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Open Data, Government Transparency, Cybertheft & Individual Privacy

IMLA, 2017 Mid-Year Seminar, Washington, DC

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General note

No mobile please



Question?



Griffith & Kohlmeier

Benjamin E. Griffith



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IMLA International Committee

ABA Board of Governors

Sven Kohlmeier



Kohlmeier Law Firm

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Member of Berlin House of Representatives

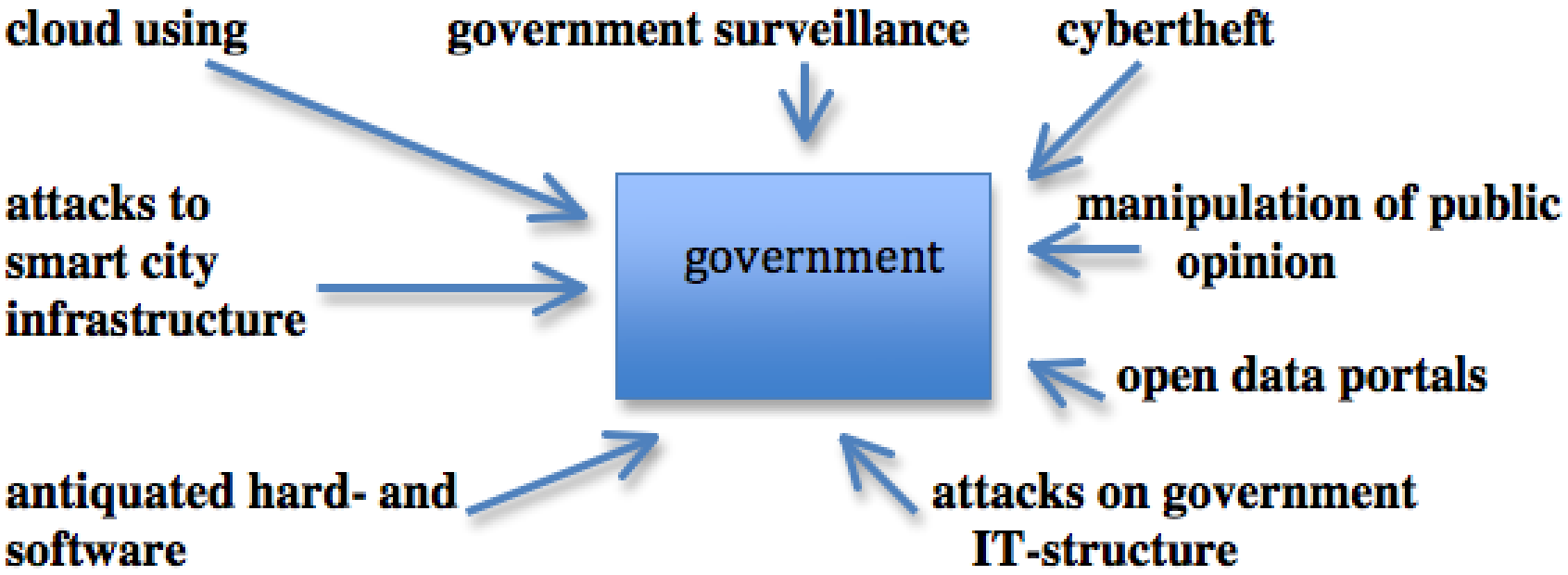
Introduction

- How do you feel in the time of global internet communication?
- Where better live to protect against government surveillance – US or Europe?

