Interview with

NIGEL WALLBRIDGE

FROM PASSENGER WI-FI TO OPERATIONAL APPLICATIONS WITH NOMAD

INTERVIEW

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U.K. MOBILE OPERATOR NOMAD DIGITAL PROVIDES IP-BASED SOLUTIONS FOR RAIL OPERATORS WORLDWIDE. MOBILITY SPOKE WITH THE COMPANY'S EXECUTIVE CHAIRMAN, NIGEL WALLBRIDGE.

COULD YOU DESCRIBE YOUR PROJECTS FOR HEATHROW EXPRESS AND THE WEST COAST MAINLINE IN THE U.K.?

For Heathrow Express, despite this being such a short trip [the journey between London Paddington and Heathrow airport takes between 15 to 21 minutes] there was high demand for on-board Wi-Fi. The first thing people want to do after a long haul flight from the States is check their mails, which they can do on the train before arriving in Central London. Plus there are a fair number of commuters using the service to get up to speed on their emails before reaching the office.

The tunnel sections [total of 6km] were definitely an engineering challenge, but it's worked out well for us. Because we now have proven experience for future projects and, in fact there are some aspects of tunnels that are easier than open spaces, e.g. the tunnel tends to act as a wave guide so the signal actually goes a long way.

For the West Coast Mainline service [run by Virgin] we use a lot of 3G and multiple carriers. In the old days we used to say "which carrier is best"; now we say "there are three carriers available, let's combine them." And by doing so we obtain higher bandwidth.

Nomad highlights in Europe

Who?	When?	Solution	Key features
Brighton Express	**2005**	Broadband Wi-Fi system on board 100mph commuter line between Brighton and London	First such system for trains in U.K.
Heathrow Express	**2006**	HotSpot Wi-Fi service for the 100mph rail link between London Paddington and Heathrow airport	Short journey time of 15 minutes + 6km of tunnels
West Coast Mainline	**2009**	Wi-Fi HotSpot service on board the Pendolino Virgin trains running between main rail artery between London Euston and main cities in the north of Manchester, Birmingham, Glasgow Central, Chester	Urban and remote geographic areas, speeds of 125mph = switching capability needed between 3G and purpose built WiMAX coverage
NSB – Norges Statsbaner	**2009**	Contract signed with the state-owned Norwegian operator to install and operate high-speed broadband on board its trains	NSB will use the system for both passenger and operational applications

ON-BOARD WI-FI IS ASSOCIATED WITH PASSENGER WI-FI, BUT IT OFFERS MUCH MORE OPERATIONAL POTENTIAL…

If you look at our industry as a whole, there was a lot of excitement about the provision of Wi-Fi to passengers in the early days, and there still is. It's definitely still an important issue, but in reality the big savings come when train operators discover the hundreds of different ways of operating their fleets more effectively and reducing their costs by having their trains connected to the network. And these benefits include saving fuel, i.e. by downloading information to inform drivers how they performed on a daily basis. Another example is preventative maintenance: for example, take a door that takes two seconds to open. The day it takes three seconds you know there's something wrong and you can take action before it fails, and so avoid having to take the train out of service. So Wi-Fi can help significantly improve the reliability of services by linking trains with their corporate networks.

Nomad Digital

The world's leading provider of mobile network solutions to the transportation sector.

Nomad Digital delivers an enhanced customer experience through passenger WiFi, on-board entertainment, passenger information systems and CCTV, as well as solutions that deliver operational efficiency to the train operator.

Our global customer base includes Virgin Trains, Heathrow Express, Norwegian State Railway and Nederlandse Spoorwegen. Nomad also provides WiFi on the Dubai Metro and has a growing customer base in India, China and the USA.

To find out how Nomad can help you call Maria Walker on +44 207 0966 966

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It's like trying to run an office efficiently with one of its key computers disconnected. For years train operators have functioned with one of their main places of business, namely the train, disconnected.
In Norway and Sweden, operators NSB and NS decided right from the start to use their Wi-Fi system for both passenger and operational applications. Whereas operators like Virgin and Heathrow Express have taken the opposite approach – they really focused on a single usage and over time have discovered the operating apps benefits.

OBVIOUSLY YOU WORK ON A CASE-BY-CASE BASIS, BUT IN GENERAL WHAT DO OPERATORS WANT?

