



Smart Cards and Tokens for Authentication in a Digital Age

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Legal stuff: Disclosure

I am an active appointed Special Government Employee serving Secretary Napolitano on the Department of Homeland Security's Data Privacy & Integrity Advisory Committee.

My presentation does not represent either the opinion of
(a) The Department of Homeland Security or
(b) The DHS Data Privacy & Integrity Advisory Committee.

My opinions expressed in this presentation are my own and are supported by my employer: Gemalto, Inc.

Agenda

- ✦ Our Digital age
- ✦ Identity and it's place today
- ✦ How privacy is adapting
- ✦ The need for authentication
- ✦ A bright future for Smart Cards & Tokens
- ✦ An Authenticated future in a Digital Age
- ✦ Summary



Our Digital Age

A revolution in the making

✦ The Internet Impact:

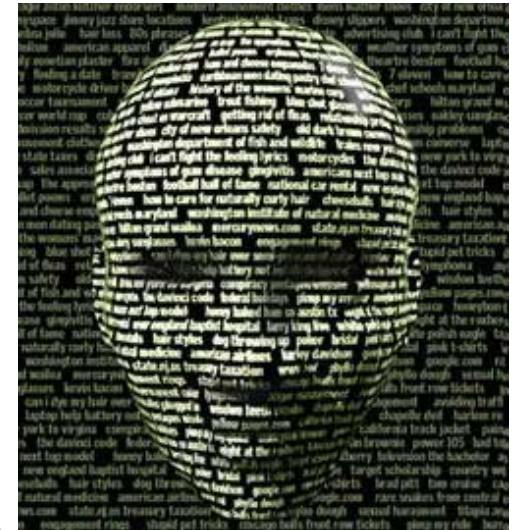
- We work online
- We shop online
- We bank online
- We email others
- We message others
- We chat with others
- Our Children are online
- We search & research online
- We can access it mobile or with broadband lines
- We participate in interest groups and virtual communities online
- We sign up for instant alerts; prompts; reminders; etc

- We are “connected” for as much or little as we wish...”always on”
- Just 15 years ago we thought Telex & Fax were cool!



Identity and it's place today

- ✦ Who you are. Part of how we know you from others
- ✦ How to communicate to you
- ✦ How a government can account for you
 - Social Benefits; Taxes; Records about you (Birth; SSNs etc)
- ✦ How a Doctor can treat you effectively
- ✦ In a Digital Age this becomes difficult to manage.
- ✦ Real World Identities are hard to assert in a Virtual World.
 - We are all reduced to just ones and zeros
- ✦ The use of your “Identity” or chosen “Personas”?
 - Real world Identity – who you are in public society
 - Persona – who you “are” in a public or private society



How Privacy is Adapting

✦ Social networking sites

- **Facebook; MySpace; etc**
 - A Public face of your identity or Persona
 - You are in control of what to present. 😊
 - But what and how much to present?
 - And who has access to it?
 - It may “live” longer than you expect....
- **How do we protect the privacy and safety of our children online?**

✦ Databases and information gathering is continuous

- **Credit reporting agencies**
- **Banking information**
- **Medical records**
- **Transactional information**
- **Travel information**
- **Targeting advertizing/email/messages**



A New Privacy?



★ Privacy is Changing

- We appear more willing today to give something about us in order to benefit in some manner.
- Much of what we do today leaves a trail of information. Our privacy erodes.
- We can reach wide audiences through the information Infinity. Privacy?.
- We can choose not to participate but at a cost to the individual.

★ A Generation Gap?

- Younger generations are less concerned about privacy and see online participation as a way of life. Having multiple personas is also commonplace.

★ Privacy is Subjective.

- It means different things to everybody.
- Cultures have influence on privacy.

But we must protect our Real World Identity from misuse and abuse in both the Real World and the Virtual World

The Need for Authentication

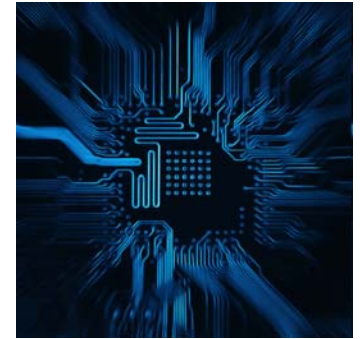


- ✦ As our online world grows so does the need to know who we are dealing with.
- ✦ We have to translate our Real World identity into the Virtual World.
- ✦ It must be a trusted translation for the virtual world to remain secure and workable.
- ✦ Without authentication the model fails and will become abused.
- ✦ Everybody must be able to obtain access in a trusted manner to the virtual world. Governments & Commerce should demand it.
- ✦ The key is to have a trusted issuer for Government and commercial applications to thrive.
- ✦ **Who will be the trusted issuer(s) of these digital identities in our Digital Age?**

So how do we achieve such a goal?



Electronic Authentication = Trust



- ✦ Comprehensive enrollment into an Identity Management Scheme
- ✦ Issue the user with a device which acts as their security agent and can be their electronic credential.
- ✦ Set up services which support the Identity Management system
- ✦ Verify the user and security device are present
 - Device+PIN/Password/Biometric
- ✦ Strong authentication to the service being accessed
 - Mutual authentication
 - Verification of validity of device and user
- ✦ Secure communication
 - Encryption
- ✦ Authentication
 - Digital Signatures

A Bright Future for Smart Cards & Tokens



- ★ Proven Technology; 25years mature
 - 1B SIM Cards
 - 150M eIDs
 - 200M Healthcards
 - 100M+ epassports
- ★ Widely adopted throughout the world
- ★ Two factor strong authentication
- ★ Security Certifications – Trust.
- ★ National and International Standards
- ★ Competitive market
- ★ Ensures secure identity authentication & verification
- ★ Enhances privacy and keeps the user in control
- ★ Various form factors

An Authenticated future in our Digital Age

- ★ Many countries are deploying eIDs.
 - 25 Countries have issued eIDs to their populations to-date.
 - Governments are enabling a trusted identity credential for their citizens
 - Commercial applications can utilize these trusted citizen credentials
 - The European Citizen Card (ECC) standards have already been issued.
 - Children need protection online. The Belgium KIDs-eID is pioneering this area.
 - Healthcare systems account for 200M eIDs
 - Access to services & Payment settlement
 - Access to EMR demands strong authentication



Summary

- ✦ The Digital Age is moving fast.
- ✦ The control of access to information will get increasingly important.
- ✦ The need for trust in a Digital Age is just being realized.
- ✦ Identity authentication in a Digital Society is an emerging challenge. It has a long way to go.

- ✦ Our industry is the key to bridging the Real World to the Virtual World.

- ✦ Trusted Issuers must emerge to enable the future online.

- ✦ Thus enabling a wealth of new opportunities....

Trust is everything for our Digital Age
Smart Cards & Tokens are just getting mainstream!

Thank you

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Virtual World Personas withheld! ;-)