



How to Inspire, Motivate and Form the Future Generation of Girls in STEAM

The Experience of Girls in Technology (Chicas en Tecnología) in Argentina - Mariana Varela, Chicas en Tecnologia



AGENDA

- 1- Introduction
- 2- Why there aren't many women in tech
- 3- How to influence in STEAM
- 4- How stereotypes affect us
- 5- Lack of gender diversity
- 6- What we do in Chicas en Tecnología
- 7- What you can do



CHICAS EN TECNOLOGÍA

We are a Civil Association dedicated to closing the gender gap in technology and entrepreneurship.



Melina Masnatta
Educational Science



Mariana Varela
Graphic Design



Carolina Hadad
Computer Science



Sofia Contreras
Entrepreneurship

+ 14 people team
permanent staff & volunteers per event of project



<< Rewind



文部科学省奨学金

2012-2014

慶應義塾大学湘南藤沢キャンパス

政策・メディア研究科



Graduate School of
Media and Governance

An interesting talk with a good
friend happened in Tokyo a
couple of years ago

What kind of impact can we make in future services and products if there aren't many of us around?

THE PROBLEM

Jobs in technology are the fastest growing ones in the world. However, **girls are falling behind.**

While girl's interest in technology fades over time, the biggest drop occurs between the ages of **13** and **16** years old.



37%

In 1984, 37% of graduates in computer science and related careers were women



▼ 16%

At present, that number has dropped dramatically

THE GENDER GAP IN
TECHNOLOGY HAS INCREASED
SINCE THE 80'S

“They just don’t care”

“The feminine touch”

“better dealing with people, not machines”

“Maternal instinct”

“Not good at math”

“Their talents are somewhere else”

BOY'S GAMES 1980

Turn your TV into the most exciting home video game ever.



Serve...return. You move to the net for a volley and, when your opposing player rallies, you stroke the electronic ball past him... for a point!

This is Tennis, played on the all-new Odyssey, the most-exciting home video game you can get for your own TV.*

Odyssey is high-speed action—and reaction—with realistic sound and on-screen scoring (Model 200).

You control the flight of the ball and pace of the games; games that are fun for the whole family: Tennis (singles and doubles), Hockey and Smash.

Put TV's fun and excitement on your side of the screen. Get—and give—Odyssey.

For the name of your Odyssey dealer, call 800-243-6100, toll-free. (In Conn.: 1-800-882-6500.) [pong-picture-page.de](#)



*Odyssey fits any brand TV, any size, black & white or color.

ODYSSEY.
All new from Magnavox.

SEGA GENESIS The Ultimate Joystick for SEGA Genesis!

GRAB THE CLUTCH

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POWER CLUTCH SG.™
The Super Sonic Control System for Turbo Power Propulsion.

- ADJUSTABLE TURBO CONTROL for each button means maximum power at your fingertips!
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PLOC DÁ 150 ATARI COM 3 CARTUCHOS CADA.

CERT. AUT. N.º 0100056983 de 02/12/83

thevintagetoyadvertiser.org

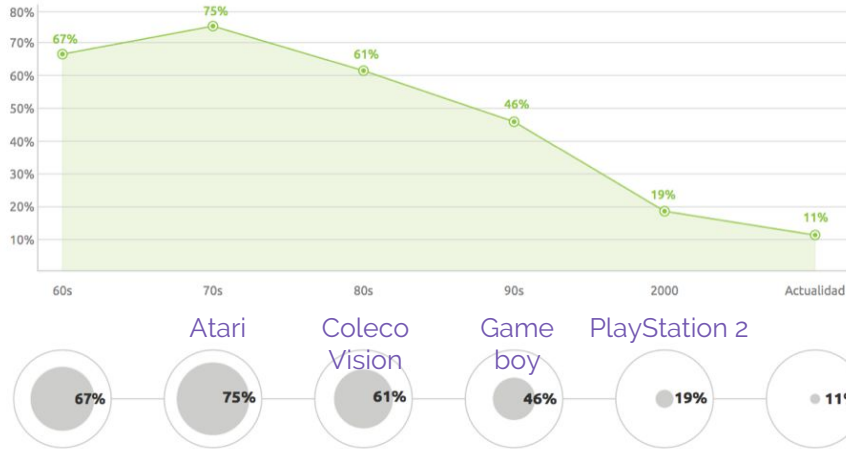
FAÇA UMA FRASE OU SLOGAN SOBRE PLOC, JUNTE COM 5 EMBALAGENS DO CHICLE DE BOLA PLOC DE QUALQUER SABOR E MANDA PARA O "SUPER CONCURSO PLOC": CAIXA POSTAL Nº 62.571 - CEP 01000 São Paulo. E concorra a 150 ATARI COM 3 CARTUCHOS CADA. Mande quantas cartas quiser.

