

The 11%; where are all the women in cyber security?

Cybercrime is recognised as one of the greatest threats to businesses around the world, and with company and government data becoming increasingly reliant on the internet, it is critical that their computer systems are protected from malicious attacks or data breaches.

As a result, there has been a huge global increase in the investment and expansion of cyber security personnel. But supply is far from meeting demand with 75% of UK IT chiefs claiming that the cyber security candidate shortage is making them an easier target for hackers (Center for Strategic and International Studies). As well as a general need for a good talent pool, there is also a need for more women within the industry. According to the Women's Society of Cyberjutsu (WSC), [women only represent 11% of the world's information security workforce.](#)

Why are there so few women in the technology industries?

In recent years we have seen events such as Cyber Security Challenge's 'Women in Security, Today, Then and Tomorrow', looking to understand the root causes of the gender disparity in the technology sector. Held in October 2013 at Bletchley Park, sponsored by Raytheon UK and organised by Cyber Security Challenge (CSC), the function celebrated the history of women in cyber security and discussed the need to attract more females into the field. In attendance were veteran women code breakers from WWII and their modern counterparts working as cyber security specialists.

Also present at the event was Baroness Neville-Jones, a patron of CSC, who highlighted the opportunities for women in cyber security today. "There's a great career here with status and recognition across broad swathes of society", going on to explain that cyber security jobs exist in a huge range of sectors, from the music industry to finance. "Let's promote these opportunities to our sisters!" she added.

A roundtable discussion held in May 2013, hosted by WSS, BIS and the Cabinet Office of Cyber Security and Information Assurance (OCSIA) set out to explore and examine the difficulties and opportunities for women working in cyber security along with those wanting to enter a career in the field. The attendees comprised of men and women from Industry, Government, academia and recruitment, making their findings broad yet fair. A reoccurring point raised at the discussion was that the generalised perception of cyber security as a "nerdy" and purely technical field was potentially discouraging prospective female employees.

Having originally acknowledged the lack of women in cyber security in 2013, the industry has since progressed to exploring the reasons for this. Companies such as Nuix are keen to look deeply into this issue and to find resolutions, with many ideas coming from women themselves. In 2016, Nuix hosted a Women in Technology panel discussion. Held at the User Exchange panellists discussed the social biases that women face in the technology industry.

"MSc Cyber Security was a must-do on my list from the moment I came in contact with networking. I think that network security is very important nowadays and everyone should have a minimum knowledge about it."

Diana Balasa, MSc Cyber Security

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Nuix's Corey Tomlinson asked the panel "How does the bias faced by women in the industry affect them?" Angela Bunting from Nuix explained, "It's an unconscious bias that we have that's ingrained when we grow up. Google has done some fascinating work in this area showing that we naturally associate men and women with different types of jobs". Angela continues "So when it comes to women in 'masculine' industries such as maths, technology, law, engineering and sciences, traditionally it's a very challenging perspective for them to rise up". Angela's solution to the issue was to empower individuals to think and respect people for their skills and attributes, rather than the biases we're left with.

A recent [Financial Times](#) report suggested that a lack of role models keeps women out of cyber security and that the old-boys' networks still dominate the industry when it comes to hiring staff.

The future of women in cyber security

[Diana Balasa](#), a Network Security Engineer for Ricoh UK (and current Northumbria University London MSc Cyber Security student) said "for me, education played an important part in this matter. As a child, from my mother to my teachers, I was encouraged to study foreign languages and social sciences because this was more suitable for a woman. My father thought differently, he was able to see that IT was the future, and no matter if you're female or male, we should try to at least learn the basics. I guess that for most of us, the reason was the lack of a role model: women who could show they can be as efficient and innovative as men in cyber security".

[MSc Cyber Security student at Northumbria University London](#) Sharleen Matheson (and Management Information Governance Manager at British Gas) believes we need to empower women. She says "some people do not know what they are capable of, but through further education and communication around what is possible, you can turn passion into a success".

The cyber security sector and technology industry as a whole are acutely aware of the lack of a sizeable presence of women in the workforce. There also is a great support network for women in technology, for example, the Women's Society of Cyberjutsu ([WSC](#)). WSC is a non-profit organisation that is passionate about helping and empowering women to succeed in the cyber security field.

Another is Women in Cyber Security ([WiCyS](#)) which continues efforts to recruit, retain and advance women in cyber security. It brings together women in cyber security from academia, research and Industry to share knowledge, experience, networking and mentoring.

UK-based [Women in Technology](#) is committed to assisting qualified and experienced women in their search for career opportunities in IT. Women in Technology features a job board that is dedicated to advertising positions within organisations committed to increasing the number of female technologists working for them.

Inspiring the next generation

Amie Taal, Vice President (Digital Forensics/Investigations) at Deutsche Bank, started her career in the legal and investigation space. Having qualifications in computer science and the support of great mentors has supported her progression into field of cyber security and she has "never looked back!"

Sharleen Matheson, Management Information Governance Manager at British Gas, entered Information Governance accidentally but through this cyber security became an intriguing possibility for her.

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Sharleen studied an HND in Computer Studies and is currently studying an MSc Cyber Security at Northumbria University London. Sharleen says "I really love the problem-solving element in cyber security. I actually researched the programme for three years before I decided to join".

As well as working for Ricoh UK, Diane Balasa is also studying an MSc Cyber Security at Northumbria University London. Having studied Chinese and French, she felt she could be 'bolder' and wanted to take a different path and so accepted her first job in IT. "Once I started working, I felt IT suited me better, so I decided to start studying".

Diana believes diversity in the workplace is one of the things that help a good company become a great company. She says "Supporting diversity means offering different people from different countries, races, religions, sexes and ages the opportunity to bring great ideas to the table".

Excel in cyber security with Higher Education

Education plays an important role in influencing and guiding individuals into a Cyber Security career. Higher Education is now an option for working professionals with the introduction of part-time Masters programmes, enabling full-time work alongside studies. Northumbria University London, in partnership with QA Higher Education, has a range of Masters level programmes, from Cyber Security, Computing and Information Technology, Project Management to Web and Mobile Development Technologies.

Students studying a part-time [MSc Cyber Security from Northumbria University London](#) are taught by expert practitioners and leading academics, building a critical understanding of governance and assurance, along with technology risk practices. Spread out over two years, the 15-weekend classroom programme teaches students how to identify threats and determine the most effective ways to minimise them.

The MSc Cyber Security modules cover Information Security and Governance, Network Security, Wireless Networks, Information Assurance and Risk Management, Ethical Hacking for Cyber Security and Research and Project Management. Created to fit around a busy work schedule, this programme enables students to apply their newly acquired cyber security knowledge immediately to the workplace.

Northumbria University of London's [infographic](#) shows important information about the programme as well as the profiles of students they welcomed on in 2016. This infographic shows common job titles of students joining the programme, including Head of IT, Programme Manager, IT Support Engineer, Information Security Manager and CEO, giving you an idea of the potential and scope of the course.

It's clear that the opportunities are there for women who want to succeed in the world of cyber security. There are excellent programmes of study, supportive organisations and communities dedicated to women in the sector and the benefits available from a career in cyber security. So as Diana Balasa says "the only boundaries are the ones we create ourselves".

For more information on the MSc Cyber Security programme please contact [Northumbria University of London](#).