Second generation micropayment systems: lessons learned

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OVERVIEW

- Introduction
- Characteristics of micropayment systems
- 1st Generation micropayment systems
- 2nd Generation micropayment systems
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Introduction

- Sales of low value products are expected to grow in the next years (Gartner)
- Share of content subscriptions dropped:
  89% in 2003 → 84,6 in 2004 (Online Publishers Assoc.)
- Share of micropayments increased:
  7,4% in 2003 → 17,9% in 2004 (Online Publishers Assoc.)
- 1st generation (1994–1999) all failed
- 2nd generation (2000–present) ?????

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Characteristics of micropayment systems

Technical

- Token-based or account-based
- Ease of use
- Anonymity
- Scalability
- Validation
- Security
- Interoperability

Non-technical

- Trust
- Coverage (acceptability and penetration)
- Privacy
- Pre-paid or post-paid
- Range of payments
- Multicurrency support

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1st Generation micropayment systems (1/3)

Mondex (1995)

Millicent (1995)

MicroMint and PayWord (1995-96)

CyberCoin (1996)

NetCash (1996)

SubScrip (1996)

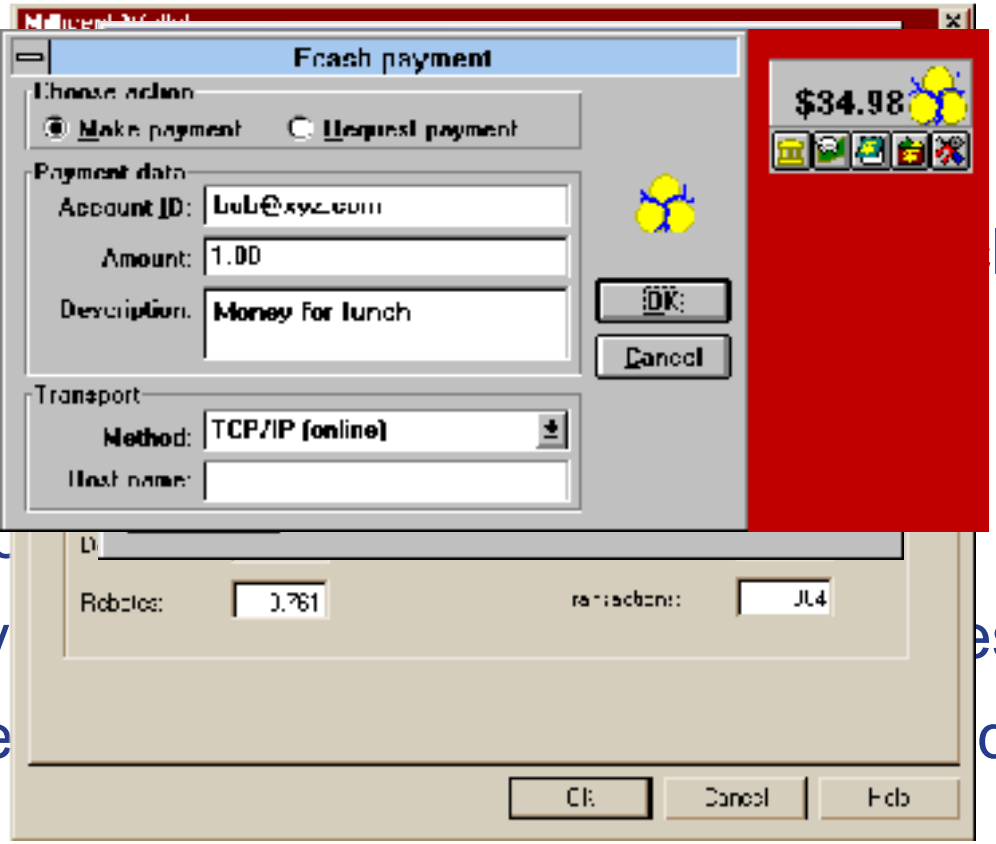
ECash (1996)

*i*KP (1997)

Mini-Pay (1997)

1st Generation micropayment systems (2/3)

- Most of
- Very inc
- Anonym hants; only ECash
- Scalabil
- Validatic
- Security es
- Interope d



1st Generation micropayment systems (3/3)

- Trust: low level
- Coverage: low. Millicent: 7000 customers and 24 merchants; ECash charged fees; CyberBucks: 30000 customers and 50-60 merchants
- Privacy: little is known
- Pre-paid or post-paid: all were pre-paid
- Range of payments: varies a lot. Millicent $0.001, CyberCoin and CyberCash $0.25→$10
- Multicurrency support: none

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2nd Generation micropayment systems (1/3)

PEPPERCOIN

Switchpoint

BitPass

pay safe · cash · fast paynova

secoin

WAY 2 PAY

PAY STONE

MiniTix

Teletik Safepay

click & buy

SoftPay

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2nd Generation micropayment systems (2/3)

- Most of them are account-based

- Interoperability: not solved yet

2nd Generation micropayment systems (3/3)

- Trust: increased significantly
- Coverage: high as customer behaviour changed
- Privacy: MPSOs protect the privacy
- Pre-paid or post-paid: majority is pre-paid
- Range of payments: varies a lot. Min: $0.01, €0.01, €0.10, $0.25; Max: €10, €150, €1000
- Multicurrency support: mostly one currency (€ or $), but several systems have multicurrency support

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Analysis: key factors (1/2)

trust

ease of use

who are the system developers and the MPSOs?

coverage

fixed transaction costs

laws and legislation

influence of standardization

security

demand for micropayments

processing speed

anonymity

guaranteed delivery of products and receive of paid money

Analysis 2/2

- High level of trust has increased significantly.
- Increasing coverage enables (i) MPSOs to earn money; (ii) growing product offers; (iii) growing demand for micropayment systems.
- Ease of use has increased significantly.
- Adequate level of security for authentication, identification, non-repudiation, secure communication channels. Audit support and supervision by financial authorities.
- High degree of anonymity.
- Processing speed increased as more developed and faster IT technologies and Internet are used.
- Influence of standardization: limited, so no interoperability.

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Conclusions

- 2nd generation micropayment systems have a better chance to become successful than their predecessors.
- The developers and operators of 2nd generation systems learned their lessons. Those who didn't, failed: Beenz and Flooz.
- The end effect of competition will be that only a few, globally accepted micropayment systems will survive.
- Due to lack of standardization, regional systems should be interoperate to facilitate world-wide micropayments.

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