

Hacking the Supply Curve for Cybersecurity Talent

Presented by:

Douglas Logan
US Cyber Challenge



About The Speaker

Douglas Logan

- Chief Technologist, US Cyber Challenge
- CEO & Principal Consultant, Cyber Ninjas
- Participant in the USCC since its pilot year in 2010
- Involved every year since in increasing roles.
- Founded Cyber Ninjas in 2013
- CISSP & GWaPT

US Cyber Challenge

- Twitter: @uscybchallenge
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Cyber Ninjas

- Twitter: @cyberninjas
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The Problem

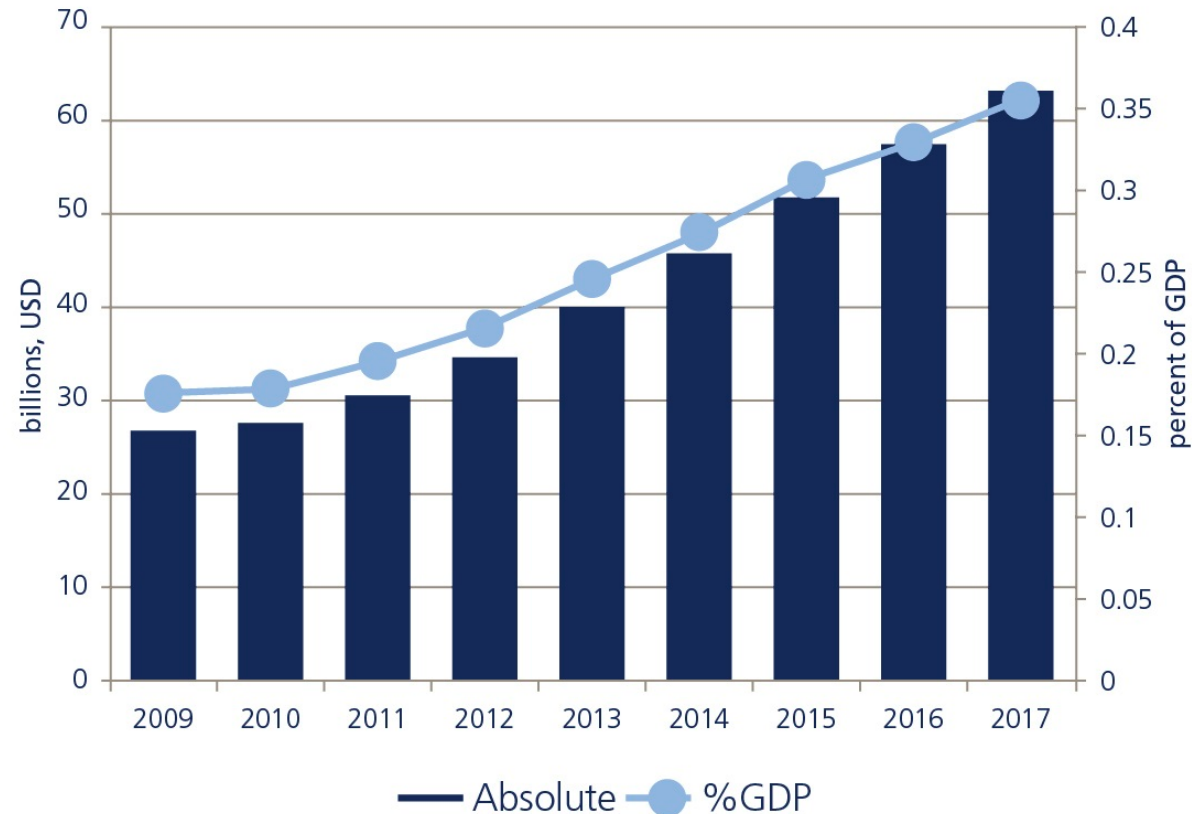
“The cyber threat to the United States affects all aspects of society, business, and government but there is ***neither a broad cadre of cyber experts nor an established cyber career field to build upon***”

- ***CSIS - Report of the Commission on Cybersecurity for the 44th Presidency, December 2008***

