How to strengthen women’s role in IT professions such as cybersecurity?

Cyberdefense

MAKE. ORG

Consultation report - January 2025

1st part

Consultation overview

Cyberdefense

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From **15.10.2024** to **22.12.2024**

Why this consultation ?

80% of cybersecurity experts in Europe are men*. The role of women in this sector is vital and must be strengthened. In a world where digital technology conditions the smooth running of our societies, cyber-attacks are multiplying and becoming increasingly sophisticated and diverse in form. Against this backdrop, the community of cybersecurity experts forms the shield of our digital activities, and needs are growing: 350,000 vacancies exist in the cybersecurity sector in Europe**. To defend us properly, digital protection professionals need to reflect the face of our society.

Orange Cyberdefense has therefore decided to launch an international citizens' consultation with Make.org in order to identify concrete solutions for increasing the number of women in the cybersecurity professions, for the benefit of all.

Why launching a consultation about women in cyber?

As leader in cybersecurity services, Orange Cyberdefense's mission is to **contribute to building a more secure digital society**.

Today, Orange Cyberdefense represents more than 3,000 experts, including **13% women in technical professions**, with the aim of **reaching at least 20% by 2025**. On a national scale, the proportion of women in the cyber sector rarely exceeds 20%. In some countries it is as low as 15%.

Convinced that **equality between men and women** is a major **challenge for the advancement of our society**, Orange Cyberdefense has set up a number of initiatives to promote the role of women in its sector, in partnership with NGOs, such as Women4cyber in Europe or CEFCYS in France.

In this context, and as part of the annual Cybersecurity Awareness Month in October, Orange Cyberdefense will launch an international consultation "Women In Cyber".

> We can't afford to deprive ourselves of 50% of talent. We need women who shine in all our professions! Managers, be active allies in promoting diversity and inclusion.
>
> Ladies, dare to come and make a difference in a field that is shaping our digital future.
>
> **Hugues Foulon**
> CEO Orange Cyberdefense

4 sources: Orange Cyberdefense, Grande École du Numérique

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From **15.10.2024** to **22.12.2024**

Key figures from the consultation

How to strengthen women's role in IT professions such as cybersecurity?

8 741
participants

592
proposals submitted

93 128
votes

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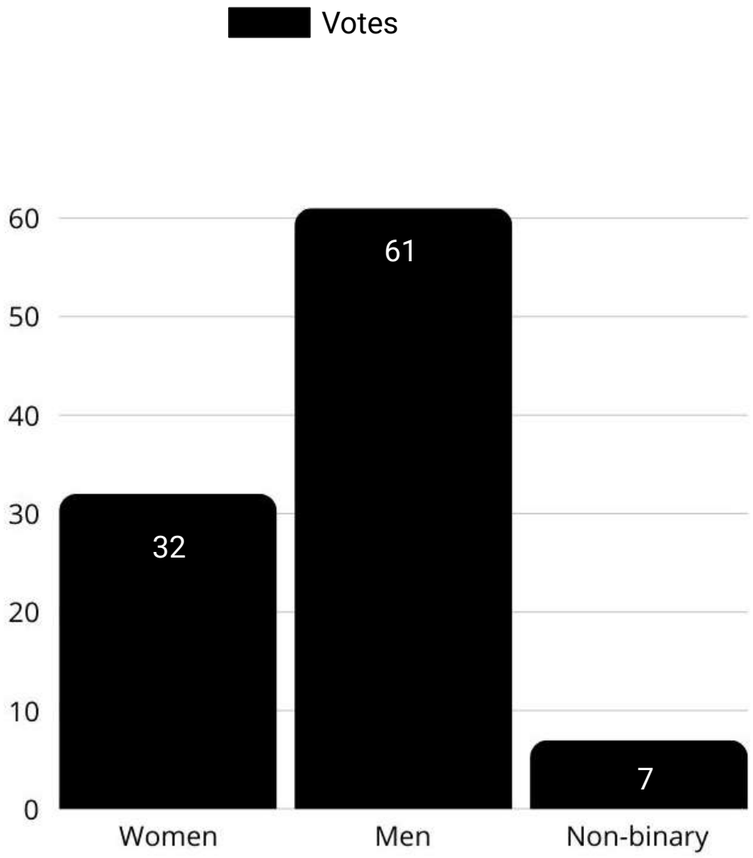
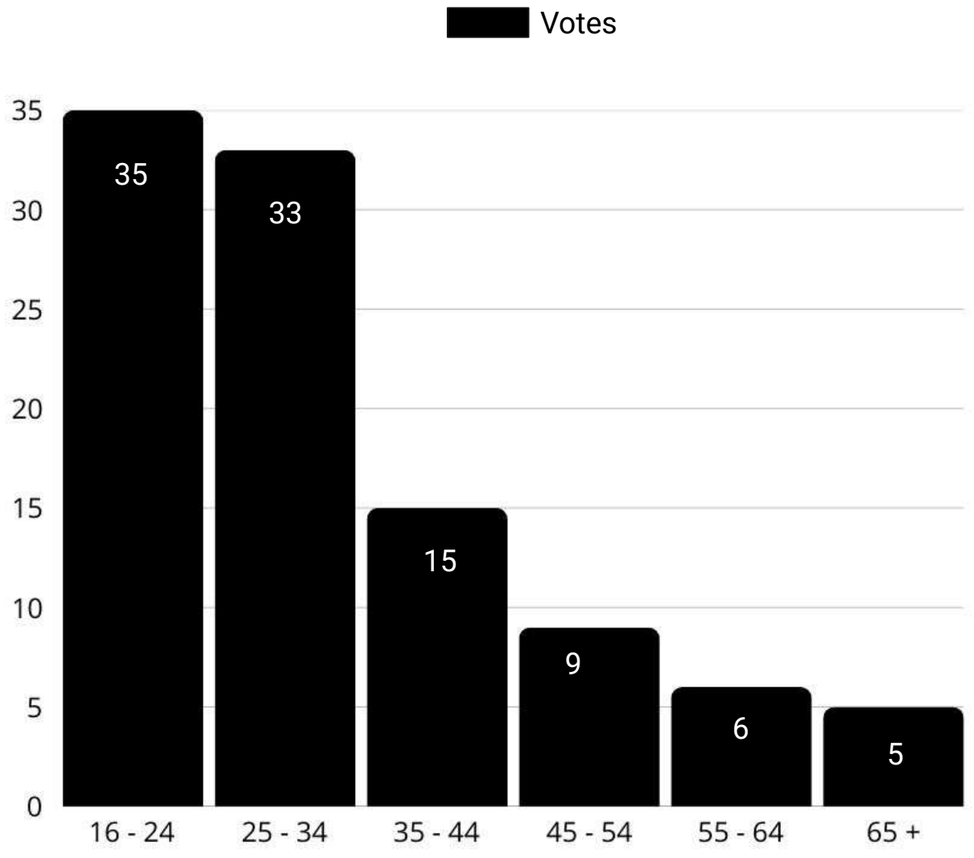
Participants' profiles

