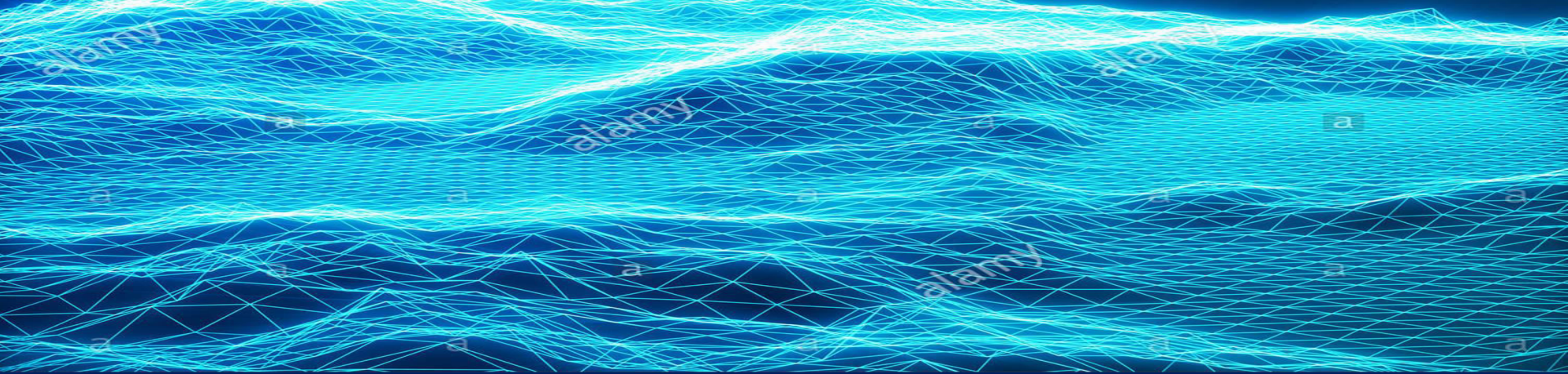


# GLOBAL CYBERSECURITY TODAY: THE WHAT, HOW, WHY, and WHO

February 11, 2019  
Deborah Housen-Couriel

The Wantman Family  
**State of the World**  
Speaker Series



**WHAT** is cyberspace?

**HOW** does it really work as a global resource?

**WHY** it's critical for us to know

**WHO** is providing the necessary leadership for governing the next stage of human activity there?



# THE GOOD



# A GLOBAL CONCERN: **WANNACRY** – MAY 12-13, 2017

## The 'Wannacry' ransomware attack

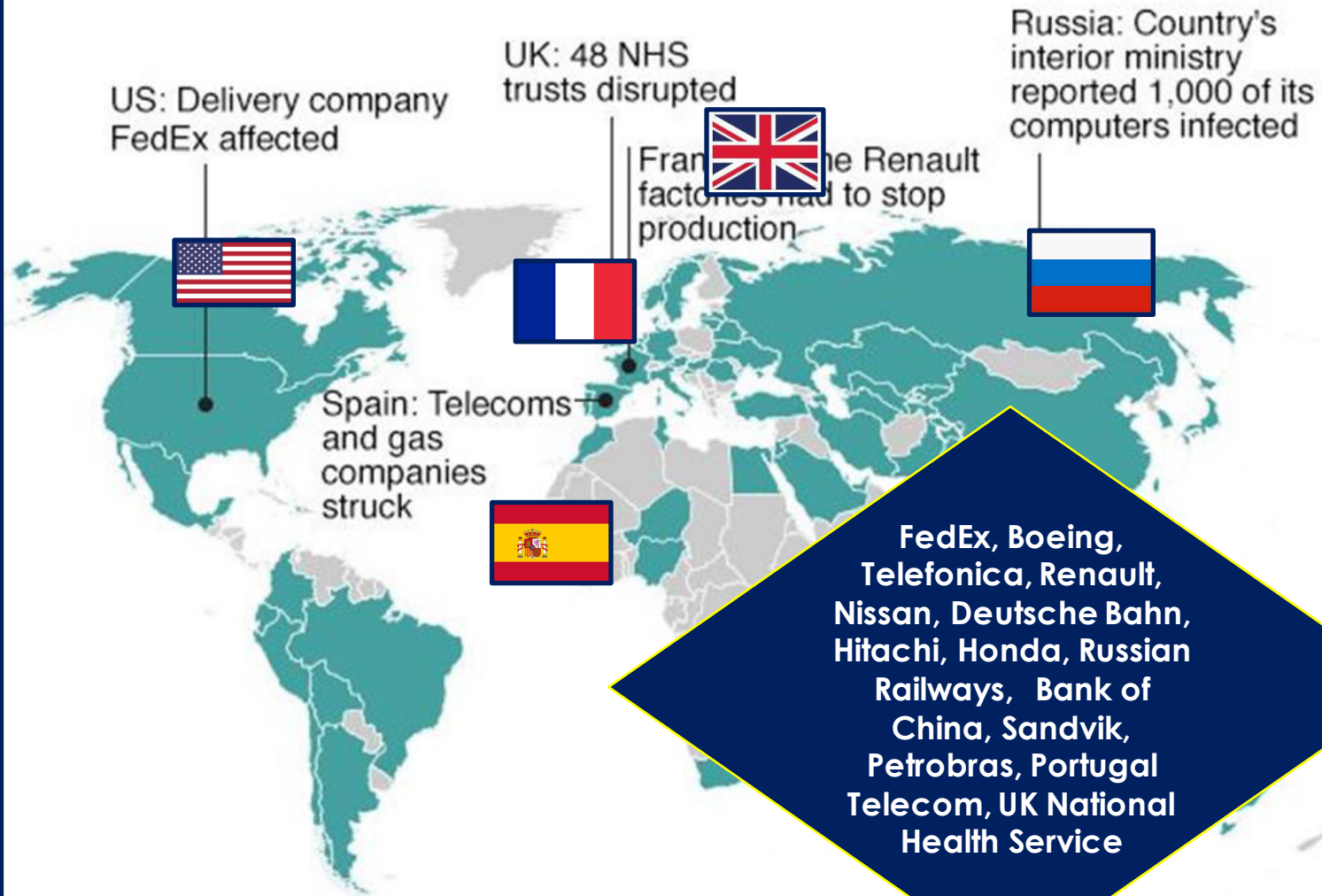
The attack has hit more than 200,000 victims in at least 150 countries, says Europol



Source: [Intel.malwaretech.com](http://Intel.malwaretech.com)

© AFP

# Countries hit in initial hours of cyber-attack




\*Map shows countries affected in first few hours of cyber-attack, according to Kaspersky Lab research, as well as Australia, Sweden and Norway, where incidents have been reported since



- ▶ PRESENTED AS RANSOMWARE - **\$300 PER**
- ▶ ORGANIZATIONS THAT HAD NOT INSTALLED **MICROSOFT'S SECURITY UPDATE FROM APRIL 2017 AND UNSUPPORTED VERSIONS OF WINDOWS**
- ▶ **> 300,000 COMPUTERS**
- ▶ **150 COUNTRIES**
- ▶ DAMAGES IN THE **BILLIONS OF USD**

Abfahrt	Linie	Nach	Gleis
Zeit	Über	Olbernhau	8
22:10	Flöha - Pockau-Lengefeld	Hbf	11
RB81	Flöha - Fre...	(S) Hbf	10
22:30	- Fährt heut	g-B. Süd	8
RB30	Hohenstein		9
22:31	Flöha - Zsc		5
RB30			14
22:36	irt heute von	Hbf	11
RB80	Geithain - E	Aue (Sachs)	
22:36		Dresden Hbf	
RB45			
22:44	Einsiedel - Thalheim (Erzgeb)		
RE6			
22:45	Freiberg (Sachs) - Tharandt		
RB89			

Oops, your files have been encrypted!



Payment will be raised on  
5/15/2017 22:50:58

Time Left  
**02:23:18:55**

**Was geschah mit meinem Computer?**  
Ihre wichtigen Dateien sind verschlüsselt. Viele Ihrer Dokumente, Fotos, Videos, Datenbanken und andere Dateien sind nicht mehr zugänglich, weil sie verschlüsselt wurden. Vielleicht sind Sie damit beschäftigt, einen Weg zu finden, um Ihre Dateien wiederherzustellen, aber verschwenden Sie nicht Ihre Zeit. Niemand kann Ihre Dateien ohne unseren Entschlüsselungsdienst wiederherstellen.

