

Oystercard – electronic ticketing system



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[pic] Oyster Card - Electronic Ticketing [pic] “ Time is money, we are told, and increasing mobility is a way of saving time, but how successful are modern transport systems at saving time? “ (John Whitelegg, “ TimePollution”, Ecologist 23, no. 4 - 1993) Service choice reasons [pic] If you live in London, you will probably know the Oyster Card fairly well. More or less everybody has one. You use it to pay for bus or tube travel - top up some money on the card and instead of buying a paper ticket each time, just place your card on a yellow reader, and it will work out how much the journey cost and automatically deduct it from your card.

It does save a ton of time, and quite a bit of money too (tickets are cheaper on Oyster). When I first came to London, I found extremely beneficial using the Oyster Card to move around the city and realized how crucial is this service in order to make people travel fast and saving time during their journey. I come from a place where the concept of “ Public Transport” is missed at all. We do not have underground systems, buses are few and always late.

In my hometown, Palermo, there are neither tram nor boat services and if you want to cycling you have not to be fussy: bicycle paths are just in the historical centre, which is the “ car” kingdom. Last but not least, people are not used to walk even if distances are very short. I have chosen to analyse the Oyster Card as I honestly think it is a light, useful and well-designed service supporting another service, in other words: an electronic ticketing serving the public transport system. Travelling around London, I have been using my Student Oyster Card and I rarely had problems.

When it has happened, I have always found punctual and kind help from the London Underground Staff. In a Metropolis as London is, where our journey is not an easy one, we need to go fast, simplifying all the touch points that allow us to buy a ticket, to board on a bus or to finally come back home. My experience with this service has been pleasant and easy so far, and I guess most of the people who live in London will agree with me. [pic] Piccadilly Circus - picture taken by myself. Value proposition [pic]

Project: Oyster Card Designer: Transys Year: 2002 [pic] The Oyster Card, developed as part of the ? 1. 2 billion PrivateFinanceInitiative, was introduced for three reasons: first, to reduce queuing at ticket offices during peak periods; second, to make better use of staff; and third, to reduce fraud. Transport for London placed the contract with Transys, a consortium of specialist firms, for the provision of an advanced ticketing system. It was hoped that the Oyster Card would eventually replace most paper tickets.

The smartcard system went live in November 2002 when the Oyster brand was launched and the first cards were made available to 80, 000 staff. [1] Fraud, estimated to be running at ? 43million per year, was the main driver of the project. The main loss of revenue stemmed from customers either travelling without tickets or using tickets not valid for the whole journey. Other countries have similar smart cards and some of them are used for other types of micro-payments as well as transport - for example Hong Kong's Octopus card and Japan's Suica card.

At the moment about over 70 similar systems are runned across 5 continents. Since the Oyster card has been introduced in London, the

advantages for the customer have been the speed and ease with which they can get through barriers and on to the station, and also in the savings that they make through using the Oyster Card. It can currently be used on the London Underground, London buses and trams, Docklands Light Railway and National Rail Services in London, providing “seamless journeys across London”. In future, the Oyster Card will be linked to the provision of other services including shopping.

This is a great example of advances in technology being applied to improve customer experience. [2] Core service [pic] What it is for? The Oyster Card is a form of electronic ticketing used on public transport services within the Greater London area of the United Kingdom. Where can use it? Oyster Card is promoted by Transport for London and is valid on a number of different travel systems across London, including: o London Underground; o buses; o the Docklands Light Railway (DLR); o London Overground, trams; o some river boat services; o most National Rail services within the London Fare Zones. How it looks like?

A standard Oyster Card is a blue credit-card-sized stored value card which can hold a variety of single tickets, period tickets and travel permits which must be added to the card prior to travel. It is also a contactless smartcard which passengers must touch onto electronic reader when entering and leaving the transport system in order to validate it or deduct funds. [pic] [pic] Front and back of an early Oyster card. How it works? The way Oyster works is pretty simple: you purchase the card, buy tickets or concessions either at terminals or online, then swipe the card at a reader when you take a train or bus trip.

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The Oyster card makes ticketing much more efficient for the consumer: no paper tickets, no handover of cash, little to no interaction with ticketing staff, speedier processing when entering the train station or bus. For the transport authorities, there are cost savings and instances of ticket payment avoidance / counterfeit are greatly reduced [pic] Oyster Card aims to replace the paper Travelcard by storing period tickets electronically. [pic] [pic] Examples of card readers at London Tube Stations.

