

## **Erkki Liikanen: Enhancing reliability and efficiency of future payments – five criteria**

Speech by Mr Erkki Liikanen, Governor of the Bank of Finland, at the European Central Bank/Bank of Finland Retail Payment Conference, Helsinki, 4 June 2015.

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### **1. Introduction**

Traditionally retail payments were made only by notes and coins. Cash-based payment process required a great deal of physical money transfers. The payment system was inefficient compared to what it is today.

Today we use more and more debit and credit cards to pay for shopping and online banking services to pay the bills. The efficiency of the system has increased, but still, it is not exploiting the full potential of digitalization.

Digitalization will shape the future payment landscape. But it is not necessarily the banks and other established financial institutions that will dominate this future. They are being challenged by new entrants and large established companies from non-financial industries. In Finland, we remember how Nokia became the biggest in mobile phones after it had challenged incumbents in the industry, such as Motorola, Ericsson, Siemens and others. But Nokia itself was challenged by new entrants: Android from Google and iPhone from Apple.

Therefore, the next big change in the payment industry may be more than just an evolution – maybe even a revolution.<sup>1</sup>

What is the role of central banks in the development of the future payment methods? Innovation and new development should naturally come from the private sector.

But at the same time, retail payment systems are essential to efficient functioning of the economy. When we take into account the social costs related to payment systems,<sup>2</sup> central banks can have an important role as a catalyst to facilitate the socially best possible development. This is our task.<sup>3</sup>

### **2. The five criteria for a payment system and the role of central banks**

We at the Bank of Finland have defined five criteria which should serve as guiding principles when assessing the present payment systems and the future developments.

There criteria are: 1) technical efficiency, 2) accessibility and non-discrimination, 3) efficient and cost-based pricing, 4) operational stability with contingency plans in case of problems, and 5) international compatibility.

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<sup>1</sup> This issue was briefly discussed in the final report of EC Conference titled “Emerging challenges in retail finance and consumer policy”, 18.11.2014, Brussels. This document can be found here: [http://ec.europa.eu/internal\\_market/conferences/2014/1118-retail-finance/docs/141118-retail-finance-final-report\\_en.pdf](http://ec.europa.eu/internal_market/conferences/2014/1118-retail-finance/docs/141118-retail-finance-final-report_en.pdf).

<sup>2</sup> ECB study found that social and private costs of making retail payments are close to 1% of GDP. A link to the study “The social and private costs of retail payment instruments: a European perspective” can be found here: <http://www.ecb.europa.eu/pub/pdf/scpops/ecbocp137.pdf?d317ce9d32d829600145bc15f9451813>.

<sup>3</sup> One of the basic tasks of the ECB and the Eurosystem is to promote the smooth operation of payment systems. And similarly the Act on the Bank of Finland states that one of the tasks of Bank of Finland is to participate in maintaining the reliability and efficiency of the payment system and overall financial system and participate in their development.

These criteria should not be considered as something that is imposed upon the payment method providers; they are an essential building block of any sound business case within the field of payment services.

## **2.1 Technical efficiency**

The first criterion, technical efficiency, states that the payment method providers should take full advantage of available technical innovations to make the payment process cheaper, faster and safer for users and providers. Digitalization and innovations are the main drivers for new payment solutions.

But also user-friendly interface is another dimension that needs to be taken into account. Users are more likely to start using payment methods that are intuitive and easy to use. User-friendliness complements technical innovations.

Adapting new technologies will at the start produce costs for the provider of a payment service but the user base and associated revenue increase over time. A significant risk for the payment service provider is that the specific technology might not be adapted by anyone else.

As catalysts that foster discussion between relevant payment system stakeholders, central banks can alleviate this ‘chicken-and-egg problem’ associated with the adaptation of new technologies. Central banks can promote international open standards for the benefit of all.

The recent times have witnessed a shift towards real-time economy. A significant amount of interest has been expressed regards real-time payments. Some countries have already implemented or are planning to implement 24/7/365 payment system with the funds being transferred immediately to the receiver’s account. The call for pan-European solutions is ongoing.<sup>4</sup>

## **2.2 Accessibility and non-discrimination**

The second criterion defines that different types of users should have access to the payment infrastructure without disproportionate inconvenience or cost.

The most senior people, for example, might not be familiar with the modern IT tools and therefore any digital payment method might require unreasonable inconvenience or even close the access to the services. Still, financial inclusion and access to appropriate payment methods are extremely important as the ability to make and receive payments related to the necessities of life is a basic right in our society.

Central banks together with other authorities must see to it that there are proper alternatives available for those who are not able or willing to use those payment methods, which are more demanding either technically or in terms of creditworthiness of the citizen. This may be a problem only for a transition period.

