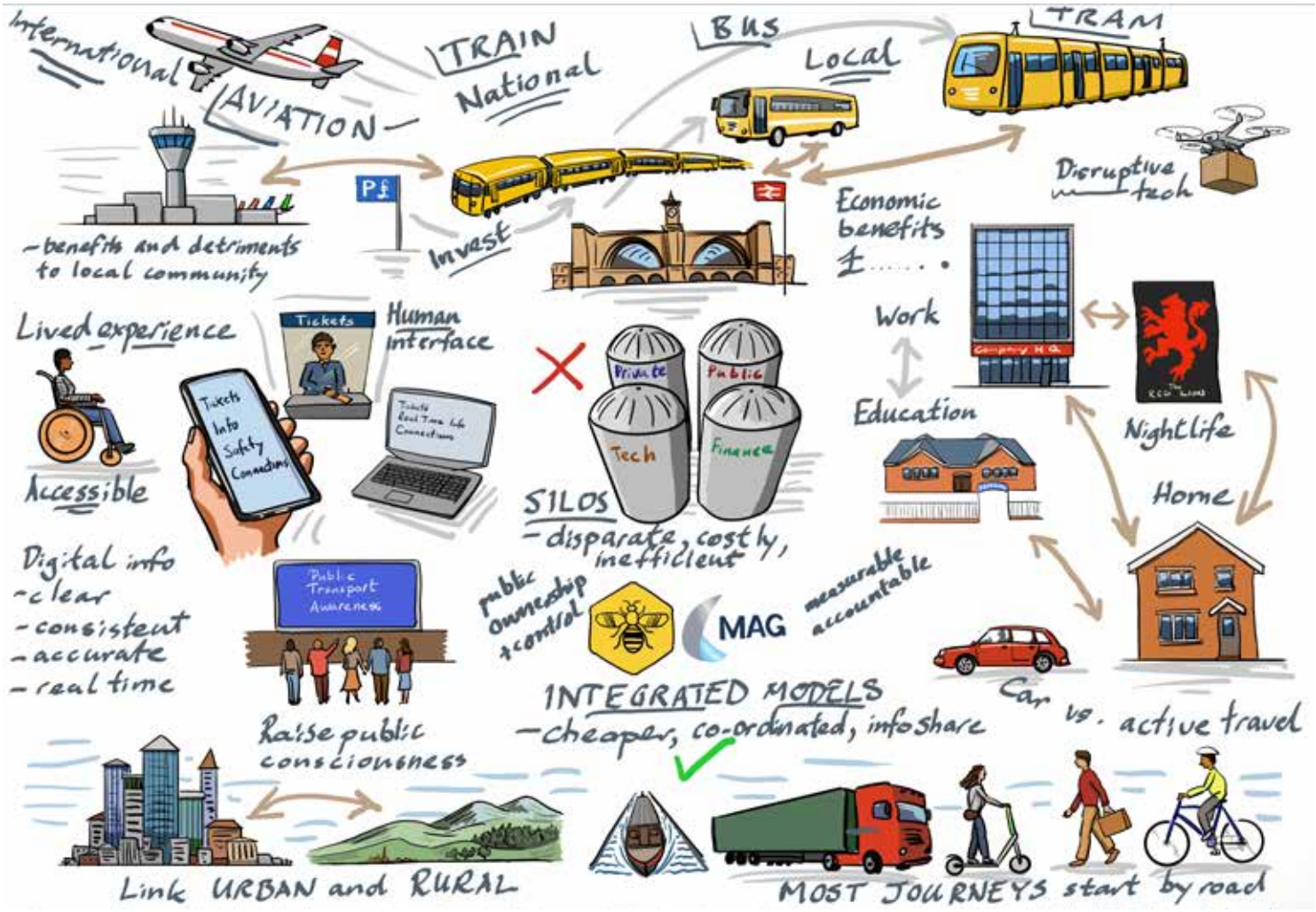
Innovate UK | Business Connect

Integrated transport

Enabling connectivity and growth



Cover illustration by Richard Ellis for Innovate UK Business Connect, created at the Integrated Transport workshop on 11th March 2026.

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Executive summary

On March 11 2026, Innovate UK Business Connect convened experts and innovators in Manchester to develop a vision for an integrated transport system and identify barriers and opportunities to seamless travel.

A consistent theme that emerged highlighted that integrated transport is not simply about linking modes. The challenge is ensuring the whole journey is easier to plan, access and complete.

The main barriers were seen as fragmentation rather than lack of ideas with participants citing siloed data, inconsistent ticketing and payment systems, disconnected governance and uneven funding and delivery conditions.

Accessibility and inclusion should be treated as central rather than peripheral. Physical access, digital usability, affordability, clear information and confidence at points of interchange were also discussed as essential to a genuinely integrated system. Designing for people who currently face the greatest barriers to travel will improve the system more widely.

First and last mile connectivity emerged as a major weakness. Participants repeatedly noted that journeys often break down at transitions between modes.

Participants felt the main challenge is delivery. Progress will depend on stronger coordination, better local capability, improved deployment of existing tools and a more consistent focus on how people experience whole journeys in practice.

As a convenor and enabler of innovation and change, Innovate UK Business Connect recently launched an Integrated Transport Programme, which aims to mobilise industry, Local Authorities and academia around the identified challenges to drive the required change.

This workshop constitutes an initial scoping activity to inform programme design and ensure activities are fit-for-purpose to drive the required change.