<https://goo.gl/Zv4Ytw>

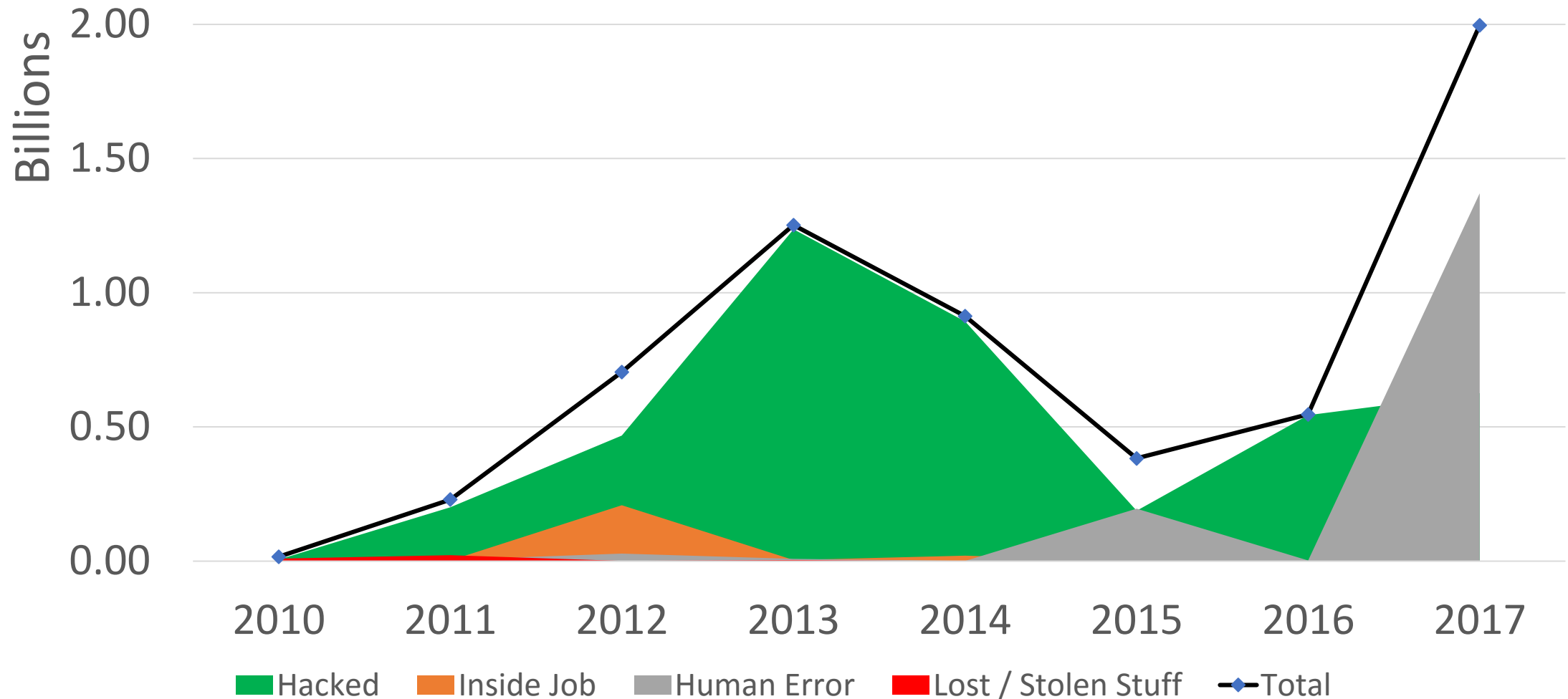
Workforce Outlook

Cybersecurity Spending

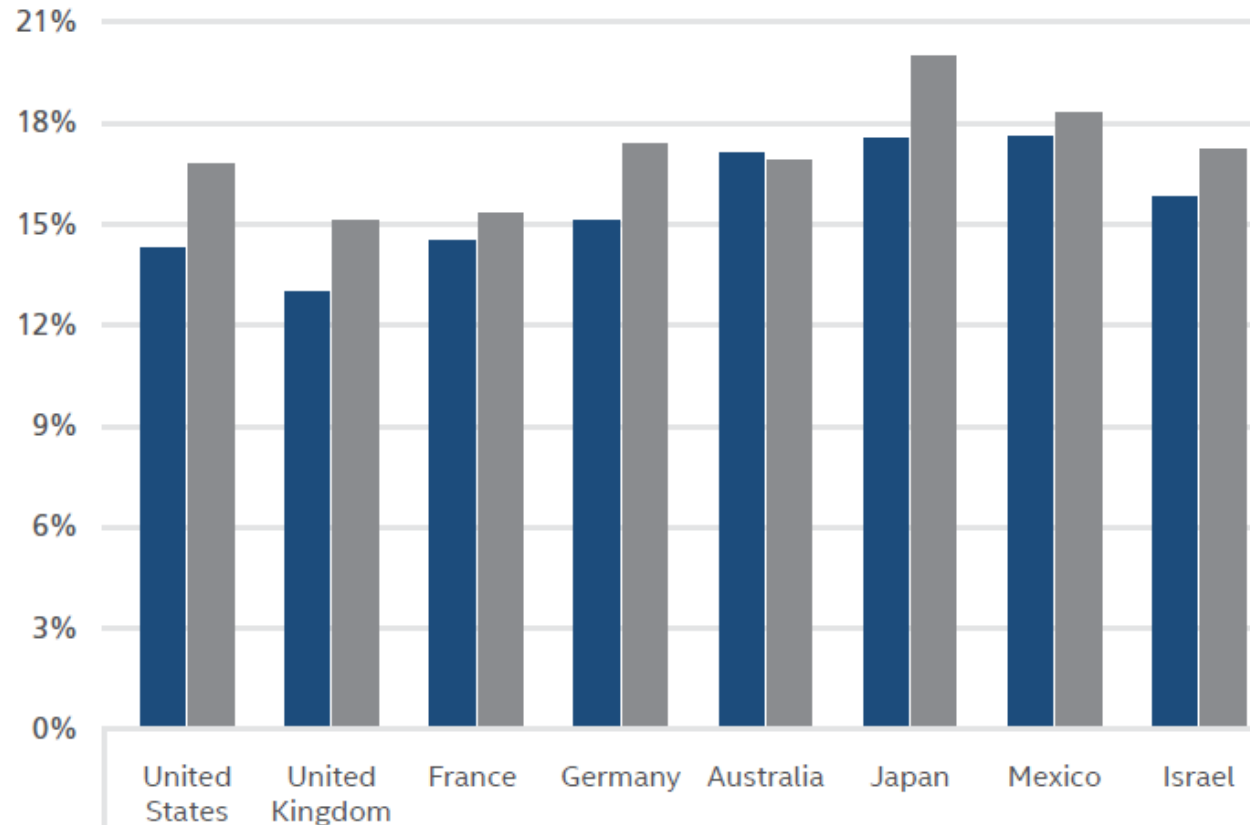


TIA's 2010-2017 ICT Market Review Forecast, May 2015
<https://goo.gl/IFsGdO>

Data Breaches – Lost Records



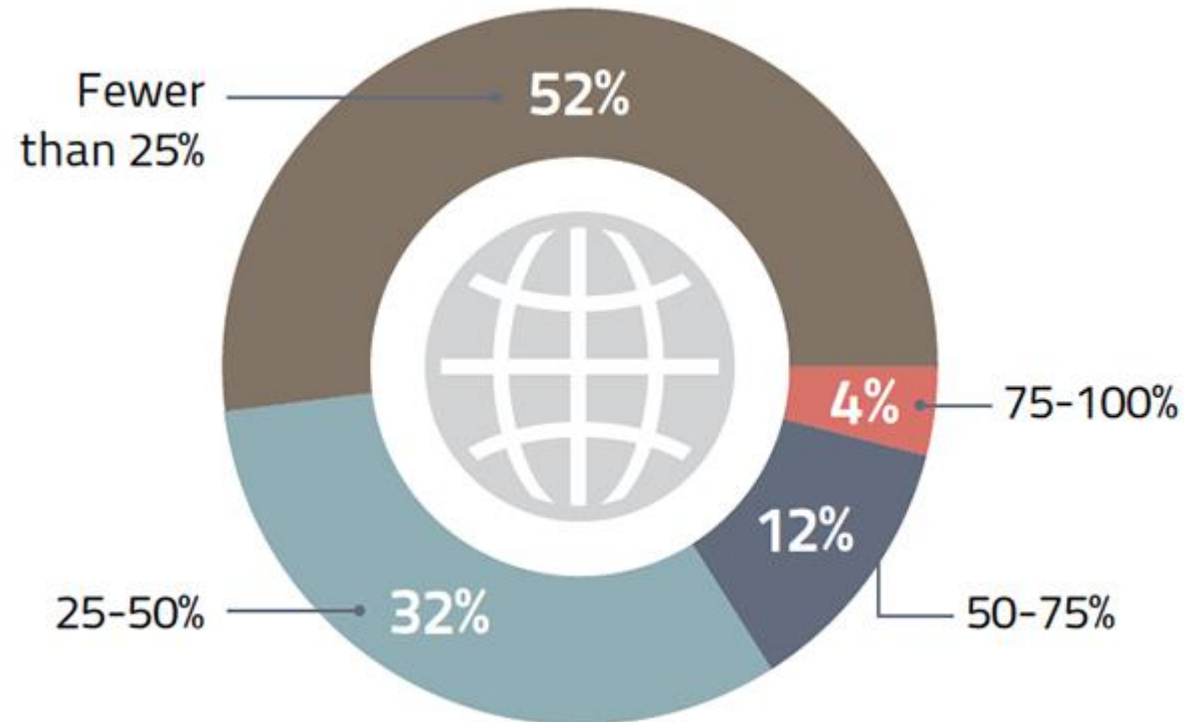
