

From plastic to bits – payment habits are changing

26 November 2007

Payment habits are changing rapidly. The creation of a Single Euro Payments Area (SEPA) will improve the efficiency of payments in Europe. But are we also facing a bigger change with the development of electronic payments?

Payments are part of our everyday life. Every time we make an economic decision, it is followed by some form of payment. Statistics show that nearly 300 different types of account-based payment are effected in Finland per capita every year. This includes company-to-company payments, which pushes up the average value of account-based payments as high as EUR 2,200. On a rough estimate, the volume of payments in cash is at least as high, although as a proportion of total payments cash payments are on the decline.

Finnish households consume an average of EUR 60 in cash per week, as nearly all the cash consumed is withdrawn from ATMs. Correspondingly, 170 purchases are paid by card annually, and the average value of a purchase is EUR 35. The value of purchases paid by card per week is approximately EUR 115, ie nearly double the value of cash purchases.

Finnish households consume an average of EUR 310 per week per capita, which means cash payments account for

approximately 20% and card payments approximately 37% of total consumption. The remaining 43% is divided mainly between credit transfers and direct debits. The proportion of direct debits is much smaller than that of credit transfers.



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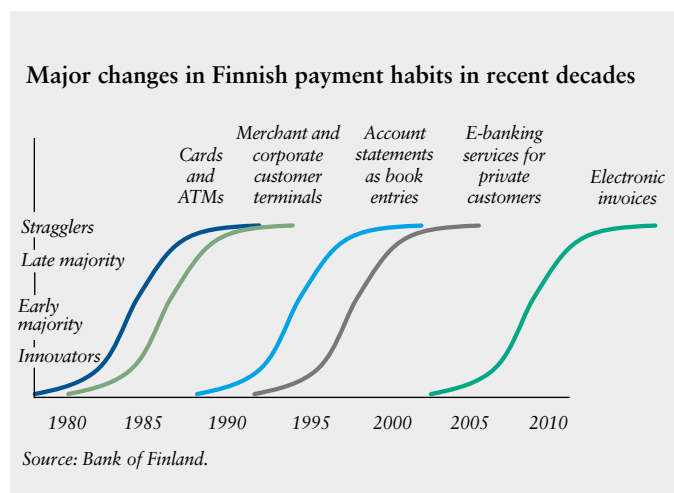
Changing payment habits

Payment is a necessity. It must be simple and practical. Consumers' payment habits are usually quite fixed and rarely change.

This is clearly shown in an examination of previous major changes in payment habits (Chart 1). Payment habits have historically changed¹ in 10-year cycles, and the process has followed the S-shaped curve typical of behavioural change. In the initial period of slow progress,

¹ The Bank of Finland has studied changes in payment habits in a special project, the final report of which is currently being finalised. For more information on the project, see the Bank of Finland website (www.bof.fi/sc/payhabits2010).

Chart 1.



innovators begin using the service. This is followed by a period of strong progress when the majority adopts it. At the end of the changeover period there is another period of slow progress where those slowest to change begin using the new service.

Finnish payment habits underwent major changes as private customers began using cards and ATMs in the 1980s and online banking services around the turn of the millennium. Companies and retailers began using banking terminals in the 1980s and automated their accounting processes by introducing the use of account statements as book entries.

The next major change was the arrival of the electronic invoice. This

will significantly change the way companies and private citizens pay invoices in the years ahead. Similar trends have also been experienced in other European countries, but usually at a later stage than in Finland and the other Nordic countries, which are the clear forerunners.

