

# Entrepreneurship Education and Student Empowerment

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Innovation in the EU

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## Chapter 5

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### Entrepreneurship education to foster innovation

The role of hackathons

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# 5 Entrepreneurship education to foster innovation

## The role of hackathons

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### 5.1 Hackathons as innovation drivers

The hackathon phenomenon has emerged as an effective approach to encouraging innovation with digital technologies in a wide range of sectors. Evolving from impromptu pizza parties and developing into bespoke corporate team-building events, hackathons have grown in a global way.

A hackathon is typically defined as a time-bound competitive event where participants collaborate to build proofs of concept and minimum viable products for a specific pre-defined problem or to innovate. Each team has to deliver a presentation (a PowerPoint, pitch for a quick demonstration of their solution for a specific challenge/topic). In fact, the term hackathon is a combination of “hack” and “marathon.” The word “hack” refers to the idea that knowledge and information sharing should be seen positively while “marathon” refers to the intense, non-stop period dedicated to developing a prototype (Emmanouil et al., 2024).

Over time, “hackathons” have come to describe many kinds of time-limited creation events, often corporate, technical and non-technical, in-person and virtual, aiming to support open innovation and creativity. This has led to the rise of hackathon events, which are considered to have had a significant impact on the culture of digital innovation (Heller et al., 2023).

Hackathons have been extensively studied as facilitators of innovation. They offer numerous benefits to both organizers and participants. Hackathons can empower start-ups by fostering creativity, skill

development, and networking. Furthermore, they accelerate innovation by initiating and speeding up novel processes, generating a wealth of ideas, and identifying emerging talent. Hackathons also provide opportunities to integrate external knowledge, broadening perspectives and stimulating creativity. Ultimately, they contribute to an organization's public image by showcasing its commitment to innovation and broadening the innovation landscape (Angarita and Nolte, 2020). According to Nolte et al. (2020), hackathons, data dives, codefests, hack-days, sprints, and edit-a-thons have gained a great deal of attention from both practitioners and researchers.

The hackathon format significantly influences the overall experience, ultimately impacting participants, time, programming, and materials. While the format of each hackathon may vary to fit a certain context, make the most of local opportunities, better involve local multipliers and stakeholders, and engage participants, hackathons are based on a standard structure. Each hackathon is estimated to last between 2 and 5 days, during which individuals gather and form collocated teams intending to complete a project of interest (Chau et al., 2023).

An integral part of the hackathon experience is the people who participate. Hackathon participants, often called "hackers," are the lifeblood. Hackers are individuals encouraged to form teams or work independently on projects to develop solutions. Other important roles include mentors, who provide technical or project management expertise and guidance, impacted stakeholders, staff (paid), volunteers (unpaid), and judges. In traditional competitive hackathons, judges—often representatives from corporate sponsors, university professors, and domain experts—are responsible for selecting winning projects (Chau et al., 2023).

Hackathons may or may not have a theme.

- **Themed hackathons** focus on a specific aspect of human activity or value (e.g., "sustainability" or "future innovation"), a specific market (e.g., "transportation," "space," "insurance"), and/or a specific technology to use (e.g., requiring participants to focus on AI solutions or data and signals coming from satellite systems). Themed hackathons tend to identify a specific set of challenges to be taken on by participants. Nonthemed hackathons, on the other hand, may be completely open to any idea and may have no challenges at all.

- **Nonthemed hackathons** are extremely rare and have the disadvantage of making it hard for participants to identify a project to focus on without much external input. Choosing a theme is very important in order to attract the right audience. Identifying concrete challenges is strongly recommended. Challenges should be formulated in a way that helps participants identify a specific problem or group of problems, without constraining them too much and leaving no space for creativity and differentiation. Depending on the purpose of the hackathon, the challenges may be announced way ahead of the hackathon dates or during the opening ceremony of the hackathon.

Depending on the scale, the regional focus of hackathons may differ. In general, hackathons may be local, national, or international. International hackathons consist of several local or national hackathons that take place at (approximately) the same time and follow a common framework. International hackathons may have geographic restrictions of their own, taking place only in, for example, a given Region or Country (such as the Balkans) or between EU member countries (e.g., the CASSINI Hackathons) or be truly global (such as the NASA Space Apps Challenge).

Hackathons are usually not limited to the main competition event but are a long process offering all necessary support for ideas to be transformed into mature products and services and for teams to flourish in successful start-ups. They often involve warmup sessions, training, and workshops prior to the competition, allowing for creating stronger bonds among team members and a deeper understanding of the challenges. But even during the main event, achieving sustainable outcomes requires a blend of hacking and training (Teuberer, 2017).

While some hackathons may focus solely on the competition, many are structured with a continuation phase to help projects progress beyond the event. Overlooking the potential for project continuation can be a missed opportunity for both organizers and participants, as continued support has numerous benefits. After the hackathon, one best practice is to support winners with targeted growth programs that include further training, mentoring, and access to a network of high-profile mentors, all with the aim of transforming ideas into successful start-ups (Nolte et al., 2020).

