

Phishing and Mobile Phones

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USEC '07 “The Future of Phishing” panel discussion

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

**Access to valuable
resources and services**

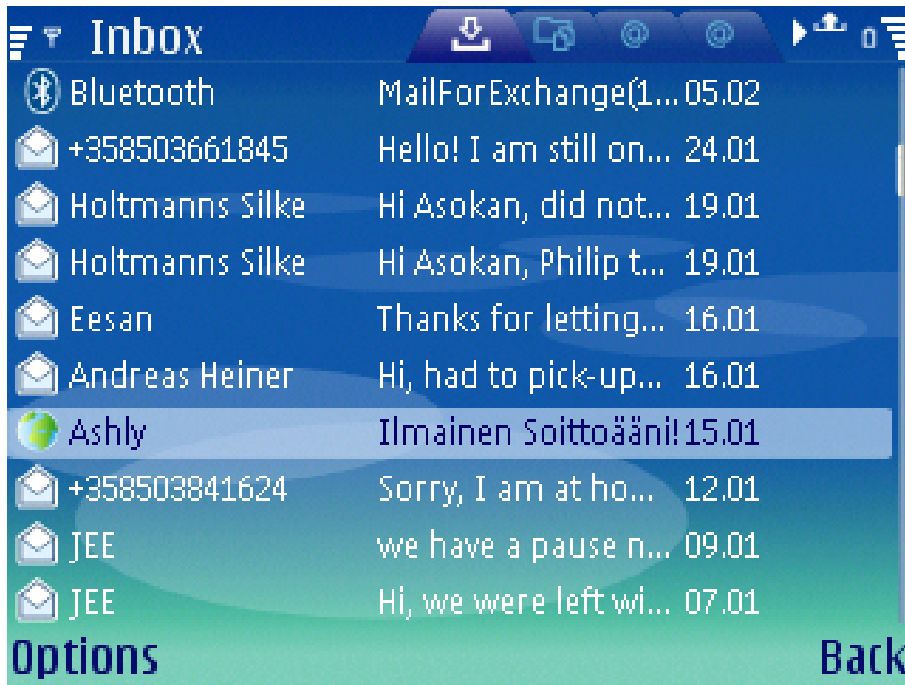
Mobile VPN Access

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

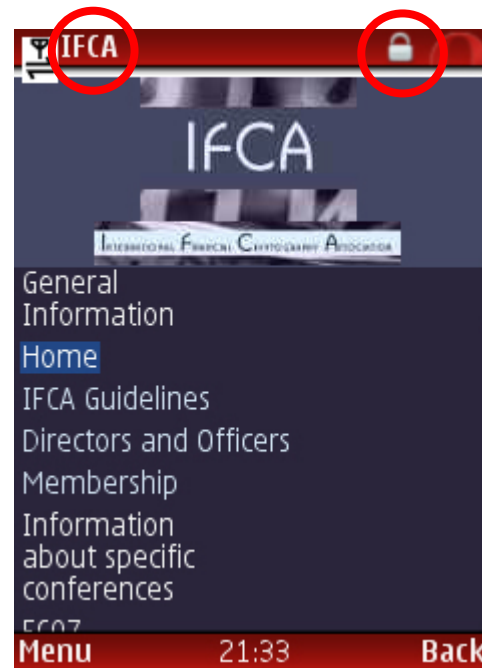
SMS Spam, SMS Phishing



Cost of sending as a deterrent will decline

Protecting phone users will be difficult

