

Payments: risky business !

(security - liability)

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- **Postbank (1989-1995)**
 - project manager / strategy planner
- **De Nederlandsche Bank (1995-2001)**
 - senior policy analyst
 - BIS 1996: security of e-money, Supervision e-money (Chipper / Chipknip), BIS Reports (1999, 2000), Dutch policy report (1999)
- **Independent consultant (2001 - ..)**



Latest news.....

.....ten thousand Dutch credit cards were blocked last week by Interpay, following a fraud-attack from the US.

Is this a security problem ?

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34 miljard visa betalingen 22 miljard pos, 11 miljard geldautomaat
680 miljard dollar 440 miljard pos, 240 miljard geldautomaat
1,215 miljard visa kaarten

Mastercard exclusief Maestro

11,9 miljard pos, 1,7 miljard geldautomaat
1140 miljard omzet 800 miljard pos 340 miljard geldautomaat
590 credit en 485 maestro = 1,075 miljard kaarten



Outline

- Where is the security ?
- Regional differences
- Security as part of the business model
- Managing risk: cards on the web
- Future developments

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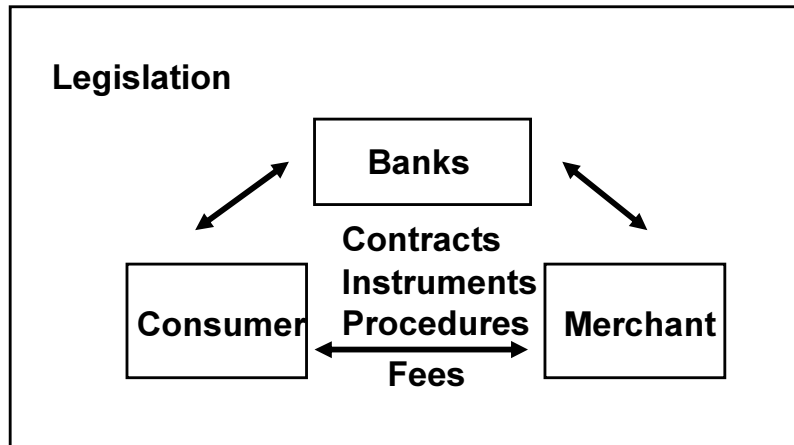
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Security in its context

- 1- legal context
- 2- business context
- 3- event context
- 4- liability shift as an instrument

Where is the security ?



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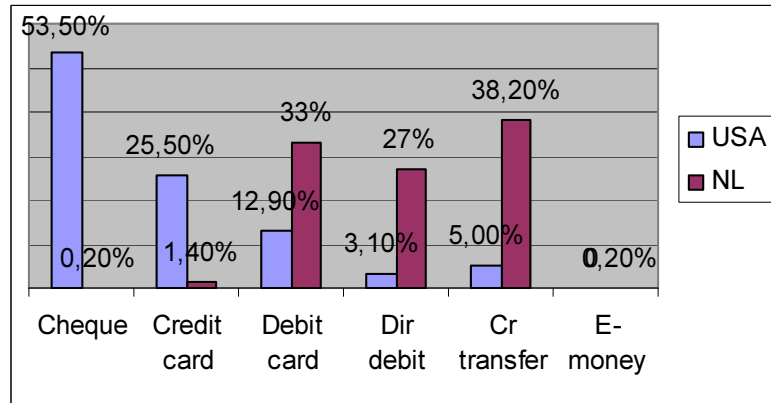
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Where is the security- 2

- Payment systems constitute of
 - user procedures (easy)
 - technical instruments (safe)
 - legal obligations (fair liabilities)
 - commercial terms (fees)
- The right mix/balance is crucial !

Are there regional differences ?



