A New Approach to E-Banking

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Outline

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Phishing Attacks

Current Attacks

- Common attacks very simple
  - Just harvest credentials
  - Easy to defend against
  - Aim of current defences
- Complex attacks are easy
  - Real-time attacks—seen in the wild
  - Re-writing trojans—seen in the wild
  - DNS pharming—seen in the wild

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The key to securing internet banking is transparency for the user in what they are authorizing.

This requires a secure interface to the user, not just to the user's computer.

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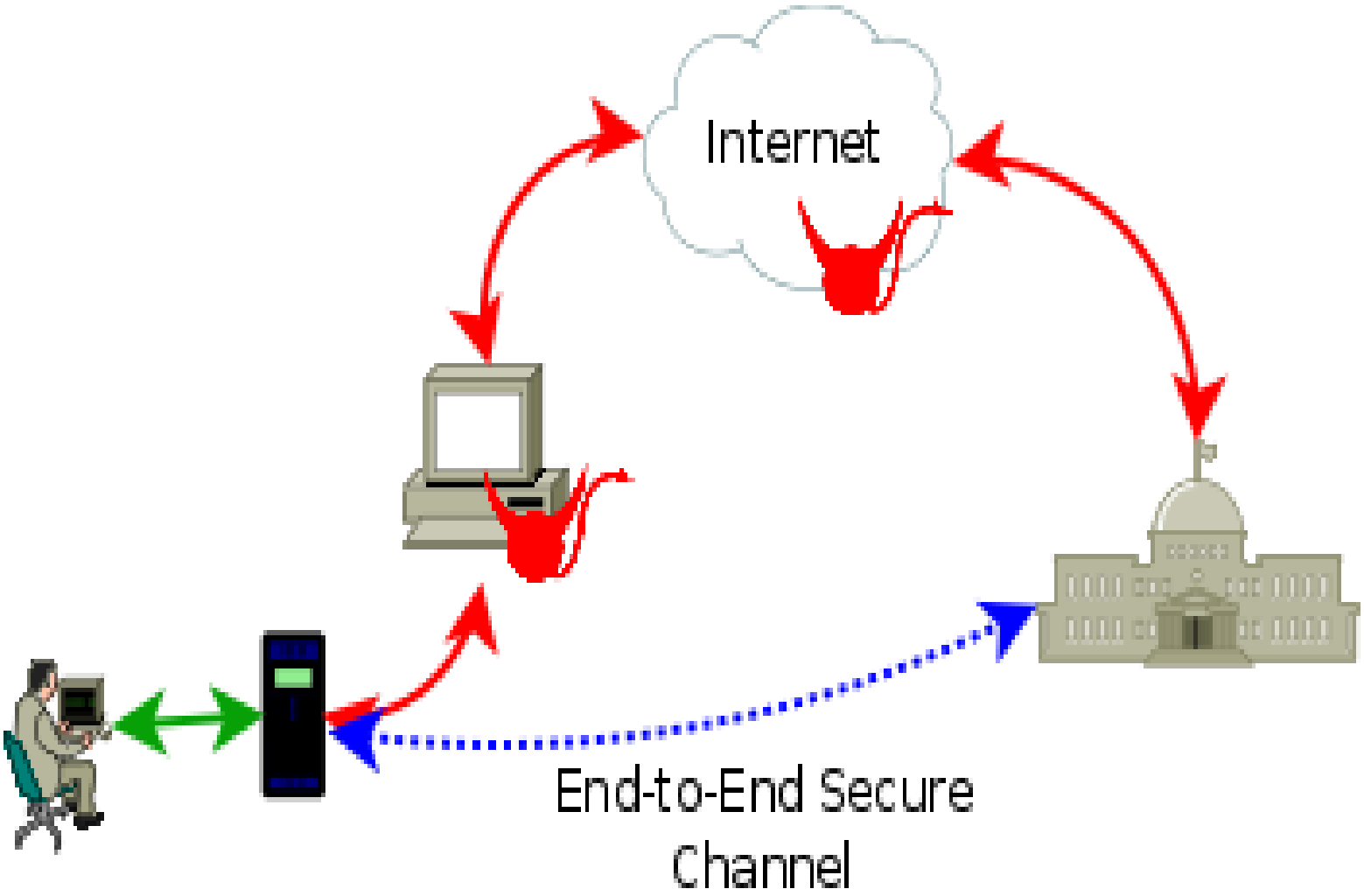
Outline

Banking Dongle

- Cheap (enough)
- Secure communication
- Display
- Input
- PC can be compromized

Banking Dongle Architecture



Bank–Device Protocol

Protocol

Bank	Device	User
Session Keys →		
	← Key ACK	
Transaction →		
	Transaction →	
		← Auth
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Key

- Encryption with long-term keys
- Session encryption
- Trusted UI

Full Protocol

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Consumer Protection

- Credit cards look out for the bank's interests
- Tills look out for the shop's interests
- Nothing looks out for the customer's interests

Can our device look out for the customer's interests?

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- Banks dispute claims of phantom transactions. . .
- . . . yet claim they can't disclose keys
- Customer gets receipts with MACs for valid transactions. . .
- . . . but cannot prove they *didn't* make a transaction

Provide the consumer with a verifiable audit trail which denies phantom transactions.

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Full Audit Protocol

Outline

Software Defences

- Mostly concentrate on common, simple attacks
- Heuristics and blacklists—can't catch all attacks
- Don't stop current attacks
- By definition can't stop a compromised terminal

Token Defences

Tokens

- APACS: must have dual-factor
- Often only window dressing
- Stop simple attacks
- Rarely more

Source

Mobile Phones

- Don't prevent all attacks
- Do we trust mobile phones?

Outline

Internet Shopping

- eBanking is not the only place you perform financial transactions
- Secure internet shopping is desirable
- Verified-by-Visa and SecureCode

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- Also provides protection for the consumer

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Any Questions?

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