
GOVERNMENT MEASURE BARCELONA, CITY OF TALENT

To promote municipal policies for talent creation,
development, attraction, reception and for
fostering talent loyalty in Barcelona

DIGITAL TALENT OPERATING BALANCE SHEET 2019-2023



Ajuntament de
Barcelona



Barcelona
Activa

DIGITAL TALENT 2019-2023
OPERATING BALANCE SHEET

**Government Measure. Barcelona, city
of talent**

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Digital talent 2019-2023

Operating balance sheet

October 2022

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1. CONTEXT

1.1 TALENT, A DRIVING FORCE FOR ECONOMIC REACTIVATION

Barcelona Activa's Digital Talent Promotion Department has set the following strategic objectives for the period 2019-2023:

1. Boost the generation, development and attraction of talent in Barcelona
2. Contribute to the competitiveness and digital transformation of the city's productive network
3. Reduce the digital gap in the city, in all its dimensions
4. Contribute to the promotion of scientific and technological vocations
5. Position Barcelona as a digital hub of reference in Southern Europe

These objectives come under the **Barcelona Green Deal's** Priority 2, "Barcelona Digital Capital", and Priority 3, "Barcelona City of Talent", **and seek to build an economic model for the future, advancing the city's digital capacity and promoting new spaces to promote the digital economy.** With an inclusive perspective, it also aims to ensure that the use of technology responds not only to everyday problems but also the major concerns a city like Barcelona faces.

Among these strategic objectives, a commitment has been made to train 3,000 digital professionals in the period 2020-2024 through the ambitious IT Academy initiative.

The actions and projects needed to achieve these strategic objectives are reflected in the Barcelona, City of Talent Government Measure, which identifies digital talent as one of the key drivers of economic reactivation, sets out as a challenge the growth of the population employed in the fields of science and technology, and affirms the value of talent as a business attraction asset.

At the operational level, these goals translate into a series of services and programmes, special projects and other products, which are detailed below.

2. SERVICES AND PROGRAMMES

The catalogue of Services and Programmes of the Digital Talent Promotion Department is organised as follows:

2.1 PROMOTING SCIENTIFIC AND TECHNOLOGICAL VOCATIONS

This is the first level of intervention to promote digital talent and is characterised by a series of medium- and long-term public policies aimed at disseminating digital culture and boosting STEAM vocations, especially among girls.

Highlighted below are the main milestones achieved in the period 2019-2022 (first semester):

- **Barcelona STEAM Plan:** Barcelona Activa promotes and coordinates this network of entities, which offer specific programmes to develop computational thinking and bring technology and technological infrastructure closer to the educational community (students, teachers and families). It works in coordination with Barcelona Supercomputing – Marenstrum (“We are Researchers” STEAM project, which in 2021 received the National Prize for Scientific Communication), universities such as UPC and Deusto, and the Barcelona Education Consortium (CEB) as the main partner.
- **STEAM Antennas network:** Barcelona Activa has activated a set of STEAM points located in the municipal libraries network, which offer specific activities aimed at experimenting with technology in a practical and fun way, and are usually extended in scope during the Christmas, Easter and summer holidays.
- **Nou Barris Digital Fab Lab:** As part of the training programme of this Barcelona Activa facility, a specific digital manufacturing teaching programme has been created, aimed at the district’s school children, to popularise and promote the dissemination of the maker technologies.
- **“Niñas en pie de ciencia” (Girls ready for science) STEAM Alliance for female talent.** Barcelona Activa has joined this initiative promoted by the Ministry of Education and Vocational Training, which aims to combine efforts in seeking synergies among administrations, companies, organisations, educational centres and the media to promote STEAM careers among girls and young women. The Alliance is committed to promoting specific initiatives to eliminate gender stereotypes associated with certain careers and professions, to boost female empowerment in STEAM disciplines and to eliminate the gender gap that is manifested in young women’s limited access to these subject areas.

- **Code.org:** Barcelona Activa supports this international initiative, which aims to give every school pupil in the world the opportunity to learn computer science, and to ensure that this subject is understood as a fundamental discipline in the culture of the digital society.