Participation by gender

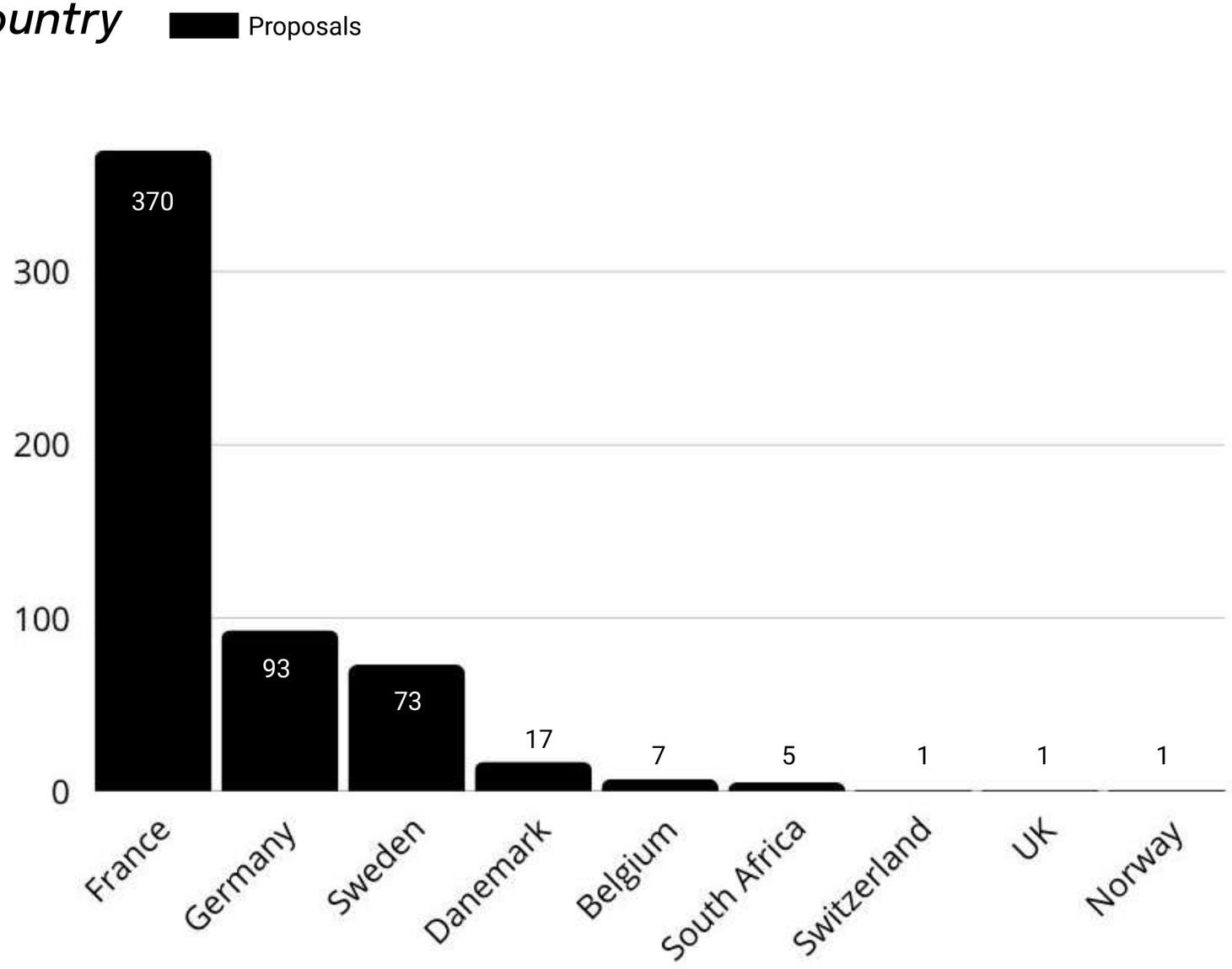


Participation by age



Participants' profiles

Proposals by country

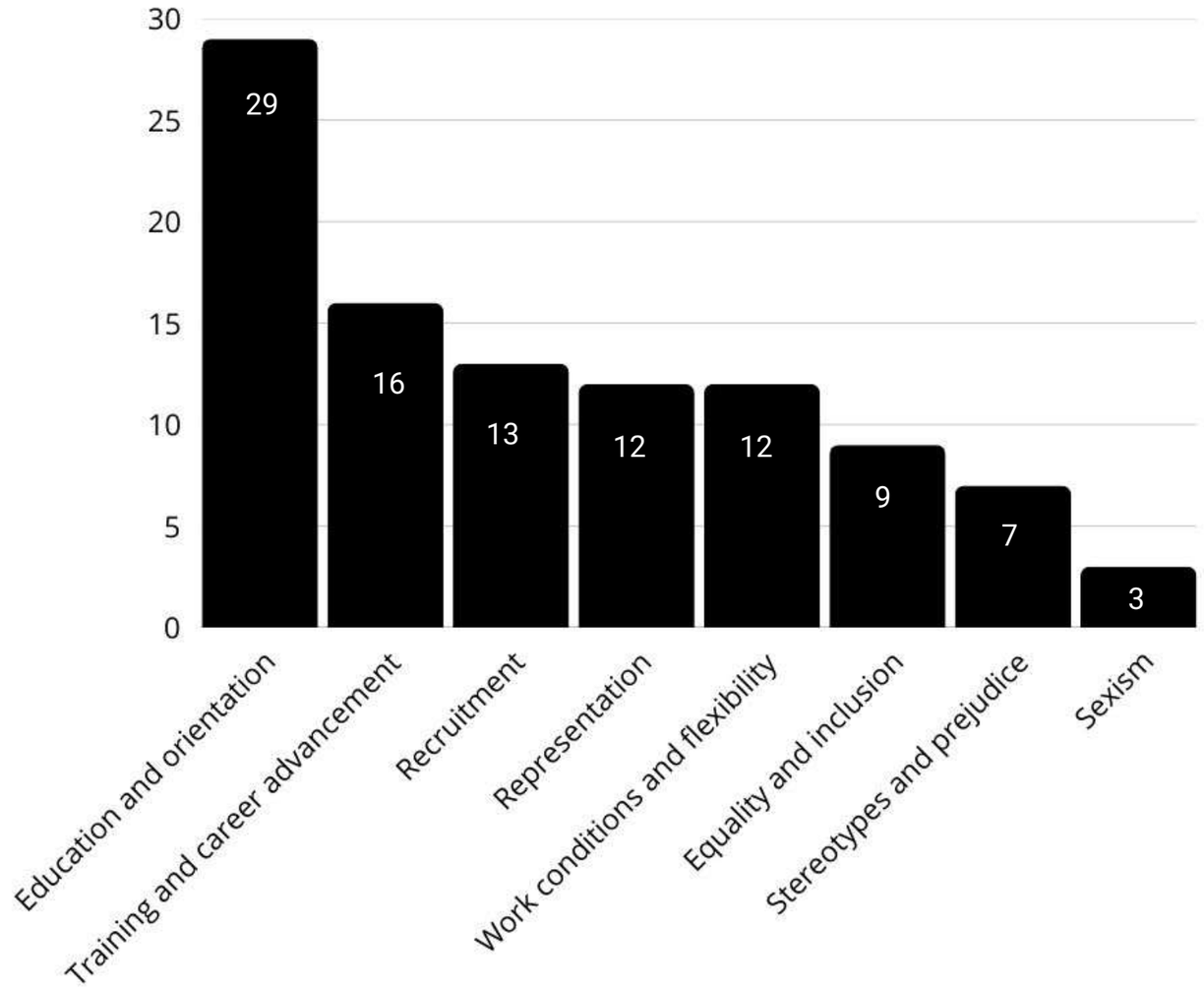


Main themes of the consultation

What citizens are talking about

% of 568 validated proposals*

