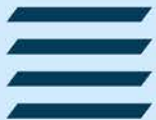




The Federal Reserve Bank of Boston's

# 2017 Cybersecurity Conference



Federal Reserve  
Bank of Boston™

# Opening Remarks

Kenneth C. Montgomery  
First Vice President and COO  
Federal Reserve Bank of Boston



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**2017 Cybersecurity Conference**



# High Profile, High Intensity Cyber Attacks Increasing Impact on Central Banks and Financial Services

**U.S. Bank Regulator Notifies Congress of Major Data Security Breach**

Office of Comptroller of Currency discloses records

**Reserve Bank of India (RBI) to Ethically Hack Into Banks to Find Vulnerabilities**

**Suspects arrested in Russia central bank cyberheist: bank official**

**Polish Banks Hacked via Malware Coming from Financial Regulator**

**Exclusive: Bangladesh police detail suspicions of inside help in central bank heist**

Hackers are bombarding the Bank of Canada with cyber attacks and the crack in the bank's armour is its employees

**Italy arrests two for hacking into emails of ECB's Draghi, former Italy PM Renzi**

US may accuse N. Korea in Bangladesh cyber heist: WSJ  
Thursday, 23 Mar 2017 | 5:56 AM ET



**Exclusive: SWIFT confirms new cyber thefts, hacking tactics**

**Google Team Cracks Longtime Pillar of Internet Security**  
Researchers at Alphabet unit, Dutch institute demonstrated 'collision attack' on cryptographic technology known as SHA-1

**Cobalt Gang Makes ATMs Across Europe Spew Cash**

**Invisible Malware Found in Banking Systems in over 40 Countries**

**20,000 Tesco Bank accounts raided by hackers, money stolen**

Lloyds bank accounts targeted in huge cybercrime attack

**U.S. accuses Chinese citizens of hacking law firms, insider trading**

**Ongoing DDoS Attack Against DynDNS Knocks Major Services Offline**

**BlackEnergy Hackers Now Launching Attacks Against Ukrainian Banks**

**WikiLeaks says it has obtained trove of CIA hacking tools**

# High Profile – High Intensity Illustrative Cases

## SWIFT Network

- February 2016 – Instructions to transfer \$951 million from Bangladesh Central Bank from an account at the Federal Reserve Bank of New York via the SWIFT network. \$101 million was transferred before being stopped.
- Confirmed reports of Banco del Austro (Ecuador), commercial banks in Ukraine, Vietnam and potentially dozens more.

## Distributed Denial of Service Attacks (DDoS)

- Large number of computers, under the control of an adversary, overwhelm a computer, website or application.
- 2013 - large scale attacks impact the operations of a number of large banks.
- 2014 to 2016 - DDoS mitigation services become mainstream minimizing the impact.
- September 2016 - Mirai Malware – 1,000 times more powerful.

## Ransomware

- Impact: 40% of businesses impacted by ransomware (30% lost revenue as a result, 20% had to cease business operations)
- Cost (60% of ransomware attacks demanded over \$1,000; 20% over \$10,000; 1% over \$150,000)
- Protection (96% of organizations are not confident they can stop malware; 79% of organizations are not confident in their backups)