**Kann ich meine Dateien wiederherstellen?**  
Sicher. Wir garantieren, dass Sie alle Ihre Dateien sicher und einfach wiederherstellen können. Aber du hast nicht genug Zeit. Sie können einige Ihrer Dateien kostenlos entschlüsseln. Versuchen Sie jetzt, indem Sie auf <Decrypt> klicken. Aber wenn du alle deine Dateien entschlüsseln willst, musst du bezahlen. Sie haben nur 3 Tage, um die Zahlung einzuzahlen. Danach wird der Preis verdoppelt. Auch wenn du nicht in 7 Tagen bezahlt hast, kannst du deine Dateien nicht für immer wiederherstellen. Wir haben freie Veranstaltungen für Benutzer, die so arm sind, dass sie nicht in 6 Monaten bezahlen können.

**Wie bezahle ich?**  
Die Zahlung wird nur in Bitcoin akzeptiert. Für weitere Informationen klicken Sie auf <About bitcoin>.

Send \$300 worth of bitcoin to this address:  
<About bitcoin>

12t9YDPgwueZ8NyMgw619p7AABlej6SMw
Copy

- ▶ 48 OF THE 248 NATIONAL HEALTH SERVICE CENTERS IN THE UK AFFECTED, 16 HOSPITALS (20% NHS)
- ▶ HOSPITAL WORKERS LOCKED OUT OF COMPUTERS FOR PATIENT TREATMENT
- ▶ BLOOD BANK DATA INACCESSIBLE
- ▶ X-RAY FACILITIES UNUSABLE
- ▶ CARDIAC AND OTHER OPERATIONS DELAYED
- ▶ NATIONAL HEALTH EMERGENCY DECLARED





**GLOBAL TAKEDOWN  
WITHIN 24 HOURS**

**BUT ALSO**

**GLOBAL RESPONSE  
WITHIN 48 HOURS**

12/5 morning  
UK's Cyber-security  
Information Sharing  
Partnership (CiSP)  
helps to identify  
malware

12/5 afternoon  
@MalwareTechBlog  
shares data with  
tech community

12-13/5 overnight  
ShadowServer and  
FBI share data with  
non-UK time zones

12-13/5  
CERTS and CSIRTs  
share information  
with public globally

13/5  
Microsoft shares  
emergency patch





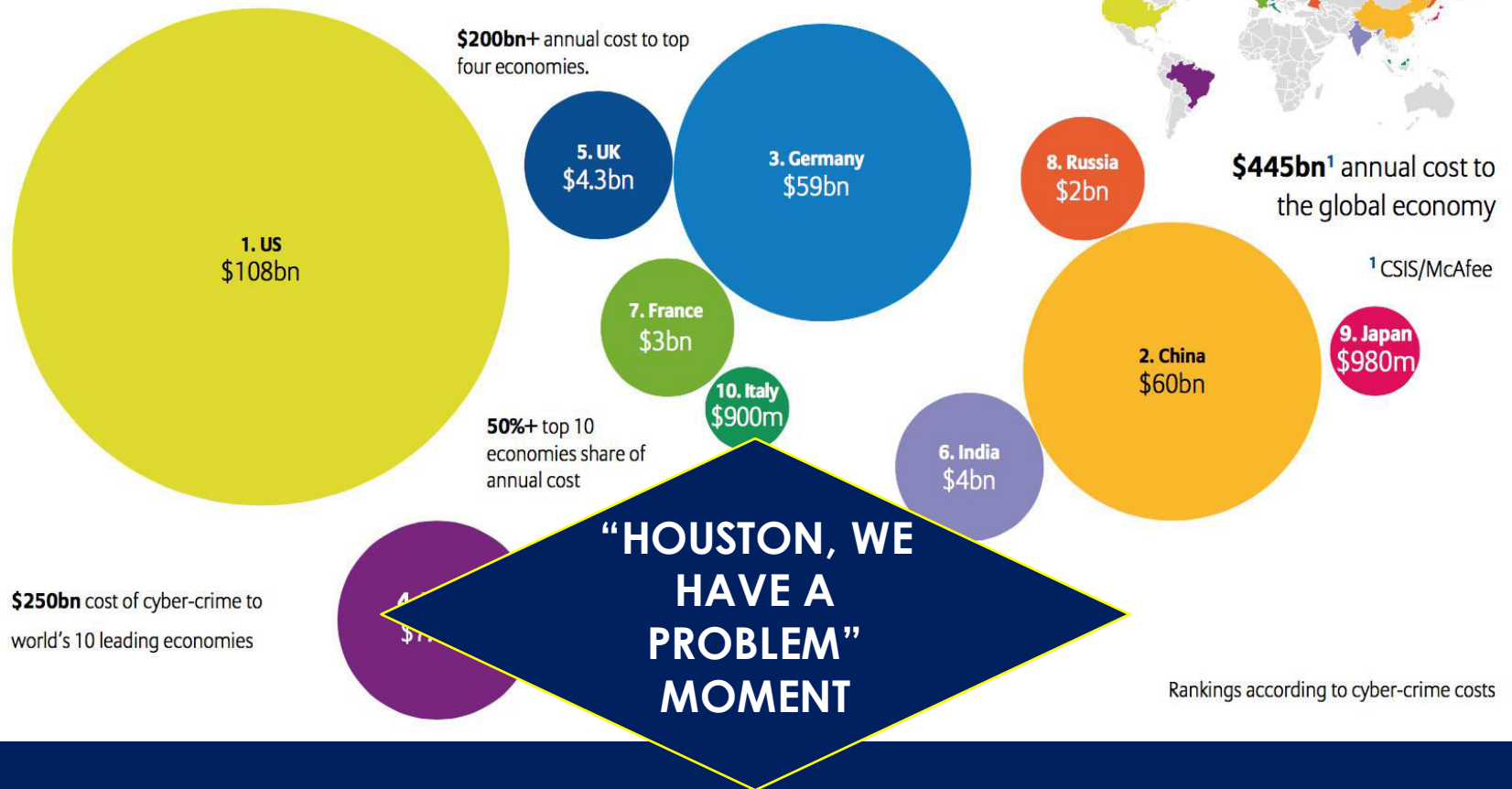
**THE HERO: MARCUS HUTCHINS**



# HYPERCONNECTIVITY > HYPERVULNERABILITY

How much does **cyber-crime** cost the world's leading 10 economies?

This **AGCS** atlas examines the estimated total cost to the global economy from cyber-crime per year, with a particular focus on the impact on the world's top 10 economies, according to GDP.