PROMOÇÃO VÁLIDA PARA CARTAS RECEBIDAS ATÉ 31/08/84

COLLATERAL DAMAGE

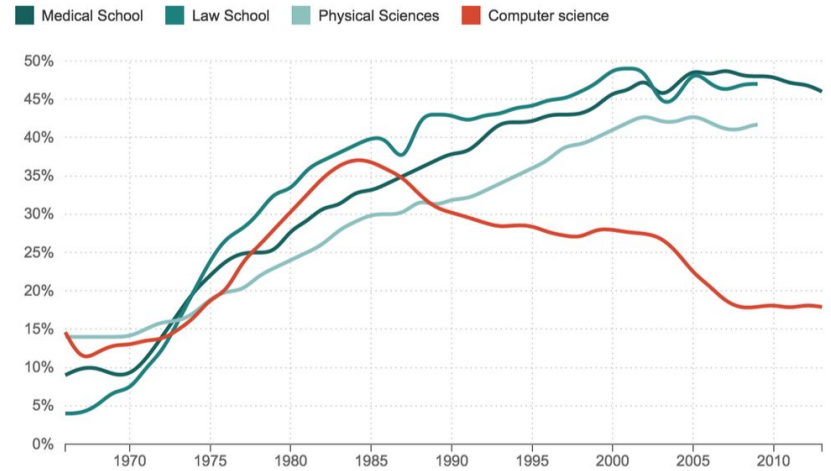


WOMEN IN COMPUTER SCIENCE IN ARGENTINA



Carreras de Ciencias de la Computación y Lic. en ciencias de la Computación

WOMEN IN COMPUTER SCIENCE IN USA



Source: National Science Foundation, American Bar Association, American Association of Medical Colleges
Credit: Quoctrung Bui/NPR

GIRL'S TOYS 1980 AND TODAY



FASHIONISTAS®



**DON'T YOU HAVE ANYTHING
RELEVANT TO SAY?**

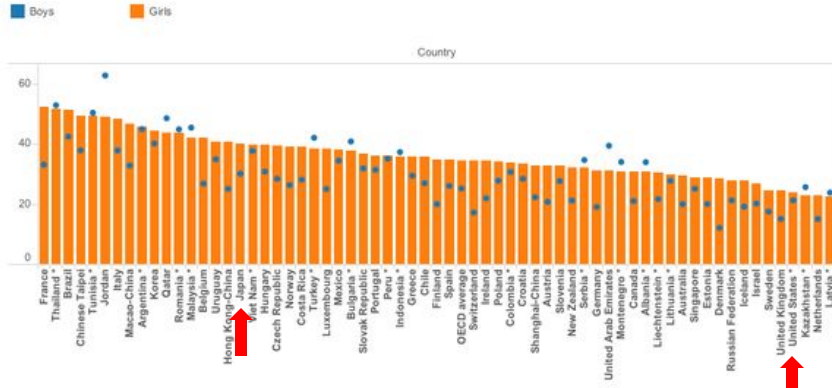


Thinking too much gives you wrinkles.

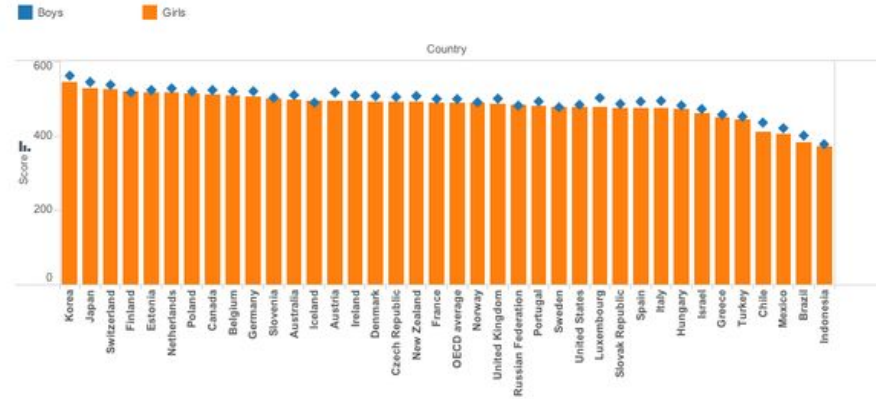


STACY:
Don't ask me. I'm just a girl.

Children's toys, games
and movies influence
in their career choices.



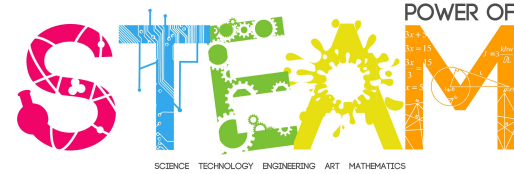
Source: OECD Pisa 2012 Database. Note: An asterisk next to the country name denotes countries where the gender gap is not statistically significant.



Girls think they do bad at math....