### ***5.1.1 The impact of hackathons***

Hackathons can have a major impact on start-ups. They offer numerous benefits, such as networking opportunities, skill development, and the

rapid prototyping of ideas. Hackathons mirror the open-innovation model by promoting teamwork, external partnerships, and rapid problem-solving.

Rexhepi et al. (2019) emphasized the value of diverse partnerships in boosting innovation performance. By engaging with a wide range of interdisciplinary partners, start-ups can inspire creativity and develop innovative solutions. In fact, the study found that this effect is stronger for high-tech start-ups. Their research significantly contributes to our understanding of how open innovation can enhance entrepreneurship, highlighting the importance of diverse knowledge and showing how this type of knowledge and partnerships can drive start-up success. Hackathons align with this idea by bringing together individuals from different fields to tackle shared challenges, expanding the potential for innovation among participating start-ups.

Hackathons offer numerous benefits to start-ups and university teams, including increased visibility, enhanced credibility, and accelerated innovation. By fostering collaboration and tapping into a wider pool of expertise, hackathons can help teams overcome limitations and develop innovative solutions. To assess the impact of a hackathon, it is essential to consider the entire result chain: **outputs, outcomes, and impact**. While outcomes represent the immediate changes resulting from a hackathon, impact speaks to the long-term effects and societal benefits. Sustainable impact means that the positive effects of a hackathon must endure over time. While completing the event is a significant achievement, it is crucial to focus on the lasting impact of the generated outcomes. Measuring impact involves evaluating the outcomes and assessing their causal relationship with the observed effects, considering various metrics, such as user adoption, revenue generation, or social impact (Emmanouil et al., 2024).

### *5.1.2 Key factors for successful hackathons*

Recognized as a powerful tool for open innovation and inspiring entrepreneurial intentions, hackathons underscore the need for open data and investment, which are essential for success and for promoting start-up development. However, studies have shown that many hackathon projects often are not completed. To address this issue, it can be helpful to engage entrepreneurs and venture capitalists as jurors. These jurors can assess the potential of projects and connect developers with investors.

In their study, Soltani et al. (2016) identified six critical factors that organizers need to take into consideration to ensure the success of hackathons. These factors came out of interviews with the involved parties during various hackathon competitions. The six factors are as follows:

- 1) *A clearly defined scope.* Identifying concrete challenges helps participants identify a specific problem or group of problems without constraining them too much and leaving no space for creativity and differentiation.
- 2) *Offering rewards to winning teams can be a strong motivator for participation.* Tangible rewards like prizes or gifts often attract more participants.
- 3) *Team diversity is essential for innovation.* Collaboration among team members with diverse competencies, skills, and backgrounds can spark creativity and lead to more innovative solutions.
- 4) *Mentors* play a pivotal role in guiding and supporting participants. Mentors should share their knowledge and expertise to help hackers develop innovative solutions.
- 5) *Jury knowledge* is essential for ensuring a fair evaluation process. The sixth factor has to do with clearly defined eligibility requirements to ensure a competition runs smoothly and efficiently. These factors create a structured and supportive environment that fosters innovation and effective problem-solving during hackathons.

An additional key factor for a successful hackathon is the inclusion of training workshops and seminars. These sessions can be invaluable for introducing newcomers to hackathon themes or specific technical skills relevant to the competition. Training seminars or hands-on workshops offer newcomers a more comfortable entry point, providing a structured learning experience before diving into the hacking phase (Kamariotou and Kitsios, 2022).

## **5.2 ENTREPRENEDU's hackathons: a case study**

In the framework of the ENTREPRENEDU project, a series of three hackathons were held in Italy, Greece, and Bulgaria. These three different locations ensured a diverse mix of participants, stakeholders,

industries, sectors, and generated solutions. The entities responsible for overseeing the hackathons were three organizations with vast experience in planning similar events: Fondazione E. Amaldi (Italy), Corallia (Greece), and Cleantech Bulgaria (Bulgaria).

To maintain alignment across the ENTREPRENEDU hackathons, Corallia took the lead in overall coordination, leveraging its extensive experience in designing, promoting, and organizing these types of events while ensuring the relevance at European, national, and regional levels. An overall framework and specific guidelines were established to facilitate this coordination across the different locations.

**HackTheBusiness** served as an entrepreneurship challenge for young minds to learn, explore and discover the secrets of the DeepTech industry. The competition encouraged participants to think outside of the box, refining their pitches and leveraging their creativity. HackTheBusiness events were the perfect opportunity for young individuals and start-ups to present their business concepts to a panel of esteemed judges and industry leaders and get invited to the ENTREPRENEDU Mentoring & Coaching Program, where they could receive all the support needed to level-up their business idea.

Throughout the competitions, participants received support from mentors and attended a total of 16 workshops, which enabled the three HackTheBusiness events to generate a total of 94 business ideas. Out of these 94 business ideas, 13 winners (four from the first two events and five from the last one) were asked to participate in an exclusive 60-hour mentoring and business acceleration program where experts from the ENTREPRENEDU consortium provided entrepreneurial training on several topics, incorporating best practices from the events to support them going forward.

