



INNOVATIVE ENTREPRENEURSHIP: A RANGE OF MEASURES TO SUPPORT REGIONAL DEVELOPMENT

Focus

The story of the Start Cup Puglia

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Introduction

Innovative entrepreneurship is a distinct form of productive activity based on the formulation and commercialisation of advanced or substantially improved products, services, and solutions that meet consumer needs and generate added value. It is recognised as a key driver of regional growth: through innovative entrepreneurship, a cumulative process is initiated within the territory. This process leverages scientific and technological know-how to address the needs of an increasingly global and constantly evolving market, thereby producing economic and social value. In this way, imitative or further enhancing processes are activated, thence expanding the initial impacts.

Innovative entrepreneurship harnesses and amplifies the effects of the ongoing transformations that characterise our present - digital, ecological, and energetic transition; circular economy; global health challenges - and impact the strategic and organizational structures of businesses and regions. To ignite and progress, innovative entrepreneurship requires a strategic vision, the ability to seize opportunities, risk propensity and strong motivation. To foster development and consolidation, it is crucial to be supported through a range of policies and public incentives, not limited to the economic ones, given the high level of risk involved in exceptionally innovative activities. Furthermore, the New European Innovation Agenda has stated that the innovative startups in the EU have “the potential

to drive innovation across the economy and society. This can in turn transform the EU's business landscape and associated markets and help addressing the most pressing societal challenges, including achieving the UN Sustainable Development Goals"¹.

At a European level, official statistics regarding the number of innovative startups in the different countries are yet to be collected and published. However, some information can be derived from the Global Startup Ecosystem Index, an annual report by StartupBlink, a Zurich-based startups research centre². The report ranks startups' quantity, quality, and business environment in approximately 100 countries and 1,000 cities worldwide. In the 2023 edition of the report, Europe leads in the number of cities featured (41% of the total), but only six of them are listed in the top 30; moreover, the continent only accounts for 19.7% of the early and late stages investments from professional firms³, or other kinds of investments destined for startups⁴. In the report's conclusion it is stated that "even though the startups' development is very intense in Europe, it still lags behind other high-impact startup economies in the world". UK, Sweden, and Germany figure in the first three positions in Europe. Italy ranks only in 18th place (14th among all European countries) and 30th globally.

Innovative startups in Italy

In Italy, following the reforms introduced in 2012 by the 'Growth Decree 2.0,' a special section of the Business Register was established, enabling the monitoring of the evolution of innovative entrepreneurship. Being the beneficiaries of tax incentives, innovative startups could be listed in the special section, provided that they have at least one of the following three requirements set by the normative: R&D (expenditures for research and development must be at least 15% of the highest between the total production value or the costs); human capital (team composed of 2/3 personnel with a master's degree, or 1/3 by PhD students or graduates with at least 3 years of active certified research experience); intellectual property (the entity must be the holder, the depositor, or licensee of at least one industrial property right related to an industrial or biotechnological invention, to a semiconductor product topology, or to a new plant variety, or it must hold the rights related to an original computer program registered in the special public register for computer programs, provided that such industrial property rights are directly related to the corporate purpose and the business activity⁵).

Regarding the number of innovative startups, with 574 enterprises registered, the Apulia region ranks 9th nationally, while Bari and Lecce are featured among the first twenty provinces. Considering the innovation requirements, Apulian startups perform exceptionally well in the R&D (5th among the other regions with 66.5% against the Italian average of 63.2%), the other requirement that merits consideration is the intellectual property (11th place with 19.1% against the Italian average of 18.6%). Despite these positive results, analysing the human capital requirement, the Apulian startups is only 15.3%, against the Italian average of 22.9% (Fig. 1).

1 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – A new European Agenda (SWD (2022) 187 final)

2 For more information: www.startupblink.com

3 For example: Angel, Pre-Seed, Seed and Series A to J..

4 For example: funding, equity, product crowdfunding, Non-Equity Assistance.

5 Section 25, paragraph 2, n. 3 decree No. 179 of 2012.

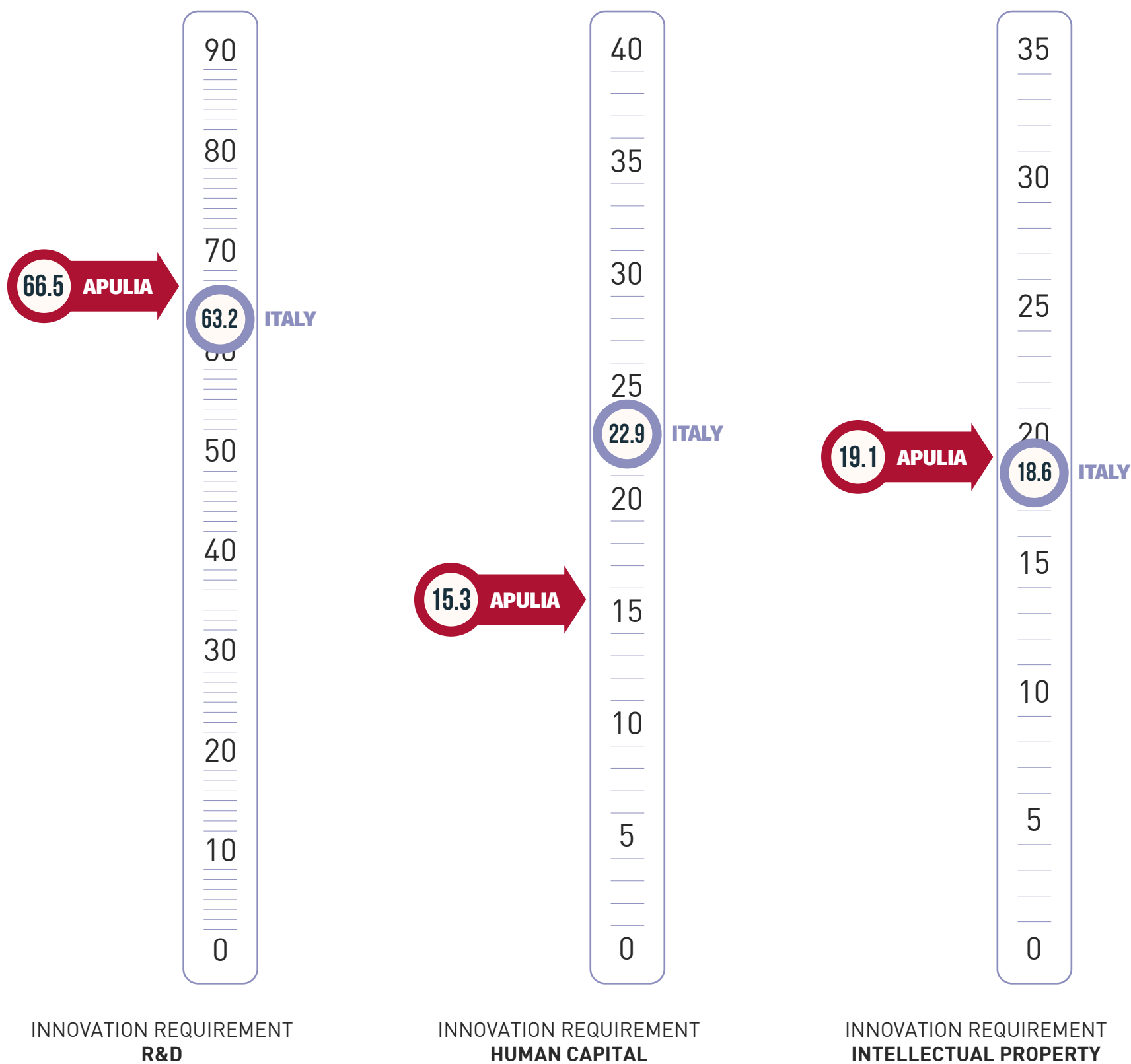


Fig. 1: Percentage of innovative startups registered in the special section of the Business Register for innovation requirements, out of the total.