**The sum of the percentages is greater than 100% because some proposals fall under more than one theme.*



This graph does not take citizens' votes into account, only the number of proposals.

2nd part

Popular ideas and controversial ideas

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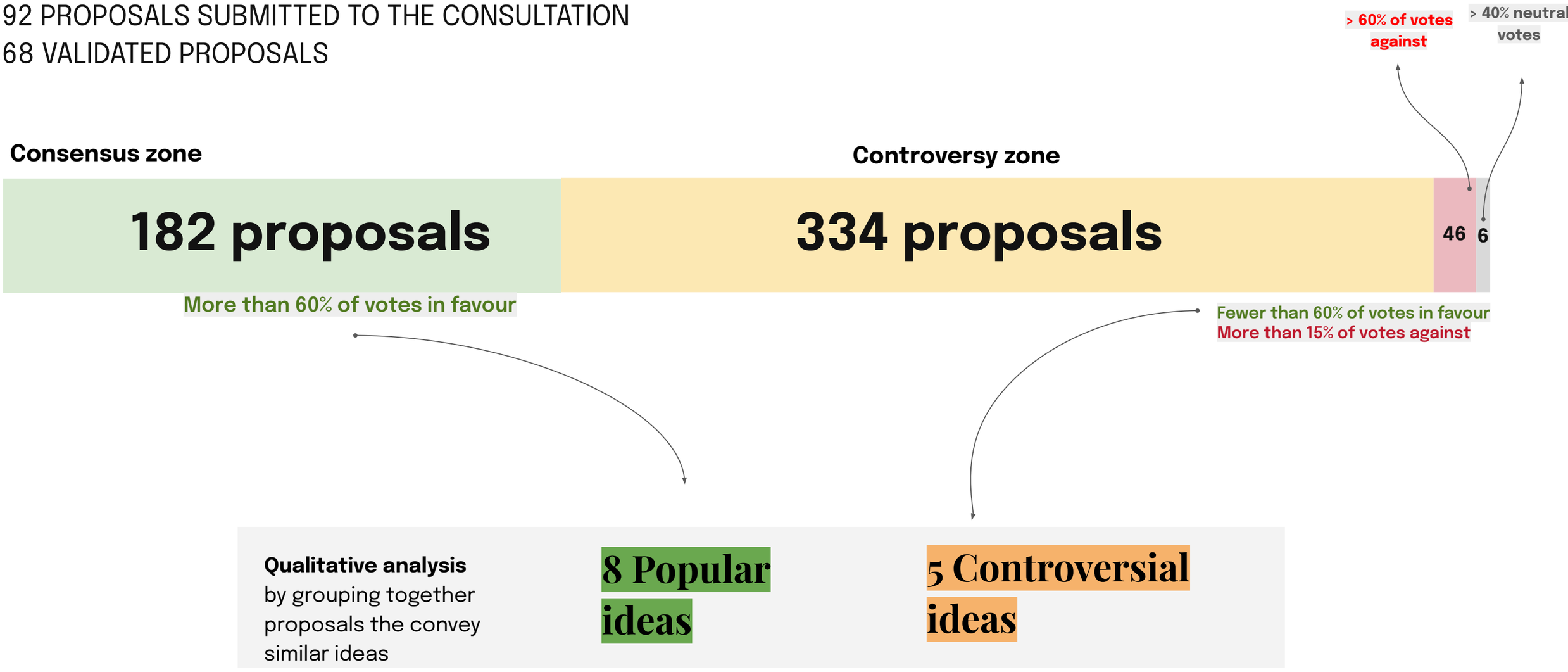
Methodology

