

Getting a Move On

How Startups Can Innovate Within
The UK Rail Ticketing Sector

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About Startup Coalition

Startup Coalition, formerly Coadec, is the policy voice of UK tech startups and scaleups. Since 2010, we have worked to engage on behalf of tech startups in public policy debates in the UK across a range of critical priority issues including access to finance, immigration and skills, and technology regulation.

We fight for a policy environment that enables early-stage British tech companies to grow, scale and compete globally. We have over 4,000 startups and investors in our network and have been instrumental in building proactive coalitions of businesses and investors on issues integral to the health of the UK's startup ecosystem. We represent the startup community on the Government's Digital Economy Council, and the UK on the board of the international organisation Allied for Startups.

Acknowledgements

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Introduction

Behind cars, trains are the most popular way to get around the UK – assuming the service is not delayed or cancelled. Trains are critical to both intercity and urban connectivity and economic growth, particularly outside of London. Despite a number of barriers, startups are ready to bring our network into the 21st Century, ensuring the network remains efficient, convenient and reliable.

When people typically think of the rail network most focus on the visible infrastructure – the stations, trains, and track – but underneath the trips taken and fares moved, there is an invisible mass of connective tissue in the form of software infrastructure that keeps the entire system moving.

Some of the biggest changes we've seen to consumers' experience of rail travel in the past twenty years – from increased automation and smarter data sharing, to new ways to buy tickets or get discounts through railcards – have been technology-led. This pamphlet highlights how, with just a few key changes, startups could provide even more innovation within rail through the ticketing sector – the most accessible area to startups due to its digital nature and the inherent scalability of its products.

However, today's startups face huge challenges scaling within rail. The network is managed by a set of the most complex group of organisations in the UK, and, when Great British Railways is established, it may be the second largest employer nationwide – second only to the NHS. As a result, startups face unnecessary challenges in entering the market, and whilst the Government's intent for significant reform is hugely encouraging, this in itself is not a silver bullet to unleash innovation.

Rail tickets have the potential to hit the headlines, and when the news isn't good the Government bears the weight of criticism. Whilst money is tight and continued investment in the rail network funded by ticketing is necessary, it is important to see how travellers' experiences can be improved beyond a simple reduction in ticket prices.

Startups are ready and waiting to provide that improvement. But they, and those that invest in them, need to know that their attempts to enter the market will be welcomed by the rail network. In our view, there are four clear areas that the Government, and in turn GBR, should make a priority in order to solve these issues.

We're not suggesting that this is a quick job, or an easy one. And we don't suggest we have all of the answers ourselves either. But the purpose of this report is to show where the pain points are for startups right now, and plan out how the Government can fix them as part of wider reforms already taking place.

Priority Areas for Reform

Taming the TOCs

Startups have told us that the need to deal with a huge variety of stakeholders is a key barrier to their growth. When they want to introduce a new product, or service, the number of organisations within the rail network they have to get approval from, or sign agreements with, lead to both significantly longer lead-in times and considerable uncertainty. The Train Operating Companies (TOCs), the majority of which currently operate independently, are a major contributor to this issue. The introduction of a ticketing innovation often requires agreements with each of them. Bringing them into public ownership, as the Government is in the process of doing, is not necessarily enough to solve this issue.

Upon Great British Railways (GBR) taking control of the 14 TOCs it plans to, significant work will be required to ensure that they do not remain as silos within GBR. GBR needs to ensure that it takes the opportunity public ownership gives it, in order to mandate interaction not only with each other, in terms of co-ordination and standardisation, but also with other bodies within GBR such as GBRX, the strategic innovation body designed to overcome the barriers to adoption of advanced technologies on Britain's railway, particularly in terms of pathways for new startups and other companies wishing to sell into the sector.

Recommendation

- **Prior to the establishment of GBR the Government, and following this GBR itself, should undertake thorough consultation of private sector companies within the rail sector so as to learn the lessons from them engaging with TOC's under the existing structure of the sector, and ensure they are not repeated under public ownership.**

GBRX

In February this year, Rail Minister Lord Hendy announced the creation of GBRX, a new body operating under the Great British Railways Transition Team (GBRTT), which is designed to fulfil Priority Four of the Government's five priorities for rail: fostering innovation – including partnering with world-leading innovators, particularly around AI – to create a better passenger experience and greater efficiency. GBRX have also been given responsibility for the AI Action Plan for Rail, and have recently appointed an AI Advisory Council to work on this issue.¹

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<https://www.networkrailmediacentre.co.uk/news/rail-minister-opens-the-inaugural-meeting-of-the-gbrx-ai-advisory-council>

While the initial ambitions for GBRX are promising, its success will depend on how it is embedded within the wider GBR structure. For GBRX to drive genuine change, it must have the support, authority, and potentially funding of GBR. Without this backing, there is a real risk that GBRX becomes a siloed innovation unit, able to pilot ideas but unable to influence decision-making or deliver transformation across the rail network.