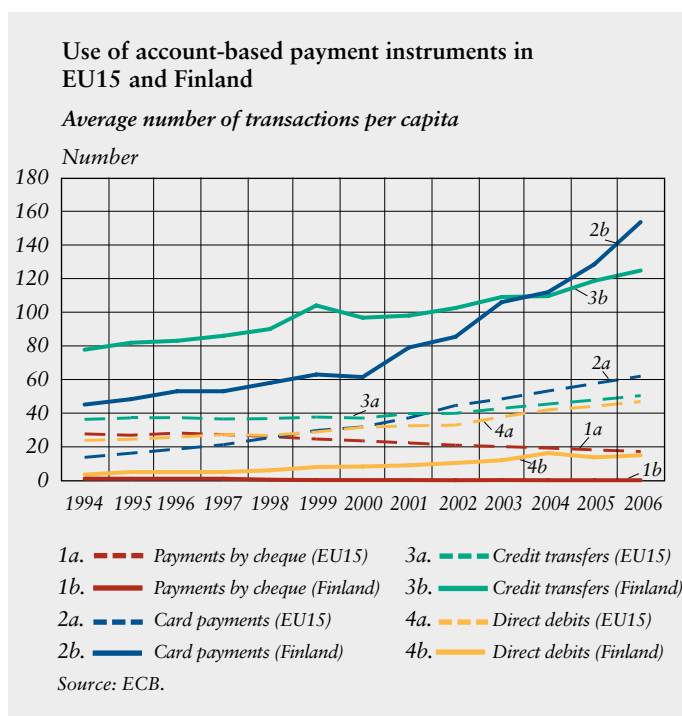
Changing trends in Finland and Europe

Statistics reveal that there are at present six significant payment trends:

- The use of account-based payments is growing robustly, and they are replacing cash.
- Electronic account-based payments are replacing account-based payments in paper form.
- Self-service payments are increasing at the expense of services provided at a bank branch.
- The use of ATMs is decreasing and is being replaced by card payments at point of sale.
- Growth in the use of debit cards exceeds growth in the use of credit cards.
- The market share of direct debits is declining relative to the other account-based payment instruments.

The number of card payments has increased the most (12% per annum) in the EU15 (Chart 2). The increase in card payments has also been strong in Finland (on average 10% per annum) compared with other payment methods. In Finland, the number of card payments is well

Chart 2.



above than the EU15 average (difference: 92 transactions per capita in 2006). The number of credit transfers has grown steadily, by approximately 4% annually, and the number of credit transfers is much higher in Finland than in the other countries (difference: 74 credit transfers per capita in 2006). Direct debits have become somewhat more popular in Europe in the present decade. Finns use direct debits less than EU15 inhabitants on average (difference: 32 transactions per capita in 2006). In Finland, the slow growth in the use of direct debits came to a halt in 2004. The cheque is a rarely used payment instrument in Finland, but in some European countries (eg France, the United Kingdom, Ireland, and Portugal) it is still widely used. Payment by cheque is also clearly declining. Even so, the number of cheques written per EU15 inhabitant was still approximately 17 in 2006.

Finland is the clear leader in the number of electronic payments per capita (Chart 3), with over 250 transactions per annum. Finland and the Netherlands have the highest level of automation, over 96% of all payments being transferred from customer to bank in electronic form. The situation varies from country to country, but the trend is nevertheless clear.

The turning point in consumers' payment habits is around 60–70 payment card transactions per annum, after which the use of ATMs begins to decline (Chart 4). The more

Chart 3.

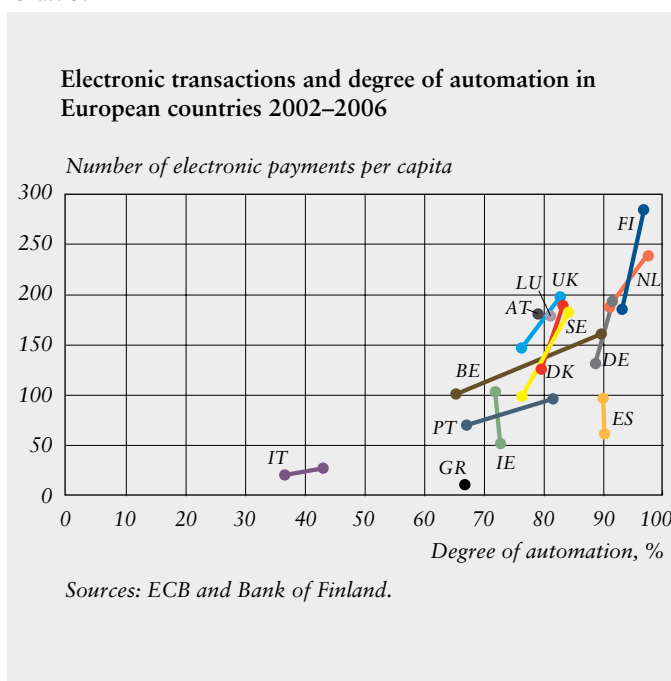


Chart 4.

