

## **FTC2050 Symposium: Fast, Green & Free deliveries, Overcoming the Last Mile Challenge, 25 June 2019**

The intention of this symposium was to bring together a large audience of the various parties involved in last-mile urban deliveries including: freight transport operators, policy makers, vehicle manufacturers, IT and telematics providers, consultants and academic researchers. During the course of the day the audience was presented with the results from the EPSRC-funded Freight Traffic Control 2050 project. The event also provided insight into last-mile delivery technologies being developed by companies and findings from other relevant projects, as well as the thinking and insights of policy makers and freight transport operators working in the parcel delivery sector. It consisted of presentations, panel and poster discussions, and question and answer sessions about operational, land-use, technological and policy implications of urban last-mile deliveries.

**Simon Shapcott** (Head of the Department for Transport's Office for Science) gave the keynote address in which he provided insight into the challenges and facing UK transport in general and freight in particular. He outlined recent government thinking and strategy including the recent Government Office for Science's Future of Freight, the DfT's Last-Mile Delivery Consultation, and the advice to government in the National Infrastructure Commission's Freight Report.

The first session of the day focused on academic research carried out into the sustainability last-mile parcel deliveries in urban areas. **Tom Cherrett** (University of Southampton and FTC2050 Principal Investigator) provided a summary of the objectives and breadth of work carried out in FTC2050, an EPSRC-funded project, that has addressed the issue of how to move towards last-mile urban delivery systems that are sustainable in traffic and environmental terms, while at the same time providing a viable business model and operation for companies. He explained the fieldwork, data collection and analysis carried out to understand transport operations in central London, using data and visualisations. This understanding of the sector led on to a programme of FTC2050 research that Tom outlined.

**Maja Piecyk** (University of Westminster) explained the FTC2050 work into the B2B and B2C same-day and next day parcel sectors, and the challenges faced in terms of depot availability and affordability, declining traffic speeds, reducing kerbside availability, and ever-increasing delivery service levels for customers. She presented analysis of the extent to which operating costs in central London were expected to increase if no action is taken to alleviate these problems by carriers or policy makers, and also outlined the range of company initiatives and policy measures that had been investigated during the project, together with their potential impact in terms of vehicle km, time spent at kerbside, CO<sub>2</sub> emissions and operating costs, noting the barriers to achieving them.

**Phil Greening** (Heriot-Watt University) provided an outline of the research being carried out in the Centre for Sustainable Road Freight (SRF), another freight transport project funded by the EPSRC, which has been collaborating with FTC2050 given their shared interests in the environmental sustainability of freight transport. He presented SRF work into the last-mile delivery of online grocery orders, and the analysis that has been carried out using agent-based modelling to examine the influence of consumer behaviour and the electrification of the last-mile grocery delivery fleet. This work has highlighted the implications of fleet electrification and its consequent recharging requirement on logistics organisation in terms of depot function and customer service levels.

Five 3-minute presentations were then made by researchers from FTC2050 and SRF about the work they had carried out as part of these projects. This covered topics including: 'Collaborative working and game theory application' (**Tolga Bektas**, University of Liverpool), 'Electrification of Home Delivery Vehicles' (**Nadia Taou**, Heriot-Watt University), 'Developing a Dashboard for Last-Mile Freight Traffic' (**Kostas Cheliotis**, University College London), 'Incorporating Consumer Behaviour into the Optimisation of Van Deliveries' (**Pratyush Dadhich**, Heriot-Watt University), and 'Co-designing Digital Services for Collaborative and Sustainable Logistics' (**Oliver Bates**, Lancaster University). A sixth brief presentation was made about the winning entry in the FTC2050 Hackathon

on same-day parcel deliveries, which was run in conjunction CitySprint, the same-day carrier. Over lunch delegates were able to view each of these posters and discuss the work carried out with the researchers.