Together with Barcelona Activa, Code.org will be able to connect with the local educational community to make the content more accessible, and at the same time foster awareness and dissemination environments and create a computer science observatory in the city of Barcelona.

In the long term, and alongside and in coordination with the Barcelona Education Consortium, Code.org aims to help incorporate programming as a subject in the curriculum, like it is in countries such as the USA and Finland.

Summary of the main indicators:

Year	Participations	Girls	No. actions
2019	10,139	72%	65
2020	2,973 (*)	31%	11
2021	6,173	48%	46
2022**	4,879	49%	111
Total	24,155	45%	233

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(*) From March 2020 to the end of 2021, face-to-face activities with children were restricted due to Covid-19.

(**) First semester

2.2 TECHNOLOGICAL TRAINING

This second block of actions includes Barcelona Activa's technological training catalogue, aimed at promoting digital talent and improving technological skills, both in the professional arena and in the use of technology for everyday life.

The block is divided into three levels: the basic or IT literacy level, the main aim of which is the fight against the digital gap; the specialist level, which focuses on training and dissemination to improve digital skills; and the advanced level, through which the digital talent gap is tackled to help the city become consolidated as a digital talent hub.

2.2.1 Basic technological training: Cibernàrium Antennas

As mentioned above, the aim of the basic technological training is to contribute to combating the digital gap in Barcelona, especially in the areas of the city where this gap is most apparent. This is done through the Cibernàrium Antennas, located in the multimedia spaces of the municipal libraries, where the training programmes are regularly scheduled. A socialisation strategy is also being deployed, which contributes to raising citizen awareness of the need for technology for their digital and social inclusion.

Highlighted below are the main milestones achieved in the period 2019-2022 (first semester):

- **Expansion of the Cibernàrium Antennas Network**, located in the municipal libraries, up to a maximum of 10 points.
- **New Cibernàrium Antennas: Canòdrom Antenna** (training based on free software) in collaboration with 6TA; **Plaça Catalunya Antenna** (Movistar Centre), in collaboration with Telefónica; and a new basic technological training point in the new **Nou Barris Cibernàrium**.
- Through the Cibernàrium Network, new formats such as **Masterclass in the territory**, to raise awareness of the need to use technology as an element of social inclusion and to improve quality of life.
- **Integration of basic technological training into Barcelona Activa's set of employment programmes**, such as "Passarel·les cap a l'Ocupació" (Gateways towards Employment), the Digitalisation Plan for Markets and Shops, "Garantia d'Èxit" (Guaranteed Success), the Reference Youth Employment Programme and the Training and Work Programme. These employment programmes are aimed at vulnerable groups, with training in digital skills incorporated as a core and cross-cutting element in the training programme. Likewise, the services made available through the Cibernàrium Antennas have been included in the Connecting-Zero Gap Project (*Projecte Connectem-Bretxa 0*), a pilot project developed in Trinitat Nova and promoted by the Digital Transition Commission.

Main partners: Libraries Network, Area for Social Rights, Area for Culture, Education, Science and Community, Telefónica and the Digital Innovation Commission.

Data 2019-2022 (first semester):

Year	People	Women	No. actions
2019	2,108	66%	1,258
2020	3,311	71%	1,055
2021	3,172	73%	1,276
2022	1,954	70%	729
Total	8,963	70%	4,318

2.2.2 Specialist technological training: Cibernàrium

The aim of this training offer is technological dissemination and the provision of specialist digital skills to people who are job seeking or in a process of professional improvement, and includes programmes especially aimed at specific audiences (for example, digitalisation plan for small businesses, technological skills for the educational community, etc.).

The offer consists in a catalogue of onsite training that takes place at the Cibernàrium 22@ and the Nou Barris Cibernàrium, and a catalogue of virtual training (in synchronous and asynchronous formats).

