CASE STUDY

WHO WE ARE

The Connected Places Catapult (CPC) is an independent, trusted, expert broker operating at the intersection between the public and private sectors and between local, regional and national decision making. We promote UK innovation and broker relationships between government, academia and industry providing support and solutions for innovators to commercialise their projects and research. With our deep expertise in technology, we bridge the gap between buyers, suppliers, innovators and industry. Our agile approach enables us to convene our partners to act rapidly to create new market collaborations responding to public funders and industry needs. We boost demand for innovation to unlock wider economic and environmental benefits.

Our client says

CPC have recently been carrying out a Horizon Scanning exercise on traffic counting for us. This consisted of a desktop review of methods and sector engagement interviews with a sample of stakeholders. This has been really useful in updating our existing knowledge and getting an independent perspective on this topic. It will provide a really useful basis for future work in this area. The team were really good at sharing their developing thinking and evidence with us, and tailoring their plans and interviews to our needs.

Jeremy Grove – Head of Traffic Surveys, Traffic Surveys, Department for Transport

Traffic Counting

Defining the future of traffic counting

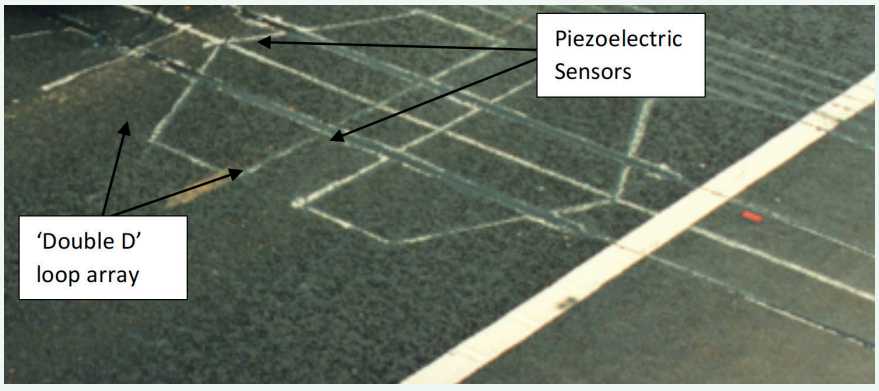
Challenge

Department for Transport (DfT) collects traffic count data on 22,700 stretches of road across the UK, counting cars and bicycles, motorbikes and mopeds, vans and lorries. The processed count data is fed through into ongoing ONS datasets.

Traffic count data is one of the more direct ways of estimating total roads emissions, alongside petrol and diesel sales and so highly relevant in tracking progress on climate change targets. In 2018 transport accounted for 33% of all carbon dioxide emissions and the majority of these were from road transport. [Link]

The current count data gives a useful insight into what is happening on our roads; however, it is a relatively narrow insight.

The project challenge therefore was to identify opportunities to harness new technologies to provide broader insights on how, when, where and why roadspace is being used. This would both enhance the ability to provide responsive, data led policy and decision-making by DfT and other transport stakeholders and support UK jobs and growth..



Example of the current, mature and widely-used technology at a typical permanent Automatic Traffic Count (ATC) site

CATAPULT Connected Places

Department for Transport
Department of Science

Solution

DfT Traffic Surveys Team commissioned CPC to investigate the potential of new traffic counting and classification technologies.

The aim of the investigation was to give DfT a full and current picture of this market, enabling it to better exploit some of technologies available and encourage innovation, jobs and growth. Therefore, the work contributes both to improving UK transportation and UK plc growth.

There were two elements to the project, a horizon scan and industry engagement.

Horizon scan

This was a desktop research exercise exploring all the various technologies and services available including the latest satellite technology, drones and Artificial Intelligence techniques. A key consideration was their suitability to support data feeds to inform National Statistics.

The scan built on the "Traffic Statistics Methodology Review Alternative Data Sources" report [Link] (conducted by the DfT's Road Traffic Statistics Team in July 2018).