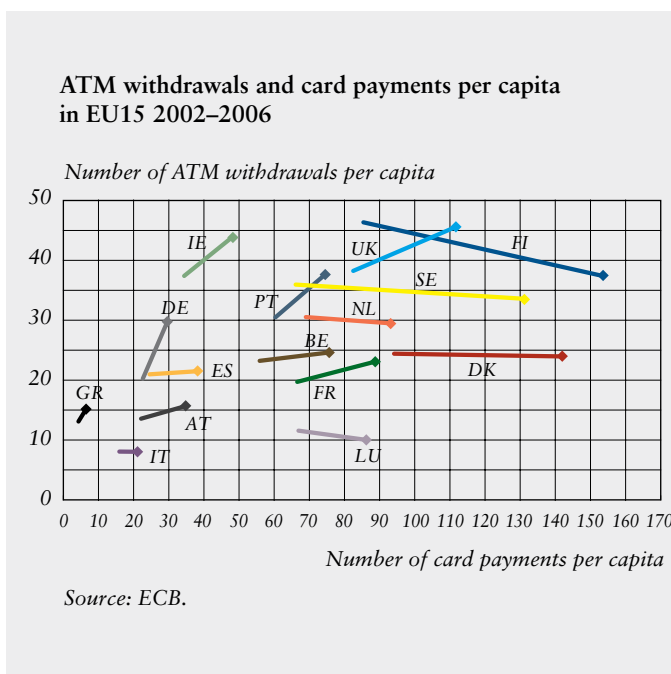
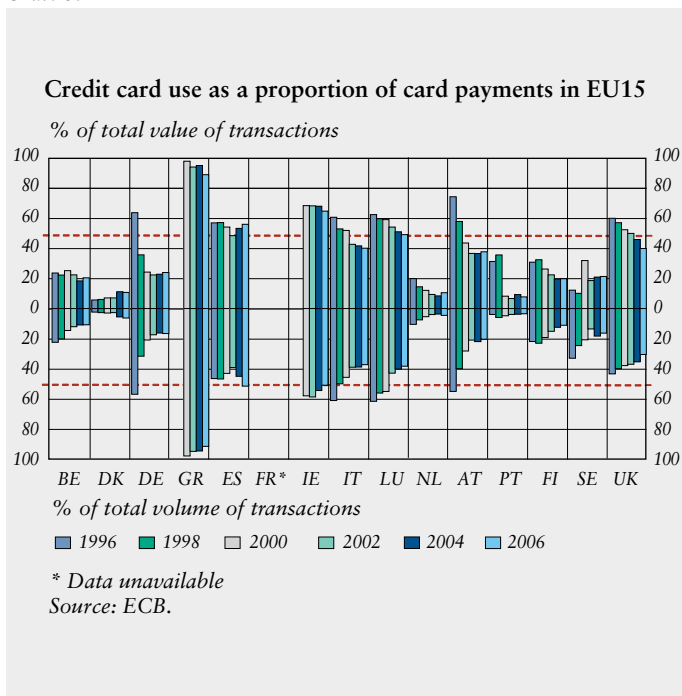


Chart 5.



customers use cards in paying for purchases, the less cash they need to withdraw from ATMs. The majority of EU15 countries are, however, only at the stage where customers are replacing cash withdrawals at bank branches with ATM withdrawals. Finland has been the leading country in the use of cash ATMs, but their use has begun to decline significantly. Finland is also the leading EU country in the use of payment cards, followed by the other Nordic countries.

In almost every EU15 country, credit card payments have declined as a proportion of total card payments (Chart 5), combined with a corresponding increase in debit card payments. This is the case in Finland, too, where the overwhelming majority of card payments are with debit cards. The only exception to the trend is Greece, where the marketing of payment cards focuses almost exclusively on credit cards.

The market share of direct debits varies considerably across countries (Chart 6). In terms of value, the proportion of direct debits is relatively small, but in some countries – particularly Germany and Spain – their proportion of the total volume of transactions is relatively high. The market share of direct debits has decreased in several countries, but there are some countries in which it has increased. Finland is firmly in the camp of those countries with a very low use of direct debits.

Chart 6.