Our clients want installation to be hassle-free; they want to avoid disrupting services by taking trains out of circulation for long periods. So our equipment is quick and easy to fit. This is crucial for operators. They also want the service to be reliable and high performance, i.e. high speed.

TO CHARGE OR NOT TO CHARGE…

If it's free, uptake is enormous. Right now Virgin is seeing at least one in three of its passengers on the West Coast Main Line using the service because it's free in first class. And with the growth in sales of the iPhone and other Wi-Fi-enabled devices, free on-board connectivity is super popular with travellers. But if they have to pay for it, penetration rates are much lower at around 1%. So from a train operator's perspective they have to prioritise – do they want to gain a small increase in revenue coming from low penetration, or increase the number of passengers in first class by giving Wi-Fi away for free. The decision is up to them but frankly the game is nearly over – over the past few years train users have been demanding it as a free must-have. For every refurbishment, every franchise change in the U.K., every new train delivered today, Wi-Fi is simply part of what the package.
You can't move from free to pay-for. For example Heathrow Express started out offering pay-for and then realised what they wanted was to encourage more people to use their trains, so it switched to free, which is fine. The pay-for model only really works for me when the train is full. If this case you don't want more passengers, you want more revenue per passenger, and so here you might charge for the service. I also think the model based on standard class pay and first class is free is good because it encourages passengers to shift classes and that's a plus for operators.

HOW DO YOU MAKE THE BUSINESS CASE WITH OPERATORS?

At the start of the process, we generally build the business model. And we show what will happen – by playing with the numbers, i.e. penetration and usage – to see where the money is going to be made. Since the West Coast Line is competing with flights between London and Manchester, the objective is to get people out of their cars and onto trains. And here's the kind of number that's interesting: typically we think the world market for this kind of connectivity is about one billion Euros per year market. This means roughly 40€ per train per day, including Opex and Capex. With a total system price like this if just one passenger per day shifts from standard to first class, the operator has paid for its connectivity. Then operational apps come free because the operator has already paid for the service.

IS UPTAKE GROWING AMONG CUSTOMERS FOR OPERATIONAL APPS SUCH AS CCTV?

They have already taken off in the Asian market with players like the Hong Kong and Singapore metros, and interest is even more intense in China. This is due cultural reasons and also government influence – the Chinese government is perhaps more interested in what its citizens are doing on trains than in Europe. I think here in Europe, and especially Britain, we're seeing a bit of a backlash against CCTV. Although there's a societal questioning of the value of having so much intrusive surveillance, on the other hand if you're a single female alone on a train at night in south London, knowing there are CCTV cameras installed, with someone watching who can also speak to you, plus the presence of a panic, is intensely valuable. And I think trains have become more of a terrorist target since attacks like the bombing in Madrid metro [2004], for example. So the question of CCTV remains open to debate.

HOW HAS THE TECHNOLOGY EVOLVED SINCE IMPLEMENTING YOUR FIRST SYSTEM IN 2005?

Wi-Fi is a fast moving market and will continue this way. Railways are accustomed to buying technology with a much longer time frame in mind. Operators buy rolling stock that runs for 30 years; wireless technology only lasts two to three. But this is what customers want. The bandwidth used in offices today was unimaginable five years ago. And on trains today, passengers want to be able to connect their phones, download music, read the latest news, and in the near future they will be wanting to watch TV on their iPhones and the Apple tablet due out in a couple of months. All these devices impact public demand and train operators have two choices – either they reject their passengers' needs or they explore ways of adapting the technology we provide. And this is Nomad's job – to be their technology partner and make our solutions as future-proof as possible so that when, for example, increases in bandwidth are required, we make the upgrade as simple as possible.
Sometimes our customers want to buy the technology from us and operate it themselves; sometimes they say "we're not in the wireless business, so we want you to install it and do the technology upgrades and maintain the service." However right now the majority of our portfolio prefer to buy and maintain our technology themselves.

HOW DO YOU SEE THE FUTURE OF WIRELESS FOR TRAINS?

In five years time it will be impossible to imagine a modern rail system without a tunnel of high-speed, wireless connectivity being intrinsic to its operation. And this tunnel of connectivity will probably be provided by companies such as ourselves, using licensed spectrum. Governments are going to say, "this is an amazing opportunity for our railway system! We must provide operators with their own spectrum so they can run their own networks and offer really fantastic services ■"

Lesley Brown