Attracting & Retaining women in Cyber Security

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Agenda

- Cyber and gender today
- My story
- How can we influence the future?

Cyber & gender today

What are the characteristics of a Cyber person?

- Typically but not always a STEM graduate

- STEAM is also of interest

- Communication skills are really important

- Super IT literate

- Smart - Smarter than the cyber criminals

- Dedicated to life long learning

- Open to working along side diverse talent
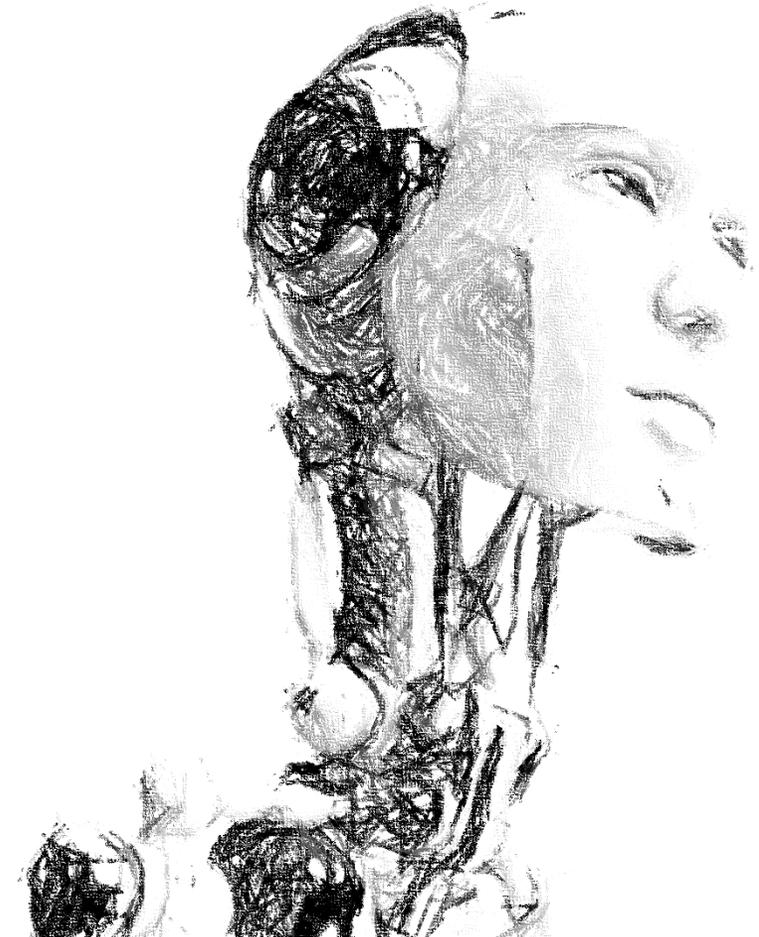
Are there any of these characteristics uniquely male?

Technical/Cyber career streams

- Typical career growth pattern

  – Do you have the skills to do the job?

  – Can you manage and motivate others to do the job?

  – Can you reach outside your group to promote what the team does?

- Branch for Technical only career pattern

  – Do you have the skills to do the job?

  – Can you deepen or broaden that knowledge to specialist level?

