



Security 2020: Global Disruptors and the Way Forward

Jim Reavis, Executive Director

About the Cloud Security Alliance

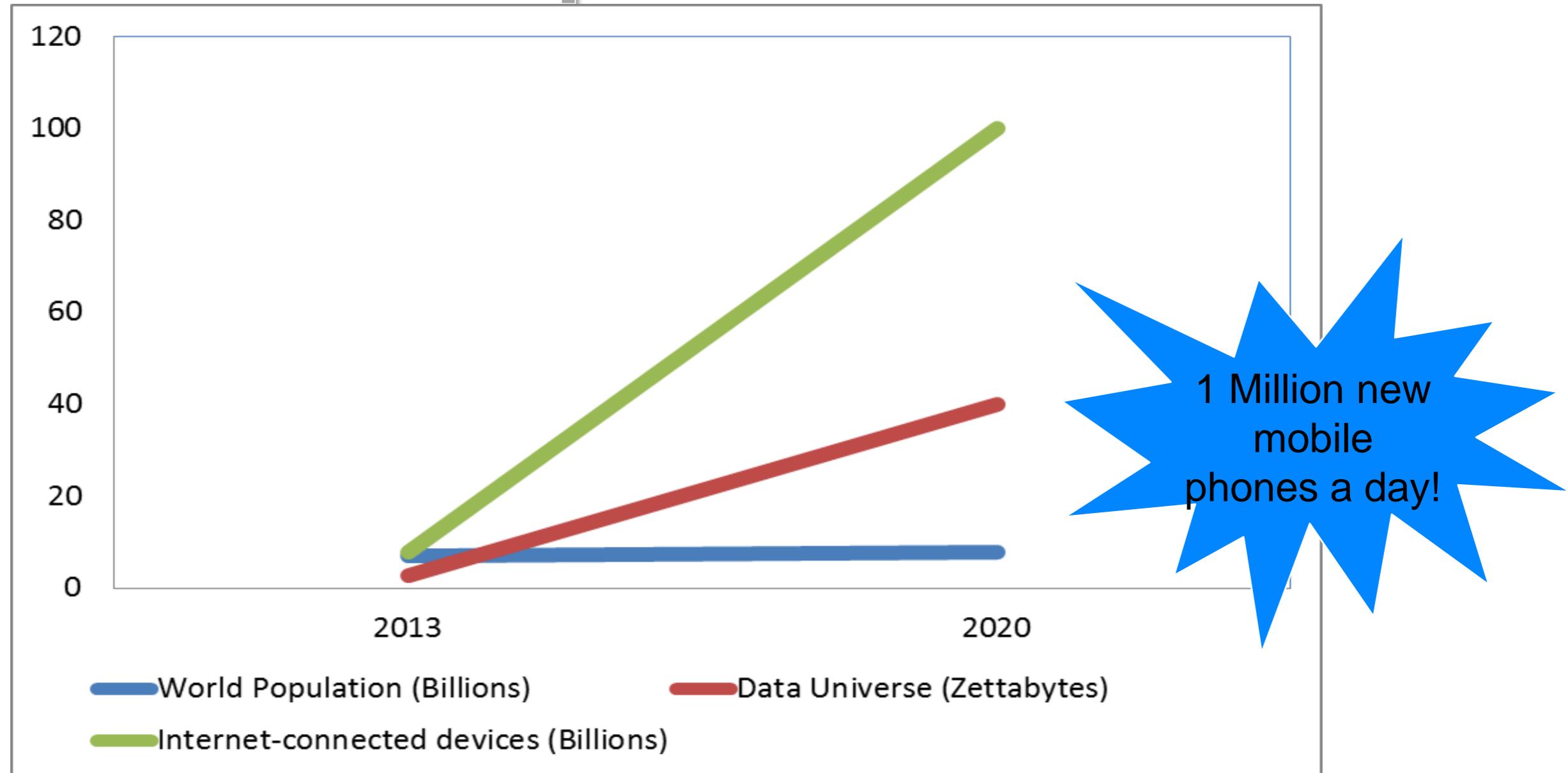
- Global, not-for-profit organization
- Building security best practices for next generation IT
- Research and Educational Programs
- Cloud Provider Certification
- User Certification
- Awareness and Marketing
- The globally authoritative source for Trust in the Cloud

“To promote the use of best practices for providing security assurance within Cloud Computing, and provide education on the uses of Cloud Computing to help secure all other forms of computing.”

