Gender inequalities in STEM fields and the digital sector were identified decades ago and while some steps have been taken to address these, stark imbalances persist and in many cases, the divide begins from an early age.

A 2020 European Parliament report outlined two key issues:

Due to societal perceptions of digital fields as male-dominated, many girls are discouraged from seeing STEM [science, technology, engineering, and mathematics] studies and careers as viable options; among those who do choose to pursue these pathways, the “leaky pipeline” effect sees women leave the sector at a much higher rate than their male counterparts.

Targeted actions and broad societal change are needed to address these issues and ensure that women take up STEM education, stay in STEM careers and reach high positions in their fields; to ensure success in combatting the digital gender divide, the involvement of both public and private sector actors is essential.
Digital gender gap is an issue for all of society, says industry leader

Industry calls for multi-level approach to tackle STEM gender gap

Education key to closing digital skills and gender gaps, say stakeholders
Women are underrepresented in digital sectors and the gender gap in STEM fields starts from a young age. There have been some developments when it comes to addressing this but progress has been slow and further action is needed, Sabine Herlitschka, CEO of Infineon Technologies Austria, told EURACTIV.

While there are important steps that industry can take to encourage diversity, she noted, this is not just an industry issue, nor is it just a women’s issue: it is a societal issue, she stressed.

**Sabine Herlitschka is the CEO of Infineon Technologies Austria AG.**

*What is your view on the current state of the digital gender gap — how much progress has been made and where can we go from here?*

To start off with a positive statement, I think opportunities have never been as good for women in science and technology as they are today. Nowadays, it becomes even clearer that with science, technology, engineering and mathematics, people are the engineers of the future.

If you think of the major global challenges, in particular something like the green transition and
managing climate change, science and technology will play a key role. And therefore, everyone who wants to contribute to shaping a positive future, has this fantastic opportunity with STEM technologies. This is particularly true for women; in so many fields, women have always contributed to managing major societal challenges.

Despite this situation, and despite many of the activities, we still see quite a gender gap. Yes, there have been developments but only in small steps. So I still consider this issue a major societal task. This is not just a women's issue, it's a societal issue.

Research shows that the gender divide in digital starts early. What can be done to encourage more equal participation in STEM from a young age, both in terms of education and broader perceptions of the field?

I think every child is a natural-born scientist. Because every child asks their parents, why does it rain? Why is the sky blue? Why is the grass green? Every child has an intrinsic interest in these questions that basically relate to natural sciences.

Every study shows that this kind of encouragement of natural interest should be strengthened at a very early age. We have initiated that at Infineon, just like many other organisations and companies as well, to provide this kind of encouragement of natural interest. In our case, through an international daycare centre for children. This international daycare centre has a focus on natural sciences and technology. We cover the entire age range, always with the intention to demonstrate how exciting science and technology is.

I think in the public domain, STEM education and professions are typically perceived as male-dominated. And that’s something we just have to demonstrate by role models is not the case, and by concrete opportunities for instance in cooperation with schools and universities. We want to demonstrate that the opportunities are broader and they exist for everyone.

What should industry be doing to ensure that women are supported in STEM sectors to both continue pursuing the careers they want to and to reach higher positions?

Unfortunately, this is not an issue for industry alone. On the one hand, there’s quite a lot of awareness of diversity. Diverse teams are stronger and more competitive, also in tangible financial terms. On the other hand, diversity needs to be developed in order to make it work.

Based on this evidence, many more organisations are starting to understand that diversity has to be considered not only because it’s the right thing to do, but because it’s a strong competitive factor and thus an opportunity.

Many more organisations are taking note of that, including through specific measures, for instance in the public sector, with the introduction of quotas. Or through the definition of targets, as we have at Infineon, where we have defined a specific target for the share of women in leadership positions.

Based on the evidence that diversity is a strong competitive factor, one should ask why there are so few companies with women in strong leadership positions.

Many studies also demonstrate that because of traditional role perceptions, it’s even more important to provide adequate and high-quality childcare. That seems to be the most effective measure to make sure that women can pursue their professional development.

I also want to underline that having broader participation of women, particularly in STEM, is not just an individual issue, but it’s a broader societal issue. Therefore my expectations are not only that women serve as role models but also that men speak up and underline the importance of diversity.
Tackling the digital gender divide requires a threefold approach encouraging more women into STEM fields while paying equal attention to supporting them to stay and advancing their careers, according to industry members.

At the same time, companies must work to support women and combat gender inequalities more broadly.

Dr Cristina De Luca, director of funding projects and coordination at Infineon Technologies, told EURACTIV that “we are at the end of the pipeline” and efforts must therefore consider the whole picture, including family life, societal attitudes, the sector, education, and careers.

“The pipeline is family, it’s education – schools and university – it’s industry and management of industry”, she said. “That means we have to take into consideration what the best solutions are for all these parts.”

PERCEPTION AND EDUCATION

Inspiring women to pursue studies and careers in STEM must start at a young age, said De Luca, and it must come from families and educators. “The examples that they receive in their social context before school and the educational path play, in my view, a very important role”.

Research by the European Institute for Gender Equality has shown a significant gender divide that becomes apparent during teenage years regarding digital technologies. While boys and girls in this age bracket may have relative levels of digital ability, girls report much lower levels of confidence when it comes to using it.

Ensuring that girls are supported and encouraged to pursue STEM subjects, both by their families and teachers, is, therefore, crucial, says De Luca, and requires a cultural shift in terms of how women’s participation in these fields is perceived.