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BIS, <http://www.bis.org/publ/cpss54p2.pdf>, 2001
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Legal differences US Europe

- US:
 - federal legislation with respect to card payments (reg E), liability limit of US \$ 50
- Europe:
 - Recommendations with respect to card payments, one specific law in Denmark, many codes of conduct, liability in contracts: 100-150 US\$



Consequences of US situation

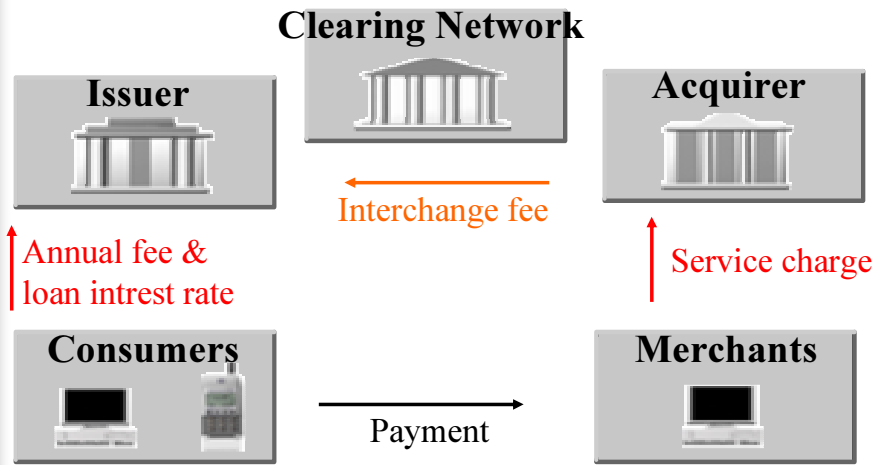
- Card issuers need to diminish fraud level below 50 \$ per incident to remain in business
- Fraud measures succeed in this respect and allow issuers to give consumers a guarantee 'zero-liability-programme'
- Little need for safer instruments given this guarantee



Consequences in Europe

- No federal or harmonised legislation
- No harmonisation of fraud measures
- Local solutions in Europe, different liability levels, based mostly on code of conduct and contract terms

The business: four party model



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Credit card Australia (acquirer)

- Merchant service fee of \$ 1,78

- Composition:

– int fee	\$ 1,06
– revenue	\$ 0,72
– cost:	\$ 0,43
• fraud	\$ (0,01)



Credit card business case (issuer)

■ Revenue	\$ 2,69
– Intr. Marg	\$ 1,36
– Interch. fee	\$ 0,95
– ann etc.	\$ 0,38
■ Cost	\$ 1,93
– credit loss	\$ 0,35
– fraud	\$ 0,07



Credit card banks in US

■ Large credit card banks (2001)

- net earnings before taxes equal to 3.24 percent of credit card balances
- credit card earnings continue to compare favorably to returns on all other commercial bank activities
- average return on all assets, before taxes and extraordinary items, for commercial banks in 2001 was 1.79 percent.

– <http://www.federalreserve.gov/boarddocs/rptcongress/creditcard/2002/ccprofit.pdf>



Visa fraud data

- VISA USA: (2000)

- Fraud losses for every \$ 100:

- 1992: 18 cents

- 1998: 7 cents

- 1999: 6 cents

- VISA EU:

- 8 cents in every \$100 spent (2001)



First conclusion

- Payments are a risky business

but risk can be managed.....



Main threats web payments

- Unsafe PC, making customer authentication the weak spot
- Sloppy merchants that do not protect consumer information
- False merchants collecting valid client information
- Bad interfaces with consumer



Very first developments (1994)

- Microsoft and Visa develop SETT (secure electronic transaction technology)
- Netscape and Mastercard working on SEPP (secure electronic payment protocol)
- 1995/1996: Visa/Mastercard develop SET (Secure Electronic Transaction)



Situation: 1995 2000

- Merchants calculate, manage and accept the risks involved with chargebacks credit-cards
- Banks and card industry:
 - Develop SET as a safer product



The 'SET development'

- Framing the issue as a security issue
 - 1: warn consumer about unsafety of cc-payments over the web
 - 2: forbid (if possible) cc-payments over web
 - 3: develop SET as a safe produkt
- -->will force merchants to adopt SET



Results - 1

- Publicity campaign unsafe credit-card numbers worked
- Research in 1999 showed:
 - 40 % won't give cc number over phone
 - 60 % won't give it over the web

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Jupiter Media Metrix has found (June, 2001) that consumers believe that online fraud is far more prevalent than it actually is. Although online credit card fraud rates are three or four times that of retail-related fraud in general, consumers believe that their credit card is 12 times more likely to be defrauded online than offline.