Unfilled Jobs by Country



Hacking the Skills Shortage,
MacAfee & Intel Security, 2016

<https://goo.gl/efUYXu>

Qualified Applicants



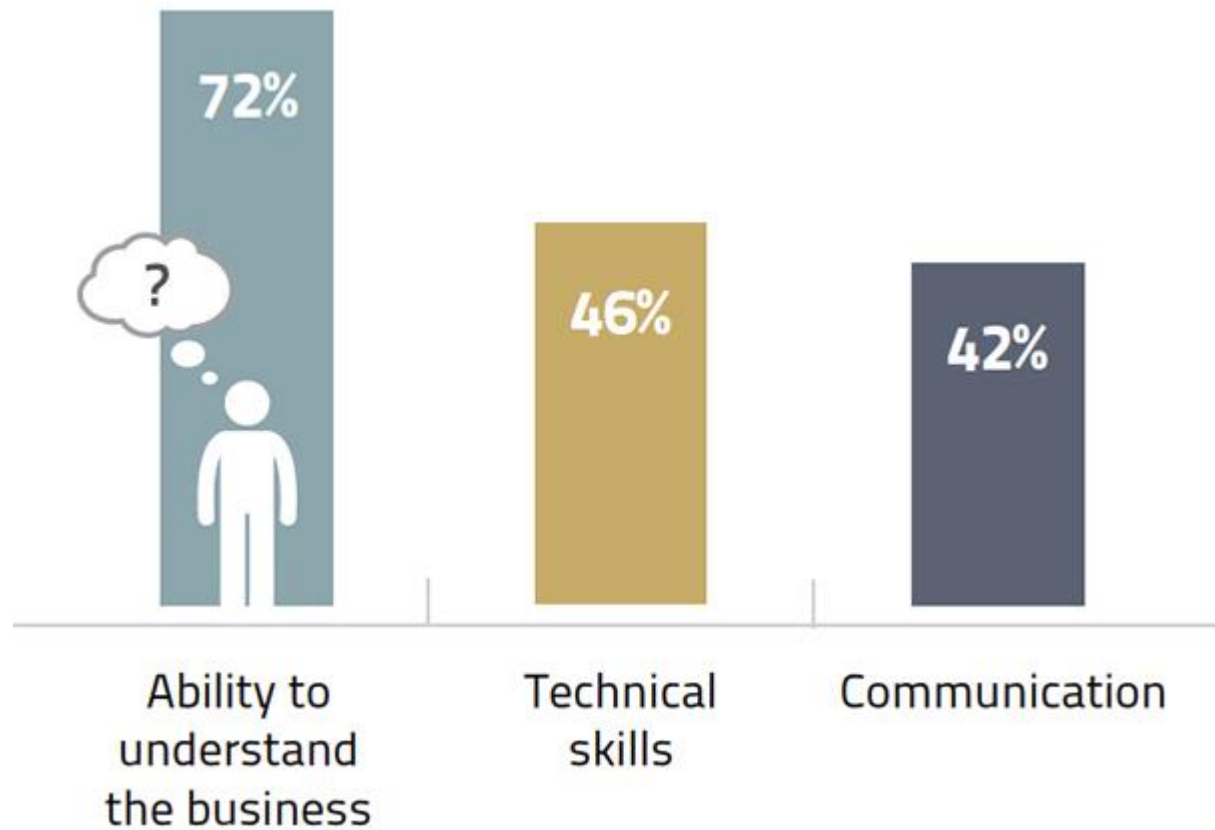
State of Cybersecurity:
Implications for 2015,
ISACA & RSA

<https://goo.gl/WiAoh1>

Professional Skills Gap

State of Cybersecurity:
Implications for 2015,
ISACA & RSA

<https://goo.gl/WiAoh1>



The Problem

- The demand for Cybersecurity Professionals is increasing.
- The number of qualified Cybersecurity Professionals is not keeping pace.
- There is no standardized way to validate Cybersecurity skills.