The output was an easy to use and refresh tracker tool for adoption by the DfT team to help it keep an ongoing eye on the market.

Industry engagement

CPC engaged with innovative technology companies and industry players to gain an understanding of promising technologies, methods and approaches to traffic counting. CPC conducted a series of 8-10 confidential and anonymised interviews in January 2020. Organisations represented technologies, products and services in Mobile Networks, Satellite Data including Optical and Radar Imagery, GPS, Traditional Traffic Surveys and Artificial Intelligence/Machine learning-based techniques. Interviewees were asked to identify broader barriers and opportunities beyond the technologies themselves which informed recommendations.

Outcomes

The output from this engagement is the technical report Link providing a list of 11 high-level strategic findings and recommendations for the Traffic Surveys Team to consider. *They are:*

- **Evolution not Revolution:** Traditional approaches will still have a role. Trend is increasing connectivity and less reliance fixed assets.
- **Coordination:** Ensure things are joined up in-house several relevant DfT programmes/projects offering clear synergies.
- **Insights from other sectors:** Look outside transport – opportunities for knowledge and technology transfer.
- **Implications of 'do nothing' or 'do minimum' in the short term:** Limited evidence for immediate change so focus effort on 7-10 year outlook.
- **Digitalisation:** Consider current and future digital/data-science/GIS skill needs within the Traffic Surveys Team.
- **Enabling Innovation:** Consider relaxation of aspects of DfT web-based guidance to provide space for innovation.
- **Costs:** Consider relaxation of DfT 'on-shore' data processing requirements to reduce costs.
- **Greater value from existing data:** Explore getting more data from local authorities and private sector generated by Traffic Impact Analysis/ Environmental Impact Assessments.
- **Jobs and growth:** Focus on the use of satellite data for traffic insight, costs reducing. Opportunities to support the socialisation of satellite data and shape future public data sets identifying jobs and markets in this area of UK strength.
- **Use Cases:** Consider the development of generic use cases to help scope out commercial business models addressing the value of data, open data and the data market (see DfT LAMP Framework).
- **Multi-supplier datasets:** Explore technical potential and commercial willingness to produce multi-operator mobile network data sets to provide larger sample sizes for public data.

CPC creates value

- Exploring the use of satellite data is an option. Industrial stakeholders want to socialise data with cost reductions using Satellite data types. Early stage/feasibility/experimentation could involve Satellite Applications Catapult (SAC) and the CPC Academic Network.
- CPC has engaged with SAC providing cutting edge SME contacts in the space providing ongoing value to DfT.

Benefits

- The feasibility study provides a base point of a common understanding between DfT and CPC regarding the Traffic Survey Team's area of interest and ongoing business.
- Well evidenced from the 8-10 anonymous cross-industry contributors.
- Provides high-level recommendations for DfT to consider of interest to the wider industry.
- Offers the DfT Traffic Surveys team an opportunity to coordinate with other DfT initiatives.
- Provides an in-house tool for the Traffic Survey Team to track developments in traffic counting related technologies as part of thinking, communications and decision making around the adoption of new technologies and approaches.

Next steps

CPC is in contact with the Traffic Surveys Team exploring opportunities. There is clear scope to engage with industry around our recommendations. The investigation enables the DfT Traffic Survey Team to engage in the market in an informed way to try out promising innovative data gathering techniques. It provides the foundation for the DfT Traffic Survey Team to gather evidence from a network of potential suppliers, with a follow-up workshop being one of the options for doing this.

To find out more about the Connected Places Catapult and how we can help you develop the future skills that address the needs of your organisation please contact ***info@cp.catapult.org.uk***

1 Sekforde Street
Clerkenwell
London
EC1R 0BE
Tel: 020 7952 5111

The Pinnacle
170 Midsummer Boulevard
Milton Keynes
MK9 1BP
Tel: 01908 359 999

Department for Transport
Department of Science

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