The cards may be "recharged" in person from numerous sales points, by recurring payment authority or by online purchase. Usage is encouraged by offering substantially cheaper fares on Oyster than payment with cash. [3] The card was first issued to the public in July 2003 with a limited range of features and there continues to be a phased introduction of further functions. By March 2007 over 10 million Oyster cards had been issued[4], and more than 80% of all journeys on services run by Transport for London used the Oyster card. [5] Technology [pic]

The Oyster card is a contactless smartcard, with a claimed proximity range of about 8 cm (3 inches). The scheme is operated by TranSys, and is based on NXP/Philips' MIFARE standard 1k chips provided by Giesecke & Devrient and SchlumbergerSema. [6] [pic] A damaged card, revealing the microchip in the lower right corner, and the aerial running around the edge of the card. MIFARE DESFire is now being rolled out on newly issued Oyster cards starting January 5th 2010. It is the same contactless smartcard as Touch 'n Go card in Malaysia which is mainly used for tollway fares. [pic]

The Malaysian Touch 'n Go or TnG smart card. The technology used for the Oyster card is known as radio-frequency identification (RFID), which is the same technology used in other electronic pass cards like Japan's Suica fare cards and other cards used all over the world. [7] [pic] The Japanese Suica (??? Suika) smart card. Suica Smart Card additional services: - Operating lockers; - Airport check-in; - Coupon; - Bank account access. Advertising, Brand Identity and Analogies [pic] The London Tube Oyster card resides inside a plastic thingie that opens up, just like a clam (oyster) does.

According to Nicole Carrol, then of EDS, the name reflects the way " the oyster protects a pearl in much the same way that the card protects the cardholder's money. "[8] [pic] [pic][pic] Oyster Current more popular Oyster card wallet By Ikea Yellow background, blue writing, unmistakably IKEA. But it is not just the colours of the most popular Oyster Card which remarks the sponsor, it is also the sentence(s) on the leaflet: " Travel is a means to an end.

Home. " Fact behind the story: It's the IKEA latest campaign about putting the concept of HOME in the Londoners minds. Two years ago, in fact, Swedish home store Ikea is launching a ? 2 million outdoor campaign which included sponsorship of the Ideal Homes Show 2008. Since the Oyster Card has been introduced, several different type of wallets have been launched and produced such as: Designer Oyster Card Wallets, Oxfam, Pimp My Oystercard (by Ben Jarvis and Tim Crook -badoyster, a Company that makes satirical oyster card wallets. [9]), Virgin, and so on.

Every one aimed to advertising or sponsoring a Brand or a Company just because a Oyster Card wallet is a good launch window. [pic][pic][pic] [pic] [pic][pic] Exaples of Oyster card wallet. Adverstising Campaigns examples: Agency: M & C Saatchi Client: Transport for London a. One poster was headlined " Blue is the new pink". It showed a photograph of a one day Travelcard and an Oyster card. Text below stated " Faster Smarter Easier Oyster". b. A second poster was headlined " The correct change". It showed a photograph of an Oyster card. Text below stated " Faster Smarter Easier Oyster". c. A third poster stated " Did you know?

Using Oyster is cheaper than buying daily single tickets. Ask our staff about Oyster Pre Pay. " d. A fourth poster stated " Still paying cash for single and daily tickets? Using Oyster Pre Pay is: cheaper quicker - avoid queues more convenient - no need to plan your journey in advance ... ". [10] Features Registration and protection Oyster Cards can be registered or protected for loss or theft. Full registration can be done at a London Underground station, an Oyster Ticket Stop (shop) or a Travel Information Centre: an Oyster registration form must be filled in (either at time of purchase or subsequently).

Registration enables the customer to buy any product for the card and to have an after-sales service, and it protects against theft or loss. All adult Oyster Cards purchased online or by phone are fully registered. (This does not include Visitor Oyster Cards.) Oyster Cards obtained at stations or shops cannot be fully registered online. However customers can protect their Oyster Card online by setting up an Oyster online account and recording their card to that account. Sales Oyster Cards can be purchased from a <https://assignbuster.com/oystercard-electronic-ticketing-system/>

number of different outlets in the London area: London Underground or London Overground ticket windows; o cash-only vending machines at some stations, they charge ? 5 for the card (? 3 refundable deposit and ? 2 worth of credit); o about 2, 300 Oyster Ticket Stop agents (usually newsagent shops); o selected National Rail stations which are also served by London Underground; o Travel Information Centres; o online via the Oystercard website; o by telephone sales from TfL. [11] [pic] Oyster Card Machine installed at London Bridge station in December 2006. A refundable deposit of ? 3 is paid for all new Oyster Cards. 12] A registration form is provided at the time of purchase. If the form is not completed the Oyster Card is restricted to Pay as you go and weekly tickets. Most National Rail stations and termini do not sell or top up Oyster card products; TfL publish a list of the participating stations. At several main line termini, TfL run Travel Information Centres which do sell Oyster. Reporting Touch screen ticket machines report the last eight journeys and last top-up amount. The same information is available as a print-out from ticket offices, and also on-board London Buses by request.