**AN ACT OF  
WAR B/W  
STATES**

**ISSUE FOR  
THE UN**

**CYBER  
CRIME**

**CYBER  
TERRORISM**

**BUSINESS  
CONTINUITY  
ISSUE**

## Photo reveals even Zuckerberg tapes his Webcam and Microphone for Privacy

Tuesday, June 21, 2016 Swati Khandelwal

25 2.5K 6465 413 39 6962

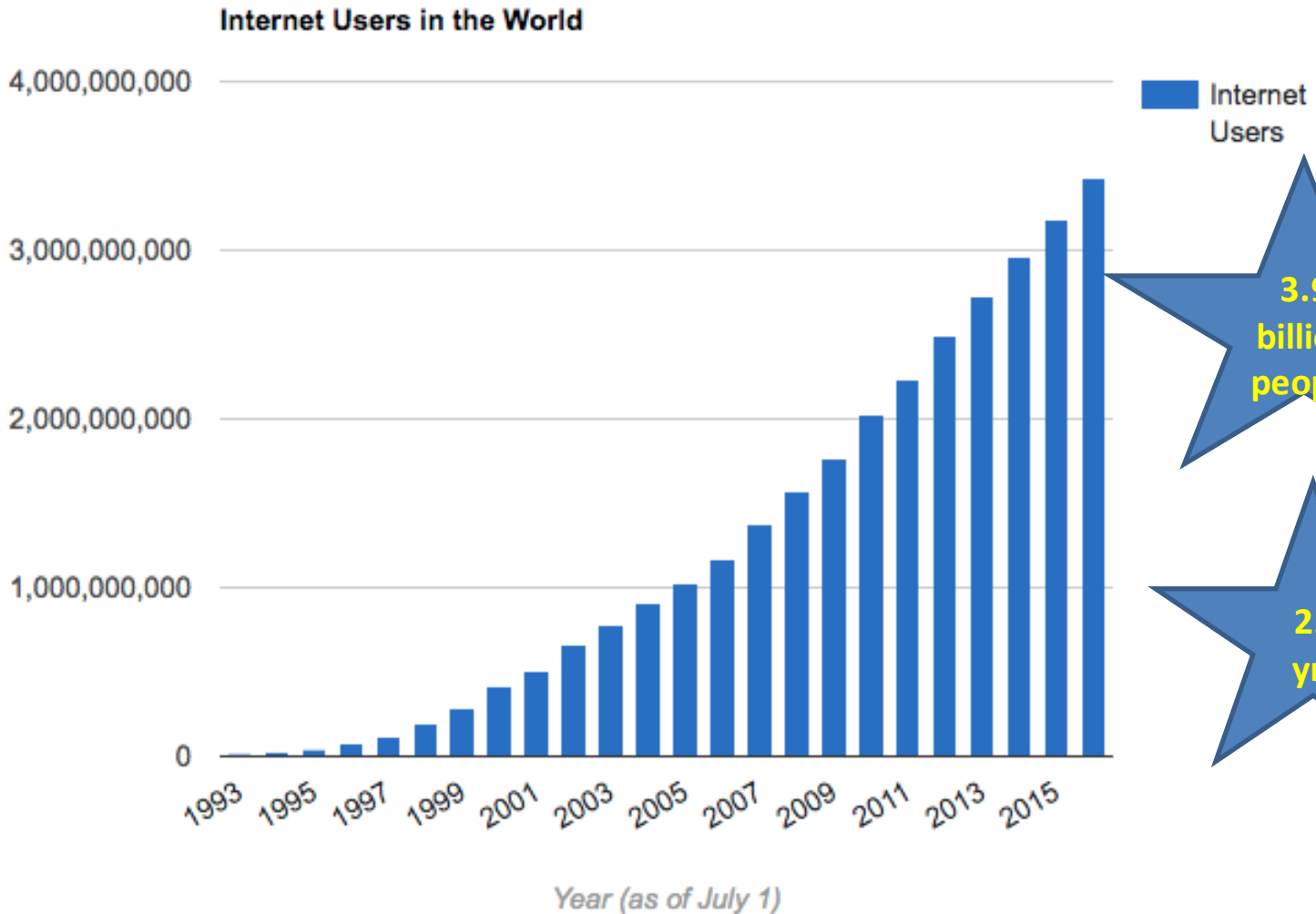


**NOT ONLY INDIVIDUALS – COUNTRIES ARE ALSO HYPER-VULNERABLE!**

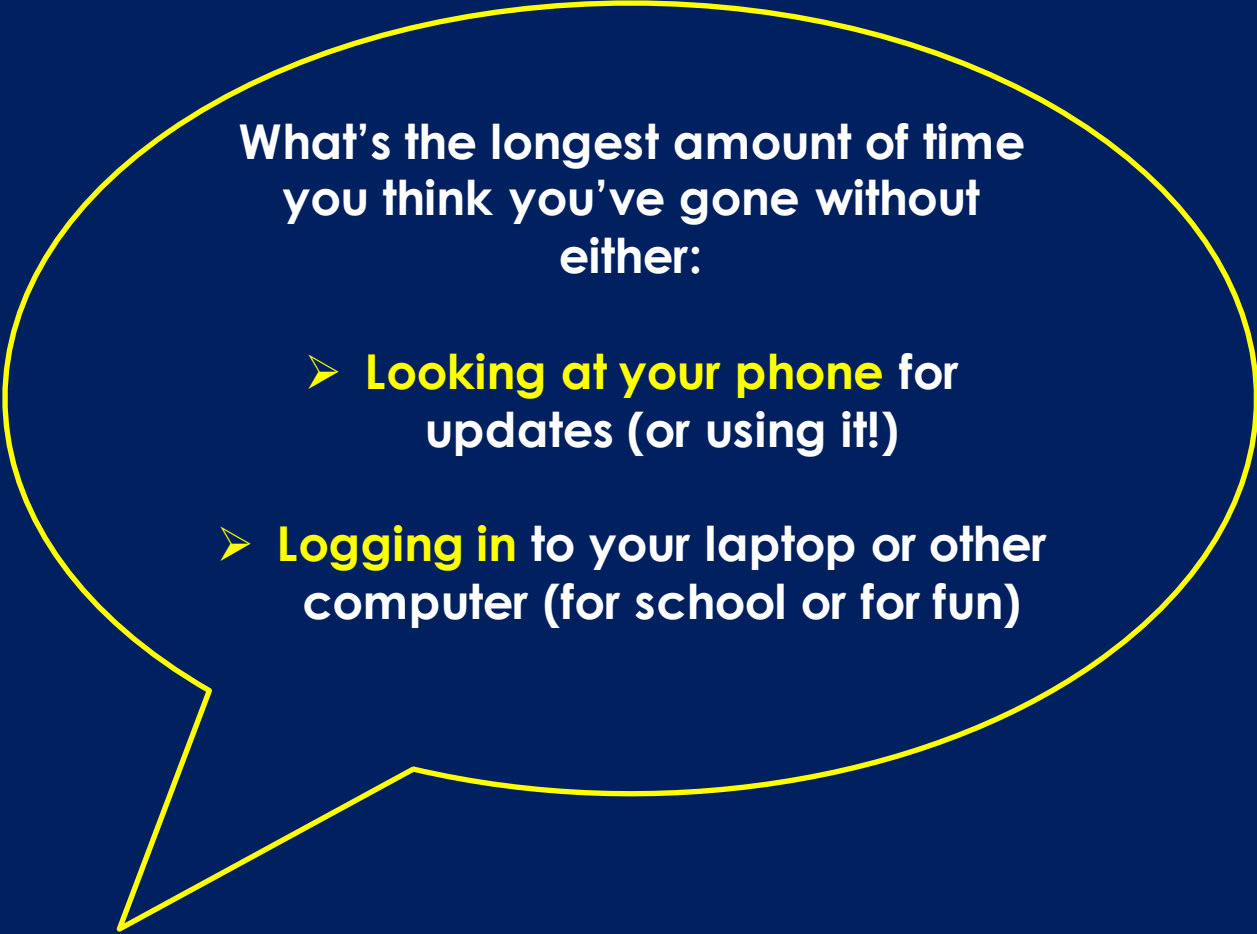


**WHAT'S IN CYBERSPACE?**

# January 2019 – 51.2% of the world





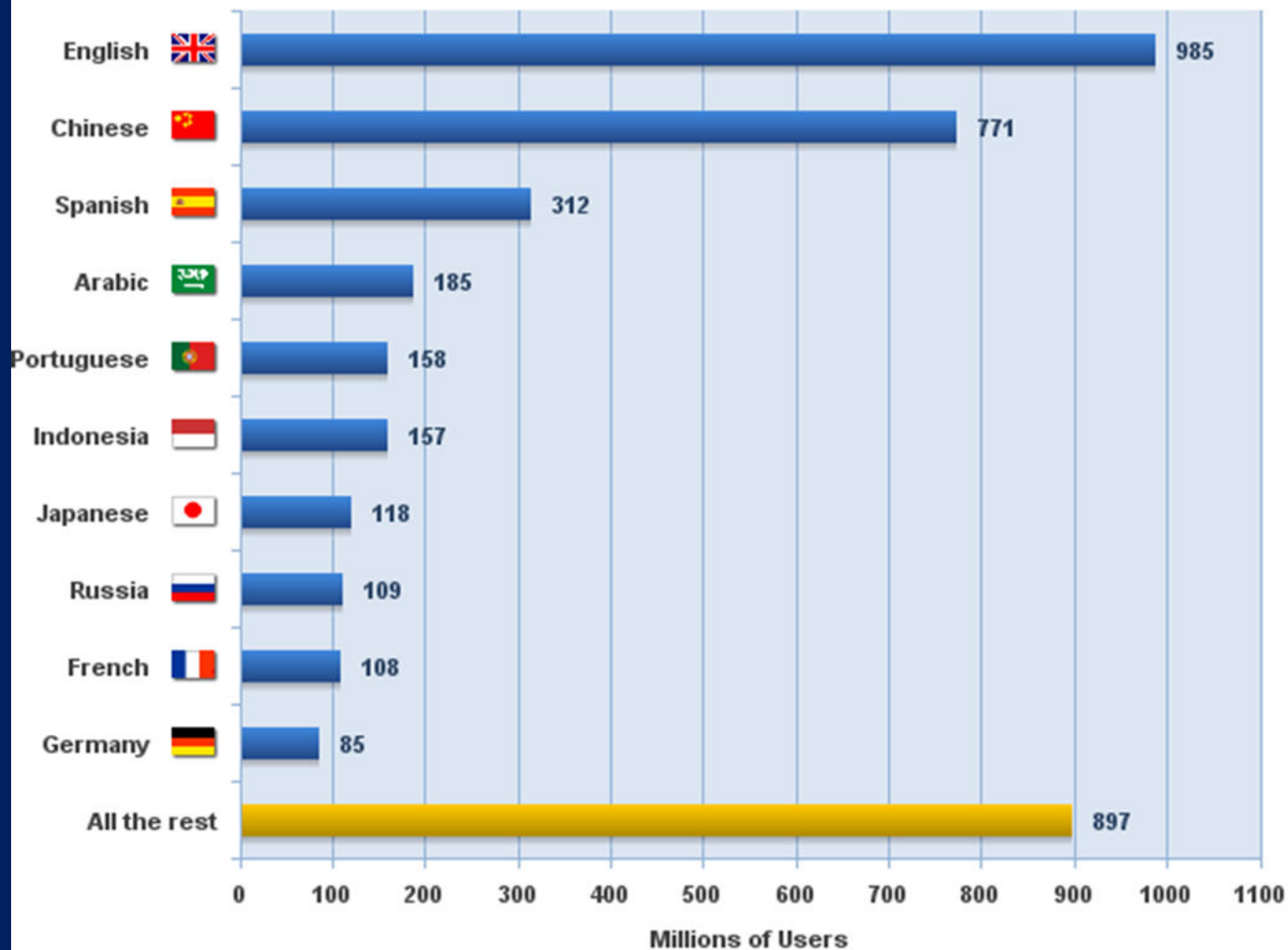


