



## Mobile Application Security is challenging

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### Agenda

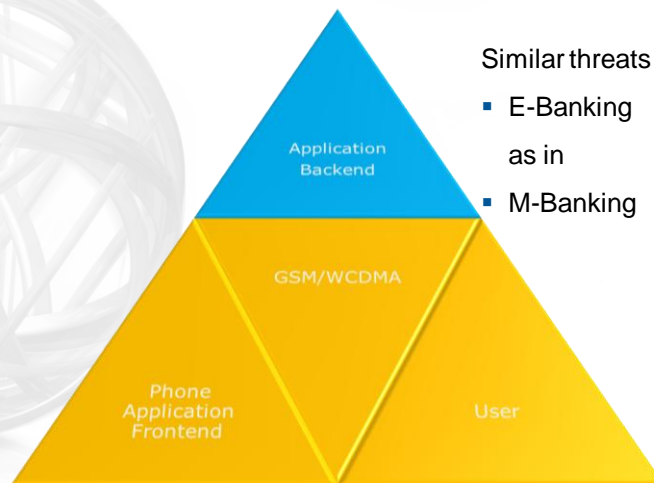
- Threats
- Mobile solution
- Mobile banking: a new banking channel
- Mobile phone as an authentication device
- The independent solution
- Experience with mobile phone as authenticator
- Advantages of using for Mobile
- Summary

### Mobile banking market factor push

- Growing number of mobile phones and other mobile gadgets
- New functionality in mobile devices
- Fast progress in mobile phone development
  - smart phones, communicators, etc
- New high speed telecom networks
- User are becoming experienced with downloads

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### About the threats



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## What is mobile banking?

- Banking services, delivered by means of mobile phone
  - Informational services: report on any type of transactions to mobile phone
  - Payment services, based on mobile phone
- Mobile banking can be based on different technologies
  - SMS
  - WAP
  - GPRS/Edge/3G

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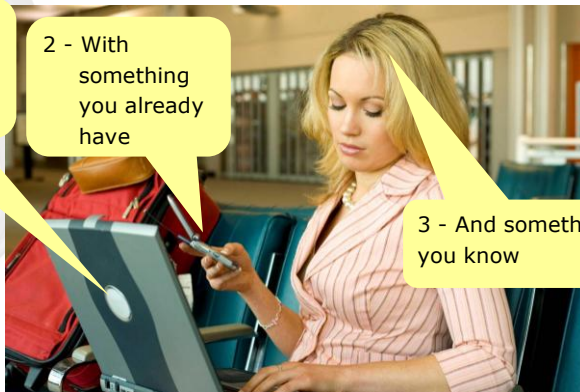
## Mobile Solution similar to On-line

2FA and Signature to facilitate your business

1 - Access online data

2 - With something you already have

3 - And something you know



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## Authentication by SMS

### Advantages of mobile phone as authentication device

- No need to distribute to the clients
- No need to have additional device – token, smartcard, etc.

#### Pro

- Very easy to implement
- Low initial investment
- Any mobile phone can be used
- To be used as a backup solution

#### Contra

- **Low level of security**
- High operational expenses
- Network coverage needed, delivery of SMS is not warranted
- Telecom receives OTP prior to the client
- SLA: uncertainty of delivery

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## Authentication by applet on phone

### Java Midlet for mobile phone (DIGIPASS 4 Mobile)

Around 85% of phones are Java-based

#### Pro

- Low operational cost
- Support for OTP and E-signatures
- Can be delivered to the bank as an application or set of API's
- Fully compatible with VASCO tokens

#### Contra

- **Less secure than HW token**
- Download of the secrets require special procedures
- Loss or change of mobile phone require another download of application and secrets

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## Authentication on SIM card

### Authentication application on SIM card (Digipass for SIM)

#### Pro

- **The same level of security as HW token**
- Any mobile phone can be used
- Support for OTP and E-signatures
- Fully compatible with VASCO tokens

#### Contra

- Special SIM card must be used – could require change of number
- Application development requires certification with telecom
- In mid-sized project cost of development might be to high

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## The problems with mobile apps

- Several Operators in one country
  - Operators own the SIM platform
    - => You need to pay for your place on the SIM
    - => You need to appeal to a mass market
- Many Handset manufacturers
  - They own their handset platform
    - => You need to have a mass market
    - => Try talking to Nokia(#1) or Samsung (#2)

**You are squeezed in between both**

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### Their benefit from you?

- What can you offer to Operators?
- What can you offer to Handset manufacturers?