Highlighted below are the main milestones achieved in the period 2019-2022 (first semester):

- **Inauguration of the new Nou Barris Cibernàrium.** This new facility has been opened with the aim of bringing technological skills acquisition closer to citizens, with special emphasis on Nou Barris residents and their area of influence, interacting with the district's business, neighbourhood and cultural ecosystems.
- Three editions of the **Digital Skills Congress**. This congress is organised annually in conjunction with UOC, Ramon Llull University and Generalitat of Catalonia. National and international experiences in technological dissemination and training are presented at this conference, and the key role of digital skills in the professions of the future is highlighted. The congress is approached from a very practical perspective, providing resources and tools for academic and professional prescribers.
- Regular training on digital manufacturing given at the **Technology Park Antenna** to disseminate and popularise the *maker* technologies.
- Boosting formats that promote **the dissemination of emerging technologies**, such as Masterclasses on innovative aspects related to ICT and other formats such as Meet-ups, thematic cycles (digital humanism, journalism, communication and technology) and InnoDiàlegs (dialogues on business innovation).
- **Programmes to improve the digital skills of the educational community**, implementing a wide range of skills acquisition activities in ICT tools and methodologies applied to education, in coordination with the Barcelona Education Consortium (CEB). Almost 4,500 teachers have been trained in digital skills in this period.
- **New Interactive Digital Skills Self-Assessment Tool.** This tool enables the competence profile of the user to be ascertained (strong and weak points, level in each competence) and, based on the result, suggests a personalised training itinerary to advance their knowledge and use of technology. Over time, the tool will facilitate the accumulation of data to obtain an X-ray of citizens'

level of digital skills, which will facilitate the design of public policies and allow their impacts to be evaluated.

Main partners: CEB, BCN Vocational and Education Training Foundation, College of Journalists, ITC entities and stakeholders linked to the Cibernàrium Advisory Committee.

Data 2019-2022 (first semester):

Year	People	Women	No. actions
2019	9,614	62%	2,586
2020	16,580	64%	3,407
2021	12,794	65%	3,448
2022	6,519	64%	1,715
Total	35,047	64%	11,146

2.2.3 Advanced technological training: IT ACADEMY

The priority line in this period is a clear commitment to respond to the growth and competitiveness needs of the city’s business network through digital talent.

The IT Academy clearly helps to position Barcelona as a digital capital and complies with one of the priorities of the Barcelona Green Deal agenda which, as stated at the beginning of this document, is to train 3,000 male and female programmers in a 5-year period (2020-2024).

It also opens up new and quality job opportunities for people who are unemployed or who want to make a career move towards the ICT sector, one of the professional fields with the greatest projection and economic prospects for the future.

To respond to the city of Barcelona’s Digital Talent needs, the IT Academy divides its training actions into two large blocks:

- Reskilling: these are all the training actions focused on supporting a person in their job conversion process towards the IT sector.

These actions are mainly concerned with web development. This discipline is the one that requires the least technical level within the various IT profiles, and is the ideal gateway to start a professional career which, over the years, can lead to other professional profiles with high demand and more technical difficulty. It is also the segment with the highest volume of job offers within the IT sector.

- Upskilling: one of the main characteristics of the IT sector is the high technical complexity. Every year, new tools appear (Big Data, AI, ML) and new professional

profiles are required by a constantly evolving job market. The training actions in this area aim to improve/update technical skills or acquire new ones, so that a person working in the sector can either improve in their area (Cyber-security) or move into other specialities (from Back End Developer to DevOps).

Highlighted below are the main milestones achieved in the period 2019-2022 (first semester):

- **Growth of the IT Academy** by 264% from 2019 to 2022, achieving 60% of the goals set in the Barcelona Green Deal by June 2022.
- **Reformulation and adaptation of the IT Academy model** to provide greater coverage without reducing the quality of the service and guaranteeing good labour market insertion rates.
- Positive actions to facilitate the inclusion of **women in the IT Academy, reaching 40% female presence in 2022.**
- Implementation of new models to connect students and companies, such as marketplaces, speed dating and hackathons.
- Broad connection with the business network, reaching 353 companies, 70% of which are from the IT sector. Notable among the companies that have placed their trust in the IT Academy are NTT Data, Accenture, Freelance, Webhelp, Apple, Copernic, Altran, Bable Information Systems, GFT Group and Capgemini, among others.
- Leadership of the training and business prospecting area within Barcelona Digital Talent.
- New look and feel of Cibernàrium 22@ with greater presence of the IT Academy image.
- Implementation of **PPP initiatives**, adding to the challenges set out in the Barcelona Green Deal and contributing to improving the objectives of reducing the digital talent gap prioritised by Barcelona City Council.
- On this last point, two complementary collaborations at the IT Academy stand out, which correspond to the same objective:

42Barcelona, Telefónica Foundation's innovative programming campus, located in the Barcelona Activa Technology Park, which complements the IT Academy and was made possible thanks to the backing of the City Council and its commitment to digital talent.