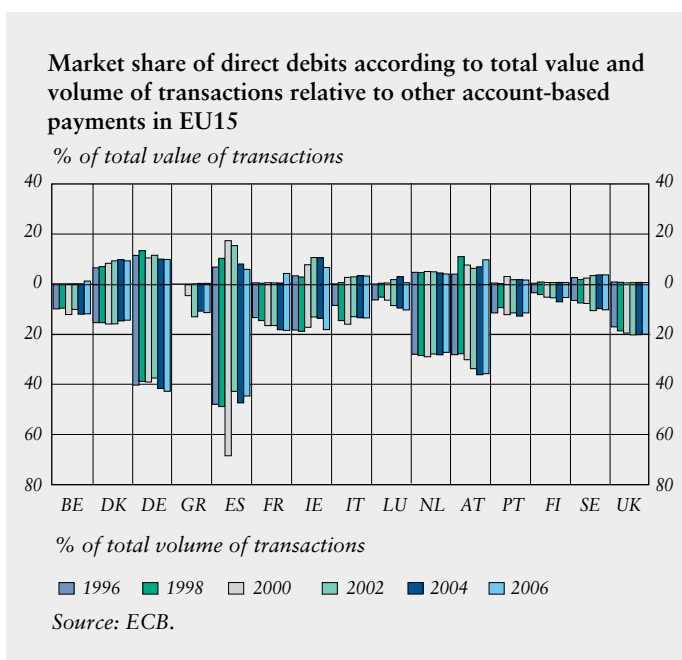
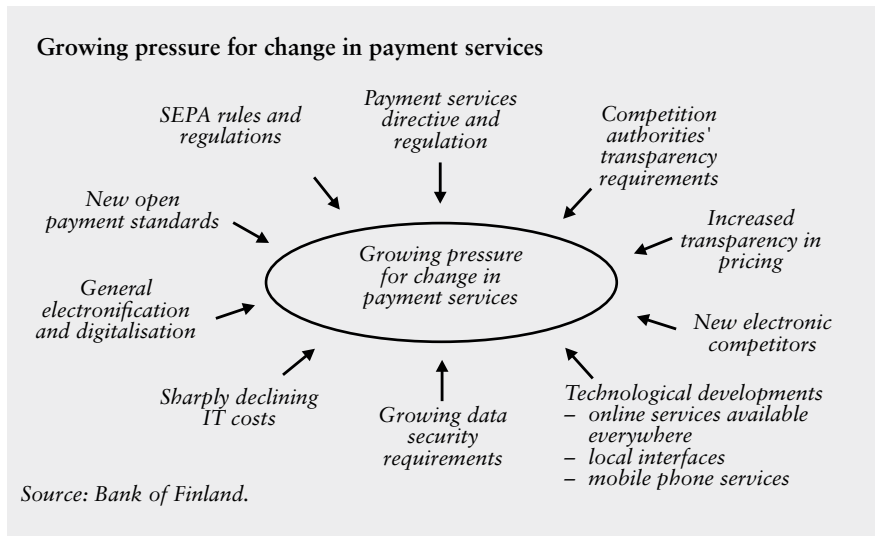


Chart 7.



Increasing pressure for change

Payment systems are currently being affected by several significant external factors (Chart 7). For this reason we can reasonably expect major changes ahead in the development of payment habits.

A Single Euro Payments Area (SEPA) is currently being established in Europe. The aim is to make payments in the euro area as simple and at least as efficient as in the most sophisticated current national systems.

Increased competition will foster more efficient operations, while common standards will generate economies of scale. The payment processing rules of banks will be harmonised and new efficient payment standards will be drafted. With the introduction of the Payment Services Directive, payment legislation will also be harmonised. The directive will enter into force in November

2009 and contains provisions on eg booking payments at full value, the prohibition of value dating, a maximum one-day execution time (apart from a few exceptions), and banks' and customers' general responsibilities for payments. Regulation (EC) No 2560/2001 on cross-border payments in euro already stipulates that the charges levied for cross-border payments in euro must be the same as those for domestic payments in the euro area.

Creating a single payments area will, however, be a longer process. As Finnish payment services are already fairly sophisticated, the benefits of a single payments area will initially be minor in Finland, and they will be fully gained only after some time, compared with countries that have less sophisticated payment systems.

Competition authorities have paid attention to the need to enhance

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competition in payment services.² New open standards and increased transparency in pricing will contribute to achieving this goal. Customers find it hard to choose efficient payment instruments and advantageous service providers when there is widespread use of hidden pricing based, for example, on value dating or the use of interest income from deposits and loans to subsidise payment costs and the inclusion of payment costs in product prices.