Not much  
or  
Nothing at all

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### The « independent » solution

- The Micro SD card  
(where you store your pictures and music)
  - Independent from Operators
  - Independent from Handset Manufacturers
  - **Secure environment: similar to SIM**
  - Processor on board (MicroSD card with processor)
  - Hardware deployment instead of software deployment

Secure and independent: too good to be true?

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## MicroSD card problems

- Several form factors: but the same chip inside
- Most new handsets use MicroSD
  - except for
    - Low cost phones (no camera or no mp3)
    - Exotic ones: iPhone
- In most cases: drivers required
- Many operating systems to support:  
Symbian, Windows Mobile, Palm, Android, Black Berry,  
Palm Pro, ...
- Flash memory:  
Decreasing prices of flash memory: inventory

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## MicroSD challenges

- Maintaining the many different operating systems
- Compatibility testing for every handset
- How much flash memory?
- Transfer of data existing data
- What about applications from other service providers?
- **What about security between 2 applications?**
- **One MicroSD card – data from 2 or more applications**

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## Experience with m-banking

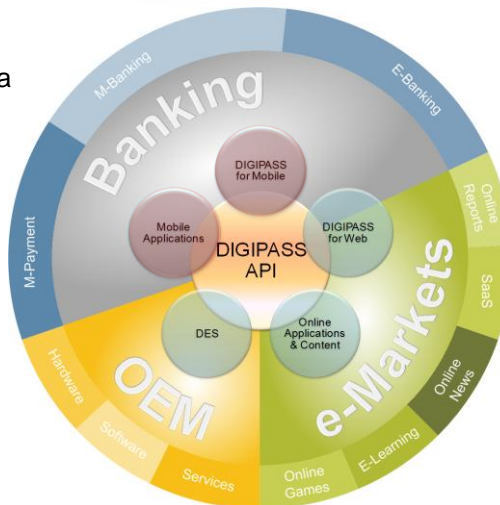
- Many types of mobile authentication:
  - Virtual DIGIPASS
  - DIGIPASS 4 Mobile
  - DIGIPASS for SIM
- Virtual DIGIPASS (SMS) – used as back-up authentication
- DIGIPASS 4 mobile – over 250 000 licences in field
- DIGIPASS for SIM – on demand




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## Mobile Solution part of larger

DIGIPASS for Mobile is part of a larger security platform



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## Mobile solution

Secure Access to online applications


**VACMAN Controller**  
A unique platform to use all DIGIPASS

Using your computer Digipass for Mobile provides you with 2-Factor authentication

Using your mobile DIGIPASS is embedded in your current mobile client-application.

- A server core component to authenticate users
- A core component and application to bring 2FA to mobile phones

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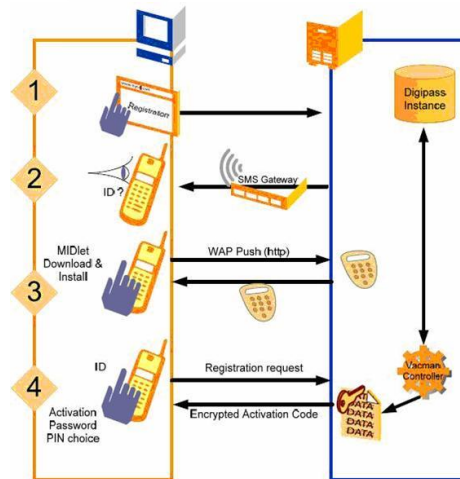
## DIGIPASS 4 mobile –midlet delivery

- DIGIPASS 4 mobile – two ways to download midlet
  - Connection to mobile phone (via USB cable or Bluetooth)
    - PC with midlet and connection to mobile phone
  - On-The-Air download (OTA)
    - GPRS connectivity required
- Midlet activation:
  - Manually, by handling or sending the PIN envelope to the customer
  - On-The-Air activation

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## Download and activation OTA

- 1 - User sends activation request via SMS;
- 2 - Bank request the unique Identification code, provided to the client
- 3 - The midlet is downloaded and installed on user's mobile phone
- 4 - The user enters into registration: requiring: ID code, activation password and PIN



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## Overview

- Low security:
  - SMS:
    - no deployment involved - delivery is the problem
- Some level of security:
  - Java applet:
    - Midlet delivery : 2 methods
- High security:
  - SIM:
    - physical deployment on SIM card
  - MicroSD:
    - physical deployment

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## VASCO Data Security

- A world leader in authentication has a full set of solutions for mobile banking
- Constantly works over design of it's solutions, based on mobile phone usage
- Customers use the benefit of experience in authentication

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# QUESTIONS?

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