592 PROPOSALS SUBMITTED TO THE CONSULTATION
568 VALIDATED PROPOSALS



8 popular ideas and 5 controversial ideas under 3 themes

Education and skill development

- Encouraging school interventions and ambassadorship
- Organizing workshops and activities to spark interest in tech and science
- Guiding young girls in tech through collaboration with companies and professionals
- Strengthening computing and practical IT education in schools
- Providing targeted financial support exclusively for women in tech and cybersecurity careers
- Focusing exclusively on women in tech through targeted programs and initiatives

Workplace and recruitment policies

- Offering flexible and family-friendly work options
- Ensuring fair and equal pay for all
- Promoting skill-based and inclusive recruitment practices
- Addressing gender disparities in tech through recruitment and quotas

Cultural and societal shifts

- Demystifying cybersecurity and IT careers: awareness, inclusion, purpose
- Challenging media and cultural approaches to promote women in tech
- Challenging educational norms

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The most popular ideas (> 5 popular proposals)

The most controversial topics (> 2 controversial proposals)

01.

Education & skill development

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Popular idea

Encouraging school interventions and ambassadorship

17 proposals

What the majority of citizens agree on

Engaging students in middle and secondary schools through passionate individuals and role models. Sharing concrete examples of careers and successes which can inspire interest and curiosity.

Highlighting the achievements of women and showcasing female leaders in the field to provide inspiration and show that success in these careers is attainable for everyone.

The importance of women representing careers in IT and cybersecurity at job fairs and conferences.

❤️ Popular proposal examples:

Lilou, 23 years

Interventions are needed in secondary schools with workshops on discovering code + cybersecurity principles.

75% 15% 11%

Evelyn, 34 years

Women working in cybersecurity should be invited to visit schools.

79% 10% 11%

Guillemette, 35 years

Women in cybersecurity need to speak at secondary schools and career fairs to change the image of these professions.

78% 12% 10%

Juliette

It's important to invite inspiring women from this sector to speak in schools and on social networks to promote.

78% 11% 10%

A, 43 years

We need passionate people who share and show concrete examples of their passion right from middle school.

84%

Manon

Young girls should be introduced to women who have advanced this field, such as Ada Lovelace, to inspire them to follow their example.

69% 18% 13%

% votes “in favour” % “neutral” votes % votes “against”

Popular idea

Organizing workshops and activities to spark interest in tech and science

12 proposals

What the majority of citizens agree on

Providing a broad spectrum of digital activities in schools allows students to explore different areas of technology, from basic programming to more complex aspects of computing.

Encouraging both boys and girls to engage with educational tools like puzzles, games, and programming workshops can help dismantle gender stereotypes.

Organizing hands-on, immersive learning experiences, such as *immersion days* led by professionals to provide students with real-world insights into the digital world.

❤️ Popular proposal examples:

Valerie, 47 years

We need to offer a wide range of digital activities and help students discover as many facets of computing as possible, starting in junior high school.

83% 10%

Karine, 54 years

We need to offer science-related events and games starting in high school, supervised by young female science students/apprentices.

70% 17% 13%

Laurence, 31 years

We need to strengthen the presence of IT in schools (workshops, info clubs) to encourage women to choose this sector.

68% 13% 19%

Lucie

Girls and boys should be offered toys and games that develop their mathematical minds, such as puzzles and construction games.

84%

Ambra, 29 years

We need to introduce "tech immersion days" in secondary schools, led exclusively by digital professionals.

80% 11%

Iliana

We need to organize "student forums" in each region, focusing on cybersecurity or IT careers, and accessible from secondary school onwards.

71% 16% 13%

% votes “in favour” % “neutral” votes % votes “against”

Popular idea

Guiding young girls in tech through collaboration with companies and professionals

7 proposals

What the majority of citizens agree on

Informing girls about the growing demand for tech professionals.

Facilitating school-company collaborations. Providing internships and direct exposure to professionals, offering a practical understanding of tech careers.

Establishing mentorships between girls and tech professionals to guide young students, provide valuable insights, and inspire them to explore careers in digital fields.

