Women in tech report

Where are we now? Understanding the evolution of women in technology

January

2021

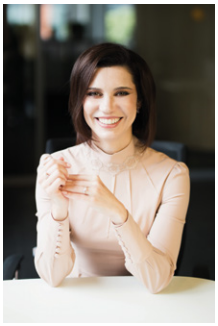
Contents

Foreword

"Business teams consisting of both men and women are the most efficient and harmonious, and the IT industry benefits when women have an equal representation within staff structures: we are attentive, supporting, patient, nurturing, empathetic, and passionate about everything we do – all qualities that are very important for leadership, management and service. We are listeners, communicators, attentive to clients' needs, adaptive and flexible. However, the tech industry is yet to leverage the full potential of these critical skills.

To be diverse is to benefit from a wider range of inputs across the full spectrum of humankind. Men have their own social experiences and women have theirs. And for an industry constantly in need of ideas, it makes sense to benefit from as wide a range of perspectives as possible.

Companies can only benefit from having diversity in their workforces, and digital competencies are helping to close the gender gap between men and women, broadening career prospects. Our present and future depends on technology, and we all have to play an equal role. In this regard, it has been good to see positive change over the past two years, but there is still a long way to go."



Evgeniya Naumova
Vice President of Global Sales Network, Kaspersky

"The COVID-19 pandemic has caused seismic changes to how and where people work, with 95% of women working in technology globally having worked at home at least part-time since March 2020."

Introduction

Encouraging more women into the IT space has been traditionally challenging in terms of achieving quick results. This is largely due to the entrenched structures and attitudes already in place, and the snowball effect that needs to occur across notions of employment, working patterns, role models, boardroom representation and education. However, the past two years has seen positive steps forward across many of these parameters, helped in part by a timely nudge from the pandemic and its push towards remote working.

The world that we live and work in today looks remarkably different to the one experienced in 2018, or even 12 months ago. The COVID-19 pandemic has caused seismic changes to how and where people work, with **95%** of women working in technology globally having worked at home at least part-time since March 2020.

This transition is just one of many trends that Kaspersky has monitored over the past two years, having initially commissioned research back in 2018 to learn about how women perceive the IT industry around them – where they could see progression, what was still holding them back, what opportunities were or weren't available to them, and what their hopes were for gender equality in tech moving forward.

In 2020, we once again carried out research among women working in IT and technology, across Europe and North America, while also adding APAC and Latin America this time around. We sought to find out how women in the industry now feel two years on and what has changed over this period. To this end, there are several encouraging signs and many of the women surveyed have either felt a shift in mindset or attitudes among their employers, or have even seen tangible progression regarding more female IT or technology leaders entering the sector. In general, just over half (**53%**) agree that the number of women in senior IT or technology roles in their organization has increased over the past two years. And more specifically since lockdown, the move to working from home has helped women feel more autonomous in their roles – improving both their confidence and career prospects.

However, the outlook isn't entirely positive and there's still much more to be done. Only **10%** women working in a technology role work in a female-majority team, compared to **48%** working in a male-majority team. This is where remote working may play a significant role, with many female respondents stating that a good work-life balance is key to encouraging more technology-related careers for women moving forward.

This report further examines this year's research findings and explores how women perceive the industry, the opportunities available to them and the barriers still presenting challenges. It also features critical insight from two trailblazing women in tech via their affiliation with Ada's List, exploring why the events of this year could be a catalyst for more accelerated progress as long as social biases don't block the way, and if tech as an industry is proactive in changing its traditional processes and mindsets.

Finding a path to progression

"One of the main reasons we are not realizing a faster pace of change in this area is because too much of the activity surrounding gender equality in IT focuses on one-off gimmicks and bandaid solutions that can be spotlighted in the press, instead of focusing attention on female employees and the actions that will truly make a sustained difference in their professional lives."

