



Future payments will be invisible, controlled by chips implanted in human bodies, predicts **Chris Skinner** of the Financial Services Club.

CUSTOMERS GO HANDS-FREE



Although all of today's payments are chip-based, because we place the chips inside things like cards and phones, we talk about future payments as being contactless and mobile. This is wrong: we should be talking purely about chip payments.

In particular, we should remember how the chip is getting more powerful and capable. Moore's law of twice as much processing power for half the cost continues to apply to chips as much as to computers.

For example, the Mondex Smart Card of 1996 was expensive and practically unusable by comparison with the EMV card of today. And while RFID and NFC chips are cheap and basic, the wireless chip of tomorrow will probably be as powerful as today's computers and laptops.

This means we will be using chips to automate almost everything, from washing and cooking to mowing the lawn and driving cars. Although chip-based products are becoming hugely pervasive, banks have only placed chips in traditional products, such as plastic cards, because of the limitations of traditional thinking. Only now, led by other industries, are they starting to experiment with alternative chip-based payments, such as the mobile.

But here's the most radical concept for future payments: stick the chip inside the customer's body; make the human the payments vehicle. The fact is that the future is all about paying through invisible, wireless, chip-enabled human interactions.

Imagine a world...

Here's the idea. Imagine that chip-based products become really powerful within the next five years, as powerful as a laptop in 2000. As a result, the chip is offered as an implant for anyone to use in one of four applications.

The first is as a health monitor: the chip automatically senses and tracks blood pressure, cholesterol,

{ 'Banks have only placed chips in traditional products, such as plastic cards, because of the limitations of traditional thinking' }

- As chips get cheaper and more powerful, they will be used in more applications.
- Implanted chips can be used to monitor health, security and location.
- In the near future, everyone will be using implanted chips to make payments.

brain activity and heart rate 24 hours a day, and wirelessly transmits this to a base station in the automated home.

The base station then reports any unusual or suspicious changes in these parameters to your doctor, meaning a stroke or heart attack can be caught at an early stage.

Because the chip is monitoring heart, brain and blood activity, if it is removed from the body, it becomes null and void. This means the chip is guaranteed to operate only as long as it is implanted in its owner.

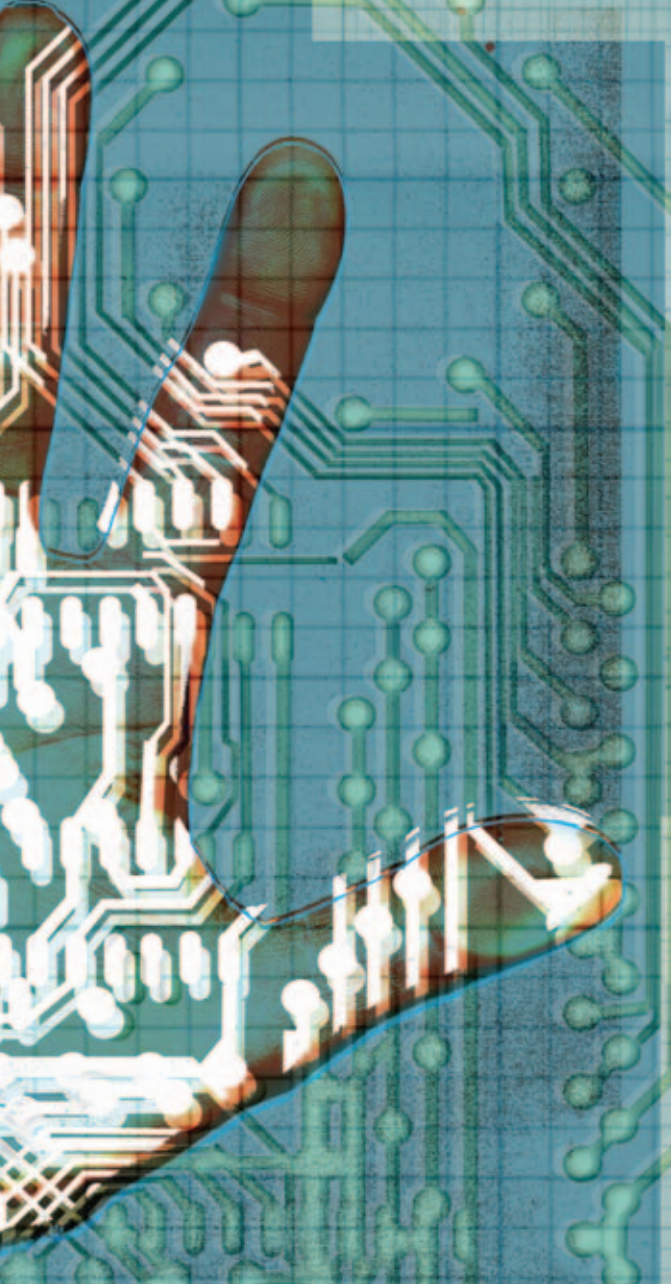
As a result, the second use is for immigration and identification. Instead of passports and ID cards, governments can use chip implants to provide fast and convenient travel services.