If withdrawing cash from an ATM appears to be cost-free, this boosts the use of cash. By paying for purchases by payment cards we could prevent or cut the costs of maintaining an extensive network of ATMs, the transportation of cash, and cashing up.

Data connections favour new services

New international electronic payment solutions enabling fast and inexpensive online and mobile payments are also being launched on the payments market, which will boost competition significantly.

Electronification and digitalisation are progressing rapidly. Broadband connections and personal computers will soon be found in almost every household. Nearly every Finn already has a mobile phone, and the properties of mobile phones are continuously being developed. It

seems to be only a matter of time before payment cards are digitalised and incorporated into mobile phones, just as calendars, e-mail, cameras, radios and the Internet already have been.

Card payments could then be made by pressing the keys on the mobile phone, and the necessary payment information would be automatically transferred between the phone and the shop's payment terminal via a local connection. As mobile phones develop, it will become even simpler to purchase various types of tickets than it currently is to purchase Helsinki City Transport tram tickets via SMS text messages.

ICT costs continue to decline, by approximately 20–25% per annum. Modern Internet services are a clear proof that data communication, processing and storage capacity no longer hinder the processing of data – particularly in the case of payments, as these contain only a very small amount of data.

Cost trends and increased competition are likely to result in a decline in payment fees in the coming years. The full digitalisation of payments may cut costs to levels close to those of other extensive network services, such as e-mail and SMS text messages.

Network-based payment requires solid data security solutions. The more money is transferred in open networks, the higher the

² See eg the European Commission's 'Report on the retail banking sector inquiry', January 2007.

number of abusers and criminals it will attract. It is vital to invest in improving network security, and customers will have to learn how to identify the various forms of network crime. Network-based payments require solid customer identification methods and the encryption of the connections and transactions. Customers will need safe equipment that ensures the reliable storage and use of identification and encryption keys.

Customers looking for change and integration

Payment always entails the transfer of funds from payer to payee. In a modern economy, this usually takes place in the form of electronic credit transfers. In a bank-centred economy, this is also true when payments are made using cash, as consumers withdraw money from their bank account via ATMs and retailers deposit daily receipts on their bank accounts at the end of the business day. Money takes this physical form only temporarily.

The payment process is being digitalised into electronic account entries made only in the payment system network. Network users will be interested particularly in the development of the following characteristics: service costs and fees, speed of entering payments, payment security, simple interfaces and efficient integration.

The costs of processing and booking payments in service

providers' systems will decline significantly as a result of full digitalisation. The changeover to network-based services together with complete digitalisation will also enable the booking of payments in real time or close to real time. In the network world, cost savings are achieved by immediate processing, less-complicated processes, the immediate resolution of possible error situations, and the simpler management of functions. For example, delaying the processing of e-mail or SMS text messages by one day would only create additional costs and no benefits.

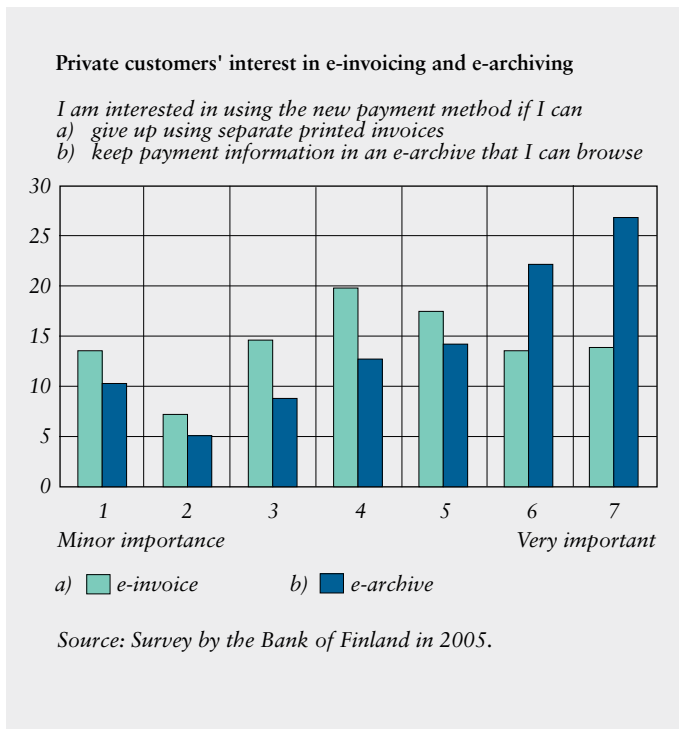
New payment methods must be secure in order to gain popularity. Customers find it important that the required security measures are clear and easy. They need a general and multi-purpose identification solution for online services. The growth of e-commerce and e-business is hampered by the current requirement for service-specific identification.

