

To Eureka or not to Eureka?



OUR BET ON SCIENCE

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To Eureka or not to Eureka?



"Eureka!" is the shoutout attributed to Archimedes when he discovered the basis of what is called Archimedes' Principle. The legend says that being very excited by what he discovered, he ran straight from the bathroom tub, into the streets of Syracuse to inform King Hiron of his discovery. We can assume that one of the thoughts that some of the inhabitants of Syracuse had, when hearing about this story, was something like "how lucky Archimedes was again". Moreover, starting from this story that we hear ever since we are small, we begin to live with the impression that great discoveries were largely influenced by a moment of "luck". Thus, we have the famous legend of the apple that, falling on Newton's head, led to the discovery of the theory of gravity. And I remember in elementary school wondering why I didn't have such a "magical" event to make a big discovery.

Studies have shown that although when some scientists talk about how they came to certain discoveries, they singularize the event and add an aura of "luck" to it when, in fact, they already had variations of that discovery already stated long before.

For example, Charles Darwin, in his autobiography, describes the moment he discovered the Theory of Evolution as an Eureka moment in October 1838 while reading a book on population types.

About 130 years later, researcher Howard Gruber studied Darwin's writings and discovered that he already had the theory laid out many months before the Eureka moment.

Thus, scientific discoveries and innovation are not "luck" or a moment of epiphany but are the results of a long process of knowledge in which, to reach Eureka, the researcher or innovator must have a solid context that will lead to the "magical" moment. If we look at the world of startups, most of the time we see the success stories of those companies that received funding of millions of dollars, or that were listed on the various stock exchanges, without understanding what was the context that led to this success.

And then, how can we create the context for Eureka-type events to be more and more frequent? Kevin Dumber in his work "HOW SCIENTISTS REALLY REASON: SCIENTIFIC REASONING IN REAL-WORLD LABORATORIES" concludes that Eureka moments do not happen when the researcher is alone in the laboratory but when researchers meet in weekly meetings, when they tell each other the latest discoveries but also what mistakes they made along the way. The diversity of interests of the people in these meetings also led to future Eureka moments.

Then we can say that to have more and more Eureka-type events, we need to develop communities. Below we find some examples of communities, of which I am a part of.



"If you want to go quickly, go alone. If you want to go far, go together."

If I were to talk about the actors who develop communities and try to bring together actors from different fields, I cannot but talk about the university I belong to, the National University of Science and Technology Politehnica Bucharest (NUSTPB). And I would mention 2 aspects. The first would be the co-opting of companies in the development of collaborative research laboratories. One such laboratory is the 5G laboratory, from the CAMPUS research center, created together with Orange Romania, where using a private 5G network we offer infrastructure and consultancy to companies, startups and researchers who want to develop innovation over the 5G network. Moreover, to create this context in which the business ecosystem intertwines with the research ecosystem, NUSTPB offers grants through the Proof of Concept competition that help researchers capitalize on the research they have done, but also creates the framework for them to interact more with the economic environment.

Another program that aims to educate students and researchers on how to develop your own startup is Innovation Labs. Thus, students, researchers from the faculties of engineering or medicine or economics or agricultural sciences participate, form interdisciplinary teams, and learn how to develop a startup with the help of the community of companies and entrepreneurs. Some teams succeed in developing a product, but most teams get the context they need to get to the Eureka moment later in life.

And finally, I will mention the Măgurele Science Park Association (MSP), an association that brings to the same table several types of entities from startups to large companies to universities and research institutes. In 2023,

I participated in 3 events organized by MSP together with Launch namely Laser Valley Innovation Bootcamp, Tech Transfer Side Event @HowToWeb and Launch & MSP Meetup @INFLPR. In all these events I noticed how by bringing researchers, business people, lawyers, engineers, product developers and startups into the same room, innovation is the one that wins. And I'm not referring to the fact that startups emerged from these events that received millions of euros in investment, but that the context was created through which these investments could happen. Moreover, the decision-makers in the public domain could observe what would be those interventions that could create the optimal context to have more success stories on Tech Transfer in Romania.

On the very day I wrote this article in my newsfeed, this article appeared in the online version of Nature magazine: "Disruptive science more likely from teams who work in the same place". Thus, in addition to the diversity of actors involved in the community, in addition to the events necessary to get to know each other and generate ideas, in addition to educational/acceleration/incubation programs, the context to produce Eureka-type moments also needs a physical space. Thus, the Science and Technology Park that will be built in Măgurele, will be the final puzzle in the development of a great community of Eureka future moments. I will end with an African proverb, quite used lately, it says "If you want to go fast, go alone, if you want to go far, go together".

I personally believe that we only have the option "far" and then we must develop and unite the existing communities to go as far as possible. We are waiting for you in the team and in the community!

Răzvan Crăciunescu
Conf. Dr. Ing. NUST POLITEHNICA
Bucharest

"Networking / a force that should not be underestimated"

The human being will never be able to live alone. We are social beings, and the interactions we engage in day by day play a crucial role in defining ourselves as individuals and professionals. Throughout history, people have gathered in groups, which we broadly refer to today as communities, to share knowledge, experiences, and resources.

Over time, these interactions have been refined and started taking on other values, becoming increasingly complex, challenging, and necessary. The labels we have assigned to these interactions have also evolved, known today as networking. For some of the most enthusiastic among us, it's a pleasure, while for others, it's a struggle.

However, because standing out in a competitive environment is difficult when you only stick to the essentials, networking has become an important ingredient for achieving success and the ability to build and maintain strong relationships with people from various fields is increasingly crucial.

Why not skip the networking stage of an event?

The first step? Don't panic. Connecting on a deeper level is a process that takes time and commitment, so you shouldn't be discouraged by the fact that some conversations start with small things like weather or food. You just need to be open and give any interaction a chance. An obvious reason why networking is essential is the possibility of creating opportunities.

Probably we're all familiar with the saying 'I know someone who knows someone who might help you.' In a world where knowing as many people as possible seems imperative, the connections we make can surface career or business opportunities we might not encounter otherwise. Whether it's securing a new job, finding the right business partners,

or getting involved in exciting projects, networking simply creates favorable contexts for developing these opportunities.

Beyond opportunities, networking can shed light on new perspectives and ideas. Interacting with people from different backgrounds, operating in various fields, is a great exercise for broadening personal horizons: it involves new approaches, creative solutions, and information we might not otherwise obtain or have harder access to. This exchange of ideas can be extremely valuable, leading to innovation and progress.

We cannot overlook the contribution such a process plays in our personal development. It's said that anything not aligned with our beliefs is rejected by the brain—a process known as cognitive dissonance. However, it's useful to occasionally expose ourselves to other opinions and approaches. Stepping outside our comfortable personal bubble from time to time helps us gain an overview of certain issues, correct misconceptions, or shatter myths and stereotypes that taint our thinking. In other words, people we interact with who are different from us should by no means be dismissed; they can be incredible vectors for our development.

Also in this category, we can mention the increase in self-confidence in our own communication skills too. Every conversation should be seen as a challenge - that of practicing empathy, adaptability, and experience.

Building upon the aforementioned points, we want to assure you that within the team of the 'Măgurele Science Park' Association, networking is a sought-after and encouraged activity at every opportunity. As community creators, it's in our DNA to stay constantly connected with our partners, to understand their needs, identify their offerings, and bring them together at the same table for discussions.

For us, it's not just important but vital to maintain relationships based on openness, transparency, trust, and empathy with those who choose to join us in the adventure of building the largest scientific and technological park in the Bucharest-Ilfov region, and why not, in the country. We accomplish this through all the activities we propose and organize together with you, all in the spirit of collaboration and the transfer of experience and knowledge within a strong, visible, and professional community.

More details about what, how, and when can be found on our website www.magurelesciencepark.ro.

In the year of collaboration, it's about the power of collaboration & the courage to act

"There is immense power when a group of people with similar interests come together to work towards the same objectives."

- USA Today headlined, quoting the renowned international consultant and bestselling author, Idowu Koyenikan.

When there is a lack of agreement within a group, it prevents collaboration, and where there is no collaboration, no goal can be achieved. Collaboration involves working together, sharing ideas, and making a joint effort to accomplish something, to reach a common goal. Collaboration is primarily about people because 'many ideas grow better when transplanted into the minds of others than the ones who initially had them.' So, collaboration is about transparency and sharing. Collaboration is also about trust and empowerment, about the potential to create opportunities and bring forth new perspectives and ideas.

At the beginning of 2023, the team of the 'Măgurele Science Park' Association was pondering how to stimulate collaboration among representatives from national research and development institutes, the business and entrepreneurial environment, and those in the educational field (university and pre-university). The answer came almost immediately after an internal brainstorming session: What if we organized an innovation bootcamp in Măgurele, where we have researchers from the physics platform, and invited entrepreneurs, students, and pupils?

Through an intensive learning experience and practical exchange over several days, participants could practice various concepts related to idea generation, defining innovative solutions, and teamwork in ad-hoc groups. The idea resonated so much with us that we immediately took action, drawing important actors from the RDI (Research, Development, and Innovation) ecosystem around it.

So, from 15th to 17th of June, at Conacul Oteteleşanu in Măgurele (Ilfov County), under the patronage of the Ministry of Research, Innovation, and Digitalization took place the first edition of the Laser Valley Innovation Bootcamp.



Supported by the 'Măgurele Science Park' Association, 'Ora de Știință' initiative, and the Launch Community (an initiative by BCR and Google for Startups), the event brought together over 100 researchers from national research and development institutes, startup founders, and students passionate about innovation. They formed mixed teams and collaborated to develop new innovative projects.

Different fields were explored during the bootcamp, including health, education, the environment, public services (including research activities within public research and development institutes), cultural heritage, and recreation. The projects developed by researchers, students, and entrepreneurs over the course of 3 days at the bootcamp included: Assembled, EduQ, Food4Science, Green Mass, LifeLink, Nano Eye, Orchid Tech, Partial Eclipse, Sci Fablab, SeedPods, Seismo, We Breathe.

The event hosted panel discussions, workshops, networking sessions, and brainstorming, with the participation of representatives actively involved in the development of the research-development-innovation ecosystem in the Bucharest-Ilfov region. Notable personalities such as Adrian Curaj (General Director of UEFISCDI), Ionuț Stanimir and Liviu Gherghescu (BCR), Narcis Constantin (Mayor of Măgurele), Ștefan Rădulescu (Vice President of the Ilfov County Council), Marian Preda (Rector of the University of Bucharest), Corina Ionela Dumitrescu (Dean of the Faculty of Entrepreneurship, Engineering, and Business Management at the Politehnica University of Bucharest), Dorel Paraschiv (Academy of Economic Studies), and Oana Coșman (start-up.ro) were invited to participate.

On the first day, the event concept was presented to all participants, emphasizing the organizers' desire to create a framework for collaboration. Teams were formed for projects, and discussions began based on proposed solutions. On the second day, mentors joined the teams, providing valuable expertise to enthusiastic individuals at the start of their journey, offering much-needed specialized support. Among the participating mentors were experts like Laurențiu Niță (Quarks Interactive), Răzvan Crăciunescu (Politehnica University of Bucharest), Daniel Rosner (OxidOS), Florin Tufan (Veridion), Liviu Gherghescu (BCR), and Diana Mereu (HealthFluencer).

At the end of the three days, teams pitched their ideas and the results achieved during the bootcamp. This was followed by a judging session, where the best project idea was awarded.

The jury comprised specialists such as Raluca Ganea (Growceanu), Mihai Cepoi (Jobful), Liviu Gherghescu (BCR), Elena Ovreiu (Biodyssey), Răzvan Crăciunescu (UPB), Florin Tufan (Veridion), and Anca Luca (BCR).

SeedPods was designated as the winning project, followed by Seismo (2nd place) and Partial Eclipse & Nano Eye (3rd place).

We thoroughly enjoyed the first edition of the 'Laser Valley Innovation Bootcamp - 2023.' The event's goal to facilitate connections between researchers from the National Research and Development Institutes on the physics platform in Măgurele, entrepreneurs, students, and pupils to create new potential innovative projects or progress in existing initiatives was accomplished. The keyword was 'collaboration' - as a tool for achieving business objectives or personal dreams, as a power gained when we share with and support one another.

Helen Keller's words resonate deeply: "Alone we can do so little; together we can do so much!"

See you at the next Laser Valley Innovation Bootcamp in 2024!



The background is a vibrant, abstract composition of overlapping, semi-transparent shapes in shades of blue, green, yellow, orange, and red. The overall effect is reminiscent of a microscopic view of a liquid or a colorful oil slick. Numerous small, spherical droplets and bubbles of varying sizes are scattered throughout the scene, some appearing to float or rise. The lighting is soft and diffused, creating a dreamlike and ethereal atmosphere. The text 'MSP Projects' is prominently displayed in the upper right quadrant, rendered in a clean, white, sans-serif font.

