



Confidence and Security in the Use of ICTs: A Holistic Approach is Required

Dr. Sid-Ahmed Berrani

Algeria

Confidence

- A trade-off between risk/threats and benefits
- Depends on cultural, social and economics factors.
- A typical example: e-commerce
 - It is growing despite the related known and unknown risks.
 - In France:
 - +14,3% in 2017 (vs. 2016).
 - More than 81,7 billion euros in 2017.

Security

- Enforcing ICT security requires the cooperation of different fields at different levels

Technical

**Laws
& regulation**

**Training &
Education**

Research and Innov

Entrepreneurship

ICT Security

Government

Telco/Internet provider

IT of companies

Users


Manufacturers

Solution developers

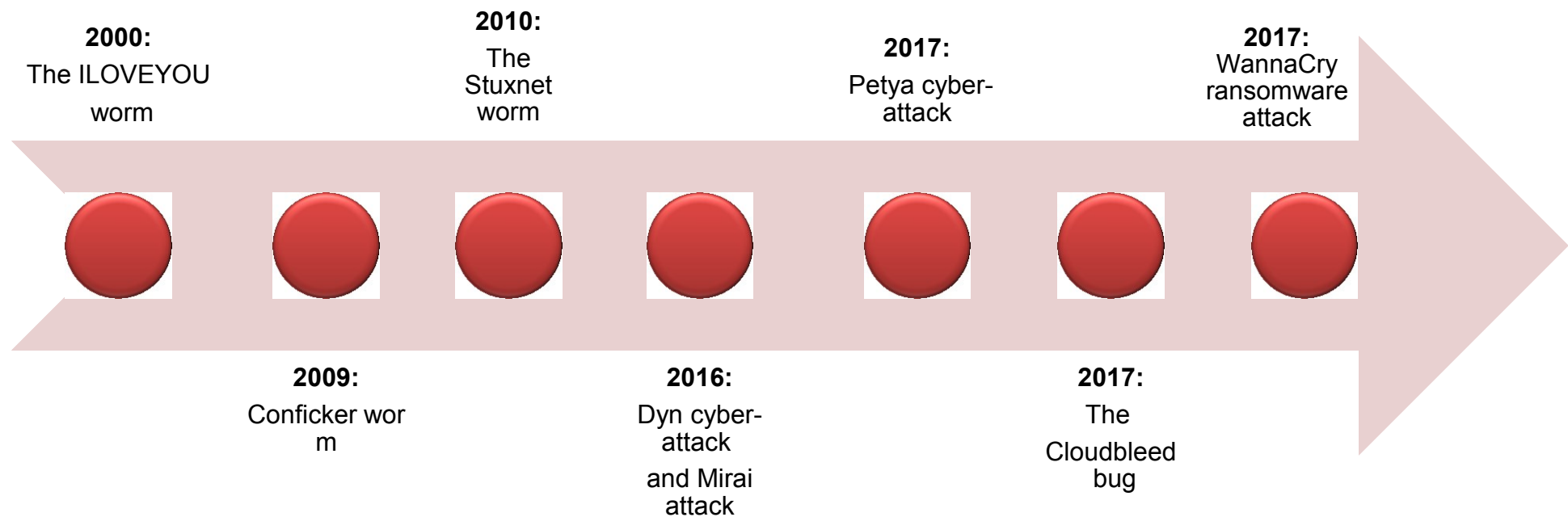
Users: Threats of Human Errors

- Gartner stated that **90%** of cyber threats occurred from Human errors [CEN1,SIC3]
- Gartner stated that More than **90%** of the attacks come from internal users [GAC2]
- Verizon stated that **95%** of advanced and targeted attacks occurred from social engineering attacks [SIC3]


What makes a user vulnerable?

- Trusting USB sticks and smart phone
- Trusting electronic gadgets, wearable devices and computer cameras and mics.
- Putting Confidential data into file-sharing sites and removable media
- Clicking on links sent via email
- Downloading and trusting email attachments
- Use of weak passwords
- The culture of bring-your-own-device (BYOD) that exposes the company to risk via lost or a stolen mobile/laptop
 -  Attackers know exactly how to exploit these

Recent human errors biggest cyber-threats



Bad thoughts

- Companies think that Security is a product not a process
- Companies think that Firewalls, Anti-Viruses and SSL are the ultimate protection resources
-  Companies invest for Security products but rarely for human (awareness training)



User vulnerability : Countermeasures

- Training and prevention
 - Awareness campaigns
 - Training and retraining
 - Providing high level of security awareness through notifications and advertisements
 - Defining disciplinary measures for effective security policy
 - Using prevention strategy approaches and standards
 - Using checklists for the correct execution of tasks