Accessibility and ease of use foster quick adaptation and enable the user base to achieve critical mass. Larger user base also allows the costs of the system to be borne by many instead of a few.

Significant factors in attracting users are trust and reputation. Established companies have credibility whereas start-ups are fighting to get it. If users are not certain that the new system is secure enough, most of them might be hesitant to start using it. The new entrants could consider whether submitting oneself to supervision and oversight by authorities would

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<sup>4</sup> Read more about this in the report titled “Financial integration in Europe”, published by the European Central Bank in 2015, pp. 56–58. This document can be found here: <https://www.ecb.europa.eu/pub/pdf/other/financialintegrationineurope201504.en.pdf?3f4d1378095005332d615bb195c29846>.

significantly help a new payment service provider to gain legitimacy in the eyes of potential users.

### **2.3 Efficient and cost-based pricing**

The third criterion, efficient and cost-based pricing, requires that the pricing of payment methods is transparent and reflects the costs of producing such services. Prices relative to production costs give the right signals that should guide users to adopt the most cost-efficient payment method in any given situation.

Competition is what makes the pricing effective and cost-based. This ensures that the benefits from technical innovations are distributed throughout the society. Competition requires a number of independent providers.

We rarely see a multitude of competing retail payment systems in one market at the same time. Economies of scale is one of the driving forces behind this. Payment methods can be more numerous but established and widely used methods are a rare breed also.

Authorities play a role in making sure that level playing field can be achieved even in the presence of dominating payment methods, and that any dominant position in the market is not misused.<sup>5</sup>

Cooperation, in relation to adaptation of new technical innovations and security measures, must still be allowed. This is the competition-cooperation nexus.<sup>6</sup> Because payment methods form a network, cooperation in defining the payment standards and building the underlying infrastructure should be recognized.

### **2.4 Operational stability with contingency plans in case of problems**

The fourth criteria, operational stability, is critical because payment systems are the backbone of all economic activity. They must run smoothly and reliably. So providers of payment methods are faced with a trilemma between usability, costs and security of the payment system.

The optimum for one payment service operator is not necessarily the social optimum. The commercial operator may be inclined not to take operational risks fully into account. This is because the parties which suffer from operational disruptions to payment systems are not able to get full compensation for their damages. Interdependencies within financial markets mean that there are always a significant amount of externalities hidden from the sight of any one actor.

In the digital world, cyber threats are the key challenge for future payment systems.<sup>7</sup> Therefore, cyber security – or put that more holistically as cyber resilience – is a mandatory feature of all future payment systems.

Cyber resilience means that it is not only about the technology but the attention needs to be put also on the processes, people and communication. This all requires a paradigm shift in

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<sup>5</sup> This issue is discussed in a recent article “Promoting efficient retail payments in Europe”, written by Iftekhar Hasan, Emmi Martikainen and Tuomas Takalo and published in the Journal of Payments Strategy & Systems, Vol. 8, No 4, 2015, pp. 395–406.

<sup>6</sup> More about this can be found in an article titled “Competition-cooperation nexus in the European retail payments market: views from a network industry perspective”, written by Kari Kemppainen and published in the Journal of Payments Strategy & Systems, Vol. 8, No 4, 2015, pp. 386–394.

<sup>7</sup> Many central banks have stressed the importance of cyber security. Bank of Finland recently published an article on cyber security and financial stability. This article can be found here: <http://www.eurojatalous.fi/fi/2015/2/voisiko-kyberhyokkays-johtaa-finanssikriisiin> (English version forthcoming).

the way we think about cyber security: cyber security should not be thought to be only a cost center, but it needs to be perceived as a business enabler.

It is relatively more straightforward to handle cybersecurity in the interbank payment ecosystem, since the access points to the payment system are limited and connections can be made using secure dedicated networks.

In contrast, retail payment systems may have billions of potential access nodes and utilize standard internet connections. Security solutions for these are different, especially considering how to make sure that all end user access nodes are secure enough.

Central banks, together with all other stakeholders – banks, supervisors, cybersecurity companies – can be active in raising awareness of cybersecurity, setting the basic security requirements, and enabling the flow of best practices from one payment service operator to another.

Central banks are a natural catalysts for cross-border cooperation to promote cybersecurity of the whole financial infrastructure. After all, it is an international infrastructure, which requires international cooperation doing the oversight.

## **2.5 International compatibility**

Finally, the fifth criterion, international compatibility, states that common standards and rules governing payment systems are needed to promote harmonization and to ensure interoperability of different retail payment methods.<sup>8</sup>

In a global economy, fragmented payment system landscape across countries will increase the costs for individual users and societies as whole. Technical innovations may increase the fragmentation, unless some common ground has been found through open standards. Either in terms of interfaces between systems or in terms of payment systems used.