Though the format of each hackathon varied to fit the context, make the most of local opportunities, better involve local multipliers and stakeholders, and engage participants, all three hackathons were based on a common structure, consisting of the four main stages described below:

- Planning and design
- Campaign—information sessions
- Launch
- Hackathon event

### 5.2.1 *Planning and design*

The first step in designing the ENTREPRENEDU hackathons involved identifying their scope: the extent of the area to which the hackathon is relevant. The scope of each hackathon (or of any other similar initiative) can be analyzed through these interlinked factors: *purpose, scale, openness, context, target groups, and time frame.*

- **Purpose:** In the case of ENTREPRENEDU, the three hackathons followed the overall purpose of the project: "... creating a highly replicable and scalable education model (venture capital program) for both businesses and educational systems via a series of 3 Hackathons, developed at the regional level and supporting developed concepts and ideas to become concrete solutions".
- **Scale:** Depending on their scale, the regional focus of the hackathons differed. In general terms, hackathons could be local, national, or international.

In the case of ENTREPRENEDU, three different regional hackathons took place (in three different countries focusing on their own regions) on different dates and with a possibly differing frameworks (though all directed towards fulfilling the purpose of the ENTREPRENEDU project).

- **Openness:** In terms of openness, hackathons are generally split into internal and external options. Internal hackathons focus on the personnel or community of the organizer (company, university, etc.). External ones, on the other hand, are more open to the public, accepting (or even focusing only on) external participants.

In the case of ENTREPRENEDU, the three hackathons were open to the broader public. HackTheBusiness targeted students, new start-ups, and researchers interested in acquiring entrepreneurial skills and exploring their business potential. Participants were challenged to propose revolutionary business ideas that could lead to successful start-ups. The competitions were open to EU residents aged 18–40 and primarily intended for on-site participation. Contestants could compete individually or in teams of up to six members.

Choosing a theme is typically very important to attract the right audience. Identifying concrete challenges is strongly recommended. Challenges should be designed to guide participants in identifying a

specific problem or set of problems while allowing enough flexibility to foster creativity and diverse solutions. Depending on the purpose of the hackathon, the challenges may be announced way ahead of the hackathon dates or during the opening ceremony (see comment on “lead time” in the next sub-section).

**Context:** The three ENTREPRENEDU hackathons each had a theme and challenges. However, all were aligned with the project’s purpose and focused on a context that could enable the proliferation of new business models and entrepreneurial skills and the commercialization of the developed solutions.

**Target group:** The last aspect to be considered for the complete definition of a hackathon’s scope is its target group(s). Identifying their characteristics is very important for setting specific hackathon registration eligibility criteria. These criteria may pertain to the potential participants’ nationality, age, background, skills, and more. A hackathon may aim to attract aspiring entrepreneurs, innovators, and programmers. In this context, ENTREPRENEDU specifically targeted participants from Italy, Bulgaria, and Greece, aged 18–30.

**Time frame:** When it comes to the timing of a hackathon, for thorough and effective planning, three aspects must be taken into consideration:

- The **duration**
- The **“when”**
- The **timing**

In addition to the time-related aspects for the ENTREPRENEDU hackathons, space-related matters were of utmost importance for the success of the three events. The ENTREPRENEDU hackathons were mostly onsite events. Each ENTREPRENEDU local organizer selected the most appropriate format to maximize participation and the impact of the ENTREPRENEDU event.

The successful organization and facilitation of the ENTREPRENEDU hackathons required an enthusiastic and skilled team of members with complementary talents and capable leadership. All ENTREPRENEDU partners had active involvement in the organization and implementation of the hackathons (during planning and/or during the actual event) to achieve good results and ensure the successful planning of all three ENTREPRENEDU hackathons.

### *5.2.2 Organizers, sponsors, and jury*

The local organizer for the ENTREPRENEDU hackathon carefully considered and assigned the following roles and task forces/teams when distributing responsibilities among ENTREPRENEDU partners:

- **Management and networking team:** The team oversaw the overall management of the hackathon, including coordinating the other organizer teams responsible for its facilitation. It was also responsible for seamless communication and alignment with other core activities of the organizing entity (e.g., European projects undertaken, entrepreneurship initiatives like incubators, etc.). This team put into place the overall strategy, management, and monitoring and evaluation tools necessary for successful hackathon implementation. Finally, the team focused on securing endorsements and support from governmental and public agencies, along with financial or in-kind contributions from sponsors.
- **Administration and financials team:** The team was responsible for all activities related to the preparation of the logistical part of the hackathon (venue, equipment, connectivity, catering, procurement, security, public hygiene, etc.) as well as the financials pertaining to the hackathon in general, such as budget estimation and monitoring, running all activities for receiving the sponsorships secured by the management and networking team, transferring monetary prizes to the local winners, etc. The team also managed and coordinated any volunteers that supported the hackathon on site.
- **Communications and marketing team:** The team was responsible for all activities related to branding, marketing, and communications for the hackathon and for attracting individuals and teams to participate in the event. It ran offline and online promotional activities, built and managed a network of community partners, and secured media and promotional sponsorships, etc.
- **Scientific and technical team:** The team was responsible for working on hackathon challenges and tailoring them to the local ecosystem's needs and interests, managing the scientific committee, the mentor and keynote speaker network, and the hackathon jury, creating guides for the hackathon participants, aggregating potential tools and datasets that could be used by aspiring hackers, etc.
- **Operations team:** This team was responsible for the hacker experience at the event. Everything having to do with the "look and feel"

of the hackathon was managed by this team. It also managed all hackathon platforms and facilitated pre-hackathon activities (e.g., team matchmaking).