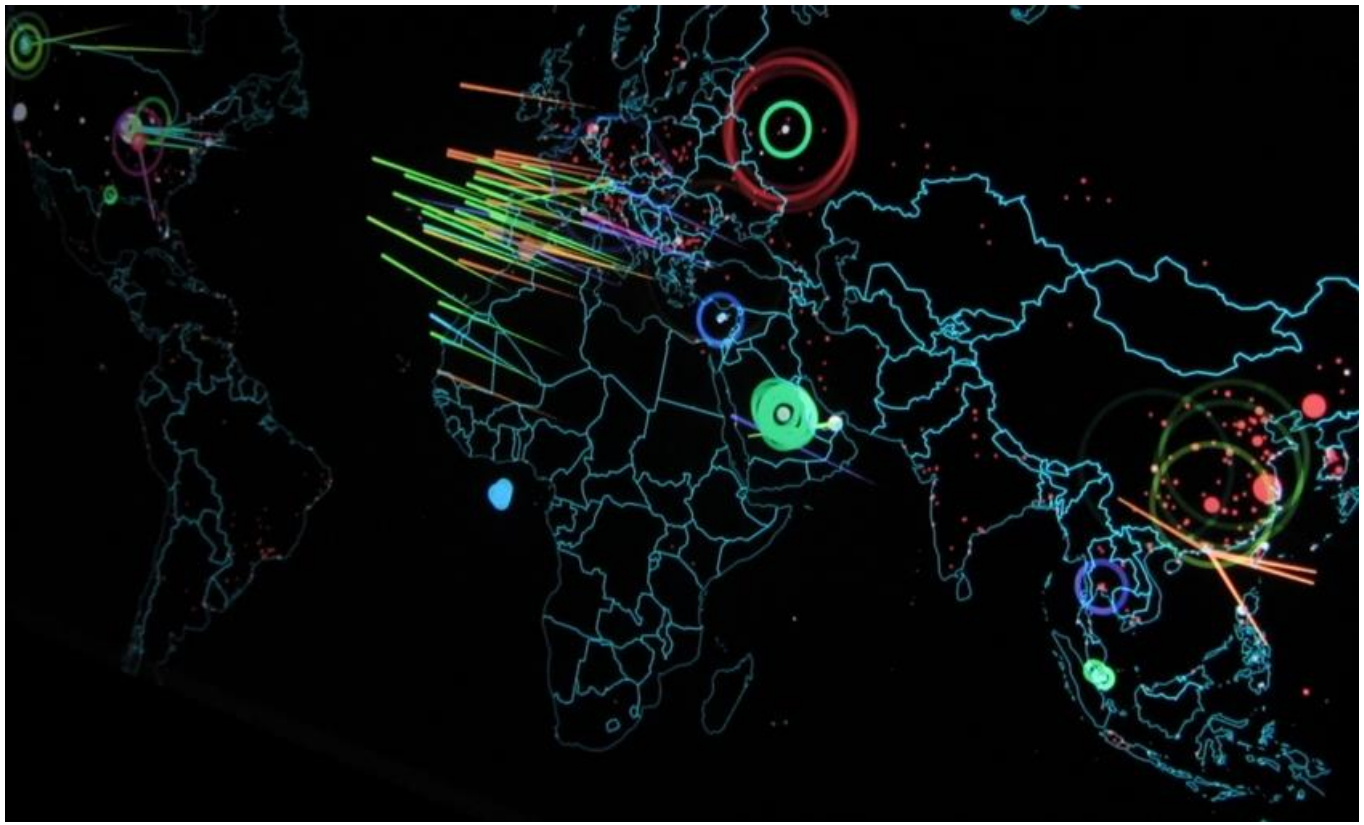
Question to the auditorium

- Who is using unencrypted emails ?
- What do you know about cyber theft?
- Who is using a cloud solution to storage private or business based data?

What we are talking about



Introduction:
Scope of the Problem



Government Surveillance – National services are watching you

- Does the NSA collect any type of data at all on millions, or hundred millions, of Americans?

- „....*not wittingly*....“ (James Clapper)



Privacy interest in a global surveillance world

- Is there still privacy safeguard in our electronic communication e.g. emails, chats, whats app and similar?



U.S. and E.U. Not On Same Page in Privacy v. Security ?



Government Surveillance

United States Court of Appeals
FOR THE SECOND CIRCUIT

August Term, 2015

Argued: September 9, 2015 Decided: July 14, 2016

Docket No. 14-2985

In the Matter of a Warrant to Search a Certain E-Mail Account Controlled and Maintained by Microsoft Corporation

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MICROSOFT CORPORATION,

Appellant,

– v. –

UNITED STATES OF AMERICA,

Source: http://digitalconstitution.com/wp-content/uploads/2016/07/Decision-opinion.pdf

Government Surveillance

- 14.07.2016: Docket No.14-2985
  Court of Appeal, New York

  "Accordingly, the SCA does not authorize a U.S. Court to issue and enforce an SCA warrant against United States based service provider for the contents of a customer's electronic communications stored on servers located outside the United States."

Government Surveillance

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

In re Search Warrant No. 16-960-M-01 to Google	:	Misc. No. 16-960-M-01 16-1061-M
In re Search Warrant No. 16-1061-M to Google	:	

MEMORANDUM OF DECISION

THOMAS J. RUETER
United States Magistrate Judge

February 3, 2017

In August, 2016, this court issued two search warrants, pursuant to section 2703 of the Stored Communications Act, 18 U.S.C. §§ 2701 et seq. ("SCA" or "Act"), which required Google Inc. ("Google") to disclose to agents of the Federal Bureau of Investigation ("FBI") certain electronic data held in the accounts of targets in two separate criminal investigations.

Source: http://www.paed.uscourts.gov/documents/opinions/17d0077p.pdf

Government Surveillance

- 03.02.2017: U.S. District Court, Philadelphia, HONORABLE THOMAS J. RUETER

-> “Electronically transferring data from a server in a foreign country to Google’s data center in California does not amount to a “seizure” because there is no meaning full interference with the account holder’s possessory interest in the user data.“ (page 20)

-> Conclusion: “For all the above reasons, the court will grant the Government’s motions to compel Google to comply with search warrants.”

State of Cybersecurity in Local, State & Federal Government

- Infrastructure is becoming one of the ripest targets for cyber attackers.



Reasonable Cybersecurity Actions Based on Threat Profile

- What is the local government entity's risk appetite?



Interrelated Cybersecurity Issues



Projected Costs for Cybersecurity Protection

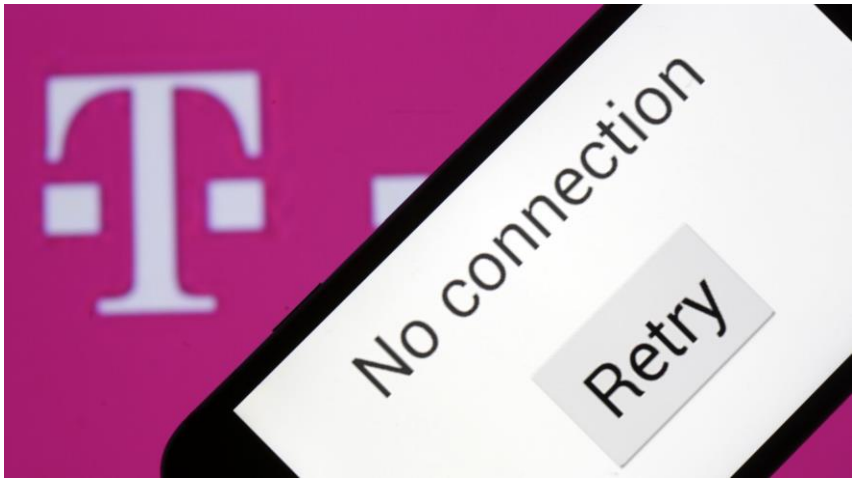


- Advances in Technological Innovation vs. New Opportunities for Exploitation

A Quick Look at the Numbers

- BP claimed to have suffered 50,000 attempted cyber intrusions per day.
- The Pentagon reported 10 million cyber intrusion attempts a day.
- The U.S. Energy Department's National Nuclear Security Administration recorded 10 million hacks a day.
- The United Kingdom reported 120,000 cyber incidents per day.
- The State of Utah claimed to have 20 million attempts per day, up from 1 million per day two years before.