The two initiatives – IT Academy and 42Barcelona – help empower digital professionals and make available to the economic and business network of the city an offer of highly qualified digital talent, which contributes to the competitiveness and innovative capacity of the economic, entrepreneurial

and scientific business ecosystems. In turn, these will contribute to Barcelona's ability to compete in global technology hubs.

Another noteworthy example of a PPP collaborative initiative is the **BCNFem-Tech Project**. In this case, and with the involvement of **Endesa**, Barcelona City Council's Area for Social Rights, Global Justice, Feminism and LGBTI, the entities Factoria F5 and Training and Work Foundation, a project has been developed to promote digital talent aimed at reversing the digital gender gap among women in vulnerable situations (long-term unemployment, irregular administrative situation, gender-based violence victims, etc.). With this objective in mind, an inclusive and free bootcamp was created, giving 50 women in vulnerable situations the opportunity to take a 6-month (850 hours) digital training course and gain access to the labour market as full stack web development professionals.

BCNFemTech students have joined the IT Academy's job seeking support processes and taken part in all the cross-disciplinary training linked to emerging technologies.

In 2022, the IT Academy was a finalist in the Eurocities awards for boosting digital transformation in Barcelona, with technological programmes and training that respond to the talent needs of the city's companies.

Main partners: Telefónica Foundation, MWC Foundation, Endesa and key digital ecosystem stakeholders, such as CTecno.

IT Academy data 2019-2022 (first semester):

Reskilling	People that have completed the training	Women	Insertion index
2019	246	36%	78%
2020	254	35%	77%
2021	445	34%	82%
2022	462	42%	82%
Total	1,855	37%	82%

Reskilling and Upskilling	People	Women	Insertion index
2019	1,184	48%	58
2020	912	45%	38
2021	2,535	42%	141
2022	1,615	42%	71
Total	5,247	45%	308

Taking as references the Digital Talent Monitor and the Digital Talent Overview published annually by Barcelona Digital Talent, and based on the IT Academy reskilling training, FMWC helps generate 11% of the city of Barcelona's IT professionals, complementing the generation of IT professionals coming from other bootcamps, universities, vocational training cycles, etc.

3. DIGITAL TRANSFORMATION OF BARCELONA ACTIVA TRAINING

One of the major challenges of this period has been the digital transformation of Barcelona Activa's services, promoting the incorporation of technology, the modification of procedures, and leading a cultural change aimed at incorporating the digital approach both in the design and the provision of products and services across the company.

First, and revolving around ERDF funding (2018-2021), an ambitious project to digitalise educational content has been promoted to create a broad portfolio of online courses (e-learning) that are permanently available and constantly updated. And second, a re-engineering of the training services delivery model has been undertaken with the deployment of virtual classrooms, facilitating streaming training (video conference).

Highlighted below are the main milestones achieved in the period 2019-2022 (first semester):

- **Virtual Classrooms.** Launching, leading and consolidating the digitisation of regular training content in streaming format that began in 2020 in the wake of the Covid-19 crisis, designing the system and adapting the protocols, which have been applied throughout the company.
- Creating **new digital resources (microcapsules)** for easy consultation from mobile devices, thereby providing a self-consumption virtual offer that complements the synchronous virtual and face-to-face ones.
- **Expanding and consolidating the digitalisation service for training** (ERDF operation), which takes the form of a regular portfolio of asynchronous online courses that allow universal and 24/7 access to both technological and Business, Entrepreneurship and Socioeconomic Innovation training content, all in a cross-cutting way.
- Evolution of Barcelona Activa's training model from 100% face-to-face to a **face-to-face, virtual and mixed format combination** to expand and facilitate access, and to respond to users' new consumption habits regarding training.
- Barcelona Activa's **White Paper on the Digitalisation of Training Services**, a publication that gathers experiences in the field of digitalisation between 2011 and 2021 as part of the corporate strategy. The results of the operation are detailed, and a critical analysis is made of the successes and the problems that have arisen, making the conclusions available to other institutions that want to undertake similar processes.