1. Introduction

Innovate UK Business Connect convened a range of experts in Manchester on 11 March 2026, spanning the following areas:

- Autonomous vehicles
- Aviation
- Bus/coach
- Cycling and e-scooters
- Government/local or combined authorities
- Integrated transport operations
- Maritime
- Rail
- Road
- Tech/data/digital
- Trade associations
- Transport accessibility and inclusion
- Transport infrastructure
- Transport planning

The objective of the workshop was to co-create a vision for an integrated transport system and involved:

- Case study presentations from Manchester Airport Group and Transport for Greater Manchester to understand examples of delivering an integrated transport vision
- Group discussion with sector representatives on the latest advancements in technologies, transport modes and integrated operations
- Co-creation of the vision and identify integration opportunities across various UK transport network types
- Cross-sector networking to introduce potential collaborators and accelerate the adoption of transport innovation.

The workshop was delivered in partnership with Lorefully, a company specialising in insight gathering and AI processing, to capture the discussion points and condense them into common themes.

Discussion points in the workshop were captured using:

- Post-it-notes and flip charts used on each table to gather insight from attendees
- Visual summaries drawn live in the room by an artist
- Audio recordings and AI-generated summaries produced using Lorefully.

2. Sector insights

Transport experts were assigned to specific tables and the insights gathered from the table are reflected in the subsequent sub-sections.

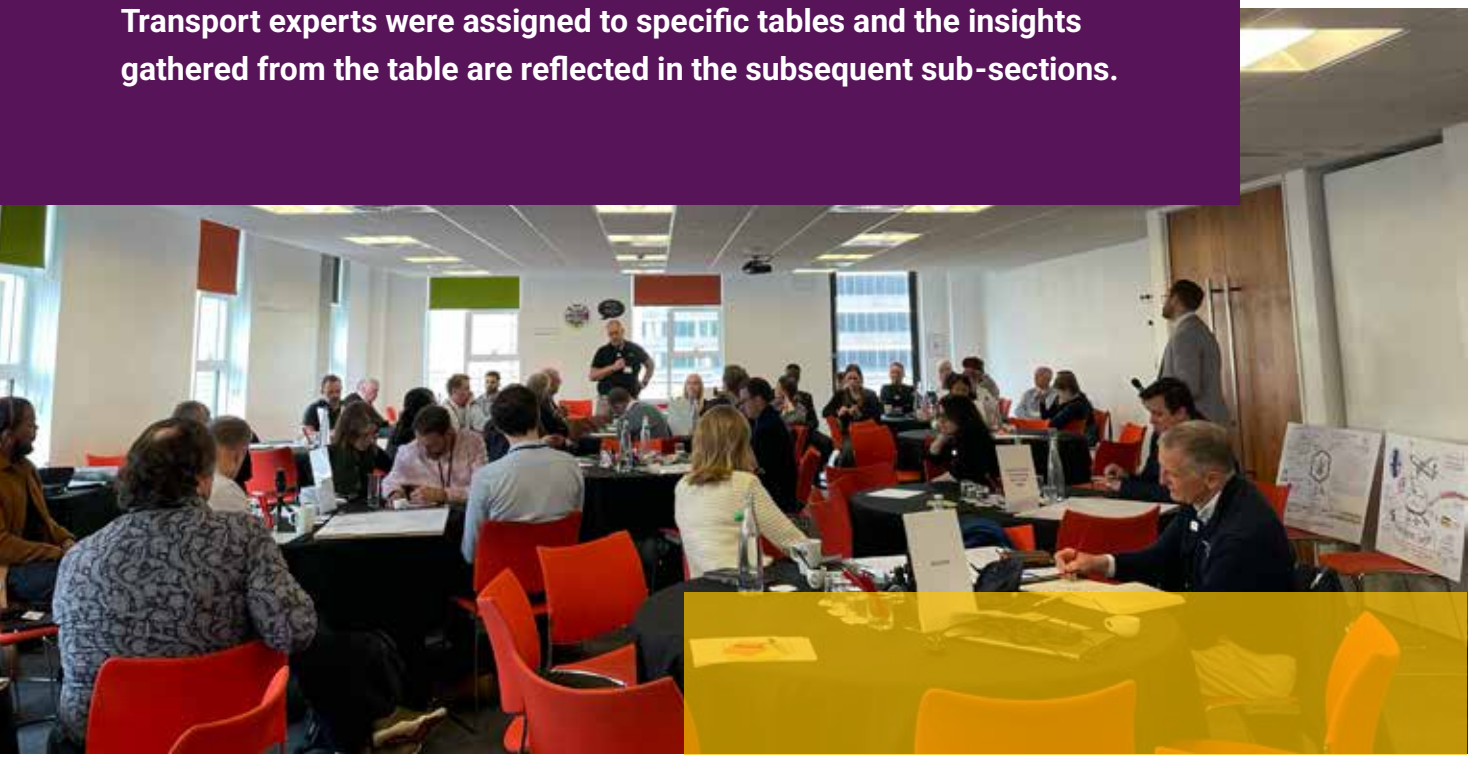


Figure 1: Integrated transport workshop in Manchester, participants feeding back on discussions.

2.1. Accessibility and inclusion

Participants emphasised that accessibility and inclusion are fundamental to effective transport integration with confidence, ease of use and dignity as recurring themes. Co-design should be embedded as a standard practice in transport planning, which would support more inclusive and resilient systems over time. The discussion reflected a wide range of users, including wheelchair users, visually impaired passengers, older people and parents with young children.