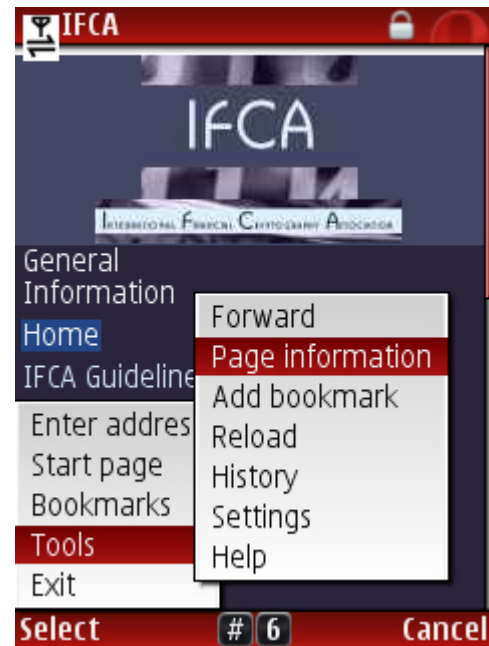
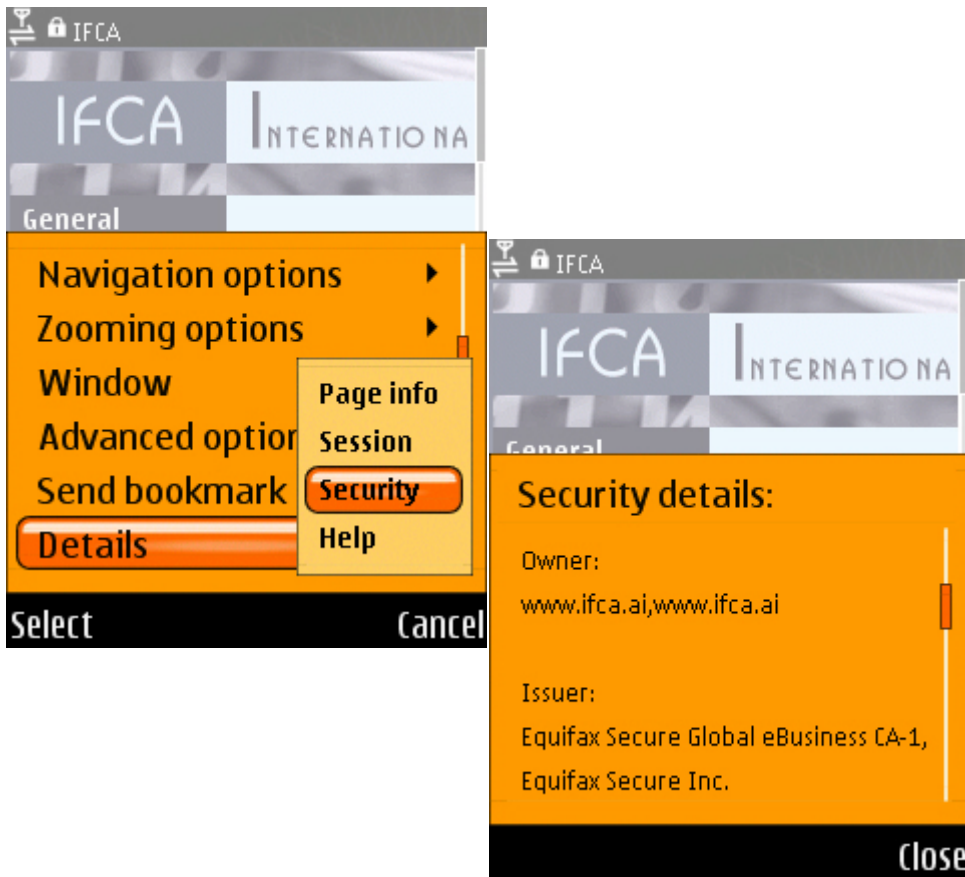
Limited display capabilities...



Methods based on visual cues may not apply

Protecting phone users will be difficult

Limited input capabilities...



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~10 key clicks to security information

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)

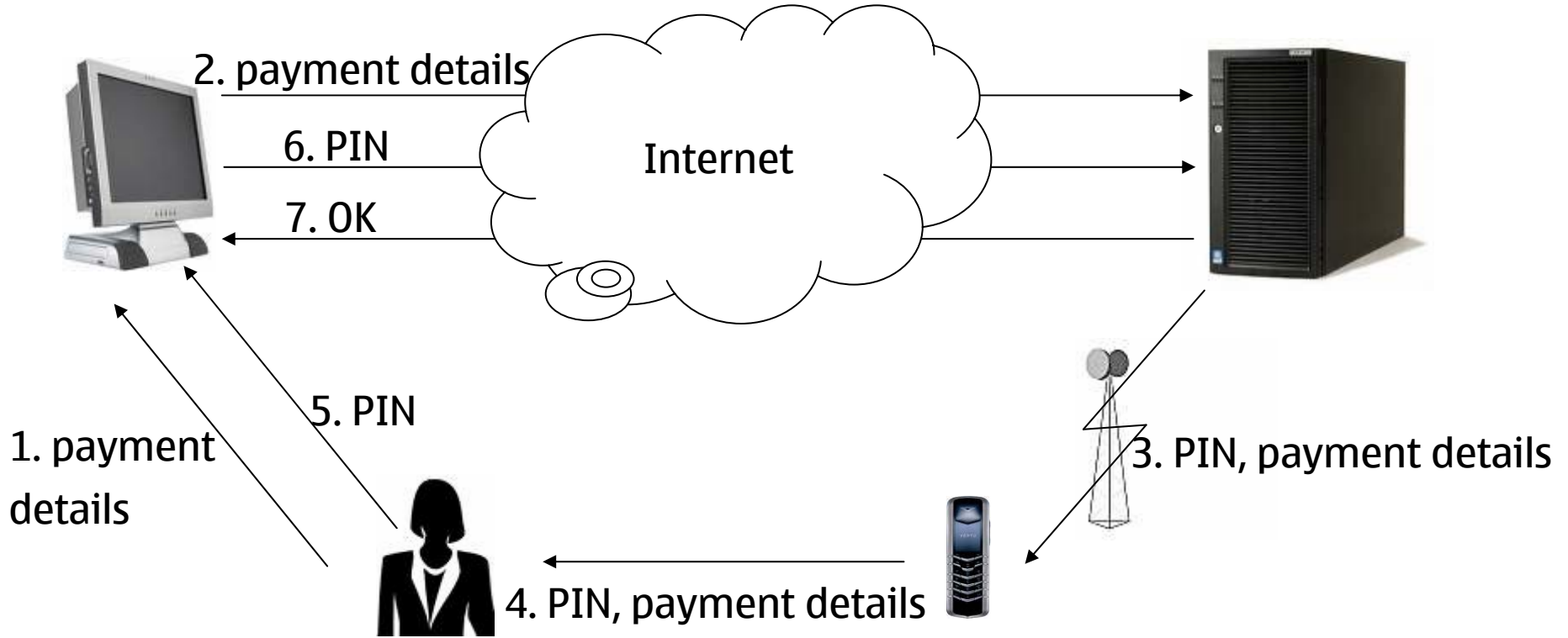
- Private key operations in mobile device
- Similar to PhoolProof (FC '06)

