On Cyber-Peace

Towards an International Strategy of Cyber-Security

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DeepSec In Depth Security Conference



Über Mich

- NetBSD-Developer, Hacker for almost 20 years
- consultant for IT-Security with focus on Social Engineering, Security Awareness and Counter Intelligence (`www.Kaishakunin.com`)
- Co-Founder and Managing Director of Magdeburger Institut für Sicherheitsforschung `www.sicherheitsforschung-magdeburg.de`
- Co-Editor of Magdeburger Journal zur Sicherheitsforschung
- studied educational science and psychology



Danger

I am not going to present a plan or algorithm to make »the internet« secure, but just some thoughts on IT security from a more global point of view.

strategic level, according to Carl von Clausewitz



On Cyber War

- DeepSec 2010: Cyberwar on the Horizon? Cybercrime/-war
- hype in the media on cyber (in-)security and cyber war
- good: awareness on security is on a high level (at least for some)
- bad: not anyone involved in the discussion knows what he's talking about
- ugly: some journalists, politicians, lobbyist groups (DRM etc.)



Current Development in IT-Security

- IT is emerging to many new fields
- IT security is also emerging to new fields
  but many are not aware of IT security problems
- Electrical and Mechanical Engineers have a complete different concept of security
  static rules published by the organization for standardization (DIN)



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the pestilence of modern days ...

- Networking/Internet is emerging to new fields
- IPv6 enables each coffee maker and fridge to be online
- smart living roles out more and more IT
- use your smart phone to control your heating at home and instruct your fridge to order more beer online ...
- once again: it security is expensive and not that sexy, so it is (mostly) ignored
- Cassandra is calling ...



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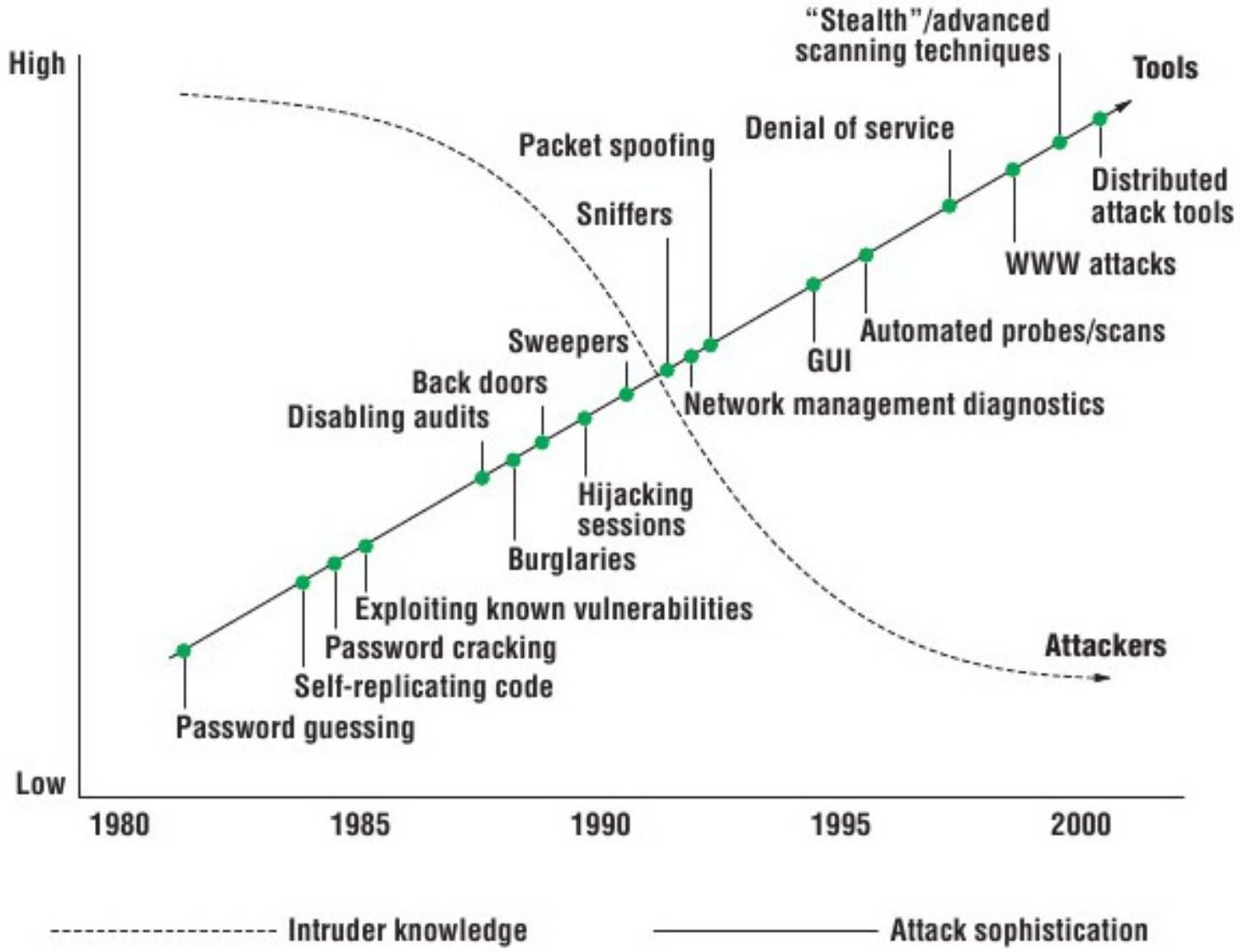