Dr Ronda Zelezny-Green,
Co-Founder and Director,
Panoply Digital

Kaspersky previously raised the alarm about the lack of women working in technology following our research and subsequent *Where are all the women in IT?* report in 2018. Back then, women were well aware of the benefits a technology role could bring, but a lack of other women working in the sector made them wary of pursuing their own IT careers. The significance – and lack – of role models to trigger a snowball effect from education up to employment has been well documented, and was also reflected in our results two years ago.

However, our latest research demonstrates that progress has been made at the beginning of this snowball effect at least, with organizations making strides to give men and women more equal opportunities in IT roles. In fact, more than half (**56%**) of female respondents agree that gender equality has improved in their organization over the past two years. What's more, gender has become less of a concern when applying for a position. Seven-in-10 (**70%**) women believe their skills and experience were considered to be more important than their gender during the interview process for their first IT or tech role.

This has also, critically, translated into the workspace dynamic as well. More than two-thirds (**69%**) of women working in technology or IT agreed they were now more confident that their opinion would be respected from day one, regardless of their gender. Given that the idea of gender balance is steeped in perceptions and attitudes, this is a critical sign of progress. Beyond tangible percentage rises in employment or boardroom positions, how women feel in the tech space and how they experience daily life in the IT sector is pivotal to understanding real evolution.

This argument can flip both ways, as also seen across respondents' views on career progression. Whether they feel more welcome or respected in the workplace is one thing, but **44%** still believe that men progress faster than them in their organization. Given that a similar percentage (**41%**) feel a more equal gender split would be conducive to general career progression, we can deduce that headway is being made, but only just getting started.

For further progress, there are various proposed methods of acceleration that the tech sector must take responsibility for.

Dr Patricia Gestoso
Head of scientific customer support at BIOVIA and 2020 Women in Software Changemakers Winner

"There is a famous saying that 'you can't be what you can't see'. In the past few years, there have been increasing calls to improve the representation of women in technology and IT. Initiatives of this nature generally rely on quotas to address long-running gender imbalances. While quotas can represent a relatively quick way to address the issue, the technology industry have proven to be institutionally misogynistic in ways that mean even quotas are insufficient for addressing the gender imbalance or aiding the progression of women to senior IT roles.

"Given this, there is a need to go beyond quotas to take sustained, more intensive action to improve the gender imbalance and progression opportunities for women in IT. A first recommendation is to implement blind hiring practices that help remove personal biases from the talent acquisition process. This includes removing identifying information from applications, amending the language in job adverts to eliminate sex-bias in favor of male candidates, and ensuring that candidate selection is free from bias by using diverse hiring committees (instead of individuals), recruiters trained to eliminate bias from hiring processes, and perhaps eventually truly intelligent algorithms created by diverse teams that can help with the candidate identification process," explains Dr Ronda Zelezny-Green, Co-Founder and Director, Panoply Digital.

She adds: "Tech and IT sector employers committed to more gender balanced workforces should undertake regular assessments of the policies and procedures they have in place, with women, to ensure they still result in progressive movement for female colleagues. One of the main reasons we are not realizing a faster pace of change in this area is because too much of the activity surrounding gender equality in IT focuses on one-off gimmicks and band-aid solutions that can be spotlighted in the press, instead of focusing attention on female employees and the actions that will truly make a sustained difference in their professional lives."

Dr Patricia Gestoso, Head of Scientific Customer Support at BIOVIA and 2020 Women in Software Changemakers Winner agrees that there isn't just one way to accelerate progress, but that the whole ecosystem needs addressing.

"Given the systemic nature of factors accounting for the low representation of women in leadership positions in tech companies, a multi-pronged strategy is needed to address the issue by both governments and businesses," she confirms.

"Tech companies can improve the gender balance by applying measures such as mapping the full employee experience and identifying instances where bias is likely to influence their career path, and plan for tools and processes that mitigate human and automated biases on decision-making. For example, the strategies that are successful for increasing the proportion of female managers may depend on factors such as women's ethnicity and caregiving responsibilities."