... Reality shows that they do as good as boys

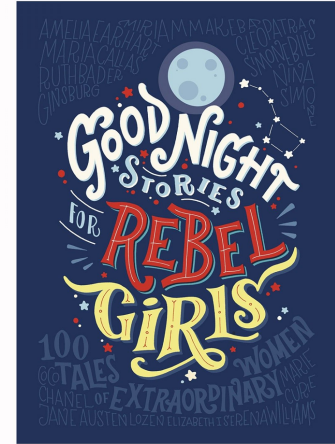
HOW TO INFLUENCE INTO



1- Encourage girls to find what they are good at and what feels is good for them.



2- Foster their attitude regarding science (if they think science is important, useful and interesting).



3- Introduce her to role models, stories of challenges and success.

**"Young girls need
to see role models
in whatever careers
they may choose. ...
You can't be what
you can't see."**

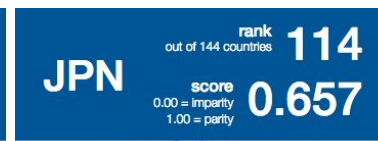
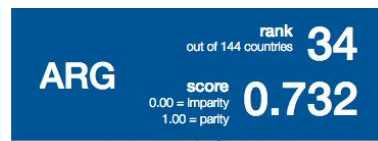
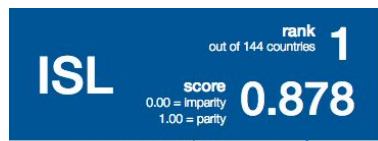
**Dr. Sally Ride, first
American woman
to travel in space**



A close-up photograph of a person's hands typing on a silver laptop keyboard. The person is wearing a green top and a gold bracelet. In the foreground, there are several sheets of white paper and a smartphone lying on a dark surface. The background is blurred, showing other people in a meeting or office setting.

There are no innate or natural factors

Real numbers show the
gender gap

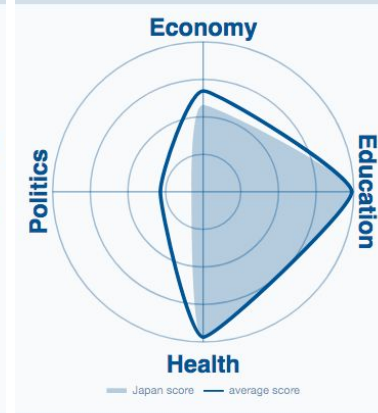
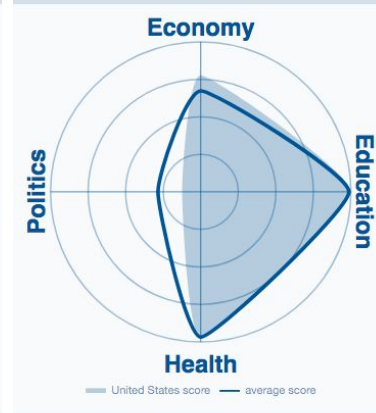
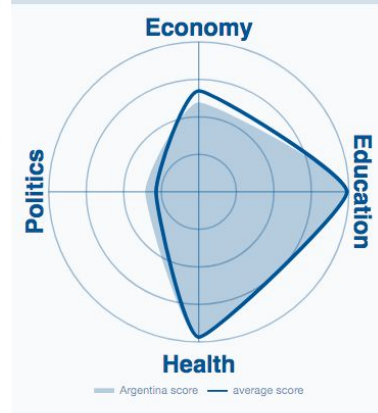
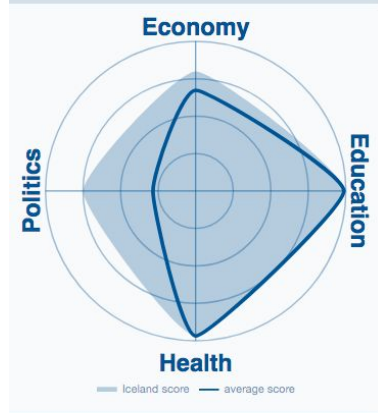


SCORE AT GLANCE

SCORE AT GLANCE

SCORE AT GLANCE

SCORE AT GLANCE



KEY INDICATORS

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KEY INDICATORS

KEY INDICATORS

GDP (US\$ billions)	20.05
GDP per capita (constant '11, intl. \$, PPP)	45,276.45
Total population (1,000s)	332.47
Population growth rate (%)	0.72
Population sex ratio (female/male)	1.01
Human Capital Index score	71.44

GDP (US\$ billions)	545.87
GDP per capita (constant '11, intl. \$, PPP)	18,479.44
Total population (1,000s)	43,847.43
Population growth rate (%)	0.97
Population sex ratio (female/male)	0.96
Human Capital Index score	64.34

GDP (US\$ billions)	18,569.10
GDP per capita (constant '11, intl. \$, PPP)	53,272.52
Total population (1,000s)	322,179.61
Population growth rate (%)	0.70
Population sex ratio (female/male)	0.98
Human Capital Index score	74.84

GDP (US\$ billions)	4,939.38
GDP per capita (constant '11, intl. \$, PPP)	38,239.77
Total population (1,000s)	127,748.51
Population growth rate (%)	-0.19
Population sex ratio (female/male)	0.95
Human Capital Index score	72.05

