Credit Suisse
Financial Services Forum

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We're Constantly Investing in Many Areas

New products

Innovation

Facilities

Research

Customer-facing

Risk management

Back office

Compliance

Technology

Training

Risk Management at U.S. Bancorp

The "what"

- Risk and governance start at the top

- Investments in people, processes and technology

- Infrastructure largely in place and reflected in our run rates

The "how"

- The Risk Management Committee of the Board of Directors approves and oversees the risk management framework and risk appetite statement

- Implementation of a collaborative "Three Lines of Defense" system of checks and balances; experienced risk management team, including integrated risk officers in each business line

- Continue to enhance "Know Your Customer" and Anti-Money Laundering program to address consent order

Operational Risk Management

We've established an effective program for operational risk

Third party risk management	Cybersecurity and information technology	New and modified products and services	Innovation activities
Monitoring and verification activities throughout all phases of the lifecycle	Independent risk management coverage; second line of defense over critical operations	Comprehensive independent risk assessments	Customized independent risk evaluations

Payment systems	Business continuity and crisis management programs	Complaint management	Ethics Oversight
End-to-end coverage by independent risk management	Preparedness at all levels of the organization	Timely response to customer and regulator concerns	Ensuring we do the right thing

Cybersecurity is Key to Risk Management

We must keep in mind…

- Size of the "opportunity"

- Frequency of attacks

- Successes to date embolden the "bad guys"

- Number of exposed points is exploding

- Cyber risk is not about a couple of guys in their basement

A few striking statistics

From 2013 to 2016
- **22,143** companies fell victim to a "business email compromise"
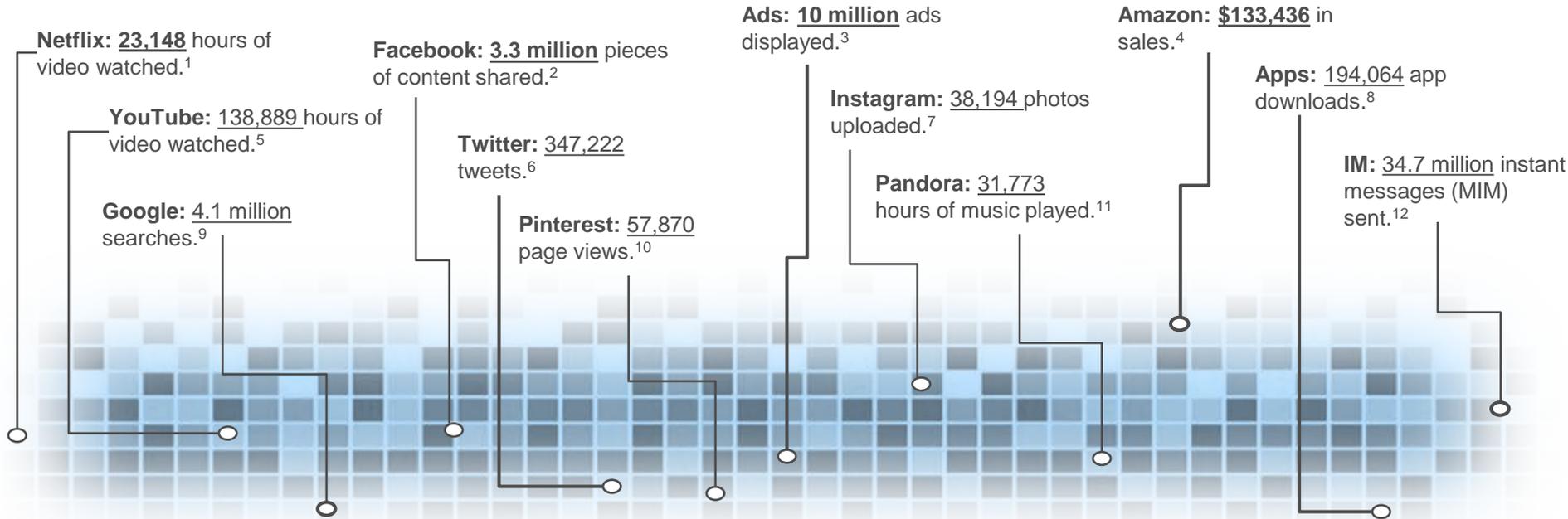- **$3 billion** was the combined exposed dollar loss