What's the longest amount of time  
you think you've gone without  
either:

- **Looking at your phone** for updates (or using it!)
- **Logging in** to your laptop or other computer (for school or for fun)

**SHOUT-OUT: HOW MUCH OF YOUR  
DAY IS SPENT IN CYBERSPACE?**

## Top Ten Languages in the Internet in Millions of users - June 2017

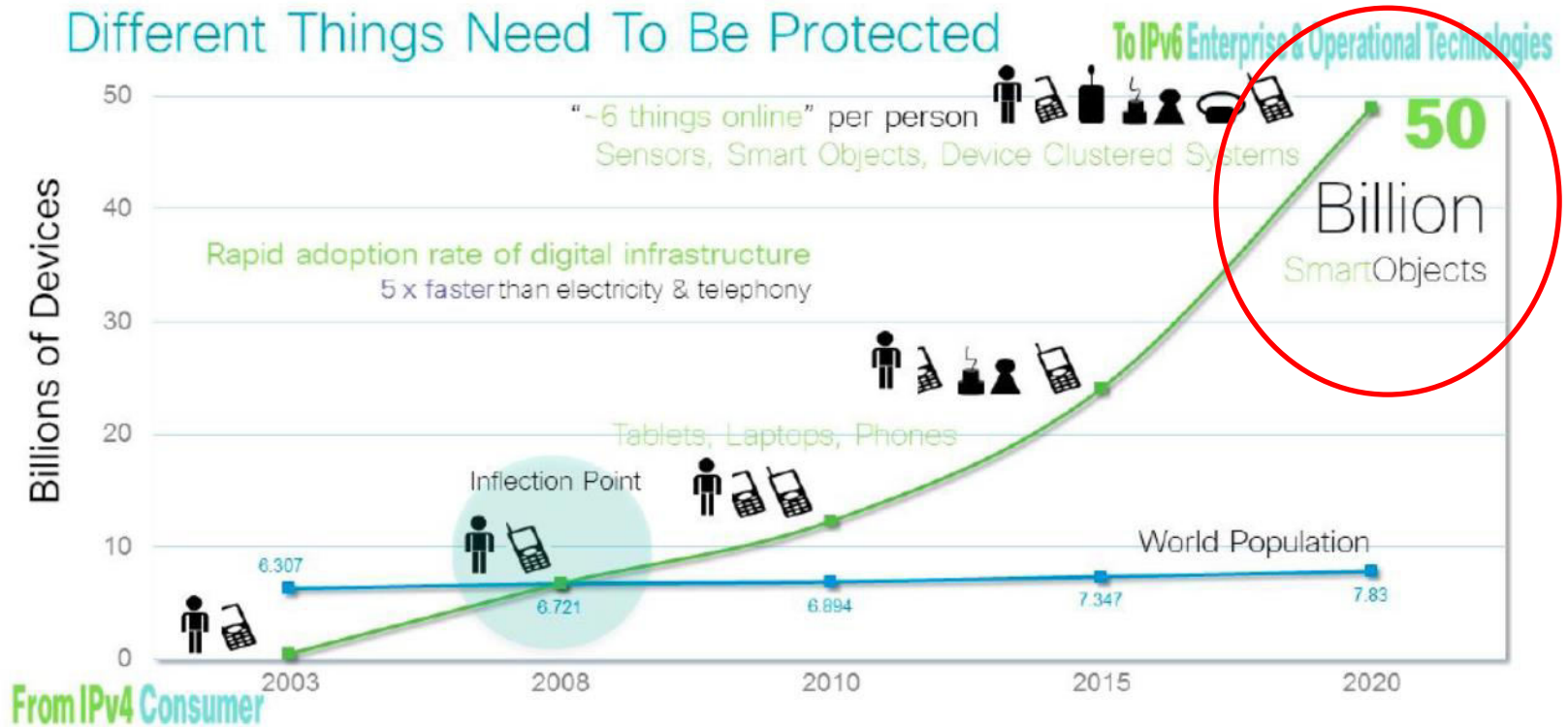


Source: Internet World Stats - [www.internetworldstats.com/stats7.htm](http://www.internetworldstats.com/stats7.htm)