	2006	2017
	rank score	rank score
Global Gender Gap sc...	4 0.781	1 0.878
Economic participation ...	17 0.711	14 0.798
Educational attainment	50 0.991	57 0.995
Health and survival	92 0.968	114 0.969
Political empowerment	4 0.456	1 0.750

	2006	2017
	rank score	rank score
Global Gender Gap sc...	41 0.683	34 0.732
Economic participation ...	82 0.551	111 0.596
Educational attainment	29 0.997	44 0.998
Health and survival	1 0.980	1 0.980
Political empowerment	23 0.204	21 0.356

	2006	2017
	rank score	rank score
Global Gender Gap sc...	23 0.704	49 0.718
Economic participation ...	3 0.759	19 0.776
Educational attainment	66 0.982	1 1.000
Health and survival	1 0.980	82 0.973
Political empowerment	66 0.097	96 0.124

	2006	2017
	rank score	rank score
Global Gender Gap sc...	80 0.645	114 0.657
Economic participation ...	83 0.545	114 0.580
Educational attainment	60 0.986	74 0.991
Health and survival	1 0.980	1 0.980
Political empowerment	83 0.067	123 0.078

ISL rank **1**
out of 144 countries
score **0.878**
0.00 = Imparity
1.00 = parity

ARG rank **34**
out of 144 countries
score **0.732**
0.00 = Imparity
1.00 = parity

USA rank **49**
out of 144 countries
score **0.718**
0.00 = Imparity
1.00 = parity

JPN rank **114**
out of 144 countries
score **0.657**
0.00 = Imparity
1.00 = parity



WORLD ECONOMIC FORUM

日本は女性が輝く国
とならなくてはなり
ません。

Shinzo Abe, Prime Minister of Japan

KEY INDICATORS

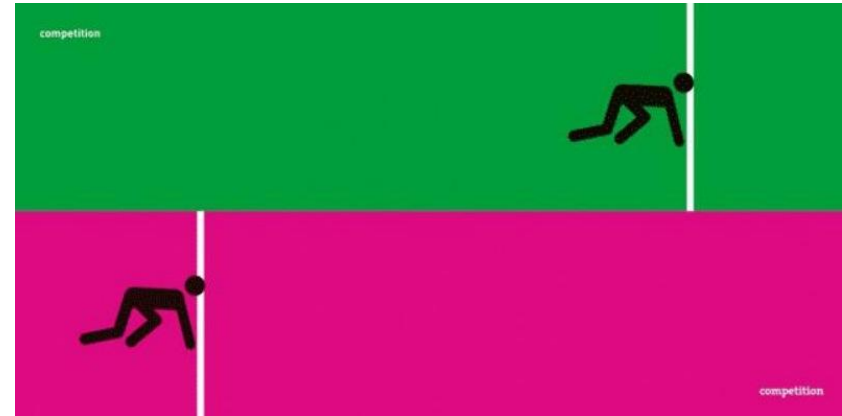
- GDP (US\$ billions)
- GDP per capita (constant price)
- Total population (1,000)
- Population growth rate
- Population sex ratio
- Human Capital Index

Global Gender Gap

Indicator	2017 rank	2017 score	2014 rank	2014 score	2006 rank	2006 score
Economic participation ...	17	0.711	14	0.798	80	0.645
Educational attainment	50	0.991	57	0.995	83	0.545
Health and survival	92	0.968	114	0.969	60	0.986
Political empowerment	4	0.456	1	0.750	1	0.980
Economic participation ...	82	0.551	111	0.596	83	0.545
Educational attainment	29	0.997	44	0.998	60	0.986
Health and survival	1	0.980	1	0.980	1	0.980
Political empowerment	23	0.204	21	0.356	83	0.067
Economic participation ...	3	0.759	19	0.776	19	0.776
Educational attainment	66	0.982	1	1.000	1	1.000
Health and survival	1	0.980	82	0.973	82	0.973
Political empowerment	66	0.097	96	0.124	96	0.124
Economic participation ...	83	0.545	114	0.580	114	0.657
Educational attainment	60	0.986	74	0.991	74	0.991
Health and survival	1	0.980	1	0.980	1	0.980
Political empowerment	83	0.067	123	0.078	123	0.078

What causes gender barriers?

- Stereotyped gender roles
- Lack of policies
- Lack of professional opportunities
- Lack of knowledge and information
- Lack of communities and networks that incentivize



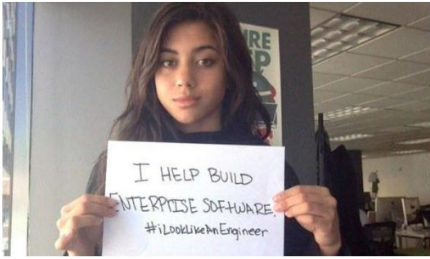
How do stereotypes
affect us?