Participants also noted that technologies such as wayfinding can improve accessibility. However, their impact depends on addressing key systemic barriers such as policy limitations, affordability, implementation challenges, inadequate infrastructure and public attitudes. An integrated transport system is most effective when it works for those who face the greatest barriers.

2.2. Road

Road vehicles emerged as a key connective layer across all journeys and will be preferred when other modes, such as rail or bus, fail. Cars are often the point of entry, exit and fallback in travel. They connect the first and last mile, particularly in rural areas.

Experts identified major pain points at modal interfaces and in congestion. Parking was discussed as an important interchange element. In this context, when the user experience is fragmented, integration breaks down. Poor apps, weak coordination with other modes and disconnected transport hubs all contribute to this. As a result, drivers are more likely to continue their journey by car. This increases congestion and pollution levels.

2.3. Tech, data and digital

Data is widely available and a range of technologies already supports transport integration. These include through-ticketing, multimodal journey tools such as Mobility-as-a-Service (MaaS) applications, and GPS-based ticketing.

However, participants noted key challenges. Technologies are often not connected at a system level, and some local authorities lack digital readiness. Data is also not shared, standardised, or used to its full potential.

Governance is needed to align data standards and simplify deployment, which would enable more effective use of proven technologies. In turn, it would support a more user-centric and inclusive integrated transport system in the UK, including rural areas and during disruption.

2.4. Autonomous vehicles and buses/coaches

Participants recognised autonomous vehicles (AVs) as a potential enabler of better integrated transport. They may also help reduce operating costs, particularly in rural areas. However, deployment must respond to genuine public needs. It should not undermine existing public transport modes and should have opportunities to support existing network operations, particularly with the integration of autonomous safety technologies.

Some challenges are likely to exist as participants questioned what problem autonomy is intended to solve and warned against deploying a single solution for all places or user groups. Participants added that they could weaken existing public transport if deployed without a clear public interest rationale. That said, participants did highlight that autonomous vehicles may be a critical mobility aid to greater accessibility and inclusion.

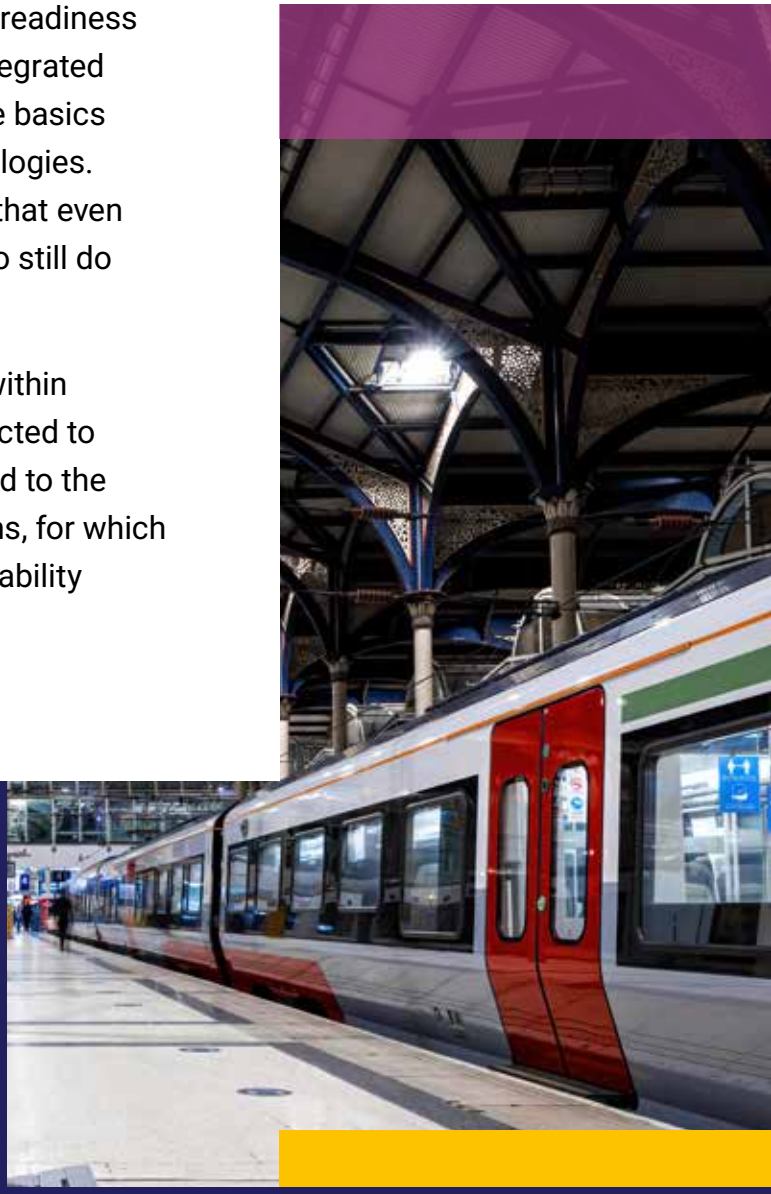
Buses and coaches provide essential social value. They offer affordable connectivity and serve remote areas, especially in rural settings.

Drivers also play a vital public-facing role, supporting accessibility and providing reassurance to passengers. These human elements are essential and should be carefully considered in the deployment of autonomous vehicles in public transport.

2.5. Government, local or combined authority

The gap between strategic ambition and delivery readiness was a common theme emerging on this table. Integrated transport works only if it is people-centric and the basics are in place before layering more complex technologies. User acceptance is a practical constraint, noting that even relatively established systems such as tap-and-go still do not work equally well for users.

