“World War III is underway… and it’s cyber”

U.S. Cyber Command (USCYBERCOM) directs, synchronizes, and coordinates cyberspace planning and operations in defense of the U.S. and its interests.

Cyber is a domain of warfare with a **unique set of challenges**.

- attribution is difficult
- distance is irrelevant
- small actors can have outsized impact

Many in the military see cyber warfare as the **biggest strategic problem** we face. In the past, **peace** has been **the norm** and **war** was the **anomaly**. But Russia, China, and other adversaries see **"a continuum of conflict"** in which peace can be war by other means.

That's how

- Russian special forces took over Crimea without a shot
- Russian hackers have attacked Estonia, Georgia, the Ukraine
- Russian hackers influenced America's 2016 election
- Chinese hackers have stolen billions of US trade secrets

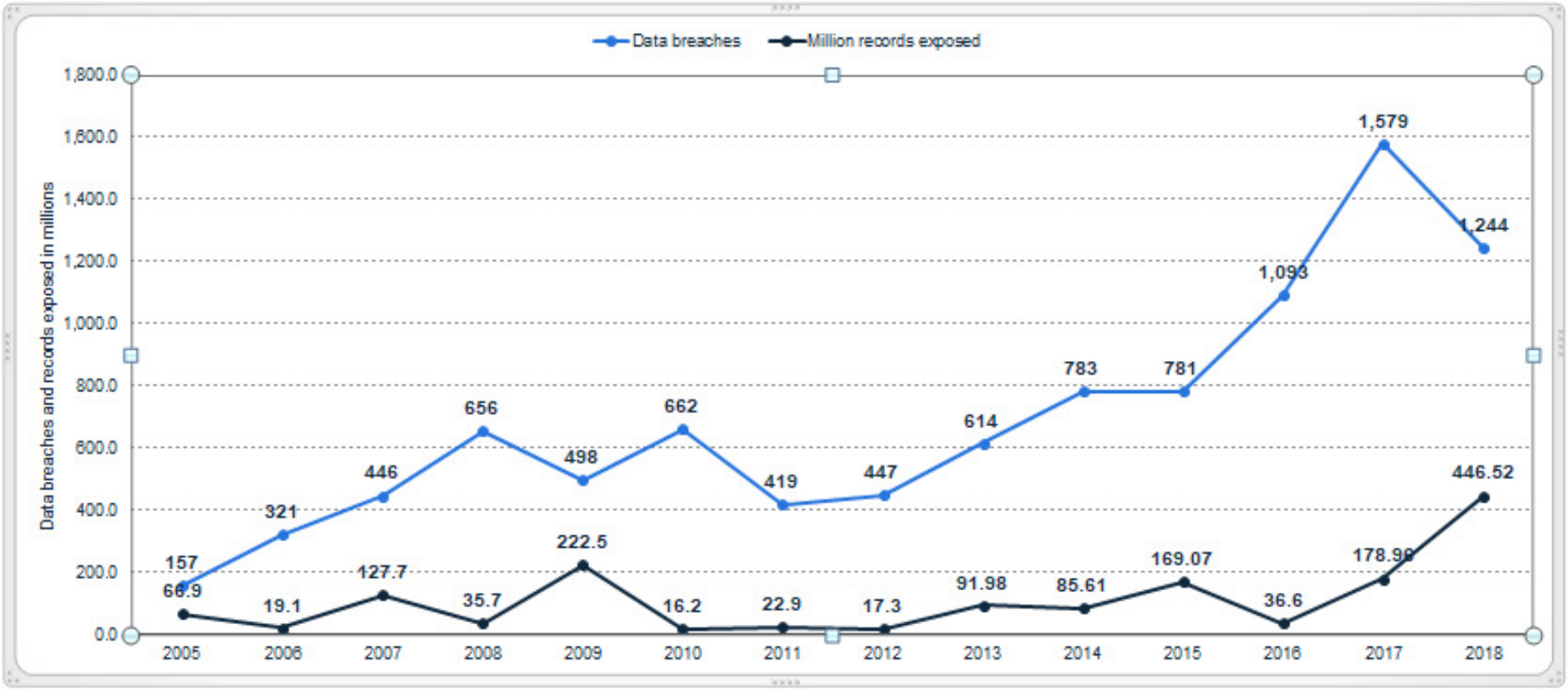

Top 10 Crime Types Reported to IC3 in 2017 (by Victim Loss)
Real Estate/Rental
$56,231,333
Investment
$96,844,144
Advance Fee
$57,861,324
Corporate Data Breach
$60,942,306
Confidence Fraud/Romance
$211,382,989
Request from CEO
Subject: Immediate Wire
o: Chief Financial Officer
High Importance
Please process a wire transfer payn
amount of $250,000 and code to "ad
by COB today. Wiring instructions b
Identity Theft
$66,815,298
Business E-Mail Compromise/
E-Mail Account Compromise
$676,151,185
Non-Payment/Non-Delivery
$141,110,441
Personal Data Breach
$77,134,865
Credit Card Fraud
$57,207,248