...



SMS as secret channel to user

RSA NetCode-SMS, used by NZ/Aus banks

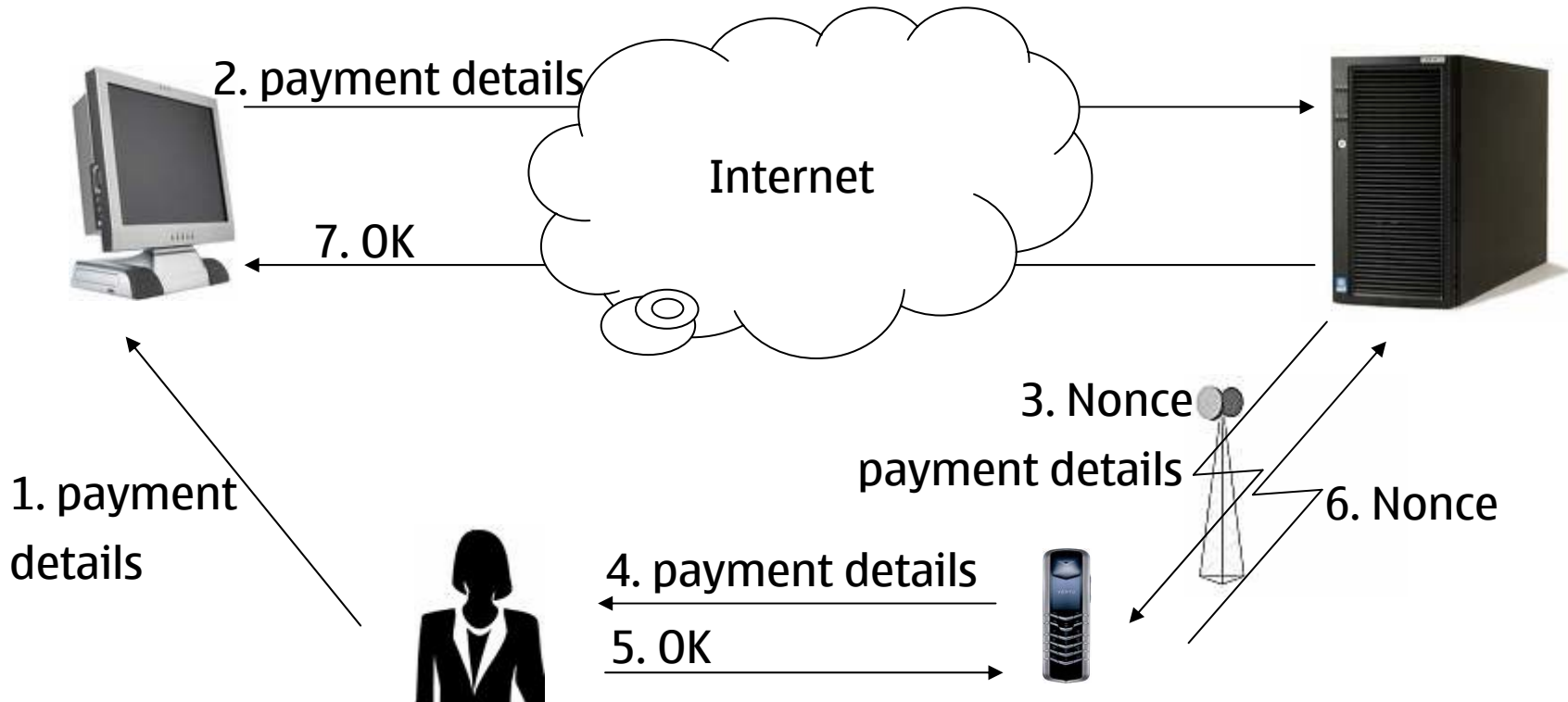


SMS routing cannot be subverted

SMS messages remain private

No malware on the phone

SMS as authenticated channel from user



SMS routing cannot be subverted

SMS messages remain private

No malware on the phone

“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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... can help protect against phishing

Links

- Personal Transaction Protocol

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

- Generic Bootstrapping Architecture

<http://www-admin.ietf.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