Clarity is therefore needed from GBRTT and the Government about GBRX's precise role and powers. In particular, its relationship with the publicly owned TOCs should be explicitly defined. GBRX must have the mandate to engage these operators and ensure they remain open to innovation, rather than defaulting to risk aversion and legacy practices."

A Clear Entry Point

Startups often a more fundamental problem when bringing new innovations under the current system: where to begin when looking to engage with the rail sector. They need a clear place to go – and GBRX could fit the bill. Startups also need to know that wherever they are pointed to, the body on the receiving end will have the skillset required to identify where there is potential and will respond to them in a timely manner.

GBRX has announced their plan to publish an 'X Portfolio', a list of key areas that are ripe for disruption, innovation and reform.² GBRX's recent strategy document also makes reference to an 'X Platform', designed to 'connect problem owners with suppliers, SMEs and researchers, and supports them through early development, shaping and safety assurance'. It makes sense for GBRX to be proactive. However, this portfolio model should not become a series of boxes startups will need to fit into in order to innovate, regardless of whether the problems are defined by GBRX itself or other elements within GBR via this platform.

There needs to be a clear way for startups to engage with GBRX outside of its chosen priorities. If there isn't, we will see UK startups testing, developing and rolling out their products elsewhere, and UK rail will miss out. At the same time, GBRX's own priorities need to be flexible enough to accommodate both changes in the market and in technology. Without this, there will be an inevitable tension between innovation GBRX prioritises and those that the market does.

Recommendations

- **The Government should set out the role, responsibilities and enforcement mechanisms of GBRX, as well as its relationships with GBR and the TOCs more widely, either in their response to the 'A Railway Fit for Britain's Future' consultation paper, or in a separate statement.**
- **GBRX should set out their clear intention to be the entry point for rail innovation, with clear channels as to how they can be engaged with.**

² <https://gbrx.co.uk/>

- **GBRX should commit, and provide a clear service to, companies wanting to innovate in areas outside of the X Portfolio, including a provision for funding if necessary for those ideas with a suitably high potential for success.**

Diving Deeper into Data

Data is the fuel that allows startups to innovate, and a huge amount of it not only exists within the rail network, but is necessary for it to function. A single day across the UK's rail network generates huge amounts of data. The ability to analyse and make use of this data is a key competitive factor for any startup – but this relies on equal access to datasets in the first place.

Expanding Access to Data

The previous Government had already moved forward to open up data access under the existing Rail Delivery Group (RDG), with the creation of the Rail Data Marketplace.

“The Rail Data Marketplace has been a welcome improvement for us”

- Rail Startup Founder

Startups we have spoken to for this report told us that this has been a qualified success, with relatively open access to data compared to previous schemes. This is not only important for the real-time operation of the services they provide, but also serves as a useful bank of past data, allowing them to refine their product and make predictions about future demand.

Furthermore, access to data can open up a range of opportunities for new startups that are not necessarily consumer facing, but can build products that businesses within the rail sector can use to refine their own products, such as predictive algorithms. It is important to note that much of this data is currently shared, but through bilateral agreements – often between TOCs and companies in sub-sectors such as ticket reselling rather than in an easily accessible way.

With the consolidation of the rail network under GBR, the Government has the opportunity to expand and open up huge quantities of data, including that relating to fares, delay repay, and performance data. But outside of reference to the last of these, which the Government intends for GBR to collect,

“Access to real-time operational data is hugely important for us - and making this more easily available would make our lives a lot easier.”

- Rail Startup Founder

there has been little reference to it in their plans. With the new public ownership model in place, GBR will have both data that was formally controlled by the TOCs and a huge amount of data that is currently controlled by National Rail, Network Rail, and other bodies. Equal access to this data is paramount to allow startups to enter into, grow and innovate within the market.

Access to real time operational data from the TOCs was described to us as a key priority for

startups. Delays, cancellations and changes already exist as real-time data sets, and this should be made available (for a fee in line with other data) on an open basis, other than opt-outs for truly sensitive commercial data.

For a startup to utilise this data though, not only ease of access is required, but also ease of use.

Data Standardisation

Regardless of whether data is shared in real-time or not, the format of the data can have significant cost implications for startups to use it. Currently, depending on the TOC or other firm, and the particular kind of data shared, there is a wide range of formats, meaning increased work, and costs, for startups to utilise it. This is not an easy problem to solve, with all organisations like TOCs currently using their own standards and formats in a way that suits them.

Standards must be pursued that benefit the various markets within the rail sector as a whole, which are also feasible for independent TOCs to be mandated to follow as well. These could include machine readability, that would make the processing of data significantly easier. With these standards, and open access to the data itself, the fuel that startups need to innovate will be easy to procure.

Smart Data

If GBR, or more likely the individual TOCs existing within it, are unable or unwilling to open up data in this way, the Government has an alternative approach it can take. The Data (Use and Access) Act, passed earlier this year, has given the Government the ability to introduce Smart Data schemes, in essence mandated data sharing, in certain markets. They are currently in the process of deciding which markets are most suitable, prior to the publication of the Smart Data Roadmap later this year.