Attack against German Telekom Internet routers



- Strongest DDos-attack with Mihai-malware

Attack on Cellebrite with theft of 900 GB of data



Cyber attacks on the German Armed Forces



Cyber Attack on the German Bundestag



Segate's $55 Million ATM Cashouts

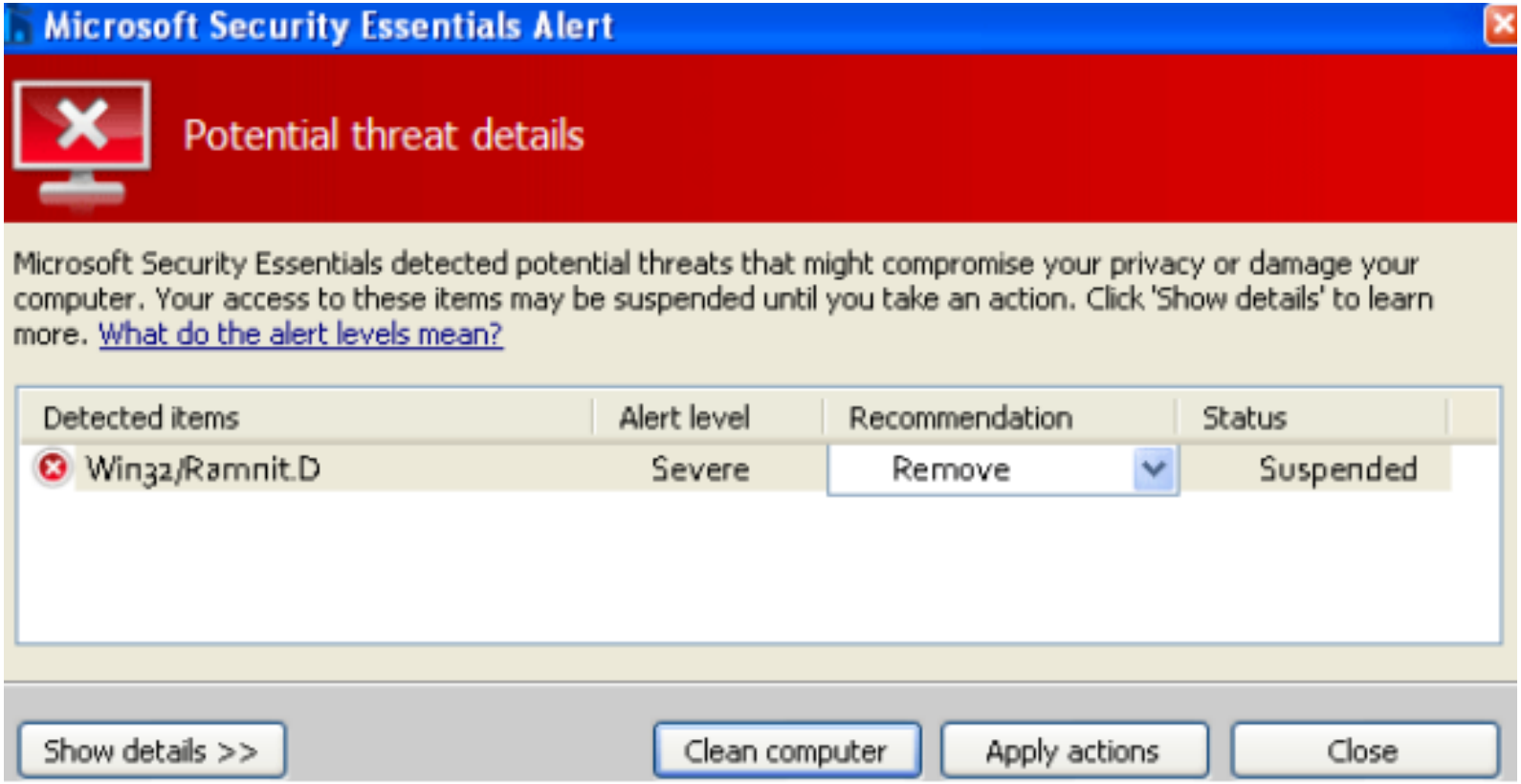


Europol Cross-Border Cooperation



- International engagement on cybersecurity is essential, and Europol's efforts proved it.

Ramnit: Public-Private Collaboration to Enhance Cybersecurity



Financial Malware



Chelan County, Washington v. Bank of America Corporation



Bank of America

From: Bank of America [mailto:onlinebanking@ealerts.bankofamerica.com.ru]
Sent: Monday, March 09, 2015 11:24 PM
To: joe.customer@gmail.com
Subject: Security Alert: Unusual Debit Card Activity

...our fraud programme detected unusual activity on your Bank of America account.

Please sign in to Online Banking at www.bankofamerica.com.ru to review and verify your information. After verifying your information we will take the necessary steps to protect your account from fraud.

If you do not respond to the link above immediately...

guarantee the security of a phone request.

Please disregard this notice if you have already contacted us.

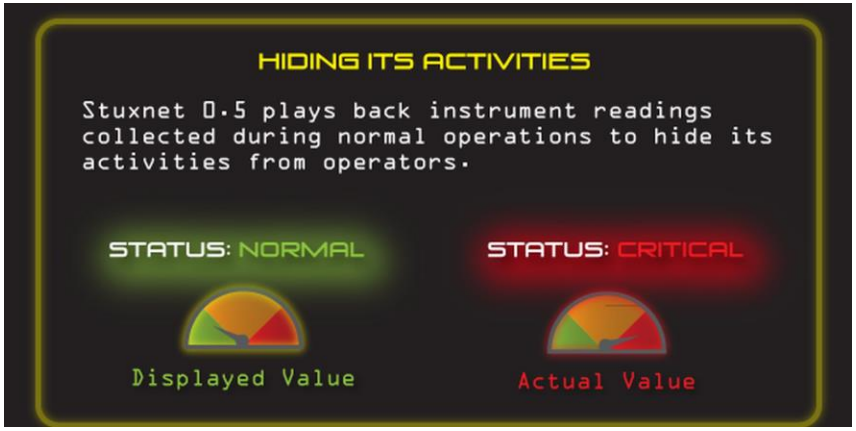
Security Checkpoint

To confirm the authenticity of messages from us, always look for this Security Checkpoint.