In 1Q16
- "Crypto-ransomware" netted criminals **$209 million** in 1Q16 alone
- **$1 billion** was the FBI's FY 2016 estimate

By 2020
- **50 billion** devices will be connected to the internet
- Online data volume will increase **50x**

Internet Velocities are Mind-blowing

Every 60 seconds there are…

Netflix: 23,148 hours of video watched.[1]

YouTube: 138,889 hours of video watched.[5]

Google: 4.1 million searches.[9]

Facebook: 3.3 million pieces of content shared.[2]

Twitter: 347,222 tweets.[6]

Pinterest: 57,870 page views.[10]

Ads: 10 million ads displayed.[3]

Instagram: 38,194 photos uploaded.[7]

Pandora: 31,773 hours of music played.[11]

Amazon: $133,436 in sales.[4]

Apps: 194,064 app downloads.[8]

IM: 34.7 million instant messages (MIM) sent.[12]

Source: What Happens in an Internet Minute?, 2014. [1]Netflix U.S. & Canada Blog, Jan. 13, 2014; [2]"A Focus on Efficiency", a whitepaper from Facebook, Ericsson and Qualcomm, p. 6, Sept. 2013; [3]"2013 U.S. Digital Future in Focus Whitepaper", Feb. 14, 2013; [4]Amazon Quarterly Income Statement, Year Ending Sept. 30, 2013; [5]YouTube Press Statistics, Feb. 2014; [6]Twitter IPO – SEC Report; [7]Instagram Press Site, Feb. 2013; [8]"Gartner Says Mobile App Stores Will See Annual Downloads Reach 102 Billion in 2013", Gartner, Sept. 2013; [9]Google Official History, Comscore, Jan. 1, 2014; [10]"The CMO's Guide to Pinterest", Crossing, Inc., p. 3, Nov. 2013; [11]Pandora Monthly Audience Metrics Press Releases, Jan. 2013-Dec. 2013; [12]"Technology, Media & Telecommunications Predictions 2014", Deloitte Touche Tohmatsu Limited, 2014.

When We Went to the Moon in the 60's…

Memory was small, **computers** were big

Apollo Guidance Computer:
- 2MHz processor
- 4kB RAM
- 75kB storage
- Weight: 70 lbs

IBM System/360 Model 75:
- 6 MB (6,000 kB) program

Source: https://en.m.wikipedia.org/wiki/Apollo_Guidance_Computer

Today's Apple iPhone

Device is small, but capacity is big

Apple iPhone:
- 2.23 GHz (2,230 MHz) A10 CPU/RAM/GPU
- 256 GB (256 million kB) storage

That's roughly **42,139 times more capacity** than it took to put humans on the moon!

