stated before, is putting user needs at the centre of the design of the new mobility system. Openness has this as a design feature, not as an extra. Government has extensive experience of this through the Government Digital Service and the Policy Lab. Those techniques for effective engagement need to become common practice if people are to part of the conversation concerning future mobility.

Our observation is that currently government R&D grant monies focus quite heavily on supporting the development of Intellectual Property for technology companies to secure investment and scale.

While we fully support this form of funding, especially when “mission-based” as per the successful Centre for Connected and Autonomous Vehicle (CCAV) sponsored R&D programs, we have a concern the benefits of open approaches to innovation and exploring new business models for funding and integrating transportation can be overlooked. For this reason, earlier in 2017 we published a whitepaper on an **Open Innovation** approach to developing mission-based transport innovations, that encouraged higher levels of collaborative and collegiate behaviour in transport innovation events, that we believe could have a greater overall impact on UK performance in transport innovation; but requires government support and funding to implement. See our *Whitepaper 5*: <https://travelspirit.foundation/resources/whitepaper-5-travelspirit-hackout-open-innovation-programme/>

Openness in technology has demonstrated its value many times over. The most convincing public story is of how a British programmer called Tim Berners-Lee made open many of the protocols that underpin the modern internet, that the majority of Britons use every day. Sharing such stories, but in the mobility field, adds significantly to the public discourse on new mobility services.

There is, of course, the economic argument for doing so. Work by Deloitte’s for Transport for London estimates the economic benefits of transport open data in London to be £130 million per annum, on a £14 million per annum operational expenditure by TfL. By contrast, TfL’s Contactless system is closed and proprietary, meaning that the benefits of the TfL Oyster system is difficult to scale up to benefit the whole country, even though it could create cost efficiencies of scale for TfL.

## Question 8

What changes do you expect to the mobility-related labour market? How can Government best support people and businesses affected by these changes?

There is significant uncertainty as to how the future mobility employment market will be shaped over the forthcoming years, and at what speed. Some predictions estimate that 50% of jobs could be lost due to automation within 10 years, whilst others are not so pessimistic.

Travelspirit has no fixed view on the likelihood, timescale, and scale of these changes.

Observations from its community, however, are that transport policy makers and practitioners need to develop their Digital skills to take advantage of future opportunities. This includes, but is not limited to, coding, data science, Big Data analytics, systems architectures - including blockchain, and user centred design.

Here, government can potentially play a number of roles to ensure this becomes standard practice in the transport profession. The most effective is likely to be supporting professional institutions such as IET and CIHT in retraining transport professionals in these core skills.

We'd therefore encourage the government to support and develop a culture of open collaboration within the UK transport industry, as part of a wider business transformation agenda to achieve greater diversity, inclusion and technical know-how across the UK transport sector.

## Question 9

What other actions should Government prioritise to help people, businesses and cities prepare for the future?

As noted in our UK transport system often suffers from a culturally risk-averse public service and public transport sector, who have often failed to focus on customer needs over inward looking political and operational concerns.

At the same time we have noted that the future of mobility will be global in nature, and therefore we believe that it essential that to prepare the UK people, business and cities for the future, government needs to prioritise and invest in its active engagement on shaping and debating the future of mobility at not only a European, but on a global scale - including, but not limited to, the regions where TravelSpirit community have already gained ground in North America, South Africa and Singapore.

Furthermore, TravelSpirit's recent collaboration with Iconic Blockchain, on the TSio Protocol, has revealed strong interest from the Chinese business community in the use-case of blockchain to

integrate new mobility services, through creating a trusted, commercially agnostic, integrator of competing service offers.

There are two areas in which we would recommend leading the debate, on a global platform:

### **The Open Internet of Mobility**

TravelSpirit sees transport as a human right and freedom, and does not want to see cities of the future being run solely for the benefit of commercial interests.

We believe it is important to defend transport from monopolistic processes which threaten to take the whole of the mobility market within the private confines of organisations that do not have a public remit or control.

We are therefore calling for an Open Internet of Mobility: a global digital common that enables the full benefits of Mobility as a Service (MaaS) and Connected & Autonomous Vehicles (CAV) - new transport modes, software and information streams - to be locked-in for the public good.

Built on open source architecture and blockchain protocols, this framework will enable MaaS and CAV providers to compete in a transparent market that is truly focused on providing individualised customer-centric services to anyone and everyone.

To progress our call, we have signed a strategic MOU with the MaaS Alliance to establish an open eco-system and joint efforts to advocate the Open Internet of Mobility within Europe and would welcome UK government support for this global call, which is already resonating well in the global TravelSpirit communities in North America, South Africa and Singapore and with transport specialists in International Trade and Intermodal Logistics.

### **The Pro-Economic and Social Case for Autonomous Vehicles in Public Transport**

The Docklands Light Railway, for example, is a very cost effective and beneficial transport system that underpins the economic regeneration of east London. However, we note that the DLR model has not been replicated elsewhere in the UK, and that too often automation efforts have been focused too much on deriving, often over-stated, cost-savings of existing operations. Earlier in 2017 TravelSpirit published our **whitepaper 3 on the role of Robotics and Artificial Intelligence in Public Transport**, and recommend this to be reviewed and for our recommendations to be considered and supported. See <https://travelspirit.foundation/uncategorized/whitepaper-3-autonomy-the-role-of-robotics-and-artificial-intelligence-in-public-transportation-and-urban-mobility-for-cities/>

## Future of Mobility Grand Challenge

### Question 10

Which 'missions' in the areas we have identified could be most effective in driving innovation and investment? Please refer to the criteria suggested in paragraph 2.6.