Iranian Cyber Attacks Targeting New York Dam

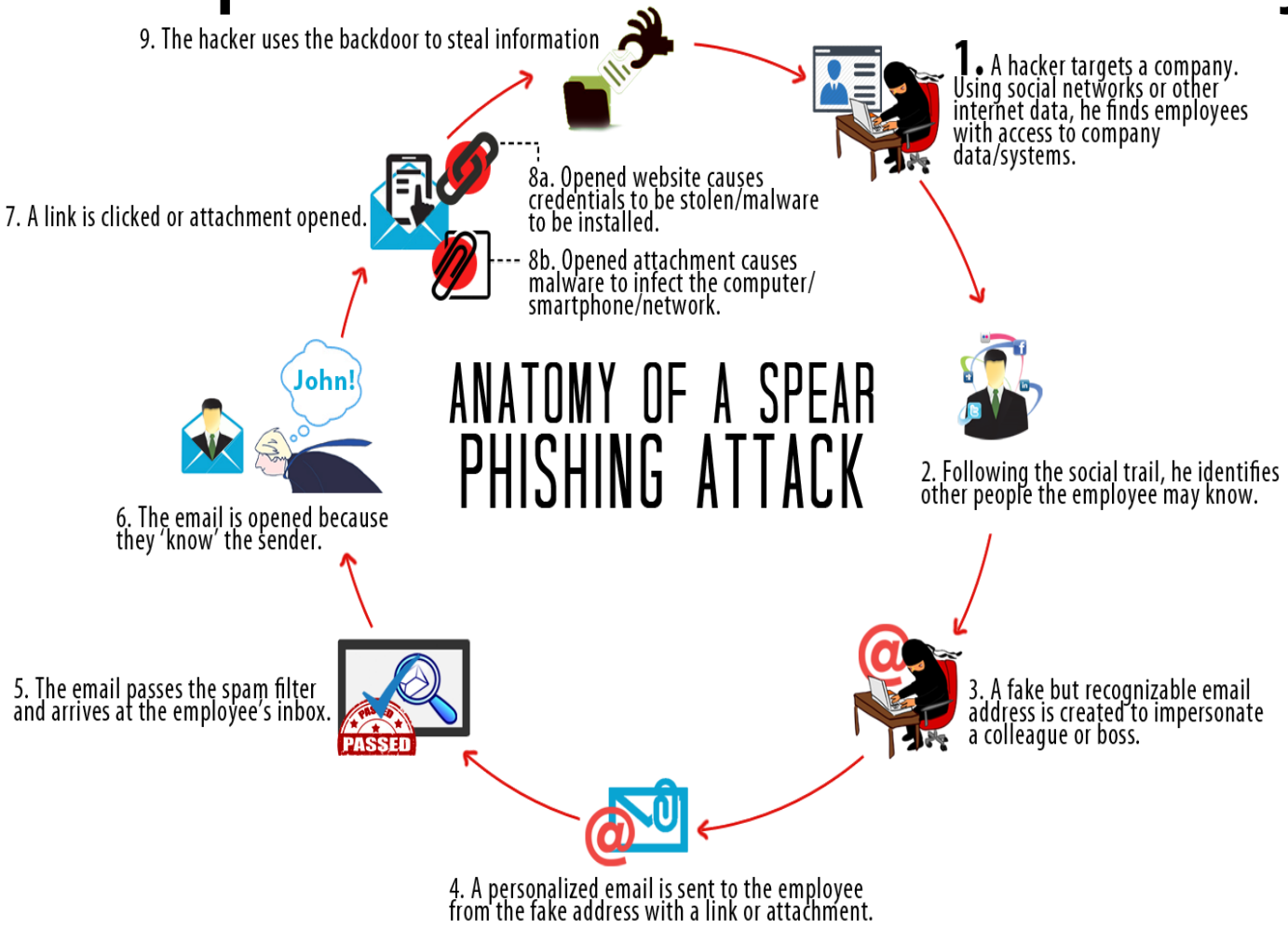


Stuxnet

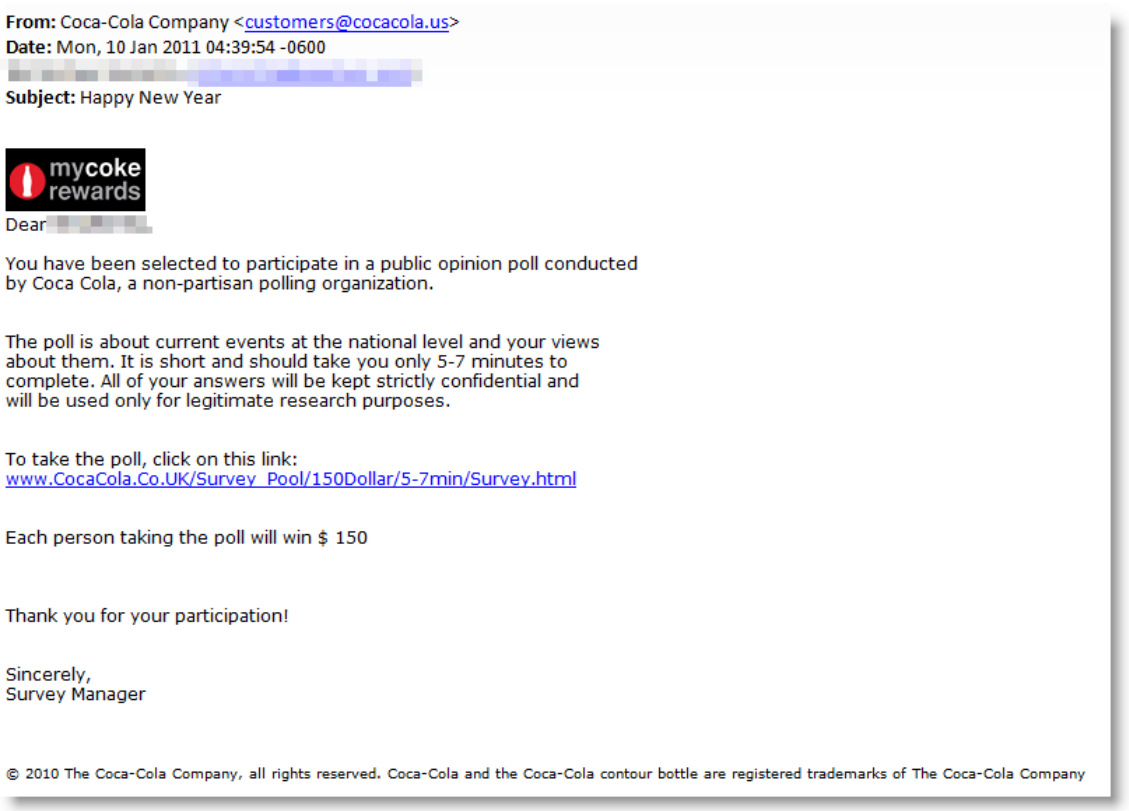


- A possible motivation for the Iranian-led cyber-attack on a New York dam in 2013 may lie in events several years before surrounding the Stuxnet virus.

