

Cybersecurity and Credit Ratings: a discussion at the Philadelphia Area Municipal Analyst Society



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AGENDA

- 1. Internet of Things & technology use in governments**
- 2. How cyber risk ties to US public finance issuers**
- 3. Sample questions we are asking issuers**

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Internet of Things (IoT)

A new line of fryers has built-in cameras, Wi-Fi

Smart cooking has come to your back patio with the SmartChef Gas Grill. The grill has built-in Wi-Fi so that you can check internal temperatures of the meat on your phone app

Your fridge can send your phone notifications when the door is left ajar, when the temperature in the refrigerator or freezer compartment reaches above a set temperature, as well as when it's time to replace the water filter

SCADA controls at your water plant that can be controlled by employee remotely, to preclude a midnight call-out

Toyota's Yui, Dragon Drive also learns about the driver's preferences over time by digesting hundreds of data points. For example, if a driver generally visits Starbuck during the week and Tim Hortons on the weekend, the car will recommend the closest Starbuck on a Tuesday and a Tim Hortons on a Saturday

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Cyber Attacks: What are they and why they occur?

What we see most frequently:

- Phishing
- DDoS
- Ransomware
- Hacktivism



The Cyber Data Triad:

- Confidentiality
- Integrity
- Availability



Cyber: We're All in This Together

Multi-State Information Sharing and Analysis Center's 2018 State, Local, Tribal and Territorial Government Outlook

- “As with past years we believe the sophistication of malware, cyber threat actors, and tactics, techniques, and procedures (TTPs) will continue to increase.”
- “We expect that financially-motivated cyber threat activity will remain the most prevalent type of activity during 2018”
- “The MS-ISAC is convinced that the 2018 cybersecurity workforce demand will continue to outstrip the available workforce, further enforcing an employment gap that will stress SLTT government functions”
- “The current growth in malware-as-a-service suggests that initiation vectors may shift during 2018 due to new cyber threat actors buying into different tactics for delivery for known malware variants.”

Recent Examples of Cyberattacks in USPF

Not an exhaustive list – pulled from both news outlets and credit reports

Recent Examples:

- **Atlanta, GA**
- **Princeton Community Hospital, WV**
- **Southern Oregon University**
- **Standish, ME**
- **Cockrell Hill, TX**
- **Lansing Board of Water and Power, MI**
- **St. Louis, MO**
- **New Hampshire Retirement System**
- **Dallas, TX**

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How does cyber tie to credit?

- Management
 - **How addressing system hardening and preparing?**
- Liquidity
 - **Spending to prepare or resolve?**
- Performance
 - **Inability to deliver services?**
 - **Unexpected costs affecting budget?**
- Flexibility
 - **Constituent trust eroded – harder to support revenue increases**
- Debt

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Select criteria sections – in all cases the entire criteria is applied

U.S. Local Governments General Obligation Ratings: Methodology And Assumptions, *Sept. 12, 2013*

P35 – Structural imbalance in part driven by “unplanned fund balance drawdowns”

P48 - Management -- “A government's ability to implement timely and sound financial and operational decisions in response to economic and fiscal demands is a primary determinant of near-term changes in credit quality.”

P63 – Flexibility – “The criteria separately assess local political support for increases...”

P65 – Performance – Negative qualitative adjustment for “Expected structural deterioration”

Building a Cyber Incident Response Plan

Preparation should be like facing a hurricane

National Institute of Standards and Technology (NIST)

The NIST Framework consists of five concurrent and continuous Functions—*Identify, Protect, Detect, Respond, Recover*.

Tips from various sources:

- Get to know local resources prior to event (FBI, National Guard, etc)
- Pre-draft important communications
- Evaluate cyber insurance coverage
- Discuss protective measures with third party vendors
- Increase cyber literacy throughout your organization

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Questions for Issuers

These are meant to start a discussion and help S&P Global gauge management preparedness. Should we find that an event has occurred, follow-up questions will be needed.

- Where do you see your greatest exposure to cyber risks?
 - An open question to get anecdotal info on management preparedness
- What type of planning have you done for cyber mitigation or cyber response?
 - A question to gauge actions taken to date
- What impact has cyber security had on liquidity?
 - A question to see if money has been spent on preparation or on ransom

Thank you

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