Estimated total Internet users are 3,885,567,619 in June 30, 2017

Copyright © 2017, Miniwatts Marketing Group

# Internet of Attacking Things



**HOW DOES IT REALLY WORK AS  
A GLOBAL RESOURCE?**



**What's cyberspace?**

**SHOUT-OUT**

**END-USER  
POINTS  
(PHONES,  
TABLETS, IoT)**

**COM-  
PUTERS**

**DATA**

**STORAGE**

**PEOPLE**

**COM-  
MUNICATI  
ONS  
NETWORKS**

# AN ANATOMY OF THE INTERNET

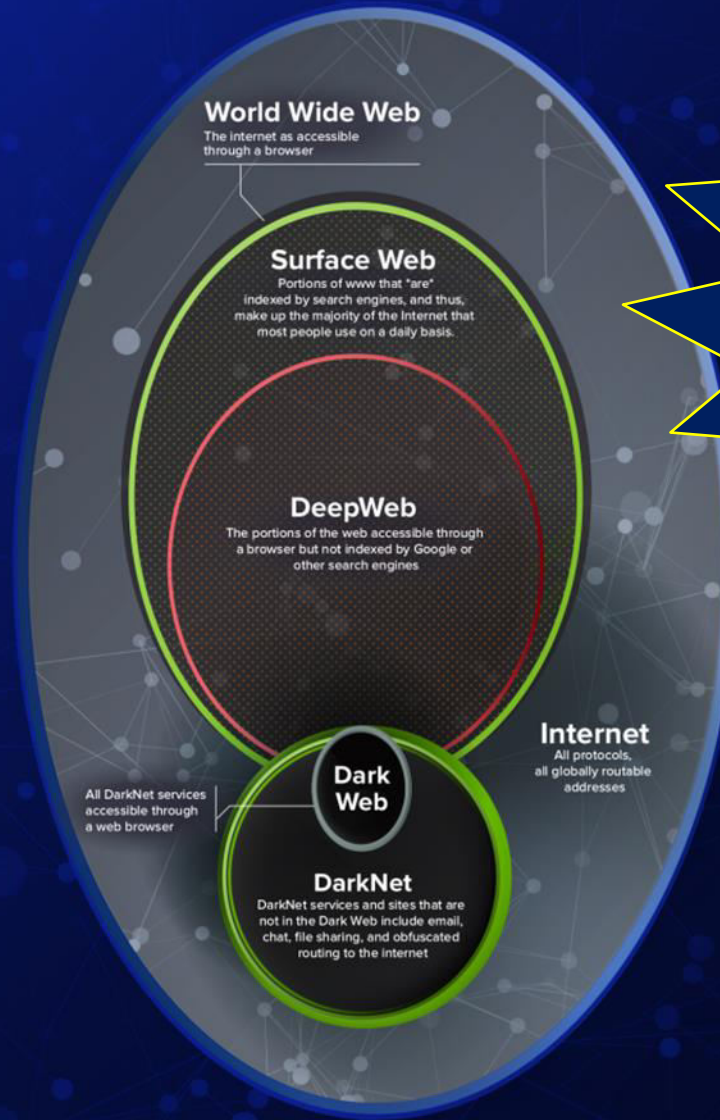
GPS

Mobile phones

Undersea cable communications

Satellite communications

Wi-Fi networks



**CYBERSPACE**

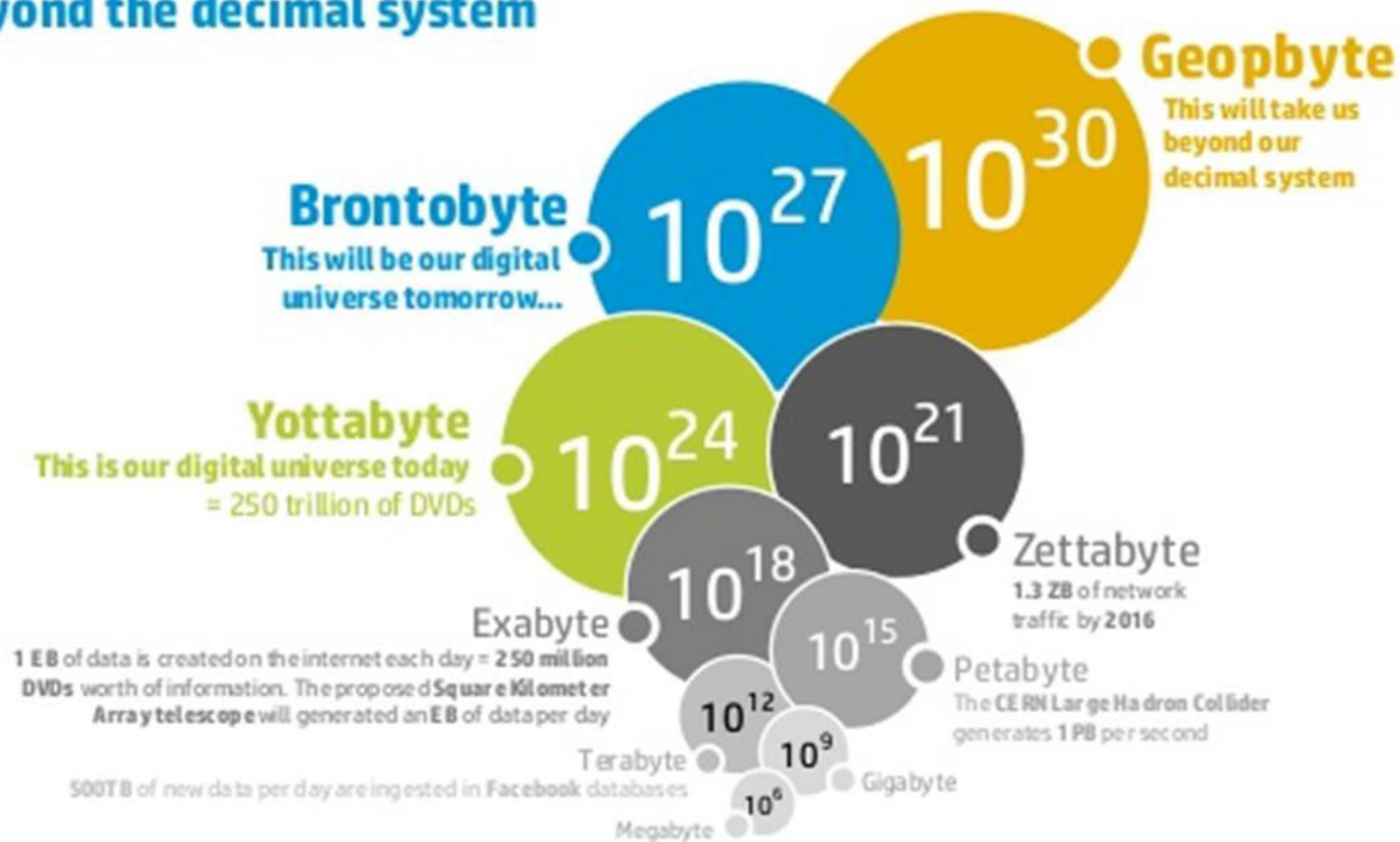
**WHY IT'S CRITICAL FOR US TO KNOW  
AS MUCH AS WE CAN ABOUT  
CYBERSPACE AS A GLOBAL RESOURCE**



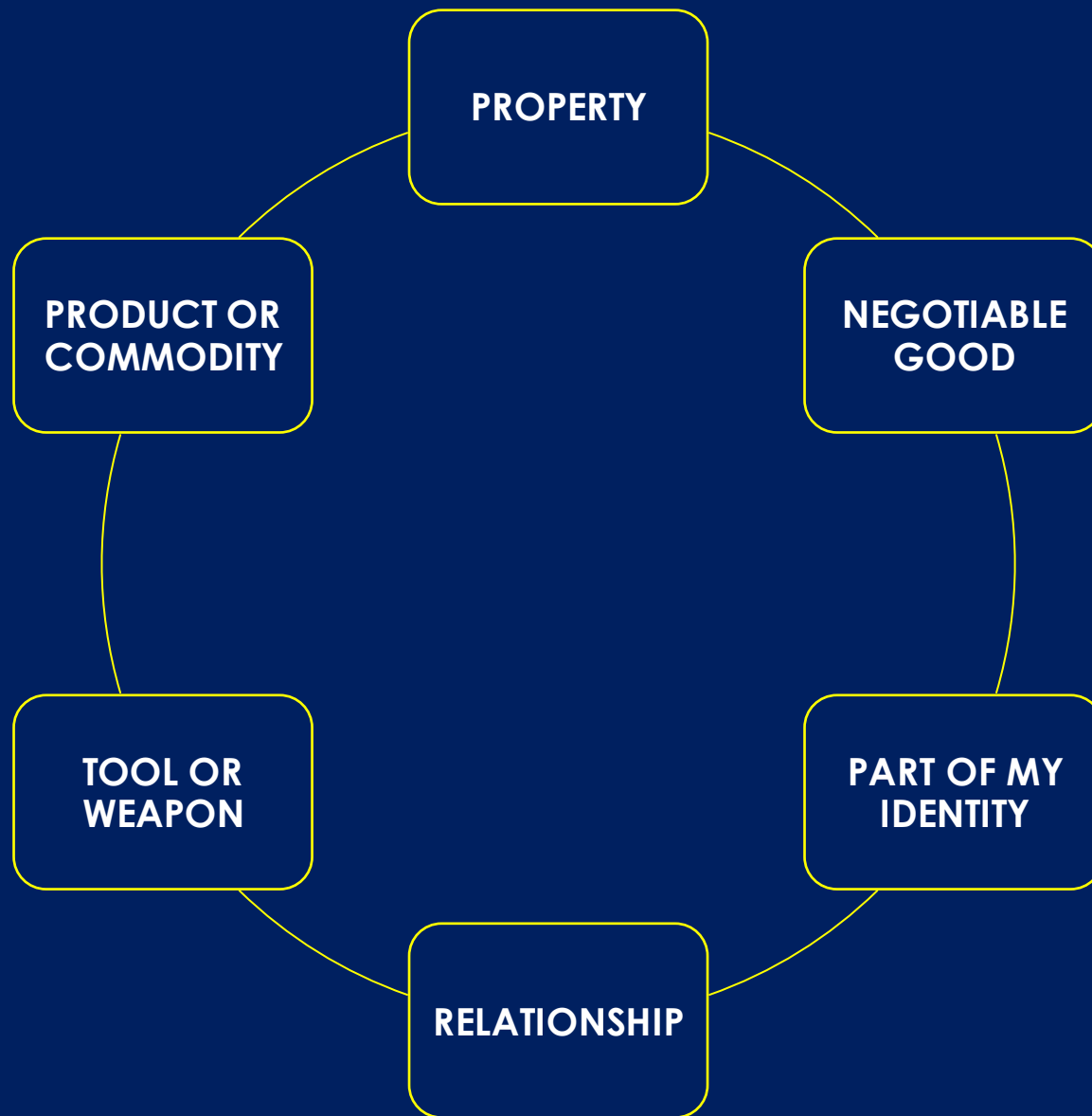
# Information from the Internet of Things: We have gone beyond the decimal system

Today data scientist uses **Yottabytes** to describe how much government data the NSA or FBI have on people altogether.