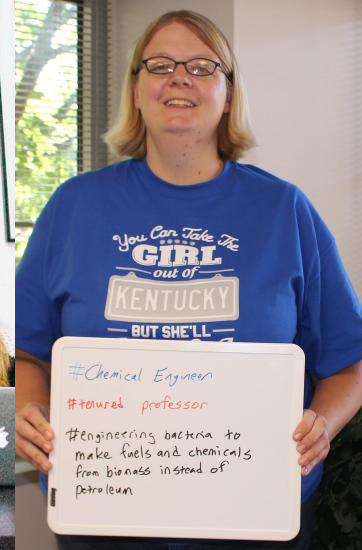
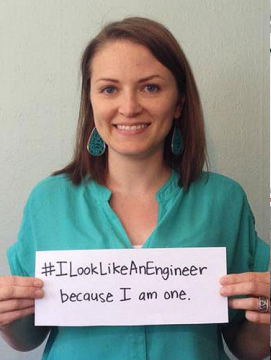
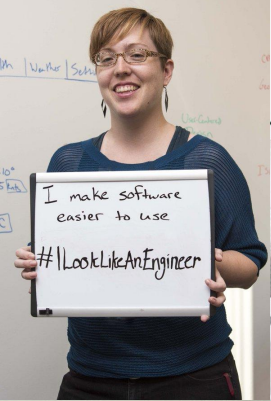
Women & the Leadership Labyrinth Howard vs Heidi

In 2002 a professor from the U. of Columbia takes the case of Heidi Roizen to compare results between two groups of students modifying a single word: change the name of Heidi to Howard. Then he surveyed the students and both groups and asked what they thought about Heidi and Howard...

- Howard is a great guy, you want to work with him or even go fishing with him.
- Heidi is self-centered and has a political bias. You can not rest assured working with her.



#ILookLikeAnEngineer

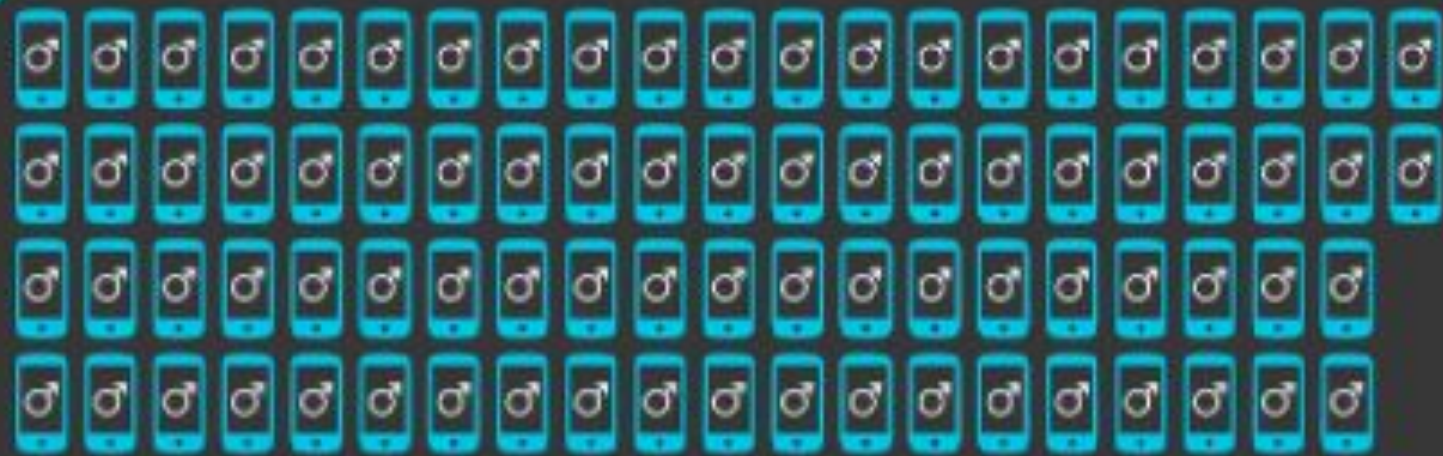


What happens when there is no diversity in teams?

Decisions are made by a very limited / like minded group of people.