Obviously, the task forces differed depending on the nature of each local organizer and each ENTREPRENEDU hackathon. It must be pointed out that all of the ENTREPRENEDU hackathon organizers' teams were aligned before the hackathon so that they could work as a unit rather than as distinct teams with different goals.

ENTREPRENEDU's hackathon involved a number of sponsors to achieve higher results and attract a larger audience. Five categories of sponsors were targeted based on the needs of each local organizer:

- **Financial sponsors:** These sponsors provided direct economic support to cover hackathon costs.
- **In-Kind sponsors:** Entities (usually companies) that provided free services or products, such as platform credits or hardware.
- **Strategic/media partners:** Entities that helped with marketing and promotion, frequently through publications and outreach-related activities.
- **Community partners:** Entities that assisted with free hacking, mentoring, judging, access to target events, or volunteer recruitment.

The ENTREPRENEDU hackathon jury committee consisted of consortium members, though external stakeholders were sometimes invited. In terms of the number of judges, usually about 5–7 members were involved (an odd number was chosen to deadlock situations). Moreover, if the external jury members had access to sensitive materials, they were asked to sign a confidentiality agreement. Finally, organizers worked to avoid any kind of conflict of interest between jury members and the teams in the competition.

### *5.2.3 Prehackathon campaign: promotion*

The promotion of each hackathon followed the standard branding, marketing, and communications practices of the ENTREPRENEDU initiative.

Registration took place via an online platform provided by F6S and was available through the ENTREPRENEDU project website.

Participants could register individually or as pre-established teams, indicating their skills to help balance team profiles. The organizers selected up to 80 participants for the hackathon, aiming for gendering diversity. Ineligible applicants were still encouraged to participate virtually by following keynote addresses, workshops streamed live on social media during the event's key moments, and the final pitch session with awards.

The promotional campaign for all three events was primarily conducted by F6S and included the following activities:

- **Website:** F6S created dedicated webpages for each competition, serving as central hubs for vital information such as competition details, agendas, and registration portals. This streamlined approach facilitated seamless navigation for participants, enhancing their overall experience and fostering greater interaction with the event.
- **Registration management**
- **Event platform:** The corresponding core organizer managed a dedicated event platform for each hackathon. The platform included valuable information required for potential participants to learn about the competition and the corresponding registration form.
- **Promotional materials:** Comprehensive promotional materials were created in order to maximize engagement, including dynamic content tailored to different platforms (LinkedIn, Facebook, and YouTube) and audiences, ensuring broad awareness and participation.
- **Press releases:** A variety of press releases were published on the official ENTREPRENEDU website.

Additionally, the ENTREPRENEDU team jointly collaborated to increase visibility and outreach by leveraging their extensive reach and expertise. Each entity ran their own dissemination campaigns (social media, press releases, articles, newsletters etc.) to engage more participants.

#### **5.2.4 Pre-event activities**

Before each competition, organizers prepared a comprehensive handbook for participants, available to be downloaded from the website. Different handbooks for each competition phase and target group (local organizers, participants, stakeholders, potential community partners/sponsors) were drafted and distributed (for a total of six

handbooks) throughout the hackathons. These handbooks provided comprehensive information about each competition, including details about organization, preparation, event logistics, prizes, and other resources for successful participation in the competition.

Organizers held dedicated warm-up sessions prior to the events as part of the prehackathon campaign to promote the hackathons and attract participants.

During these sessions, participants had the opportunity to meet the organizing team virtually, ask questions, and delve into the intricacies of the competition. The event proved highly successful, offering all attendees a deep dive into the ENTREPRENEDU world, encouraging them to form teams with fellow members. The goal of each session was not only to attract potential participants but also to train them and provide highlights about the market and the technologies related to the topic of the hackaton. Overall, the sessions offered participants invaluable information, expert tips, and profound insights in preparation for the upcoming competitions.

Following each event, engaging Q&A sessions facilitated networking opportunities and allowed participants to ask questions and seek clarifications from organizers. Additionally, winners of previous hackathons shared their inspiring stories on how they transformed their ideas into successful start-ups. Finally, keynote speeches enriched the experience, offering strategic perspectives and fostering a deeper understanding of the industry landscape.