We need to identify and attract America's best and brightest to Cybersecurity now!

Competitions

Why Competitions?

- Attracts participants of all ages to learn the subject.
- Encourages team-work and mentoring.
- Creates a healthy outlet for hacking curiosity.
- Provides hands-on experience outside a workplace.
- Focuses on finding solutions to problems with unknown answers.

Existing Competitions



- Cyber Patriot
 - High School / Middle School oriented Defense competition.
- National Collegiate Cyber Defense Competition (CCDC)
 - College oriented Defense Competition
- Various Independent Capture The Flags (CTF)
 - <https://ctftime.org/ctfs>
- US Cyber Challenge
 - Workforce Oriented Competition

US Cyber Challenge (USCC)

- Founded in 2010 with the goal of finding America's Best and Brightest and Connecting them with a career in Cybersecurity.
- The Methodology
 - Identify
 - Train
 - Measure
 - Connect

USCC - Identify

- Identify
 - Run annual competitions open to the public.
 - Give participants a test which is near impossible to ace.
 - Allow three attempts to study and figure it out to encourage learning.
 - Invite ONLY the top scorers to training.

USCC - Identify

- Why does this matter?
 - Difficult challenges weed out the best candidates.
 - Top Performers push other Top Performers to the next level

**Its not about what they know,
but what they can learn.**

USCC – Train

- Train
 - Provide and Monitor Ethic Discussions
 - Expose Students to Industry Leaders in Information Security
 - Inundate students with accelerated, intensive, hands-on training

USCC – Train

- Why does this matter?
 - Provide a basis of ethics to curb potential destructive behavior.
 - Reduce egos to a more manageable size.
 - Show America's Best how exciting a cybersecurity career can be.

**Once the door for learning is opened,
no one can close it.**

USCC - Measure

- Measure
 - Provide a Capture-The-Flag (CTF) Competition
 - Assign random CTF teams
 - Measure individual & team performance

USCC - Measure

- Why does this matter?
 - Capture-The-Flags help measure the applied knowledge.
 - In real-life, you need to work well with a team, not always of your choosing.
 - Team sports build relationships which help growth.

**In real life, its not about the individual.
Its about the team.**

USCC - Connect

- Connect
 - Build Teams & Relationships in the Industry
 - Introduce Participants to Hiring Companies
 - Teach Effective Resume Writing

USCC - Connect

- Why does this matter?
 - Personal networks are what build careers.
 - Communication of skills are as important as having them.
 - Individuals need to be placed to fill the workforce gap.

**Connections build trust.
Trust powers the workforce.**

CyberCompEx.org

- Launched in 2015 to create a social-site to network Cyber Security Professionals in the US and connect them with potential employers 24/7.
 - Connects participants with competitions, resources and employers to allow growth.
 - Measure non-traditional experience (e.g. CTF's) and map to marketable job experience & employers.

Workplace

Profile of Good Security Talent

- Strengths

- Loves an excuse for learning something new.
- Willing to press through until a problem is solved.
- Wants to understand WHY something happens.
- Desires to consistently get better.

- Typical Weaknesses

- Rarely wants to document a solution once achieved.
- Does not immediately understand the business.
- Typically weaker in written / verbal communication

