## Interview: Consult Hyperion




*Juniper Research interviewed John Elliott, Head of Public Sector Practice*

Consult Hyperion is an independent IT consultancy specialising in secure electronic transactions. Consult Hyperion has spent two decades helping organisations to make the right commercial and technical choices, exploiting technologies ranging from smart cards and mobile phones to contactless tickets and electronic ID in mass-market systems that include global payments, national and regional ticketing, international settlement, national identity and corporate services.

For several years now, Consult Hyperion has been involved in developing business cases and building cost/benefit models for e-ticketing for transport. As part of this research, Consult Hyperion worked with Detica in the UK to conduct a study entitled "The benefits and costs of a national smart ticketing infrastructure". This report was used to prepare a consultation document on e-ticketing for the UK DfT (Department for Transport). The full report[1] is a high level review of the capital and operating costs, and tangible and intangible benefits of a national smart ticketing scheme, based on experience with existing local schemes.

The study included a six-month trial of NFC mobile tickets on NoWcard buses in northwest England. Forty trialists used NFC phones loaded with ITSO-compliant e-tickets to travel on three different bus fleets in Lancashire and Cumbria. Not only did the NFC technology work extremely well during the trial, but the majority of users were very positive with their overall feedback. As a result, the study concluded that NFC technology is entirely suitable for use as NFC customer media right now. Even more interesting, the same trial also included a bench test to show other uses of NFC, including the ability to top-up tickets "over the air" and the possibility of using NFC phones as inexpensive ticket inspection devices.

Elliott explained that over the past few years there has been somewhat of a lull in NFC transport trials, partly because of the recession and also the lack of NFC phones. However this is beginning to change and a key indicator would be the arrival of an iPhone with NFC capability.

During the interview Elliott mentioned a number of other projects Consult Hyperion has worked on

- In Singapore a few years ago, Consult Hyperion worked with the government on business modelling focused on how to encourage an NFC infrastructure which would allow for as many different applications as possible, including transit ticketing, payments, entertainment etc. to use NFC. The government has recently announced that the NFC infrastructure plans are now going ahead and they have agreements with all the banks and mobile operators. This is quite a significant move and unusual to be able to gain such coopereation between the financial nd telecoms sides.
- For the past few years Consult Hyperion has been working on specifying the next generation reader for Oyster gates in London to accept not only Oyster and ITSO cards but also EMV contactless bank cards. This means that travellers from the rest of the UK and around the world can more easily enjoy the benefits of contactless travel in London. It is hoped that in 2012 EMV cards will be accepted on all London buses and in 2013 every Oyster reader will have been converted.
- Recently, Consult Hyperion has been protyping technology to find ways to speed up the gate times for Transport for London (TfL) in preparation for the move to ITSO and EMV. Currently 250ms is the common transit target with 500ms being the minimum to avoid queueing according to recent TfL studies.

[1] http://www2.dft.gov.uk/pgr/regional/policy/nationalsmartticketing/ticketreport.pdf

Elliott believes that the future of mobile transport ticketing is now firmly linked to the rollout of EMV contactless technology and a single smart card supporting both the payment and ticketing functions. The current generation of EMV contactless cards provides all the basic functionality required - all that is needed is the the migrating of this smart card functionality to the NFC phone. However, apart from the availability of NFC phones and the deploymemt of contactless infrastructure, there are still a few key technical issues to be resolved to provide a fully functional mobile ticketing system

- For complicated, multi-leg journeys, current EMV bank cards do not facilitate the storage of information to the chip. This is needed at the start of the the journey and progressed through the various legs so that so each gate and inspection device knows exactly what ticket has been purchased and what leg of the journey the user is on. Fortunately, the next generation of EMV bank card will implement the writeable TDA (Transit Data Area) – this will be the last barrier to overcome in replacing transit cards with bank cards.
- On the MNO side, the remaining issue is that of secure provisioning. MNO's currently issue NFC phones with the NFC 'wallet' already loaded onto it in a non-enabled state that can be enabled OTA (over the air) for payments and ticketing if the user wants to use it. Currently management of the secure element is a contentious issue between banks and MNOs. It is not clear whether there will be a way for them to co-operate or whether they will simply issue their own separate Secure Elements.