### **5.2.5 Hackathon event**

The hacking period is the heart of the hackathon and the moment when teams focus on their mission, which is to create something novel and impactful. Teams concentrate on outlining their proposal, designing and offering an initial prototype, and describing their solution in an appealing way. The event should be seen as an opportunity for teams to document and demonstrate a solution rapidly by producing a prototype and/or rehearsing a pitch.

From the local organizer's side, the main activities during this period include:

- Supporting **matchmaking and team formation**.
- **Communicating timelines and rules** for every step of the hacking process—brainstorming, pitching, formulation, and presenting, including meal/coffee times.

*Table 5.1* Topics covered in the training workshop*Session*


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Building future-proofed business ideas  
 Understanding business angels—fundraising tips for start-up founders  
 Business model discovery  
 From Idea to impact: Unlocking the potential of your business concepts  
 Entrepreneurship in space  
 How to apply to European Space Agency business incubation centers

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*Source:* Contributors' own work.

- Making sure mentors/advisors are available to the participants and helping teams create their pitches.
- **Engaging participants** in other side activities (optional and, in some cases, counterproductive).
- Ensuring all participants have dedicated time to work on their projects and suitable physical or virtual space and equipment.

The ENTREPRENEDU team offered a series of training workshops throughout the hackathons. These workshops provided participants with in-depth knowledge and analysis in terms of developing entrepreneurial ecosystems tailored to regional innovation levels and specific needs. The main topics covered are presented in Table 5.1.

### 5.2.6 *The competition*

During the competition, all teams had to submit a presentation—a pitch deck (in PowerPoint or PDF format)—by the set deadline. A template was provided that outlined further details on the content to be included in the presentation. A demonstration/technical implementation related to the final presentation was optional.

The presentation followed this outline:

- **Introduction:** A summary of what you are going to present. Open with a simple statement such as “This is our team, and this is what we do.”
- **Problem:** Description of the problem that you are trying to remedy or the opportunity that you want to take advantage of. Avoid looking for a solution that is searching for a problem.

- **Solution:** Explain how you will resolve the problem and the value that you will create. It is not necessary to provide an in-depth technical explanation. Merely provide the gist of how you will fix the problem (but do make sure that your idea is feasible).
- **Market:** Explain who the customers are or speak about the consumers you are targeting. Quantify the market (e.g., How big is it, in monetary terms?).
- **Business/pricing model:** Explain how you can make money—who will pay you, what are the channels of distribution you are going to use, what are your gross margins, etc.
- **Competition:** Are there alternatives? Are there direct or indirect competitors? Briefly categorize them.
- **Unique selling point(s):** Describe what makes you different from the competition.
- **Team:** Present the skills and roles of your team members. Identify why you are the team to solve the problem.
- **Timeline:** What are the next steps you can take to implement your idea? Are there any milestones?
- **Financials:** Present the expected costs, required funding you would need to make your idea a reality, and your expected revenues (projections/estimations).

### **5.2.7 Results and evaluation**

Beyond the presentation submission, the teams had to pitch their idea and present it within a specific time period in front of a jury. Following all pitches, the teams were evaluated based on the criteria specified below, including innovation, feasibility, market scalability, and social impact.

The evaluation criteria included the following elements:

- **Technical innovation:** Is the idea innovative? Does it rely on technology transfer? Does it have the potential to secure Intellectual Property Rights (IPRs)?
- **Market attractiveness:** Does the idea address a real problem? Is there a market for it?
- **Business viability:** Is the business model sound? Can a company built around the presented idea run a successful business?
- **Investor interest:** Overall, can the idea attract interest from potential investors?

- **Funding opportunities:** Does the idea have the potential to secure funding from other sources (beyond investors), such as grants?
- **Educational impact:** Does the business/idea have a (side-)effect on education? Can people be trained/educated through it?
- **Team quality:** Is this the team to solve the problem?
- **Branding and marketing:** Has the team worked on its values, its branding, and its marketing (e.g., name selection for business/product, logo creation, graphics, creative content, etc.).

**HackTheBusiness Italy** had a total of 43 applications with 30 business ideas—five were from already formed teams, six came from start-ups, while the remaining number came from individuals. Eleven teams submitted their ideas for final evaluation and four winners were selected.

**HackTheBusiness Greece** received a total of 108 applications and 35 business ideas, with members from 4 different universities in Greece. Twelve teams competed in the finals, and four winners were selected.

**HackTheBusiness Bulgaria** received a total of 61 applications and 29 business ideas. Five winners were selected from a pool of 23 entries.

Table 5.2 shows the full list of events that have been organized under the ENTREPRENEDU Hackaton initiative.

*Table 5.2* ENTREPRENEDU hackathons: Information about the main events

<i>Competition</i>	<i>Date</i>	<i>Theme</i>	<i>Business ideas</i>	<i>Finalists</i>	<i>Workshops during the hackathon</i>
Rimini, Italy	15–17/06/2023	DeepTech	30	4	6
Athens, Greece	25/11/2023	Space	35	4	5
Sofia, Bulgaria	26–27/03/2024	Sustainability	29	5	5

*Source:* Contributors' own work.