Spearphishing & Disruption of Attack Delivery



Multi-Stage Attacks by State-Sponsored Actors



From: Coca-Cola Company <customers@cocacola.us>
Date: Mon, 10 Jan 2011 04:39:54 -0600
[redacted]
Subject: Happy New Year

mycoke rewards

Dear [redacted]

You have been selected to participate in a public opinion poll conducted by Coca Cola, a non-partisan polling organization.

The poll is about current events at the national level and your views about them. It is short and should take you only 5-7 minutes to complete. All of your answers will be kept strictly confidential and will be used only for legitimate research purposes.

To take the poll, click on this link:
www.CocaCola.Co.UK/Survey_Pool/150Dollar/5-7min/Survey.html

Each person taking the poll will win $ 150

Thank you for your participation!

Sincerely,
Survey Manager

© 2010 The Coca-Cola Company, all rights reserved. Coca-Cola and the Coca-Cola contour bottle are registered trademarks of The Coca-Cola Company

Aramco attack

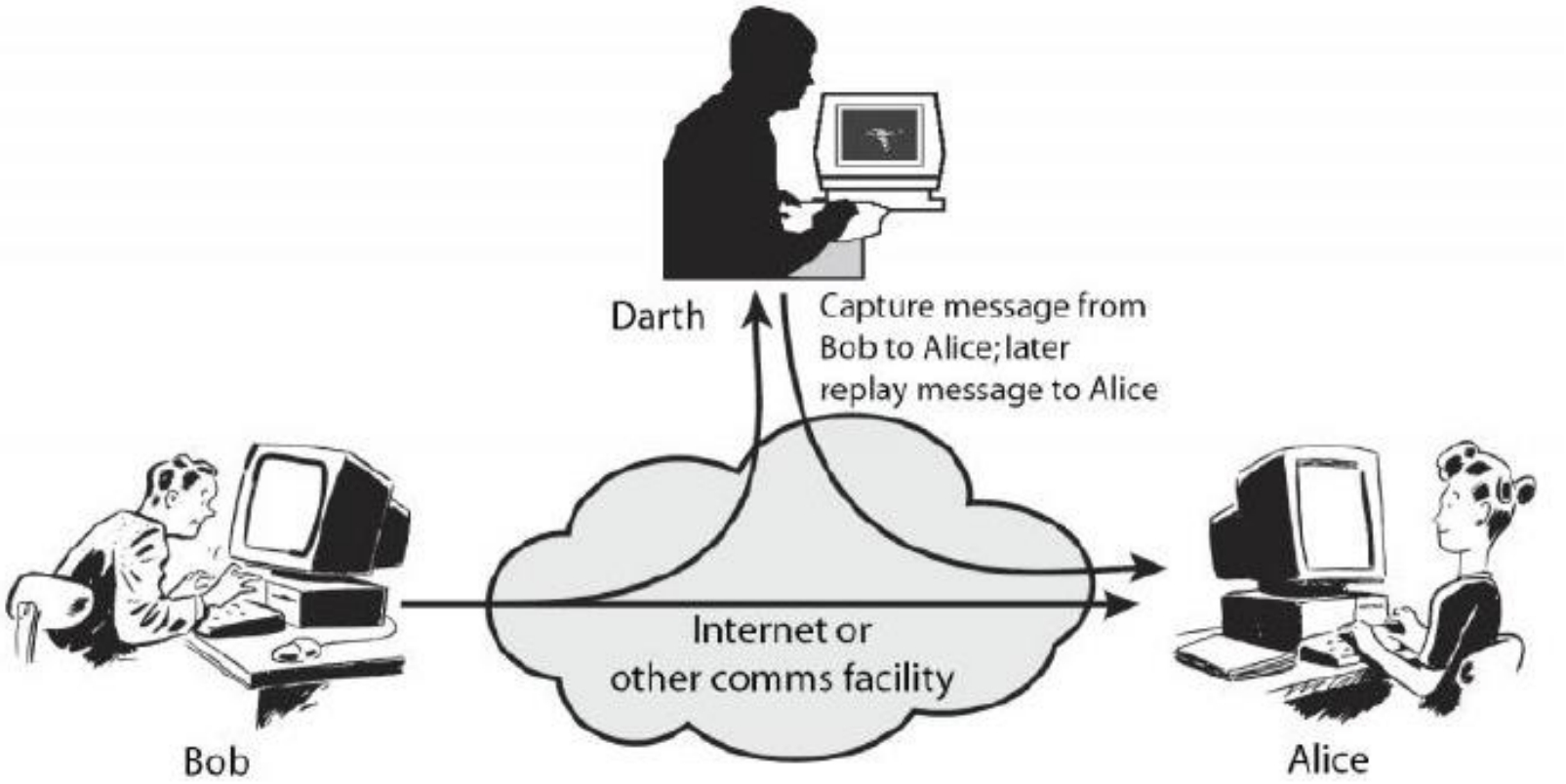


Zeus Virus and Masquerading



- Stealing Confidential Information from Compromised Systems
- Wide Array of Targets in and Outside Government
- Inability to Remove All Versions from Operating Systems

Replay Masquerades



Protection Methodology



- Cat and Mouse
- Attack Vectors

The Cybersecurity Information Sharing Act (CISA)



Immunity from Consumer Lawsuits



- One of CISA's key features is that it enables private entities, non-federal government agencies, state, tribal and local governments who have been victims of cyber threats to share information with any federal entity and with each other.

