Manchester Metropolitan University

# Smart Passenger

## Identifying key information touch points and decision-making factors affecting rail passenger journeys

Business Transformations Research Centre, Manchester Metropolitan University on behalf of Rasic Ltd.

## The problem

**In the shadow of COVID-19, rail travel has reached a pivotal junction. Just as passenger behaviour has changed, expectations have grown. Generation Z and the upcoming Generation Alpha now demand accurate and real time updates, which requires timely communication between transport hubs and their customers.**

**If railways are to be relevant for the future, they must adapt and compete with the alternatives – from remote working to car travel. In short, they need to offer a better customer proposition, removing the friction and stress from rail travel. They need to create the Smart Passenger.**

In Great Britain, rail passenger journeys fell by almost 70% during the pandemic, from 463 million in 2019-20 to 140 million in 2020-21. Post pandemic, commuting numbers have remained considerably lower than before as the public change their travel behaviours – perhaps because people challenge the need to travel more, or remote working has been widely embraced.

The recent Williams-Shapps report (2021) emphasised that railways must meet the needs of passengers in the post-pandemic era to avoid a society that becomes dependent on the car. This presented several objectives for better rail journeys, including Seamless, Comfortable, Trusted, Reliable and Informed – all of which rely on the flow of information.

With this in mind, Manchester Metropolitan University's Business Transformations research centre was commissioned by RASIC Ltd to examine the door-to-door rail journey. Where are the points of friction and stress in its planning and completion? How and when can key information shape passengers' decisions? And what are the consequences of those decisions for rail operators, and for the other transport networks?

## What we discovered

The team examined different scenarios around the door-to-door rail journey, mapping the passenger's decision-making process at each stage, along with the consequences of those decisions for the transport networks.

To begin, they broadly classified passengers into two key types: problem seekers and problem solvers. The problem seeker checks information before leaving home. The earlier passengers obtain information the better – they can choose to stay at home or take another mode of transport, while the transport hub can then collate passenger information to better understand their own capacity.

The problem solver receives information after they've left, then aims to solve the problem en route. For instance, a network failure means all trains are cancelled. The passenger must now decide which method to use instead – the information they receive is crucial for that decision. The rail station would also need to share this information with other hubs (taxis, buses, trams), as this will drive demand in other areas.

The team then considered scenarios from the perspective of the station. From there, updates are not only pulsed out to passengers, but also to the other networks/providers, who then return information to the station on their own capacity – demonstrating a circle of information around these three key activists.

The key for this system is that the train station understands each problem, all available capacity and other issues affecting the other networks or passenger. The same is true for the other networks, necessitating a constant return of information throughout the whole system. This not only supports passengers' decisions, but also ensures that all transport networks are aware of their own circumstances and the issues they face.

The final decision process map charted the consequences for transport networks when circumstances change. Once the passenger is informed, they will change their plans accordingly. If they choose to work from home, the rail station's capacity increases. Choosing an alternative mode also has ramifications – driving increases road traffic, while taking the bus removes capacity for others. Whatever the passenger's choice, it starts a chain reaction of events impacting all the relevant networks.

To understand which information would be most useful to passengers throughout these scenarios, the research team then conducted an online quantitative survey, asking them to rate their information priorities during five key stages of their journey. This found that:

- At stage 1 (planning and buying tickets in advance), train schedule and ticket offer information were most important.
- At stage 2 (travelling to the station) and stage 3 (at the station), participants identified train status updates as the most important information.
- During stage 4 (travelling aboard), participants identified travel route, current location and upcoming stations as the most important information.
- For stage 5 (at the destination), advice on available local bus, taxis, was the most important information.

The survey suggests that passengers need a 'pulse' of information around every 10 minutes while waiting for the train, but less often once aboard.

Where there is a delay, there's a strong focus on timely communication. Yet the highest-ranking information for passengers remained unchanged between normal and delayed travel, while the length of the delay – under or over 15 minutes – didn't alter passengers' priorities.

## Recommendations

These findings are likely to support what is widely known across the sector. However, it is worth noting those points where this information is operationally useful, just as it may be interesting to see how the pandemic influenced passengers' decisions.

This highlights the importance of the timely flow of relevant travel information and opens debate on the role technology can play through the digital personalisation of transportation information.

Giving passengers what they want – removing the friction and achieving the Williams-Shapps objectives – means rethinking how information is provided. To create the Smart Passenger, rail data systems cannot be operationally centric: they must place passengers at the centre of the information.

## Further information

This project was led by David Bamford, Professor in Operations Management at the Business Transformations research centre, together with Dr Iain Reid, Reader in Operations Management, Dr Amin Vafadarnikjoo, Research Associate and Ben Cowcill, Enterprise Delivery Fellow for Crowd Safety and Risk Analysis – on behalf of Mr Marcus Mayers, Managing Director, RASIC Ltd.

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