GENDER DIVERSITY IN THE TECH INDUSTRY

82% MEN / **18% WOMEN**





**ONLY
10%**

**of Silicon Valley tech jobs
are held by women**



**ONLY
6%**

**of app developers
are women**



Equals, 2018

LACK OF GENDER DIVERSITY

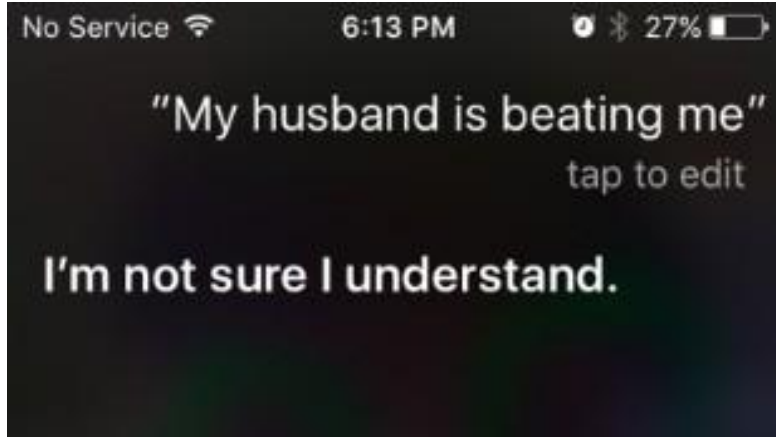


Until 2003, Airbag tests were not carried out with female dolls or children.

BECAUSE THERE WERE NO WOMEN IN THE TEAMS

<https://medium.com/hh-design/the-world-is-designed-for-men-d0664065449>

LACK OF GENDER DIVERSITY

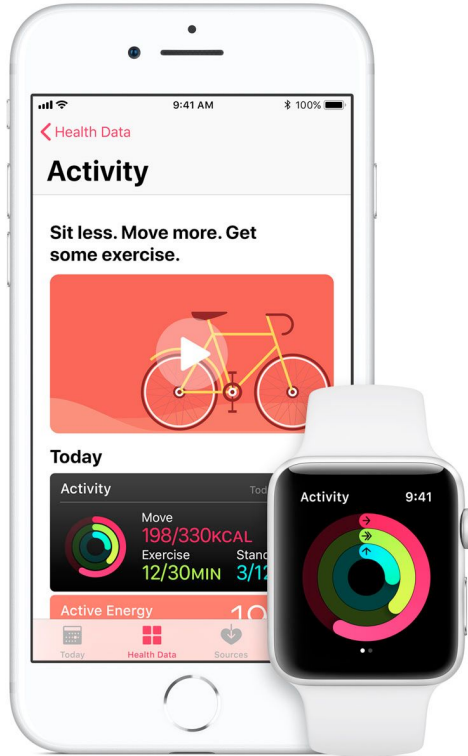


LACK OF GENDER DIVERSITY



Apple 5th
Avenue NY

LACK OF GENDER DIVERSITY



Heart



Body Measurements



Reproductive Health



Results



Vitals

* After some controversy in 2015, menstrual cycles and reproductive health were included in iOS Health

BENEFITS OF DIVERSE TEAMS



Innovation

Different cultural perspectives
inspire creativity and innovation



Competitive

Knowledge and understanding of the local market
make a company more competitive and profitable



Skills

Different skills allow to offer a wider and more adaptable range of products and services




Talent

A culturally diverse talent pool allows an organization to **attract and retain the best talent**



Productivity

Diverse teams are more **productive and work better**



What we do in Chicas en Tecnología

I love going out dressed
like a woman and get
hit on by men [22 M]

THE SOLUTION

It is necessary to **break the stereotypes** that are generated around these areas and make more young women get interested in technology sectors from an early age. Not just as users, but also as creators and entrepreneurs



