



17 August, 2020

## How can rail companies embrace new technology to encourage the commuter back?



**Roland Harvey**

Business Development  
Manager

It's been well over 4 months since the Government announced a lockdown for the UK on the 23 March 2020 and people are now trying to get back to some normality as the restrictions are gradually lifted.

For some, this will mean working from home is the new norm. The pandemic has ushered in a new wave of video-call aware workers who previously wouldn't know what WebEx or Zoom meant. They are now comfortable with working in the kitchen, headset on, putting their clothes in the washing machine or filling the dishwasher while listening to the weekly team call.

For many others though, the lifting of restrictions means going back to their place of work and choosing between their car and public transport to make that journey. A critical issue for everyone in the UK and any country trying to reduce its carbon emissions. During the main period of lockdown, urban areas in the UK saw a 30-40% drop in Nitrous Oxide (NOx) pollution. To me that showed the huge potential benefit of more people taking public transport. However, the balancing of costs, convenience, flexibility and environment means it can be a difficult decision for individuals to make despite the critical nature of the longer-term global warming issue.

From what I can see and have read, all mass transit and train companies have really stepped up to the plate to ensure the potential risk of infection is minimised; providing regular cleaning and ensuring passengers wear masks and wash their hands frequently. But that isn't the only issue facing switching commuters to public transport:

**When rail companies can effectively predict in advance where and when faults and breakdowns are likely to happen, then they can take scheduled, planned action to fix the issues and minimise any delays.**

My local train company sends me regular email updates on issues for my journey from Southampton Airport to Waterloo Station in London. Great, at least it's communicating with me. But I'm still overwhelmed with the volume of emails citing, signal and track failures every week. As I do return to the office, the last thing I want is for unscheduled delays to my journey—whatever the reason.

But why, when we are seeing 80-90% drop in passenger numbers, are we seeing these issues? How can rail companies ensure a delay free return to commuting to work – or at least a service with the unscheduled delays minimised?

For that, we need the public transport services for our cities and regions to become

more robust and resilient. They will need to significantly reduce unscheduled delays and cancellations to regain customer trust. The secret to achieving this will be the effective employment of new technology to manage and monitor what is often old physical assets. When rail companies can effectively predict in advance where and when faults and breakdowns are likely to happen, then they can take scheduled, planned action to fix the issues and minimise any delays.

At Dexda, by using machine learning and big data we have already helped a global payment system provider to reduce outages at the mass transit, barrier, ticket machine and bus contactless payment levels. By helping them to predict likely failures of physical assets, so engineers can fix the issue before causing any service issues, the ticketing provider has been able to deliver a seamless roll-out of their new technology ahead of schedule.

Taking it to the trackside, Dexda has recently worked with a US Mass Transit authority and has been able to build a model in 4 weeks that predicts failure of switch machines up to 14 days in advance. All using existing data and Dexda's cloud-based machine learning to deliver automated predictive fault detection. This means the mass transit Authority is achieving:

- Significantly reduced maintenance costs
- Fewer unplanned outages
- Increased asset service lifetime
- Reduced human risk

We have all been affected by the global pandemic and we all need to work together to be smarter and safer in getting back to work. Maybe now is the time to really look at the new technology available and ask ourselves how it can help transform some of our most established business sectors.