Source: ARTI's Elaboration on Business Register data. Data updated as of December 31, 2023

Regional policies supporting innovative startups

According to the data communicated by Puglia Sviluppo⁶'s monitoring service, for the programming period 2014-2020, through public incentives, 3,419 billion euros have been introduced in the Apulian productive system. This generated a leverage effect that resulted in total investments of 8,186 billion euros, of which 1,730 billion was dedicated to research and innovation activities.

A significant portion of the above-stated public incentives focuses on promoting innovative entrepreneurship since the formulation of the business idea developed by the informal groups, as well as supporting the already established innovative companies. Throughout a series of rolling applications with no deadline, a range of measures assists the different phases of the entrepreneurial path (creation, development, and consolidation) for both startups and other innovative SMEs. These calls for proposals have a structural nature, limiting the beneficiaries' chances of missing the deadline. This approach lets them tailor their investments to their needs, providing the time needed to adapt to their unique

⁶ Puglia Sviluppo is the in-house finance company of the Apulia Region. Its role is to contribute to the implementation of regional economic development programs, acting as an Intermediary Body for managing investment aid to businesses.

requirements and ensuring an effective and well-organized plan. It allows them to properly plan their material, immaterial, and organizational investments while being assured of receiving financial grants. Therefore, the beneficiaries can interface with all stakeholders, from those operating within the scientific system to those in the credit sector, following schedules that align with the development of prototypes, solutions, products, and services, hence promoting a more transparent and quality-oriented process.

Given its attractiveness to a younger target, whose interests lay in having their first managerial experience, the first public regional measure that needs to be taken into consideration is the currently ongoing 'Percorsi d'impresa'. This measure, being part of the youth policies of the Apulia Region, logically falls within the regional support area called 'entrepreneurial culture': it offers information and guidance services, as well as throughout in-depth meetings and networking opportunities, provides a pathway to gaining awareness of the entrepreneurial landscape.

The other Apulian measures, dedicated to the entrepreneurial innovative activity, spanning the 2014-2020 and 2021-2027 programming cycles, fall into the following three categories of regional support:

1. Support for innovative entrepreneurial projects

In this area, classifiable as part of the 'pre-seed + seed' mixed phase, it is included the project 'Estrazione dei Talenti', now suspended to be reprogrammed into a renewed version. Through the "Team Selection" Notice in June 2019, 232 Teams of aspiring innovative entrepreneurs have been selected from an Evaluation committee. These Teams, made of at least three components, have participated in a series of accompanying/incubatory actions within the Activity Plans (AP) lasting up to a maximum of 300 hours, recognised by ARTI, as the Intermediate Body. The Activity Plans included highly personalised services, such as networking, fundraising, and mentoring, specifically aimed at enhancing entrepreneurial ideas.

The APs were delivered by the so-called 'Factories', a group of public and private entities with proven expertise and experience in both entrepreneurial accompanying/incubation and business creation in the priority innovation areas indicated by the Regional Strategy for Smart Specialisation (S3)⁷. Said Factories, being the beneficiaries of the project, have received a monetary contribution, the highest being 24 thousand euros, for each AP delivered. Moreover, in order to streamline the procedure in this measure, simplified cost options have also been implemented. Through an online platform, each Team selected from the Evaluation committee had to choose the Factory that best suited their support needs and whose priority area was the most compatible with their business project. Furthermore, the Factories, as stated in the measure, had to work in conjunction with the Teams to initiate the "screening" phase, aimed at profiling the need for guidance and determining the type of technical support the Teams required. Subsequently, the Factory elaborated the AP and shared it with the Team, detailing a personalised and specific accompanying and incubation plan tailored to their unique needs.

The keywords that characterise this support area are the following: project support, know-how and skills transfer; embracing an entrepreneurial mindset.

⁷ While working through the APs, the Factories' experts have collaborated with the Teams to improve their business idea, mostly online via videoconferences, ensuring that the idea morphed into an innovative and well-rounded business plan, with the issuance of specific project deliverables at predetermined deadlines.

2. Creation of innovative enterprises

Within this area of support, akin to the mixed “seed + startup” phase, three different measures can be identified:

- a. “Start Cup Puglia”, a currently active measure, will be thoroughly covered in the Focus section of this report.
- b. “PIN – Pugliesi Innovativi”, currently inactive. The measure started as an initiative of the youth policies of the Apulia Region. The initiative targeted young individuals interested in starting innovative business projects with high potential for local development and good consolidation prospects, other than aiming to improve their skills and knowledge in the field. PIN supported the realisation of pilot business projects ranging between the cultural, scientific, and social innovation areas. For the initiative, it had been assessed a non-repayable grant, between 10 and 30 thousand euros per project, destined to cover the investments and management costs during the first year of activity. To have access to the grant, the informal Teams had to associate as a legal entity recorded in the Business Register or in the Economic and Administrative Index (REA). Ultimately, ARTI has also offered, to approximately 2,000 young entrepreneurs and 529 businesses, a set of services to support and consolidate their skills.
- c. “NIDI – Nuove Iniziative d’Impresa” currently active. The measure sustains, through non-repayable subsidies and loans up to 130 thousand euros, the unemployed, young adults and women who intend to start associated professional firms or microenterprises, whether innovative or not. With four specific areas – ordinary; under 35; women; tourism – depending on the applicant and the main focus of the project, the rolling grant programme is characterised by a specific set of regulations. This measure also presents distinct accompanying and support activities of the initiation and development of women-led and youth-led businesses.

The keyword that characterises this support area is the following: Business Plan support.

3. Development and scale-up of an innovative enterprise

In this support area, classifiable as part of the “early growth + growth” phase, two measures are to be taken into consideration:

- a. “Tecnonidi”, currently active. The measure addresses startups and innovative SMEs with a more advanced TRL⁸ (at least a TRL4). These enterprises must establish a local unit in the Apulia region and aim to initiate or develop high-innovation and research investment plans, with a maximum subsidy of 280 thousand euros.
- b. “Equity Puglia” is not yet fully operational. The measure consists of a financial tool designed to raise the capitalisation rate and, consequently, the SME's capital and financial solidity through the participation of professional investors in the risk capital. The Apulia Region has set up a fund of 60 million euros, which has been divided appropriately into lots. Subsequently, it carried out public selection procedures to identify the Asset Management Companies (AMC), that will be the vehicle for co-investing in the share capital of innovative startups and scale-ups operating within the region. As a result of the completed notice, four AMCs have been selected: Vertis, based in Napoli, AVM Gestioni, Eureka Venture, and Indaco Venture Partners, all located in Milan.

⁸ TRL is an acronym for ‘Technology readiness level’, it is a method for estimating the technological maturity of a product or process. It is based on a scale from 1 to 9, with 1 being the lowest (Basic principles observed) and 9 the most mature technology (Actual system proven in operational environment).

Source: “Technology Readiness Levels (TRL), HORIZON 2020 – WORK PROGRAMME 2018-2020 General Annexes, Extract from Part 19 – Commission Decision C(2017)7124”.

The keywords that characterise this support area are the following: *Business Development accompanying; Support for Innovative Finance.*

A schematic representation of the regional measures supporting innovative entrepreneurship is provided below (Fig. 2).