CSA Fast Facts

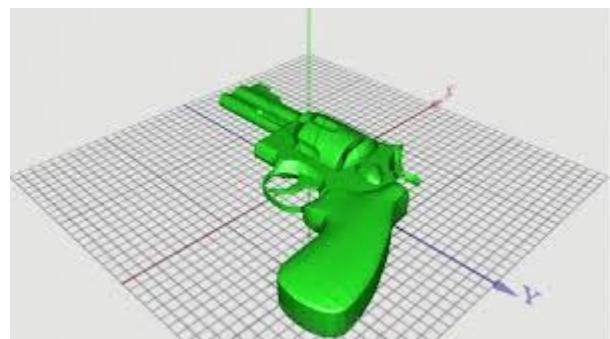
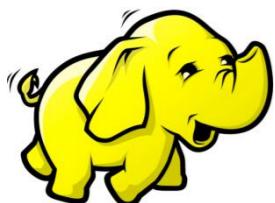
- Founded in 2009
- Membership stats as of May 2013
 - 47,000 individual members, 66 chapters globally
 - 180 corporate members
 - Major cloud providers, tech companies, infosec leaders, governments, financial institutions, retail, healthcare and more
- Offices in Seattle USA, Singapore, Heraklion Greece
- Over 30 research projects in 25 working groups
- Strategic partnerships with governments, research institutions, professional associations and industry

Growth Beyond Comprehension



Forrester forecasts that the global market for cloud computing will grow from \$40.7 billion in 2011 to more than \$241 billion in 2020

Wildcards of Disruption



Cloud is the Foundation

- Our IT System
 - Enabling Big Data
 - Managing Mobile Devices
 - The Glue for the Internet of Things
 - Accelerating innovation



Security pain points that will get more painful

- Humans overwhelmed by system, application, data & device volumes
- Best practices inadequate for massively asymmetric warfare
- Inability to collaborate
 - Within industries
 - Across disciplines, e.g. cloud provider to ISP
 - Across nations
- Incompatible laws across jurisdictions
 - Data sovereignty
- Lack of transparency & visibility from providers & gov't

Government trust isn't an issue, is it?



