

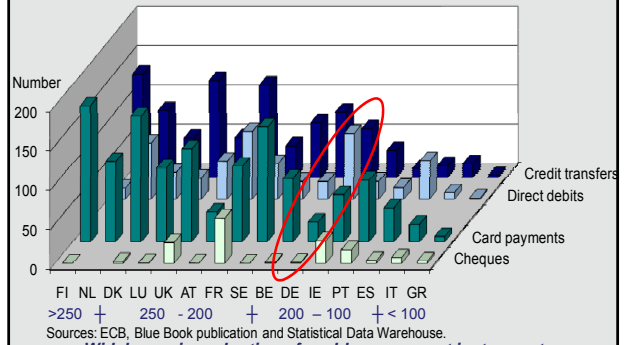


*Current developments and future trends  
in EU Payment Systems,  
SEPA now and in future*

Harry Leinonen  
16 October 2009

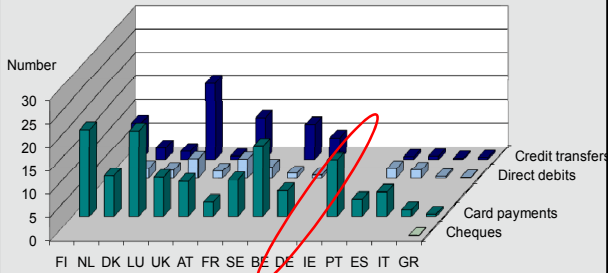
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the Bank of Finland.

*Number of cashless payments per inhabitant in  
EU15 countries, 2007*



**Widely varying adoption of cashless payment instruments  
on the eve of the SEPA beginning.**

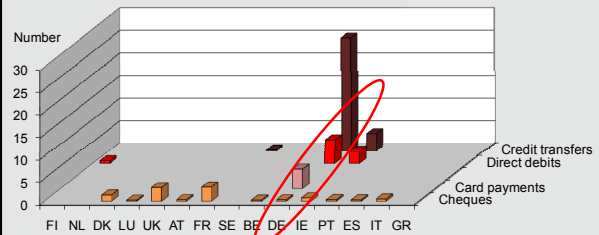
*Positive changes in number of cashless payments per  
inhabitant in EU15 countries, change 2006/2007*



Sources: ECB, Blue Book and Statistical Data Warehouse.

**In 2007, card payment increased rapidly in all countries except Germany,  
direct debits show moderate growth in most countries and  
credit transfers show varying growth in most countries.**

*Negative changes in number of cashless payments per  
inhabitant in EU15 countries, change 2006/2007*



Sources: ECB, Blue Book and Statistical Data Warehouse.

**In 2007, cheque usage decreased in all 'cheque' countries, card payments  
decreased in Germany, direct debits and credit transfers decreased  
in some countries (Germany's CT figure due to methodology change?)**

*Main benefits of SEPA*

- ◆ More competition (=improved service, lower tariffs)
  - Visible tariffs (=no float)
  - Cross-border competition based on common standards
- ◆ Faster payment execution
  - Basically max delivery time 1 day throughout SEPA
  - Even faster alternatives in pipeline
- ◆ Improved cost-efficiency
  - Reduced country-level overheads
  - Common interbank standards
  - Common customer standards for larger user-community
  - Improved integration possibilities with modern standards

**The sooner SEPA is implemented,  
the sooner the benefits will be achieved**

*SEPA timing = end-date issues*

- ◆ Common bank SEPA-readiness date will increase customer interest
- ◆ Clear new SEPA benefits increase customer interest for change
- ◆ Old and new standards in parallel ease changeover but increase costs if prolonged
- ◆ Prolonged end-date will increase problems with non-IBANised transactions and unstandardised remittance information

**SEPA benefits should attract the majority of users,  
late laggards could be forced to change via regulations**

Customers have strong interest in eSEPA  
= common electronic payment instruments  
credit transfers, direct debits & card payments

- ◆ Electronic interface standards promote automated integration
- ◆ Quality standards increase remittance information in payment messages
- ◆ Common standards increase the interest of software-houses to build application interfaces
- ◆ Common standards reduce barriers to changing banks or using several banks