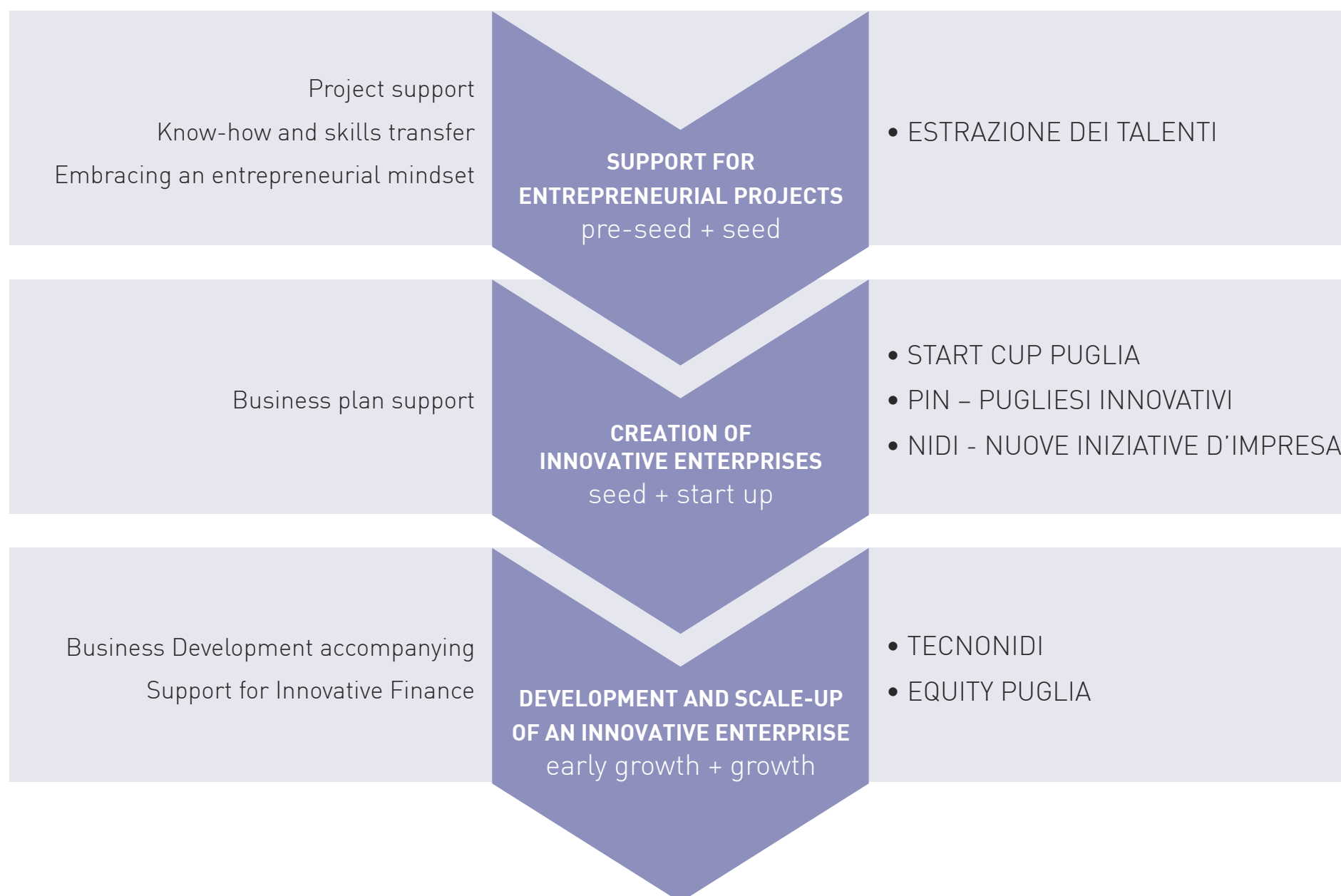


Fig. 2: Range of regional measures for innovative entrepreneurship in the Apulia Region.

Source: ARTI

From the empirical observation conducted over time by the technical staff supporting the various measures, there appears to be evidence that the beneficiaries positioned in the upstream end of the regional support areas are more prepared and ready to participate in the measures located further downstream, and, successfully, bringing them to completion. It seems, therefore, that participating in multiple measures encourages the entrepreneurial and commercial growth of the most active Apulian startups; moreover, this plural approach encourages them to apply, often with positive outcomes, for calls for subsidies and incentives, incubation and acceleration programmes, competitions and awards at both the national and European levels, attracting, therefore, the interest of national and international investors, as it happened with some of the winning Business Plans of SCP: BionIt Labs, Leb World, HT Materials Science Italy, Arabat, Foreverland, and Preinvel.

Focus

The story of the Start Cup Puglia

Start Cup Puglia (from now on SCP), also known as “Regional Innovation Award”, represents one of the most lasting regional measures supporting innovative entrepreneurs to this day.

SCP is a business plan competition, primarily promoted by ARTI – Regional Agency for Technology and Innovation, in collaboration with the Apulia Region and the National Innovation Award (NIA). The SCP, as an annual competition, has reached its 17th edition in 2024. This competition rewards the business ideas grounded in advanced scientific knowledge, preferably science based, by offering the opportunity to transform these ideas into fully developed enterprises, through project accompanying activities and technical assistance – provided by ARTI at no cost. Participants can also receive monetary prize and/or business development services.

Since 2017, the Organising Committee, made of around 60 organisations operating at a regional, national or international level, has helped with the initiative and has promoted the competition, aiming to increase its visibility and participation.

To join the competition, the participants will have to identify the business idea by writing a business plan, which will be analysed and valued by experts of that specific field: a jury chosen by the Organising Committee of the SCP.

It is of the utmost importance to remember that the initiative, as part of the regional programme, is connected to the NIA, established and managed by the PNICube Network - composed of the Italian University Association, academic incubators and regional Start Cups - founded in 2004 for the entrepreneurial valorisation of the scientific research.

The Apulian business plan competition, which took place for the first time in 2008 as part of the multiannual Apulian ILO project⁹ is, as of today, still the most pervasive action dedicated to intertwining the offer and the demand for innovation in the region. Over the years, the SCP has become autonomous from the Operational Programs of the Apulia Region (since 2016), creating an organisational standard that has evolved over time: from 2010 onwards, divided into two phases, when it became fundamental to offer entrepreneurial accompanying to the Teams; and subsequently, from 2017 onwards, when the initiative involved an increasingly extensive partnership that, as previously mentioned, has come together in the SCP Organising Committee, which today represents a significant segment of the Apulia Regional Innovation System (RIS).

How does SCP work?

The SCP's procedure is inspired by the most consolidated national or international experiences regarding business plan competitions. The SCP takes place after the publication of a public notice in the Apulia Region's Official Bulletin indicating regulations and principles. The SCP's guidelines parallel the NIA's.

In the SCP are admitted those projects presented from:

- a. Informal Teams, with at least 2 individuals, who intend to start and establish an innovative business in the Apulia region;
- b. Innovative businesses that have been established since October 1st of the year preceding the year of the competition, or in the period between January and September, but have declared the start of their activities (as evidenced by the operational start date specified in the Chamber of Commerce registration) on a date from October 1st onward.

The SCP consists of two phases: the 'formulation of the business idea', followed by the 'business plan competition'.