There was a strong emphasis on fragmentation within local delivery systems. Local authorities are expected to conduct, at scale, a wide range of activities related to the management and maintenance of digital platforms, for which they may not have the tools, capacity or interoperability needed to support integrated transport at scale.



2.6. Rail

Rail experts agreed that accessibility is one of the clearest tests of whether integrated transport is working in practice. Ease of planning and navigation matters as much as physical access, and that both digital and physical systems need to be predictable, accurate and consistent. Physical access to stations is a potential barrier and step-free access, tactile paving and wider station design remain inconsistent.

Through-ticketing across modes is a key enabler, with participants pointing to the value of being able to plan and complete journeys from start to finish through a single joined-up system. There are existing solutions in areas such as ticketing, wayfinding and journey support, including tools that could reduce stress for passengers with anxiety or other access needs.

The barrier was described less as innovation and more a deployment in a complex rail environment shaped by legacy systems, ageing infrastructure and slow change processes.

2.7. Maritime

The waterways are an underused part of integrated transport, with many regions in the UK having water-based assets to support passenger movement, place-based regeneration and better quality of life. The vision for integrated transport should include the waterways.

Key considerations include accessibility, environmental conditions such as flooding and the availability of sustainable fuel. Some regions such as London deliver river operations, hence the technology and basic infrastructure exist.

In Manchester, it was noted that the waterways could provide a significant integration expansion to the existing Bee Network. The challenge and barrier to this proposition is the cleaning and repairing required to some of the unused waterways to ensure a safe and viable operation.

Where operations are a potential option, the key is to integrate with other transport modes and ensure robust planning around timetables, ticketing, and seamless interchange. Maritime transport should therefore be approached in the same way as rail, positioned as a core element of a multimodal, inclusive and user-centred journey experience.

Seaplanes are gaining renewed attention as congestion across roads, rail, and traditional airports intensifies, limiting the capacity to meet growing demand for regional and flexible travel. By operating from water rather than runways, seaplanes offer a practical way to unlock additional transport capacity, particularly in coastal and island regions where infrastructure is constrained.

Although historically limited by outdated designs, their short range and operational challenges, emerging technologies are transforming their potential. Advances in aerodynamics, hull design, materials, and navigation systems are enabling more efficient, resilient and versatile aircraft. Innovations such as foldable wings and enhanced manoeuvrability allow access to marinas, docks and urban waterfronts.

This evolution positions seaplanes as a valuable enabler of transport integration. They can connect remote and underserved communities directly to urban centres and transport hubs, link coastal and island regions with inland airports, and reduce reliance on secondary surface transport by bringing passengers closer to their final destinations. By integrating with ports, marinas and waterside developments as multimodal interchange points, seaplanes can help bridge gaps between air, land, and maritime networks.

Given the widespread availability of water, often closer to communities than airports, they offer a scalable solution to expand access to aviation without requiring new runways or major infrastructure, while also supporting sustainability goals.