Other posters prepared over the course of the project were also available to view over lunch, these included:

- Last-mile parcel delivery - Characteristics and trends
- Parcel carrier collaboration - the carrier's carrier
- Same-day delivery market and operations
- Solutions for more efficient and environmentally-friendly last-mile delivery
- Surveys of next-day last-mile parcel operations in central London

The session after lunch commenced with a parcel operator panel discussion on urban deliveries. It was moderated by **Ian Wainwright** (Future City Logistics) and panellists were: **Dervla Gallagher** (Director of Business Infrastructure at APC), **Andy Wilson** (City Logistics Manager at TNT/FedEx), **Sam Clarke** (co-founder and Head of Business Development at Gnewt by Menzies Distribution), and **Rob King** (co-founder and CEO of Zedify). In a rich and wide-ranging discussion which included questions from the floor, issues covered included the commercial and challenges facing last-mile urban logistics, the role of policy making at various levels in an increasingly complicated and operationally difficult urban landscape, the role of other supply chain parties (including retail customers and final consumers) in addressing last-mile servicing and pricing challenges, the potential for operational collaboration in the parcel sector, the potential for using electric vans and cargo cycles in urban centres, and the importance of operational data for corporate strategy and informed policy-making.

The third session focused on new operations and technologies for last-mile delivery. **Sam Clarke** (Gnewt by Menzies Distribution) and **Tom Cherrett** (University of Southampton) presented research carried out in FTC2050 and subsequently continued by Gnewt into the use of on-foot porters for the final deliveries of parcels. This decouples the vehicle from the final metres of delivery, and thereby reduces vehicle fleet requirements, driving distances and especially kerbside space and time requirements. The trials carried out by Gnewt were illustrated together with the traffic and environmental benefits, and the operating cost implications.

**Fraser Maclean** (co-founder of AJG Parcels and formerly of Menzies Distribution) presented a case study of parcel carrier collaboration in action in the Scottish Highlands and Islands. He explained how he had overseen the development of a service and related data handling system that facilitates the collaborative delivery of parcels in some of the remotest parts of Scotland, in which Menzies Distribution functions as a neutral consolidator on behalf of many major national parcel carriers, thereby reducing delivery operating costs, improving service levels and reducing vehicle traffic. This led to a fascinating discussion about the potential applicability of this approach to dense urban areas, which although having very different geographies and drop densities are faced with ever-more challenging transport conditions and rising operating costs.

**Mark Preston** (founder and CSO of StreetDrone) explained his efforts to bring his knowledge and experience in Formula 1 and Formula E to the development of autonomous, electric vehicles to aid last-mile delivery. He presented his company's work in developing digitally-addressable mobile lockers and other autonomous road vehicles that could be positioned off-peak for customers to collect their orders from and to make deliveries direct to customer's homes and workplaces. Mark also explained development work and trials of the technology carried out with automotive designers Astheimer and Warwick Manufacturing Group at a university campus.

The final session of the day addressed infrastructure and policy needs for last-mile deliveries. **Tom Rice** (Planning and Delivery Lead, Transport for London) explained the importance of freight transport to London's economy and cultural vitality. In addressing the Mayor's Transport Strategy

and the related Delivery and Servicing Action Plan he discussed work on Area Freight Management Plans, guidance on Zero Emission Zones, and the London Lorry Control scheme to provide consistency of policy-making across London. He explained the steps that TfL is taking as a major employer and landowner in terms of reviewing personal deliveries to workplaces, the provision of click and collect locker banks, and the potential to make TfL land available for sustainable logistics operations by carrier. He concluded by discussing the TfL Freight Consolidation Demonstrator projects.

**John Dales** (co-founder and director of Urban Movement) presented the work he is conducting for DfT in the Future Streets project. He provided numerous examples and illustrations of the challenges that exist in the supply and demand of kerbside space in urban areas, and the ways in which the kerbside is currently used including for deliveries. He explained that kerbside demand exceeds supply, but that this has been exacerbated by a lack of strategy at all levels of government about kerbside design and management. While there is no easy solution to these kerbside challenges, he emphasised the importance of strategic thinking especially about flexibility in kerbside use, the provision of clear information, consideration of the value of the kerbside. This will require much improved understanding and data collection concerning the kerbside to better understand user needs, together with creative solutions and possibly charging mechanisms.