Of the mission areas identified, improved access to transport and liveable cities have the greatest potential to drive innovation with an impact on people's lives. However, as presented in the document, we consider them to be incomplete. Innovations should focus not simply on the means of transport, but on the purpose as well. Transport and associated technologies are a means of enabling people to access opportunities to improve their lives. Consequently, innovation missions should reflect this.

### Question 11

How should Government funding be targeted to help UK innovators build and scale transport solutions?

There is a continuing need to trial future mobility solutions in smaller urban areas, and the rural / urban fringe, that do not present an immediate commercial opportunity for the widespread deployment of this technology. This builds upon success already being realised in larger urban areas like London and Manchester, and has the potential to leverage the skills and capabilities developed in these areas for a wider benefit. This can be achieved through new funding streams, and minor changes to existing funds.

Most critically, government needs to be a leader in terms of establishing open standards as the default requirement when purchasing mobility services and providing funding for them. Whilst providing support for technology development is important, and should continue, the most effective financial mechanism is to be a purchaser of such services. This is well-established practice in the Government Digital Service, and should be applied to new mobility services.

This could include the following, although this is not intended as a complete list:

- Deployment of low emission and autonomous vehicle technology as part of government transport service contracts, with investment in these services increasing over time;
- Making all new data sources generated by government initiatives open as standard;
- Require the deployment of open source technologies and data as part of licence conditions granted to major operators, including Highways England and Network Rail;
- Mandating the deployment of open source technologies as part of government research and development funding, including publishing the findings in an open source manner.
- Contributing funding and developer resources to established open source code projects, such

as those identified in our response to question 2, thus contributing to the future of mobility at a global level, while providing local employment and training opportunities for UK-based software development engineers.

At the local level, a number of initiatives are required, and require financial support from government:

- Dedicated 5-10 year financial support, or the ability to raise local funds, for comprehensive implementation by local authorities of technology solutions required to enable new mobility services. This could include open protocols for traffic management and coordination, and open APIs for parking services;
- Make investment in enabling technologies, such as Internet of Things (IoT) sensors, a requirement as part of all government Major Scheme Business Case grant awards, and making such technology open and exploitable by all;
- Building upon the findings of the Local Transport Data Discovery Project, targeted investment in providing support and technological development to the authorities where the business case for technology investment is weakest.

In addition to financial investment, the biggest investment required is in terms of developing new technology and analysis skills of transport policy makers, technicians, and engineers through the UK. All professionals should have the opportunity to not simply learn from the best, but to apply this best practice as part of their own work. There is already extensive opportunity for knowledge transfer from professional institutions and government-backed initiatives such as the Knowledge Transfer Network.

Accordingly, government should prioritise its investment in researching, and providing mechanisms for professionals to translate this learning into practice. This has the potential to not only embed skills within organisations, but to create demand for innovation from an informed client.

## **Question 12**

Which laws or regulations not currently being addressed need to be amended or created to help harness the benefits and mitigate any risks associated with new transport technologies or services?

Following experience from the bus industry following deregulation of services, a review of competition laws to reflect the emerging paradigm shift in mobility is required. Current regulations, such as in local bus services, at best discourage collaboration between mobility service providers (for fear of being judged to collude with one another), and at worst deem it illegal.

Research into Traveller Needs undertaken by the Transport Systems Catapult reveals that travellers are often not concerned about whom provides their mobility services. So long as their needs are met (i.e. to get to their end destination) for a transparent price and service offering, they will use that means of travel. Even if that means services collaborating with one another.

Monopolistic behaviour is clearly not of benefit to consumers overall. But if the UK is to be a leading nation on new mobility solutions, the future of mobility depends upon open collaboration – open in its intent, its means, and its outcomes. An option for this is the Finnish Transport Code, that forces mobility service providers to open up their operational data, including fares.

Legislating should be used as a matter of last resort. However, a review of existing competition legislation is required to ensure that innovation based on openness is not stymied in the UK.

### **Question 13**

How could the experience of working with local and/or national regulators be improved for transport innovators?

Through government's close relationship with the Transport Systems Catapult, the establishment of the Innovation in Rail Programme, the creation of the Centre for Connected and Autonomous Vehicles, and innovation funding dedicated to Highways England, Government has already demonstrated a willingness to work with innovators. We have also seen similar work emerging in local authorities across the UK, such as Transport for West Midlands' work with ODI Leeds on its open buses API.

Similar to the approaches to technology, we would recommend that for Government and transport innovators to mutually benefit, work must be undertaken in the spirit and practice of openness.

### **Question 14**

What further actions should Government prioritise for resolving barriers to data sharing and use in the mobility sector while protecting privacy and security?

TravelSpirit Foundation believe there is a pressing need for a UK small town/ rural as well as an urban (non-London) "regulatory sandbox environment" to test and demonstrate the value of open eco-systems.

This area would build on the success of London in opening its data sets, which was not initially a clear business case and provide a financially and policy insulated space for a different set of UK regions to fully implement this policy and determine the consequential outcomes.

Most local authorities believe that open data sets are a good idea, but few non-London cities have the power to make this happen. This is either in the financial and policy muscle or the scope to compel contracted operators. If a region (an urban and a rural), could be provided with some government assurances that funding would be available for several years to implement this policy - say 7 years - and it would be comprehensive in its implementation and include all local modes, we could see the real impact on regional and local innovation, services, quality, etc. that open data

would have in other non-London parts of the UK.

At present, we have a slow moving and erratic process across the country that is making progress, but at a rate that makes it hard to really see the totality of the impact of the policy. The benefits and issues would be able to be observed well before the 7-year completion, but the length of time would give entrepreneurs some assurances about devoting their efforts to developing services for these areas.

### **Question 15**

Do you have any further suggestions or comments on the subject of this call for evidence?

None.