Governmental Cybersecurity Clearing Houses and Measures at Federal and State Level

- The new clearinghouse created by CISA focuses on cyber threats.

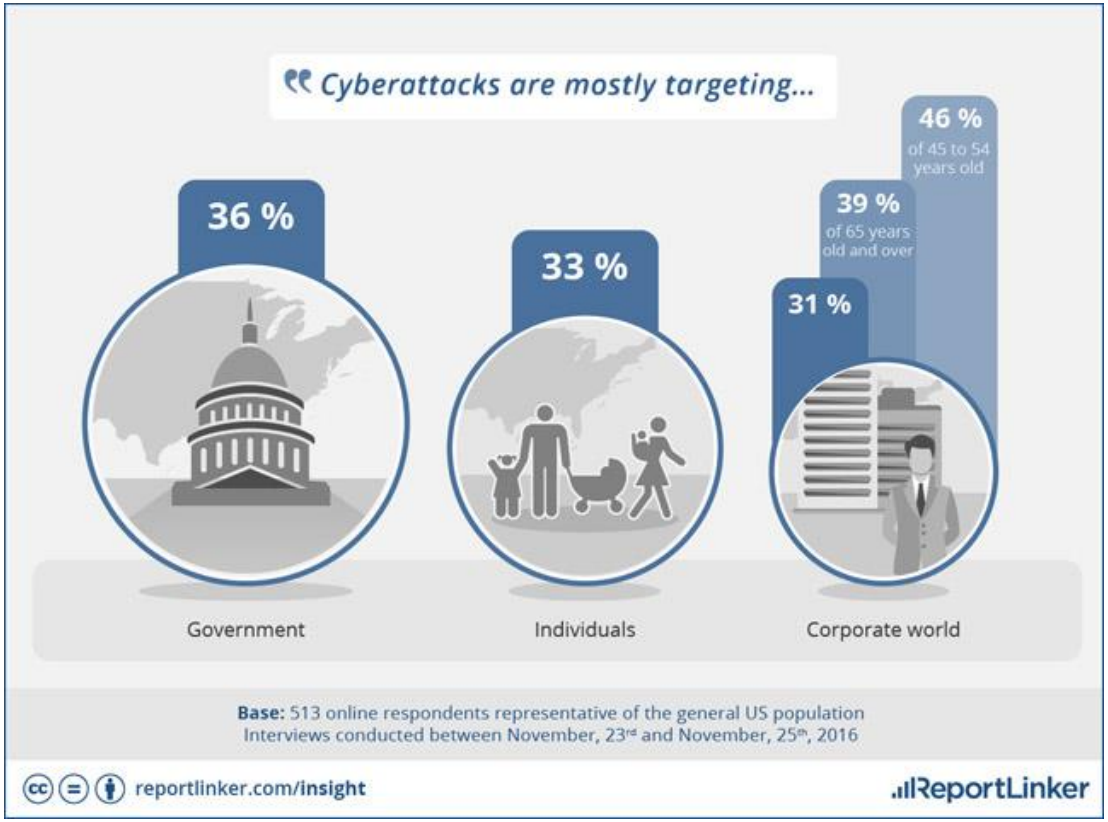


New Jersey League of Municipalities Cybersecurity Awareness Efforts



- Awareness at the Municipal Level
- Education and Outreach at N.J. Local Government Level
- Franklin Township's Fight Against Cyber Threats

Municipal Targets of Cyber Threats



Better Security with Slot Machines than Computer Voting Systems?

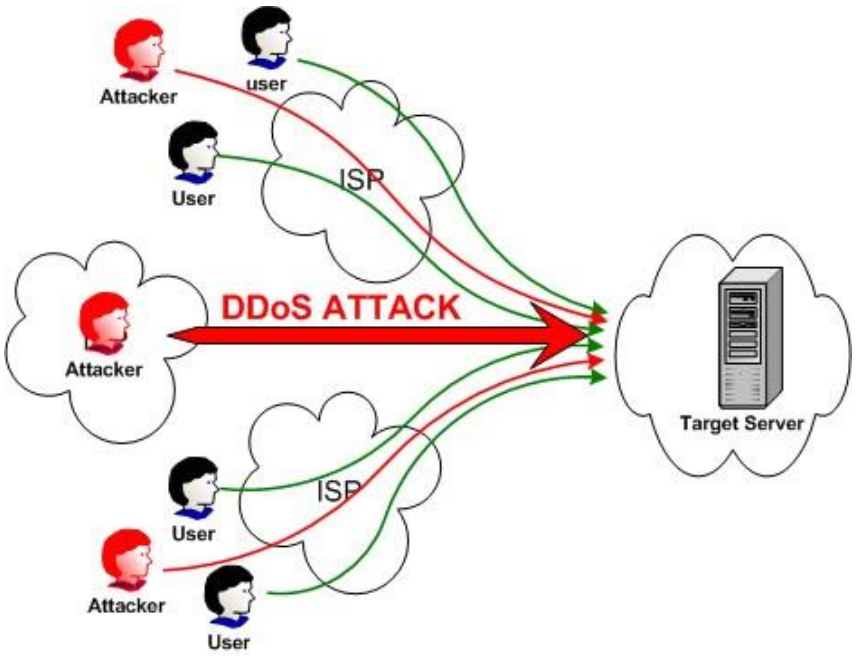




A look at how Las Vegas slots and electronic voting machines compare:

	LAS VEGAS SLOTS	ELECTRONIC VOTING MACHINES
Software	State of Nevada has access to all software. Illegal to use software that is not on file.	Software is a trade secret.
Spot-Checking	State gaming inspectors show up unannounced at casinos to compare computer chips with those on file. If there is a discrepancy, the machine is shut down and investigated.	No checks are required. Election officials have no chip to compare with the one found in the machine.
Background Scrutiny	Manufacturers subjected to background checks. Employees are investigated for criminal records.	Citizens have no way of knowing, for example, whether programmers have been convicted of fraud.
Equipment Certification	By a public agency at arm's length from manufacturers. Public questions invited.	By for-profit companies chosen and paid by the manufacturers. No public information on how the testing is done.
Handling Disputes	Casino must contact the Gaming Control Board, which has investigators on call round the clock. They can open up machines to inspect internal mechanisms and records of recent gambling outcomes.	In most cases, a voter's only recourse is to call a number at the board of elections that may or may not work to lodge a complaint that may or may not be investigated.

