

---MEMBER IN THE SPOTLIGHT – March 2011 – Transport for London---

Towards the next generation of transport payment systems in London

London's payment system today – the Oyster card

Transport for London (TfL) has announced its plans for the next step in the evolution of the ticketing system used for public transport in London. The city is widely known as the home of the Oyster contactless smartcard, launched by TfL in 2003. The Oyster card is perhaps typical of the kind of contactless smartcard using ISO14443 standards that many transport operators and city, regional and national authorities have been seeking to introduce for public transport fare collection over the past decade. Oyster cards are the platform upon which TfL sells season tickets and also a stored value purse for pay-by-ride travel called Pay As You Go (PAYG). So whichever product you choose, you can get it on an Oyster card when you make the purchase at a station, and the same is true if you make an online or phone purchase – the card will come in the post. Once a customer has a card, they simply tap in to the public transport system to pay their fares.

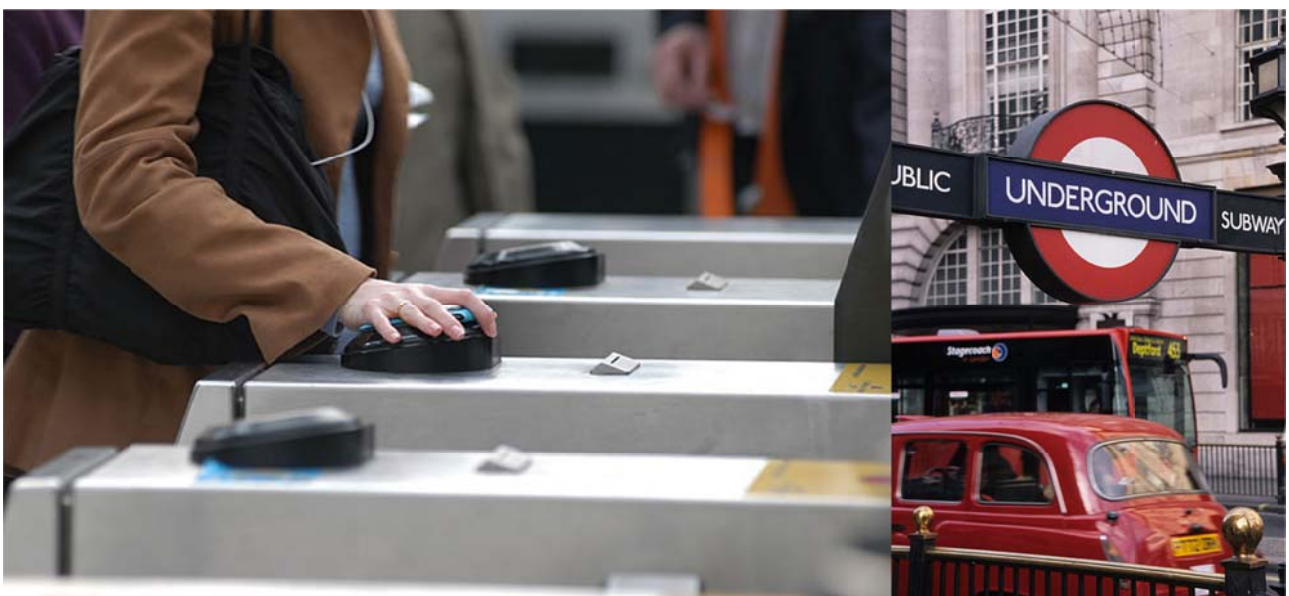
The iconic London Underground system has been equipped with Oyster gate-lines at all of its 275 stations: customers tap the Oyster card at the smartcard reader to enter the platform and then make their journey. At their destination station they leave the platform and tap out. The system checks for a valid ticket on both entry and exit. If none is present, an alert sounds. This system is also used for the many other rail services in London, both those operated by TfL and those operated by the private commuter rail companies, although many of the rail stations just have stand-alone Oyster card readers rather than full gate-line barriers. On London's 8,000 buses customers tap their Oyster card at a reader placed by the driver when they board. There is no need to tap-off as London's buses operate a flat-fare pricing policy that reflects the relatively short journey length observed on London's buses. TfL observes passenger throughputs in excess of 20 passengers per minutes for extended periods of time when customers enter the system (whether bus or rail) in this way. Existing card holders can add to the set of tickets they carry on a card at station kiosks, or online. Oyster cards can carry up to three tickets at a time, and in addition has a stored-value purse for the funds that customers top-up their cards with for PAYG travel.