  – Can you become a guru?
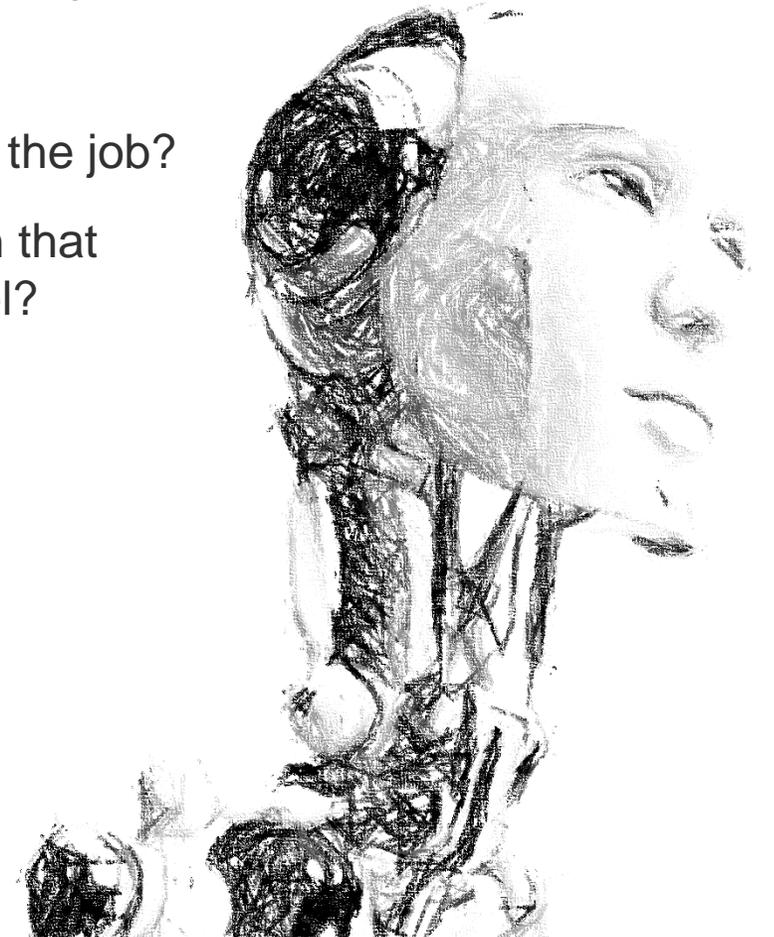
Are either of these paths more male/female?

Women in IT – Cyber being a subset

- There is a lack of women in IT every stage of education and employment:

- Girls take 51% of all GCSEs and 44% of IT GCSEs – but only 6.5% of computer A-levels

- Women make up 55% of HE entrants – but only 35% of STEM entrants – and only 13% of computer science entrants

- There are 1.1 Million IT specialists in the UK – only 16% of whom are women

- Female IT specialists are paid 16% less than their male peers

- And to compound these figures, research from (ISC)2 shows that only 11% of information security professionals are women. (*Down to 10% in 2015*)

1.5 Million shortage of cyber professionals worldwide

- *Ref: Research from e-skills and BCS, Dr Jessica Barker, 2014*

Third level education

- I have 2 daughters who have made 3rd level selections

  - One chose Engineering (only girl in electronic engineering UCD class of 2012)

  - One chose Law (not sure where we went wrong) hopefully she might do technology law

- SANs immersion academy for women – free courses

- Ireland leading university statistics for Computer Science entrants

  - 2015 1st years, 33% female

  - 2014 1st years, 26% female

  - 2015 3rd years, 14% female

- Women in Cyber Security https://www.csc.tntech.edu/wicys/

- In Ireland we have multiple established and emerging Cyber Security Courses

Second level subject choice by gender

Irish Higher Level Leaving cert subjects by gender 2015
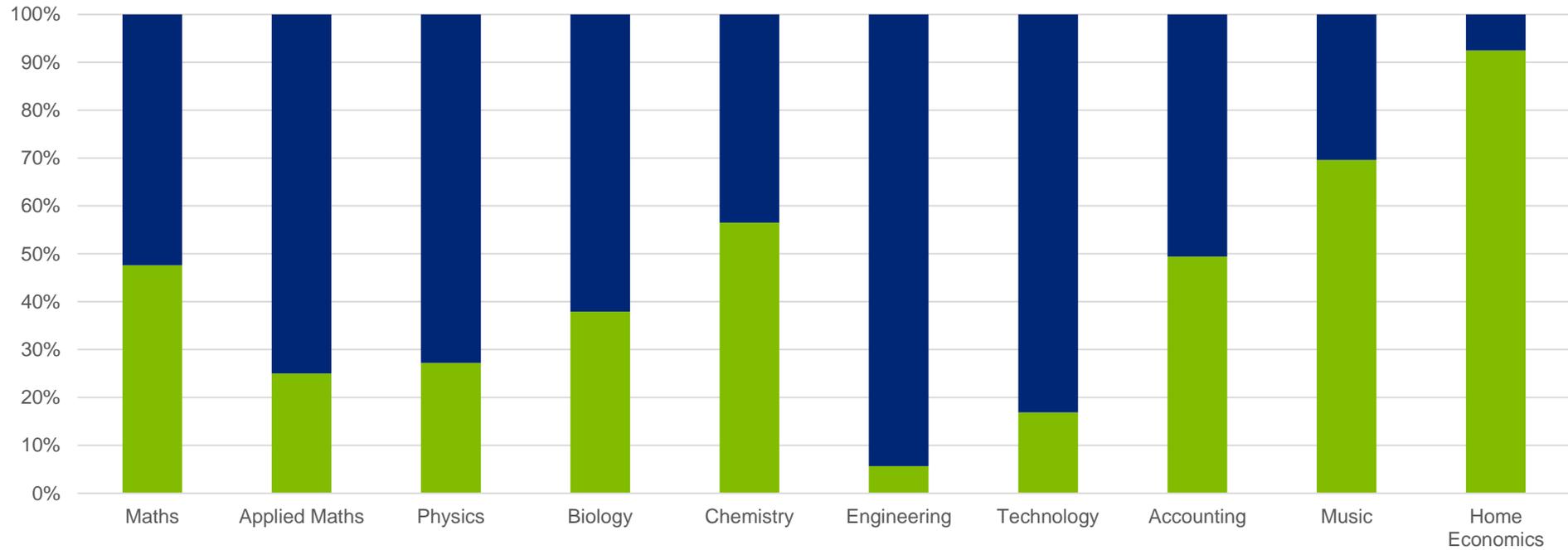
■ Female ■ Male

