Driving Innovation in Transportation Systems: Overcoming Legacy Systems

Richard Davies

Biography

Richard Davies is the UK Country Manager Partner, Netcompany (https://www.netcompany.com). As Country Managing Partner, Richard is responsible for leading the team to meet and exceed newly set business goals for the UK. With over 20 years' experience of leading major digital innovation and digital transformation projects, Richard will work closely with existing customers and engage new relationships across key markets.

Based at Netcompany's London office, Richard works closely with the infrastructure, data and application development teams to target the public and private sectors. Prior to joining Netcompany, Richard was Vice President at DXC Technology where he led digital business initiatives across major clients in Europe as well as being Managing Director of DXC's Leading Edge Forum Programme (LEF). In this role where he built a Global thought leadership & Advisory programme to create and deliver next practice IP to senior executives on how IT will reshape the way they do business.

Netcompany is an international IT services company based in Denmark with 10 offices in 6 countries and 6000+ employees. Netcompany delivers society- and business-critical IT projects that accelerate clients' digital transformation at the highest quality, on time and on budget.

Richard Davies
UK Country Manager Partner
Netcompany

Abstract

Just as employees are being rallied by the Government to return to the workplaces and adapt to the new 'norm' of living with the Covid Omicron virus, it is feared that safety concerns around social distancing could push commuters away from trains despite the green agenda. In this article, the author discusses the innovations that will be needed to drive transportation systems into the future.
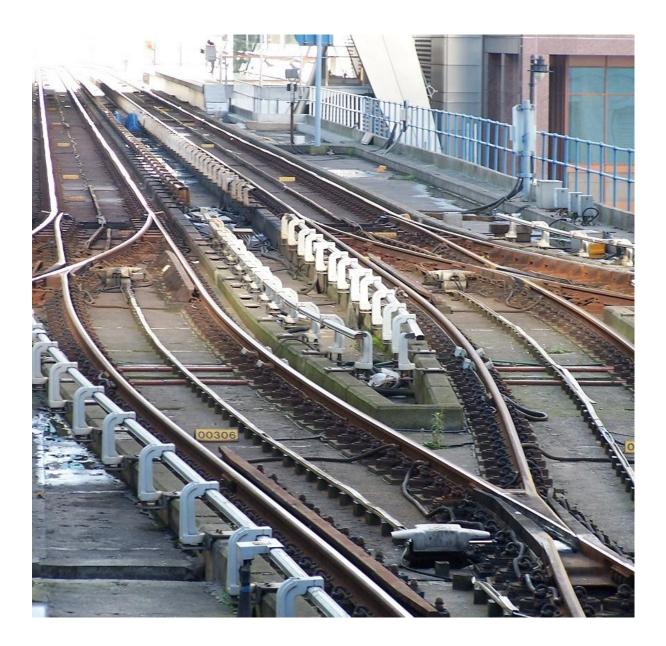
Introduction

Railways, like so many other sectors of the transportation industry, are facing seismic changes. With environmental regulations coming to the fore because of climate change initiatives, as we look to keep global warming to 1.5°C, combined with the pandemic, supply chain disruption, the energy and oil crisis and more, this is a sector that needs to modernize and innovate. To this point, the recent Shapps report[1] identified serious issues facing the railways before Covid struck; of course some of these issues have been exacerbated because of the pandemic.

During Covid, the government provided unprecedented support to keep the railways running but now systems need overhauling and fundamental changes implemented

for railways to survive, remain competitive, meet future demand, and support the transition to greener transport.

But today's railway is fragmented – numerous bodies incentivized in different ways has led to a lack of joined-up thinking. No single organization is accountable for integration, planning and leadership across infrastructure, passenger services and freight operations. The Shapps report outlines how the government will make railways the backbone of a cleaner, more environmentally friendly, and modern public transport system across the country. By replacing franchising, accelerating innovation, and integrating the railways, the government intends to deliver an efficient, financially sustainable railway that meets the needs of passengers and organizations who rely on rail on a daily basis.

Overcoming legacy systems

The need to deliver new more efficient systems, agile ways of working that improve productivity, operational efficiency and enable organizations to migrate away from rigid legacy systems while keeping operational costs low, is not unique to the rail industry.   Other parts of the travel and transport sector face similar challenges. Many airports rely on old legacy systems and processes, for example, Copenhagen Airport was facing many of these challenges before it embarked on a radical digital transformation programme that has now seen it named the most efficient airport in Europe fifteen out of seventeen times by the independent Air Transport Research Society (ATRS).

To maintain this position, it adopted an ambitious strategy and has taken a drastic approach to digital transformation. Working with Netcompany, Copenhagen airport implemented a 'smarter airport' solution – AIRHART – which has moved it away from the old legacy Amadeus system and dramatically improved punctuality and drastically reduced waiting times through better forecasting and turnaround management.   The new AIRHART solution allows for more efficient use of existing resources, enabling the airport to increase throughput and raise passenger numbers, while making a considerable reduction in IT costs and meeting its sustainability goals.

However, for many organizations, legacy systems are one of the biggest barriers to change, and this isn't unique to the railway industry. Even though there has been a lot of talk about the pandemic accelerating digital transformation initiatives, the reality is that a lot of companies are still running on mainframes and the challenge is how to extract themselves in a cost-effective and time efficient way.   Also, many organizations have reached the limit of what they can do with digitization, because to undertake more radical digitization requires them to get out of legacy. But many are concerned about getting it wrong because this can cost the organization a lot of time, money as mission-critical systems could grind to a halt.

Equally, no organization should try to simply 'shift and lift' to a new system. At the same time, they don't want to tinker with parts of the system without a thorough understanding, as this can invite a lot of business risk. So, legacy must be approached extremely carefully. The key is finding out what data within these systems is important and valuable to the business and then making a plan to get out of legacy in a controlled way.

The obvious answer for migrating away from cumbersome legacy systems is that you rewrite somewhere else using standard software and/or open source while avoiding any vendor lock-in, in an environment that can be easily maintained and where you have alternatives in the future. But to do this you need to extract the valuable data and rearchitect this on another more composable platform. A composable software architecture empowers organizations to move from an all-in-one system to highly-customizable and flexible, 'best of breed' applications ready-made for the future.

Delivering transformation
Here at Netcompany, we have built a strong reputation for successfully delivering complex transformation projects to large enterprises across Europe harnessing the power of composability. Our business model is based on an exceptionally effective approach which assembles and reassembles flexible independent solutions for reuse to deliver different critical business functions across the enterprise. Using our Composable Enterprise Framework we enable companies to offload their legacy onto new modern platforms with optimized processes, a data-driven culture, and a customer-centric business model. Our tried and tested approach, utilizing modules and accelerators means we can quickly build on existing systems, rapidly delivering projects at highly competitive prices.

Ultimately, whatever new architecture rail companies chose to build their new systems in, they should avoid high operational costs such as licenses, infrastructure and hosting, any vendor lock-in and use software and components carefully so that they don't become constrained in the future. Our unique delivery model and Composable Enterprise Framework is changing and accelerating how rail companies, and their customers, are using technology, helping to streamline passenger flow and passenger management, making transportation better and safer for society at large.

Reference

1   Policy paper: Great British Railways: Williams-Shapps Plan for Rail - The Government's Plan to Transform the Railways in Great Britain. Available at: https://www.gov.uk/government/publications/great-british-railways-williams-shapps-plan-for-rail