❤️ Popular proposal examples:

Ambra, 29 years

We need to establish partnerships with companies to offer internships to high school girls interested in digital professions.

61% 16% 23%

Sophie

Companies need to offer internships to 3rd and 10th graders, and they need to see people from the trade in their jobs.

69% 19% 12%

Jean, 41 years

We need to inform middle and high school girls that this is a sector that's hiring, and provide them with training opportunities.

75% 11% 14%

Laurie, 24 years

We need to enable students to discover the realities of the field and take part in internships through partnerships between schools and companies.

75% 15%

Iliana

We need to help organize mentorships between middle school girls and professionals in cybersecurity or other sciences.

62% 17% 21%

Lilou, 23 years

We need to subsidize internships for students to discover careers in coding/cyber in secondary schools, on a voluntary basis.

70% 10% 20%

% votes “in favour” % “neutral” votes % votes “against”

Popular idea

Strengthening computing and practical IT education in schools

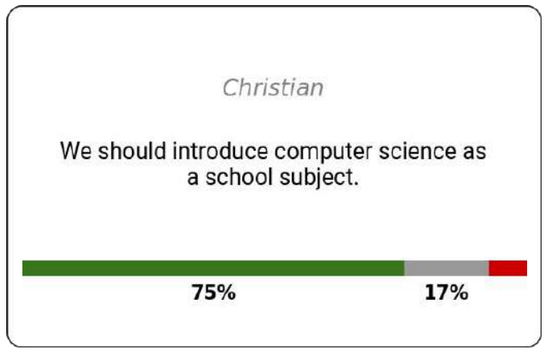
7 proposals

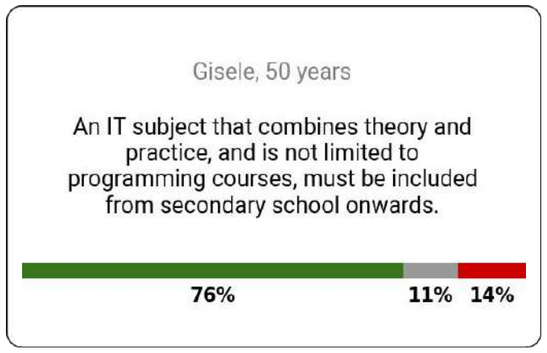
What the majority of citizens agree on

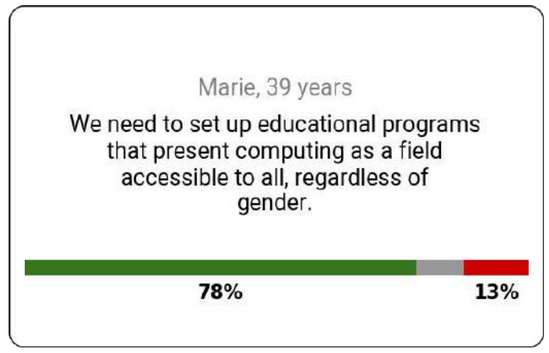
Making computer science a formal subject in schools and ensuring that all students have access to foundational knowledge in the field.

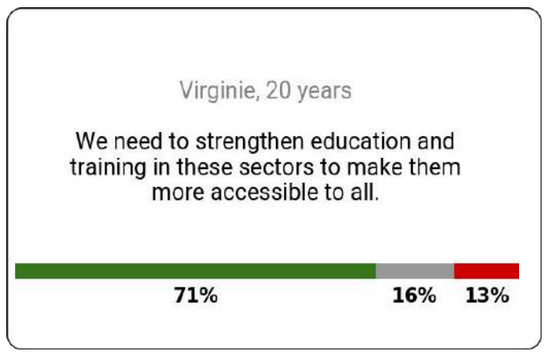
Strengthening computer science options (labs; more training; both theory and practice etc.).

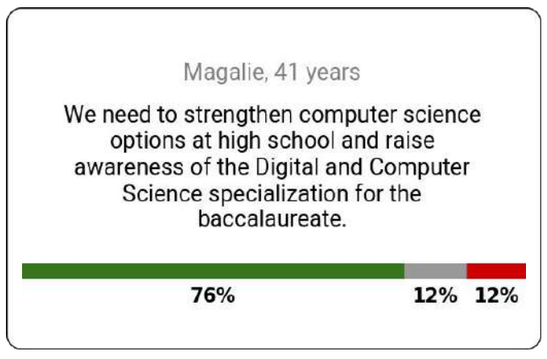
❤️ Popular proposal examples:

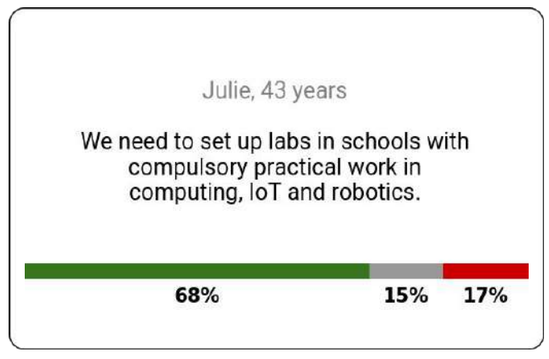












% votes “in favour” % “neutral” votes % votes “against”

Controversial topic

Providing targeted financial support exclusively for women in tech and cybersecurity careers

13 proposals

What citizens are divided on

Offering scholarships and stipends for women entering IT or transitioning careers. Prioritizing female applicants for existing financial aid programs and better promoting available grants.

Developing specialized paid trainee programs for women, financial support for job-seeking women etc.

Creating incubators and investment funds for startups founded by women.