- **Assignment of online training content and advice to other institutions** that have recognised the Barcelona online training model as a good practice. Some examples are BSM, Barcelona City Council's in-house training area, El Prat de Llobregat City Council and Masquefa City Council, among others.
- Boosting the corporate commitment of the training team. Barcelona Activa has a network of 400 trainers, organised into teams belonging to different supplier companies and unrelated to each other which, in many cases, provide regular, although infrequent, training. Work has been done to build community, foster a spirit of corporate commitment and identification with Barcelona Activa's values through the organisation of the **I and II Knowledge Network – Meeting Barcelona Activa's Expert Team** and, since 2021, promote a regular corporate programme of trainer training.

Data 2019-2022:

- Creation and functioning of 289 online courses (asynchronous training), equivalent to 785 hours of technological, entrepreneurship, business, equality, ISE and urban industry skills acquisition training.
- More than 60,000 completed training courses, serving more than 26,000 different people (an average of 3 courses per person), and still ongoing.
- Creation of **81 microcapsules** to explain simple concepts, mainly aimed at people who require digital literacy.
- **5,538 virtual classrooms** (synchronous training) and nearly 93,170 participations since 20 March 2020, involving 22,751 different people (64% women).
- Creation of 83 online courses to support the implementation process of digitalisation plans for the small business sector. More than 1,000 companies have already benefited and 6,048 people (66% women) have consumed nearly 1,200 hours of online training.

This period has also coincided with the **Cibernàrium's 20th anniversary**. An open day with activities for citizens was organised for the occasion and a report was published, featuring a collection of the Cibernàrium's main milestones between 1999 and 2019. This catalogue of events has served to promote the Cibernàrium as a reference service in the field of technological dissemination and training, to stand as an example of successful and sustained public policy over time, and to draw the road map for the next 10 years.

4. PARTICIPATION IN CITY EVENTS

Cibernàrium has had an active presence at the most significant events related to technology, using these platforms to expand its technological dissemination work and reach new audiences, and collaborating with various digital ecosystem stakeholders in Barcelona:

- **SteamConf.**, in collaboration with SOKO.
- **Congres360º**, in collaboration with WomenTech.
- **Open data challenge**, in collaboration with the Open Data Office and Barcelona Education Consortium.
- **City and Science Biennial**, in collaboration with 6T.
- **“Bons Nadals”**, in collaboration with the Christmas Office Art Commission.
- **Mobile Week**, in collaboration with GSMA.
- **Youth Mobile Festival**, in collaboration with GSMA.
- **Smart City Week and Barcelona Innova Week**, in collaboration with the Digital Innovation Commission.
- **BIZ Barcelona and Employment Fair**.
- **4YFN**, in collaboration with the FMWC.
- **Social Internet Congress**, in collaboration with: Digital Politics of the Generalitat of Catalonia.
- **Jump2digital**, in collaboration with Barcelona Digital Talent (FMWC).
- **Maker Fair**, in collaboration with the Digital Innovation Commission.
- **Superminds Congress**, in collaboration with Valkiria Hub.
- Regular participation in different forums and sectoral congresses linked to digital talent. Presentations of the Cibernàrium model to national and international institutions visiting Barcelona.

5. COLLABORATIONS WITH MUNICIPAL AREAS AND WITH THIRD PARTIES

Collaboration agreements have been made annually with key stakeholders, through grants, agreements and other formulas, to implement, promote and support projects and initiatives with objectives and purposes in line with those of Barcelona Activa's Digital Talent area.

The most notable are:

- **With the municipal areas:**

- 1TA, with the Trade area for deploying the Trade Sector Digitalisation Plan.
- 3TA, with the Digital Transition Commission for the Fair Digital Transition Plan and Connectem Barcelona.
- 4TA, with the Area for Social Rights, Global Justice, Feminism and LGTBI, mainly for the BCNFemTech project.
- 6TA, for the launch of the Canòdrom Antenna, the Education Sector Digitalisation Plan (teachers and families) and the Libraries Consortium (Cibernàrium Antennas Network).
- Municipal Manager's Office for Open Data, for the deployment of the Open Data Challenge.