In the near future, **Brontobyte** will be the measurement to describe the type of sensor data that will be generated from the IoT



# THE ABSOLUTELY UNPRECEDENTED PHENOMENON OF BIG DATA



**“DATA”: THE CONCEPTUAL CHALLENGE**

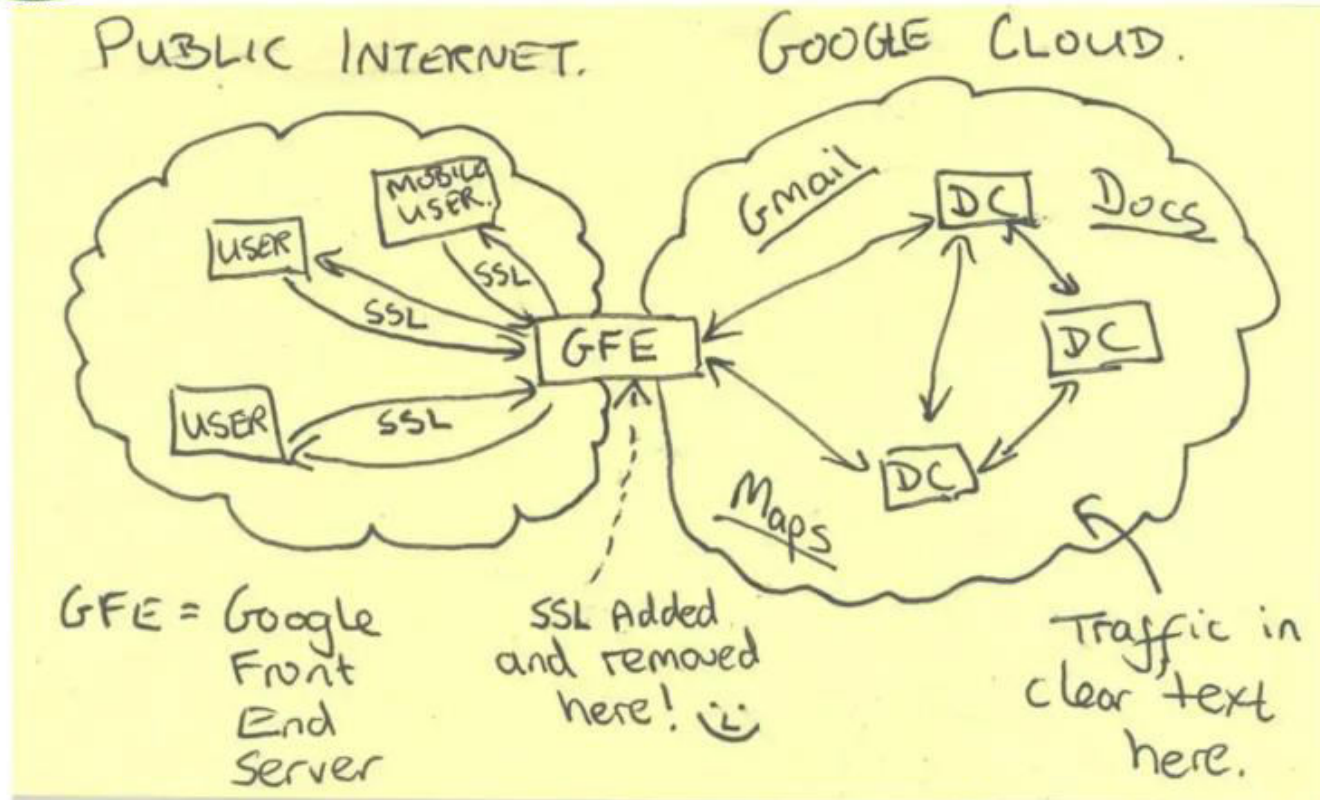


**The Michael Jackson  
phenomenon: we are our  
digital data**

**...AND NOT ALWAYS BY CHOICE**

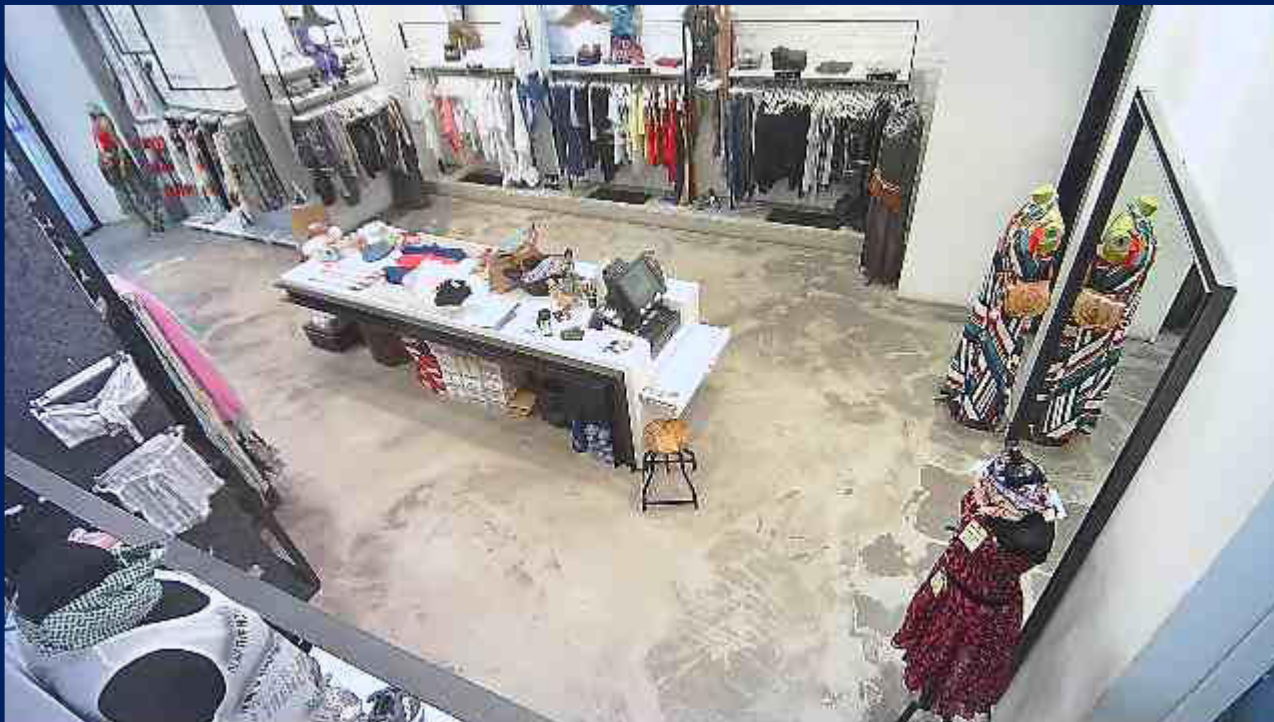


# Current Efforts - Google



In this slide from a National Security Agency presentation on "Google Cloud Exploitation," a sketch shows where the "Public Internet" meets the internal "Google Cloud" where user data resides. Two engineers with close ties to Google exploded in profanity when they saw the drawing.

# GOVERNMENT SURVEILLANCE / "SURVEILLANCE CAPITALISM"





IN THE CIRCUIT COURT OF BENTON COUNTY, ARKANSAS

STATE OF ARKANSAS

PLAINTIFF

v.