⚡ Controversial proposal examples:

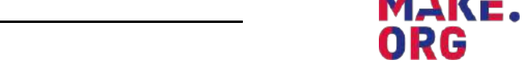
Adam, 33 years

We should develop a paid trainee program specifically for women to transition into the cybersecurity industry (eg CyberCX Academy in AU/NZ).

We need to offer scholarships for female students in these fields (unfortunately, studies are very expensive).

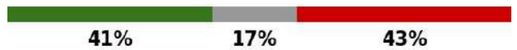
Marie

We should offer scholarships to encourage women to study computer science



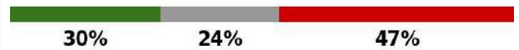
Alexiz, 37 years

Financial assistance is needed for women wishing to reorient their career paths so that they can benefit from training in this field.



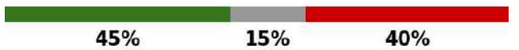
Thérèse, 30 years

Better promotion of existing women-only subsidies



Floribert, 40 years

We need to offer scholarships for IT professions to people with limited financial means, and give priority to female applicants.



% votes “in favour” % “neutral” votes % votes “against”

Controversial topic

Focusing exclusively on women in tech through targeted programs and initiatives

8 proposals

What citizens are divided on

Hands-on initiatives designed to attract interest for women. Organizing discovery days and coding workshops exclusively for girls.

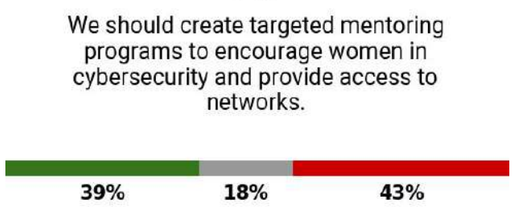
Dedicated scholarships and retraining programs specifically tailored for women.

Targeted advertising campaigns aimed at women.

⚡ Controversial proposal examples:

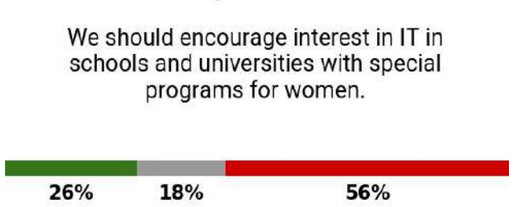
Pia

We should create targeted mentoring programs to encourage women in cybersecurity and provide access to networks.



Jasmin

We should encourage interest in IT in schools and universities with special programs for women.

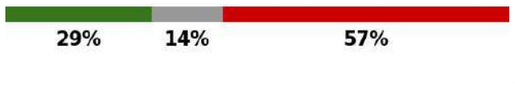


Béatrice, 23 years

Women's training workshops need to be set up to combat the invisible obstacles women face.

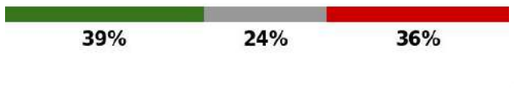
Koko, 39 years

We need to organize "open days" at computer engineering schools, specifically aimed at women.



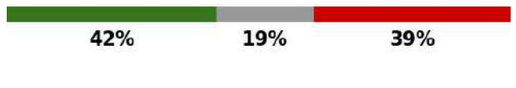
Helene

We should do credible advertising for the sector, specifically aimed at women.



Ambra, 29 years

Targeted recruitment programs are needed to attract more female talent to the technology sector.



% votes “in favour” % “neutral” votes % votes “against”

02.

Workplace & recruitment policies

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Popular idea

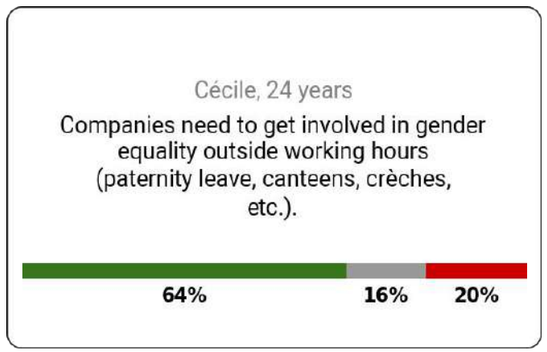
Offering flexible and family-friendly work options

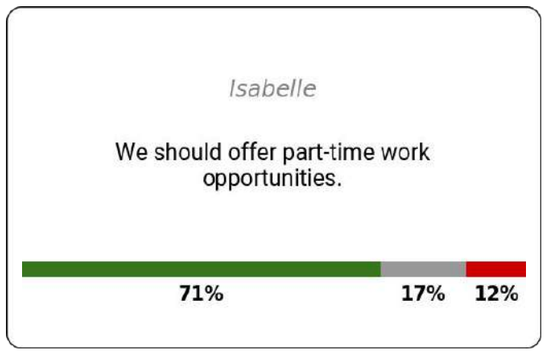
13 proposals

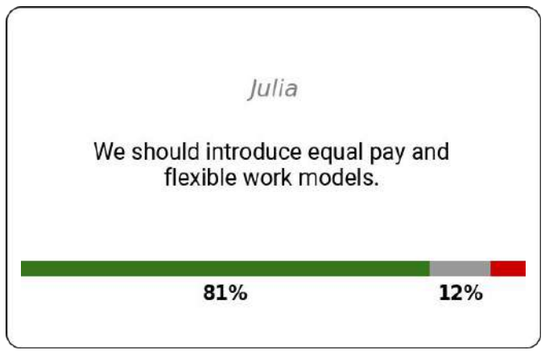
What the majority of citizens agree on

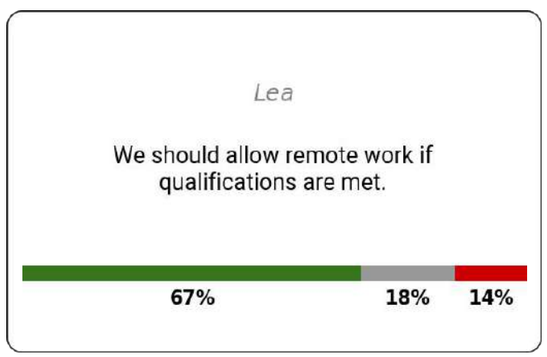
Providing flexible work arrangements, such as part-time roles, family-friendly schedules, and remote opportunities, to enhance the field's appeal and accessibility.