MSP Projects



CONNECT

NextCONNECTION: Concrete actions with business, research, and local public administration for an innovative community

Between June 23, 2022, and August 22, 2023, the Magurele Science Park Association (MSP), in partnership with the Ilfov County Council, implemented the project "CONNECT – Local Public Development through Innovation and Stakeholder Collaboration."

The main objective was to strengthen the association's capacity to develop mechanisms for promoting local development and efficient interaction with authorities in the research-development-innovation (RDI).

The "CONNECT" project is a significant step towards local development through innovation, offering not only solutions but also a replicable model for communities eager to accelerate progress through collaboration and innovation.

Context

The project started with the belief that effective collaboration among diverse stakeholders and local public authorities can generate beneficial services for communities. Through consultative meetings and Innovation Bridge events, MSP community actors provided valuable insights and created bridges for exchanging best practices in local development through innovation.

The final CONNECT Conference - Achievements and Perspectives

The final CONNECT conference, held on June 23, 2023, showcased notable results, including a documentation study, training courses for the MSP team and joining 30 business and research actors to the MSP community. The event featured an exhibition area where community members presented innovative products and participated in networking sessions.

Six community members contributed valuable input during the fifth consultation session, emphasizing the importance of education for the general public, cultural changes, and the need for collaboration among all involved parties.

Innovation and Local/Regional Development

A key outcome of the project is the Action Plan (Blue Paper) aiming to accelerate local development and serve as a valuable instrument for other communities interested in promoting local innovation.

The Action Plan highlights the need to strengthen the RDI ecosystem in Romania, a country classified as an emerging innovator but below the European Union average. The focus is on the importance of collaboration and exchange of experience between the public and private sectors.

Implementation of actions: Invitation to adventure

We are still at the beginning of this journey and the next step is the implementation of the proposed actions in the Blue Paper. We invite you to join this adventure and be part of the change we aspire to for local and regional development.

**Contact us at
office@magurelesciencepark.ro
and let's work together for theMSP
community!**





The resulting initiatives to support public administration in local development through innovation and adaptability to the needs of the RDI ecosystem are:

Initiative 1: Establishment of Working Thematic Groups (WTGs) - aimed at identifying concrete measures in areas and themes of interest to support collaboration among actors in the RDI ecosystem, leading to the enhancement of local governance quality.

Initiative 2: Public consultation platform for civil society/RDI Ecosystem - this initiative provides a suitable tool for citizen participation in local administration decisions and facilitates collaboration with actors in the RDI field, supporting innovation for community progress.

Initiative 3: Platform/laboratories/educational initiatives for promoting future technologies to students in their region - preparing human resources for the labor market by using innovative technologies and methods in education and attracting to STEAM sciences.

Initiative 4: MatchMaking Platform - through the MSP matchmaking platform, we aim to facilitate collaboration between SMEs, large companies, national research and development institutes, universities, etc., creating a space where research services meet the business environment's needs for innovative products, processes, technologies, and services.

Initiative 5: Fund of funds financing - establishing a "fund of funds" financing hub to increase dedicated funding for the RDI ecosystem in the BI region.



Entrepreneurship among students represents a significant challenge but also a unique opportunity for developing leadership skills and bringing innovative ideas to fruition.

Within the **EntrepLoading...** project, implemented by the "Center for Project Consulting and Management" EUROPROJECT Association in partnership with the POLITEHNICA University of Bucharest, the Chamber of Tax Consultants, and the Măgurele Science Park Association, over 370 students have received entrepreneurial training, and following a business plan competition, 21 students were selected and received funding of 60,000 euros each to turn their entrepreneurial dreams into reality.

During the 12-month implementation of business plans, the new entrepreneurs were closely monitored and supported by the **EntrepLoading...** team.

One of the main challenges faced by student entrepreneurs was the effective management of financial resources. Despite generous funding, entrepreneurs had to be extremely careful with expenditures to align them with the business plan budget while maximizing the business's potential.

In addition to operational aspects, student entrepreneurs also grapple with balancing academic requirements and business demands. Time management becomes essential and task prioritization is crucial to avoid overburdening and ensure success in both academic and entrepreneurial environments.

At this point, the businesses established and funded under the **EntrepLoading...** project are in the sustainability phase. Long-term sustainability largely depends on their ability to control costs and generate revenue from sales. This

mechanism is materialized by signing collaboration agreements between MSP and the companies funded under the project, granting them the same rights and obligations as existing members of the MSP community.

The objectives of the partnerships are diverse, starting from identifying the needs of the private environment and establishing collaborative relationships with research and technology service providers. These collaborations focus on intensifying the relationships between knowledge providers and the environment business, promoting existing research/technological services and exploiting them for the benefit of the business community.

Partners entering such agreements with MSP enjoy significant advantages, including privileged access to community resources, networking opportunities, and collaboration possibilities with experts and entrepreneurs in the field of interest. Additionally, they have exclusive access to MSP-organized events, benefiting from discounts and/or special access to conferences, exhibitions, and future events.

Partnerships with MSP also provide access to innovations within the MSP community, offering companies the opportunity to maintain a competitive





**Instrumente Structurale
2014-2020**

advantage in a dynamic environment. Furthermore, MSP promotes its partners through various channels such as the MSP website, newsletters, MSP magazine, and social media, contributing to strengthening their presence in the market.

The EntrepLoading... project no doubt had a significant impact on the future development of these student entrepreneurs.

From developing business plans to their effective implementation and sustainable business management, these young entrepreneurs have gained valuable experiences that we believe could not have been acquired in any other context.

Exploring the entrepreneurial journey, these young entrepreneurs provide insight into the challenges faced as beneficiaries of funds through the **EntrepLoading...** project:



Starting a business is an adventure with successes and many challenges. For me, perseverance and belief in the idea I wanted to turn into reality and in everyone who worked alongside me, mattered. Dedication and focus on understanding how to manage the business, the rules for using non-refundable funds and how to attract and retain professionals helped me build the business I dreamed of since childhood. I think it's crucial to work responsibly, with diligence and dedication.

Cristina Vițcu - VIDAV Creativ Construct



As a young entrepreneur and non-refundable beneficiary, I had essential dual support: constant external support and an extraordinary internal team united by the same vision. Even without experience in managing European funds, we succeeded due to the clarity and promptness of the responses received and, especially, thanks to my dedicated team.

This internal-external synergy was the key to our success, proving that a common vision and close collaboration are vital in entrepreneurship.

Oana Durcău - Triliada



I started by developing a detailed business plan and a project plan for non-refundable funds. This provided me with a clear direction and allowed me to anticipate possible challenges. I invested time in understanding the process of applying for non-refundable funds and developing entrepreneurial skills.

In-depth knowledge of requirements and the process reduced the risk of errors. I learned to be flexible and adapt to unexpected changes.

Filip Pop - Therapy Time



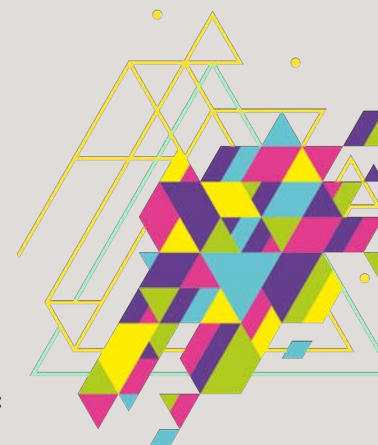
I would define the challenges as intense, but most challenges we encountered were generally bureaucratic or generated by the geopolitical situation surrounding Romania, suddenly changing people's interests, making it harder for us to find clients or resources to provide our services, but we adapt and move forward.

As a smart solutions provider, RELI aims to offer efficient conversion of an already finished space into a smart home system without the need for significant modifications to existing infrastructure.

Kevin Miță - RELI



A new educational initiative by MSP in 2023 - 'Ora de știut!'



Let's remember...

'Ora de știut!' is an optional integrated discipline, part of the school's curriculum by its decision.

The initiative started in 2022 through a partnership between the Ilfov County Council, the Ilfov County School Inspectorate, the 'Măgurele Science Park' Association, and DIGIPEDIA.

The curriculum integrates various fields of interest within the sciences (STEAM), with a general theme focused on exploring scientific aspects of the relationship between humans and the terrestrial and even extraterrestrial environment. It covers topics related to contemporary global issues as well as challenges encountered in everyday activities.

This program integrates specific elements from the curricular areas of Science and Human and Society (primarily from geography, as Earth Science). It targets lower secondary education, with one hour per week allocated, aiming to stimulate curiosity, create questions, foster positive attitudes, and develop intrinsic motivation for learning.

In creating the document for the integrated optional course "Ora de știut!", the aim was to develop the following general competencies:

- Using scientific terminology to develop a correct perception of phenomena in the environment and contemporary society.
- Solving everyday life problems using scientific information.
- Adapting to new environmental and social-professional contexts by correlating processes and phenomena with information from the field of sciences.

The proposed content areas in the program are:

- Curiosity - the starting point of scientific research.
- Conversations with the planet.
- Future technologies.
- Trends in the global economy.
- Humans and outer space.

The curriculum is developed in accordance with the Methodology for Curriculum Development at the school's decision, approved by OME no. 3238/2021.

The originality of the Ora de știut! program comes from partnerships established with the DIGIPEDIA show (a significant vector for





popularizing sciences, offering hundreds of hours of broadcasts available to students and teachers) and the MSP, providing an alternative learning environment with innovative technologies and methods in education.

These partnerships mean practical applications, modern teaching resources; they involve contact with the Romanian scientific environment, with researchers and entrepreneurs who can become the models our children need.

The interest from schools was immediate for “Ora de știut!” initiative that was promoted in Ilfov County! Over 30 schools expressed their students' desire to pilot the initiative. Due to this interest, a campaign was organized for project development in Ilfov County schools, utilizing materials and information presented within the curriculum.



All these projects created by the students of participating schools were exhibited at an exposition organized by the Măgurele Science Park team at the Romanian Parliament in May 2023. Of course, the most representative exhibits were selected and awarded by the organizers.

Additionally, we organized the 'Challenge of Minds' competition, where students enrolled in the optional course were invited on an adventure through the fascinating world of artificial intelligence (AI). They submitted various dedicated and interesting projects for the competition, and the most compelling ones were awarded. After the pilot phase from 2022 to 2023, the overall objective for 2023 was to obtain accreditation for the 'Ora de știut!' curriculum at the school's decision level and to scale it nationally with the support and through the channels of the Ministry of Education. We hope that with the accreditation of this curriculum, students will perceive it more positively and be increasingly motivated to choose vocations in the professional fields of the future. We will keep you informed about the results of the accreditation process carried out by the Ilfov County Inspectorate and the Ministry of Education for this optional curriculum!

In the days immediately following the exhibition, the MSP team organized, at the Education Committee Hall of the Chamber of Deputies, the debate 'Ora de știut!' - 'School Curriculum for the Integrated Optional Course.'

Its purpose was to promote the initiative and disseminate the results of the instructive-educational process within the 'Ora de știut!' curriculum to the legislative body.

We discussed the program's advantages, the challenges of a dynamic generation, and, of course, the impact of artificial intelligence on creativity and the educational process.





Paving the Way for Sustainability: A Retrospective on the Ilfov 's Local Green Deal

As we look back on the transformative journey of the Ilfov Region, one significant milestone shines brightly—the signing of the **Local Green Deal**. This ambitious initiative has not only set the stage for a sustainable future but has also pioneered innovative strategies, particularly through an impactful Innovation Mentoring Program. At the heart of the SME4GREEN's sustainability drive is the Innovation Mentoring Program—a pioneering venture that provided small and medium-sized enterprises (SMEs) with a unique opportunity to engage in one-on-one sessions with seasoned mentors. These sessions delved into critical subjects such as Methods of Managing Innovation Processes, Green Transition, Digitalization, Funding Opportunities for Innovation, and Digital Marketing.

The program facilitated a dynamic exchange of ideas, empowering SMEs to navigate the complex landscape of sustainable innovation. The mentors, possessing a wealth of experience, guided these businesses towards eco-friendly practices, digital integration, and strategic funding avenues. The overarching goal was to equip SMEs with the knowledge and tools needed to play an active role in the forthcoming **Local Green Deal**.

The SMEs that participated in the Innovation Mentoring Program are not mere beneficiaries but active contributors to the development and implementation of the Local Green Deal. By integrating their insights and experiences, these businesses have become vital stakeholders in shaping the region's sustainable future.

Their involvement goes beyond symbolic gestures; it includes tangible efforts to align their practices with the principles of the Local Green Deal. This collaboration not only promotes a green



agenda but also strengthens the local economy by fostering innovation and competitiveness among SMEs. As part of this transformative project, a national workshop was organized, bringing together the Local Steering Group. This gathering served as a platform to collect invaluable insights regarding the needs and solutions for sustainability in the Ilfov Region. The collaborative efforts of the steering group have been instrumental in shaping the direction and priorities of the **Local Green Deal**.