A new work-life balance

Adding to this debate over the past year has been the COVID influence. The 'new normal' that everyone is adapting to following the pandemic's outbreak has caused significant changes to how both men and women around the world approach work. IT and technology staff have not been an exception. Home offices are now common, which is likely to be the case for the considerable future, and many people work remotely in the same space as their significant other. These changes, at first glance, are a source of huge potential for women in tech as previous stereotypes around female career opportunities and family planning obstacles are brought to a completely level playing field. However, as evidenced by our results, there are still some lingering social biases hindering the complete positive impact of this accelerated step change.

"...the effect of the pandemic broadly differed for women. Some appreciated the greater flexibility and lack of commute from working at home, whilst others shared that they were on the verge of burnout."

Dr Patricia Gestoso, head of scientific customer support at BIOVIA and 2020 Women in Software Changemakers Winner

Taking in the positives first, while **34%** of women have missed seeing colleagues in person while remote working, a similar percentage report that they prefer this dynamic (**31%**), and the same number again believe they are more efficient when working remotely (**31%**). As many as a third (**33%**) who have worked at home part-time since March 2020 believe this has given them a higher level of autonomy, while female respondents who work in technology say there is a better balance between men and women now, with **46%** agreeing that gender equality is improved by teams working remotely. This latter figure is bolstered especially by **58%** of female respondents in the APAC region agreeing that remote working facilitates gender equality.

As mentioned, however, while industry has been coerced into this new dynamic, societal stereotypes have perhaps been exacerbated rather than mitigated. Despite all of the above positive impacts, **47%** of women believe that the effects of COVID-19 have actually delayed career progression. Even though the economic effects of the pandemic have hit both genders, there are additional statistics to show that women are being disproportionately hindered by the home lives they're now operating in.

The research shows that almost half (**48%**) of women have found juggling work and family life since March 2020 stressful. This is especially the case if the couple has children, with more than six-in-10 (**63%**) mothers working in technology agreeing that they have done most of the home schooling or have helped their children with homework more than their partners (**52%**) since March 2020. A similar number of women (**60%**) agree they have also done most of the cleaning at home since March 2020, a figure which rises to **70%** in North America. Only **47%** of males, globally, can say the same.

In essence, pandemic life has created a tug of war between industry development and social barriers when it comes to women in tech. Even though the general consensus remains that remote working is a positive step forward for gender equality and opportunities in IT, four-in-10 women (**40%**) report they have been held back from pursuing career changes since March 2020 due to family or home pressures. The 'gender balance' has converted to being a balance between industry and social evolution, where the former has been more positively impacted than the latter by the events of the past year.

Tech as a sector must maintain this positive and encouraging momentum to make the notion of women working in IT, from home, a more embedded and unhindered norm in the months and years to come. This begins by removing some of those entrenched social and family biases on their side first.

"Once women are hired, work must be done to retain them. This can be achieved by designing workplace policies and procedures that make it fairer for women to remain in the sector and to advance. For example, the decision to have children is often delayed due to the treatment of female employees before, during, and after they become pregnant or adopt. Comparatively longer periods off work for maternity leave often counts against women when being considered for promotions," explains Zelezny-Green.

Gestoso adds: "Ensuring equitable maternity, paternity, and parental leave that supports shared parenthood, covers situations beyond natural births by heterosexual partners – this includes alternatives that make off-ramping unnecessary for women due to pregnancy, parenting, or caregiving, and on-ramping programs that facilitate women to return to work after a voluntary time out. Apply an intersectional lens to support women's career progression."

This acknowledgement of social imbalance doesn't mean making regulations completely the same but offering a completely equal choice and opportunity.

Gestoso continues: "Research I conducted into the impact of COVID-19 on professional women's unpaid work showed that the effect of the pandemic broadly differed for women. Some appreciated the greater flexibility and lack of commute from working at home, whilst others shared that they were on the verge of burnout. It's paramount that companies ensure their managers are aligned with their strategy to support employees with caregiving responsibilities.

"The other significant trend that the pandemic has accelerated is the co-existence of remote and hybrid employees within the same organization. This can be a challenge for women working remotely as they may experience less access to top management working from offices. This may decrease their chances to be considered for the kind of stretch assignments that lead to promotions. Employers need to be conscious of those disadvantages and plan accordingly to minimize them."