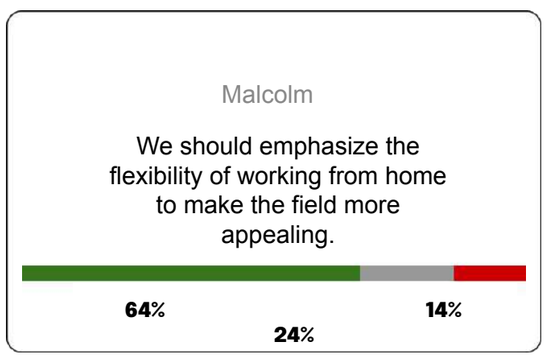
❤️ Popular proposal examples:

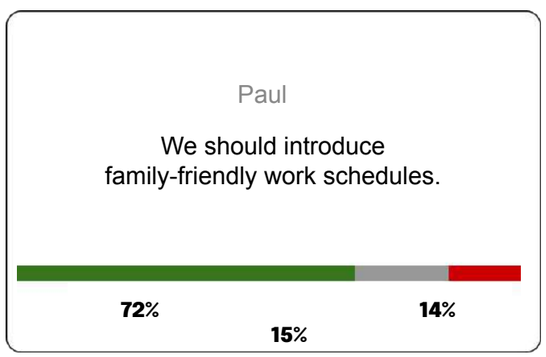












% votes "in favour" % "neutral" votes % votes "against"

Popular idea

Ensuring fair and equal pay for all

11 proposals

What the majority of citizens agree on

Ensuring equal pay across genders to promote fairness and eliminate gender-based disparities. This practice can drive greater workforce satisfaction and create an environment where all employees feel valued equally.

❤️ Popular proposal examples:

Sophia

We should guarantee fair and equal pay for men and women.

Joanna

We should ensure equal pay for equal work.

Mia

We should ensure equal salaries.

Markus

We should pay them the same salary.

% votes “in favour” % “neutral” votes % votes “against”

Popular idea

Promoting skill-based and inclusive recruitment practices

9 proposals

What the majority of citizens agree on

Basing hiring decisions solely on skills, performance, and competence, without bias related to gender, ethnicity, or personal opinions.

❤️ Popular proposal examples:

Jo, 17 years

Recruitment should not be based on gender, ethnicity or opinions, but on skills.

Lucie

Recruiters need to be able to offer equal opportunities based on skills, not gender.

Andy

We should focus on valuing individuals for their work and knowledge rather than their position.

Marie

We should create fair tests where men and women are evaluated using the same criteria and timeframes.

Pierre, 76 years

Jobs in cybersecurity should not be gendered but offered according to skills and affinities.

Mary

We should ensure that hiring decisions are not influenced by assumptions about family responsibilities

% votes “in favour” % “neutral” votes % votes “against”

Controversial topic

Addressing gender disparities in tech through recruitment and quotas

22 proposals

What citizens are divided on

Changing recruitment strategies to actively alternate male and female hires while involving women in hiring decisions.

Targeted educational programs and internships reserved for female students to build early interest in the field.

Partnering with women-focused organizations and regularly assessing diversity efforts can further strengthen gender inclusion across the industry.

⚡ Controversial proposal examples:

Laurie, 24 years

Companies need to commit to diversity and inclusion by implementing women-friendly HR policies.

41% 12% 47%

Manon

We should launch a year-long program with 50% of women in mid-level cybersecurity positions, aimed at fast-tracking into management roles

39% 21% 40%

Nina, 33 years

We should impose higher quotas for women on the boards of tech companies than the current law requires

44% 21% 35%

Sophie, 54 years

We have to impose a strict alternation between male and female recruitment. We have to go out and find the women!

38% 23% 39%

Dennis

We should recruit more women for this purpose.

43% 24% 33%

Claude

We should adapt recruitment processes to be more inclusive and ensure that women are involved as recruiters in the process.

40% 18% 41%

% votes “in favour” % “neutral” votes % votes “against”

03.

Cultural & societal shifts

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Popular idea

Demystifying cybersecurity and IT careers: awareness, inclusion, purpose

22 proposals

What the majority of citizens agree on

Introducing IT and cybersecurity careers early, with hands-on exposure and better communication about career diversity to guide informed choices.

Making cybersecurity careers relatable by breaking stereotypes and highlighting their accessibility and broad appeal.

Framing cybersecurity as a meaningful profession that protects society, combats cybercrime, and ensures digital safety for the common good.

Simplifying technical roles, highlight job diversity, and teach foundational concepts to make IT and cybersecurity less intimidating.

Presenting cybersecurity as part of the broader IT field, showcasing its interconnections and the variety of career paths available.

❤️ Popular proposal examples:

Céline, 47 years

Right from the orientation phase (middle school/high school), we need to communicate more effectively about the different paths available, including cyber.

85%

Berlange

We need to show that the IT and cybersecurity professions are vast, with something for everyone.

83%

Anne, 53 years

We need to communicate on the purpose of cybersecurity professions (in particular combating/cybercrime) to give them meaning (societal role).