CASE NO. CR-2016-370-2

JAMES A. BATES

DEFENDANT

**MEMORANDUM OF LAW IN SUPPORT OF  
AMAZON'S MOTION TO QUASH SEARCH WARRANT**

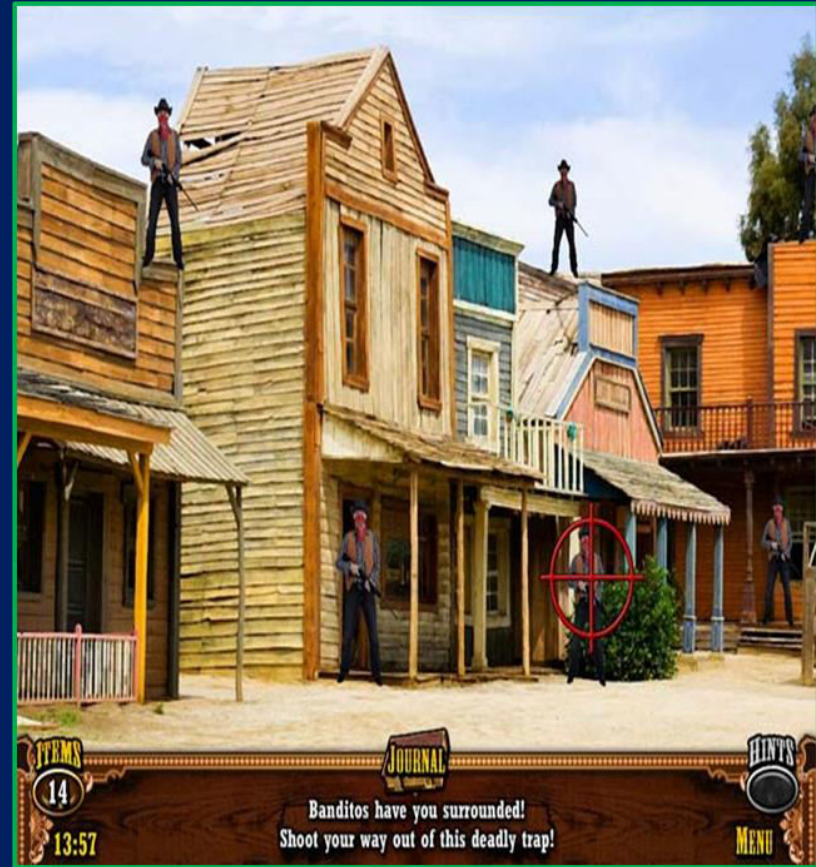
Pursuant to Rule 13 of the Arkansas Rules of Criminal Procedure, Petitioner Amazon.com, Inc. ("Amazon"), submits this memorandum in support of its Motion to Quash a search warrant served on Amazon.<sup>1</sup> The warrant requests that Amazon produce any audio recordings and transcripts that were created as a result of interactions with an Amazon Echo device owned by the defendant James Bates and located in his residence. Given the important First Amendment and privacy implications at stake, the warrant should be quashed unless the Court finds that the State has met its heightened burden for compelled production of such materials.

# ALEXA AS MATERIAL WITNESS

- ▶ WHAT IS IT – OR **HOW ARE WE TREATING IT** IN A SPECIFIC CASE?
- ▶ CAN WE ACTUALLY **CONTROL** WHAT HAPPENS TO IT?
- ▶ **WHO** GETS TO DECIDE?  
(GOVERNANCE)

**3 BIG QUESTIONS ABOUT DATA IN  
CYBERSPACE**





# NEW TOOLS, NEW RULES

# ONE ANSWER: **INTERNATIONAL LAW**

1

- TAKES INTO ACCOUNT NATIONS' CONCERNS

2

- NEGOTIATES CONCERNS AND INTERESTS

4

- BUILDS ENFORCEMENT MECHANISMS GLOBALLY



# General Assembly

Distr.: General

22 July 2015

Original: English

**INTERNATIONAL LAW  
APPLIES TO  
CYBERSPACE**

Seventieth session

Item 93 of the provisional agenda\*

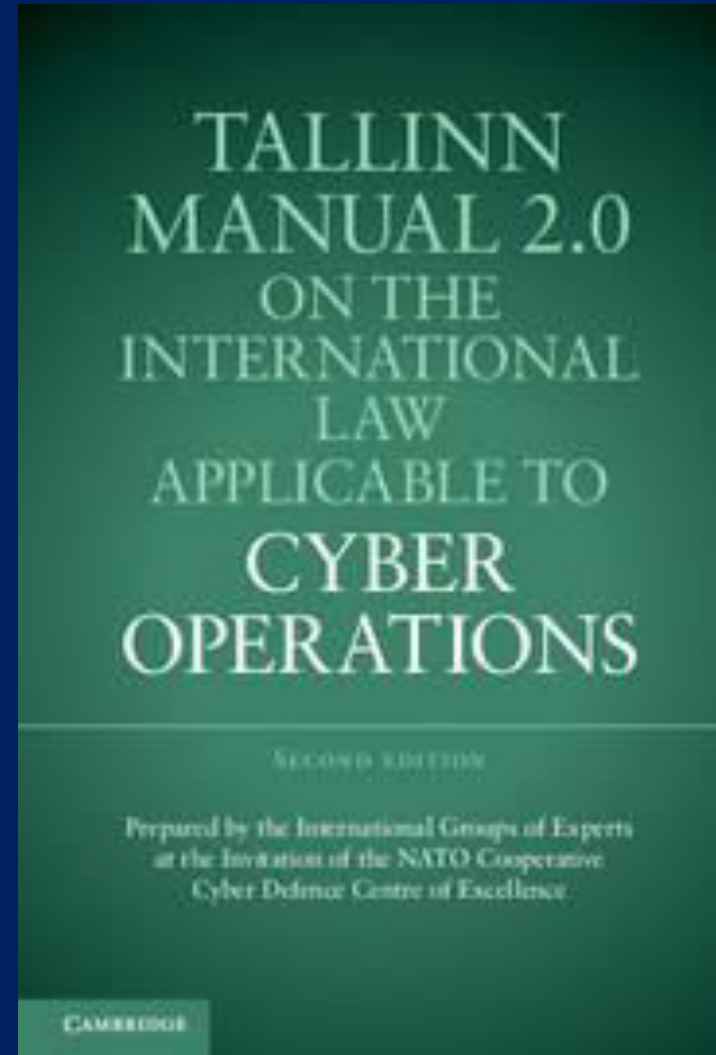
**Developments in the field of information and  
telecommunications in the context of international security**

**Group of Governmental Experts on Developments in the  
Field of Information and Telecommunications in the  
Context of International Security**

**BELARUS, BRAZIL, CHINA, COLOMBIA, EGYPT, ESTONIA, FRANCE, GERMANY,  
GHANA, ISRAEL, JAPAN, KENYA, MALAYSIA, MEXICO, PAKISTAN, KOREA,  
RUSSIA, SPAIN, UK, USA**

2017

- ▶ **INTERNATIONAL LAW IN THE CYBERSPACE DOMAIN**
- ▶ **THE WAYS IN WHICH IT APPLIES**
- ▶ **THE HAGUE PROCESS: STATES' INPUT**
- ▶ **DE FACTO ACKNOWLEDGEMENT**