### 5.3 The HackTheBusiness competitions

#### 5.3.1 HackTheBusiness Italy

HackTheBusiness Italy was held in Rimini during the “We Make Future 2023” event (June 15 to 17, 2023), the largest digital innovation fair in Italy. A dedicated space was reserved for hacking, workshops, and pitches, making this the perfect opportunity to hold the HackTheBusiness competition.

*We Make Future* has become synonymous with innovation, technology, and entrepreneurial spirit. This prestigious event attracts forward-thinking individuals from a variety of industries, offering a unique opportunity to explore emerging trends, network with industry experts, and gain invaluable insights. Figure 5.1 shows the logo of the HackTheBusiness Italy initiative.

HackTheBusiness Italy included 43 applications and **30 business ideas**. The aim of the hackathon was to bring together young talents and new entrepreneurs passionate about or interested in DeepTech with experts in business and innovation. The idea was to work together to develop innovative solutions enabled by DeepTech to address the needs of industry and society.

E. Amaldi Foundation was responsible for all aspects of the Italian hackathon: logistics, strategic stakeholder engagement, defining the challenge, developing the guide for participants, and evaluation board management.

Participants were invited to propose DeepTech business ideas representing a true revolution for the food, climate, and space industries.



*Figure 5.1* HackTheBusiness Italy. Logo.

Source: ENTREPRENEDU.

The description of the challenges is provided below.

**Challenge SPACE:** This challenge sought business ideas that leveraged satellite data and space technologies to solve problems across various industries (energy, transportation, agriculture, etc.). The focus was on using space data and AI to analyze large datasets and create innovative solutions. It also highlighted the need for innovation in the space sector itself, such as new satellites and components. The aim of this challenge was to propose a business idea that addressed one or more of the issues facing the space sector.

**Challenge FOOD:** This challenge was about business ideas that used new technologies (AI, Blockchain, IoT) to create a more sustainable food system. The goal was to address issues like food security, reducing the environmental impacts from farming, and minimizing resource waste.

**Challenge CLIMATE:** This challenge sought out ideas that utilized emerging technologies to mitigate and adapt to climate change. Examples included intelligent forecasting systems, monitoring carbon neutrality, planning renewable energy grids, and protecting people from extreme weather events.

Before the competition, E. Amaldi Foundation prepared a comprehensive handbook for participants, available to be downloaded from the website. This handbook contained valuable information, such as the event timeline, agenda, eligibility criteria, stakeholder information, prizes, and other helpful details necessary for successful participation in the competition.

Amaldi Foundation, with the support of FS6, organized a warm-up session on May 30, 2023, as part of the prehackathon campaign in order to promote the events and attract participants. During this session, participants had the opportunity to meet the organizing team virtually, ask questions, and to delve into the intricacies of the competition. It attracted 28 attendees.

Over the 3 days of the competition, participants collaborated intensively with mentors to review their business ideas and think about potential gaps that might need to be filled. There was a great deal of pressure as each team aimed to deliver a concise, persuasive pitch highlighting their vision, value proposition, and market potential. To support their DeepTech development, participants also had the opportunity to attend workshops led by ENTREPRENEDU experts, gaining

valuable business insights and practical tips. There were eight workshop sessions in total, covering different insightful topics:

- Business model discovery
- Spark your success: Unleashing the brilliance within your ideas
- Building future-proofed business ideas
- Understanding business angels—fundraising tips for start-ups
- From idea to impact: Unlocking the potential of your business concepts
- Entrepreneurship in space
- How to apply to the European Space Agency business incubation centers
- Useful tools for DeepTech business in Europe

After 3 days of intense work, excitement, learning, and fun, the ENTREPRENEDU team of experts selected the top four winning teams and their innovative DeepTech ideas. The winning teams were: BACKWARDS, SHADES OF BLUE, AS YOU LIKE, and BOBIS. They all demonstrated innovation and drive. BACKWARDS aimed to solve the problem of packaging waste by creating reusable packaging and logistics infrastructure while SHADES OF BLUE wanted to create a certification system and consultancy systems for the sustainable management of water resources, providing companies with monitoring, improving the negative impact on rivers and water. AS YOU LIKE set out to transform the dining experience with a mobile app that lets users customize meals, access real-time nutrition information with visual AI, and discover restaurants aligned with specific dietary needs. BOBIS proposed reducing CO<sub>2</sub> emissions caused by last-mile logistics, offering the end user a platform to encourage local consumption while searching for products and services within three kilometers.

### **5.3.2 HackTheBusiness Greece**

The second HackTheBusiness competition organized by the ENTREPRENEDU team was held in Greece in November 2024, where emerging talents gathered to showcase their groundbreaking space ideas. Figure 5.2 shows the logo of HackTheBusiness Greece initiative.

HackTheBusiness Greece was the first entrepreneurship and educational ideation contest that took place on a national level. The aim was to bring together young entrepreneurs with business and innovation experts to work together and develop innovative solutions enabled by DeepTech to address the needs of industry and society.