79% 12%

Laurie, 24 years

The importance of cybersecurity to protect personal/corporate data needs to be emphasized to attract the interest of young people.

73% 17%

Mathieu, 40 years

From elementary school onwards, we need to take children out into the field and introduce them to all kinds of professions (not just IT...).

75% 17%

Marie, 44 years

We need to talk about cybersecurity in terms of its positive contribution to society, for the common good, for a safer digital world.

70% 17% 13%

% votes “in favour” % “neutral” votes % votes “against”

Controversial topic

Challenging media and cultural approaches to promote women in tech

13 proposals

What citizens are divided on

Transforming the cultural portrayal of women in this field. Increasing the visibility of female experts in media, such as news reports and documentaries.

Featuring female tech professionals in prominent roles within TV shows, movies, and books.

⚡ Controversial proposal examples:

Isabelle J, 59 years

There should be a TV series on the net about women's work in AI, cybersecurity, etc.

24% 31% 45%

Flo, 61 years

We need to create a TV mini-series featuring women with different profiles, all working in technical positions, to make people dream.

36% 25% 38%

Serge, 72 years

We need more documentaries on women scientists, and we need to show how the professions have evolved.

43% 26% 31%

Peter

We should engage children from an early age to spark their interest in IT, for example, by featuring a main character in a Disney movie

37% 21% 42%

Pauline, 31 years

We need to put more emphasis on women in tech on TV/series/films to encourage young girls to enter these professions.

44% 21% 35%

Julien, 39 years

We need to launch calls for cultural projects (series, comics, etc.) featuring a mega-tech-savvy heroine.

29% 23% 47%

% votes “in favour” % “neutral” votes % votes “against”

Controversial topic

Challenging educational norms

6 proposals

What citizens are divided on

The idea that breaking gender stereotypes should begin early, focusing on changing toys, education, and parental attitudes to encourage girls' interest in STEM fields.

⚡ Controversial proposal examples:

Sarah

Stereotypes need to be broken at an early age, starting with toys that target girls and stories.

46% 12% 43%

Nora

We need to work with parents, with initiatives at every stage of their daughter's life and schooling: birth, kindergarten...

33% 32% 35%

Robin, 31 years

Gender stereotypes need to be deconstructed from childhood onwards, by encouraging girls to take an interest in science/technology/math.

50% 14% 37%

Xavier, 64 years

We need to educate girls differently: maths is for them! Scientific professions also require a great deal of empathy.

43% 24% 33%

Catherine, 53 years

Parents need to be trained in gender stereotypes so that they can project their daughters into scientific careers.

50% 24% 26%

Evelyn, 34 years

We need to start by changing girls' toys and introducing maths at an early age.

44% 28% 28%

% votes “in favour” % “neutral” votes % votes “against”

Propositions initiales

Proposition	% pour	% contre	% neutre
We should make cybersecurity careers more tangible and less opaque	79%	8%	14%
We should deconstruct stereotypes around cybersecurity jobs.	74%	11%	16%
We should combat sexism in tech	68%	16%	17%
We should organize coding workshops for girls in primary and secondary schools.	46%	40%	15%
We should create attractive, dedicated scholarships for women going into IT fields.	51%	33%	16%
We should impose higher quotas for women on the boards of tech companies than the current law requires	44%	35%	21%
We should organize hackathons and coding competitions reserved for female teams	43%	37%	20%
We should develop cybersecurity retraining programs specifically targeting women.	50%	34%	16%
We should impose quotas in the media for a more balanced representation of professionals in cybersecurity roles	41%	30%	29%
We should create incubators and investment funds dedicated to tech startups founded by women	48%	29%	23%
We should integrate education on gender stereotypes into computer science training	50%	28%	22%
We should create professional networks and support communities for women in cybersecurity	51%	24%	25%
We should establish math ambassadors in every class to encourage and support girls to choose a career in science	50%	23%	27%
We should create films and series featuring women in cybersecurity to inspire young girls to pursue this profession	57%	23%	20%
We should launch a major campaign to promote mathematics among young girls in primary and middle schools.	52%	17%	31%

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Key learnings

- Une forte participation : Plus de 93 000 votes ont permis de hiérarchiser les 568 propositions soumises. Un très bon engagement de la part des participants.

- Une consultation majoritairement controversée : 60 % des votes qualifient la consultation de « controversée ». En revanche, la zone de consensus est beaucoup plus riche et diversifiée en termes de sujets. La zone de controverse est moins riche et présente moins de sujets, comme les quotas, l'éducation genrée ou l'isolement des femmes dans certaines activités - des sujets controversés classiques dans nos consultations.

- Un profil de participants majoritairement masculin : Les hommes représentent 61 % des participants, ce qui pourrait expliquer le caractère controversé de la consultation.

- Une audience jeune : Deux tiers des votants ont moins de 35 ans, sans doute en raison de la nature du sujet, qui implique des discussions sur la formation, un domaine touchant particulièrement les jeunes. La publicité, principalement diffusée sur Instagram, a contribué à engager cette tranche d'âge. En Allemagne également, ce sont les moins de 35 ans qui ont le plus participé.

- Une diversité thématique : Les propositions couvrent des sujets variés comme l'éducation et le développement des compétences, les politiques de recrutement, les évolutions culturelles et sociétales etc. Ces sujets incluent des solutions concrètes applicables dans les écoles ou les entreprises.

- Des opportunités pour des ateliers futurs : les idées se distinguent par leur clarté et leur faisabilité, offrant un réel potentiel pour la création d'ateliers. Cela rappelle des consultations précédentes, telles que celle en collaboration avec Degroof sur la parentalité au travail, où des idées similaires avaient permis de générer des pistes d'actions pragmatiques et directement exploitables.