consult hyperion
CHYPpings



Summer 2009

Customer focus
Transport for London

Transport for London (TfL) is a strategic transport authority, responsible for the planning and delivery of transport services in London. In 2002 it introduced the Oyster card, which has proven an incredible success with more than 20 million Oyster cards issued and in excess of 3 billion journeys made with Oyster last year. Since its introduction the proportion of cash payments on the tubes and buses has fallen to less than 3%.

In recent years, Consult Hyperion has worked closely with its clients in developing a number of innovative applications of Oyster. These include the Barclay's OnePulse card that combines a Chip and PIN Visa credit card, a Visa PayWave contactless interface and an Oyster contactless interface to deliver a three-in-one card for Londoners; and last year's highly successful trial run by O2, which included the Visa PayWave application and the Oyster application on an NFC phone. Consult Hyperion supported both O2 and Barclays with detailed knowledge of contactless smart cards and NFC technology to help make these projects a success. Both of these applications demonstrate that new technology can make travel more convenient for the customer, as well as provide additional benefits for the operator.

Consult Hyperion has recently been engaged by TfL to help in the move forward from the current highly successful smartcard ticketing scheme, to identify the benefits of current technologies and look to ways in which the scheme can offer greater convenience to customers in addition to providing reduced operating costs. As part of this drive there is a need to develop a new reader that in the future will be able to read ITSO, Oyster and contactless EMV cards so that travellers from the rest of the UK and around the world can enjoy the benefits of contactless travel in London.

Consult Hyperion will deliver against these complex and demanding challenges by drawing on our experience in payments, transit, contactless and mobile applications gained working at the forefront of these sectors.

Oyster is just one example of the new products and services made possible through the evolution of contactless interfaces and microprocessors. The combination of simplicity and convenience that consumers appreciate together with the speed and security that operators need makes the intersection of smart card and wireless interfaces a fruitful place to look for "game changing" mass market ideas.

Naturally, bringing the relevant processing, communications and security technologies together in a succesful combination require a knowledge of not only the technology abilities and constraints but the longer-term business ramifications of choices made in the early technology phases. This is why proper requirements capture, business analysis and design specifications are crucial to organisations looking to develop new products and services in this space: a superificial understanding of either can lead to expensive mistakes and lost opportunities.

For further information about our capabilities and experiences supporting organisations in Europe, North America, the Middle East and Asia, to find out how we can help your organisation, please contact:

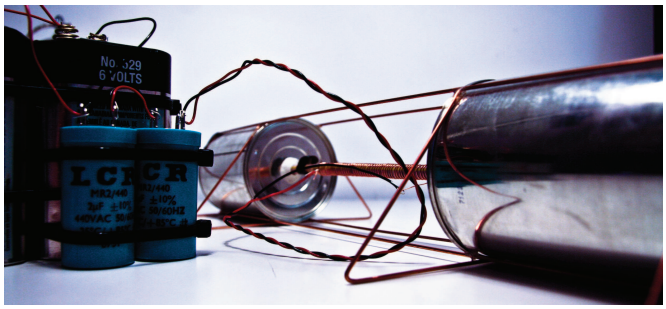
Mike Burden <mike.burden@chyp.com>

Consult Hyperion's Digital Money Fourm 2009

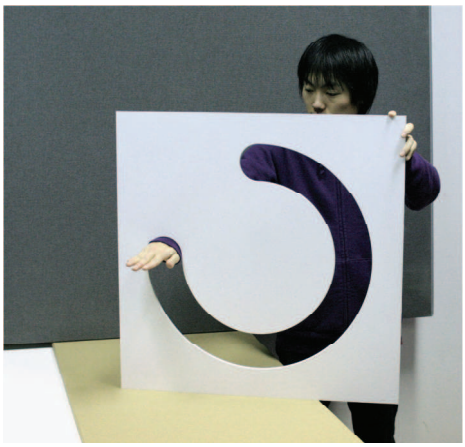
This year we were fortunate enough to be joined by four students from The Royal College of Arts.

Sometimes, technologists (and bankers!) have to recognise that there is a limit on their imagination about the use of technology in the longer term. We have to look outside our own discipline to gain a better understanding of what technology is doing.

Austin Houldsworth, Bernd Hopfengaertner, Daisy Ginsberg and Gunnar Green had been working on a project entitled "Money of the Future". The images below do not do justice to their work but do provide a window into their perceptions of how they think money might be transformed in the future. To find out more about their work and their visions for the future of money, please go to the Royal College of Art's online exhibition at: http://beta.interaction.rca.ac.uk/fom/



Electric Money
Austin Houldsworth.



Gunnar Green's *spectacle of paying* language. A practice tool for a gesture of £100 is shown above.



The Electronic Handshake
Bernd Hopfengaertner



Early Exit
Daisy Ginsberg

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Mobile 2 Factor Authentication (2FA)

David Birch, Director

We've long felt that the mobile phone will become the central identity device, the pivot of the emerging digital identity infrastructure. Plenty of other people seem to think the same, so it's puzzling that organisations that need significant improvements in both the security and the convenience of large-scale identity management are taking so long to exploit the mobile phone.

An obvious case in point is the banks. Since, in the UK, everyone who might conceivably bank online already has a mobile phone, one might reasonably have expected mobile phones to become a standard 2FA token for online banking and shopping. It's not exactly hard to imagine how that might work (as in Turkey, for example) but in the UK banks have opted for a simple "disconnected" 2FA that uses chip and PIN cards to generate one-time-passwords (OTPs) for logging-in to home banking (hereafter referred to as a "reader").

