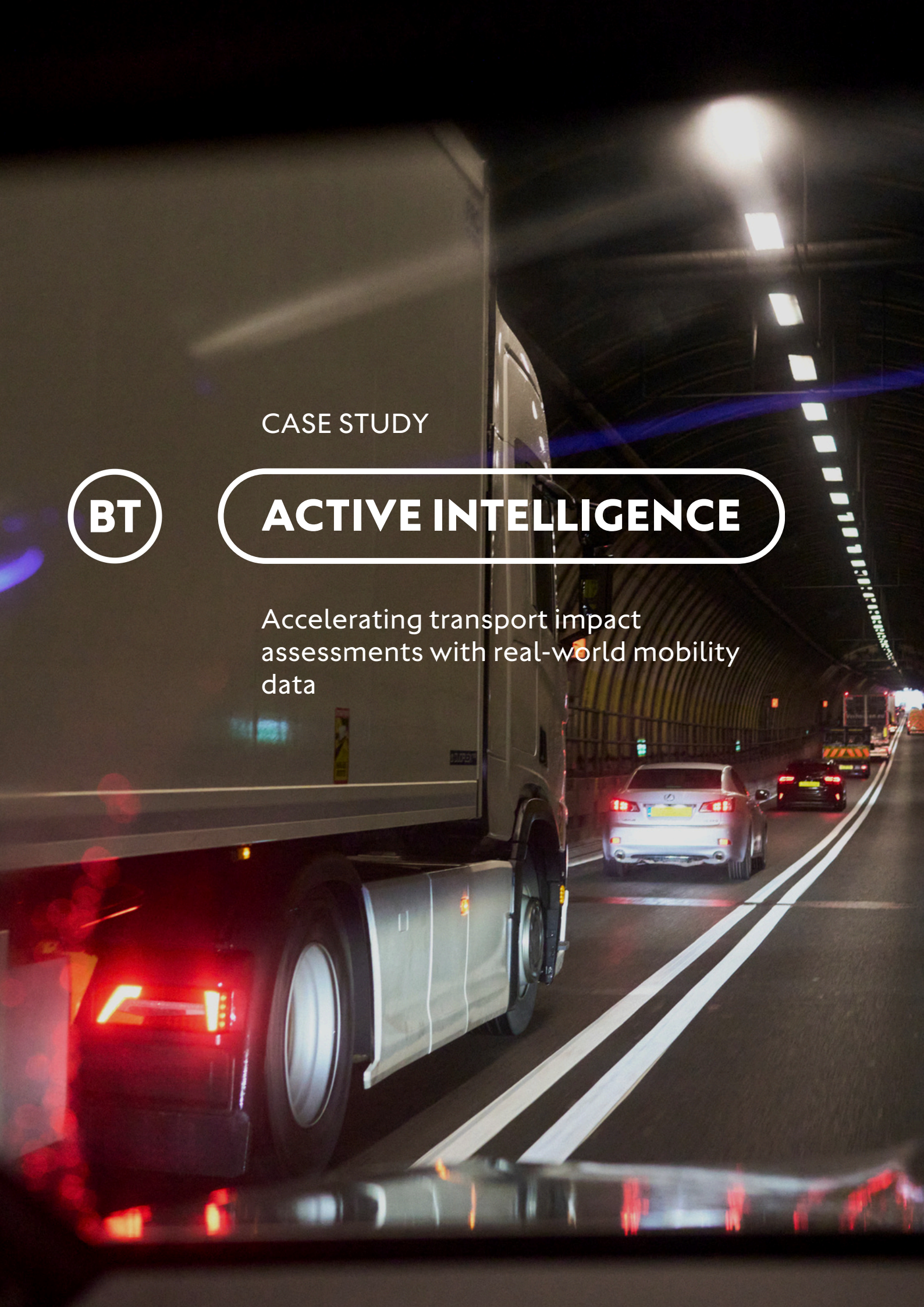




CASE STUDY

BT

ACTIVE INTELLIGENCE

Accelerating transport impact
assessments with real-world mobility
data



Through using BT Active Intelligence – BT's data analytics service that uses granular, anonymised and aggregated mobile network data – Immense Simulations Ltd (Immense) helps organisations understand how changes to the road network could affect traffic, communities and infrastructure before decisions are implemented in the real world.

