Overview of E-commerce Protection Technologies

Purpose: Information
Submitted by: Russia
Overview of E-commerce Protection Technologies

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Contents

• Brief market analyze
• Trust Problems of E-commerce
• Identification and Authentication
• Privacy Access Control
• Hardware Authentication Devices
• Overview of Modern Protection Technologies
E-commerce market

CNews Analytics, 2004
Russia B2B market

Energy - $348.2M
Universal – $32.6 M
Metal - $42M
Wood - $12.9M

...... Total: $442M

Increase - 40%
Topicality: financial loss

Total Losses for 2005 were $130,104,542

CSI/FBI 2005 Computer Crime and Security Survey
Source: Computer Security Institute

2005: 639 Respondents
Security Solutions Used

- Firewalls: 97%
- Anti-virus software: 96%
- Intrusion Detection Systems: 72%
- Server-based access control lists: 70%
- Encryption for data in transit: 68%
- Reusable account/login passwords: 52%
- Encrypted files: 46%
- Smart cards/other one-time password tokens: 42%
- Public Key Infrastructure: 35%
- Intrusion Prevention Systems: 35%
- Biometrics: 15%

CSI/FBI 2005 Computer Crime and Security Survey
Source: Computer Security Institute
2005: 687 Respondents
Trust Problems of E-commerce

• Guarantee of confidentiality (number of a credit card, a delivery date of the goods, the address, …)
• Guarantee of data integrity
• Sufficient level for controlling of operation participants:
  • The seller should be assured that the buyer will not refuse purchase and in solvency of the buyer
  • The bank-emitter should check up the seller before realization of his requirement for payment of purchase
  • The buyer should be assured that seller is real, instead of false
Some Trust Problems of E-commerce: Security weaknesses

- sensitive financial details for online paying;
- trade secrets and other confidential information;
- privacy of e-commerce actions:
  - pay bills,
  - trade stocks and shares,
  - file our income tax returns,
  - conduct legally transactions;
  - vote in government elections;
  - …
PKI Trusted Services

- Authentication,
- Access control,
- Trust internet - banking services,
- Assured privacy data delivery,
- Encryption,
- E-signature.
The role of Authentication

Use of strong authentication may be one of the way for trust users to e-commerce
E-Signatures Types

Electronic signatures

Advanced electronic signatures

Qualified signatures

Advanced electronic signature:
- qualified certificate
- certificate is in file system of smart card or token
- private key protected by PIN

Qualified signature:
advanced electronic signature
secure signature creation token
private key can't leave token
Signatures Types

Advanced electronic signature

CSP CryptoPro

Qualified signature

Key Container

Key Container
Identification and Authentication

Identification
- RFID
- Bar Codes
- Magnetic Strip Cards
- Touch Memory
- Electronic Keys
- Biometry
  - Static
  - Dynamic

Authentication
- Passwords
  - Nonexpendable
- Smart Card + PIN
- USB Token + PIN
  - Strong Authentication
  - OTP
  - Secured Authentication
Single (universal) Smart card

- PKI Certificates
- Contactless Chip
- Logical Access Controls
- Biometric credentials
- Passwords
- Barcode & Magnetic Swipe encoding
- Flexible Role Definition

Caroline Hall
EMP# 5222 22986
Example:
Token Management System
Hardware Tokens

IDC, 2004
Expected dynamic of market

IDC, 2004
USB Tokens Market

<table>
<thead>
<tr>
<th>Company</th>
<th>Revenue, $M</th>
<th>Share of the Market, %</th>
<th>Increase Annual Profit, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSA Security</td>
<td>127.8</td>
<td>40.2</td>
<td>20.8</td>
</tr>
<tr>
<td>Rainbow Technologies</td>
<td>47.4</td>
<td>15.0</td>
<td>12.0</td>
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<tr>
<td>Aladdin</td>
<td>45.3</td>
<td>15.0</td>
<td>12.0</td>
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<tr>
<td>VASCO</td>
<td>17.2</td>
<td>5.4</td>
<td>31.7</td>
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<tr>
<td>ActivCard</td>
<td>43.0</td>
<td>10.3</td>
<td>3.2</td>
</tr>
</tbody>
</table>

IDC, 2004
USB Tokens Market in Russia

- Aladdin: 69.8%
- Rainbow: 24.8%
- Active: 5.0%
- MultiSoft Systems: 0.9%
- Other: 0.5%

Own evaluations
Thanks you for attention

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