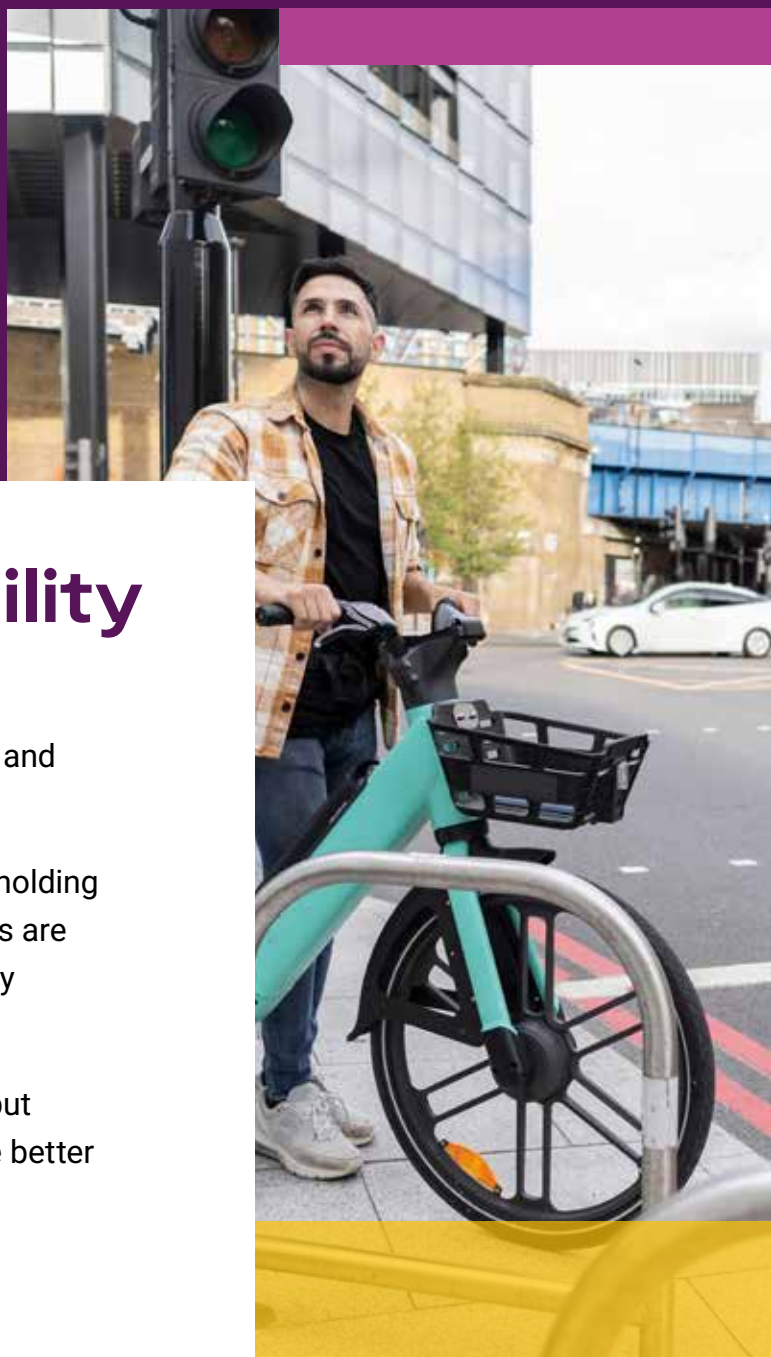
2.8. Aviation

Airports are important multi-modal hubs, however, participants argued that the UK remains behind some European comparators in how well the hubs connect to wider networks. This may be due to fragmented commercial and governance arrangements, especially around rail access, ticketing and investment.

According to aviation experts, journeys to and from the airport should be regarded as experiences, where flights are an integral part of the end-to-end customer journey. Likewise, greater resilience should be factored in when passengers face unexpected disruption that forces them to switch modes.

Emerging aviation modes, including regional air mobility, drones and eVTOL services, can strengthen regional connectivity and freight. However, infrastructure, planning and system integration must be considered from the outset.

Overall, the discussion suggested that aviation is already part of integrated transport in principle, but that practical integration in the UK is still constrained by funding complexity, siloed incentives and limited coordination across the wider journey.



2.9. Micromobility

Cycling and e-scooters play a key role in first and last-mile connectivity and the wider role of active and personal mobility within an integrated system.

Current e-scooter models and regulation may be holding back improved integration. Heavy shared scooters are poorly suited to multimodal journeys because they cannot easily be carried onto trains or trams.

Micromobility offers a strong alternative to cars but only if regulation, design and system planning are better aligned with how people travel.

3. Conclusions

Participants highlighted repeatedly that integrated transport is less about introducing new modes and more about making existing systems work together effectively. While journeys are experienced end-to-end, planning and delivery remain split across modes, operators and governance structures. This fragmentation continues to create barriers across ticketing, data sharing, infrastructure and interchange.

A clear consensus emerged around the need to prioritise the user. Integration should be judged by how easily people can plan, access and complete journeys. This includes physical accessibility, digital usability, affordability and consistency of information. Designing systems around those who face the greatest barriers would improve outcomes for all users.

Participants agreed that many of the necessary tools already exist. Technologies such as through-ticketing, real-time information and multimodal journey planning are available. Progress is limited by fragmented governance, siloed data, inconsistent standards and slow deployment. The challenge is therefore one of coordination and implementation, rather than innovation.

Local and combined authorities were identified as central to delivery, yet their capacity varies, and many face constraints linked to legacy systems, limited resources and uneven digital readiness. Strengthening local capability is essential to turning ambition into practice.

First and last mile connectivity also emerged as a critical weakness. Integration often fails at the interfaces between modes rather than within them. Improving interchange quality, simplifying booking and payment, and ensuring reliable onward connections are key priorities.

Overall, there is strong alignment on the direction of travel. Integrated transport should be inclusive, multimodal and easy to navigate. The main opportunity lies in delivering this vision more consistently. This will require better coordination across the system, stronger governance and a sustained focus on the end-to-end user experience.

4. Recommendations

Based on the discussion, several recommendations emerge.

1. **Future integrated transport** work should prioritise user-centred interoperability, with particular attention to accessibility, through-ticketing, journey information and interchange quality.

2. Stakeholders should focus on **governance and deployment** barriers as seriously as on technology development, especially where proven tools are not yet being used at scale.

3. **Local delivery capability** should be recognised as a strategic enabler, including the digital, organisational and planning capacity needed to implement integrated solutions.

4. Newer technologies such as **autonomous vehicles, drones or eVTOL** services should be assessed against clearly defined transport needs and public value, rather than treated as stand-alone solutions.

5. Modes that are currently **peripheral in mainstream planning, including maritime and some forms of active and personal mobility,** should be considered more deliberately where they can address local connectivity challenges and strengthen.

5. Integrated Transport Programme and next steps

Innovate UK Business Connect has launched a new Integrated Transport Programme to mobilise innovators, local authorities and academia around the challenges identified in the workshop and priorities defined by the Department for Transport.