Eight distinguished partners have officially signed the Local Green Deal, underscoring their commitment to a sustainable future. The signatories include Ilfov County Council, Magurele Science Park, Fonduri-Structurale.ro, Ecosys Organization SRL, Quality Habitat SRL, Inquito Srl, Carute Vieneze SRL, and Mia Pop Kinder SRL.



Looking ahead, the Ilfov Region is poised for further growth and collaboration. A key upcoming event is an Experience Exchange Workshop scheduled for January 2024 in Bucharest, where representatives from Ilfov will engage with counterparts from other cities and regions with **successful Local Green Deals**.



This exchange of experiences aims to enrich the Ilfov initiative and foster cross-regional collaboration.

Additionally, the project is gearing up for a concerted effort to attract more SMEs to sign the Local Green Deal. This expansion is crucial for creating a broader impact and ensuring the active participation of the entire business community in driving sustainability. As we celebrate the achievements of the Ilfov Region in embracing sustainability, the call to action resounds loud and clear.

SMEs and other relevant stakeholders are invited to join hands in supporting and signing the Local Green Deal.

SMEs and other relevant stakeholders are invited to join hands in supporting and signing the Local Green Deal.

This collective commitment will not only benefit individual businesses but will contribute to the broader goal of building a resilient, green, and prosperous Ilfov Region for generations to come.

Together, let us shape a future where innovation and sustainability go hand in hand, leaving an indelible mark on the landscape of progress.



Let's "talk" about PROSME differently.

It's said, and quite rightly so, that a picture is worth a thousand words. I'd say: "at least a thousand words," especially in today's fast-paced world, where everything happens in a flash, moving at the speed of the internet and social media. So, I've put this saying into practice!

We want you to understand at a glance what the PROSME team from MSP has meant this year! And precisely because it's hard to fit 12 months of adventure into such a small space, we want to share with you and invite you to be part of our project.

First, let's briefly remember what the PROSME project stands for.

The "Promoting SMEs through Enterprise Europe Network" (PROSME) project supports the transition of enterprises towards more environmentally, socially, and

economically sustainable businesses. It focuses on backing digital innovation and enhancing resilience to ensure competitiveness within the European Single Market and global markets. MSP is a partner within the PROSME consortium.

The experts at #MSP in the PROSME project offer support to enterprises for adopting new business models, including:

- Advice on internationalization, innovation, digitization, or accessing European funding programs, including research, development, and innovation;
- Assistance in identifying European and international business partners or for identifying development projects;
- Training and information activities;
- Supporting SMEs in expressing opinions within the European policy-making process.

The year that has just ended made us aspire to be more competitive, and we managed to initiate and successfully complete many impactful activities in the business environment. We are proud of the following activities:

1. Co-organizing the virtual pitching competition, with prizes exceeding 20,000 EUR in the binno hub

On June 27, 2023, binno.com, a virtual matching and innovation hub in the #MSP community, developed by the software company [2webservices](https://2webservices.com), announced, through the founder [Andreea Avramescu](https://www.linkedin.com/in/andreea-avramescu), the winners of the virtual pitching competition for high-tech startups on its own platform. The competition, launched by binno in collaboration with MSP, aimed to connect founders with ecosystem resources - from mentors and consultancy services to investment opportunities and acceleration. 17 international high-tech companies from various fields, including AI, VR/AR, Robotics, and Blockchain, participated in the competition. At the event, experienced consultants in innovation, new business models, investors, and mentors also participated. The grand prize was a scholarship to the pre-acceleration program at Draper University in Silicon Valley, USA, worth 12,000 USD, and was won by One Learning, an EdTech company founded by [Ioana Axinte](https://www.linkedin.com/in/loana-axinte).



The ending year made us desire to be more competitive, and we managed to initiate and successfully complete many

compelling activities with significant impacts in the business environment. We take pride in the following activities: Second place was won by NeuroReVive, MedTech/DeepTech, founded by Adrian Fechete. Impressed by this solution, representatives from Draper University awarded the founder with a partial scholarship of over 75% in the university's pre-acceleration program in Silicon Valley. Third place was won by Nightz, EventTech, founded by Darius Marian Filip. The jury consisted of program managers from accelerators and international industry experts.

2. Participation at the GoTech World 2023

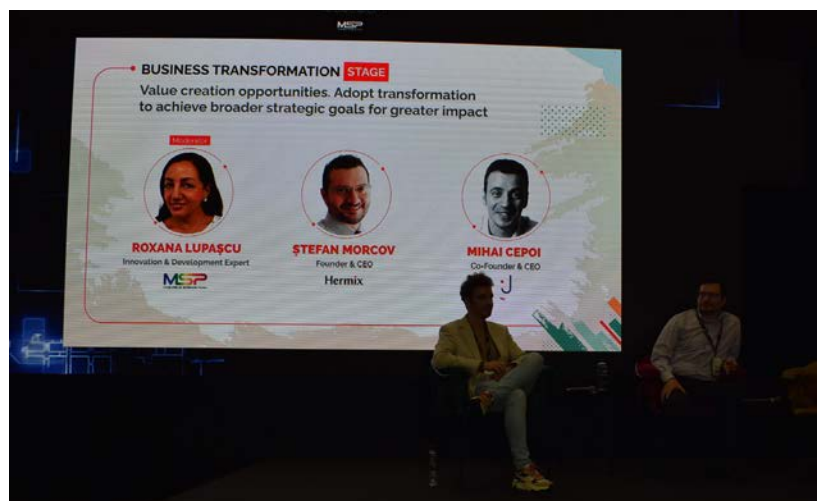
On the 8th and 9th of November, the MSP team participated as a partner in the international event GoTech World 2023, the largest IT & Digital expo-conference in Central and Eastern Europe, as the 'Business Transformation Networking Partner'.



We created a dedicated networking area for the PROSME project, showcasing in the stand solutions from the MSP community. We had alongside us 5 SMEs such as FIA Integra SRL, Unbox Management Solutions SRL, Atlas Apps SRL, Playful Software SRL, SeedPods SRL, Alstoria Global Tech SRL. Additionally, we organized a series of interactive activities tailored for ambitious companies and the business minds behind them.

We were also present on the Business Transformation stage with the session 'Value creation opportunities. Adopt transformation to achieve broader strategic goals for greater impact.' Here, we emphasized that business transformation is more than just a process; it's a goal in itself that helps create long-term value and this was emphasized by the transformative power of the EEN network, supported by two successful examples from the #MSP community: Mihai Cepoi (Jobful Playground) and Ștefan Morcov (Hermix).

They discussed the opportunities and challenges that change brings in various industries and how EEN can lead to achieving strategic goals with a greater impact.

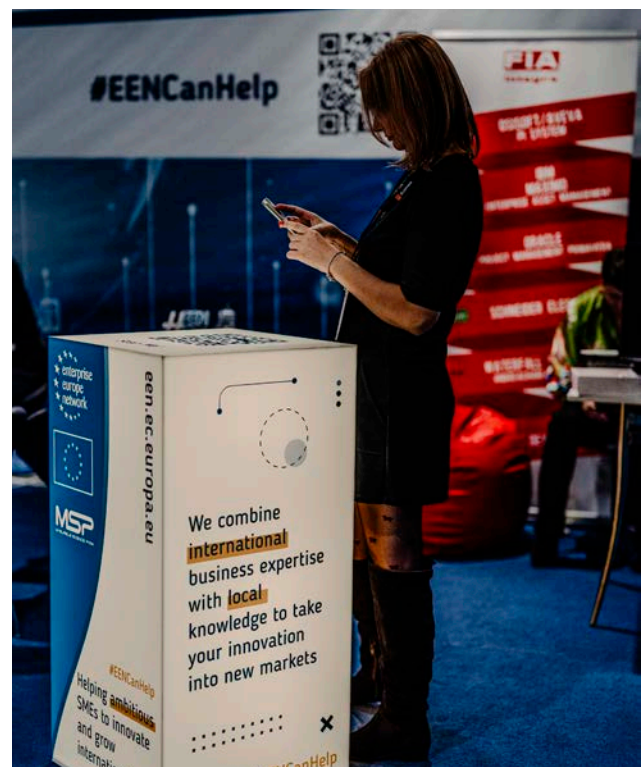


At GoTech World 2023, our experts from the PROSME project - Claudiu Vrînceanu, Emanuela Modoran, and Paula Badinu - conducted a series of mini-presentations for attendees in which they discussed three topics of interest for ambitious SMEs: internationalization, digitalization, and accessing funds.



This participation led to over 75 one-to-one meetings with potential future business partners from among the 100+ companies showcasing over 1200 top technological solutions.

We attracted over 1500 visitors to our stand, fostering dynamic interactions dedicated to exploring technological advancements and digitalizing businesses. We exchanged innovative ideas during the intense two days, learned about cutting-edge themes and solutions from renowned speakers, had fun, made friends, and laid plans for the next edition.



3. Enterprise Europe Network Annual Conference 2023 in Bilbao

The MSP experts participated in the EEN Annual Conference in Bilbao from November 15th to 17th, held under the theme 'The Network at 15: Showing the Way Forward for SMEs,' with over 800 participants from 50 countries.

The event took place during the European SME Week and brought together small and medium-sized enterprises (SMEs), network partners, EU officials, and private sector representatives. In a hybrid format, the EEN Annual Conference showcased highly interesting panel discussions, interactive workshops, networking opportunities, and social events.



The sessions were organized around four main directions aligned with the critical priorities of EU policy:

- **Industrial transition, with a focus on sustainability, digitalization, and resilience;**
- **The single market and global markets;**
- **Innovation and startups;**
- **The quality and impact of business support services.**

We listened to representative voices from the European Commission, who reaffirmed how important the services we offer to companies are, especially in this recent period marked by uncertainty and political instability. We rejoiced together at the success of three entrepreneurs from the Basque Country who shared their stories with us, and it was delightful to see familiar faces from past editions.

And one of the highlights of the first day was, without a doubt, the modern-style showcase of auresku, a traditional dance from the region where we were.



And the second day was a busy one, focused on communication, innovation, and networking. Luiza Popescu, the project's communicator, participated in a workshop on effective communication in social media, where she learned useful tips about creating video scripts and crafting messages for the LinkedIn platform. All of this interspersed with one-to-one sessions with other specialists from the #EEN network, who shared valuable insights from all corners of Europe.



On the agenda for the third day of **#EEN2023**, we attended a final panel about the future of companies that can strategically innovate, the closing session of the conference, and we bid farewell to all the participants we met in Bilbao.

We're really curious to experience the 2024 event in Budapest!

And because we understand the challenges and aspirations of companies aiming for international growth, we take pride in co-organizing European events within the EEN network, such as:

1. DRONETECH 2023 – a hybrid event held between October 12th-18th in Torun, Poland, which connected investors, entrepreneurs, scientists, and enthusiasts of the latest drone technology.



2. EBAN Annual Congress 2023 - held between May 24th-26th in Thessaloniki, Greece - The 2023 edition of the European Business Angels Network (EBAN) gathered hundreds of investors, startup founders, and innovation enthusiasts who convened for 3 days to further accelerate entrepreneurship and investments in the broader region of Southeast Europe.



3. Hack4reSTART Bucharest – Chamber of Commerce and Industry Bucharest. Hack4reSTART was an innovative hybrid event aimed at bringing together traditional SMEs in the manufacturing sector and technology providers, focusing on suitable solutions in the digital transformation process and the transition to Industry 5.0.



4. Hannover Messe 2023 - is an innovative hybrid event aimed at bringing together traditional SMEs in the manufacturing sector and technology providers, focusing on suitable solutions in the digital transformation process and the transition to Industry



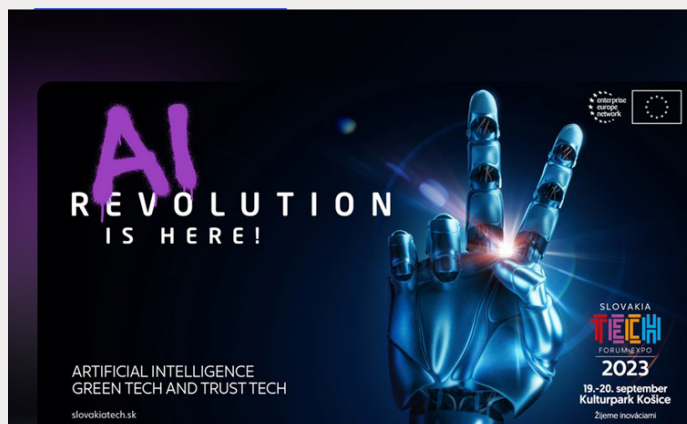
Hannover Messe 2023 – traditional brokerage event, organized from April 17 to 20, 2023 in Hannover, Germany.