Source: FBI

https://www.ic3.gov/media/default.aspx

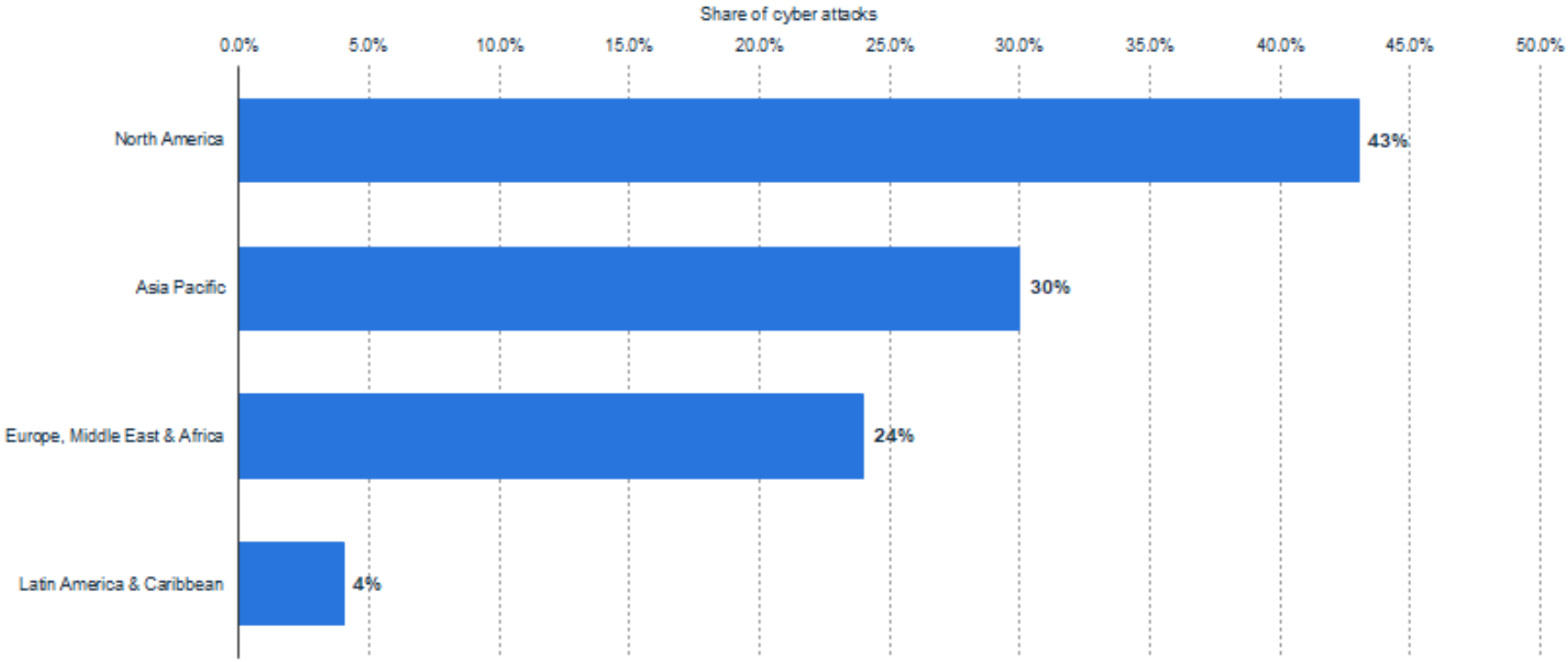
Annual number of data breaches and exposed records in the United States from 2005 to 2018 (in millions)

Cyber crime: number of breaches and records exposed 2005-2018



Geographic location of malicious data breach victims in 2017, ranked by share of attacks

Distribution of malicious data breaches 2017, by region



Every new means of communication introduces new problems

1840s – **the telegraph** – “anyone can send a telegram”
1876 – **the telephone**

THE TELEPHONE UNMASKED.

It is time that the atrocious nature of the telephone should be fully exposed, and its inventors, of whom there are any quantity, held up to public execration.

When this nefarious instrument was first introduced, it was pretended that its purpose was an innocent one.

The New York Times
Published: October 13, 1877

1895 – **the radio**
“War of the Worlds,” Orson Welles' 1938 radio play about Martians invading New Jersey. About 12 million people were listening when Welles' broadcast came on the air and about 1 in every 12 thought it was true and some percentage of that 1 million people ran out of their homes.

20th Century -- **the television**
Stephen Colbert’s “truthiness”

Up till 1980s, about **80%** of U.S. company wealth was in **tangible assets**
Now, about **80%** of U.S. company wealth is stored in **intangible goods**, mainly trade secrets and intellectual property.

"**Cyber technology** has probably **changed the way wealth** is generated, stored and transported at least as much as maritime and rail technologies did in previous centuries." (cf. Mackinder, Mahon)

In cyberspace: offense and defense stem from the same tools & techniques.
Cyber crimes are increasing. There's the ability to **transverse international borders**.
You have **private** & **state players**.

Cyber activity is an appealing way for nation-states to achieve their objectives for one key reason: it's so difficult to empirically attribute an attack to a specific nation.

p. 72 from Great Decisions book

Russia

- Uses social media to influence public opinion in pro-Western states
- Internet Research Agency (IRA) [troll farm in St. Petersburg]
- Creates Facebook accounts with misinformation
- Places malware on U.S. infrastructure (DOD entertains nuclear retaliation)

China

- Adapts U.S. approaches – e.g., hacking into Verizon
- "There are 2 kinds of big companies in the U.S.: those who've been hacked by the Chinese and those who don't know they've been hacked by the Chinese" (Comey)
- "Thought control" – public relations along with infiltration (Hollywood connection
- Steals trade secrets

Discussion questions

1.Space Force – will it help protect American cyber security?

2.Cyber conflict & elections. Putin accused Hillary of interference in 2011 Russian election. How does that relate to Russian interference in U.S. 2016 election?

3.Can U.S. stop Chinese cyber espionage?

4.What's the relationship between geopolitics & cyber conflict?

5.How will cyber affect global conflicts?

6.How are individuals affected by cyber espionage? How are commercial companies influenced by cyber espionage?