A third benefit would be as a locator. Just as we chip our pets, we will be able to chip ourselves so we can be tracked. This would alleviate our concerns over security and terrorism, but would also enable us to be found if we are lost.

This is not too far-fetched: people already chip their children, although the chips are not implanted. They are in phones and we use GSM tracking to find out where they are. Now, various firms are offering chip-implanted shoes so you can do the same without your child knowing.

Soon, chip-based location services will become standard and the idea of having one inside is going to be the most reassuring way for a parent to track their child, as they cannot be lost or dumped.

This leads to our fourth application. If chip implants can guarantee health, security and ease of travel, why not use the same services for payments?



Far fetched?

You may think that the idea of consumers having chips implanted in their bodies is ludicrous, but many people thought mobiles were only for rich idiots when they first came out and now almost everyone has one. Only a few years ago, MP3 players were viewed with suspicion, then the iPod became a multi-billion-dollar global market.

In 2004, a group of payment professionals told me that mobile payments were about ten to 20 years away and would only succeed when a WalMart or Virgin offered the service. Two years later, PayPal Mobile was launched and, within a few months, mobile payment pilot programmes were everywhere.

Implanted chips will be used in a number of pilot applications by 2010; they will be noticeable by 2015 and common by 2020.

Chip implants will become common if it makes sense. It makes sense for national security and cross-border movements. It makes sense for family health and security. It just makes sense. As a result, chip-based invisible payments will become increasingly common.

Paper, cardboard and plastic as identification with passwords, identification numbers and fingerprints is all so 20th century. After all, when do you ever see them being used in *Star Trek*? FBA

Science fact or fiction?

How invisible payments would work

John is a hardworking man with a complex multichannel financial account with Acme Bank. Acme's wireless application has identified that John has a chip implant and verified his details with the government's national identity database. As a result, his bank switches on the wireless payments service related to his unique chip identification in the same way that it would have done for his mobile RFID or SIM chip, or his EMV contactless card.

John is now free to start making invisible wireless payments. His first port of call is the electronics shop to buy Apple's latest release of iGod, where users are able to control everything in their house using a simple iPod-style control panel. The iGod, priced at \$5,000, is a pretty sizeable purchase and John is keen to see if his new Acme wireless payments service will work. As he picks up his order, he sees the store's payments screen flash up 'Payment made of \$5,000 from debit account John Jones, Acme Bank'. John is happy with the payment and walks out of the store with his goods.

What happened?

When John selected the iGod, the wireless sensors picked up his chip signal indicating a preferred account for payments and activated the payments process. These wireless sensors are the same as those used for NFC payments, just a bit more powerful.

Why did he not need to authorise the payment?

Authorisation came from the fact that John walked away with the goods without changing any instructions. If he had left the goods in-store, no payment would have been made.

Why did he not have to provide identification?

The system is just looking for the chip to be live, as it will not work if it is removed from his body. Furthermore, since the chip is monitoring his vital signs, it knows that he is not being robbed or mugged or forced to make a payment he does not want to make.

Chris Skinner

Chris Skinner is the CEO of Balatro, a think-tank on the future of financial services, and chairman of the Financial Services Club, a UK-based group that meets regularly in London and Dublin to debate the future of the financial markets.

Skinner is the author of two books: *The Future of Banking in a Globalized World* and *The Future of Investing in Europe's Financial Markets after MiFID*.

Prior to founding Balatro, Skinner was vice president of marketing and strategy for Unisys Global Financial Services and strategy director with NCR Financial Services.

Websites: www.balatro ltd.com, www.fsclub.co.uk, www.shapingtomorrow.com



Looking into the crystal ball

For expert opinion on what's next in banking, visit www.banking-gateway.com