Phishing and Mobile Phones

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USEC '07 "The Future of Phishing" panel discussion

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Summary

Mobile phones ...

... will become phishing targets

... can help protect against phishing

Phishing on phones

Phishing will come to mobile phones

Cellphones becoming pocket-size banks

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Posted 2/13/2007 10:10 PM ET

By Kathy Chu and Christine Dugas, USA TODAY

Mobile VPN Access

Access to valuable resources and services

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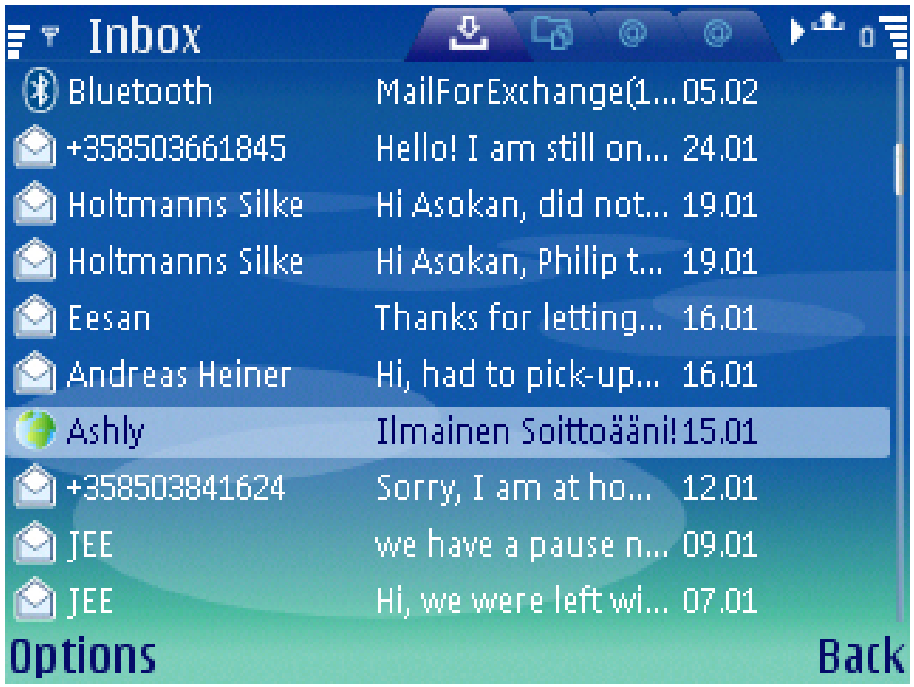
Traditional social engineering by phone

(Automated) phone call or message

- "Bad things are about to happen to you; please call this premium number"

- No evidence of large scale attacks

SMS Spam, SMS Phishing



Cost of sending will decline as a deterrent

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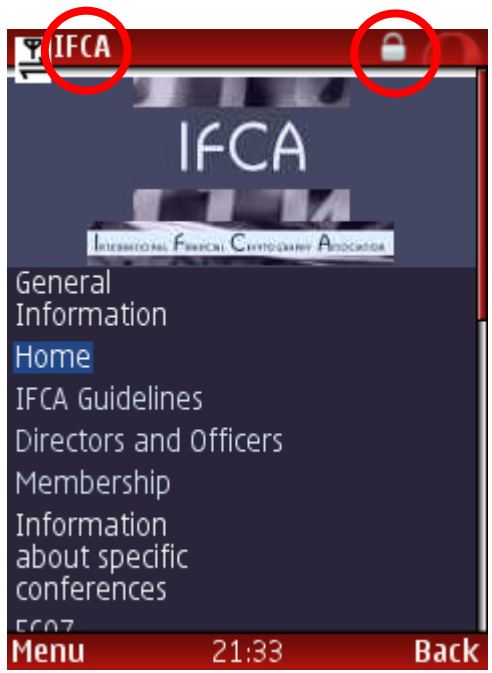
Protecting phone users will be difficult