The balance is displayed on some Underground barriers at the end of journeys that have caused a debit from the balance and can also be requested at newsagents and National Rail stations that provide a top-up facility. A complete 8 week 'touch' history can be requested from Transport for London: For registered and protected Oyster Cards, Transport for London can provide the history for the previous 8 weeks, but no further back. The Oyster website gives details of the most recent journeys charged to pay as you go if and only if credit has been purchased online, but not for other journeys, or those paid for by Travelcard.

Renewals When the Oyster Card Travelcard is due to expire, it can be renewed at the normal sales points and ticket machines at London Underground or London Overground stations, Oyster Ticket Stop agents, or some National Rail stations. Travelcards can also be renewed online via the Oystercard website, or by telephone sales from TfL; users must then nominate a Tube station where they will swipe their card in order to charge up the card with the funds purchased. This can only be done the day after ordering. [13]Travelcard renewals cannot be added from a reader on a bus.

Recharging When the PAYG balance runs low, the balance can be topped up at the normal sales points or ticket machines at London Underground or London Overground stations, Oyster Ticket Stops or some National Rail stations. All ticket offices at stations run by London Underground will sell or recharge Oyster cards, or handle Oyster card refunds. However, some Tube stations are actually operated by National Rail train operating companies, and their ticket offices will not deal with Oyster refunds. DLR ticket offices do not sell any Oyster Card top-ups or handle refunds.

PAYG funds and Travelcard season tickets (but not Bus & Tram Passes) can also be purchased online via the Oyster online website or by calling the Oyster helpline; users must then select one station or tram stop where they will validate their card in order to load the funds or Travelcard purchased. This should be done as part of a normal journey to avoid the risk of paying an Oyster maximum fare. If the customer is purchasing PAYG, the top up will be at the gates of their nominated station, or Tramlink stop the next day (ready for first train, provided they made the purchase before 11 PM the previous night).

It will remain at the gates for 7 further days before dropping off the system. If the customer purchases a Travelcard season ticket, it will 'arrive' at the gates, up to 5 days before the start date of the ticket and will remain there until 2 days after the ticket has started. If the customer does not make their pick up in time, it will take a further 14 days to refund automatically to the bank card they made the purchase with. [14]Top-ups of this type cannot be added from a reader on a bus. Auto top-up Customers can set up and manage Auto top-up online for their existing Oyster Card.

They register a debit or credit card, make a payg top-up purchase (minimum ? 5) and select either ? 20 or ? 40 as the Auto top-up amount. Alternatively, a new Oyster card with Auto top-up and a minimum of ? 5 pay as you go can be ordered via Oyster online. Whenever the pay as you go balance falls below ? 5, ? 20 or ? 40 is added to the balance automatically when the Oyster Card is touched on an entry validator. A light on the Oyster reader flashes to indicate the Auto top-up has taken place and an email is sent to confirm the transaction. Payment is then taken from the registered debit or credit card.

To ensure successful transactions, customers must record any changes to their billing address and update their debit or credit card details as necessary. [pic] Top up machine Touching in and out system [pic][pic][pic] London Underground ticket barriers with yellow Oyster readers Travellers touch the card on a distinctive yellow circular reader (a Cubic Tri-Reader) on the automated barriers at London Underground stations to 'touch in' and 'touch out' at the start and end of a journey (contact is not necessary, but the range of the reader is only a few inches).

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Tram stops and buses also have readers, on the driver/conductor's ticket machine and, in articulated buses, near the other entrances also. Oyster Cards can be used to store both period travelcards and bus passes (of one week or more), and a Pay as you go balance. The system is asynchronous, the current balance and ticket data being held electronically on the card rather than in the central database. The main database is updated periodically with information received from the card by barriers and validators.

Tickets bought online or over the telephone are " loaded" at a barrier or validator at a preselected location. [pic][pic][pic] Oyster validators are placed at most entrances on London buses. Pay as you go system Oyster Route Validators [pic] The yellow symbol for Oyster validators. In addition to holding Travelcards and bus passes, Oyster Cards can also be used as stored-value cards, holding electronic funds of money. Amounts are deducted from the card each time it is used, and the funds can be " recharged" when required.

