



Intelligent Transport Systems – information paper

Date of meeting 28 September 2018

Date of report 10 September 2018

Report by Senior Director

1. Object of report

To provide Partnership members with an insight and understanding of Intelligent Transport Systems (ITS) and its application to the work of SPT.

2. Background

2.1 Intelligent Transport Systems can be defined as “advanced applications which aim to provide innovative services relating to different modes of transport and traffic management, and enable various users to be better informed and make safer, more coordinated and ‘smarter’ use of transport networks”¹.

2.2 The importance and utilisation of ITS in modern transport networks has grown significantly in recent years. Examples of ITS range from Real Time Passenger Information at bus stops through to peer-to-peer, ridesharing, taxi, delivery and transport facilitators such as Uber. The worldwide ITS market is expected to grow to an annual value of £900 billion by 2025 (compared with £140 billion in 2014)², and therefore its future role in transport planning and operations cannot be underestimated.

2.3 Below is a high-level summary³ of the main categories within the ITS market:

- **M-Commerce** – the use of mobile devices to conduct commercial transactions (e.g. ticketing);
- **Communications services and products** – including passenger information systems, vehicle-to-vehicle communications;
- **Network management** – management services and control systems for ‘smart’ transport networks;
- **Customer experience** – use of technology to enhance the customer experience during journeys (e.g. augmented reality);

¹ Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport

(<https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:207:0001:0013:EN:PDF>)

² and ³ Transport Systems Catapult

- **“Internet of things”** - this relates to objects and machines which can process information, communicate with each other through the internet (or other network), and take action independent of human control (e.g. autonomous vehicles); and
 - **“Big Data”** – use of tools and systems to analyse huge quantities of data to better inform business decision-making, system efficiency or other objectives.
- 2.4 The scale and rate of change and progress within each of these fields is significant, and is fundamentally ‘disrupting’ the way we traditionally plan, deliver and pay for travel. Indeed, transport has been one of the main beneficiaries of a range of factors which have led to it being considered one of the most innovative sectors in today’s society. Such factors include super-fast mobile digital connectivity (e.g. 4G, and soon 5G), availability of and access to vast amounts of new, high-quality data, and socio-economic and geographic change such as the rise of people living in cities, changing demographics (including an ageing population), and the need to tackle increasing congestion and pollution.
- 2.5 Advocates for ITS and disruptive technologies in transport believe the future will be one where fewer people own a car outright, instead utilising Mobility as a Service (MaaS), and more people will share vehicles for travel, with less emissions and congestion as a result. However, there are concerns around new technologies actually increasing the number of cars on the road thus creating more congestion and pollution, not less; safety issues (e.g. autonomous cars); a growth in urban sprawl; some areas or societal groups being ‘left behind’ as others progress; and privacy issues.

3. SPT and Intelligent Transport Systems

- 3.1 SPT has a long history of involvement in ITS projects and initiatives and has often led the way in their development in Scotland. Some recent examples include the ‘Bramble’ smartcard developed through our partnership in Nevis Technologies Ltd; many aspects of the Subway Modernisation programme (e.g. Unattended Train Operation, regenerative braking, platform screen doors), and our regional Real Time Passenger Information system for the bus network. We have also been involved in various ITS initiatives with partners including passenger information provision through Traveline Scotland, the Strathclyde Regional Transport Model (used for transport analysis, planning and project development), and being an early member of Mobility as a Service Scotland (MaaS Scotland)⁴. It is worth highlighting that in its recently published Programme for Government⁵, the Scottish Government committed £2million to the development of MaaS in Scotland.
- 3.2 To ensure SPT remains at the forefront of transport development in Scotland, it is essential that every opportunity presented by ITS and disruptive technologies is explored to improve the transport network in the west of Scotland. This will entail such initiatives as working with partners to ensure the appropriate regulatory framework is in place to handle the impacts of new technologies, partnerships with academia and the private sector to research, trial and implement new ideas, and being aware and cautious about investing significantly in a new concept which may quickly become obsolete. The new Regional Transport Strategy provides the ideal vehicle for SPT and partners to look at ITS and disruptive technologies in an objective and evidence-based manner, while embracing an agile approach.

⁴ See <https://maas-scotland.com/>

⁵ <https://beta.gov.scot/programme-for-government/>

4. Conclusion

Without question, the future impact of technology both on how people travel and how transport is planned, provided and paid for is going to grow significantly in coming years. As well as considering ITS as part of the new Regional Transport Strategy (RTS), officers have also created an internal working group to keep track of progress both externally and internally on ITS and to develop new initiatives and projects in this field, and will keep the Partnership updated as progress continues.

5. Partnership action

The Partnership is recommended to note the content of this report.

6. Consequences

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| Policy consequences | <i>ITS will be a key component in the new RTS.</i> |
| Legal consequences | <i>None at present.</i> |
| Financial consequences | <i>None at present.</i> |
| Personnel consequences | <i>None at present.</i> |
| Equalities consequences | <i>None at present.</i> |
| Risk consequences | <i>None at present.</i> |

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