OUR PROGRAMS



WE INSPIRE, MOTIVATE AND FORM GIRLS IN HIGH SCHOOL AGE



BREAK WITH STEREOTYPES AROUND WHAT IT MEANS TO WORK IN THE TECH FIELD



WE APPLY, DEVELOP AND VALIDATE WORK METHODOLOGIES



WE IMPACT ON LOCAL AND NATIONAL COMMUNITIES

ALL OF OUR PROGRAMS ARE FREE

+1000

to graduate in 2018



Programando un Mundo Mejor



Clubes CET



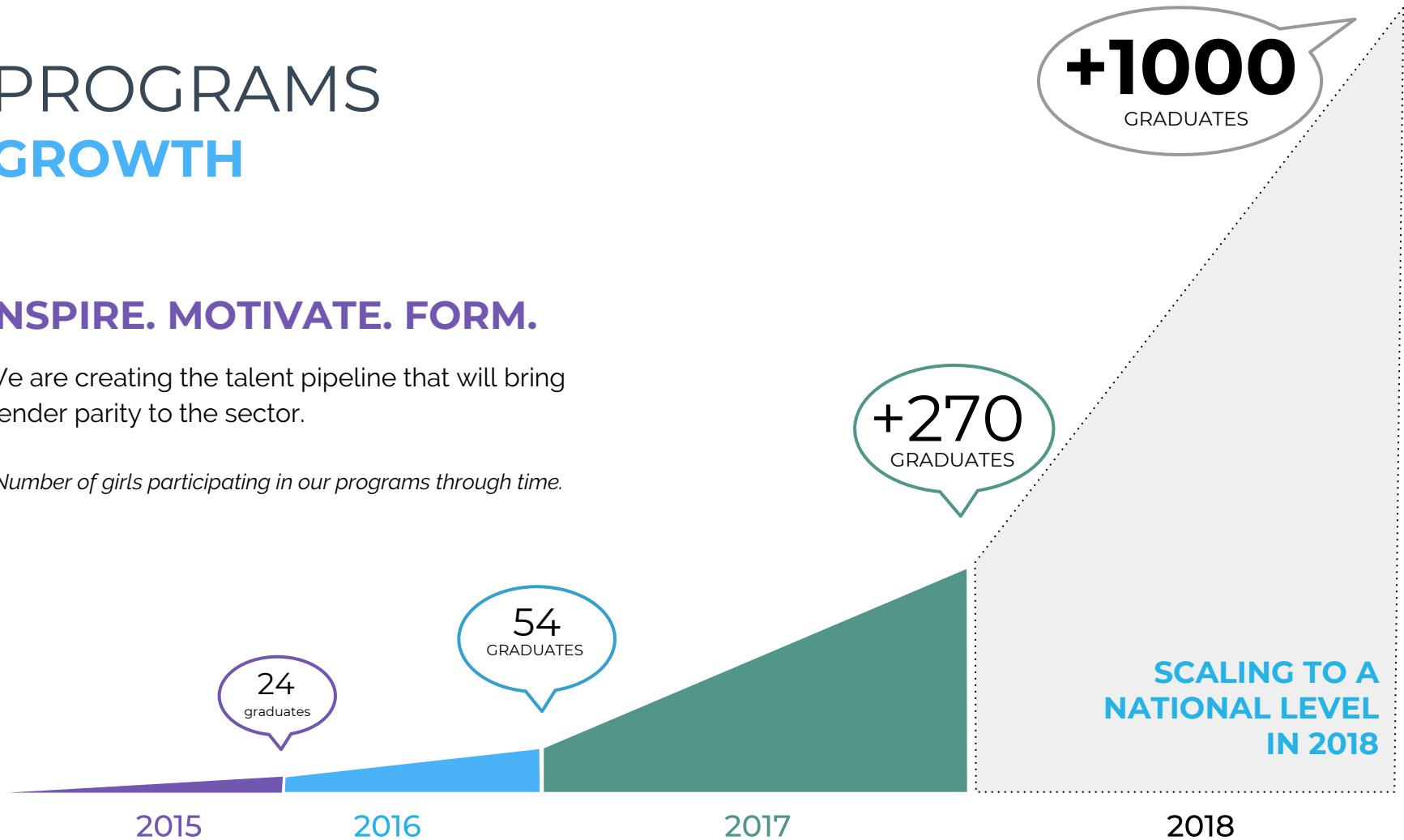
Comunidad CET

PROGRAMS GROWTH

INSPIRE. MOTIVATE. FORM.

We are creating the talent pipeline that will bring gender parity to the sector.