*Figure 5.2* HackTheBusiness Greece. Logo.

Source: ENTREPRENEDU.

The HackTheBusiness Greece competition was planned by Corallia, with the support of the European Space Agency Business Incubation Center Greece (ESA BIC Greece), the Greek Space Technologies and Applications Cluster (si-Cluster), the STARTAB Entrepreneurship Program. It was under the auspices of the Ministry of Digital Governance with four co-organizers: National Technical University of Athens, the University of Thessaly, the Aristotle University of Thessaloniki and the Democritus University of Thrace.

HackTheBusiness Greece consisted of two phases. During the first phase, four different local competitions (physical events) took place simultaneously in different cities all over Greece in collaboration with local Universities (Athens, Thessaloniki, Volos, Xanthi). During the second phase (the finals), winners of each local competition gathered in Athens, where they pitched their ideas against each other.

As the main organizer, Corallia was responsible for all related activities (logistics, strategic stakeholders, and sponsor engagement, defining the challenges, and developing several guides—local organizers, jury, participants, and evaluation board management).

The main theme of the competition was “**space.**” Specifically, participants were invited to:

- identify a problem/challenge faced by the space industry and provide a solution based on pre-existing or new space technology and/or systems.

- introduce a product or service based on a transfer of space technology to, and/or the utilization of, a space system in a non-space environment (spin-off). For example, the participants could suggest using images from Earth observation satellites to create a new precision agriculture application.
- facilitate the use of nonspace technology in the space market (spin-in). For instance, the participants could suggest introducing blockchain technology (originally coming from the logistics/financial sector) in managing satellite clusters.

In other words, any innovative idea was considered acceptable as long as “space” was either the origin of the challenge or the basis of the solution.

Educational entities (Democritus University of Thrace, National Technical University of Athens, Aristotle University of Thessaloniki, and the University of Thessaly) played a crucial role in the planning of the first phase of the HackTheBusiness Greece, acting as local organizers. This enabled universities to reinforce their position as hubs of education and innovation, engage with their local ecosystems, and identify new space challenges and solutions. The competition also served as a milestone for future activities, further solidifying their involvement in the Greek space sector.

The first phase of the event was held from November 3–5, 2023, at four different universities across Greece: Democritus University of Thrace (DUTH); National Technical University of Athens (NTUA); Aristotle University of Thessaloniki (AUTH); and University of Thessaly (UTH). Teams with the most innovative ideas received mentoring and a paid ticket to the finals. The second phase of the competition—the finals—took place in Athens, Greece on November 25, 2023, at the Corallia premises. The HackTheBusiness Greece competition was a hybrid event. The first phase featured physical events in four locations, with workshops and one-on-one mentoring sessions conducted both online (discord used) and physically. The final event and awards ceremony included on-site participation from both organizers, participants, and speakers.

In the first phase, four different local competitions (physical events) took place simultaneously in four different cities in Greece in collaboration with the educational entities under the coordinated guidance of Corallia. During the 3-day local competitions, participants actively collaborated with mentors to refine their business ideas and win over the

judges. Teams attended four workshops led by the ENTREPRENEDU team and sponsors, gaining valuable business insights. Furthermore, one-on-one sessions were organized between the hackathon teams and the mentors. These sessions focused on both technical and business aspects of the solutions, as well as on presentation tips and tricks.

The award ceremony was live-streamed across all four locations in Greece, with winners selected by local organizers in collaboration with Corallia.

In the first phase of the competition, a total of 68 participants, divided into 18 teams, participated.

During the local competition, all official communications were conducted over the Discord platform. Discord was utilized to connect mentors with participants and for teams to submit their project ideas. Events (e.g., the launch Session, and webinars) were also streamed via this platform.

### ***5.3.3 HackTheBusiness Bulgaria***

Cleantech Bulgaria hosted the final round of the ENTREPRENEDU HackTheBusiness Bulgaria, an entrepreneurial hackathon for students, young professionals, and early-stage start-ups.

HackTheBusiness Bulgaria was a golden opportunity for aspiring European entrepreneurs to step into the business world. Participants were invited to delve into the realms of sustainability and digitization, addressing challenges from diverse sectors. This dynamic business ideation competition provided a space for aspiring entrepreneurs to harness their creativity, collaborate with like-minded individuals, and bring their innovative ideas to life. HackTheBusiness Bulgaria counted a total of 61 applications with 29 business ideas. In a groundbreaking finale hosted by Cleantech Bulgaria, the third and final installment of the HackTheBusiness hackathon series sparked a wave of innovation set to redefine Europe's sustainable landscape.

With a sharp focus on green and eco-conscious solutions spanning agri-food, construction, manufacturing, and digital and creative industries, participants were primed to unleash their creativity and address pressing environmental challenges head-on. The goal was to catalyze contributions towards a future that's not only environmentally aware but also resilient across these pivotal sectors.

HackTheBusiness Bulgaria took place on March 26th and 27th at the Innovation Forum "John Atanasoff" of Sofia Tech Park, gathering



**HackTheBusiness**  
HACKATHON **BULGARIA**  
**26 & 27 March, Sofia**

*Figure 5.3* HackTheBusiness Bulgaria. Logo.