**Customers' integration savings will be huge.**

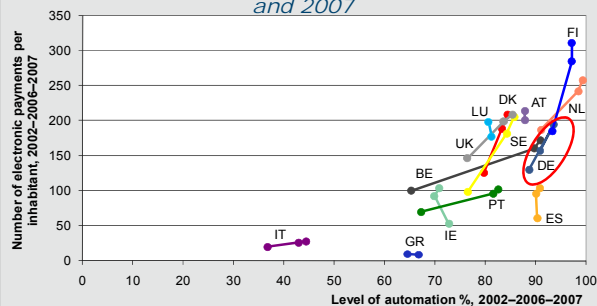
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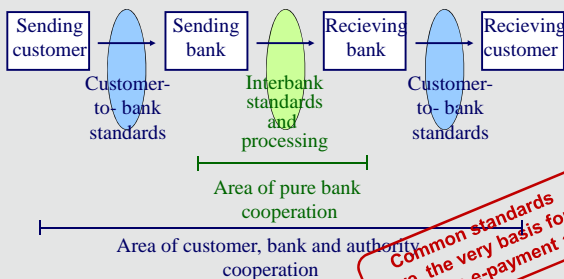
*Electronic payment and automation level developments in selected countries, 2002, 2006 and 2007*



Sources: ECB, Blue Book publications, Statistical Data Warehouse and Bank of Finland.  
**In 2007, most countries showed increased automation levels, some countries lagging behind the overall automation developments**

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*Two levels of payment standards (bank-to-bank and customer-to-bank)*



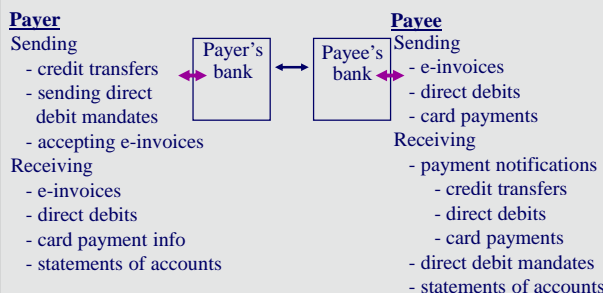
**For end-to-end STP (Straight-Through-Processing) common interbank and customer standards are needed**

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**Common standards are the very basis for a common e-payment area**

*Necessary customer-to-bank payment standards*



**Common standards facilitate direct re-use of same data within payer and payee systems. Common e-standards basis for efficiency.**

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*Global standards are common in most industries especially in networks/communications*

- ◆ Container shipping
- ◆ Flight ticketing
- ◆ Telecommunications, Internet
- ◆ Data processing, office systems
- ◆ Photography, video, audio etc entertainment
- ◆ Etc etc

**Common standards have been the basis for international connections and scale benefits**

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**Common standards will bring the same kind of benefits in payments**

*ISO 20022 XML will be the SEPA payment standard*

- ◆ Same standard for interbank and customer-to-bank transfers as well as internal customer processing
- ◆ Same standard across payment instruments credit transfers and direct debits and possibly also for card payments
- ◆ Large data content possibility covering both banks' and customers' processing needs
- ◆ ISO 20022 developments are supported by SWIFT and are the basis for SEPA payments in Europe  
**ISO 20022 could develop into a common Financial Transfer Message (FTM) for all kinds of payments and related processing**

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**XML data description standard = tags + attributes in a common version-based library**

**Data field naming using tags**  
eg DueDate

**Attributes describing characteristics**  
eg type="xs.date"

**Schemes for defining data content**  
eg <xs:element name="DueDate" type="xs.date"/>

**Files with tag and data**  
eg <DueDate>2007-05-20</DueDate>

**Style sheets for presenting data using different media/languages**  
eg paper, screen, etc

*Completely variable records in content, structure and length*

*The same data can as such be used for several purposes and in several languages*

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**Standardised database keys = addresses and references**