In need of role models

While trends are starting to move in a more positive direction, some of the previously mentioned findings around gender imbalance may still deter women from IT or technology roles. Despite the opportunity to use problem-solving skills (**44%**) or to work in a well-paid (**40%**) profession, the majority of women in the sector have not been encouraged to do so by outside sources. Just as our research showed in 2018, this brings to light the significance of role models, building a well-trodden and clearly signposted path into and throughout the tech sector.

"Telling different stories about the need for more women in tech roles in areas like AI will go a long way for women to make inroads in IT and tech roles where we are currently underrepresented."

Dr Ronda Zelezny-Green,
Co-Founder and Director,
Panoply Digital

Currently, the most common pathway for women to learn of a role in IT or technology is through their own research (**44%**), showing that the onus is often on individuals to forge their own careers. **10%** fewer (**33%**) were encouraged to find one at education stage thanks to their school, college or university. Fewer still (**19%**) were encouraged to find a technology or IT role through female role models in their communities.

Worryingly, more than a third of female respondents note that final statistic as inhibiting to their own careers, with **38%** claiming a lack of women in the tech industry makes them wary of entering the sector. And this is why that oft-mentioned snowball effect is so important. It seems like a chicken and egg situation to ponder whether more women in IT triggers industry change, or whether new sector behaviors can attract more women into the sector. In reality, especially with the influence of remote working now at the forefront, the challenge can be met from both sides.

For the sector's part, this should begin by building on the positive trajectory of the past two years and more actively promoting the benefits of tech and IT to women. As many as **42%** of women believe that better marketing of the positive impacts that IT or technical skills can have within society is the most important measure to encourage women into the industry. A push from this side, compounded by a nudge from more flexible working on the other, could propel progress upwards at a more concerted rate. This should be aided by the wider IT climate which has a long way to go to be classed as 'equal'.

"...what we have now is an unforeseen and (hopefully) one-time opportunity to accelerate change. Last year, the decision was made on behalf of businesses to level the playing field in which men and women can operate. To ignore that opportunity when all statistics point towards this being an enabler of gender equality would be an opportunity missed."

"One underexplored avenue that can help encourage more women into technology and IT are more opportunities to create products and services for women, developed and designed by women. One area of great potential is artificial intelligence (AI)," explains Zelezny-Green. "We have seen attention grow as it relates to the lack of diversity in AI along the lines of both sex and ethnicity. There is a huge potential in telling the stories of Timnit Gebreu and Joy Buolamwini, black women who are leading the charge for more ethical and inclusive design of AI technologies that affect society at large. Telling different stories about the need for more women in tech roles in areas like AI will go a long way for women to make inroads in IT and tech roles where we are currently underrepresented.

"To diversify the areas where women can have a major impact in developing products and services for other women, there is also a need for substantial funding to help female tech innovators grow their ideas. According to Fortune, in 2019 women received only **2.7%** of venture capital funding, or just around $3.5 billion. The clear barriers women face (especially when compared to men) to be able to think outside of the box and to 'fail fast' mean that investors are primarily funding ideas from female founders that they view as 'safe bets', which stifles the potential for riskier ideas that could change the world. VC funds that target female founders exclusively is an idea whose time has come."

Gestoso believes there are a number of ways to encourage more women into tech roles, and to build this role model platform: "These include demystifying the belief that all IT jobs are about coding. There are a wealth of other opportunities such as product management, project management, UX design, support, and training. There is also not a unique path that leads to a career in tech. My own background is chemical engineering and polymer chemistry which, with time, evolved into computational chemistry, simulation, and finally working as head of scientific services for a software company.

"It's also important to highlight the advantages of a career in tech. Whilst tech careers are usually marketed by hard skills exclusively (maths, computers, logic), it's important to highlight that skills such as collaboration, communication, and customer skills are key to a variety of tech roles."