The Cybersecurity Industry is Booming

Spending on Information Security worldwide in 2015…

77 billion

7- 8% CAGR

The Cost of Cybercrime is Unprecedented

Spending on Information Security worldwide in 2015…

77 billion

Organized criminals are **exceptionally** well-funded; the **cost of cybercrime** in 2014 reached $575 billion!
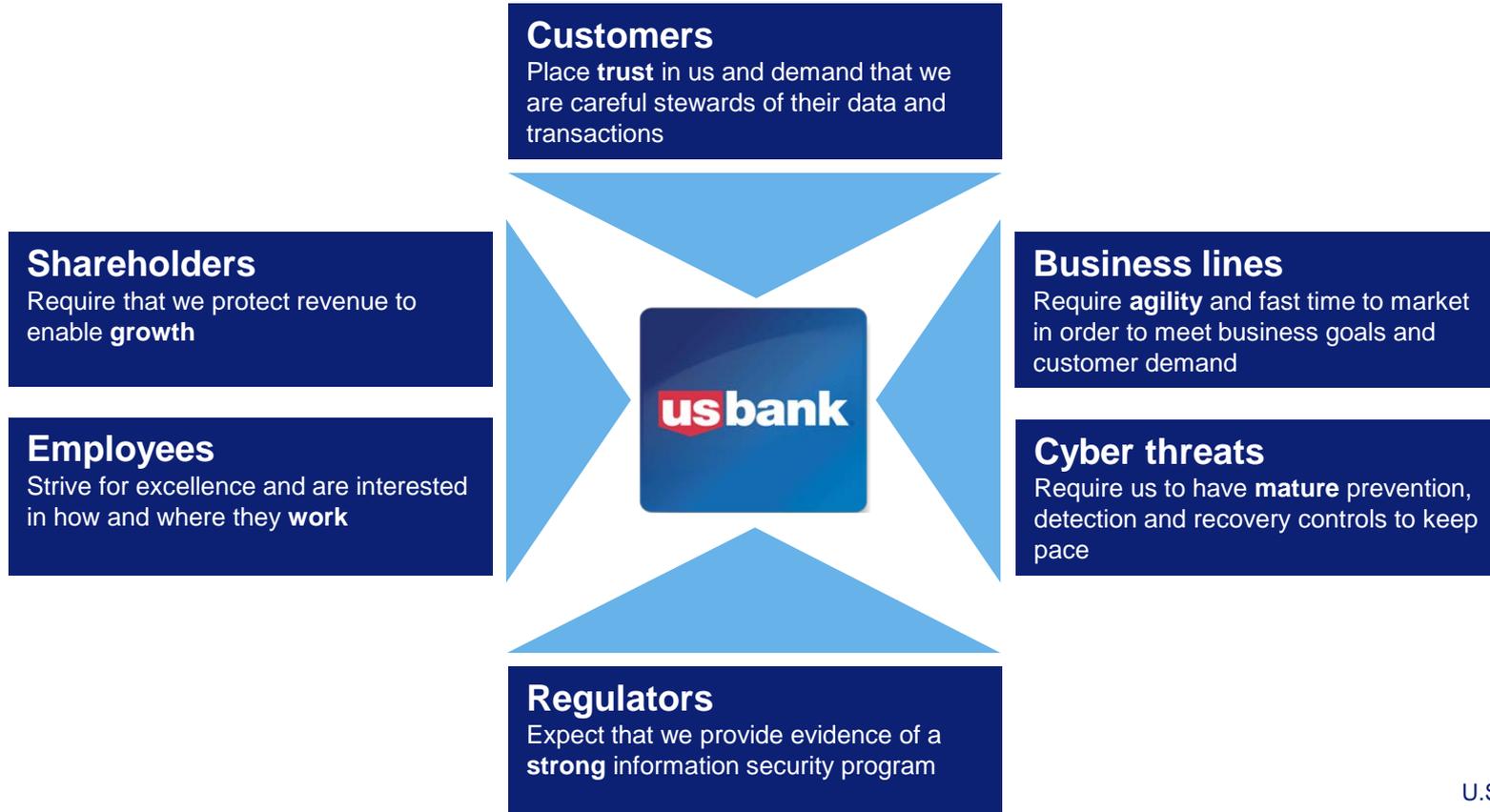
575 billion

A Typical Organized Crime Business Model

Strikingly similar to a corporation's business model

- Security: Configuring your System
- Foundations of Carding: Terminology, Explanation of Payment Systems
- Drops and Intermediaries, Customs and Delivery of Goods
- Working in the U.S., Canada and England
- Working in Europe, Asia, and the Rest of the World
- Enrolled Cards: Shipping Methods & Addresses
- E-Gift Cards
- The Tourist Sector: Hotel/Travel Booking
- PayPal
- Intercepting and Picking Up Packages
- Brute-forced Accounts
- Authorization Forms and Account Confirmation Via Telephone
- Android Devices
- How to Socially Engineer a Retailer

Cyber Strategies Must Be Intelligence-driven

Customers
Place **trust** in us and demand that we are careful stewards of their data and transactions

Shareholders
Require that we protect revenue to enable **growth**

Employees
Strive for excellence and are interested in how and where they **work**