**Functional level**  
Initiation → Debiting → Inquiries → Crediting → Reconciling

**Identifiers**  
Payer's reference, Payer's IBAN, Transaction ID, Payee's IBAN, Payee's reference

**Application level**  
Payer's system, Bank's system, Bank's system, Payee's system

**Database level**  
Orders Payables, Accounts Transactions, Accounts Transactions, Invoices Receivables

**Standardised keys facilitate automatic reconciliation**

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**Structured creditor reference number ISO RF standard proposal (SEPA rulebooks 2010?)**

RF cc 12345689012345678901

Data ID ↑  
Payee provided number for automatic reconciling ↑  
Common standardized check digit ↑

*In spite of its simplicity, it is the basis for payee STP benefits*

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**Receiver reference basis for customer automation benefits ISO standardisation proposal for RF code standardisation**

Receiver's account numbers, Receiver, Reference/reconciling number, Sum to be paid

**Payer**  
Jukolabrantan 4 B 7  
02180 ESBO

**Receiver**  
Nordes 156030-116676  
Sampo 800017-70928183  
OKO 500001-2378954

**Reference/reconciling number**  
1 21231 09695 28113

**Sum to be paid**  
94.90

**Due date**  
21.11.2005

**Bar code containing payment data**

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**Basic automation benefits of e-Invoicing (corporates)**

**Electronic sending**  
- no printing on paper  
- no envelopes  
- just a file to the bank

**Secure electronic transportation**  
- no physical processes  
- no stamps  
- sender verif. by banks

**Electronic reception**  
- no letters to open  
- no data to key in  
- just direct e-input  
- easy to archive

**Electronic fund transportation**  
- all relevant information included

**Electronic payment initiation**  
- no paper instructions  
- no data key-in  
- direct use of e-invoice as e-credit transfer

**Electronic reception of payment**  
- no paper notifications  
- automated reconciling of receivables based on reference code  
- just a file from the bank  
- easy to archive

*Direct parts of companies work-flow processes*

**Cost savings in the range of at least EUR 10-30 per invoice**

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**SEPA e-billing via bank system**

**Customer ID and acceptance control**

1) Invoice transfer  
2) Interbank invoice transfer  
3) Explicit Payment/invoice acceptance  
4) Interbank payment transfer  
5) Payment reception

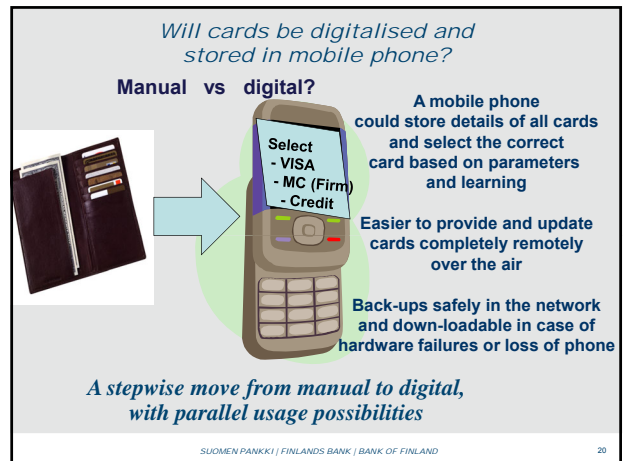
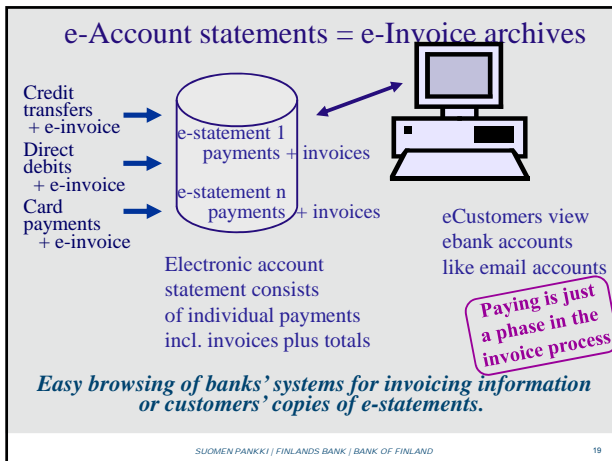
**Payee's bank**  
**Payer's bank**