Results - 2

- Creditcard works fine for US merchants and customers (zero liability)
- Dutch web-companies went abroad to acquiring banks
- Forbidding usage on the web does not work



Results- 3

- I-pay with SET introduced in NL
- Some SET-solutions implemented
 - SET became heavy wallet-solution
 - Implementation costs merchant very high
 - Set up and install problems for consumer
 - Too few shops accepting product (80)
- SSL became the standard



Reconsideration of approach

- Cleanup to prevent misuse old files:
 - Mastercard and Visa UK announce 3 digit verification code to be used on web as of April 1, 2001
- Emphasis best practices webmerchant
- Development of newer light-weight solutions in combination with three domain model and liability shift



New web solutions

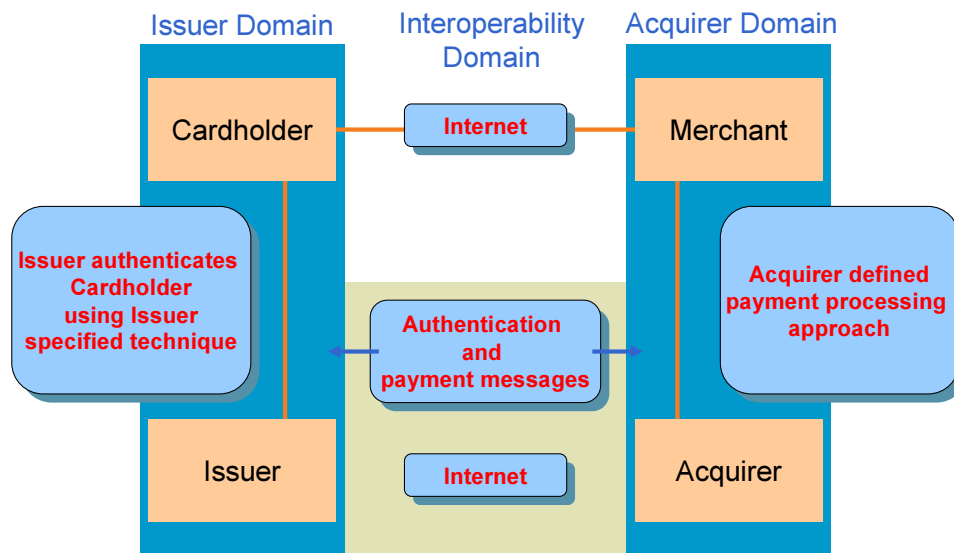
- Disposable credit card numbers for online shopping
 - Amex, MBNA, ABN AMRO e-wallet
 - 3D-secure
 - Visa: Verified by Visa
 - Mastercard: Secure code
- in combination with liability shift



Liability shift

- On 1 April 2002, chargebacks on the Internet ceased to be the sole responsibility of the Merchant. The liability for repudiated e-commerce transactions within the EU Region moved to the Issuer if the Merchant is protected by 'Verified by Visa'.

Three Domain Model (3D)





Additional supportive action:

- Elimination of sub-submerchants
- High fees and penalties for chargebacks
- Court cases if web merchant doesn't pay back charge-backs
- Continued emphasis on best practices for webmerchants



What have we seen?

- Security determined by:
 - regional context
 - legal context
 - business context
 - evolution / learning curve
- Liability shift as a powerful incentive



What's next ?

- Major fraud concerns:
 - counterfeit cards
 - card not present transactions
 - lost and stolen cards
- leading to
 - 3D solutions on the web
 - implementation of EMV (IC-chip)



What's next in the Netherlands ?

- The liability shift as the solution for direct debit payments on the web
 - if not processed according to standardized rules, liability for erroneous/fraudulous payments shifts to acquirer / merchants
- Slow implementation of 3D-solutions
- Very slow implementation of EMV
 - conference 18th of June in Amsterdam



Questions ?

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