Limited display capabilities…



Methods based on visual cues may not apply

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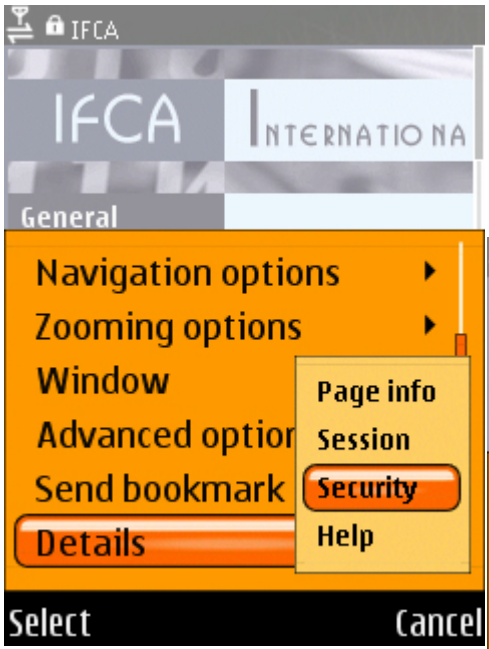
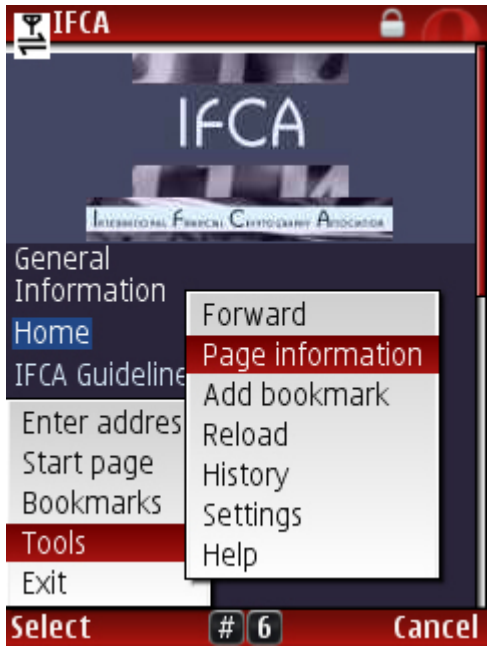
Protecting phone users will be difficult

Limited input capabilities…





~10 key clicks to security information

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Phone as an anti-phishing tool

Relevant features of mobile phones

Trusted path

- User input and output potentially difficult to spoof or intercept

Auxiliary “secure” communication channel

- *Implicit*: SMS, Cellular data
- *Explicit*: GBA (Generic Bootstrapping Architecture) 3GPP/3GPP2 standard

Mobile phone for trusted path

MP-Auth (FC ’07)

- Password entry on mobile device
- Encrypted for the server before leaving device

Personal Transaction Protocol (MeT Forum ‘02)

- Private key operations in mobile device
- Similar to PhoolProof (FC ’06)