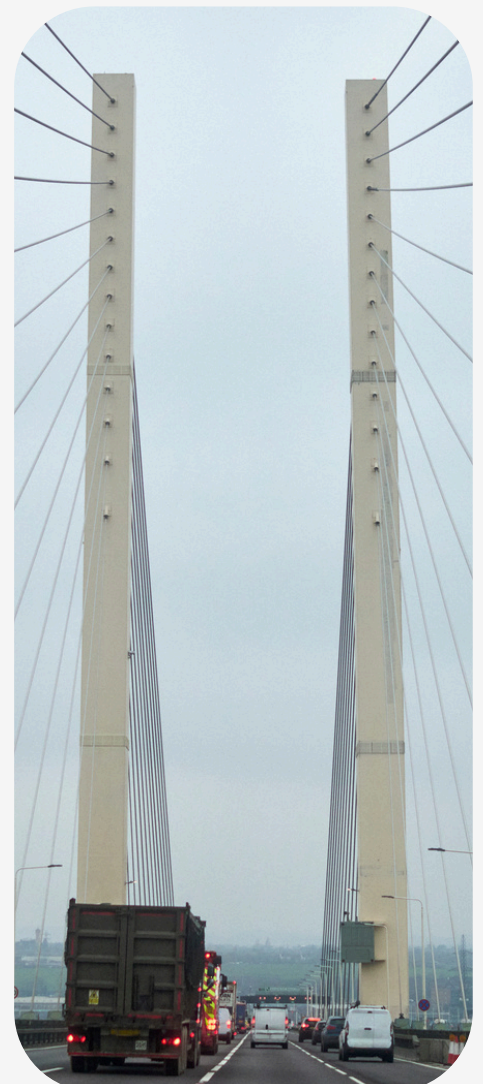
Immense enables organisations to assess disruption, test mitigation measures and plan network interventions with confidence. By combining BT Active Intelligence Road Insights with its advanced transport simulation platform, Immense enriches its digital models with observed movement data at a national scale. Together, this collaboration helps transport authorities, infrastructure operators and delivery partners better understand the impact of roadworks, traffic management schemes and infrastructure projects. Immense has used these capabilities to support National Highways and local authority use cases and schemes, helping project teams evaluate options, minimise disruption and make informed decisions.



About Immense Simulations Ltd

Infrastructure projects, streetworks and traffic management schemes significantly affect how people and goods move across the road network. Understanding those impacts has traditionally required extensive data collection, expert modelling and analysis before decisions can be made.

Immense's simulation platform supports traffic impact assessments, scenario testing and mitigation planning, enabling stakeholders to evaluate potential disruption, compare options and understand impacts across the wider network. To strengthen its assessments with real-world evidence, Immense needed a data partner, who could complement other transport and network datasets used to build and validate its models. This enabled them to create a more representative picture of movement across the network.





Challenges

Before detailed vehicle and journey insights on how people travel across the UK's roads were available, assessing the impact of roadworks and network disruption often required significant time and effort. Conventional data sources often lacked scale and consistency, and to build a good travel demand model, transport teams need reliable data.

TRAFFIC MANAGEMENT PLANNING

When road closures, lane restrictions or temporary traffic signals are introduced, stakeholders need to understand how traffic is likely to respond before works begin.

DIVERSION ROUTE ASSESSMENT

Drivers do not always follow signposted diversion routes. Understanding where traffic may reroute across the wider network is essential for identifying potential congestion and disruption.

MITIGATION TESTING

Project teams often need to compare multiple traffic management options and assess which approach will minimise impacts on road users, businesses and local communities.

UNDERSTANDING REAL-WORLD MOVEMENT

Traditional transport datasets only provide a partial view of how people and vehicles move across the network.

The overarching challenge was understanding how changes in one part of the network could affect traffic across a much wider area. Immense needed access to movement data that could enrich its models and provide a more representative picture of travel patterns at scale. Stakeholders needed a faster and more consistent way to assess impacts, test mitigation measures and improve delivery outcomes.





The Solution

Immense integrated BT Active Intelligence Origin Destination Journeys (ODJ) and Road Insights datasets into its simulation platform. ODJ provides anonymised and aggregated LSOA-level origin destination insights into where journeys start, end and travel across the road network, helping to reveal broader travel patterns. Road Insights complements this with road-level traffic volume data, providing visibility into how different parts of the network are used at different times.