DDoS: Distributed Denial of Service



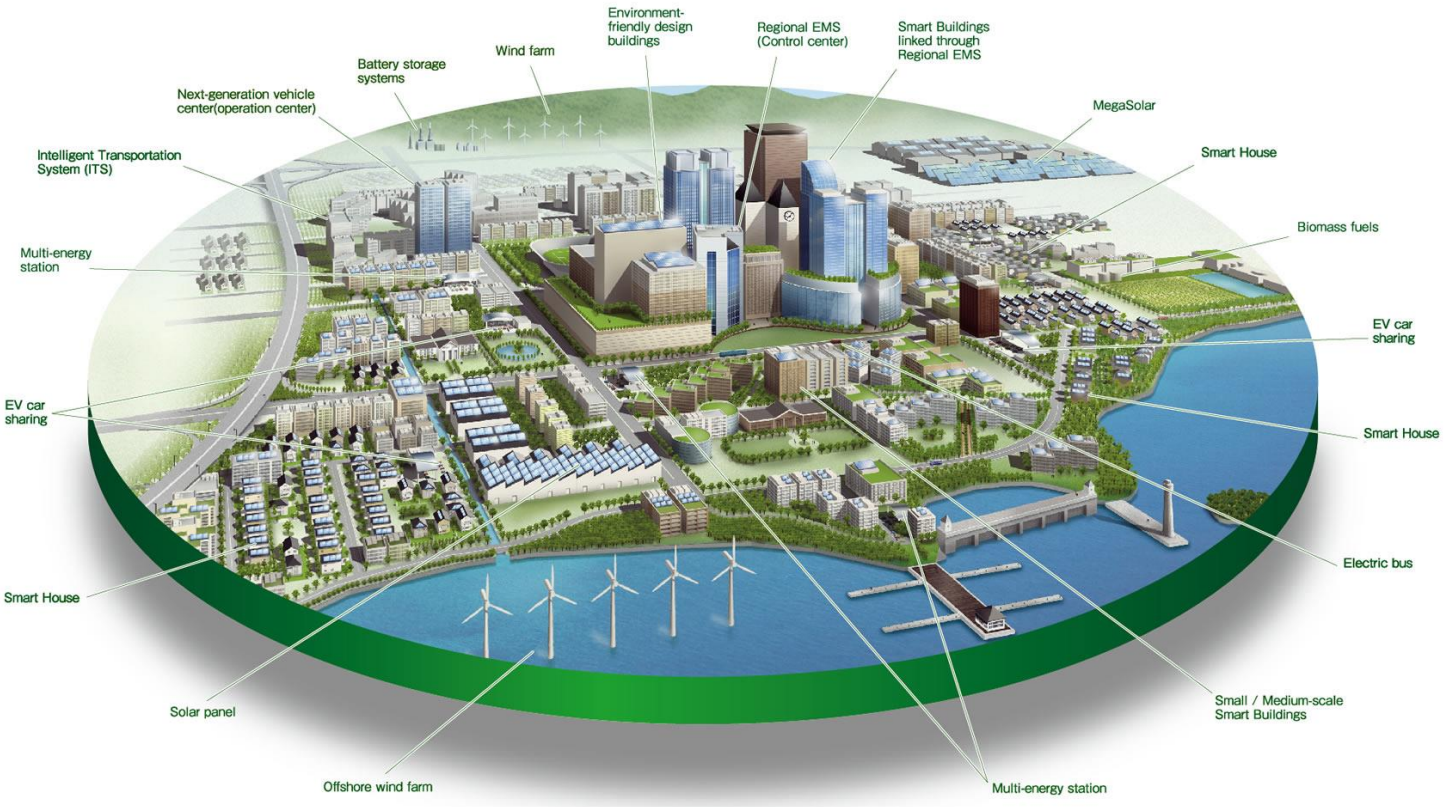
- Purchase of DDoS Service on the Dark Web
- Approaches to Prevent DDoS Attacks

Grass Roots Approach to Cyber Security



- Recognizing the Problem
- Coordinated Governance via a Cyber-security Governance Committee
- Engaging Stakeholders

Smart Cities and Protection of Citizens from Cyberattacks



Post-Ferguson DDoS Attack

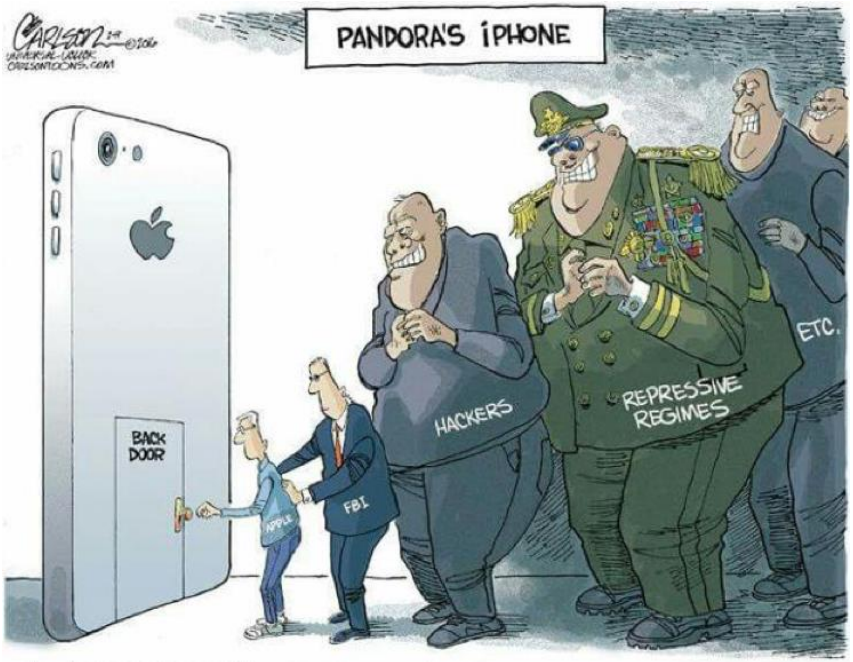
- Following the fatal shooting of Michael Brown by a Ferguson, MO police officer on August 9, 2014, the City of Ferguson found itself at the epicenter of worldwide attention, including that of hackers with a sociopolitical agenda.