…

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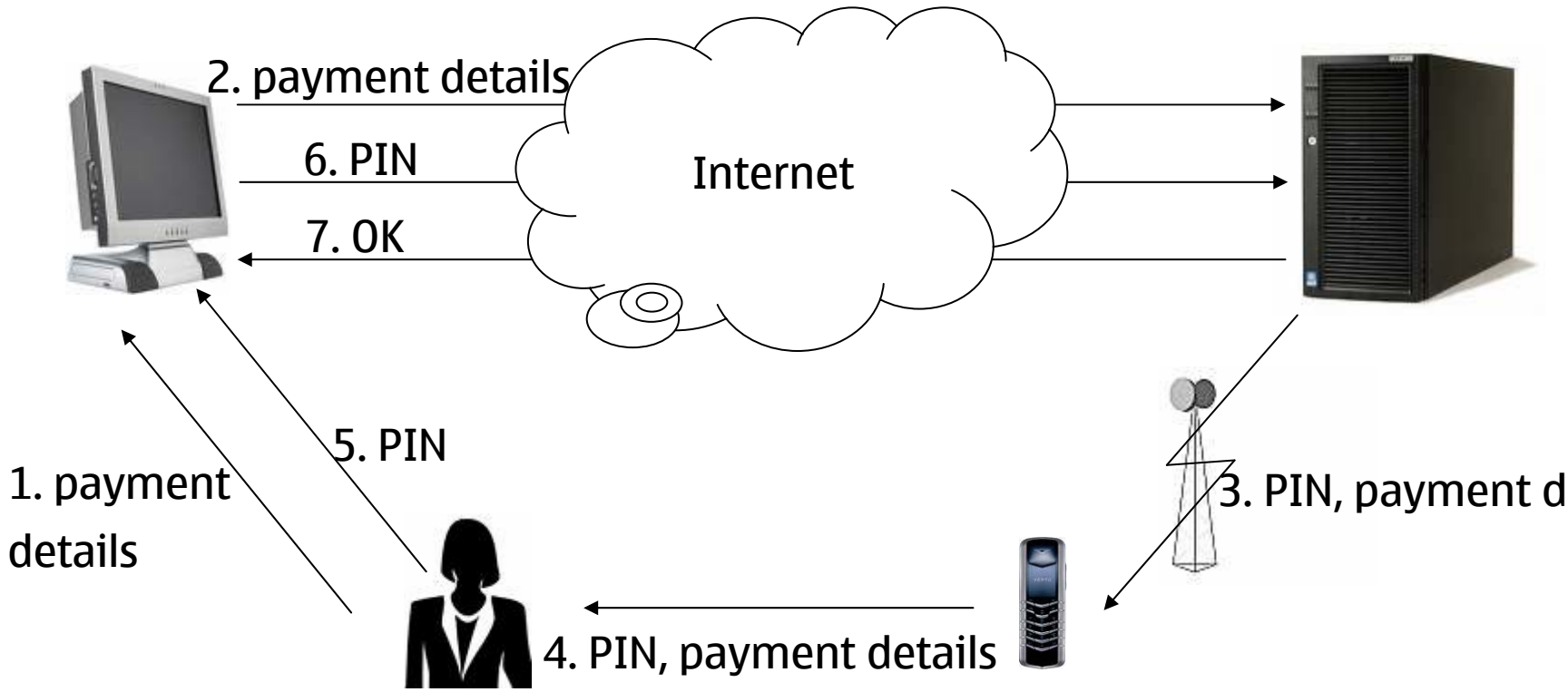
SMS as secret channel to user