But international compatibility is not only about the interoperability between payment systems. It is also about the compatibility with the laws and regulations of the society around the payment system. Future payment systems should not be in a conflict with the laws of the society in any country where the payment system is operational.

With the future payment systems emerging, international compatibility is again an issue in the spotlight. SEPA was a step towards international compatibility in the field of payments. There is again a risk that future payment systems will become fragmented with the emergence of new payment methods. It would better to set the harmonized guidelines before this fragmentation actually happens.

The work done by the Euro Retail Payment Board (ERPB) and its national counterparties, including the Payments Council in Finland, should be highlighted in this relation.<sup>9</sup> These groups bring together the relevant payment system stakeholders to consider how future payment systems will change the whole financial ecosystem – also at the European and international levels.

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<sup>8</sup> In a recent speech Vice-President Ansip, in charge of the Digital Single Market, noted that common technical standards for mobile payments are needed to promote digital single market. This speech can be found here: [http://europa.eu/rapid/press-release SPEECH-15-4937 en.htm](http://europa.eu/rapid/press-release_SPEECH-15-4937_en.htm).

<sup>9</sup> Chaired by Yves Mersch, Member of the Executive Board of the ECB, the ERPB objective is to contribute to and to facilitate the further development of an integrated, innovative and competitive market for euro retail payments in the EU. The ERPB is composed of members both from the supply and demand side of the market.

## Are the future payment systems already here?

Where are we at the moment in relation to these five standards and innovative payment methods? Even the most novel and debated virtual currencies do not meet these standards.

So why doesn't Bitcoin meet the five criteria? Bitcoin is not subject to the most basic principles governing payment systems, starting from the know-your-customer fundamental principle. Continuity of operations and contingency planning are problematic. And fluctuations in the bitcoin value will impose additional costs to people who use bitcoins.<sup>10</sup>

Sometimes you hear a claim that these are not problems of bitcoin, per se, but of the bitcoin ecosystem. To the general public, these two are the same. It seems that even Bitcoin is for virtual currencies what MySpace was for social networks.

Digital purses, mobile phone apps and some other niche payment solutions exist, but all in all, we haven't yet witnessed the emergence of a true future payment system. Bits and pieces of a future payment system are incorporated in different payment methods of today, but none such exists yet that would meet all the five criteria. This is by no coincidence.

Banks and other established financial institutions are well entrenched in the payment landscape. It might not be in their best interest to develop new systems that cannibalize profits from their existing investments. The new-comers are facing an uphill battle in trying to establish a bridgehead within the payment landscape. Still, it seems that something fundamental has changed.

Historically the usage of payment methods has evolved slowly over time. But digitalization and the emergence of new actors in the field of future payment methods are something new, not seen in the past. So far the speed of change has been overestimated. But we must remember that in the short run we often overestimate the change but underestimate it in the long run. This has happened with many technological breakthroughs.

## Conclusions

To conclude, I would like to emphasize that even in the future, the five criteria for a payment system remain essential. In other words, technical efficiency, accessibility and non-discrimination, efficient and cost-based pricing, operational stability with contingency plans in case of problems, and international compatibility are still important for developing new payment systems.

The key challenge for developers is how to solve the trilemma between usability, costs and security of a payment method. The competitors in this future payment race are likely to come from different directions and their solutions can be very different.

Since payment methods are part of payment networks, no payment service is isolated from the real world and other financial transactions. The competition-cooperation nexus needs to be taken into account to enable faster adaptation of innovative solutions without compromising security, but also to maintain and foster competition between providers of such payment services. The end-user benefit and transparency are the key points here.

Authorities need to be able to monitor the development and usage of new payment services, keeping in mind the proportionality principle. This means that it is not in the interest of authorities to suppress innovation; new entrants should have a fair chance to be able to enter into the market. Nevertheless, safety of the payments must be ensured in all cases.

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<sup>10</sup> In a speech titled "Euro banknotes – a means of payment recognised worldwide", Yves Mersch, Member of the Executive Board of the ECB, highlighted some of the problems associated with Bitcoin. This speech can be found here: <https://www.ecb.europa.eu/press/key/date/2014/html/sp140519.en.htm>.

The economics of payment networks are highly complex, so there is a need for continued research in the field. Academic papers and discussion in this conference have shed light on many important aspects that should be taken into account in relation to future payments.

Conferences such as this are a welcome sign that the necessary exchange of information and views is going forward. Authorities, users and other stakeholders need to participate in the discussion about future payments.