Understanding Hactivists' Motivation, Means, and Opportunity



Encrypted iPhones and the Battle for Encrypted Data Access



- Device management feature lacking
- Going Dark
- Encryption Backdoors
- Alternative Avenues to Encryption: Cloud Backup

Albuquerque P.D. Going Dark



Essential Preparation and Planning



- Basic measures local governments can take
- Developing Nations' Reach for Cyberspying Capabilities

Cyber Sanctions



FinFisher

- FinFisher Gamma Group in Munich has developed and produced a sophisticated, user-friendly spyware that is sold exclusively to government agencies and police forces.



IT-Department: How the Berlin Authorities Protect Themselves Against Cyber Attacks

One attack per week is launched as part of secret service activities



IT-Department-Service Berlin:

- eGovernment-Law regulate:

1. All authorities of Berlin must use IT-Department-Service Berlin

IT-Department-Service Berlin:

- eGovernment-Law regulate:

2. All authorities of Berlin must create and implement IT security concepts

IT-Department-Service Berlin:

- eGovernment-Law regulate:

3. All authorities of Berlin supposed to have one IT security officer

IT-Department-Service Berlin:

- eGovernment-Law regulate:
- 4. Computer Emergency Response Teams (CERT) collects and processes IT security incidents

IT-Department-Service Berlin:

- eGovernment-Law regulate:
- 5. Encrypted communication between authorities and citizien/users

What City Officials Need to Know About Cybersecurity



- Cybersecurity Awareness Training

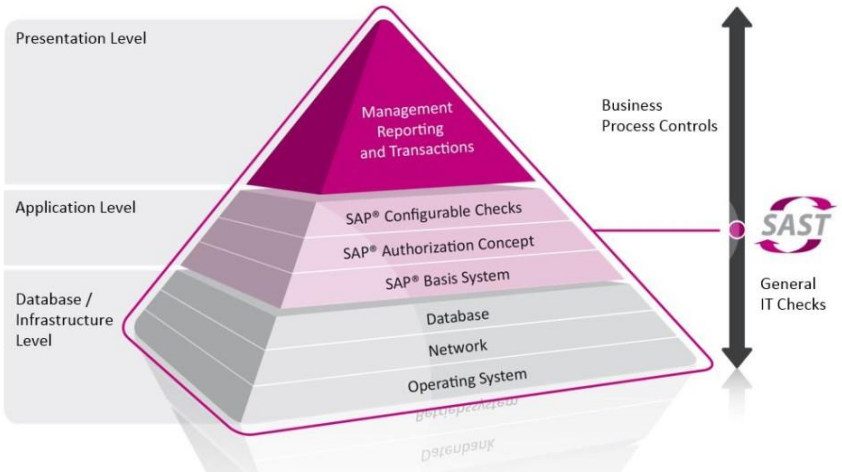
Cryptolocker



Cybersecurity Awareness Programs



End-User Education



- Security Audits, Penetration Tests and Monitoring
- Security Information and Event Management (SIEM) Tools
- Continuity of Operations Plans

Questions for Local Government Leaders to Consider

1. Questions the human resources department on whether it can help support a security awareness-training program.

2. Give support for new hardware, software, or services.

Questions for Local Government Leaders to Consider

3. Perform assessments, within the limits of funding, at the executive management level regarding the amount of risk the local government is willing to mitigate or simply accept.

4. Make the backup and recovery plan a good as the government can afford, since a cyber attacker with the time and desire will gain access one way or another.

Basic Cybersecurity Best Practices

1. Effective password management policies, using best practices for password management

1. Least privilege user access (LUA).3. Harden client devices by deploying multilayered firewall protections

2. Conduct regular penetration tests and vulnerability scans of infrastructure.

Basic Cybersecurity Best Practices

5. Mobile device management program, requiring authentication to unlock a device, locking out a device after five failed attempts, using encrypted data communications/storage, and enabling the remote wiping of devices if a mobile device is lost or stolen.

6. Continuous monitoring in real-time the security of the organization's infrastructure.

Basic Cybersecurity Best Practices

7. Deploy web application firewalls to detect/prevent common web attacks.

8. Permit only authorized wireless devices to connect to the network.

9. Implement Always On Secure Socket Layer (AOSSL) for all servers requiring log in authentication and data collection.

Basic Cybersecurity Best Practices

10. Review server certificates for vulnerabilities and risks of domains being hijacked.

11. Develop, test, and continually refine a data breach response plan.

Best Practices for Municipalities

- Encryption
- Control over Administrative Functions
- Strong Password
- Cybersecurity Staff
- Shared Service Agreements
- Cybersecurity Policies

ICS-CERT: Cybersecurity Measures for Water and Wastewater Industry

- Are there feasible, established, vetted, and available best practices and training measures for reducing the risk of such attacks, mitigating the vulnerabilities, and improving the resiliency of such systems?



INDUSTRIAL CONTROL SYSTEMS
CYBER EMERGENCY RESPONSE TEAM

Best Practice Plus:

protect your personal and business data and observe the attorney-client privilege

- Protection of Internet-router/internet-devices
- Internet use
- Internet usage via the TOR network and VPN-Connection
- Internet usage with LiveCD

Best Practices Plus

- Internet usage with a different IP address
- Email usage
- Cloud services
- Network technology and computer repair works by external service providers

State and Local Government Cyber-exercises



- Many valuable state and local government cyber-exercises have taken place across the United States, demonstrating successful public-private partnerships and substantive sharing of information and cyber technology.

ABA House of Delegates Resolution 108



Conclusion



Open Data, Government Transparency, Cybertheft & Individual Privacy

Thanks for your attention

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