By combining these mobility insights with transport modelling, Immense can enrich its simulations with observed movement patterns. This helps organisations assess the impact of roadworks, traffic management schemes and infrastructure projects before decisions are implemented in the real world. Through this collaboration, Immense gains access to:

TRAVEL DEMAND INSIGHTS

Understanding where journeys start, end and how they move across the network and why.

CONSISTENT MOBILITY DATA

Supporting a repeatable approach across multiple projects with a high sample rate.

ROAD USAGE INSIGHTS

Providing insights into how roads are used, traffic volumes and how traffic at different times and days of the week may redistribute when disruption occurs.

NATIONAL COVERAGE

Nationwide mobility intelligence from 24 million EE devices, scaled to the UK population and ready for integration into simulation models.

Results

Insights from BT Active Intelligence help Immense create more representative transport models, enabling customers to assess network disruption and identify mitigation measures more efficiently. By combining observed movement data with its simulation platform, Immense can evaluate the impact of roadworks, closures and traffic management schemes before they are implemented.

1. Assessing the impact of road closures

When temporary road closures are required, stakeholders need to understand how traffic is likely to redistribute across the wider network. By incorporating Origin Destination Journeys and Road Insights, Immense can identify potential diversion routes, assess the impact of the disruption and highlight areas at risk of increased congestion. This enables project teams to answer key questions such as:

- Which routes are most likely to experience additional traffic?
- Where could congestion hotspots emerge?
- What are the impacts on journey times, network performance, and road users?



2. Optimising traffic management plans (Devon County Council)

Immense uses BT Active Intelligence insights to test alternative traffic management strategies, including full road closures, lane closures, and temporary traffic signals. By assessing multiple scenarios before works begin, stakeholders can compare options, evaluate mitigation measures, and identify approaches that minimise disruption.

For the A382 highway improvement scheme in Devon, five traffic management options were assessed before construction began, helping delivery partners identify a full road closure strategy as the preferred approach. The evidence-based assessment supported a reduction in the overall construction programme of up to 12 months while minimising network disruption and supporting the scheme's wider carbon reduction objectives.

33%

faster project delivery, reducing the programme from 3 years to 2.

3. Supporting mitigation planning (National Highways)

Understanding the impact of disruption is only part of the challenge. Immense also helps customers evaluate mitigation measures, from diversion routes and traveller information strategies to revised traffic management plans. For example, National Highways uses Immense's outputs to inform mitigation planning and support scheme delivery.

By combining observed movement patterns with simulation, stakeholders can identify potential risks and develop more effective mitigation plans before implementation. The result is a faster, more consistent approach to transport impact assessment, helping organisations make data-driven decisions and reduce disruption across the network.

4. Accelerating impact assessments (Buckinghamshire Council)

Using anonymised and aggregated mobility insights, Immense has accelerated its modelling workflows, allowing them to assess transport scenarios quicker with faster model build and testing cycles. In Buckinghamshire Council's trial, impact assessments that would typically take weeks were completed within hours, enabling more responsive project delivery, more informed traffic management decisions, and improved stakeholder engagement.



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For schemes involving strategic routes, freight movements and major network disruption, having access to BT Active Intelligence insights has been invaluable. It helps us provide our customers with timely impact assessments and dynamic models of real, enriched observations of movement across the network. In many cases, the ability to deliver these assessments would not have been possible without the data.

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Robin North, CEO & Co-founder, Immense Simulations

Conclusion

The collaboration between Immense and BT has helped transport teams assess the impact of streetworks, traffic management schemes and infrastructure projects more efficiently. By combining reliable mobility data with simulation technology, organisations can better understand how changes to the network may affect traffic flow and identify mitigation measures before works begin.

The collaboration between Immense and BT Active Intelligence helps stakeholders evaluate options, assess potential impacts and make informed decisions based on a clearer understanding of how people and vehicles move across the network. The result is faster, evidence-based planning, helping transport teams reduce disruption, improve project delivery and maximise the value of investments.

Discover how our data can transform your decision making.

Tell us the problem you're looking to solve, and our team will identify the best solution to support your needs. Get in touch at active.intelligence@bt.com.