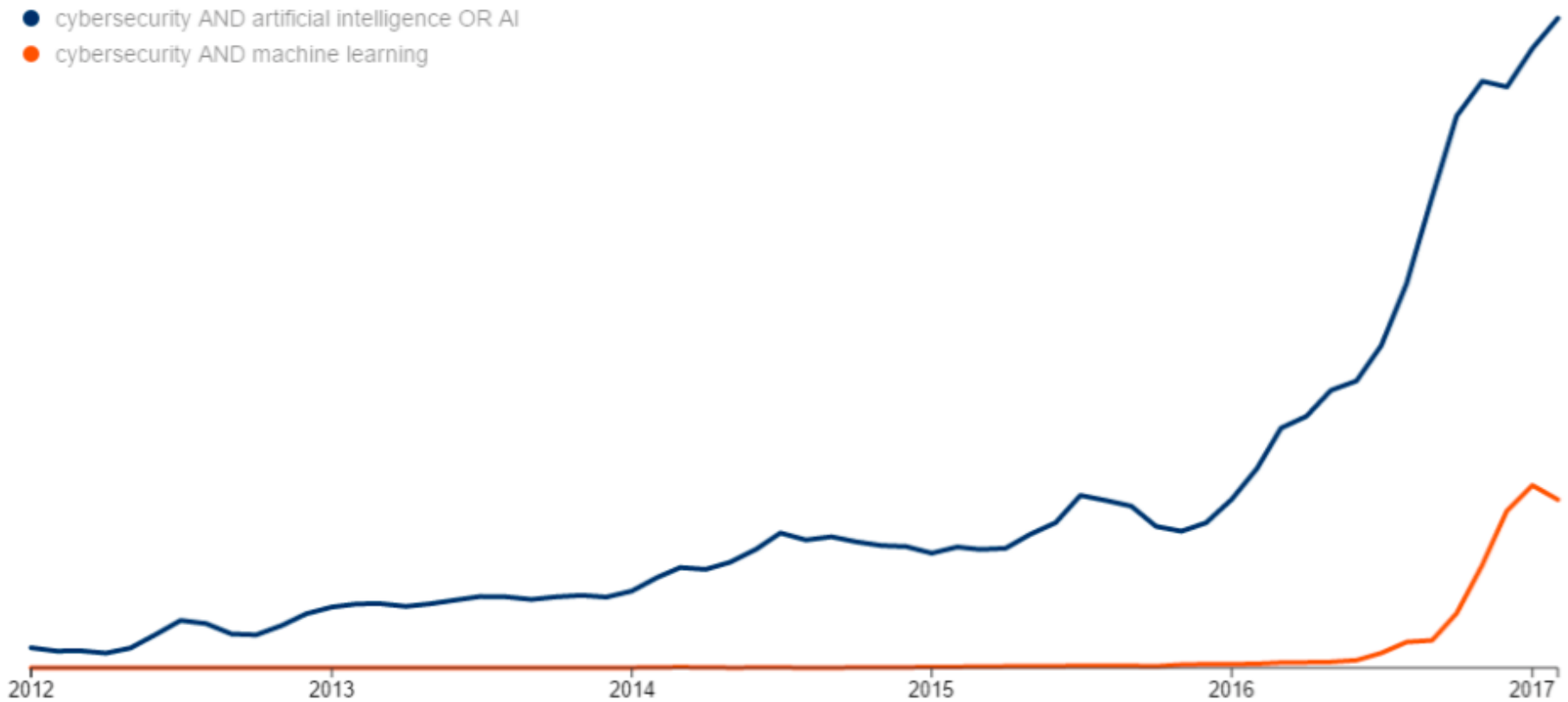
Research and innovation

- Developing and highlighting solid foundations within science of security
- Maximizing the applied Research Impact in cyber security
- Cyber security datasets analysis, AI (Artificial intelligence) and deep learning
- Using pillar themes to understand the root causes of existing cyber security deficiencies
- Predicting malicious and human behavior modeling
- Improving the cyber security research infrastructure