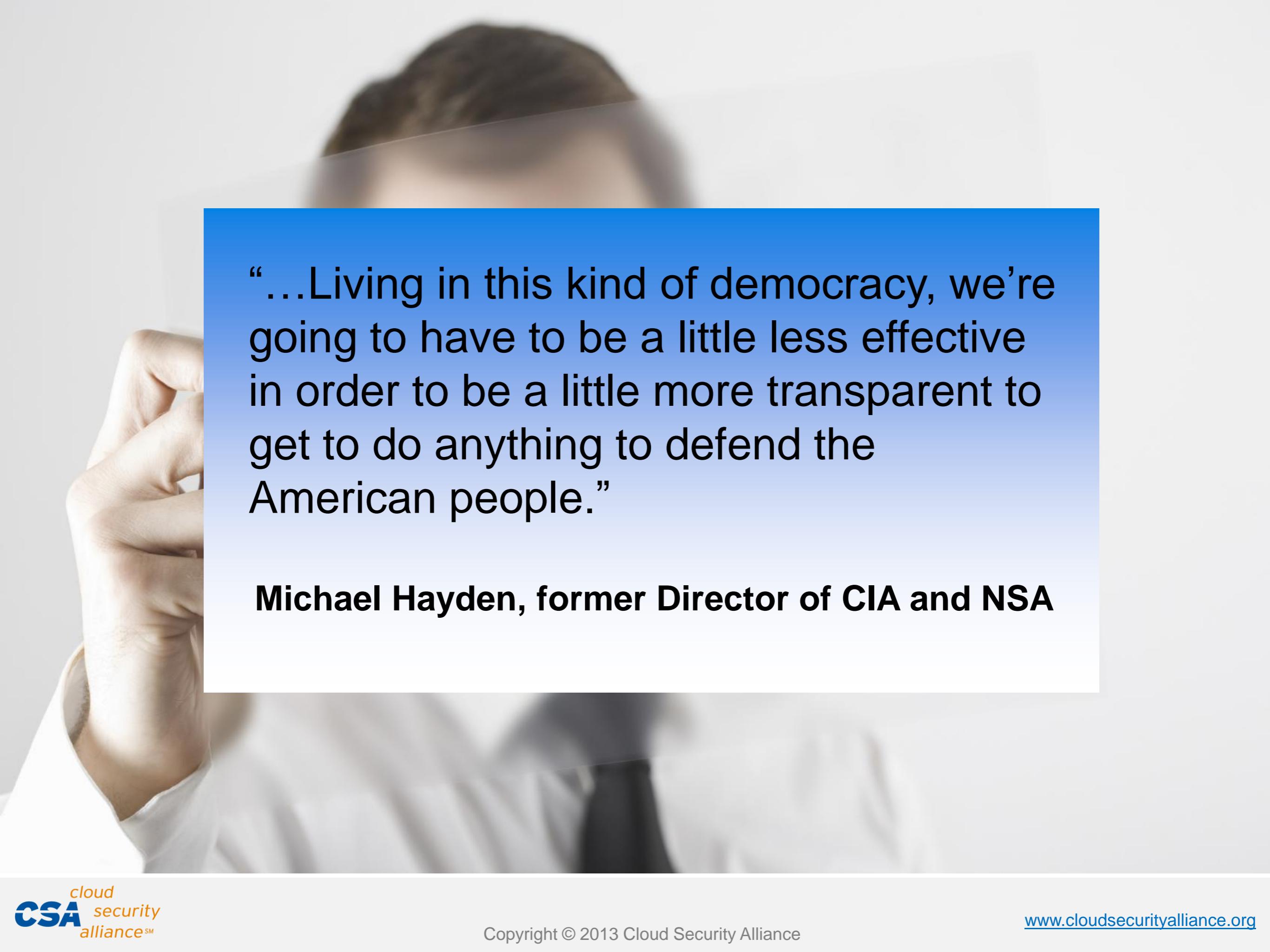
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Will the Patriot Act kill the cloud and globalized IT?

- USA Patriot Act “Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and obstruct Terrorism Act of 2001” (reauthorized in 2006 & 2011)
- Not a new law, series of amendments to existing laws related to surveillance, investigation and prosecution of terrorism (Foreign Intelligence Surveillance Act)
- Most requests for information follow subpoenas/warrants, but are often decided in secret
- Most countries have laws permitting disclosure of user info without user consent related to foreign intelligence and national security
- But... the NSA is big, we don't know what we don't know

What Happens Next?





“...Living in this kind of democracy, we’re going to have to be a little less effective in order to be a little more transparent to get to do anything to defend the American people.”