In the first phase, spanning from spring to mid-June/early July, the candidates interested in moving to the following phase can schedule without any obligation or commitment, free project support sessions aimed at guiding them toward the potential submission of their application for the second phase. These sessions can also be conducted remotely (online). The sessions are delivered using a personalised approach to entrepreneurial training, which is adjusted in real-time by SCP coaches based on the maturity level of the business ideas presented by the Teams. The project accompanying/orientation activities focus on the most common critical issues: primarily, but not exclusively, the feasibility of the technologies/products/services that the Teams intend to propose to the market and their potential competitive advantage, business models, marketing strategies, economic-financial projections, and any protection/evaluation/management of intellectual property.

The second phase, consisting of the actual competition, presents the following subphases:

- Submitting a Business Plan (BP) and its executive summary. Teams indicate which of the four categories they are applying for Life Science-MEDTech, ICT, Cleantech-Energy, and Industrial¹⁰.
- Evaluation by an external jury – never connected to ARTI or the Apulia Region- which shortlists the finalists, not considering the category as a criterion. The jury, chosen

⁹ Intervention co-financed from the 24th of July 2007 to the 31st of December 2008 by FESR – Puglia POR 2000 – 2006 "Regional network of Industrial Liaison Office – ILO Project"; from the 15th of April 2009 to 20th of November 2015 by the FESR – Puglia POR 2007-2013 "Creating businesses and spreading technology starting from the research – ILO2 Project".

¹⁰ The projects are uploaded on the submission platform, available on the SCP website, which, to ensure the homogeneity of the documents, has guidelines on the compilation.

also through the expertise of the Organising Committee¹¹, will rank each BP by an assessment grid indicated in the public note. The finalists (max 12 min 8, depending on the projects' quality) will have to participate in both the 'Bootcamp' and the final SCP event, otherwise will be disqualified.

- The "Bootcamp," consisting of at least two-day intensive coaching sessions aimed at refining the business projects and improving their presentation (pitch deck) to potential partners and investors. Said sessions are individual and can be done online or through dedicated time slots meetings with the coaches, and focus on enhancing the ability to develop entrepreneurial projects, stressing the coherence between market analysis, business model and economic and financial projections; bringing to light the business metrics that emphasise any potential competitive advantage related to the products/ services/solutions intended for market introduction, and maximise the efficiency of the pitch deck.
- A "pitch session" for the finalist projects, which involves an oral presentation before the jury, supported by appropriate infographic documentation. This presentation takes place during the final event of the SCP and is held in person, with streaming available for those who are unable to attend physically. At the end of the "pitch session," the jury selects the winners of the competition, combining the evaluation of the business plan with the assessment of the oral presentation.
- The announcement of the award winners. During the awards ceremony, the top four ranked Teams are each given a symbolic cash prize, without any category constraints, contingent upon the establishment of the business by the Teams in the Apulia region by June 30 of the year following the competition reference year. Additionally, the top-ranked Team is awarded the title of "grand winner" and receives the special mention of the "Regional Award for Innovation". The winners also have the right to compete for the National Innovation Award.

Additionally, the jury awards a special 'Green and blue' prize for the best entrepreneurial project regarding climate change, combining innovation technologies, protection and valorisation of natural resources, to generate economic growth and environmental protection. The winner of this award can also compete in the National Innovation Award.

Three honourable mentions are also nominated:

- Social innovation, based on the criteria set by the normative for innovative startup.
- Gender equality in social enterprises, created by the collaboration of the President of the Council of Ministers – Department of equal opportunities.
- Silver Economy¹² – instituted in 2024.

In the 2022 and 2023 editions, projects which conducted the best accompanying path during the 'Estrazione dei Talenti' – of which ARTI has been the Implementing Body, as well as the Intermediate Body - have also been awarded 2 thousand euros.

Since 2017, many entities in the Organising Committee have also offered additional prizes, primarily in business incubation services, business development, cash awards, special mentions and recognitions to encourage participation of the best innovative projects in the SCP.

¹¹ The jury is preferably made up of 5 members, four of which are chosen by secret scrutiny of the Organising Committee, based on applications, and the President – personally appointed by ARTI. Based on the division between categories (Life Science-MEDTech; ICT; Cleantech-Energy; Industrial), a member is chosen for each of them. Therefore, the candidates must prove to have a solid experience, scientific and/or entrepreneurial and/or managerial knowledge in one of the previously mentioned categories.

It is also worth mentioning that ARTI chooses, as the Foreperson, a businesswoman who has collected a series of awards or merits in the Apulia region throughout her career (Mariarita Costanza in 2019; Margherita Mastromauro in 2020; Mariella Pappalepore in 2021; Simona Miglietta in 2022; Viola Margiotta in 2023).

¹² For more information: Fiore A., 2023. Youth and female unemployment: A critical issue for inner areas in Puglia (Italy). Needs and opportunities in the silver economy age in Rivista Italiana di Economia Demografia e Statistica, Volume LXXVII n.4. (http://www.sieds.it/wp-content/uploads/2024/02/18_04051RV_Fiore.pdf)

There is also a third phase, taking place after the final event, constituted by two subphases:

- Post-Competition Support to SCP winners that receive intensive support from ARTI coaches to prepare for the National Innovation Award. This involves:
 - a. refining their BP and executive summary;
 - b. finalising the pitch deck to send to the NIA management in order to join the competition.
- Participation in the NIA, held at a different venue each year. In 2012, the Apulia Region and ARTI organised and hosted the National Innovation Award. During the final event, the submitted documents are evaluated by a national jury; additionally, the pitch decks are presented in the "pitch sessions" scheduled for the semifinals and, if selected, for the final round of 16 projects on the concluding day of the event.

Each year, a delegation from ARTI accompanies the Apulian Teams to the NIA, supporting their presentations and ensuring they showcase their projects effectively with experiments, demonstrators, prototypes, and other materials¹³.

The timeline of SCP and NIA phases is illustrated in Fig. 3.



¹³ It is important to emphasize that ARTI supports the five Apulian Teams participating in the NIA by covering their registration fees for the competition, as well as providing a contribution covering their logistical expenses for the mission at the location of the national finals.