We believe that the Government should not get in the way of markets in solving data sharing issues, and prioritise either those where there is a market failure, or where a Smart Data scheme would help to fulfil a key Government priority. Therefore GBR should be given the chance to open up data sets it will soon be wholly responsible for. However, if the same inertia we have seen in the current organisation of the rail network rears its head again, the Government should not be afraid to act, and should introduce a Smart Data scheme for rail ticketing.

Recommendations:

- **GBR should establish a central data sharing portal, with a view that, outside of commercial sensitivity or national security reasons making this impossible, data should be available on it by default in a machine-readable format.**
- **If data sharing is not expanded under GBR, the Government should consider the potential for a Smart Data scheme in rail ticketing, mandating that the TOCs share a variety of data points in real time to allow private companies, including startups, to use it.**

Digital Railcards and Season Tickets

Startups in the rail ticketing sector should be able to offer the best deals and discounts to their customers – but unfortunately this is not currently always the case. Both Digital Railcards and Digital Season Tickets are restricted in one way or another – meaning needless friction for consumers.

Digital Railcards

Railcards, where those qualifying can pay a small fee to buy a card providing them with discounted fares, have become a significant part of train travel in the UK, and the advent of digital railcards has made it easier for startups to offer the best deals for travellers. The average traveller with a railcard saves £140 a year on train tickets, and there are over 5.6 million railcards in use across the UK, with the majority granting a third off ticket costs.³ All railcards are currently managed by Network Rail, with these responsibilities transferring to GBR in line with Network Rail's responsibilities more widely.

Currently all nine types of digital railcards can be purchased and hosted on a smartphone app built and operated by National Rail, but only seven of the nine can be purchased and hosted by a private company providing a ticketing app. The two railcards unavailable on alternative apps are the Disabled Persons Railcard and the Veterans Railcard, which have to be purchased from National Rail directly.

Whilst assessing eligibility is more complex for the criteria granting a traveller eligibility for these two railcards relative to the other seven, this is not an insurmountable issue – and one that National Rail has clearly managed to overcome for their own app. Solving this issue would allow eligible travellers to access a greater choice of providers for their railcard.

More widely than solving the specific issue with these two railcards though, it is important that in future, with the potential launch of more railcards, a precedent should be adopted that all companies with a license to sell rail tickets should be able to offer all railcards.

This would provide greater competition amongst ticket sellers, both in terms of features and price, and the ability to automatically add eligible railcards to train journeys in-app when buying a ticket would reduce unnecessary traveller spend, lowering the average price paid for a journey and therefore increasing adoption.

Digital Season Tickets

Similar to railcards, Digital Season Tickets are an innovation that has improved the customer experience, but its adoption has been piecemeal. Historically, season tickets began being issued on card (similarly to a regular train ticket) before the introduction of 'smart' cards – plastic cards that arrive by post and require a proprietary app managed by the individual train company to show exactly what ticket is assigned.

³ <https://www.nationalrail.co.uk/railcards/national-railcards/>

Consumers travelling on sixteen of the 28 major TOCs are able to host their season tickets on an app, leading to much greater convenience, no issues around lost tickets or cards, and a single place to access all tickets.⁴ However, in another example of train company resistance to innovation, a number of TOCs have refused to implement this easy win for consumers.

Breaking this link between the use of a season ticket and the direct relationship to the TOC opens up (and makes competitive) a new market, and this should be the case for all lines in the UK.

Recommendations:

- **GBR should allow access to other firms selling railcards to access their verification system - or approve proprietary verification systems built by these firms that maintain the same standards.**
- **GBR should adopt the rule that all TPS's should be able to sell all kinds of railcards, and abide by this rule when creating new types of railcard.**
- **GBR should compel TOCs to make digital season tickets available on all of the publicly owned lines, and provide equal access to the hosting of them.**

⁴ <https://www.thetrainline.com/season-tickets/digital#which-season-tickets-are-digital>

Summary of Recommendations

- Prior to the establishment of GBR the Government, and following this GBR itself, should undertake thorough consultation of private sector companies within the rail sector so as to learn the lessons from them engaging with TOC's under the existing structure of the sector, and ensure they are not repeated under public ownership.
- The Government should set out the role, responsibilities and enforcement mechanisms of GBRX, as well as its relationships with GBR and the TOCs more widely, either in their response to the 'A Railway Fit for Britain's Future' consultation paper, or in a separate statement.
- GBRX should set out their clear intention to be the entry point for rail innovation, with clear channels as to how they can be engaged with.
- GBRX should commit, and provide a clear service to, companies wanting to innovate in areas outside of the X Portfolio, including a provision for funding if necessary for those ideas with a suitably high potential for success.
- GBR should establish a central data sharing portal, with a view that, outside of commercial sensitivity or national security reasons making this impossible, data should be available on it by default in a machine-readable format.
- If data sharing is not expanded under GBR, the Government should consider the potential for a Smart Data scheme in rail ticketing, mandating that the TOCs share a variety of data points in real time to allow private companies, including startups, to use it.
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