Michael Hayden, former Director of CIA and NSA

Transparency: User Data requests from law enforcement according to Google

- For <http://www.google.com/transparencyreport/> “...ask you to help make it possible for Google to publish in our Transparency Report aggregate numbers of national security requests, including FISA disclosures—in terms of both the number we receive and their scope. Google’s numbers would clearly show that our compliance with these requests falls far short of the claims being made. Google has nothing to hide.”
- France
- Germany
- India
- Italy **David Drummond, Chief Legal Counsel, Google**
- US: 8,438 requests, responded to 88%
- UK: 1,458 requests, responded to 70%

Technology creates Policy Obsolescence (maybe new challenges)

- Virtual representation of everything
- Software Defined Networking
- SaaS format preserving encryption
- Virtual Private Clouds
- Mobile clouds (grids, botnets)
- Identity Management Instrumentation
- Next generation AAA
- Privacy enhancing technologies
- It's not where anything is, it's who has access and what rules apply

Internet of Things requires “MIST”

- MIST – “Massive Integrated systems of Smart Transducers”, Dan Geer & Jerry Archer
- Devices will be greatly autonomous & self organizing
- Humans play an increasingly smaller role in maintaining operational health, managing & responding to intrusions
- Behavioral analytics will mimic immunology

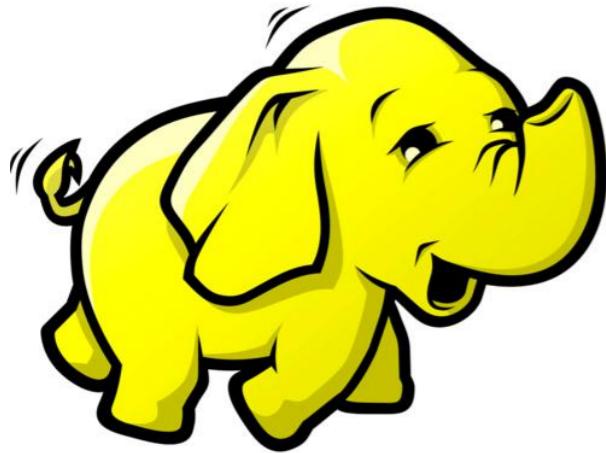
<http://www.csoonline.com/article/723487/revolutionary-evolution-the-internet-of-things-and-things-to-come>

“Hack Back” here to stay

- “I do not see how the modern enterprise has any choice but to deploy active defenses to balance the odds”, Dan Geer in private briefing with CSA enterprise members, May 2013
- Born of desperation
- It will be ugly
- We will have lessons learned
- Military has cyber offensive capabilities
- Some rules of the road will be developed



Big Data will be key



google.org Flu Trends

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Flu Trends

Select country/region ▾

Home

[How does this work?](#)