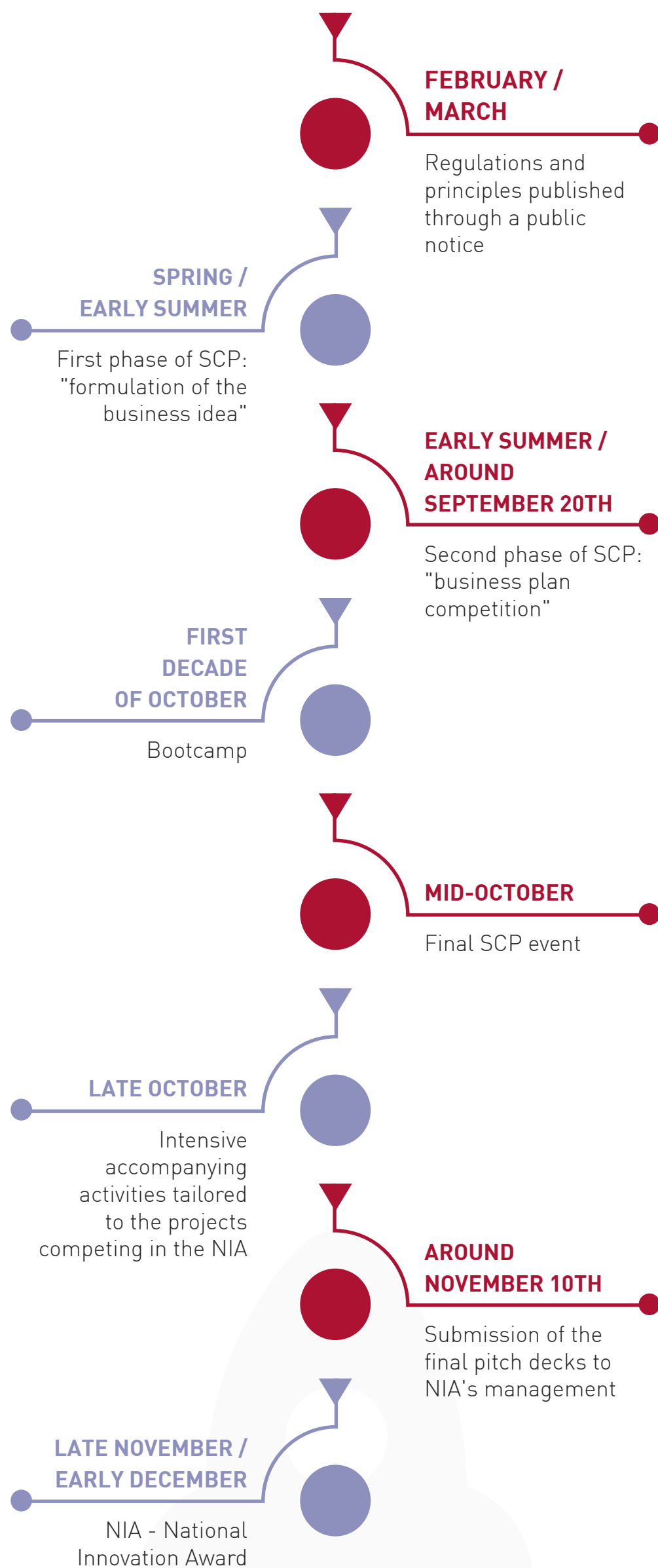


Fig. 3: The Apulian Start Cup and NIA's phases.

Source: ARTI

Data from the last five editions

From 2008 to 2023, for a total of 16 editions, **589 BPs have engaged in the competition; 53 out of the 62 winners, have then founded their enterprise in the Apulia region¹⁴.**

As previously outlined, starting with the 2010 edition of the SCP, a support program was introduced: during this phase, **86 collective support sessions and 146 individual sessions were held**, with a total of 659 participants from entrepreneurial Teams.

Within this focus, the aim is to shed some light on the Teams and their BPs of the last five seasons.

Of all the participants, 54 Teams had access to the final phase of the business plan competition from 2019 to 2023: during this period, except for 2019 and 2023 in which there were 12, 10 Teams accessed each year. In total, there were 198 prospective entrepreneurs, with, on average, 3.6 individuals per Team.

Of these, over three-quarters are male. The **low female participation** is also evident when analysing the data using the criteria set by the special section of the Business Register for determining female prevalence. Based on these criteria, it is observed that only in 2019 there were two Teams with exclusive female prevalence (100%), while in 2023 there was only one case with strong female prevalence (female presence in the Team exceeding 66%). Over the past five years, in addition to those mentioned, there have been only nine cases where the Team composition was at least gender equal.

The analysis – **both calculated per Team and per individual edition – on the ages of the participants**, having considered only the Teams where all the component's information was present, **showed that, on average, the participants were 35 years or below when participating.**

Regarding the geographical origin of the Teams, the analysis shows that the province of Bari leads, followed by Lecce and a group of extra-regional Teams (Fig. 4). **In each of the last five analysed editions, there has been at least one Team from outside the Apulia region, confirming the notable national and international appeal of the Apulian business plan competition.** These Teams come from Latium and Lombardy with three Teams each, while Marche, Umbria, Emilia-Romagna, Piedmont have one Team each, and one from Hungary.



¹⁴ Data updated at to the 31st of March 2024

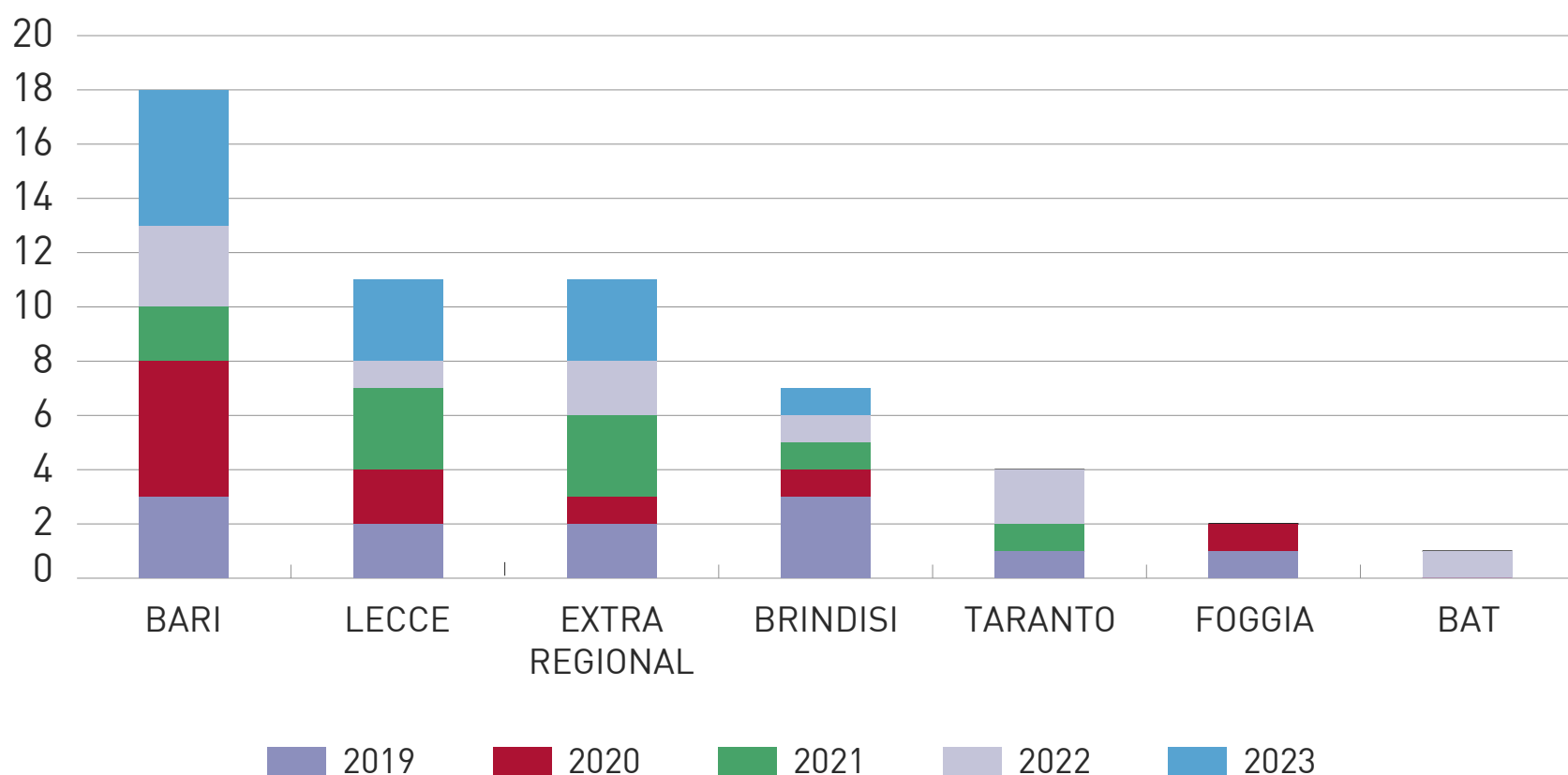


Fig. 4: Provincial and extra-regional distribution of Apulia Start Cup's Teams. Editions from the years 2019-2023.
Source: ARTI

Regarding the four categories introduced in 2012 for the competition, **the predominant category, both annually and overall, is ICT, with 21 Teams.** This is followed by Life Science-MEDTech with 13 Teams and tied for third place are Cleantech & Energy and Industrial (Fig. 5).