**Payee**  
**Payer**

*Synergies in coupling payments with more info*

*e-Invoices transferred via banks from payee to payer for explicit acceptance as part of credit transfer or a direct debit service (with more info). Routing based on payer and payee IBANs.*

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### Mobile phone-based solutions improve customer initiation device compared to cards

- ◆ Independent screen and keyboard as user interface
- ◆ Vast data storage capacity
- ◆ Good processing possibilities
- ◆ Improved security features

**Main improvements with mobile payments are in the domain of efficient customer interfaces, security and local processing capacity**

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### Full utilisation of mobile technology improvements would provide

- ◆ NFC (Near Field Communication) for payment data capture
- ◆ Camera and scanner for data capture
- ◆ POS, Internet, and person-to-person payments
- ◆ Secure identification feature via SIM or other security card
- ◆ Complete transaction record with payment details
- ◆ Immediate real-time payment processing and notification
- ◆ Automated reconciliation
- ◆ Global standards for all phones and networks
- ◆ Global terminal standards

**Mobile telephone payment technology could efficiently replace most of the old technologies**

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### Future dominant mobile payment issuers and accounts?

1. Card accounts of current systems
2. Current bank accounts
3. TELCO phone call accounts
4. Money remittance accounts
5. Specialised payment institutions
6. Central banks

**All types of issuers can use the mobile technology and different schemes can exist in parallel**

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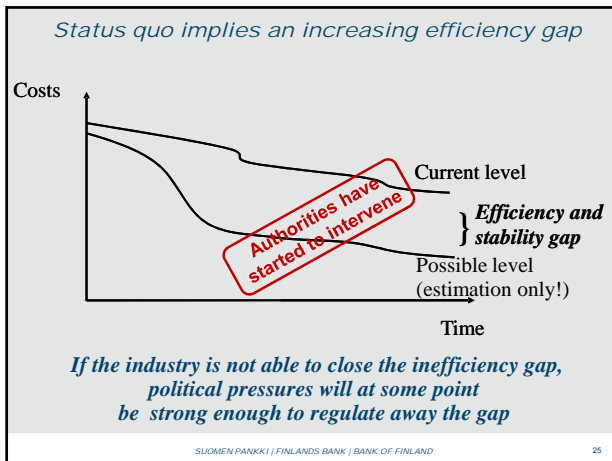
### SEPA-wide or global mobile multi-issuer mobile payment network and scheme would require

- ◆ A common network with common technical standards for all issuers and acquirers
- ◆ A common business scheme
- ◆ A common security architecture and trusted administrator for securely identifying all parties
  - Payers (mainly consumers)
  - Payees (mainly merchants)
  - Issuers
  - Acquirers
  - TELCOs

**Are European banks interested???**

**An open architecture involves unlimited numbers of acquirers, issuers and TELCOs**

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- Authorities' alternatives*
- ◆ Promote competition
    - Control monopolies, reduce competition barriers, allow new competitors, implement level-playing-field, support efficient pricing conventions etc
    - SEPA: payment institutions, share-convention, reduced interchange fees and float, requirement for transparent fees
  - ◆ Implement standards
    - Require minimum standardisation
    - SEPA: delivery time requirement T+1, IBAN and BIC
  - ◆ Solve coordination problems
    - Governance and cooperation support
    - SEPA: EPC coordination, start-date and possible end-date regulation
  - ◆ Provide necessary public production services
    - Security, settlement and clearing services
    - SEPA: ?
- Note: Authorities can have positive and negative impact*
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*We seem to be heading for a "Worldpay" solution via some intermediary steps*

*based on common standards and some common payment networks*

*SEPA is the beginning...*

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*Thank you for your attention.*

*Questions?*

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*More information in Bank of Finland publication A:111*

*Harry Leinonen: Payment habits and trends in the changing e-landscape 2010+*

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