E-Commerce Payment Systems

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Overview

- Electronic Payment Systems Requirements
- Types of E-Payment Systems
- Non-Internet Methods
- Protocols
- Related Issues
- Selecting an E-payment Method
- Conclusion
Electronic Payment Systems

Requirements

- Technological
- Economic
- Social
- Regulatory

Technological Requirements

- Authenticity
- Privacy/Security
- Integrity
- Non-Repudiation
- Interoperability
- Maintainability
- Portability
- Scalability
Economic Requirements

- Cost-Effective
- User Reach
- Value Mobility
- Financial Risks

Social Requirements

- Anonymity
- User Friendliness
- Mobility
- Atomic Exchange
Regulatory Requirements

- E-commerce Contracts
- Technical Standards
- Custom & Taxation
- International Agreements

Electronic Payment Methods

- Online Credit Cards
- Electronic Cash
- Electronic Checks
- Micropayments
Online Credit Cards

- Partially/Entirely Anonymous
- Low Financial Risks
- Compatibility
- Good Authenticity (VCC Card No., PIN)
- Mobility
- Integrity (Hash Function)

Online Credit Cards

- Internationally Used
- Fair Usage Range
- None Value Mobility
- High Transaction Costs
- Limited Transfer Amount
- Online Transactions
Electronic Cash

- Entirely Anonymous
- Fair Authenticity (Uses PIN)
- Low Transaction Costs
- Privacy (No Track of Bank Account No.)
- Integrity (Blind Signature)

Electronic Cash

- Poor Mobility (E-Cash Purse Installation)
- Relatively High Financial Risks
- Incompatible with Financial Systems
- Online Transactions only
- Unable to Meet International Standards
Electronic Checks

- Authenticity (Digital Signature)
- Compatibility (Offline/Online Financial Organizations)
- Fair Privacy
- No Limit on Transfer Amount

Electronic Checks

- Relatively High Fixed Costs
- Limited to Virtual World (Share a Checking Account)
- No Anonymity
- Poor Mobility
- Risky for Consumers
- Unable to Meet International Standards
Micropayments

- Entirely Anonymous
- Real/Virtual Use
- Low Transaction Costs
- Internationally Used
- Privacy (Consumers’ Serial No.)

Micropayments

- Offline/Online Use
- Low Financial Risks (Stolen, Lost, Misused)
- Authenticity (Serial No.)
- Good for Small Payments
Micropayments

- Financial Risks for Consumers
- Poor Value Mobility
- None Integrity
- Convenience (Needs Special Certificate from a Broker)

Non-Internet E-Payment Systems

- Self-Check Out
  - Sears, K-mart
- Scanning Checks
  - Wal-Mart
- Using Regular Credit Cards
  - PepsiCo, Coca-Cola Vending Machines
Electronic Payment Protocols

- **Secure Socket Layer (SSL)**
  - Easy to Implement
  - Compatible
  - Low Cost
  - Digital Certificate (seller only)
  - Less Secure (Internet Security protocol)

Electronic Payment Protocols

- **Secure Electronic Transaction (SET)**
  - De facto Standard
  - Provides Confidentiality, Integrity, Authentication
  - More Secure (Suitable for E-Payments)
  - Digital Certificate (Seller & Buyer)
Electronic Payment Protocols

- Secure Electronic Transaction (SET)
  - Complex Implementation (POS client software)
  - Interoperability Problems
  - High Cost
  - Performance Issues

Electronic Payment-Related Issues

- Taxation
- Confidentiality
- Integrity of E-Money Issuers
- Privacy
- Government Control Over Money Supply
Selecting an E-Payment Method

- Demographical Considerations
  - Age
  - Computer Literacy
  - Macro Vs. Micro Payments
  - Convenience

- Technological Considerations
  - Required Level of Security
  - Set Up Costs
Conclusion

- Implications of the Existing E-Payment Systems
- Technical/Institutional Constraints
- Incompatible Regulatory System
- E-payment-Related Issues (Taxation, Confidentiality, Privacy)