Business lines
Require **agility** and fast time to market in order to meet business goals and customer demand

Cyber threats
Require us to have **mature** prevention, detection and recovery controls to keep pace

Regulators
Expect that we provide evidence of a **strong** information security program

us bank

Cyber Strategies Must Also Be Comprehensive

We must…

Anticipate
emerging threats and risks

Enable
business growth while
protecting existing revenue

Safeguard
U.S. Bank information
and assets

…across nine information security ecosystem components

Data and information: is secure both at rest and in transit

Networks: are monitored 24x7

Devices: are secure and patched regularly to remain protected over time

Applications: are secure in both development and production

Identity and access: is appropriate based on job role

Third parties and vendors: control parity is risk-based and protections are appropriate

Industry and partnerships: provide actionable, cost-effective threat and risk intelligence

Customers and clients: are educated on cyber risks and their role protecting their devices

Employees: first line of defense, key to success

Improving Intelligence

Staying a step ahead with machine speed data analytics

Cyber Defense Fusion Center

- **~550** information security staff in **34 cities** throughout **six countries**

- **24x7** detection, monitoring, response teams

- **1.3 petabytes** of information security data

- **$10 billion** in money movement reviewed per day

- **Significant investment** over the last several years

- **3.8 billion** security events reviewed per day

Building a "Future-proof" Defense

Intelligence, analytics and data keep us on the cutting edge

Protecting against threats (fraudsters and hackers) and managing through new breakthroughs (disruptive technologies and real-time payments)

Offering machine-speed data, using external intelligence, and taking advantage of machine-learning, analytics and artificial intelligence

Creating a holistic view of customers and fraud, while enabling real-time decisioning

Here, Now and Coming Soon

Innovative, frictionless, customer-centric controls

2014-2016

bank innovation

"Arguably the single most forward-thinking major financial institution in the United States today," 2016

#3 for Innovation
"Arguably built the industry's deepest innovation department," 2015
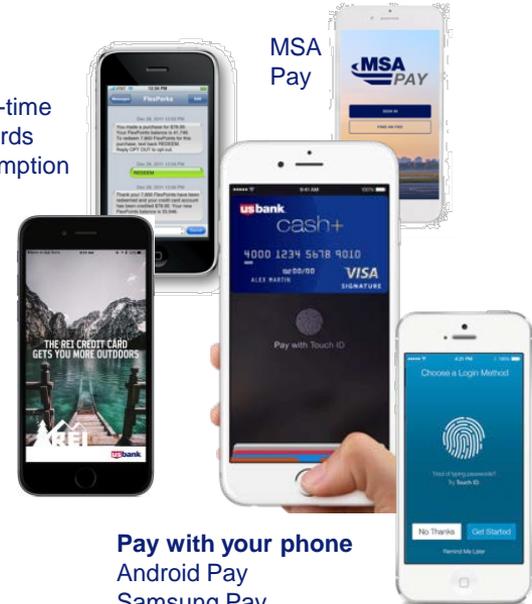
Innovation Award – Photo Bill Pay, 2014

2016

- Mobile Voice Biometrics
- Mobile Fingerprint Authentication
- Mobile customer money movement "light switches"

2017+

- Online customer authentication preference panel
- End of the password: facial recognition, pattern matching, fingerprint

MSA Pay

Real-time rewards redemption

First bank to use mobile to open accounts

Pay with your phone
Android Pay
Samsung Pay
Apple Pay

Fingerprint and voice authentication

Award-winning Industry Thought Leadership

Risk-based, frictionless, customer-centric controls

- Multichannel customer authentication
    - Secure options
    - Frictionless
    - Customer-selected

- Patent for customer malware detection

- President's Advisory Board

- Named "Most Trusted Company for Retail Banking" by privacy and information security research firm, Ponemon Institute*

- Information Security Executive North American Project of the Year Award for Data Tokenization

* U.S. Bank is the only bank to rank in the top five for all 12 years since Ponemon's first privacy trust study was conducted in 2004, and has been number one for the past 10 years