The event brought to the fore:

- Industry 4.0 and Smart Factory solutions;
- Resource and energy efficient production technologies;
- Sustainable energy and mobility;
- Measurement tools, for obtaining information about the results of industrial research and more.

5. SlovakiaTech Brokerage: AI, Green and Trust!

AI, Green and Trust! This year's event, held on September 19-20 in Kosice, Slovakia, brought together companies and experts to explore the latest trends in AI, Green Tech, and Trust Tech.



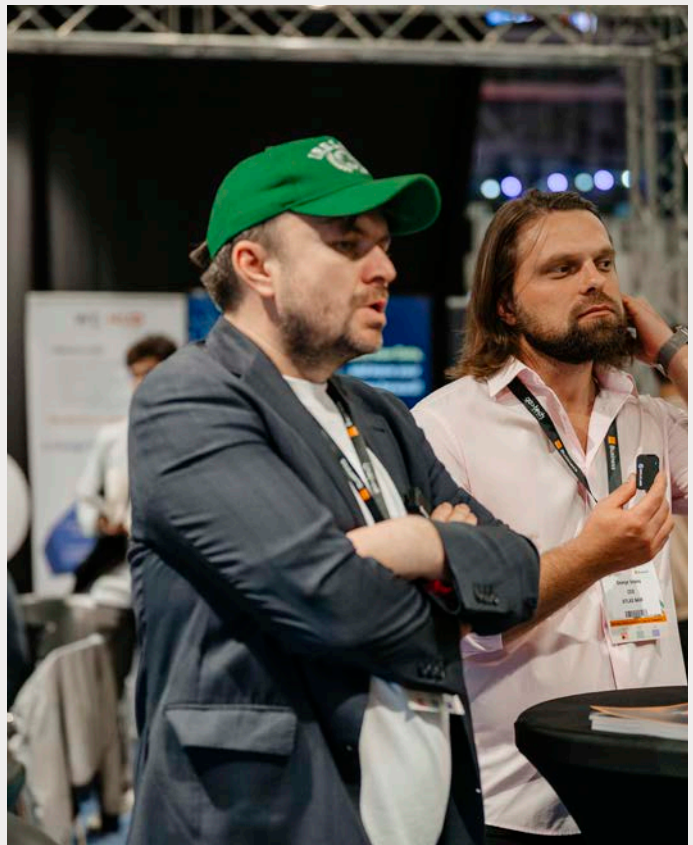
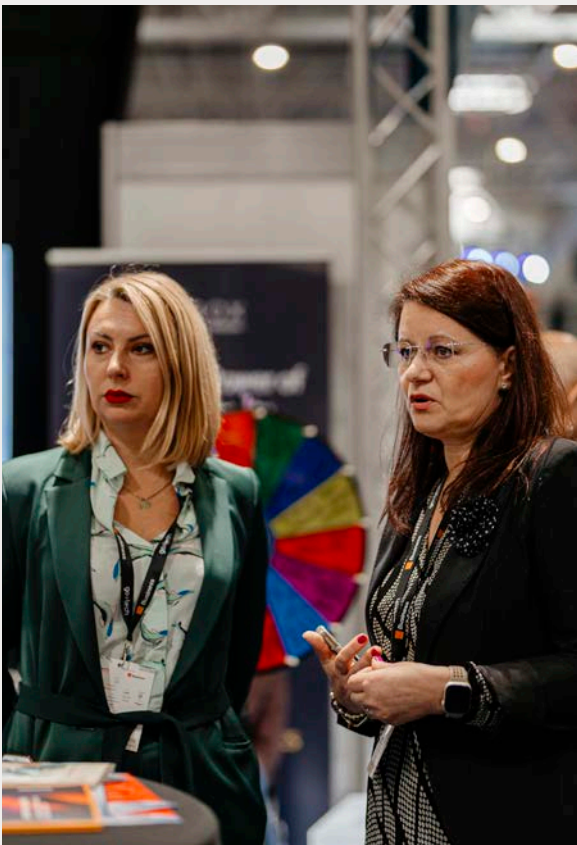
AI: Challenges and Regulations | Education and Jobs | Manufacturing and Retailing | Creativity and Society | Health;

Green TECH: Advanced Nuclear Technologies | Renewable energy and storage | Sustainable transport | Green hydrogen | Waste reduction;

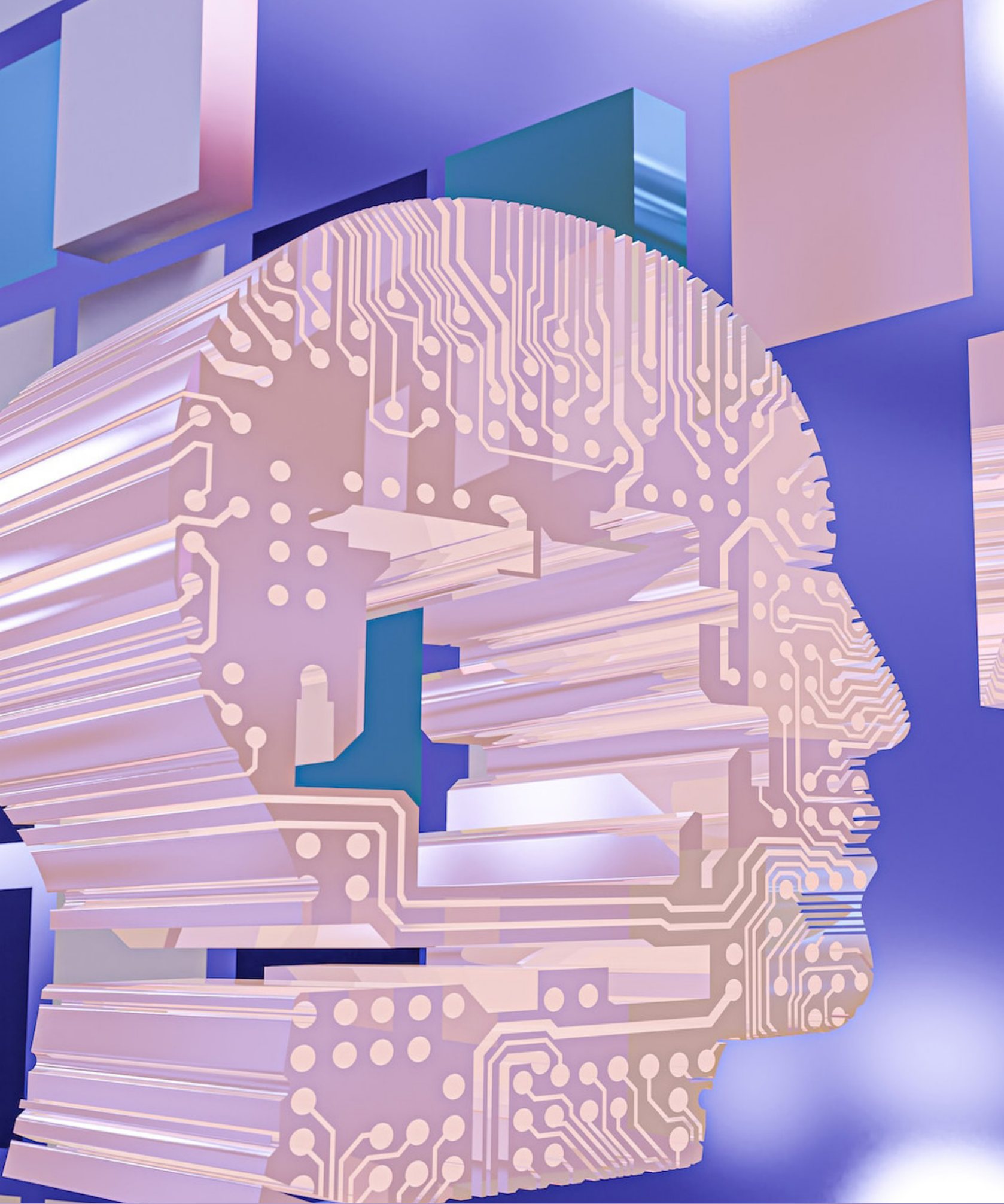
Trust TECH: Cyber Security Hacking | Identity and Privacy | Finance and Blockchain | Defense Technology.

6. Innopro Summit – Innovations Pathways Romania - Innovations Pathways Romania - which took place in Sinaia between November 16-17, 2023. The Summit involved a diverse audience, including businesses and authorities at regional, national, and international levels, specifically designed for organizations aiming to leverage innovation services and solutions, with a strong commitment to identify the most effective pathways toward transitioning to a more sustainable and resilient business model or organizational structure.





Sounds like a series full of achievements and positive energy! Images can be an excellent way to illustrate these accomplishments. Wishing you wonderful celebrations and creative connections to the PROSME team by MSP, and may you have a prosperous and joyful start to the new year!



The image features a vibrant, abstract 3D composition. A large, light orange rectangular block is positioned on the left side, with a semi-circular cutout revealing a detailed, golden circuit board pattern. Above it, two teal rectangular blocks are partially visible, floating in a deep blue gradient background. The overall aesthetic is modern and technological.

TECHNOLOGICAL PARKS

bursateknopark®

Bursa Teknik Üniversitesi Teknoloji Geliştirme Bölgesi



"Bursa Technical University Technology Development Zone - Bursateknopark" provides services in an area of approximately three decares in Bursa Technical University Mimar Sinan Campus (Bursa, Turkey). Bursa Technical University Technopark Company was established in March 2021 with the permission of Turkish President and started to activities in June 2022. The owner of the company is Bursa Technical University (BTU). Bursateknopark is Turkey's 75th Technology Development Zone and reached 100% occupancy in July 2023.

It includes 30 companies and eight of them are incubator companies. Bursateknopark has rentable office spaces, an incubation center, a prototype laboratory and meeting rooms within the building.

Bursateknopark completed its first year of operation in June 2023. Although it is a very young technopark, it is very active in the region. It carries out many activities such as thematic events, seminars, training and so on for the development of its companies and entrepreneurship ecosystem.

Bursateknopark serves as a bridge between universities and public institutions by bringing local and foreign companies together. It encourages the establishment of new companies with the potential to produce advanced technology and the growth of existing companies.

Bursateknopark mission is to be a technopark that can compete at the international level and produce high-value-added technology. It aims to integrate the research talent, qualified workforce and regional industrial experience of universities in Bursa and its surroundings.

It has adopted the vision of contributing to the national and international innovation and R&D ecosystem by supporting the development of innovative products and services with advanced technology and high-added value.

It aims to achieve a strong character that adheres to scientific and ethical values, and focuses on high-added value, innovative technological products and services and serves the development of the region, country

and world. Bursatechnopark provides administrative and technical services to the companies. At the same time provides services such as consultancy and support, incubation, technology transfer office and prototype laboratory to companies.

Rental Services: Bursatechnopark offers qualified office space through rental to companies that want to operate in.

Meeting and Conference Hall Service: Companies can use the meeting rooms free of charge by making a reservation.

Restaurant-Cafeteria-Canteen Services: These services are provided by Bursa Technical University, located on the same campus.

Services: The Technical University of Bursa offers consultancy, announcements, information, and benefits such as access to the Technical University Library of Bursa as a user/guest.

Consulting and Support Services: Consultancy, training and support services required for R&D and design activities are provided, especially for small and medium-sized companies, in the process of transforming technical knowledge into economic value.

- Project and R&D management;
- Access to Financial Resources and Marketing;
- Business Development;
- Human Resources Management;
- Intellectual and Industrial Property Rights Management;
- University - industry collaboration;
- Technical Report;
- Accounting and financial issues; training, seminar, fair, mentorship and meeting with Angel Investors.

Prototype Laboratory Service: We provide services to companies in the development and testing of prototypes of

new products, technologies or designs.

Incubation Services: We allocate space in the incubation center to entrepreneurs who have not yet established a business.

Technology Transfer Office Services: There is a protocol agreement between Bursa Technical University Technology Transfer Office (Bursatto) and Bursatechnopark regarding the execution of Technology Transfer services.

Also Bursatechnopark organizes Technology Cooperation Programs in order to ensure that companies operating in the Region establish R&D and technology-oriented collaborations with companies within the Region, domestically and abroad, researchers and research institutions and related organizations.

We have specialized skills in the following areas:

- Monitoring and evaluating projects to assist in their successful planning, implementation and termination;
- Making suggestions to improve the performance of project;
- Identifying project objectives and key performance indicators (KPIs) and measuring the project's performance using these indicators;
- Supporting researchers and entrepreneurs by providing training and consultancy services;
- Accelerating the commercialization of technologies developed through collaboration with SMEs;
- Support in protecting and managing the intellectual property rights of developed technologies.;
- Support in promoting and commercializing new technologies by ensuring an environment that stimulates entrepreneurial spirit and innovation.