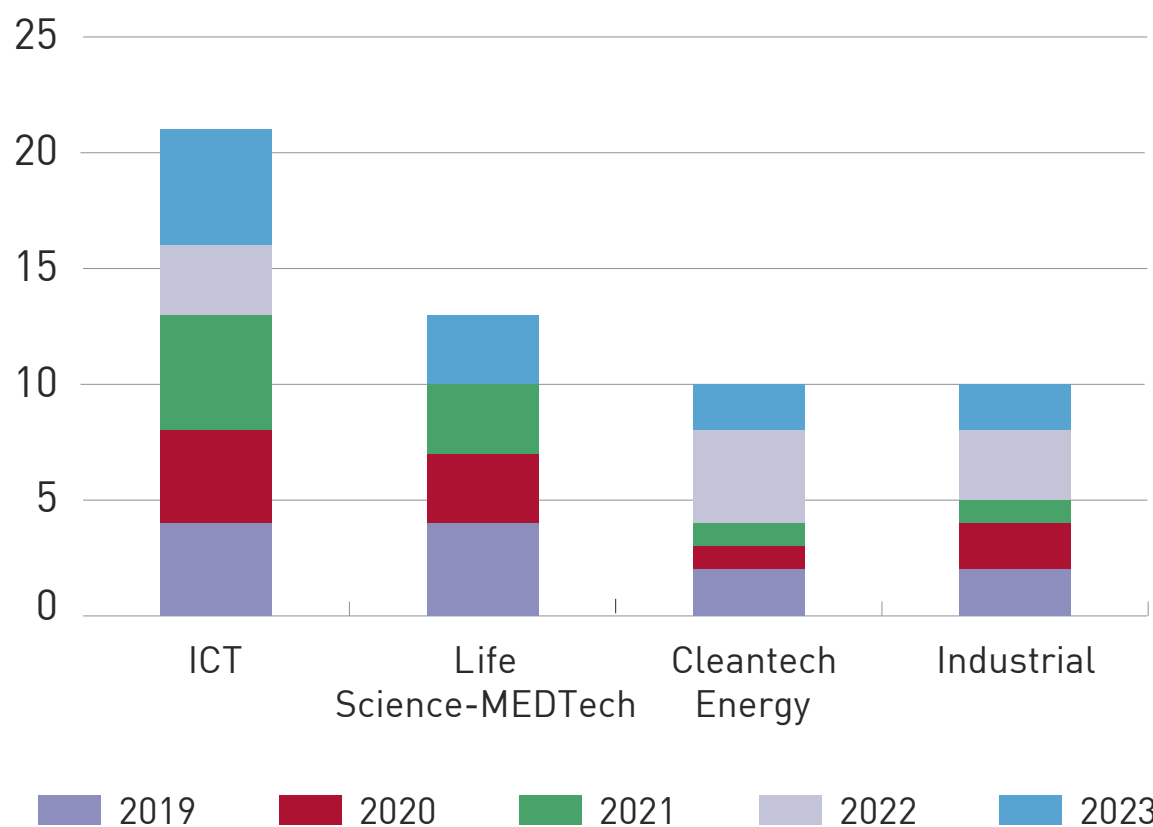


Fig. 5: Category-based distribution of the Apulian Start Cup's businesses plans. Editions from the years 2019 to 2023.
Source: ARTI

It is interesting to cross-reference the categories with the target markets or the needs they aim to address (Tab. 1).

	ICT	LIFE SCIENCE-MEDTECH	CLEANTECH & ENERGY	INDUSTRIAL
Agri-food	5	1	1	2
Environment and Territory		1	5	1
Fashion	1			2
Construction				1
Medical and Health	3	9		1
New Energies, and Energy Efficiency			4	1
Advanced Services (including retail)	4			1
Transportation & Logistics				1
Edutainment	8	2		

Tab. 1: Market and category-based distribution of the Apulian Start Cup's businesses plans. Editions from the years 2019 to 2023.

Source: ARTI

Some categories have specific target markets: this is especially true for the Life Science–MEDTech category, which predominantly impacts the Medical and Health sector; and for Cleantech & Energy, which primarily offers solutions in the fields of Environment and Territory, New Energies and Energy Efficiency. The ICT category has presented many solutions for Edutainment, as well as for Agri-food, Advanced Services, Medical and Health sectors. The Industrial category, on the other hand, appears to be the most cross-sectoral, presenting solutions for almost every target market analysed. It is also worth noting that the Agri-food is the only target market that is addressed by all categories.

It is important to consider how **Apulian startupper**s are also addressing major challenges such as the ageing population. Some Teams have presented specific solutions for the elderly: for example, FlavoLife, with functional foods capable of counteracting the ageing process, and Senex, with on-demand digital training and support services for those over 60. These business ideas can create a particular market segment, the so-called silver economy. Given the urgency of this challenge, starting from the 2024 edition, a special mention will be given to projects addressing these specific needs.

Finally, innovative processes are also fueled by collaborations and synergies: therefore, Teams typically present one or more partnerships; in the last five editions, only 16 out of the 54 Teams did not declare any collaborations. **Partnerships are mainly with private entities (companies, consortia, non-profit organisations) and, secondly, with universities.** Collaborations with public administrations are less frequent (Fig. 6). The analysis does not uncover a particular trend for the partnerships, but it is noted that the highest number - 37 declared collaborations - was reached in the edition that took place during the pandemic emergency year.

For international collaborations, partnerships range from Europe (France, Sweden, Finland, Latvia), to Canada and Hong Kong for private entities, and exclusively within Europe (Sweden, Austria, Portugal, Netherlands, Spain) for universities.