The benefits of the Oyster card

Overall, TfL has been very pleased with the business outcomes that have been achieved with the introduction of Oyster. Customers now choose to use Oyster for more than 85% of all journeys on London's public transport system. As a result, TfL and the commuter rail operators have enjoyed substantial benefits in three areas. First, Oyster has delivered incremental ridership and revenue because it has made public transport seem more modern and has made it possible to choose public transport for spontaneous, unplanned trips that

previously were made by car or on foot. Key to this effect is the PAYG product, which has become very popular by virtue of its effect of eliminating the need to buy a ticket before every journey. Since 2004, when Oyster PAYG was introduced, TfL's volume of ticket selling transactions has fallen dramatically. Second, Oyster has allowed customers to speed up their journeys in and out of stations and onto buses. On buses especially, the reduction in the amount of time that the driver has had to spend selling tickets has materially increased the ability of London's buses to deliver quick journeys in line with the published timetable, and thereby improved the competitiveness and attractiveness of buses when compared with the car. And in addition, these journey time savings mean that bus routes can be served with smaller fleets, resulting in cost savings for TfL and its bus operators. Third, Oyster has in various ways hugely reduced the incidence of forgery and the casual re-selling of paper tickets by ticket 'touts' and thereby has improved TfL's revenue yield by 1-2%. Those who recall the years when London Underground was a haven for unpleasant ticket touts will find that they have now all gone.

So it is clear that TfL's decision to introduce a contactless smartcard has resulted in great benefits. It seems unthinkable that London's public transport system will ever see a reversal of the decision to introduce contactless smartcard fare collection. But the question TfL has been asking is could it do even better? Oyster has two noticeable disadvantages that manifest themselves for the kind of infrequent or irregular travel made by the majority of TfL's customers who are not commuters in the classic sense. First, whereas commuters can expect to engage in one ticket purchase transaction every month or even every year, customers who travel using PAYG or weekly tickets have to invest valuable time managing the Oyster card to keep it topped up with funds or with tickets. This is wasted time for customers, who would rather be getting on with their journey. And for TfL, the provision of ticket selling facilities at every station and online is expensive. In addition, these customers tend not to retain a single card for an extended period of time like commuters do, so TfL finds itself continuing to issue many thousands of Oyster cards every week at considerable expense.



Beyond the Oyster card

TfL's recent announcement sets out a plan to address these two problem areas by taking advantage of recent developments in the payments industry. Banks in the United Kingdom have been progressively introducing Oyster-like contactless capabilities on the credit and debit cards that they provide for their customers, and these customers have begun to be able to pay this way for low-value (<£15) purchases in various leading retail chains that have installed the necessary wave-and-pay terminals in their stores. TfL has announced that it will be upgrading the software in the Oyster system over the next twelve months so that its smartcard readers will be able to interact with these cards as well as with Oyster cards. A customer presenting a contactless credit or debit card will be able to tap-in and tap-out of TfL services without having to buy any kind of ticket in advance. No registration in advance is required. Customers will be charged for their travel according to the PAYG fares directly to their accounts. TfL will operate a website to allow customers to track their expenditure and journey history in advance of receiving their card statements.

So why would this make sense for TfL? First, they relieve the customer of the need to buy tickets or to top-up Oyster funds before making journeys. This is bound to save many people time and will therefore become popular quite quickly. Indeed, for many people it could open up an ability to spontaneously leap on a bus or a train without thinking that was previously impossible. These benefits will be especially real for visitors to London, who typically arrive without an Oyster card. For them there will be no need to queue in line to get a card before using the TfL system, they will be able get on with their journey quickly. And for the many who are new to London, there won't even be a need to find out about Oyster. The contactless cards issued by the UK banks carry the well-known international payment scheme symbols and these provide the necessary visual clues for visitors to pay with confidence, in the same way as they do in shops around the world.

And for TfL there are substantial benefits too. Foremost among these is a diminution on the rate of Oyster card issuance, which continues to be substantial operating cost as about 600,000 cards are issued each month. Second, there will be a significant reduction in the commissions that TfL pays to retail partners who provide Oyster PAYG top-up facilities, which more than offsets the necessary increase in Interchange commissions payable to the card-issuing banks that are implicit in this scheme. Thirdly, there will be a dramatic fall in the customer service burden felt by customer-facing staff across the whole of TfL as the volume of queries about Oyster falls off.

Can credit/debit card payment systems work elsewhere in Europe?

For other European cities there are some interesting conclusions to be drawn from TfL's announcement. First, TfL has brokered an agreement with the payment schemes MasterCard and Visa about how their contactless cards can be used to pay for urban public transport in the same "tap-in, tap-out" manner as Oyster. Visa and MasterCard are working to turn this agreement into a detailed set of rules for acceptance that can be used by any city, and this work is expected to be complete by the autumn of this year. From that point, any European city will be able to discuss this kind of contactless payment card acceptance

with their acquiring bank and expect to get back a fully-detailed explanation of how it works and what the obligations on transport operators are. Although by European standards the British banks are relatively well advanced in adopting contactless payments, there is lots of activity elsewhere in Europe, notably in France, Italy and Poland where card-issuing banks have sizeable contactless payments programmes underway. Second, this model delivers comprehensive interoperability between all European cities in one direct step. It is already the case that EU citizens can travel freely around the EU by car in the sure knowledge that they will be able to use their credit or debit card to buy fuel whenever they need it. If cities across the EU adopted this model for the payment of single and return trips or daily passes on the urban public transport system, the same interoperability will have been achieved for public transport. Third, when compared with “transport-specific” smartcards like Oyster this model offers a similar or better smartcard experience to the customer at markedly lower cost to the transport operator, and therefore ought to be an attractive option.

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