Website : <https://bursateknopark.com/>
Contact person: Atike Köken / atike.koken@btu.edu.tr / bursateknopark@btu.edu.tr



RESEARCH AND DEVELOPMENT

INSTITUTES

RESEARCH PARTNER



NATIONAL INSTITUTE FOR LASERS, PLASMA, AND RADIATION PHYSICS – INFLPR

www.inflpr.ro

RESULT OF RESEARCH

APPLICABILITY

Agriculture | Industry

NAME OF THE RESULT

Innovative Technology for Manufacturing and Testing Gas Sensors

DESCRIPTION

At a global level and within the context of accelerated industrial development, the gas sensor market is experiencing continuous growth. Various industrial sectors are known to be responsible for harmful emissions, potentially combustible, thus creating a high demand for sensors capable of monitoring and analyzing gas emissions. An ideal gas sensor should have a low manufacturing cost, offer real-time detection capabilities, be sensitive and selective, possess rapid response times, and its performance should remain unaffected by temperature and humidity variations.

In this context, our primary focus lies in two main directions:

- (a) Developing advanced materials, structures, and processes and their subsequent integration into gas detection devices.
- (b) Characterizing and testing obtained sensors for the detection of various gases of interest.

We have developed sensor manufacturing technologies (both optical and conductometric) for gas detection purposes, catering to public safety, agriculture, and industry (H₂, CH₄, NH₃, CO, CO₂, organic compound vapors, etc.). The advantages of our developed sensors include miniaturization, low power consumption, high sensitivity, and enhanced stability.

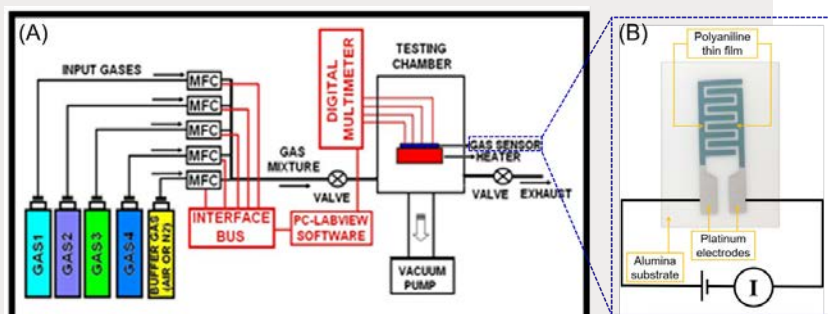


Fig 1. a) Internal built configuration for gas sensor testing. b) An example of a conductometric sensor used for ammonia detection.

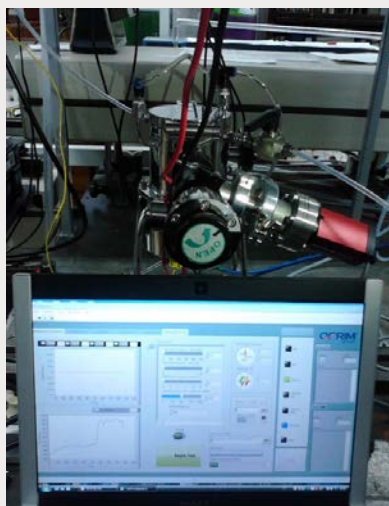


Fig 2. Photograph of the gas testing chamber where various sensors can be integrated, along with the LABVIEW application used to control various parameters.

RESULT OF THE RESEARCH

APPLICABILITY

Food Industry

RESULT TITLE

Manufacturing an innovative fiber optic sensor for detecting allergens in food products.

DESCRIPTION

Dispositives based on Surface Plasmon Resonance (SPR) are potent optical tools with significant applicability in biodetection, allowing real-time quantification of biochemical interactions.

biosensors remain unexplored, necessitating a better understanding for it to reach its maximum potential. Consequently, the INFLPR team has developed, for the first time in Romania, a fiber optic diagnostic device based on Surface Plasmon Resonance (FO-SPR), used for rapid and sensitive detection of allergens (e.g., Ara h 1) in food products.

However, commercial SPR platforms are seldom utilized outside specialized centers due to their bulky nature, costliness, and requirement for trained personnel.

The detection potential of the FO-SPR system has been assessed through the implementation of novel strategies involving sensor design modification and its active surface alteration, aiming to achieve new standards in miniaturization, performance, portability, ease of use, and applications. The obtained results present new opportunities for the automatic and rapid detection of allergens in general (such as the major allergen Ara h 1 found in peanuts), ultimately aiming to provide consumers with safer food options.

To counter these issues, Fiber Optic (FO)-based SPR biosensors have recently emerged as an alternative to classical prism-based SPR systems, offering advantages like simplicity, portability, and cost reduction.

Yet, as the FO-SPR platform is continuously evolving, many opportunities regarding the construction of these



Fig 1. The developed Fiber Optic Surface Plasmon Resonance (FO-SPR) detection system. On the left is an enlarged image of the FO-SPR sensor fixed in an SMA connector. This system comprises the following components: (1) a halogen light source, (2) a UV-Vis spectrophotometer, and (3) an interchangeable FO-SPR sensor inserted into an SMA-type connector.

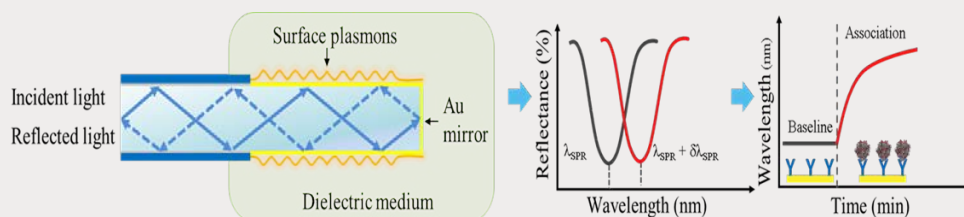


Fig 2. Schematic representation of the operating principle of the FO-SPR detection system. At the interface between a noble metal and a dielectric medium, under certain conditions, surface plasmons arise, causing a loss in the intensity of reflected light - an SPR dip. The spectral position of this SPR dip depends on the refractive index (RI) near the sensor surface. Thus, any event occurring at this interface, such as the interaction between a specific antibody and antigen, will induce a modification in the position of the SPR dip (e.g., from λ_{SPR} to $\lambda_{SPR} + \Delta\lambda_{SPR}$). By graphically representing these changes in SPR wavelength over time, real-time sensorgrams are obtained, allowing efficient monitoring of bio-/molecular interactions.

Featured Article in Market Watch Magazine titled "Sensing and Detection Field: Pinnacle of Applied Research at INFLPR and National Center of Excellence," October 2020 (www.marketwatch.ro/articol/17047).

2. Video: www.youtube.com/FOSPR_INFLPR 3. Web: <https://fosensing.inflpr.ro>; <https://lasem.inflpr.ro/>

RESULT OF THE RESEARCH

APPLICABILITY

RESULT TITLE

DESCRIPTION

Products Developed

We've created metallic prostheses in the form of spinal plates and tibial prosthesis through 3D printing. The printed materials exhibit no volumetric defects, such as porosity or fissures, and there is no segregation of constituent elements.

3D Printing Technology

We've developed a 3D printing technology for metallic materials involving material deposition, cutting, drilling, and finishing. This technology can be adapted for other applications in powder metallurgy, such as laser cladding, relief laser engraving, and composite material synthesis.

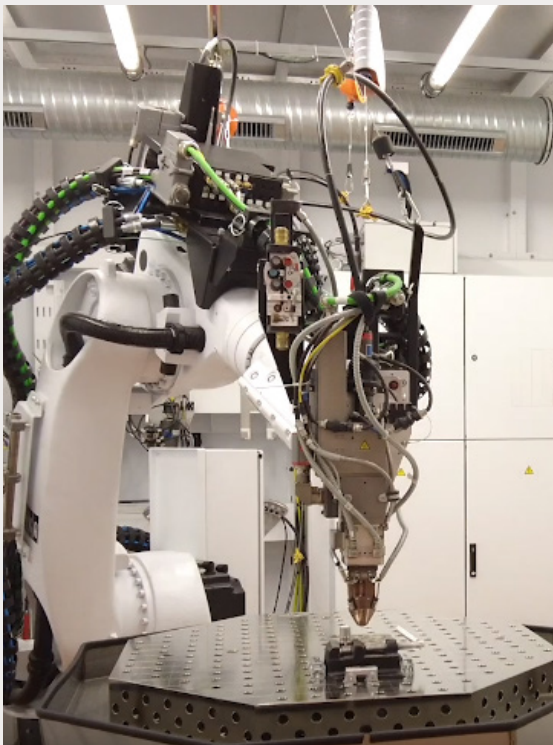


Fig 2. Laser Robot

Industry

Technology for 3D Printing of Metal Materials

Starting from a powdered material, a laser beam selectively melts and then solidifies the powder locally into a dense metallic material. By either scanning the laser beam across a powder bed or blowing the powder into the moving laser spot, a contour of dense material can be drawn. Repeated passes of the laser beam over the same contour enable the generation of 3D structures, facilitating the production of metallic parts in a single step. This method eliminates multiple conventional technological steps in the manufacturing and processing process, thereby constituting a significant competitive advantage.



Fig 1. Suggestive image



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The European Union
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SciResCareer: promoting research and the researchers

One of the priorities of the project Regional Centre for Guidance and Counselling in Research Careers in the Bucharest-Ilfov Region (RBI) has been dissemination of the research results and to establish a framework where outstanding Romanian researchers have the chance to lecture for the general public. To this end, the project implementation team started a series of activities involving different target groups, from the general audience, such as participation in the European Researchers' Night 2023 event, to passionate students about science and young researchers in early stages of their careers.

The public lectures series named Science Café started in July, with Dr. Mădălin Giambașu (Merck, Sharpe&Dohme) and Professor Adrian Șalic (Harvard Medical School) as guests. Dr. Mădălin Giambașu provided an insight into the private research sector, as he works in the research department of the US above-mentioned pharma company. Professor Adrian Șalic presented his research directions, especially in the light of the new project he is going to implement at the University of Bucharest, together with researchers from the Organic Chemistry group of the Faculty of Chemistry. The conferences were attended by many PhD and MSc students from the University of Bucharest, who were able to discuss with the guests the particularities of a career in research. The series of conferences will continue monthly, and the guests will be announced on the project website

<https://scirescareer.unibuc.ro>.

The SciResCareer project team made a significant contribution to the Science and Technology Summer School in Măgurele, a well-known event for promoting STEAM disciplines among young people. Thus, Professor Virgil Băran, director of the SciResCareer project, participated in the opening

event, presenting the objectives and activities of the project and its importance for the development of the research ecosystem in the Bucharest - Ilfov Region. In addition, together with Lecturer Andreea Croitoru, Professor Băran hosted part of the activities of the theme Introduction to the theory of quantum correlations and quantum information processing. Professor Beatrice Radu (Faculty of Biology of the University of Bucharest) gave the opening lecture of the summer school, entitled "The Brain - the most complex organ", which was highly appreciated by the young people, the number of questions received exceeding the allocated time. Further, with the support of PhD students Florin Zamfirache, Andrei Bratu and Gabriela Prundaru, she supported the theme entitled Exploration of brain activity and behaviours - from animals to humans. The 3rd theme, entitled Coordination compounds: synthesis, characterisation, and applications in medicine, was presented by Lecturer Delia Popescu, helped by Assistant Professor Mariana Dianu and Lecturer Cătălin Maxim (Faculty of Chemistry).

As every year on the last Friday of September, the European Researchers' Night 2023 took place on September 29th, an event aimed at promoting the research career among young people, celebrating the research profession, but also communicating the research results to the general public, in an action to raise society's awareness on the importance of research, development and innovation.



UNIVERSITATEA DIN
BUCUREȘTI

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<https://mfe.gov.ro/pnrr>



The National Recovery and Resilience Plan

The project's stand was under siege by children between the ages of 5 and 20, who watched or even got involved in Chemistry or Biology experiments, but also the flight of the drones and the images they transmitted on the LCD monitor in the stand. On the stage of the event, Prof. Beatrice Radu gave the presentation What do we know about emotions? The bravest participants tried the EEG helmet, and the most active participants received small prizes from the project team.

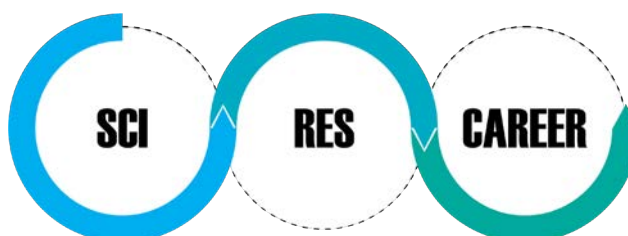
The research promotion activities towards the society and the development of programs targeting young people from secondary schools and highschools, focused on their involvement in scientific experiments within the SciResCareer project, will continue in the next period.