Primary & Secondary level students

- Gaming culture

- Phone culture gender neutral

- No formal IT education at primary or secondary schools in Ireland

- Great initiatives like Coder Dojo - personal experience gender bias is good

- Academy of code 16% moved to 23% recently post website neutralisation

- Negative perception of security – it stops you doing things

- My second level daughter asked her peers – Would you consider a career in Cyber and if not why not?

No – It's all boys

No – I can't believe that Miss X did computer science because she is cool

No – I'm good at maths but I want to do business

No – I like science but I want to do medicine

No – I know your Mum does that – no offence but they are all a bit weird aren't they?

- None of them mentioned job security, good pay and varied work

Firm Wide Gender Comparison by Grade

Grade	Female	Male
Partners	20%	**80%**
Directors	32%	**68%**
Senior Managers	48%	**52%**
Managers	55%	**45%**
Seniors	40%	**60%**
Trainees	49%	**51%**

Consulting Gender Comparison by Grade

Grade	Female	Male
Partners	0%	**100%**
Directors	24%	**76%**
Senior Managers	35%	**65%**
Managers	35%	**65%**
Seniors	34%	**66%**
Trainees	35%	**65%**

Note: In my organisation Cyber is 100% male at Manager and Senior Level, 10% female at consultant level. Cyber overall is 10% female on par with industry averages. Next years intake at grad level is 50/50

Advantages of workplace gender balance

- Men and women have different viewpoints, ideas, and market insights, which enables **better problem solving, ultimately leading to superior performance** at the business unit level.

- A gender-diverse workforce allows the company to **serve an increasingly diverse customer base**.

- Gender diversity helps companies **attract and retain talented women**. Companies cannot afford to ignore 50% of the potential workforce and expect to **be competitive in the global economy**.

Ref: Gallup

- Collaborative, empathetic, listeners

Traditional career gender bias

Military	Nurse	Builder	Pilot
Doctor	Cleaner	Painter	Teacher
Engineer	CEO	HR	PA
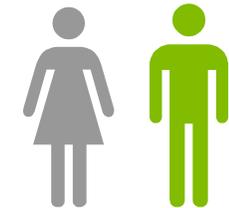
Cyber career gender bias?