The maximum value that an Oyster card may hold is ? 90. This system is known as " pay as you go" (abbreviated PAYG), because instead of holding a season ticket, the user only pays at the point of use. The use of PAYG differs across the various modes of transport in London, and passengers are sometimes required to follow different procedures to pay for their journey correctly. [pic] The pink symbol for Oyster Route validators In 2009, TfL introduced a new form of Oyster Card validator.

These validators, distinguished from the standard yellow validators with a pink-coloured reader, do not deduct funds but are used at peripheral interchange points to confirm journey details. Oyster Pay as you go users travelling between two points without passing through Zone 1 are eligible for a lower fare, and from the 6 September 2009 they can confirm their route by touching their Oyster Cards on the pink validators when they change trains. By doing this, they can be charged the appropriate fare without paying for Zone 1 travel. [pic] A Thames Clipper river bus service

As with Underground, Buses, River Buses and DLR journeys, Oyster PAYG users on National Rail must swipe their card at the start and end of the journey to pay the correct fare. PAYG funds may also be used to cover any additional fares due from season ticket holders who have travelled outside the valid zones of their season ticket. Many large National Rail stations in London have Oyster Card-compatible barriers. [pic] National Rail ticket barriers with yellow Oyster readers [pic] Standalone Oyster readers provided at interchange stations between National Rail and the Tube. Pricing

The pricing system is fairly complex, and changes from time to time. The most up to date fares can be found on Transport for London's FareFinder website. To encourage passengers to switch to Oyster, payg fares (including Bus and Tram fares) are generally much cheaper than cash fares: A cash bus or tram fare is ? 2, while the single Oyster fare is ? 1. 20, but capped at ? 3. 90 for any number of trips in a day. Using pay as you go, a single trip on the Tube within Zone 1 costs ? 1. 80 (compared to ? 4 cash), or from ? 1. 30 (? 3. 50 cash) within any other single zone. Penalty fares and maximum Oyster fare

In order to prevent " misuse" by a stated 2% of passengers, from 19 November 2006 pay as you go users who do not both 'touch in' at the start and 'touch out' at the end of their rail network journeys are charged a 'maximum Oyster fare' - currently ? 6 (Mon - Fri 06: 30 - 09: 30 & 16: 00 - 19: 00) / ? 4. 30 (at all other times) for most journeys, or more if the journey begins or ends at certain National Rail stations. Depending on the journey made, the difference between this maximum fare and the actual fare due is automatically refunded to the user's Oyster Card upon touching out.

Users must touch in and out even if the ticket barriers are open. At stations where Oyster is accepted but that do not have ticket barriers, an Oyster pass validator will be provided for the purposes of touching in and out. The maximum cash fare applies even if the daily price cap has been reached and does not count towards the cap. Maximum cash fares may be contested by telephone to the Oyster helpline on 0845 330 9876. [15] This involves providing the Oyster Card number and the relevant journey details; further journeys appearing on the card are helpful to validate the user's claim.

If the claim is accepted then the maximum Oyster fare minus the cost of the journey will be refunded. The customer should make the pick up as part of his or her regular travel pattern. This is because when they touch the reader with their Oyster Card, not only will the refund go on to the card, but a new journey will start. Oyster users who do not touch in or out when making a journey (in only for bus and tram journeys) may be liable to pay a penalty fare (currently ? 50) and/or reported for prosecution if caught by a revenue protection inspector. Issues

Technological and security issues The system has not been without technical setbacks and criticisms. Passenger groups have expressed concern that buying single travel tickets with cash is far more expensive than using Oyster Cards, and it is suggested that this is putting many tourists off coming to London. Oyster has been promoted by Visit Britain and TfL, who sell them on their website and in their offices around the world. Despite this, visitors to London have often never heard of Oyster and its benefits, and are paying higher cash fares unnecessarily. A 3 deposit is also seen as a deterrent to tourists. Another complication is the confusing terms of validity on National Rail services which serve many popular tourist sites on the outskirts of London. The system has been criticised as a threat to the privacy of its users. Each Oyster card is uniquely numbered, and registration is required for monthly or longer tickets, which are no longer available on paper. Usage data are stored both on the card and centrally by Transport for London; recent usage can be checked by anyone in possession of the ticket at some ticket machines.