- **With other Administrations:**

- With the Ministry of Education and Vocational Training, we have joined the "Niñas en pie de ciencia" (Girls ready for science) agreement.
- With the Generalitat of Catalonia, specifically with the Digital Policies and Public Administration Area, for the Digital Skills Congress and as a collaborating centre to host the ACTIC tests. And with the Research and University Area for the launch of 42Barcelona.
- With FMWC through Barcelona Digital Talent.

- **Academic and university area:** UPC; UPF; UOC; Harbour Space; Deusto University, Ramon Llull University, CEB, mainly linked to the promotion of scientific and technological vocations. And with the FBFP, creating bridges with the IT Academy.

- **PPP collaboration:**

- Code.org
- Telefónica Foundation, with 42Barcelona
- Telefónica, with the Cibernàrium Antenna in Plaça Catalunya (Movistar Centre)
- Endesa, with the BCNFemTech Project
- LinkedIn

- **Other agents and technological infrastructures:**

- Barcelona Supercomputing
- CIDAI
- College of Journalists of Catalonia
- Valkiria Hub
- M4Social
- CTecno
- ITC cluster
- 22@network
- ...

6. PUBLICATIONS

- Provision of the [e-recomana](#) tool, which supports the digitisation process from conceptualisation to the launch of the course.
- 20 years of the Cibernàrium report.
- Trainers' Manual, available to the more than 400 Barcelona Activa trainers (knowledge network).
- Digital skills map, drawn up with the UOC and the URL in collaboration with the Digital Policies Department of the Generalitat of Catalonia, and aligned to European standards (DIG COMP).
- White Paper on the digitalisation of Barcelona Activa's regular training services.
- IT Academy Transfer Manual.
- City of Barcelona Talent Map (WIP), thanks to an agreement with the LinkedIn professional network.

7. GLOBAL DATA AND PROFILE 2019-2022 (first semester)

In this period, Barcelona Activa has trained a total of 66,726 people in digital skills, 64% of whom are adults and 36% primary and secondary school children.

BREAKDOWN OF THE PROFILE OF PEOPLE > 18 YEARS

SEX

Women	26,829	63%
Men	15,742	37%

AGE

<25	3,198	8%
From 25 to 40	15,955	37%
From 41 to 54	17,158	40%
From 55 to 65	4,631	11%
>65	1,625	4%
NA	4	0%

EDUCATIONAL LEVEL

Primary education	1,539	4%
Secondary	13,332	31%
University	27,638	65%
NA	62	0%

EMPLOYMENT SITUATION

Unemployed people	11,587	27%
Students	3,099	7%
Employees	17,747	42%
Self-employed	5,417	13%
Pensioners	1,850	4%
Other	2,859	7%
NA	12	0%

USERS' DISTRICT OF RESIDENCE

Ciutat Vella	1,573	4%
L'Eixample	4,962	12%
Gràcia	2,630	6%
Horta-Guinardó	2,535	6%
Les Corts	1,074	3%
Nou Barris	1,959	5%
Sant Andreu	2,245	5%
Sant Martí	4,378	10%
Sants-Montjuïc	2,716	6%
Sarrià-Sant Gervasi	1,790	4%
Barcelona w/o specifying	1,095	3%
Barcelona Province	13,378	31%
Rest of Catalonia	1,785	4%
Other	451	1%

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OTHER INFORMATION

Participations	219,419
Average No. activities per person	5
Total No. activities	16,054
Average attendees per activity	14

8. BUDGET

Between 2019 and 2022, over **€20 million** has been allocated to developing the digital talent promotion strategy as a whole.

Below is a year-by-year breakdown.

Year	Structure	Activity	Subsidies
2019	€ 1,658,802	€ 1,829,329	€ 40,000
2020	€ 2,042,699	€ 1,559,517	€ 1,936,000
2021	€ 2,491,113	€ 2,432,337	€ 681,000
2022	€ 2,774,564	€ 2,511,000	€ 102,000
Total	€ 8,967,178	€ 8,332,183	€ 2,759,000