FAQ

Flu activity

Intense

High

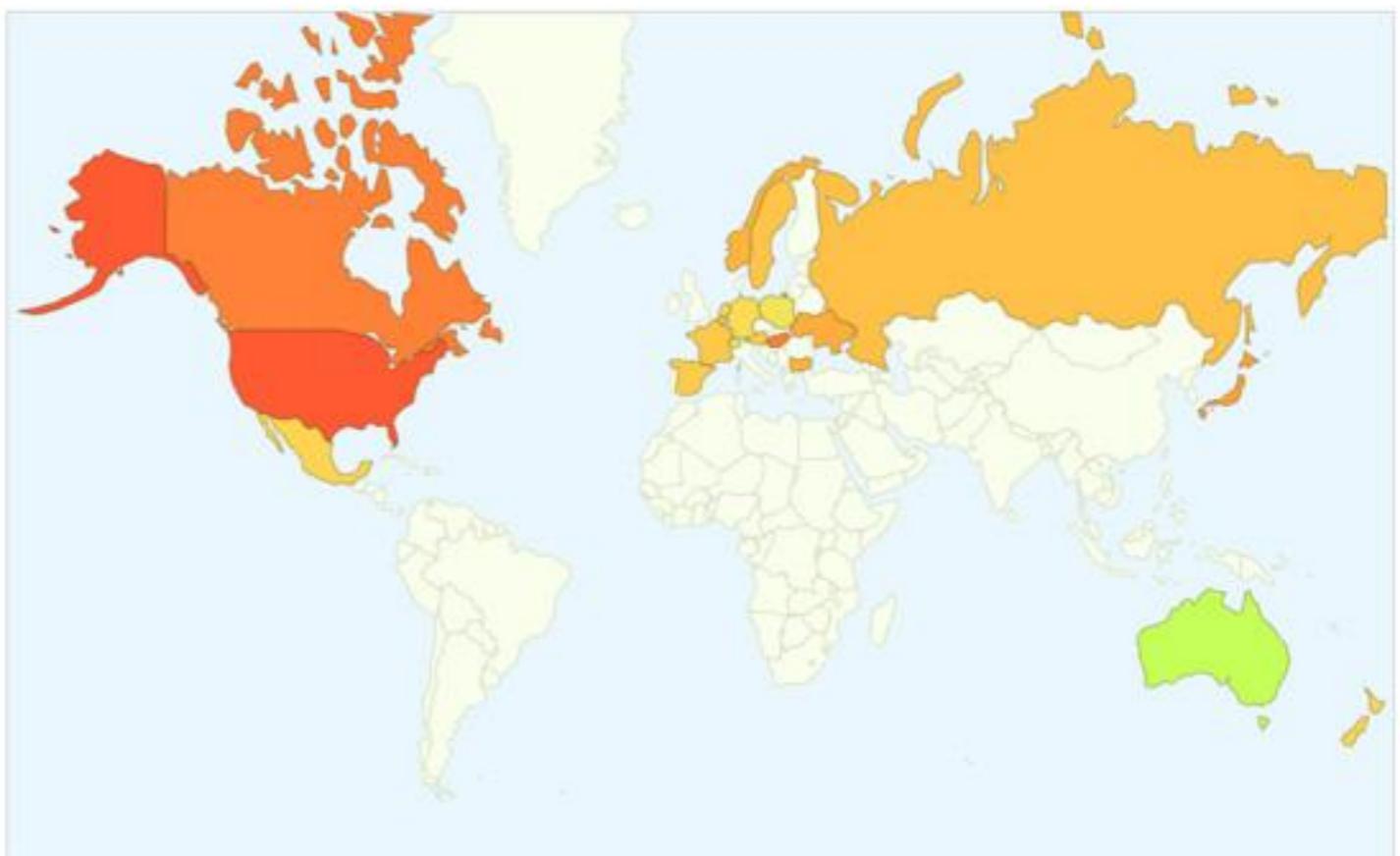
Moderate

Low

Minimal

Explore flu trends around the world

We've found that certain search terms are good indicators of flu activity. Google Flu Trends uses aggregated Google search data to estimate flu activity. [Learn more »](#)



Security must be a Service

- Cannot move quickly enough in our own castles
- Same economic and agility arguments as cloud
- Network effect, greater sharing of threat, incident & best practices
- Higher quality of services in the long run
- Security can innovate more quickly
- Leverages Big Data & Community Policing



Always an Arms Race



Why Are We Here?

- State Sponsored Cyberattacks?
- Organized Crime?
- Legal Jurisdiction & Data Sovereignty?
- Global Security Standards?
- Privacy Protection for Citizens?
- Transparency & Visibility from Cloud Providers?

The Global Mandate is Empowerment

- Shift the balance of power to consumers of IT
- Enable innovation to solve difficult problems of humanity
- Give the individual the tools to control their digital destiny
- Do this by creating confidence, trust and transparency in IT systems
- Security is not overhead, it is the enabler

Research Portfolio

- Our research includes fundamental projects needed to define and implement trust within the future of information technology
- CSA continues to be aggressive in producing critical research, education and tools



Key Areas to track at CSA

- CSA Guidance
- GRC Stack
 - Controls Matrix
 - CSA STAR Provider Certification
- CCSK User Certification
- Working on the future
 - CSA Mobile → IoT
 - Big Data



Lots more: <https://cloudsecurityalliance.org/research/>

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