Workplace – Finding Talent

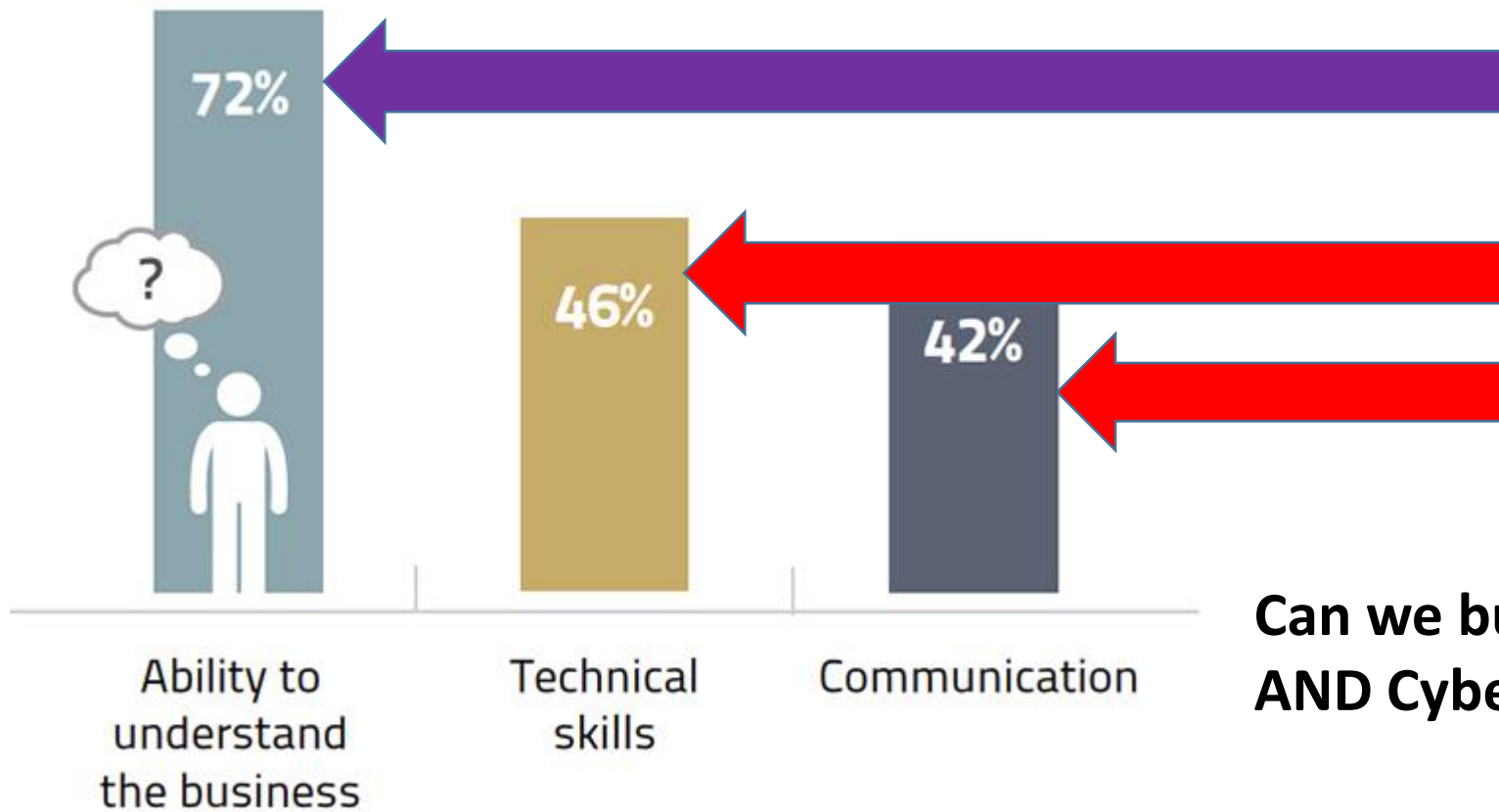
Standard Talent Search

- Job postings on various websites
- Hiring or working with contract recruiters.
- Employee Referrals.

Alternate Recruiting Paths

- Sponsor / Recruit from competitions which are building our future talent.
- Create competitions to build your company brand / team.
- Create a company CTF team, and recruit top performers across departments.

Professional Skills Gap



What would happen if business units competed with the security team?

Competitions directly help fill these gaps.

Can we build cross-functional teams AND Cyber Acumen at the same time?

Workplace – Hiring Talent

Typical Hiring Evaluation

- Has the person worked with the tool / technology / same exact thing we have at our office?
- Have they already been a part of a problem like ours being solved?
- Can they answer questions on the facts of a given technology / tool / vulnerability?

How We Should Hire Talent

- Has the person demonstrated self-driven learning to pickup new skills and abilities?
- Do they have a history of solving challenges they didn't know the answer to?
- Can they DO tasks that show they understand fundamentally how the base technologies work?

Competitions answer these questions...

Workplace – Retaining Talent

Typical Organization

- Favors the purchasing of new tools over investing in people.
- Fails to define a clear Cybersecurity Career Path.
- Lacks a mentorship program to aid in growth of individuals.
- Training budgets are a paperwork nightmare and dolled out on a “as-have-time” and “first-come-first-serve” basis.

You can not retain top talent without a vision that builds your people.

Exceptional Organizations

- Invest in People before investing in Products.
- Clearly define entry-level requirements and career paths.
- Establish a mentorship program where another individual is responsible for helping set and achieve a person's career goals.
- Training budgets should be allocated on a per person basis, and effective use of budget part of periodic evaluation.

Summary

- The best Cybersecurity professionals are life-long learners.
- Competitions help identify and equip these individuals.
- We need to actively building people to solve the new challenges that the future will bring.

Thank-you!

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