Don't represent the official position of the Romanian Government.

EUROPEAN UNION - NEXTEUGENERATION

<https://www.facebook.com/PNRROficial>



RESEARCH PARTENER



NATIONAL RESEARCH AND DEVELOPMENT INSTITUTE FOR
FOOD BIORESOURCES, IBA BUCHAREST

www.bioesurse.ro

RESULT OF THE RESEARCH

CONTACT: Catană Luminița

CENTER/ DEPARTMENT

National Research And Development Institute For
Food Bioresources, IBA Bucharest

APPLICABILITY

Health | Nutritive | Valorization of raw materials

RESULT TITLE

**Pasta fortified with Aronia melanocarpa pomace
powder**

DESCRIPTION

The product "Pasta fortified with Aronia melanocarpa pomace powder" has an original and scientifically based composition, consisting of a functional ingredient (powder) obtained from Aronia melanocarpa pomace, organic white Alac flour (*Triticum monococcum*), organic whole wheat flour (*Triticum monococcum*), eggs, water and sea salt.

The final product is a delicious dining experience and beneficial for health, which capitalizes on both the taste and the nutritional benefits of these special ingredients, offering a unique synergism of bioactive compounds.

The product "Fortified flour pasta with powder from Aronia melanocarpa fruit waste" is noted by the protein content (15.70%), ash (1.90%) and mineral elements.

Utilization of waste resulting from fruit processing of Aronia melanocarpa in the form of juices means efficient use of residues produced during the process of obtaining juices from Aronia melanocarpa fruits.

This work involves transforming these waste materials into a functional ingredient in the powder form, which has high nutritional value and potential antioxidants.



PHOTO Pfa LT



pasta with
a unique
composition
based on
aronia,
scientifically

RESEARCH PARTENER

National Institute of Materials Physics



www.infim.ro

RESULT OF THE RESEARCH

CONTACT: Phd. Ștefan Neațu - stefan.neatu@infim.ro

CENTER/ DEPARTMENT

National Institute of Materials Physics

APPLICABILITY

Energy

RESULT TITLE

Hydrogen production through photocatalytic water splitting

DESCRIPTION

In a few words, photocatalysis can be described as the acceleration of a photoreaction in the presence of a catalyst, called a photocatalyst, which upon photoexcitation creates electron-hole pairs that migrate to the outer surface and initiate simultaneous oxidation and reduction reactions. In this field, most of the initial studies focused on the production of hydrogen through water splitting reactions using various photocatalysts.

In addition to its role as an energy carrier, hydrogen possesses the capability to facilitate the production of hydrocarbons via the process of photoreduction of carbon dioxide.

This process holds the potential to yield substantial environmental benefits, as it involves the conversion of a greenhouse gas into valuable chemicals. Starting from these premises, within the MATCA (Catalytic Materials and Catalysis) group of the National Institute for Materials Physics, research was carried out focussing on hydrogen production through photocatalytic water splitting by using various photocatalysts based on titanium dioxide.

This approach proved a promising solution for obtaining hydrogen using highly stable photocatalysts both under long irradiation and under continuous magnetic stirring.



PHOTO Gas chromatograph

The experimental setup employed in this study comprises a cylindrical quartz photoreactor equipped with two valves (one for inlet and one for outlet), where the photocatalytic water decomposition reaction occurs. Additionally, an illumination system with optical fiber light guidance is incorporated into the setup. The gaseous products are subjected to analysis by the utilization of a gas chromatograph.

RESULT OF THE RESEARCH

CONTACT: Phd. Neațu Florentina/Phd. Mihaela Florea - florentina.neatu@infim.ro;
mihaela.florea@infim.ro

CENTER/ DEPARTMENT

National Institute for Materials Physics/Catalytic Materials and Catalysis Group (<https://infim.ro/lab-80/>)

APPLICABILITY

Chemical Industry

RESULT TITLE

Chemical recycling of polyethylene terephthalate (PET)

DESCRIPTION

The industrial production of plastics began after the Second World War, and today a world without plastics or synthetic organic polymers seems unimaginable.

The rapid growth in plastics production is extraordinary, outstripping most other man-made materials, and production is gradually increasing, estimated to be over 300 million tonnes in 2023. But, the extreme durability of plastics and the unsustainability of current recycling methods, have made polymers a long-term environmental concern and a threat to the global ecology.

Thus, the so-called "**plastic revolution**" will soon be followed by the global "plastic-free resolution". Therefore, there is an urgent need to address these environmental issues that throw a shadow on the importance of these materials that play an important role in our economy and everyday life and, YES, can save lives, enabling medical innovation.

At the National Institute for Materials Physics, **MATCA group (Catalytic Materials and Catalysis)** has been developing research to find a solution to this major problem and tried to depolymerise PET into monomers using heterogeneous catalysts.

The advantages of using chemical recycling using heterogeneous catalysts is that plastic waste containing PET can be broken down to its starting material (monomers) if water is used as a solvent, and the catalysts used are recyclable and can be reused again in the depolymerisation cycle.

Chemical recycling has proven to be the most promising end-of-life solution for contaminated PET waste streams and is essential to meet the many imminent recycled content requirements for PET products.

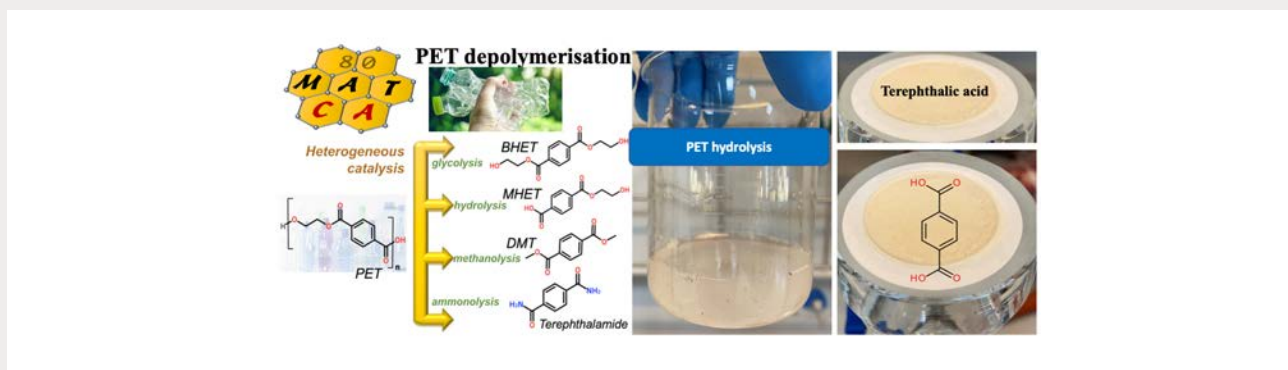


Photo Depolymerisation

RESEARCH

PARTENER

THE INSTITUTE OF BIOLOGICAL RESEARCH IAȘI, BRANCH OF
INCDSB BUCHAREST.



www.incdsb.ro

RESEARCH RESULT CONTACT

Acatrinei Ligia, Boz Irina

CENTER/ DEPARTMENT

Experimental and Applied Biology Department

APPLICABILITY

Agriculture | Forestry | Technologies for Obtaining
Natural Products | Nanotechnologies

OFFER TITLE

Analysis and Testing Services - Plant Physiology

DESCRIPTION

- The evaluation and monitorization of the ecophysiological response in wild plant species and crop plants to the anthropic stress (including chemical treatment) and climate change at some terrestrial ecosystems, natural and anthropic by using specific indicators such as, photosynthetic pigments, carbohydrates metabolism, foliar gas-exchange parameters (photosynthesis, transpiration, respiration, stomatal conductance) through modern non-invasive in situ or ex situ methods. Analysis of water management in soil-plant system in protected spaces (polyethylene tunnels);
- Identification and valorization phytotherapeutic potential through histo-anatomical analyzes of vegetative and reproductive organs; analysis of structural changes induced by certain external factors; identification and characterization of the structures involved in the secretion of active principles (especially volatile oils), identification and exploitation of the chemical polymorphism of volatile oils from medicinal plant species.

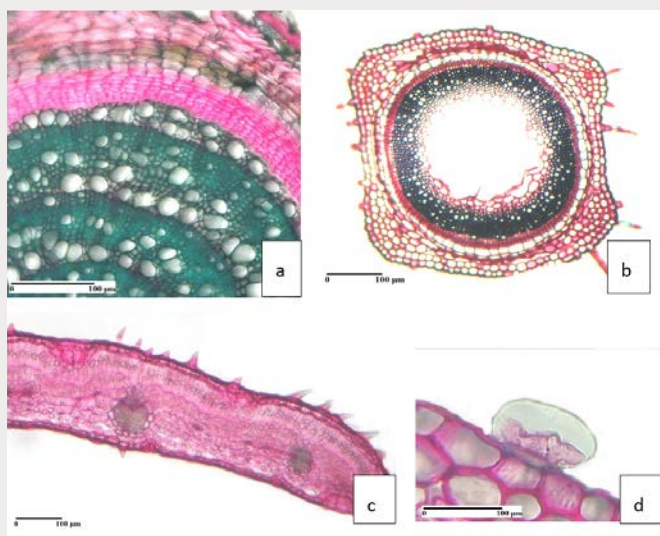


Fig 1. Transverse sections made through the vegetative organs of the *Thymus glabrescens*: a. Root; b. Stem; c. Leaf blade; d. Oil-secreting hair volatile

RESEARCH RESULT

CONTACT: Crăciunescu Oana - oana.craciunescu@incdsb.ro

CENTER/ DEPARTMENT

National Institute for Research Development for
Biological Sciences, Bucharest (INCDSB)
in collaboration with Santo Raphael SRL

APPLICABILITY

Biotechnologies | Bioeconomy

RESULT TITLE

Hypocaloric protein bar

Hypocaloric bar 80% extract from berries

Through the synergistic combination of forest fruit residue (blueberry, cranberry, sea buckthorn, currants) with apricot kernels, chia seeds, hazelnuts, cocoa butter, cocoa mass, malt syrup, honey and coconut oil, was obtained a product rich in antioxidants, with nourishing, vitaminizing and mineralizing properties. The production process is reproducible and leads to the obtaining of a stable functional product / food. The composition was conditioned as glazed bars.

Patent application published RO135559 (A0)/ 30.03.2022.



PHOTO Synergem bar & composition Functional food with nanoencapsulated bioactive compounds

RESEARCH PARTENER

INSTITUTE OF BIOLOGICAL RESEARCH CLUJ-NAPOCA,
BRANCH OF THE NATIONAL INSTITUTE OF RESEARCH AND
DEVELOPMENT FOR BIOLOGICAL SCIENCES BUCHAREST



www.incdsb.ro

RESEARCH RESULT

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CENTER/ DEPARTMENT

Institute of Biological Research Cluj, Department of Taxonomy and Ecology, Environmental Microbiology

APPLICABILITY

Environmental Monitoring | Identification and characterization of microorganisms from water and sediment samples | Assessment of environmental factors' impact on microbial communities

OFFER TITLE

Analysis and Testing Services - Microbiology and Molecular Analyses

DESCRIPTION

The Environmental Microbiology Laboratory provides a dedicated research and development platform for the study of microorganisms in natural environments, with the aim of supporting research in the "One Health" field. This facility is equipped with modern infrastructure and offers extensive capabilities for both fundamental and applied research across various domains. The laboratory facilitates the study of microorganisms in the environment, with a focus on lotic ecosystems, drinking water, wastewater, and treated waters.

Through the use of available analytical techniques and state-of-the-art equipment, we can investigate bacterial cultures, perform molecular biology analyses, and utilize biotechnologies to address various research questions. Key areas of interest include public health and environmental monitoring, the identification and characterization of microorganisms in water and sediment samples, the assessment of the impact of environmental factors on microbial communities, and the development of strategies for the conservation and protection of natural resources.



Fig 1. Petri dishes with selective isolation media with agar for actinomycetes (AIA) and streptomycetes (SMA).



Fig 2. Laboratory artificial lotic systems used to study biodiversity changes caused by pollution. Each artificial system contains glass slides covered with bacterial biofilm and is filled with constantly recirculated sterilized river water using a peristaltic pump.

RESEARCH PARTENER

NATIONAL INSTITUTE OF RESEARCH & DEVELOPMENT
FOR INDUSTRIAL ECOLOGY - ECOIND BUCHAREST

www.incdecoind.ro

RESEARCH RESULT

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CENTER/ DEPARTMENT

Pollution Control Department Biotest Laboratory -
Biological Analyses

APPLICABILITY

Industry of chemical product manufacturers – completion of technical files for obtaining product marketing authorizations;
Users of chemical products – to obtain approvals for use and discharge into the environment;
Environmental authorities – issuance of environmental permits;
The academic environment - for the development of environmental projects, doctoral studies and increasing international visibility through publications in specialized journals, training of young researchers;

RESULT TITLE

The methodology for assessing, interpreting, and communicating the ecological risk associated with chemical and physical factors, starting from formulating the analysis problem in situ, exposure to pollution, assessing effects, characterizing risks, managing, and reducing risks (result obtained within the NUCLEU projects 2008-2023).