Source: ENTREPRENEDU.

young entrepreneurs, researchers, and early-stage start-ups to pitch innovative and sustainable business ideas. Hosted by Cleantech Bulgaria, this event aimed to transform the European sustainable ecosystem and resulted in a variety of eco-conscious solutions and ideas connected with agri-food, construction, manufacturing, and the digital and creative industries. Figure 5.3 shows the logo of the HackTheBusiness Bulgaria initiative.

Participants had the opportunity to network and gain valuable insights from industry mentors.

The HackTheBusiness Bulgaria competition was an on-site event. On the first day of the competition, participants had the opportunity to form teams, meet the mentors, and attend workshops carefully designed by the ENTREPRENEDU team in order to equip them with the necessary skills and knowledge to master their pitch decks. During the second day of the competition, each team had a brief 7-minute window to explain the vision and mission behind their solutions. After each pitching session, the teams answered questions from the jury committee. Following all pitches, the 12 teams were evaluated based on criteria specified, including innovation, feasibility, market scalability, and social impact.

The event concluded with a prestigious award ceremony where the winners and prizes were announced. Following the award ceremony, a networking cocktail event was held for all participants, partners, investors, political figures, and fellow attendees.

### **5.3.4 HackTheBusiness: phase two**

Winners of the local competitions were invited to join the mentoring program offered by the Corallia team. This program provided winning teams with the opportunity to receive guidance from experienced mentors, who helped them refine their business ideas, enhance their expertise, and excel in the competition.

Following local competitions, winners from each region gathered in Athens on November 25, 2023, to pitch their innovative business ideas for a chance to join ENTREPRENEDU's business acceleration program, where promising ventures got the support needed to become a reality.

The final competition was held with the support of the Greek Ministry of Digital Governance, and the deputy minister was in attendance. Community partners and stakeholders actively took part in the final competition and shared their insights about space and entrepreneurship, while three successful start-up companies, participants in previous hackathons, shared their inspiring stories and journeys in becoming successful entrepreneurs. Afterwards, each team had a brief seven-minute window to explain the vision and mission behind their space solutions. After each pitching session, the teams answered questions from the jury committee. Following all pitches, the 12 teams were evaluated based on innovation, feasibility, market scalability, and social impact criteria.

The award ceremony followed with the announcement of the winners and prizes. The final event concluded with networking among all participants, partners, investors, and fellow attendees.

ENTREPRENEDU's HackTheBusiness initiative culminated in a resounding success, fostering innovation, and supporting young people in Europe. The overall satisfaction of participants in the ENREPRENEDU hackathons was high, making for a generally positive experience. All hackathons were well-received, with participants finding them valuable and offering relevant challenges and workshops. Most participants appreciated the collaborative atmosphere, valuable workshops, access to mentors, and, most importantly, the opportunity to innovate. Few participants highlighted the need for better organization and clearer communication regarding event logistics and expectations. The unique learning experiences and the networking opportunities provided were among the deciding factors.

Twelve winning teams, chosen from three hackathons held in Italy, Greece, and Bulgaria, have embarked upon the ENTREPRENEDU

Mentoring & Coaching Program. This targeted program equips young entrepreneurs with the essential knowledge and guidance to transform their innovative ideas into successful start-ups. The program's impact extends beyond the winners, as over 100 European participants actively took part in the hackathons. Participants showcased their creativity and technical prowess by developing solutions in the space, sustainability, and climate arenas.

## **5.4 Conclusions**

The HackTheBusiness experience is more than just a competition—it's an immersive journey of learning and growth filled with business tips and tricks presented by ENTREPRENEDU experts. Every participant had the unparalleled opportunity to meet the panel of judges and mentors, receiving constructive feedback aimed at improving their ideas and strategies to perfection. Participants benefited from practical business tips and tricks designed to maximize hacking efficiency. Furthermore, the esteemed panel of judges and mentors offered invaluable feedback, helping participants refine their ideas and strategies to a competitive edge.

HackTheBusiness fostered a collaborative environment that pushed boundaries and sparked new business ideas. With this successful launch, ENTREPRENEDU paves the way for future hackathons to empower even more young minds across Europe.

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- For detailed information about the NASA Space Apps Challenge, visit: [www.spaceappschallenge.org/](http://www.spaceappschallenge.org/)
- F6S is a global online community that helps founders and startups grow to solve the world’s pressing social, economic, environmental, sustainability, and innovation problems. F6S members include the world’s top companies, earlier stage companies, startups scaling towards unicorn status and other supporters. For more information visit: [www.f6s.com/company/f6s#about](http://www.f6s.com/company/f6s#about)
- For detailed information about the Cassini Hackathon format, visit: [www.cassini.eu/hackathons/](http://www.cassini.eu/hackathons/)
- For detailed information about the NASA Space Apps Challenge, visit: [www.spaceappschallenge.org/](http://www.spaceappschallenge.org/)
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