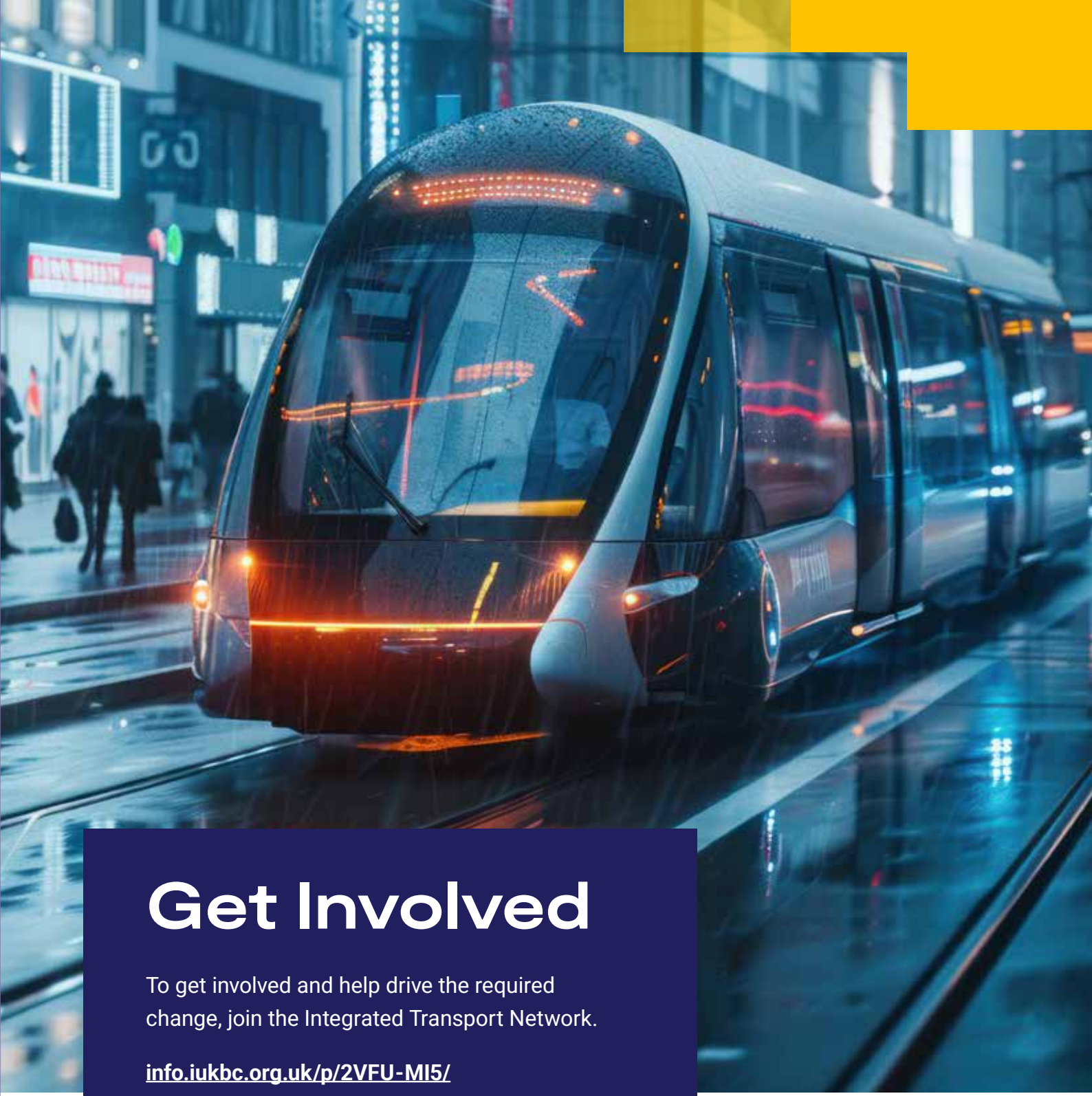
The programme aims to accelerate the adoption and scaling of innovative transport solutions. A targeted business engagement approach will support high-potential ideas to move efficiently from concept to market, grounded in real user needs to improve access to employment, education, healthcare and other essential services.

Robust data and insights can inform policy and investment decisions, alongside a strong focus on identifying and strengthening regional transport innovation industry clusters. This place-based approach will enable local and combined authorities to invest in integrated solutions that enhance connectivity, unlock economic opportunity and deliver tangible benefits for communities across the UK.

Following the workshop, the UK Department for Transport published **'Better Connected, a strategy for integrated transport'.** This strategy focuses on priorities across the UK and highlights the importance of working collaboratively across all levels of government and industry to drive consistent and integrated outcomes.

Innovate UK Business Connect's Integrated Transport programme aims to support DfT's ambitions and will focus on:

- Developing the Innovate UK Business Connect Integrated Transport Programme aligned with the Department for Transport "Better Connected, a strategy for integrated transport" priorities
- Building an integrated transport network to mobilise and connect the diverse sectors
- Enabling the adoption of solutions by working with innovators, Authorities and operators to broker meaningful collaborations
- Providing data and insights to inform decision making.



Get Involved

To get involved and help drive the required change, join the Integrated Transport Network.

info.iukbc.org.uk/p/2VFU-MI5/integrated-transport-programme.

Get in touch with the team to discuss how we can support your innovation journey:

iuk-business-connect.org.uk/transport/

Appendix I

During the workshop an artist sketched representations of the outputs from the workshop. The following represents a collection of those drawings.

Figure 2: Visual summary of case study presentation from Manchester Airport Group.