DESCRIPTION

The methodology involves:

- Implementing ecotoxicological methods, on various biological models, to assess lethal toxicity concentrations (LC/EC/IC50%), MATC (Maximal Acceptable Toxicant Concentration), NOEC (No Observed Effect Concentration), LOEC (Lowest Observed Effect Concentration) of chemicals / pollutants;
- Designing of laboratory experiments to evaluate the toxic effect of specific pollutants/ wastewater/ groundwater / surface water/ leachate / waste/ sediment upon aquatic and terrestrial (micro) organisms;
- Evaluation of organic substances/ chemical products and/or waste waters biodegradability potential;
- Chemicals classification according to REACH / CLP Regulation;

- Assessment of the pollutants environmental impact by biochemical experiments based on modulation of the enzymatic activity from intoxicated fish organs;
- Development of the new and modern testing strategies for environmental risk assessments;

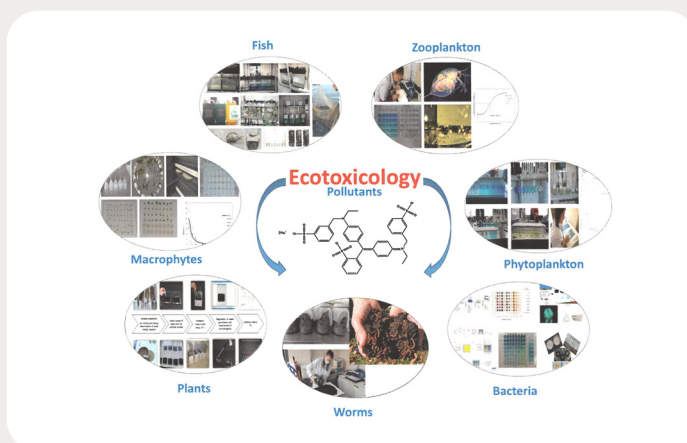


Fig. Ecotoxicology biological models

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RESEARCH RESULT

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CENTER/ DEPARTMENT

**Department of Environmental Pollution Assessment and
Monitoring, Waste Analysis Laboratory**

APPLICABILITY

Recycling | Circular Economy | Composite Materials | Construction

RESULT TITLE

**Process and composition for obtaining polyolefin/keratinic
composites materials (Patent Application No. RO135221 A0 / a
2021 00175)**

DESCRIPTION

Invention refers to compositions based on synthetic polymers and keratin materials characterized by preparation from recycled polyolefin and keratin materials from chicken feather waste in the following proportions: 50-70% polyolefin (majority recycled), 10-20% keratin materials, 17-20% CaCO₃, 3-5.5% coupling agents, after which the mixture is extruded to obtain products with improved breaking strength and hydrophilic properties. The preparation process presents both economic and environmental benefits. Introduction of keratin material as filling agent results in a decrease of costs and assures preparation of new construction materials.

- Good dielectric properties of the newly obtained materials;
- Cost reduction due to capitalization of two waste flows.

Partners

Innovative Green Materials Ltd.

National Research and Development Institute for Industrial Ecology – ECOIND

Project

Partners Innovative Green Materials SRL National Institute for Research and Development in Industrial Ecology – ECOIND Project Operational Competitiveness Program – Priority Axis 1 – Action 1.2.3 – Project ID P_40_300 / SMIS 2014+ 105581 – Subsidiary Contract 14352/12.09.2019.

The advantages of the invention:

- New materials based on recycled polyolefin and keratin materials resulted from chicken feather waste;
- Superior recycling of chicken feather waste as a valuable source of keratin material;
- Superior recycling of Linear Low Density Polyethylene waste;
- Improved hydrophilic properties of polyolefin;
- Improved breaking strength of the newly obtained composite materials;



Fig Obtaining composite materials Polyolefins/Keratinic Material

RESEARCH PARTENER

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RESEARCH RESULT

CONTACT: Chim. Simona Mariana CĂLINESCU, Research Scientist III,

CENTER/ DEPARTMENT

Pollution Control Department, Air Pollution Control Laboratory

APPLICABILITY

Environmental Protection | Dispersion of atmospheric pollutants

RESULT TITLE

Determination of the odor emission rate from surface sources

DESCRIPTION

The direct measurement of odor concentration in the surrounding air is often not sufficient to establish a level of odor pollution. For this reason, the Air Pollution Control Laboratory has developed and optimized sampling methods for determining odor emission rates originating from liquid or solid surface sources, expressed in odor units per second (ouE/s). These are obtained as a product of the odor concentration and the air flow rate associated with the source.

For diffuse surface sources characterized by the absence of an outward airflow it is used a sampling equipment consisting of a wind tunnel hood with a surface area of 0.5 m², automatically ventilated by two radial fans with a constant volumetric flow rate. **(Figure 1)**

For active area sources characterized by the presence of an outside air flow greater than 0.008 m/s but not greater than 3 m/s it is used a sampling equipment consist of a dedicated hood with a covered area of 1 m² is used. The hood is pyramid-shaped and join with a cylindrical exhaust pipe. **(Figure 2)**

The samples uses (used) to determine odour concentration are vacuumed in containers made of certified nalophan materials through a vacuum pump shown in the figures 1 and 2. The odour concentration is determined through dynamic olfactometry using a dynamic olfactometer with 4 human assessors **(Figure 3)** and is expressed in ouE/m³. Then is reported to the specific type of volumetric flow of the sampled sources resulting in the emission rate.

Through these methods for determining odour emission rates, several types of simulations of the dispersion of odour concentrations in the surrounding air can be carried out, depending on climate parameters over short or long periods of time, using the emission rate as input data associated with the sampled source in the specialized dispersion programs of atmospheric pollutants.



Fig 1 Figure 1 - Equipment used for determining odour emission rate from passive area sources.



Fig 2 Figure 2 - Equipment used for determining odour emission rate from active area sources.



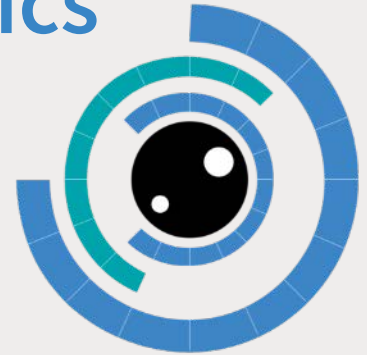
Fig 3 - Dynamic olfactometer with 4 human assessors olfasense T08.



THE BUSINESS ENVIRONMENT

Clark Analytics

CLARK VISION



Machine learning powering retail optimisation

What is Clark Analytics?

Clark Analytics is the software development and data analytics division of Clark. The company started in 2018 with Clark Vision, a brand started around augmented reality (AR) glasses. Although it started as a hardware product, Clark always needed software expertise and the team developed a platform to integrate data from IoT (Internet of Things) components. Over time, the growing need for data analytics arose, and that's where Clark Analytics started, and I joined the team and began developing the solutions we offer today.

What solutions does Clark Analytics offer?

Currently offering data analytics solutions to optimize promotional practices. But that doesn't sound descriptive at all, so I'll give an example.

Imagine you have a corner store, and to increase sales, you do some discount offers. Your expectation is that you will attract more customers, or persuade existing ones to buy more products. Which products will you be promoting? Some of them may bring you more sales, enough to cover the loss from the price cut, or maybe more. But some can bring losses, so you need to find the perfect combination to maximize your sales. That can be easy for a local retailer with one store, but it becomes difficult for large companies selling dozens of different products in hundreds of locations, and having to take into account the actions of competitors.

Clark Analytics helps companies measure the benefits, costs and risks of their promotional discount offers to identify what they can improve in the future. We use customer data to give them the tools they need to make the best decisions with ease.



**Alexandru Grădinaru, 29 years old
Head of Analytics at Clark**

Where did this idea of optimizing promotional practices stem from?

It was a happy synergy between statistical knowledge and programming, coupled with experience in the FMCG field (Fast Moving Consumer Goods - an industry dealing with the production, sale, and promotion of products like shampoos, detergents, or oral hygiene products, among others), where I identified a strong need for these types of solutions.

To elaborate, I worked for 5 years as an analyst in FMCG, where there is an interest in understanding how consumers respond to price cuts. That's because over the course of a year large amounts of money can be saved from cutting promotions that don't bring in extra sales. A company I previously worked at had established methods and tools to understand how we could change our promotional practices. But after a while, it became clear that the solutions offered did not directly address the needs of those responsible for implementing them. But I couldn't give up on the methods and tools offered, so when I started working on Clark, I set out to solve this problem in a way that was faster and more practical for those who would use it.

Can you briefly describe how your solution works?

The fundamental principle is simple: any data set is composed of signal and noise. The signal tells us a story about the data. In this case, it tells us how consumers react to price cuts. Statistics is the toolkit by which we eliminate the noise and get to the signal.

And domain expertise helps us to translate the signal into knowledge, and then into concrete actions. Using these tools and expertise, we've created a solution that measures discount performance as accurately as possible, and gives customers a dashboard through which to analyze results and compare them in a visually and intuitive way.

How was the experience with your first client? What was their reaction?

The first customer proved the need for our solution in the market, because they were the ones who initiated the discussion. They knew about this type of service and had heard about our initiative. At this point we had already started the development, but this partnership gave us the opportunity to test and improve it in practice, using their experience in the field.

They made it very clear that they were happy with the current solution, and it was seen by the fact that they expanded the project to include more product categories across the Romanian market.

The collaboration with the first customer is still active, perhaps more active than ever, as we are working intensively to make improvements and provide the most complete solution for their needs. That is a win-win situation.

What are your plans for the future?

We are close to completing major enhancements to the current product, after which we want to expand to offering more solutions for the same market. Retail companies have many operations, and many of them are just starting to truly utilize their data.

We aim to help them extract the best insights from this data as quickly as possible.

[More details on www.clark-x.com](http://www.clark-x.com)



Hermix App. Public sector sales analytics/ Our story

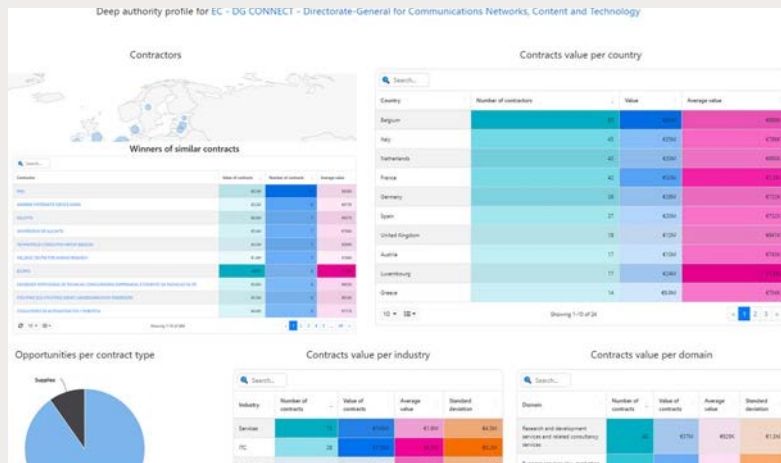
Hermix is the first analytics platform for public sector sales.

We help companies understand & win public sector projects, by monitoring tenders and market intelligence.

How we started, more than a year ago?

We thought of our personal, direct experience of over 20 years in public sector sales; mainly at the tenders of the EU institutions and the European Commission, but also at the national authorities.

The Business-to-government sector is great, and has worked very well for us: stable market, lots of money, and lots of information - if you know where to look and how to interpret it.



So, we asked ourselves:

What worked, How, and Why it worked for us? We noticed that data analysis and market intelligence are key success factors, and yet completely under-exploited.

Everything is done manually: tender monitoring, market research, forms, papers, CVs, technical proposals, prices. At the same time, public sector sales were not using big data analytics. Information was managed manually in emails and Excel files.

In B2C/B2B, retail and consumer, data is king! Marketers rely heavily on billions of data points and on hundreds of tools: *Google Analytics, Facebook Analytics, LinkedIn Sales Navigator, Plausible, Indicative, etc.*

So we started to automate B2G, providing services such as:

- Tender and market monitoring, notifications.
- Big data analytics, deep market intelligence, actionable insights: *where the money is, who buys & sells, what, where, how.*

We've gone a long way since we started out in 2022.

We developed the technical platform. We launched [Hermix.com](https://hermix.com). We tested, validated and evaluated the concept and tools.

We had ~500 meetings. We enrolled 217 users.