** Number of girls participating in our programs through time.*



METHODOLOGY



EDUCATION



ENTREPRENEURSHIP



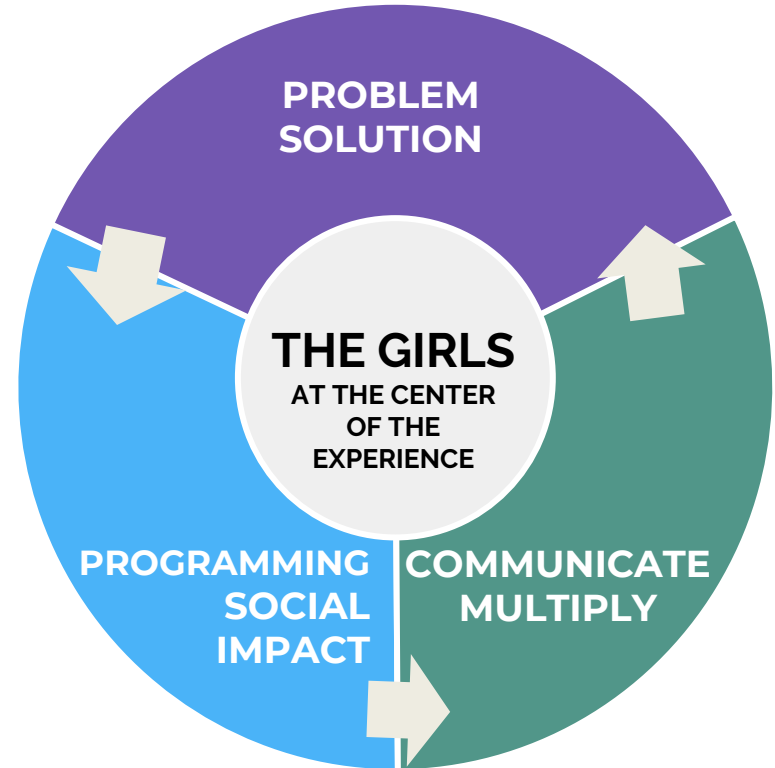
GENDER



TECHNOLOGY

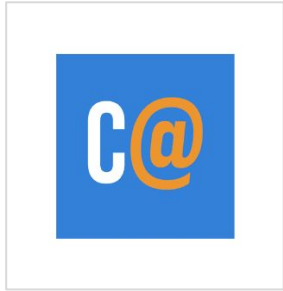


LEADERSHIP

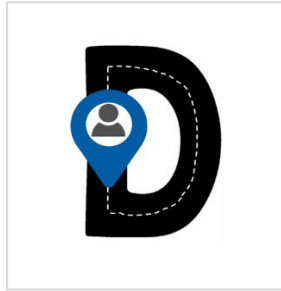


THEIR DEVELOPMENTS

Some of the APPS with social impact developed by the girls



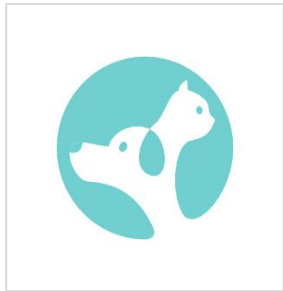
Contectad@s



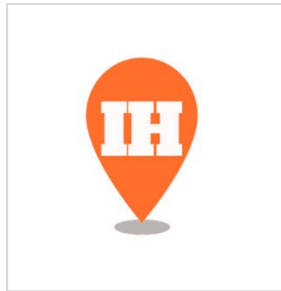
don.ar



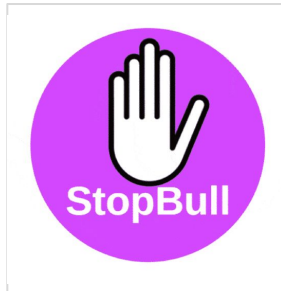
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Mascotify



I'm Here

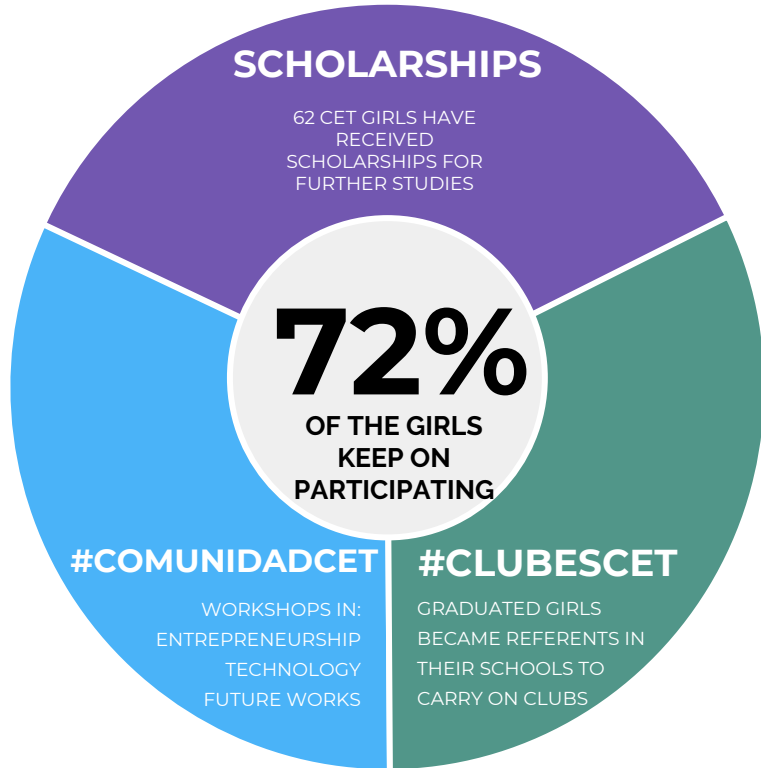


StopBull



...and many more

SUSTAINABILITY



STUDY YOUR ECOSYSTEM

Find **specific data** about women, where they are, how many. Set goals.

Report their problems: Harassment, discrimination, stereotyping.

Raise their voices: Find them, celebrate them, bring them to panels and talks.



ACT AND WAIT FOR IMPACT



Organize workshops: Technical & Non-technical. Bring girls & women together.

Rise awareness: Talk about this issue in conferences like this ;) +friends +coworkers

Articulate **concrete actions** to end stereotypes like we do in CET.

A vibrant, stylized illustration of a futuristic, space-themed environment. In the background, a woman with short blonde hair in a grey jumpsuit with planet patterns stands near a control panel with two monitors. In the foreground, a woman with long dark hair sits at a desk with a laptop. To the right, a woman with long blonde hair is shown in profile, holding a pink handheld device with a lightning bolt and the text 'CLUB VEGHATT?'. The scene is filled with stars, nebulae, and various technological elements, all rendered in a soft, pastel color palette.

CHICAS EN TECNOLOGÍA

どうもありがと
うございました。

<http://bit.ly/CETreport2017EN>
www.chicasentecnologia.org
[@chicasentec](https://twitter.com/chicasentec)
[/chicasentecnologia](https://www.facebook.com/chicasentecnologia)