Research and development

- A strong trend: cyber security and AI

 Predictive cyber security



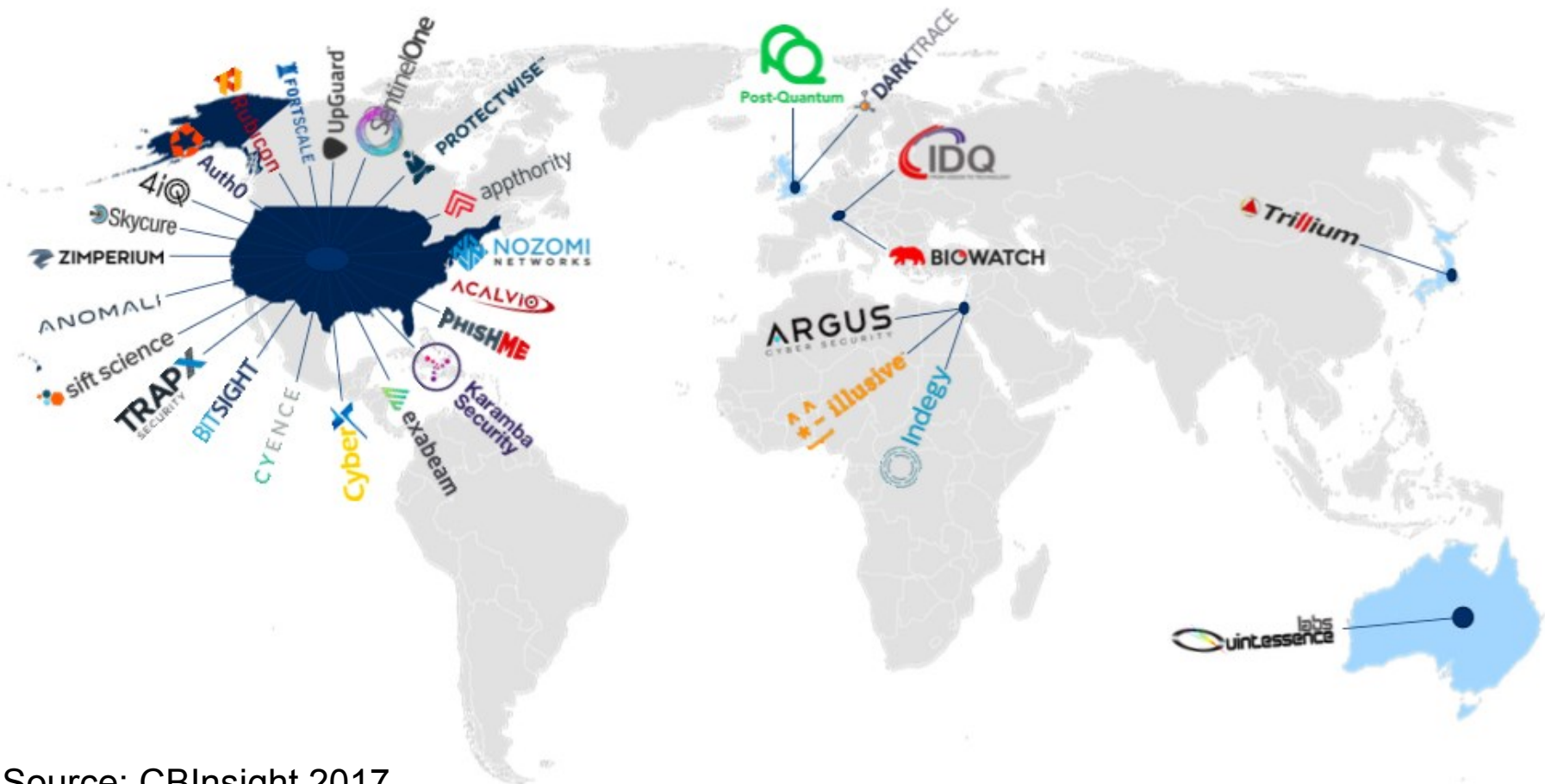


Entrepreneurship

- Cybersecurity will be the next Entrepreneurial Growth Business.
- According to *CBInsights (2017)*:
 - \$12.5 Billion Cybersecurity funding with VC participation across 2012 – 2016.

Entrepreneurship

- 70% of the Cyber Defenders are located in the US.
- Next: Israel, Switzerland, UK, Australia, and Japan.



Source: CBInsight 2017

Recommendations

Technical

- Identify a risk management model
- Secure Government infrastructure and applications.
- Deploy Technical audit, IT Health Check and documentations inspections in SMEs.
- Assess detailed technical standards supplement minimum requirements.

Organisational

- Create legal and regulatory incentives for critical infrastructure owners.
- Define an accountable organization to serve as a focal point for coordinating cybersecurity activities
- Put in place appropriate organizations to protect infrastructures required to deliver essential services to the public.

Educational

- Create programs to increase the cybersecurity skills and trainings.
- Promote a strong security culture in the public, private and government structures.
- Organize national awareness programs
- Improve the child online protection strategy.
- Ensure the cybersecurity innovation and R&D



Thanks for your attention

Dr. Sid-Ahmed Berrani

Algeria

sberrani@gmail.com