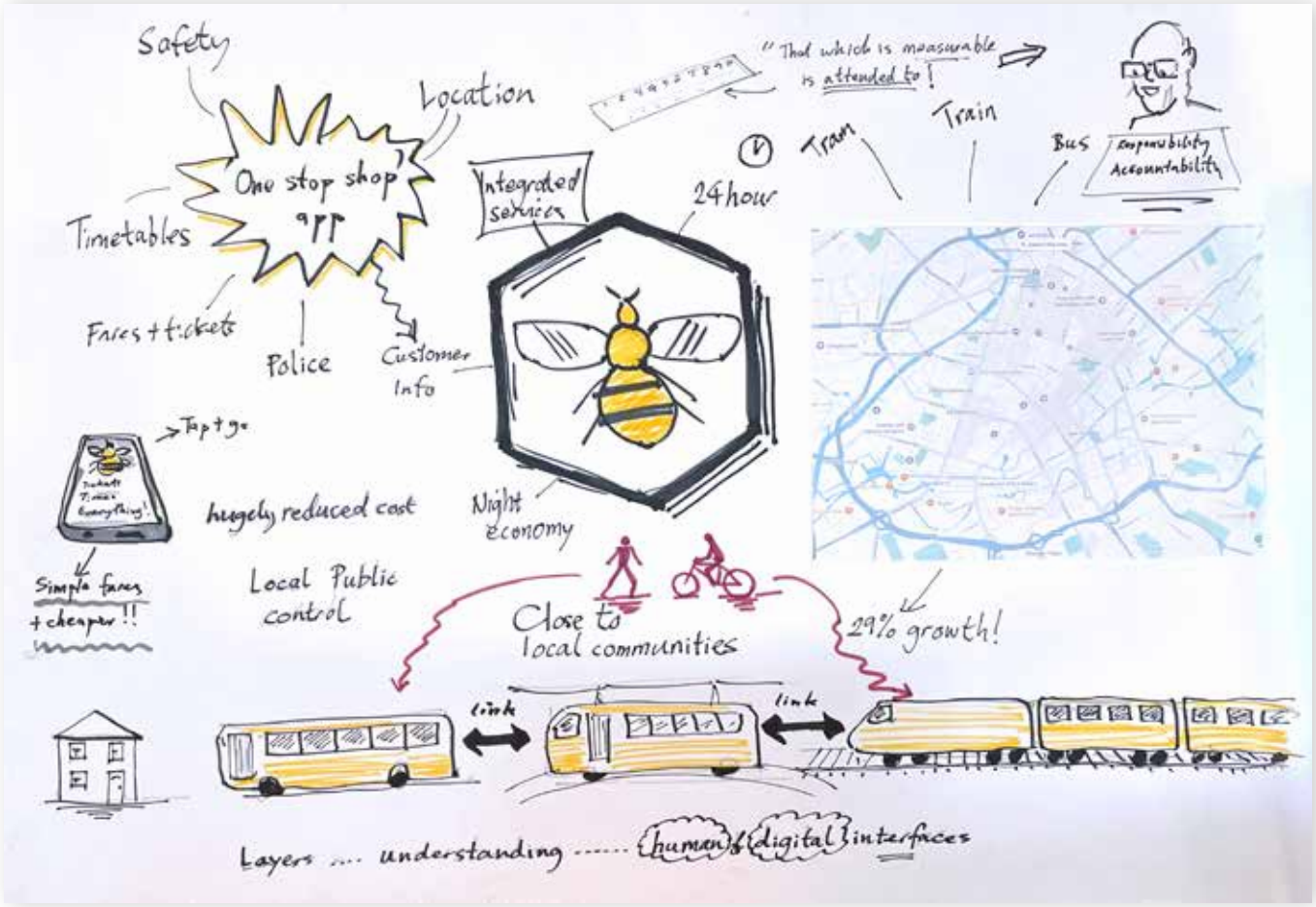


Figure 3: Visual summary of case study presentation from Transport for Greater Manchester.

Figure 4: Visual representation of Integrated Transport workshop vision and outcomes.

Figure 5: Visual representation from Integrated Transport workshop.