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Military	Nurse	Builder	Pilot	Ethical Hacker
Doctor	Cleaner	Painter	Teacher	SOC engineer
Engineer	CEO	HR	PA	Cyber Incident Responder
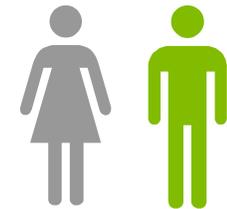
My Story

My story
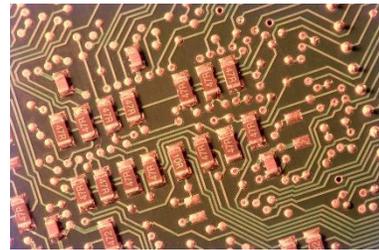
My experience of gender bias

- Mr. Jacky Fox

- Dad was a career role model to me – technology was acceptable

- Only 20% girls sat honours maths in my school

- First job asked to wear a skirt everyday

- Mr. Pots & Pans

- Network install in a male only organisation

- What's my line

- Still sometimes have to display my credentials early in a meeting

- "That's an unusual job for a woman"
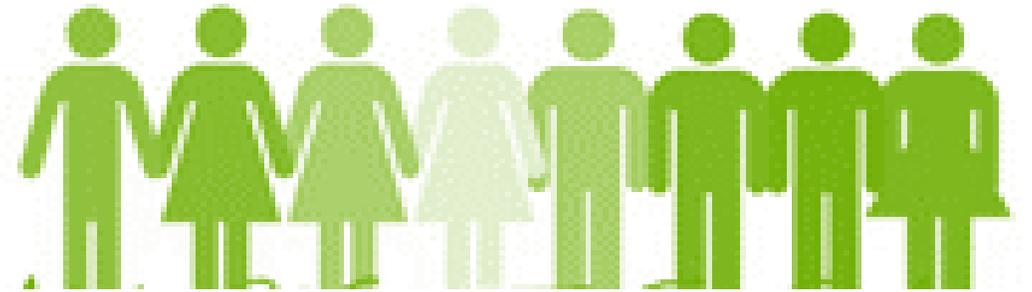
How can we influence the future?

Change perceptions for women in Cyber

- Brogrammers culture

- Military lingo – weaponised, attack, payload, kill chain

- Attract more Women into IT

- Ensure that bias does not set in early

- Decision makers & influencers - educate parents, schools, toy makers

- Promote security as a positive thing – protection as opposed to prohibition

Attracting female talent into Cyber

- Role Models - Would I have gone into tech if I hadn't been introduced to it by my Dad

- Tipping point for change Kanter(1977a) tipping point for sustainable change to be achieved is 35%

- UCD study for Engineering 2013
  - 20% female intake
  - <10% female active practitioners
  - 50% drop out at employment stage – is the path clear enough yet?
  - reason stated in 60% cases was imbalance of pay and promotion prospects

- Journey rather than an overnight fix

- Cyber is now a board room rather than a back room issue

- Deloitte NL hacking for girls initiative

- Great employment & travel prospects

- Mobile working e.g. pen testing

- Don't pull the ladder up after yourself

30% rule – this is not a female issue

- Rooney rule NFL required to interview minority candidates for all senior positions no quota or preference

- Cisco 38% Exec LT female, 23% overall and 14% technical (source Cisco 2015 diversity)

- Identify business units that are less gender diverse e.g. Cyber & HR

  - Develop a hiring strategy that increases gender diversity in these units without reducing or ignoring merit. For example, studies indicate that when women feel they are hired to fill quotas, it negatively affects relationships between co-workers.

- Set inclusiveness goals, and hold managers accountable for diversity.

- Make sure women are judged on their potential and not what they have achieved to date

- Imposter syndrome - I can/can't do 50% of that job description

My organisation asks from female employees

Support at key junctions in life (i.e. balancing career and family)

Maintain inclusive and flexible culture

Recognise female talent and acknowledge it

Leadership & mentors

Give opportunities

Own the business issue around gender diversity

Retaining women in Cyber & General

- Most important in Cyber to keep the role models

- Work life balance

- Women are delaying having children & egg freezing

- Career breaks often happen at a critical career point

- Non-gender related employer support
  - Mat/paternity leave
  - Extended career breaks
  - Study support
  - Support family at key stages
  - Fitness/sport/lifestyle changes
  - Global mobility

- Government policy for families – childcare, allowances etc.

Getting women to return to work and into Cyber

- Work life balance

- Attracting back in mature candidates
  - Acknowledge non-career experience
  - It's okay to have a career break on your CV
- Getting back on the bike
  - Presentation skills
  - What's happened in your space update
  - Support fast progression
  - Internships for mature candidates
- Retraining
  - Plenty of courses but are they attracting the right candidates?
  - Gender diversity
  - Certifications

Thanks for listening

Contact information

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