These devices can deliver maximum transaction security in challenge-response mode. When I want to send money to someone from my Barclays account, the bank sends me a "challenge" (depending on the bank, made from the destination account number and the amount) that I enter into the reader, with my debit card in it, and punch in the PIN. Then I take the number displayed and enter it into the web page. It's not that much of a hassle and I use it a couple of times each week, and I like not having to remember a passcode and secret word. But it's not obvious that, as a consumer, I would prefer one of these readers over either a) nothing, b) something simple with mobile phones such as an SMS one-time password or c) end-to-end security with digital signatures, so that the bank sends a digitally-signed and encrypted challenge to an application in the SIM that asks for a PIN and then generates a digitally-signed and encrypted response to the bank.

The reader is good, but it's not the perfect solution for me because I sometimes need to log in to my home banking from work. When I wanted to do this last week I couldn't, because I'd forgotten my 12-digit user identification and I have it written on a sticky note at home. Now, even if I remember to bring the sticky note with me, I'll have forgotten the reader!

By contrast, I always have my mobile phone with me. I have no intention of using it to log into my bank's mobile banking service (I tried it once: never again) but I would use it as a 2FA device to log in to my bank on the web. And if that were implemented using standard digital signatures (this is just how it is done by Turkcell), then I would use ideally the same service (perhaps now an income stream for the bank) to log in to other things as well.

Consult Hyperion's Digital Money Forum took place in London at the end of March. In its twelth year, it once again delivered the combination of discussion and debate, learning and fun, that has earned it the reputation as the place to be for people interested in the future of retail electronic payments.

This year's opening talk was given by Lawrence H. White. Larry is the F. A. Hayek professor of Economic History at the University of Missouri St. Louis and the author of amongst other things, 'Currency and Competition' and 'Free Banking in Britian 1800-1845', books that could change your view of both the history and future of money.



The forum was structured around four sessions followed by a variety of presentations and expert panels ranging from *What will make mobile-payments work* to *The ethnographic study of M-PESA in Kenya*. All the presentations along with the full agenda from the event can be found at http://www.digitalmoneyforum.com

The Digital Money Forum was a not-for-profit event, surplus funds were donated to the following charities:

Action Medical Research is an independent charity which has specialised in children's health for almost 60 years.
Jubilee Action is an international Christian charity working to rescue and protect children of all faiths, races and cultures, facing the most serious injustices.
BUFFER, Breast Unit Fund for Education and Research is a Surrey-based charity helping women get their breast cancer diagnosis as early as possible.

Thanks again to everyone who helped make the event such a success.

Summer 2009



We are an IT consultancy that has spent two decades advising leading organisations around the world. We help them to reap real benefits from technological change in the field of secure electronic transactions: transactions ranging from retail payments to passport control and from mobile top-up to TV shopping. We help organisations to:

- ***Evaluate new business concepts*** to give clients a firm foundation for new ideas.
- ***Develop new products and services*** from specification to customer roll-out
- ***Test and certify complex systems*** using structured and automated techniques.

We support customers in reaching their goals in a timely and cost-effective way. We work in:

- ***Financial services*** where our clients include the world's largest payment schemes.
- ***Telecommunications and media*** where we advise world leaders such as Sky and Vodafone.
- ***Technology*** where we support some of the largest IT companies including EDS, NTT Data and Thales.
- ***Public sector*** where our work has ranged from ID card specifications to roadmaps for law enforcement.

Recognised as thought leaders in the fields of digital money and digital identity, experienced in the delivery and risk analysis of population-scale transaction systems (from identity cards to "Chip and PIN" payments), we have world-class expertise at every step in the transaction value chain, ranging from the authentication of transaction using smart cards and biometrics to the execution of transactions through mobile phones, the web and digital television.

For more information about our expertise and experience or to find out how we can help you to exploit new technologies please contact:

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Meet the team

Dick Clark

Principal Consultant

What hobies/pastimes do you have outside the office? Walking and golf.

What was the last foreign country you visited? I've just had an enjoyable weekend of golf on courses in Belgium and the Netherlands - good golf courses and great chips. Co-incidently, work-wise the last foreign country I visited was also Belgium, to the offices of a global payment scheme.

What exactly were you working on when you were asked these questions? For a global non-government organisation. I'm currently working on a new initiative that will aim to help stimulate and support start-up mobile money transfer and mobile banking schemes for the unbanked in developing countries.

What is your current favourite gadget? A 'Laser Rangefinder with Pinseeker' for judging distances and club selection - essential piece of kit that's ridiculously expensive for what it does!

What was your first job? Fruit and vegatable picking during the summer months. Character-building jobs that taught me to avoid manual labour.

Who had the biggest influence on your career? No single person stands out for me. I've tried to listen and use the advice of people who are more knowledgeable, and I guess most of my colleagues at Chyp have fallen into this group over the years.

If you could change something about the industry what would it be? A change in the attitude of large organisations to stop searching for the killer-app with PowerPoint and try stuff in the early stages of the ideas lifecycle. And when an idea is moved forward, use a rigorous, structured and agile implementation approach.

CHYPpings is published quarterly by Consult Hyperion and is avilable free of charge from our web site or by e-mail application to info@chyp.com for the latest issue.

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