Stuxnet

- attacked Programmable Logic Controllers (PLC) on Industrial Control Systems
- included the first (created | known) PLC rootkit
- Industrial Control Systems are mainly developed/operated by Electrical Engineers $\rightsquigarrow$ different concept of »security«
- further malicious software might attack other PLCs/ICSs
- a car has been hacked by a manipulated MP3 CD



Attacks - the complete picture



Zombies, Botnets and dDoS

- botnets containing of thousands or even millions of zombies
- used by eg. cyber crime groups to extort companies like banks
- botnets are usually created by automated scanning of large nets and automated exploiting of detected vulnerabilities
- most exploits are already known and patches are available - but not installed
- many average users are still not aware of it security
- if they are aware, they are lacking skills to secure/harden their systems
- according to Microsoft, ca. 40% of exploits use vulnerabilities, where security patches have been available for more than 12 month



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- a technique to circumvent security mechanisms by misusing human behavior
- »Hacking People«
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IT security is multi factorial

- IT security is not just a technological problem
- technological dimension – psychological dimension – social dimension – political dimension – legal dimension
- IT security has to extend its limitations to technology
- cooperation with psychology, social science, educational science, didactics, adult education, law, politics



the human factors ...

- human factors research - a branch of (industrial/engineering) psychology
- man machine interaction, cognitive load of cockpits, electronic assistants in cars
- security awareness and capacity building
- How do I motivate people to get interested in IT security? (huge problem)
- How do I train and educate people in IT security matters? (install patches etc.)
- Want to prevent Social Engineering? $\rightsquigarrow$ social problem $\rightsquigarrow$ social solution $\rightsquigarrow$ psychology
- So there is a lot to do, let's get it on :-)



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Manufacturers of Software

- have to deal with security problems
- develop and roll out patches etc.
- get in contact with security researchers, (white hat) hackers
- be aware of security matters



Politics and Law

limited to Germany

- product liability by the manufacturer
- user liability by the user
- users in Germany are normally not responsible/liable for the technical security of their Computers
- but they are responsible/liable for the security of eg. their car
- this should be changed
- the manufacturer of software should also be responsible and liable for their products



Politics

- security policy is an essence of every government (police, firefighters, hospitals, armed forces ...)
- the internet is being discussed by politicians (mostly in a very strange way)
- talk to them, educate them, don't vote for them, found a political party ;-)
- if the manufacturers of software don't care about security, the government could force them ...



nations unite ...

- governments and countries should cooperate in fighting cyber crime
- get aware of cyber crime
- exchange knowledge and technology
- shut down cyber crime gangs



solving solvable problems

some ideas

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- Microsoft evolved and implemented a cyber security strategy (good)
- the users did not evolve (bad)
- Psychology: Awareness, Training, Education
- Politics: make users liable for security problems
- Media: Awareness, cover the topic (in a serious way!)
- Social Science: Knowledge Management in Organizations



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Sum it up

- IT security has many dimensions
- IT security professionals/researchers have to connect to that dimension
- problems can often only be solved in some or all of these dimensions
- IT security is not static!
- Security Experts of the World: Unite!



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Questions?

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