Maintaining momentum

Looking ahead another two years, and there is reason for optimism, as long as the impact of remote working is met by a tech industry-driven ambition to transform its biases and the way it is marketed. But the hard work hasn't even really begun yet. There will come a time when COVID loosens its grip and businesses are faced with tough decisions regarding flexible working and the dynamic they want to move forward with. Knowing and understanding the impacts on women in tech that this decision will have is imperative. To take the seemingly simple decision to proceed with remote working as an option could have widespread positive repercussions as societal stereotypes also adjust.

We noted last time that progress could be slow, but what we have now is an unforeseen and (hopefully) one-time opportunity to accelerate change. Last year, the decision was made on behalf of businesses to level the playing field in which men and women can operate. To ignore that opportunity when all statistics point towards this being an enabler of gender equality would be an opportunity missed.

From this point, the industry should stay vigilant enough to capitalise on every benefit this step change brings. To better promote the benefits of being a woman in IT, to make sure promotion opportunities are entirely level, to instil a culture of respect and team balance across organisations, and to ultimately elevate more and more women to positions where they will become role models to future generations.

We at Kaspersky already run several support initiatives that not only promote women currently working in the industry, but that also provide guidance so younger women can forge their own IT careers. It will take similar commitments of proactivity from businesses, and indeed men in IT, to ensure that the progress seen over the past two years isn't wasted, and that it becomes even more pronounced moving forward.

Gestoso says: "The COVID-19 pandemic has made flexible working the default for most tech companies and, with the accelerated adoption of technology triggered by the lockdowns, working on IT has now become a very appealing career choice with well remunerated salaries as well as stability, compared to other professional paths.

"The pandemic can also be a catalyst for a deep review of tech workplaces, to drive diversity and inclusion in tech. It has a history of adhering to very traditional work practices – full-time, office-based jobs consisting in workweeks of 40+ hours. Now that we have moved to remote and hybrid workplaces, it will be interesting to see if other deep-rooted beliefs may be questioned as well."

Zelezny-Green concludes: "If the pandemic has taught us anything, it is to listen to women – we get the job done. Despite being saddled with an exceptional number of challenges since March 2020, women have persisted, innovated, and moved the needle in the IT sector. In many instances, taking advantage of the new flexibility in working patterns and locations has enabled women to underscore why flexible working should be standard in the post-pandemic era. Given their ingenuity with resources that have been increasingly squeezed, the women who have kept their heads above water and even flourished are those employed by companies that recognize the multiplicity of roles women are carrying during this time, and are helping their female employees survive and thrive as much as possible.

"If we want to ensure that the gains made for women's presence and progression in this sector are not eroded, it is important that employers reimagine the workplace and let go of outmoded ways of defining who is contributing to advancing a company and how they are realizing those achievements.

"The onus is now on IT and technology employers, not their female employees."

Methodology

Kaspersky commissioned Arlington Research to undertake research among men and women working in technology or IT roles in November to December 2020 across 19 global markets. This survey explored people's perceptions of gender differences within the industry, barriers to a career in the technology and IT industries amongst both sexes, what has motivated men and women to develop a career in these industries and the impact of the COVID-19 pandemic has had on the respondents' career prospects.

An online survey of 13,000 respondents was conducted across 19 countries: UK (1,000 respondents), Germany (1,000 respondents), France (1,000 respondents), Italy (1,000 respondents), Spain (1,000 respondents), US (1,000 respondents), Canada (1,000 respondents), Argentina (500 respondents), Brazil (500 respondents), Chile (500 respondents), Columbia (500 respondents), Mexico (500 respondents), Peru (500 respondents), Australia (500 respondents), India (500 respondents), Japan (500 respondents), Malaysia (500 respondents), Singapore (500 respondents) and Vietnam (500 respondents).

For more information about Kaspersky products and services contact euhq@kaspersky.com or visit www.kaspersky.com

Kaspersky
Kaspersky Lab, 1st Floor
2 Kingdom Street
London, W2 6BD, UK
www.kaspersky.com

kaspersky