

CELEBRATING 50 YEARS OF BRITISH TECHNOLOGY INNOVATION

REMOVE THE BARRIERS TO DIVERSITY IN TECHNOLOGY

Clare McDonald looks at the great women who have made a difference in technology and how we can encourage more to follow their lead



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1966-2016

“**W**omen in IT” has become a phrase associated with a battle for diversity and inclusion in technology roles or companies. In 2015, women made up only 4% of the developer population in the UK, and accounted for just 16% of the IT sector.

Yet women make wide use of tech products and half of gamers are female. While the figures might suggest that women have little to do with IT innovation, the reality is that women have been involved in the IT industry since the dawn of technology.

It’s difficult to discuss the history of women in technology without mentioning [Ada Lovelace](#), the first computer programmer.

In the 1830s and 1840s Lovelace was exchanging frequent letters with [Charles Babbage](#) about his [Analytical Engine](#). A mathematician and scientist, Lovelace is credited with writing the world’s first computer program in the form of an algorithm designed for Babbage’s machine. Colleges, schools and initiatives for boosting diversity in IT have all been named after Lovelace to honour her efforts in technology.

WAR EFFORT

At the launch of the Ada National College for Digital Skills, [Martha Lane Fox](#) highlighted Lovelace’s education in science and mathematics, describing her as a “force of nature”.

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Just as fundamental as Lovelace's involvement in creating the industry as we know it today were the technology innovators at [Bletchley Park](#), on the outskirts of Milton Keynes, during the Second World War. Nearly 10,000 codebreakers were assembled at Bletchley Park in 1939 to decipher coded messages sent by the Nazis during the war, including cracking the Enigma cipher.

What many people don't know is that about [75% of those working on the Bletchley Park effort were women](#), many of them working as operators for the machines used in the codebreaking process. Outside Bletchley Park, members of the Women's Royal Naval Service, the Women's Auxiliary Air Force and the Auxiliary Territorial Service (the women's branch of the army during the Second World War) worked as wireless operators to forward enemy radio messages to Bletchley in the effort to win the war.

BLETCHLEY'S SAVIOUR

We have [female tech powerhouse Sue Black](#) to thank for the conservation of Britain's Bletchley Park code-breaking headquarters. Black wrote a book, *Saving Bletchley Park*, on her experience of visiting Bletchley and her shock at its disrepair. She aims to teach people about the women working on the site and gain funding to ensure it is not knocked down.

› *British Gas has launched a women in tech network to provide a community for female tech employees.*

Saving Bletchley Park was, she says, an opportunity to encourage people to visit Bletchley Park because it still needs visitors and it still needs funding.

[The founder of the Techmums group, which helps mothers to understand and use technology](#), Black is an example of how modern women are smashing through stereotypical tech barriers to leave their mark on the IT industry.

CALL ME STEVE

[One of the first examples of this disregard for barriers is Stephanie "Steve" Shirley](#). In the 1960s Shirley launched her own company F International, later renamed Xansa, which she now describes as "a company by women for women".

To help gain business in a competitive market, she used the name Steve rather than her own. Her business employed 300 programmers, only three of whom were men. She supported flexible working at Xansa and allowed job sharing where possible.

Now she works on philanthropic projects through the Shirley

Foundation to support initiatives in the field of autism spectrum disorder. She has pledged to help get one million people with Asperger syndrome working in the IT industry by 2020, and supports Abilitynet, which helps disabled people use digital technology to aid their work, education or home life.

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GENDER CRASH

During the 1980s, initiatives like these were few and far between, and it was in this decade that the number of women in the industry began to drop away. Some have suggested that the 1980s was when the stereotype of the sweaty male geek coder was formulated, affecting the perception of what someone in IT looks like. There is, however, no solid evidence that this is what led to the decline of a mixed-gender tech industry.

According to research, only 23% of businesses have [gender-diverse teams](#) at management level, while the number of women tech bosses doubled between 2015 and 2016 – to just 7%.

BCS WOMEN

To address this decline of women in technology, in 2001 Black founded BCS Women to build a network for women still persevering with careers in technology. Computer scientist Karen Petrie took over as BCS Women chair in 2008, succeeded by Tectre founder Gillian Arnold in 2011.

BCS Women members include computer science lecturer and Lovelace Colloquium founder [Hannah Dee](#), managing director of Accenture UK and Ireland [Emma McGuigan](#), co-CEO of Apps for Good [Debbie Forster](#), News UK CTO [Christina Scott](#), and Everest Group vice-president [Sarah Burnett](#).

Government influencers have also stepped up to help promote the diversity in tech and digital message. [Eileen Burbidge](#), fintech envoy for HM Treasury and chair of TechCity UK, is a role model for women in the fintech sector. And [Chi Onwurah](#),



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MP for Newcastle upon Tyne and shadow minister for the digital economy, refuses to sit on single-gender panels.

Meanwhile, [Martha Lane Fox](#), Lastminute.com co-founder and previous government adviser, launched her Doteveryone campaign in 2015 to promote inclusivity in the digital world. She says an increase in women in the IT industry could fill the current skills gap.

[Maggie Berry](#), executive director of WEconnect Europe, has also made efforts to connect women across the technology industry. She founded the Women in Technology network in 2004 to help recruit and keep women in the IT industry.

But the sector still faces a drop-off of female tech talent. Only 15% of computer science degree applications in 2014 were by women, and only 27% of those taking ICT and computing A-levels were women.

TOP 50

Each year, Computer Weekly [compiles a list of the most influential women in UK IT](#) to showcase the female talent in the technology industry. Since its launch, the shortlist has doubled from 25 a year to 50. As the longlist of candidates grows annually, so does the hope that the number of women in the IT industry will grow too.

Computer Weekly also showcases [Rising Stars](#) in the tech industry, highlighting those who have huge potential. Many Rising

Stars have gone on to feature in the top 50 list. Not only does the top 50 list showcase the number of great women in the industry, it also offers young people role models. A lack of role models is a deterrent for girls thinking about their future careers.

Organisations such as Stemettes, Apps for Good, Coder Dojo, TeenTech and Code Club are working to make coding and technology interesting to young people and especially girls. Their aim is to increase the diversity of people joining the industry.

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SMASHING THE STEREOTYPES

By making technology accessible and fun, these organisations are breaking down the industry stereotypes that put so many young women off entering the industry.

Ask any woman involved in IT, tech or digital and she will say she's tired of having to discuss the issue of diversity in the industry. But she will also agree that shining a light on the problem is important. The hope is that by bringing the issue to the forefront of people's minds we can escalate the change we've already seen.

Next on the agenda is to stop focusing on having an equal number of men and women in the technology industry. It needs to be opened up to people of diverse backgrounds, genders and minority groups, and [creating an inclusive industry](#) and environment that drives forward innovation for everyone. ■