Increasing the visibility of women in technical sectors would be an
excellent way to do this, Ulrike Glock, a project manager at Infineon, told EURACTIV. She added that it is vital that women in STEM are not seen as an anomaly and that girls see it as a viable career path.

“I think the only way to change the perception is to increase the visibility of the women currently working in the technical or in the ICT sector”, she said, “to produce the view that it’s completely normal that women work in such sectors.”

De Luca agrees – “there is a huge cultural gap that we have to close. This is fundamental, but this is not the only problem.”

Alongside this, she added that addressing the digital gender divide must focus in a similar way on the environments and opportunities available to women once they have embarked on STEM studies and careers.

**MULTIPLE DIMENSIONS**

To do this, Thomas Gutt, a project manager at Infineon, told EURACTIV that attention needs to focus on three areas: increasing the number of women hired; ensuring that women have the same opportunities as men for promotion, especially to management levels; and reducing the number of women leaving STEM careers early.

Tackling the latter two, says De Luca, requires a multifaceted approach with the introduction of measures on several of fronts. Women often “learn by doing”, she said, but it’s essential that they are not left out in the cold once working in these sectors and that, for example, female start-up founders are supported in their work.

It’s also essential to note, she added, that women have “double work” in that they still shoulder the majority of familial responsibilities alongside their careers.

Gutt, Glock and De Luca all point to flexible working hours or childcare provision as crucial examples of enabling women to participate equally. “It is crucial to motivate careers and work-life balance in parallel”, said De Luca.

Public authorities can play an important role in providing these kinds of programmes and increasing engagement with addressing the gender gap, said Gutt, but action to combat the issue in the industry “should really come out of companies”.

De Luca, however, says the EU and national authorities can play a key role, as their decisions affect the whole of the pipeline, from families to education, and action in each area is vital.

“Gender equality doesn’t grow on trees’, she said. “It’s something for which we really have to work”, but which will bring extensive benefits “not only from an economic point of view but in terms of other aspects: we have global challenges, and we need all our strengths, for all of us to work to find solutions.”
Industry stakeholders say that a greater emphasis on digital education will be crucial to closing both the skills and gender gap in the digital sector, calling for more attention to boost capacity.

The digital skills shortage is a key reason why Europe is not at the forefront of the digital transformation, MEP Maria da Graça Carvahlo said, speaking at an event on women’s participation in the digital economy hosted by EURACTIV and KDT-JU last week.

Tackling this shortage of digital skills, she said, will boost Europe’s digital economy as a whole and the position of women within it, opening up further opportunities for those already in or looking to join the sector.

“We live in an increasingly digital world. We all know how digital technologies have penetrated our lives, our economy and our society”, said Antoaneta Angelova-Krasteva, director for innovation, digital education and international cooperation at the Commission’s education and culture department.

“Therefore, we cannot allow girls and women in the EU to miss out on the crucial 21st-century skills and on the economic opportunities they bring”, she said.

As part of its Digital Decade targets, the digital transformation plan inaugurated last year, the Commission aims to empower 80% of Europe’s population with essential digital skills by 2030. In addition, it hopes to work towards gender convergence when it comes to ICT specialists, the current vast majority of whom are men.

To strengthen digital education, policymakers and industry representatives at the event agreed it is necessary to agree on a comprehensive, cross-border and cross-sectoral
approach. This should reconfigure STEM education on a technical level and rethink how girls and women are taught and encouraged to relate to these study and career paths.

The way STEM and ICT are currently taught in schools and perceived more broadly poses critical barriers to girls’ and women’s full participation in these fields, said Angelova-Krasteva. Furthermore, they have created “different expectations of what girls and boys should pursue as subjects in school and their careers.”

The role of parents and teachers here is also crucial, adding that girls’ capabilities when it comes to STEM subjects are often underestimated, which can negatively affect their education and interest from a young age.

She said that encouraging more equitable digital education will require a pan-European effort to share best practices and experiences between member states at both a policy and school level. Essential to this will be ensuring that teachers have the skills and confidence required to administer digital education to students, she added.

MEP Carvahlo echoed this, saying that strengthening girls’ ICT education from a very young age would help combat inaccurate perceptions of the field as one meant for boys, but added that investing in teaching was vital.

“Teachers here have a very important role, and it is a fact that we don’t have enough trained teachers in the area of ICT to cultivate this taste for ICT at a very young age”, she said. “That is something that member states need to look at, to bring this to primary schools or at a very early stage of education.”

She said that there also needs to be investment from higher education institutions in reaching out to schools to publicise the available programmes and ensure that students see women represented in these areas at the university level.

“It’s very important that when they go to high schools or they invite high schools to come to see universities, they keep in mind that they need to show that science, that engineering, that ICT is a woman’s business, it’s not a man’s business”, she said, noting that to ensure this happens, “you need to have a critical mass of women also as professors and teachers.”

In all of this, said Angelova-Krasteva, it is also essential that a multidisciplinary approach is adopted when it comes to digital education, removing traditional barriers between areas of study to connect STEM subjects with the arts, humanities and social sciences.

“This”, she said, “is a way to tackle both the crucial skills shortages, but also a way to encourage the development of transversal skills, which will drive entrepreneurship and innovation.”

“We need a holistic approach when it comes to solving the problem of the digital gender gap, and we need joined-up efforts to meaningfully tackle this issue”, she said. “Only when all sectors work together – public and private – on all levels – European, national, regional, local – can we succeed and make a difference.”