RSA NetCode-SMS, used by NZ/Aus banks



SMS routing cannot be subverted

SMS messages remain private

No malware on the phone

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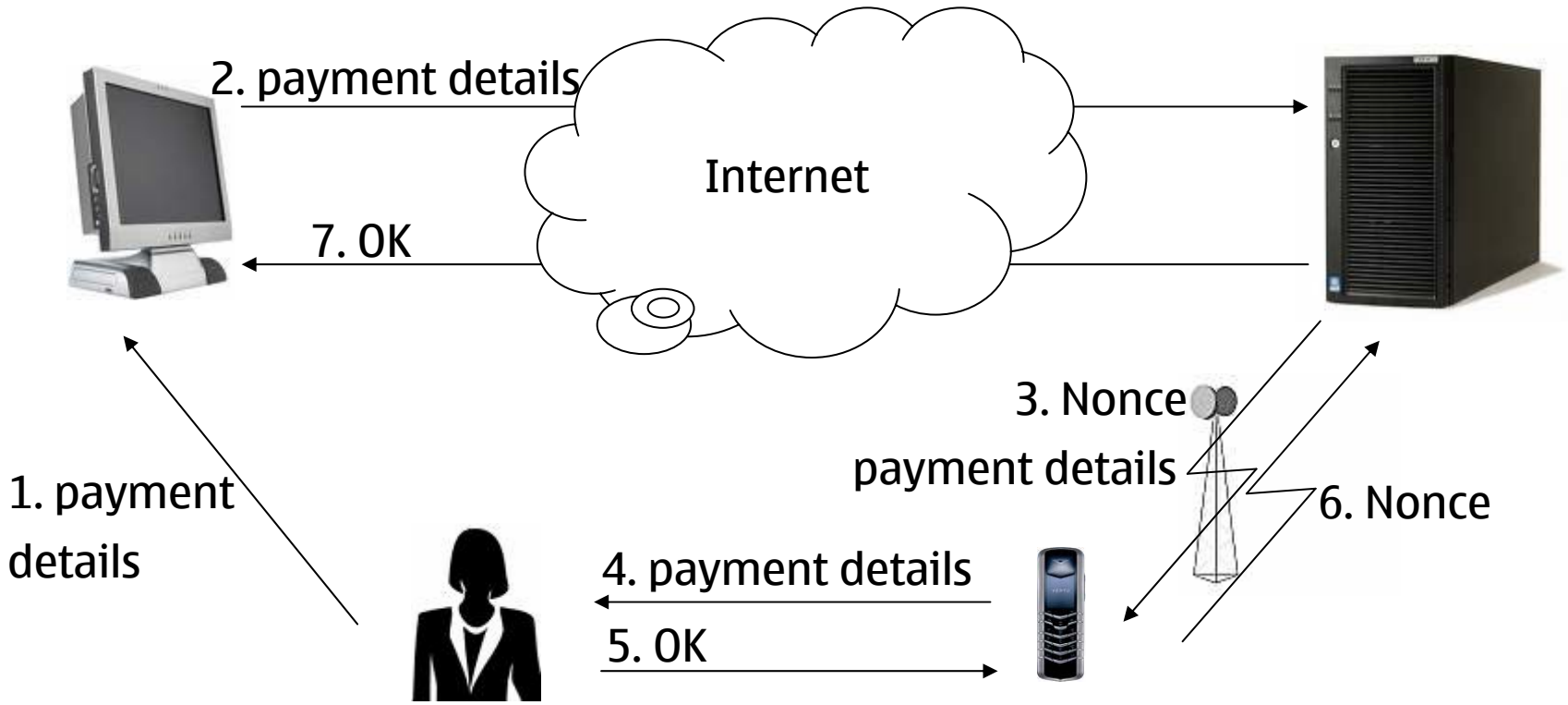
SMS as authenticated channel from user



SMS routing cannot be subverted

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No malware on the phone

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“No malware on the phone”?

Most phones are (still) closed systems

Security architectures for phone software platforms exist

- J2ME security architecture
- Symbian OS platform security

Symbian OS has platform security

- "Capability"-based security architecture
  - access to critical resources subject to permissions
    - TrustedUI, SWEvent, MultimediaDD, ..
  - Permissions grants based on code-signing or user approval
  - Untrusted programs have no direct access to display; cannot generate input events
- Each application has a private directory
  - Can be used to store information to personalize UI

“No malware on the phone”: reasonable?

Basic OS protection mechanisms exist

But bugs in privileged software will appear

Secure hardware will help

Summary

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… will become phishing targets

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Links

- Personal Transaction Protocol

  http://www.mobiletransaction.org/pdf/R200/specifications/MeT_PTP_v100.pdf

- Generic Bootstrapping Architecture

  http://www-admin.iee.org/OnComms/PN/communications/062%20-%20P%20Ginzboorg.pdf

- Symbian OS Platform Security

  http://forum.nokia.com/main/platforms/s60/security.html

  http://www.symbian.com/developer/techlib/v9.1docs/doc_source/guide/N10022/index.html