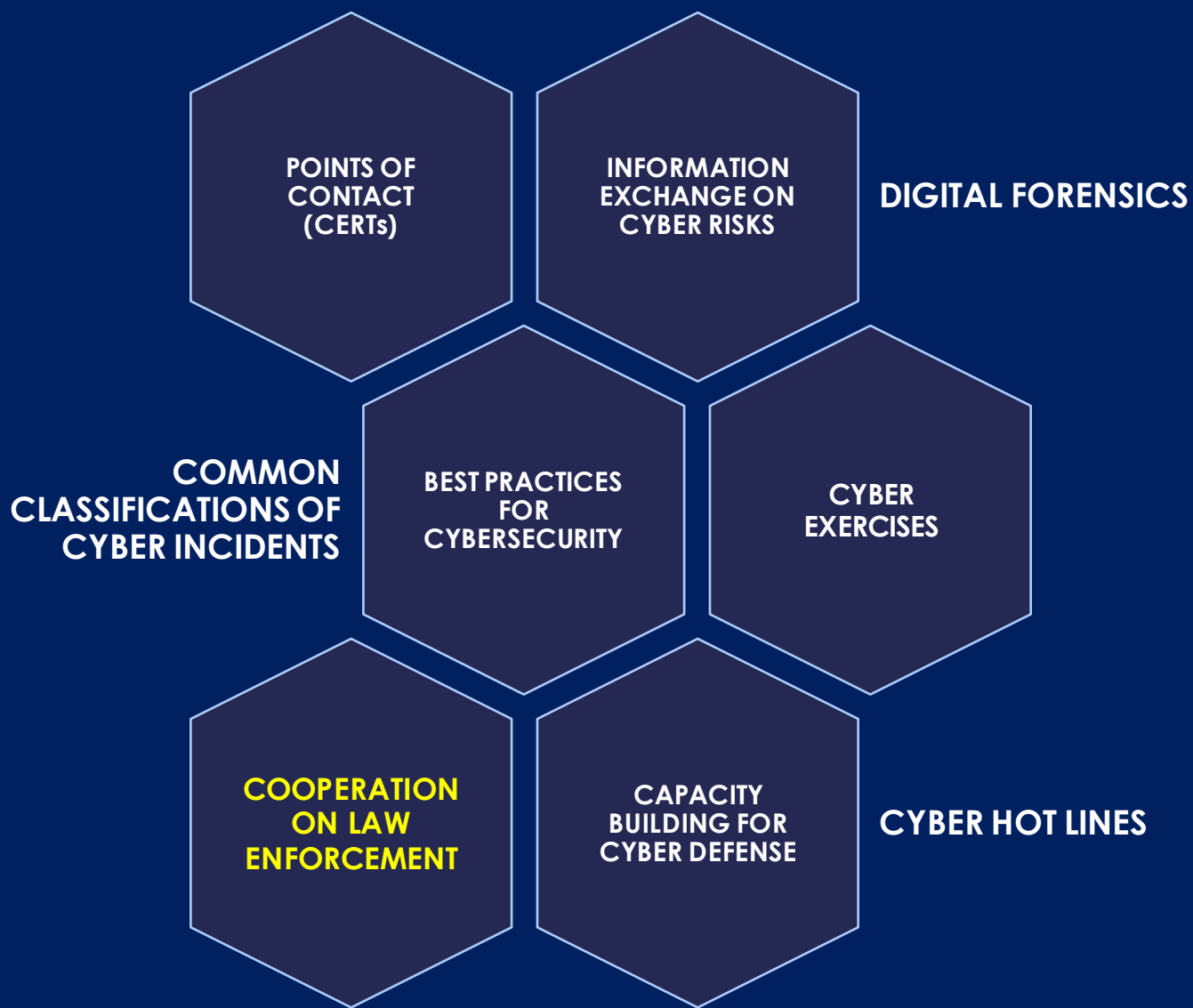
▶ **INTERNATIONAL LEGAL NORMS**

▶ **CONFIDENCE -BUILDING MEASURES  
FOR GLOBAL ENFORCEMENT**

▶ **GLOBAL COMPANIES** TAKING ON  
NEW RESPONSIBILITIES

▶ **INDIVIDUALS** HAVE A NEW ROLE FOR  
ENFORCEMENT OF NORMS

**4 WAYS WE'RE MOVING AHEAD GLOBALLY**



# CONFIDENCE BUILDING MEASURES (CBM'S)



ASEAN REGIONAL FORUM



Group of Governmental Experts



# The Strategic Alliance Cyber Crime Working Group

*Member Nations and Lead Law Enforcement Agencies*



**CYBER POLICING HAS GONE GLOBAL**

# Facebook, Microsoft, YouTube and Twitter form Global Internet Forum to Counter Terrorism

John Mannes @johnmannes · Jun 26, 2017

 Comment



GIFCT

VISION

ABOUT

LEADERSHIP

PARTNERS

The vision of the GIFCT is to prevent terrorists from exploiting our platforms.



**BETA** This is a new service – your [feedback](#) will help us to improve it.

## Report online material promoting terrorism or extremism

If you're reporting a crime that's happening right now or if there's a threat to someone's life, call 999 immediately.

### Where did you find the material?

Give the website / app name.

### What's the web address?

If you do not have the web address, please leave this blank and provide clear details of how to find the materials in the "Tell us more" field below.

▶ [What's a web address?](#)

## REPORT ILLEGAL CONTENT ON THE INTERNET



Click on one of the links(\*) below to be redirected to the reporting website of your country. If your country is not listed, visit [iNHOPE - the International Organisation of Internet Hotlines](#) . Different types of illegal content may include online sexual abuse material, online grooming and hate speech.

### REPORTING WEBSITES

Austria - DE   EN	Germany - DE   EN	Poland - PL   EN
Belgium - FR   NL   EN	Greece - EL   EN	Portugal - PT   EN
Bulgaria - BG	Hungary - HU   EN	Romania - RO   EN
Croatia - HR   EN	Ireland - EN	Spain - ES   <a href="#">Policia</a>   <a href="#">Guardia Civil</a>
Cyprus - EL   EN	Italy - IT   IT	Slovakia - SK   EN
Czech Republic - CZ   EN	Latvia - LV   EN	Slovenia - SI   EN
Denmark - DK   EN	Lithuania - LT   EN	Sweden - EN
Estonia - EN	Luxembourg - DE   FR   EN	United Kingdom - EN
Finland - FI   EN	Malta - EN	
France - FR	Netherlands - NL	

# internet-signalement.gov.fr

Portail officiel de signalement des contenus illicites de l'Internet

Signaler

Formulaire de signalement

1. Contenu
2. Quand/De
3. Description
4. Informations
5. Validation

**Quel type de contenu souhaitez-vous signaler ?**

Choisissez le type de contenu dans la liste ci-dessous\* : [ ? ]

- Pédophilie ou corruption de mineur sur Internet
- Incitation à la haine raciale ou provocation à la discrimination de personnes en raison de leurs origines, de leur sexe, de leur orientation sexuelle ou de leur handicap
- Menaces ou incitation à la violence
- Trafic illicite (stupéfiants, armes, etc.)
- Mise en danger des personnes
- Incitation à commettre des infractions
- Spam
- Injure ou diffamation
- Escroqueries

**Questions et Réponses**

- Conseils
- Conseils aux Jeunes
- Conseils aux Parents
- Internet Prudent
- Protéger son ordinateur
- Liens Utiles



**CBM's ARE HELPING TO  
BUILD A BASIS FOR  
INTERNATIONAL LAW  
NORM IMPLEMENTATION**



**NEW ROLE FOR  
COMPANIES**



**NEW ROLE FOR  
INDIVIDUALS**

**WHO** IS PROVIDING THE NECESSARY LEADERSHIP  
FOR GOVERNING THE NEXT STAGE OF HUMAN  
ACTIVITY IN GLOBAL CYBERSPACE?

**We've entered a new era, and we lack the shared vocabulary and political doctrines to make sense of it.**

**Perhaps more importantly, the generation of leaders who can seamlessly integrate policies in the physical and digital worlds is still emerging.**

*-- William Burns, President of the Carnegie Foundation, February 2017*



THE ADAPTIVE CHALLENGE BECOMES CLEAR AS TACTICAL RESPONSES FAIL

# AN ADAPTIVE LEADERSHIP CHALLENGE

# MIND THE GAP

By 2022, there will be a shortage of 1.8 million information security workers.



Surpassing Baby Boomers as the largest living generation, Millennials will be critical for filling the employment gap. To secure the best talent, it's important to understand who Millennials are and what motivates them.

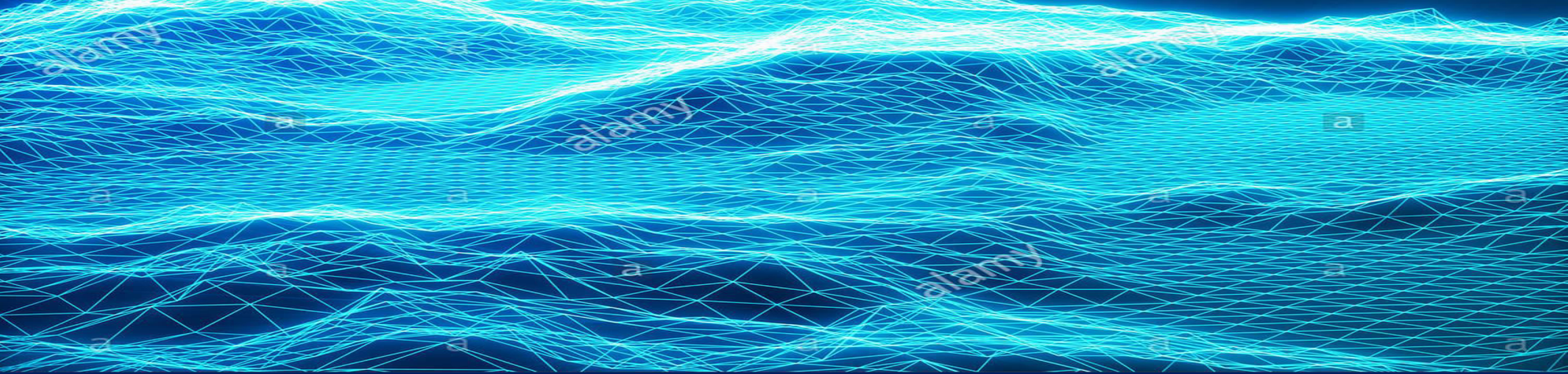
Source: 2017 Global Information Security Workforce Study



**MARCUS HUTCHINS**

**SUMMING UP**





**WHAT** is cyberspace?

**HOW** does it really work as a global resource?

**WHY** it's critical for us to know

**WHO** is providing the necessary leadership for governing the next stage of human activity there?



**GLOBAL CYBERSECURITY IS  
A LONG-TERM, STRATEGIC CHALLENGE FOR  
OUR TIME –  
NOT A TACTICAL ONE, AND NOT A  
TEMPORARY ONE.  
YET ABSOLUTELY CRITICAL.**

**THANK YOU - ANY QUESTIONS?**



# THE INTERSPECIES INTERNET

TED2013 (VINCE CERF, PETER GABRIEL, DIANA REISS,  
NEIL GERSHENFELD)



Image posted on Facebook by ElephantVoices