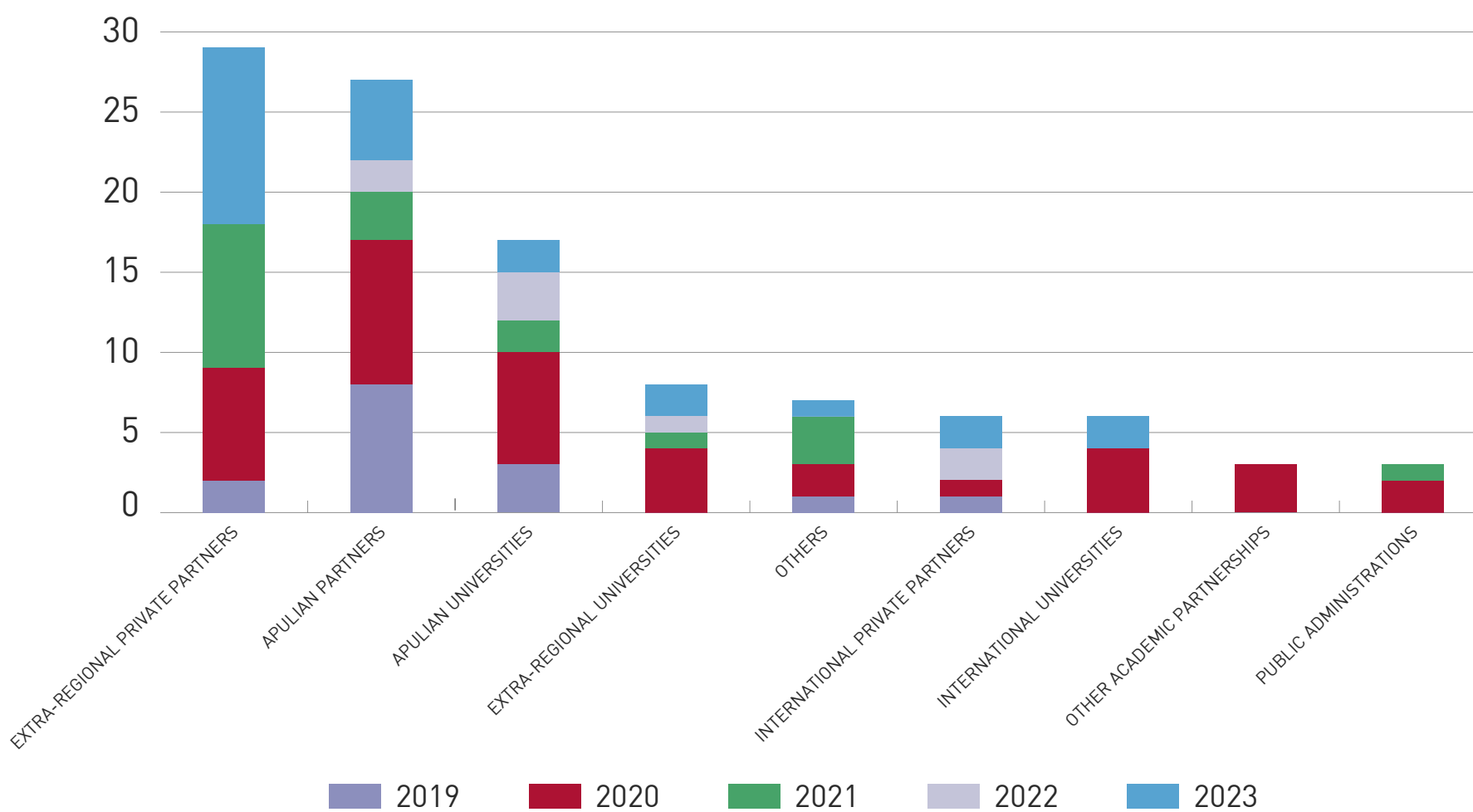


Fig. 6: Teams' declared partnerships divided by year and category. Editions from the years 2019 to 2023.

Source: ARTI

Additionally, the winning Teams of the SCP are notable for their strong performances at the National Innovation Award (Tab. 2).



NATIONAL AWARDS FOR SCP'S TEAMS

2014

NIA Winner - category "Agrifood-Cleantech"

DIPTERA, SCP winner

2015

NIA and "Champions Cup" Grand Winner

NIA winner - category "Life Science"

NEW GLUTEN WORLD, SCP winner

2016

NIA Special Mention - "Social Enterprise with a Focus on Equal Opportunities"

ROBOT4CHILDREN, SCP winner

2018

Special Award Golinelli Foundation - "G-Factor"

ADAM'S HAND (now BionIt Labs), SCP winner

2019

NIA winner - category "IREN-Cleantech&Energy"

MAXWELL 2020 (now HT Materials Science Italy), SCP winner

Special Award "Boost Heroes"

NAIL SOLUTIONS (now Leb World), 2nd place SCP

2022

NIA winner - category "IREN-Cleantech&Energy"

ARABAT, SCP winner

2023

NIA winner - category "Industrial"

Special Award "Unicredit Start Lab"

FOREVERLAND, SCP winner

NIA winner - category "Cleantech&Energy"

"Nobento & iVision" award

"Encubator" mention

PREINVEL, SCP winner

"Young Entrepreneur Program-YEP"

AGR-E, SCP finalist

"Young Entrepreneur Program-YEP"

SERVATI, SCP finalist

Tab. 2: National awards received by finalist Teams in the SCP – various editions.

Source: ARTI

It is important to highlight the victory of BionIt Labs Team at the 2023 Italian Master Startup Award (IMSA) held in Turin. This is the only national competition that rewards market achievements by young hi-tech companies from universities and Italian Research Institutions, who have also participated in a regional edition of a Start Cup and have filed at least two financial statements.

Conclusion

Effectively, in order to formulate policy recommendations, it is necessary to summarise the average profile of startups in the Apulia region, as derived from the data presented in this report and the qualitative analysis conducted by ARTI over the years within the framework of SCP, as well as other initiatives for innovative entrepreneurship managed by the Agency since 2008.

On average, innovative startups in the Apulia region:

- Provide advanced and high-tech innovative services.
- Disseminate innovation throughout the production system.
- Are predominantly technology-oriented (technology pull) rather than market-driven.
- Typically develop products that remain in prototype stage for several years.
- Exhibit a low propensity for scalability.
- Record low female participation.

The most significant deficiencies identified include:

- Difficulty in integrating managerial skills within the entrepreneurial Team, essential for sustaining long-term business projects.
- Lack of business alliances, leading to challenges in entering the market despite developing products/services beyond the prototype stage.
- Deficit in corporate finance and in connecting with investors and industrial partners.

As an initial guiding principle, it is considered essential **to promote and support the role of innovative startups and small enterprises as a "bridge" between the frontiers of scientific knowledge and advanced innovation** (especially the one emerging within both the Apulian scientific system and globally) **and the more traditional production system**. This aims to intensify the dissemination of radical innovation in sectors characterised by purely incremental and empirical innovation.

Additionally, there is a need to enhance, through specific subsidies, the natural process, observed in recent years, of absorbing qualified and valuable workforce into innovative startups in the Apulia region, contributing to economic growth and regional competitiveness. Structural changes associated with digital, ecological, and energy transitions, along with new social needs, create opportunities for higher value-added small-scale innovative businesses, and alternative solutions in service provision to individuals and communities (e.g., in the *silver economy*), as well as activities addressing the needs of other businesses or new specific markets.

Furthermore, with a focus on interventions following the SCP, it is considered appropriate to launch a dedicated initiative supporting the potential scaling of innovative projects up to TRL 4 (technology validated in the lab) after entrepreneurial support programs outlined in other measures. This initiative would consist of a grant, available exclusively to Teams that have established enterprises, aimed at funding proof of concept activities, which are crucial for validating entrepreneurial projects and crossing the so-called "valley of death" thereby

complementing regional measures dedicated to startups and innovative enterprises across all phases of their launch.