Privacy groups consider it a form of mass surveillance and are concerned with how these data will be used, especially given the introduction of the London congestion charge by Mayor of London Ken Livingstone in February 2003. The police have used Oyster card data as an investigative tool, and this use is increasing. Between August 2004 and March 2006 TfL's Information Access and Compliance Team received 436 requests from the police for Oyster card information.

Of these, 409 requests were granted and the data was released to the police.

[16] The system has been criticised for usability issues in general system,

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website and top-up machine design. The most significant usability issue is that pay as you go customers who for whatever reason do not "touch out" at the end of their journeys will not be charged correctly. Users who have run up a pay as you go debt of as little as ? 1 are prohibited from using any period travelcards on the card until the debt is repaid.

Another criticism is that problem diagnosis by London Underground staff is generally poor[citation needed] as the system is new and complex, and the staff unfamiliar with all its workings and insufficiently trained; this causes passenger frustration. On 10 March 2005 a software fault meant that the Oyster system was inoperable during the morning rush hour. Ticket barriers had to be left open and pay-as-you-go fares could not be collected. [17] On the day that the pay-as-you-go went live on all Oyster cards, some season ticket passengers were prevented from making a second journey on their travelcard.

Upon investigation each had a negative prepay balance. This was widely reported as a major bug in the system. [18] However, the reason for the "bug" was that some season ticket holders, either knowingly or otherwise, were passing through zones not included on their tickets. The existing paper system could not prevent this kind of misuse as the barriers only checked if a paper ticket was valid in the zone the barrier was in. Touching Points and Journey Mapping [pic] Mapping the user journey from buying an Oyster Card, touching in at the barrier, catching the tube, touching out, going to work and coming back home following the backwards course.

Highlighting all the touching points: • ticket machine office to purchase or top up the Oyster Card; • barriers validators in and out; • TfL website; • TfL green-line; • travel information center; • member of the staff for questions or problems; • crime department in case lost/stolen cards; • mail letter for student or photo cards [pic] Touching points [pic] [pic] Mapping the journey Surveys and Service Implementation [pic] Source: <http://www.transys.com/whatwedo/oystercardproject/results.php> [pic] Source: <http://www.transys.com/whatwedo/oystercardproject/implementation.hp> Conclusions In Principles of Marketing, Philip Kotler defines a service as “ any activity or benefit that one party can give to another, that is essentially intangible and does not result in the ownership of anything”. [19] I, like millions of other people travel to and around London every week day for work and so have found the Oyster Card an invaluable tool to help me in my journey. I think the main advantage of this card is that it means I can load a certain amount onto it for the month and then not have to worry about having actual cash on me to buy a new ticket each day.

The Oyster Card can be carried in your wallet just like a credit card and so is small, handy and easy to use. The other great thing about the Oyster Card is that it's cheaper to use per journey than if you buy a ticket with cash.

Another thing I like is that if you swipe in and then there is a long delay on you line and you have to swipe right out again without going anywhere you can go back up to the ticket office and have them refund your money back onto the card. This however, must be done within 15 minutes of swiping out again otherwise they will not refund it for you.

I also like the fact that if your journey is delayed for fifteen minutes or more (this happens quite a bit to me, sitting in tunnels for ? hour at a time) you can log onto the website given above and ask for a refund. You can enter your Oyster Card details so they can see you are telling the truth and then you will be sent a credit voucher in the post that you can then put back onto your Oyster Card to compensate you for your inconvenience. One of my criticisms though with the Oyster Card is that it does not always swipe first time and you are given a red light meaning you have to swipe your card again.

This often causes backup at the gate, especially at rush hour in the mornings or evening. Generally I find it is because you are standing too close to the gate and so if you back away a bit you should be ok to swipe after that. One thing I would urge is that you need to make sure that you swipe in and then remember to swipe out to complete a full journey and to avoid being charged a full amount. On one hand we can safely assume that such services are an optimized solution for our current need of travelling fast.

On the other hand, we do not know the unpredictable consequences of our design actions. As John Thackara warns us, increases in mobility cause negative impact on the environment [20] and we use time gained by speed in order to travel further [21]. ----- [1] <http://www.transys.com/whatwedo/oystercardproject.php> [2] Bill Hollins - <http://www.designcouncil.org.uk/About-Design/Design-Disciplines/Service-design-by-Bill-Hollins/13-lessons-in-service-design/>. [3] " What is Oyster? ". Transport for London. Retrieved 10 August 2008. 4] " Mayor to give away 100, 000 free Oyster cards". Media Centre (Greater London Authority). 17 April 2007. <https://assignbuster.com/oystercard-electronic-ticketing-system/>

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