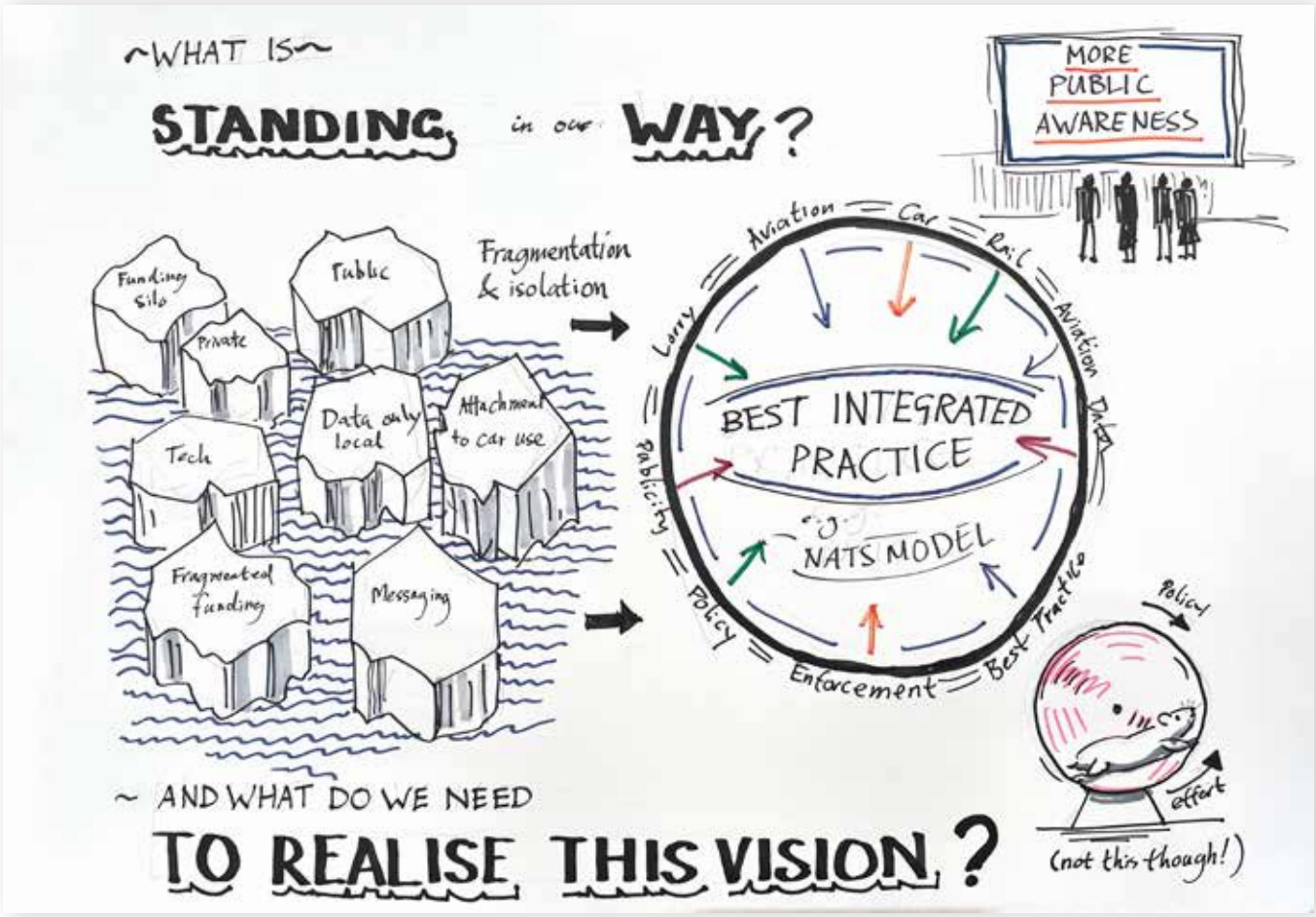
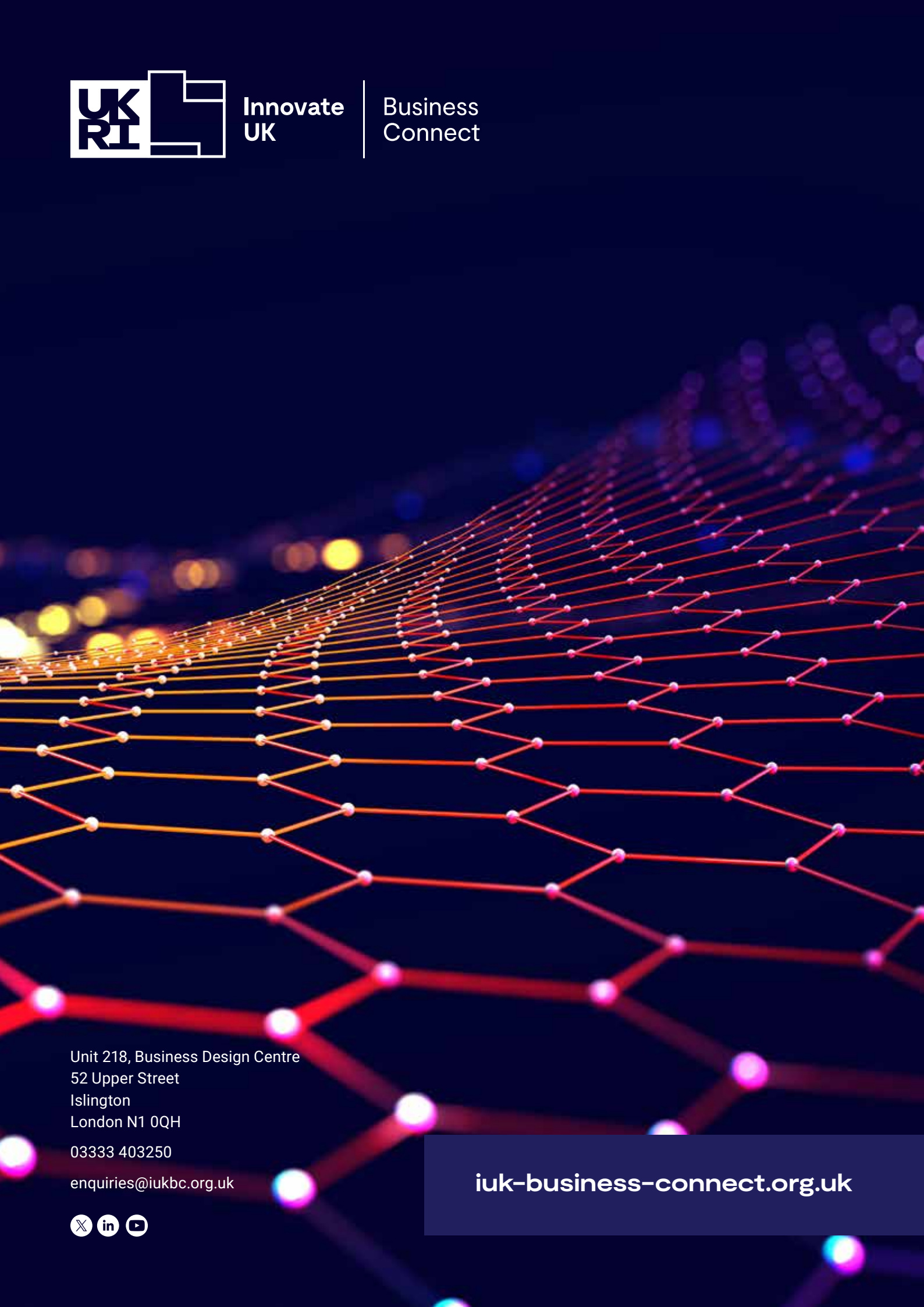


Figure 6: Visual representation from Integrated Transport workshop.



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