Banks are offering their own security solutions to the other providers of network services. This is, however, insufficient, as an EU-wide service provider, for example, would have to have a contract with and link to each of the approximately 5,000 European banks. We need a uniform and secure electronic identification service.

Internet and SEPA standards provide basic interfaces and channels for electronic payments. A private customer can make a payment by

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Chart 8.



clicking on screen menus. The largest gains can be achieved, however, by integrating customers' systems with the banks' payment systems. Both private and corporate customers are most interested in the opportunities provided by electronic invoicing. Currently, invoicing is highly manual and paper-based.

A changeover to electronic invoicing would generate significant benefits. It is already being introduced in the Nordic countries. A number of studies in various countries show that introducing e-invoicing into business-to-business invoicing would reduce processing costs by as much as EUR 10 to 30 per

invoice. The European Commission is therefore very justifiably launching a project to promote e-invoicing throughout the EU.³

Private customers' interest in the e-invoice, and particularly in the e-archiving of payments and invoices, was clearly demonstrated in the results of a recent consumer survey conducted by the Bank of Finland⁴ (Chart 8). Private customers are even more interested in the e-archive than the e-invoice as a form of service.

Customers are used to keeping e-mails, pieces of music, videos and photographs in an electronic archive that can be browsed, and they clearly hope that payments and invoices could also be stored in these types of archives. Compared to an e-archive for photographs and e-mails, an e-archive for invoices would require much less memory. The advantages are obvious when searching for an old invoice or payment. The introduction of e-invoices provides opportunities for creating e-archives for payments.

Other possible areas for integration are various travel tickets as well as tickets for sports and cultural events. These are increasingly purchased on the web and can be stored either directly in the robustly expanding mobile phone memory

³ European Electronic Invoicing (EEI), Final Report of the European Commission Informal Task Force on e-Invoicing.

⁴ Dahlberg and Öörni (2006), Finnish consumers' expectations on developments and changes in payment habits. Bank of Finland Discussion Papers 32/2006.

and/or on the Internet, to be accessed by mobile phone. The management of tickets will become simpler, for both service providers and users. For example, ticket checking can be automated and speeded up. The development and integration of ticket practices is a good example of potential benefits, but also of the need for extensive cooperation in the development of new integration solutions.

Electronification calls for increasingly extensive, coordinated efforts. The efficient transfer of travel tickets to mobile phones requires eg the development of mobile phone software, secure storage and e-identification methods, the construction of links between payment terminals and mobile phones, the development of banks' payment systems, the conversion of service providers' ticket applications to self-service online applications and the improvement of data communications providers' applications. This must be a coordinated effort. The task becomes more difficult as the introduction of new integrated solutions affects a continuously growing number of participants.

Steady development or a quantum leap in payment habits?

Payment services seem to be on the verge of a major change. Traditional payment instruments, such as cash, credit transfers and payment cards will probably still be used for a long

time to come, and their use is likely to develop in line with the trends discussed above. Several factors suggest, however, that the traditional payment instruments could in future be accompanied by a network-based payment instrument that is fully digitalised, real time, most likely international and utilising Internet and mobile phone technology.

Payments and invoices will be confirmed by the click of a mouse, and all the information will be available only on screen. More detailed information will be available in e-archives, when needed, and the current paper receipts will be replaced by electronic receipts. The adoption of new payment habits is spreading gradually, in the shape of an S curve, and traditional payment habits are gradually being replaced. Similar developments have already taken place in the use of e-mail and SMS text messages. How did we manage before the Internet and the mobile phone? In some 10 years we will probably wonder how we could have ever managed without the e-invoice and m-payments.

Keywords: payment habits, payment systems, electronic payments

Alongside traditional payment methods, we could see the emergence of a fully digitalised, real time, international network-based payment instrument.