Bring Your Own Device For Authentication

The XignQR-System

Pascal Manaras – XignSYS
Markus Hertlein – XignSYS

{manaras, hertlein}@xignsys.com
Agenda

Authentication in Organisations

The Xign-System

Conclusion
Authentication in Organisations - Problems

- Password & Username most prevalent form of authentication

- Passwords are ...
  ... too easy to guess or
  ... too difficult to remember or
  ... used for more than one account and
  ... vulnerable to different attacks
Two fundamental approaches to tackle the problems of classic passwords

• One Time Passwords
  - Stolen root secret corrupts the whole system (no revocation)
  - Most problems of passwords still apply

• Challenge Response
  - Require special hardware
  (restricted number of Use Cases)
Bunch of different authentication methods within one organisation
Authentication in Organisations – Resulting Issues

- not interoperable
  → no authentication across organisations
- not easily integrated
  → huge amount of knowledge and time
- too complex
  → vulnerable to configuration and security issues
- not easily maintained
  → expensive
The Xign-System – A new approach
The Xign-System - Concept

• QR code as entry point
• Smartphone as personal authentication device
• Advanced security through use of security token
• Backed by public key infrastructure (PKI)
• Passwordless and secure authentication
• Reliance on standards where possible
• Authentication in different realms
• The ability to work across organisations

• Multirealm Authentication
  → Reservations, check-in, website, terminals, ...

• Passwordless due to Challenge Response

• Extended Cryptography

• Data Integrity and Pseudonymity
  → German data protection act
Phishing and brute-force attacks are not possible, since no password

Contextual information further improves security (plausability)

E2E-Encryption and mutual authentication prevent MITM attacks and data theft

Fast and efficient risk management
The Xign-System – Benefits

- Interoperability
  → Easy to use across organisations

- Easily integrable
  → Standards + Smartphone + QR Code

- Reduced complexity
  → prevents configuration and security issues

- Easily maintainable
  → fast response to failures while reducing costs

→ Gain security, reduce costs and optimize business processes
The Xign-System – Today’s vs XignQR’s situation

Today’s situation

Xing situation
A modern Authentication System - Requirements

- Interoperability
  → Standards where possible

- No requirement for special hardware
  → No extra devices

- Easily integrable
  → Use what already exists

- Easily maintainable
  → Usability and easiness
Today's authentication systems
→ Insecure password-based authentication
→ MFA too expensive or too complex

Modern authentication system
→ Interoperability, no special hardware, easily integrable, maintainable, reduced complexity, passwordless

The Xign-System answers future challenges
The Xign-System – Beyond authentication in organisations

- Secure and user friendly authentication for the public Web
- Enabler for a better way of online shopping and secure mobile shopping
- Possibility for signing transactions

**Outlook:** eIDAS conform trust services
Room for questions?

Pascal Manaras – XignSYS
Markus Hertlein – XignSYS

{manaras, hertlein}@xignsys.com