Below are potential areas for consolidation efforts by the Apulia Region in support of innovative entrepreneurship:

- **From an open innovation perspective, establish, digital programs, and platforms facilitating matchmaking between startups/small innovative enterprises and potential industrial and commercial partners** (locally, nationally, and internationally). Such partners could serve as testers for the industrial and commercial development of Apulian innovators' products/services. This area includes organising business matching events and potentially offering specific aid schemes targeted at developing such synergies and strengthening the corporate venture capital, which is significantly needed, exceeding the demand for venture capital.
- **Promote business alliances, fostering a favourable range of public, private, and mixed services, as well as organisational and intangible infrastructures dedicated to creating and developing innovative startups**, preferably highly focused on knowledge and technology content. The ultimate goal is to grow the size of innovative enterprises in Apulia to at least an optimal minimum dimension that allows them to consolidate as vectors of innovation and generators of added value for themselves and the sectors in which they operate.
- **Foster integration between existing and operational Apulian incubator/booster programs** (particularly certified ones, as well as Factories from the 'Estrazione dei Talenti' programme and other uncertified ones) **with national and international operating accelerators, investors, and venture capital funds**. This could be achieved through joint events and workshops to facilitate mutual understanding and partnership creation. Additionally, the initiative could also provide the financial support needed from innovative startups to participate in national and international incubation and acceleration programs, provided at least one stage occurs in a facility located in the Apulia region.
- **Support the internationalisation process of innovative enterprises in Apulia by offering them tailored consultancy support services to reach their international target markets**. Enhance commercial missions and facilitate the participation of startups and innovative SMEs in international trade fairs, internationally promoting their business. Furthermore, design an aid scheme for internationalisation expenses, including those for participating in international acceleration programs and for establishing operational offices abroad.
- **Implement a digital platform for teambuilding that eases the matchmaking between entrepreneurial Teams and individuals - with complementary technical-production-scientific and/or entrepreneurial-managerial skills - willing to join the company by acquiring shares of its social capital**. The platform's use should be promoted through awareness and promotion campaigns in universities, Italian research centres, private and mixed research organizations, business associations, the Chamber of Commerce system, and innovation and knowledge intermediaries. The platform should also encourage synergies among startups operating in the same sector, potentially leading to mergers or strong vertical and horizontal integration.
- **Promote specific training and coaching programmes in finance for innovation**, offering scholarships or incentives for training activities aimed at startups and small innovative enterprises. The main focus would be the interactions between financial structure choices and business strategic decisions, as well as evaluating the impact of financing choices on company performance results.
- **Introduce multiple incentives and facilitations measures for startups that promote gender equality in the entrepreneurial Teams**, particularly if they demonstrate a certain level of female participation in decision-making or leadership roles.

In conclusion, in order to continually align regional innovative entrepreneurship needs with policy design, it is crucial to maintain constant monitoring and actively listening to the various components of the regional innovation system. In this regard, ARTI has recently initiated a detailed survey of innovative enterprises; the collected information will be appropriately valorised and shared in line with the Agency's mission as a knowledge hub, and in anticipation of additional challenges posed by reforms integrating ARTI's current objectives and competencies with those of a regional technology transfer centre.



APPENDIX

List of winners of the SCP. Editions from the years 2019-20233



FINALIST TEAMS	CATEGORY	WINNERS	SPECIAL MENTIONS
9 SECONDS	ICT	1° place	
NAIL SOLUTION	Industrial	2° place	
MAXWELL 2020	Cleantech&Energy	3° place	
MY HEALTH DATA	Life Science- -MEDTech	4° place	
TRADING TRENDS	ICT		SOCIAL INNOVATION
PLANTASTIC	Life Science- -MEDTech		SOCIAL ENTERPRISE WITH A FOCUS ON EQUAL OPPORTUNITIES
FERVET	Life Science- -MEDTech		
IO AGRI	ICT		
MAV REALITY: OPEN WORLD	Life Science- -MEDTech		
PASSAPULIA	Industrial		
PUZZLE PARTY	ICT		
SISTEMA MODULARE ANTIEROSIONE	Cleantech&Energy		





FINALIST TEAMS	CATEGORY	WINNERS	SPECIAL MENTIONS	COMMITTEE'S SPECIAL AWARDS
FOAMILLE	Life Science-MEDTech	1° place	COUNTERING COVID-19	PRO.BAN; START FUNDING
CIBI SPRAY	Life Science-MEDTech	2° place		IC406; DITECH; START FUNDING
BUILDNN	ICT	3° place		START FUNDING
ORTOPEDIA 3D	Life Science-MEDTech	4° place		TECNOPOLIS PST
ACROSS	ICT		SOCIAL INNOVATION, SOCIAL ENTERPRISE WITH A FOCUS ON EQUAL OPPORTUNITIES	
CO2CONV	Cleantech&Energy			EIT RAW MATERIALS
BEESMART	ICT			
MAV REALITY: XR MAZE	ICT			
NUMINA	Industrial			
REWOW	Industrial			



FINALIST TEAMS	CATEGORY	WINNERS	SPECIAL MENTIONS	ARTI'S SPECIAL AWARDS	COMMITTEE'S SPECIAL AWARDS
FLAVOLIFE	Life Science-MEDTech	1° place			START FUNDING
LIMITLESS	Life Science-MEDTech	2° place	SOCIAL ENTERPRISE WITH A FOCUS ON EQUAL OPPORTUNITIES	ESTRAZIONE DEI TALENTI	CETMA; START FUNDING
SENEX	Life Science-MEDTech	3° place			IMPACT HUB; START FUNDING
ENVIRON ZEROWASTE	Cleantech&Energy	4° place			EIT Raw Materials; START FUNDING
INMYPLACE	ICT		SOCIAL INNOVATION		
ELECTRONIC SMART HEALTH	ICT		COUNTERING COVID-19		
AIRONE	Industrial				CETMA
SANA SANA	ICT				UNIBA; EIT Food Hub Italy
VIRTUAL TAILOR	ICT				DPIXEL; SELLA LAB
CLICCA E CUCINA	ICT				



FINALIST TEAMS	CATEGORY	WINNERS	SPECIAL MENTIONS	ARTI SPECIAL AWARDS	COMMITTEE'S SPECIAL AWARDS
ARABAT	Cleantech&Energy	1° place		ESTRAZIONE DEI TALENTI	INTESA SAN PAOLO INNOVATION CENTER
6DOF LABS	Industrial	2° place			CETMA; IMPACT HUB BARI
NEBRA SKAY STUDIO	Industrial	3° place	SOCIAL INNOVATION		
ENDYMION	ICT	4° place			ALAN ADVANTAGE
WAST3D SHELLS	Industrial			GREEN & BLUE CLIMATE CHANGE	
BRICKHOUSE	ICT		SOCIAL ENTERPRISE WITH A FOCUS ON EQUAL OPPORTUNITIES		FEEDEL VENTURES
FINSECT	Cleantech&Energy				SELLA LAB
TECNOGRAPH	Cleantech&Energy				IMPACT HUB BARI
SHORTIE	ICT				
SKY2LAND	Cleantech&Energy				



FINALIST TEAMS	CATEGORY	WINNERS	SPECIAL MENTIONS	ARTI SPECIAL AWARDS	COMMITTEE'S SPECIAL AWARDS
FOREVERLAND	Industrial	1° place	COUNTERING COVID-19		
MYBON	ICT	2° place		ESTRAZIONE DEI TALENTI	
EMBER LAPTOPS	ICT	3° place			PUGLIA SVILUPPO
PREINVEL	Cleantech&Energy	4° place			PRO.BAN
FLYING DEMON	Cleantech&Energy			GREEN & BLUE CLIMATE CHANGE	CETMA; EMFL-IRIS-OMNICS RESERCH LAB
FLORENCECARE	Life Science-MEDTech		SOCIAL INNOVATION		PRO.BAN
PSORIATRIX	Life Science-MEDTech		SOCIAL ENTERPRISE WITH A FOCUS ON EQUAL OPPORTUNITIES		BINP; PRO.BAN; THE QUBE
CHRONES	ICT				CETMA; SPRINTX IMPACT HUB
SERVATI	Industrial				CETMA; PRO.BAN
UNICORN	Life Science-MEDTech				PRO.BAN
AGR-E	ICT				
COLD SHARING	ICT				



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Agenzia regionale
per la tecnologia
e l'innovazione

INSTANT REPORT

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ARTI Instant Report is a series of periodic publications through which the Regional Agency for Technology and Innovation of Apulia Region presents concisely qualitative-quantitative analyses and survey results on the dynamics of key innovation indicators of the Apulian regional innovation system (RIS).

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