We signed quite a few contracts with important clients and trusted partners such as: Tremend, Zetta Cloud, Westpole, Brayton, Amazon, Google, Hubspot, Capgemini, Fincons Group, VASS, Eau de Web, Schuman Associate, Technopolis,

Cegeka, Cosmote Global Solutions, Zitec, Aricoma Group, Rinf Tech, Zitec, Engineering- the digital transformation company.

We won the EU Datathon award from the European Commission, and a prize of 25k. We were recognized as the best application for public procurement for young Europeans.

We are also happy that our work was awarded Deloitte's Impact Star award in November 2022. The Impact Star is a special classification for organizations that deliver great products that positively impact society, business, innovativeness, environment, or diversity.

We signed a 250k regional R&D grant.

We listen to our customers and partners every week and we receive their feedback and requirements. We aim to understand their real needs. We focus on ergonomics, usability and on key user scenarios: Which are the daily pains of the sales managers and commercial directors, of bid managers and presales architects? And then we design crucial solutions for these needs.

We improve our data algorithms continuously. We analyzed millions of historical government contracts,

tenders and payments, hundreds of thousands of authorities and contractors. We import and clean new data daily:

1.4 mil tender notices, totaling 7.4 trillion Eur.

6.4 contracts awarded.

145k authorities, including 118 European institutions.

868k contractors, including 1480 cross-national groups.

1.1 mil. European Commission payments, totaling 452 bil. Eur.

We release 2-3 new major features per month. We use the most modern & fancy technology out there, but we remain function-driven.

But most importantly, WE are a team.

We have achieved a lot throughout this year of which we are truly proud, but at the foundation of it all was the team. Hermix is also about the team, as each member brings added value to our project and product. We are glad that we managed to form a team with high potential that is involved in the updates and evolution of our app daily, especially now that we are a highly created team.





Who we are

Quarks Interactive is a Romanian ed-tech startup founded in 2018 starting from a pressing need felt by Laurentiu Nita (CEO) during his research for his Ph.D. in Quantum Computing at Durham University, UK. Specifically, he realized that to better grasp phenomena in Quantum Physics, he needed a way to visualize them because they couldn't be explained using examples from nature and everyday life. And there was no tool available for this purpose. This is how Quantum Odyssey software was born, out of the necessity of someone doing research in the field. Together with a team of PhDs in Quantum Physics and Education, they transformed complex equations into a purely visual format, no math, no code required: all things quantum mechanics in a purely visual way.

What we offer

In the ever-evolving world of quantum computing, Quantum Odyssey emerges as a game-changer – quite literally. Crafted from the ground up, this immersive educational tool is not your average textbook or online course. Quantum Odyssey is on a mission to make quantum

computing accessible, engaging, and, above all, fun. Its early access phase has already drawn a global following, setting a new standard for quantum education.

Why We Do It

Traditional quantum education methods have been a costly and complex journey, creating a significant talent gap in the industry. Our team at Quantum Odyssey is committed to break down these barriers by making quantum education accessible and engaging for students, professionals, and enthusiasts. We've transformed complexity into an exciting adventure, collaborating with key partners: universities, IBM Quantum, Quantum Flagship EU, Womanium, and the EU DigiQ, to standardize quantum curricula and empower the next generation of quantum enthusiasts. The urgent need for accessible, engaging quantum education is recognized globally.

Are People Using Our Product?

Yes, they are using it. Quantum Odyssey is making a significant impact in both B2B and B2C domains, thanks to its unique gamified educational approach. The product is a versatile tool, adopted by universities to enhance their quantum courses. IBM, recognizing

Our mission: democratizing quantum computer education! The authors behind the framework “quantum literacy”.

The 1st complete visual “no math no code” Quantum Algorithm Design (QAD) platform in the world Based on a patent written by our founders and collabs, with feasibility studies that show it can teach learners as young as 12 y.o. to design quantum algorithms.

With new features in the pipeline, funded by EU & Innovation Norway grants, we are now preparing for GLOBAL DISTRIBUTION!

the potential, has supported us in integrating our software with their quantum hardware, bringing the real-world experience to users.

One of our proudest moments has been the recognition by the EU DigiQ consortium, who have chosen our software as a flagship product for their ambitious project.

Join the Quantum Odyssey- Where Quantum Becomes an Adventure!

If you're a puzzle gamer or a quantum enthusiast, Quantum Odyssey is your gateway to the fascinating realm of quantum computing. Challenge yourself with immersive puzzles and uncover the magic of quantum. Dive into a world where complex calculations become exciting adventures. Join our global community and elevate your quantum knowledge.

Contact us for questions, collaborations, or to embark on your Odyssey:

**contact@quarksinteractive.com.
Website: quarksinteractive.com //
Visit DigiQ: digiq.eu**

***This project has received financing from EEA Grants:
<https://eeagrants.org/>***

SEEDPODS

By Adrian Rotaru, Dan Gabriel Ghiță, Alexandru State, Doru Păceșilă and Alexandra Ivan

SEEDPODS wants to redefine afforestation by using drones for efficient seedling planting. This new process involves launching the saplings through some aerodynamic, vertically stabilized projectiles, accumulating momentum through free fall. Once in the soil, the projectiles open and biodegrade, preparing the ground for seedling growth. With lower cost, faster deployment speed, increased accuracy and industrial scalability, SEEDPODS aims to play an important role in the future of afforestation efforts.

Our Roots in Logging

About 8000 years ago, our ancestors pioneered the use of wood as a primary source of energy by cutting down trees. This exploitation generated a surplus of energy, released through combustion as heat, facilitating the development of human societies. Wood was an abundant resource, as forests covered extensive territories at that time in favorable climates.

Massive deforestation has transformed large areas of forest into spaces needed for human settlements, using wood also as a building material. Estimates indicate a loss of between 30 and 50 percent of the planet's forest area, although exact numbers remain uncertain.

What I now know as a modern, technologically advanced and familiar world has deep roots in the continuous exploitation of wood for millennia. What was not known at the time, however, is that forests also served a vital role in the terrestrial biosphere, contributing significantly to the sequestration of CO₂ from the atmosphere and climate regulation.

The chemical processes fundamental to life on Earth involve oxidation reactions, with CO₂ as a byproduct. The planetary forest, being the main actor in sequestering this gas, functioned as a great climate regulator.

Yet, paradoxically, the extensive exploitation of forests to meet the energy needs of our sophisticated societies has created a dilemma. The deforestation of this great regulator, as well as the massive release of sequestered carbon back into the atmosphere, has contributed to the increase in CO₂ concentration, generating significant effects on the global climate.

Thus, the historical accumulation of carbon, now transformed into fossil fuel, fuels the progress of society, advancing from the Industrial Revolution to the modern era. However, we are now facing the consequences of this phenomenon, aware that we have a historical debt to pay for the implications we feel in our contemporaneity.

The Importance of Forests in the Climate and Biosphere

Spring marks the revival of photosynthesis, causing a significant drop in CO₂ levels in the Northern Hemisphere for two months of the year. Trees use sunlight to molecularly dissociate carbon dioxide, trapping carbon in the soil and releasing O₂ into the atmosphere. With the arrival of summer, high temperatures favor reduced soil moisture, slowing photosynthesis and depriving trees of the vital resource of water. This is when the ocean takes over sequestering CO₂, but at the cost of acidifying it, setting off a chemical chain reaction. This sequence of events triggers a climate crisis, the extent of which remains partially understood. However, the main problem stems from the slow evolution of climate change, driven by the considerable mass of the Earth's atmosphere. The return to manageable conditions, if possible, will be equally slow and arduous.

At the time of writing, the average global temperature has risen by about 1 degree Celsius since 1880. Although this increase seems negligible, in reality its impact is significant, especially in the context of the massive accumulation of heat energy in the Earth's atmosphere. This accumulation, equivalent to 1 billion terajoules, has generated extreme climate anomalies, continuously fueled by rising CO₂ levels.

At present, there is no economically and technologically efficient technology for sequestering CO₂ on an industrial scale. The irony is that nature has evolved organisms, such as trees, specialized for this vital function. Although logging has contributed significantly to the progress of societies, we now find that this process also has negative consequences.

Currently, the main approach to combating climate change is extensive afforestation, promoted through legislation and regulated through CO₂ taxation and trading of green certificates. Together with other practices to reduce, reuse and recycle resources, planting new trees becomes an essential tool in the fight against the accumulation of CO₂. In this perspective, the SEEDPODS project was initiated to contribute to this cause.

SEEDPODS: Revolutionizing Forestry

To achieve carbon neutrality by expanding forested areas, Romania would require at least 300 million additional mountain trees. Thus, SEEDPODS addresses the essential question: "What are the technological and logistical needs to plant 300 million trees in the most economical way, using a fast and precise technique?" The prototype of our solution is illustrated in the following image:

In the first phase, SEEDPODS uses fir, pine and spruce seedlings with a height of 20-30 cm and developed roots at planting. This aspect differentiates SEEDPODS from conventional techniques, which use aerial vehicles for simple seed dispersal.

In the second stage, to ensure the success of the planting, three successive operations are necessary. Transporting the seedlings to the planting site, creating an optimal space in the ground for the introduction of the root and mechanically inserting the seedlings into the soil. These operations become complicated and expensive when they have to be repeated millions of times. The SEEDPODS answer lies in a revolutionary technique called "Gravity Assisted Implantation".

Through this technique, seedlings are loaded into high-capacity drones and airlifted to planting sites, including hard-to-reach areas. Each seedling has a pre-set coordinate, and the proprietary SEEDPODS positioning and wind compensation system, together with an automated planting release and confirmation mechanism,



allows implantation from 100 meters altitude, with an accuracy of +/- 0.5 m and depth of 10 cm. This automated solution ensures repeatability in planting for millions of seedlings. SEEDPODS uses an aerodynamic and biodegradable projectile for implantation. The projectile, released from the drone, stabilizes vertically and accumulates kinetic energy in free fall. Impact speed is adjusted according to soil conditions and optimal planting depth. At impact, the shape of the tip facilitates soil penetration, ensuring stable implantation. The projectile biodegrades in 6 months, providing nutrients to the soil and completing the ecological cycle. The result is attached in the attached image.

In an industrial approach, the biodegradable projectiles are sent to nurseries, where seedlings grow directly in them. After 6-9 months, the seedlings are ready for planting and loaded into drones. This automated and industrially scalable process brings an innovative and efficient solution for large-scale afforestation.

In conclusion

SEEDPODS wants to become a turning point in the field of forestry, offering significant benefits compared to traditional planting methods. One of the important aspects is the potential to reduce planting costs to about a third of the current costs per hectare, revolutionizing the accessibility of the afforestation process.

Also, SEEDPODS has the ability to transform the afforestation process into an industrial effort, opening the way to reach the ambitious target of planting 300 million trees, necessary for carbon neutrality in Romania. Through our approach, we



want not only to solve the current challenges, but also to help accelerate the process of reforestation on a national scale. It is important to emphasize that SEEDPODS is in a developmental phase, and our work to optimize and scale the method will continue for many years to come.

We are on the way to building a robust logistics chain to initiate hectare-level planting projects. If you would like to support us in our mission, we invite you to visit and contact us using the information below. With your support, you can become part of this initiative, helping to shape a greener and more sustainable future for us all.

www.seedpods.ro contact@seedpods.ro
+4 (0731) 836 854

Digitas - Topography and Cultural History

DIGITAS is a startup specialized in cartography, topography, data digitization, and archiving services, operating in a niche sector that has been largely unexplored or at least methodically and consistently unexplored - that of CEMETERY SYSTEMATIZATION.

Our goal is to facilitate rapid access to cemetery archive data, providing clear records of grave sites, buried individuals, and legal documents related to the concession of burial places.

Having achieved success in our operations and with satisfied clients, we aimed for further development and enhancement in this field to keep the past alive in the present.

Therefore, we identified the opportunity and necessity to provide society with a modern tool for identifying local (but not only local) personalities' graves, accompanied by a brief biography of these individuals. This tool is the dedicated web platform for cemeteries across the country: www.cimitire.ro.

With the support of cemetery administrators, parish priests, community members willing to engage in documentation work, teachers, local councils, or other authorized individuals, we gather and organize information related to local personalities into the geospatial database.

Primarily, local personalities encompass teachers and professors, clergy (regardless of denomination), community leaders, inventors, individuals in the cultural or artistic sphere, or those who have distinguished themselves in some way.

Alongside the stages of digitalization come several advantages, such as:

1. **Designing a cemetery map** aiding in clear and swift identification of its perimeter, subordinated plots, and, last but not least, the availability of grave sites.
2. **Unique identification code for each grave site**, serving as a tool for quick digital search and identification of any burial, preventing instances of wrongly concessioned graves, expired contracts, or uncontracted burial spaces.
3. **Capturing a set of photographs for each grave site and gathering on-field information** are steps contributing to identifying unused spaces and transforming them into available grave sites.

4. **Processing information from old maps, registers, and contracts aids in the accurate reporting of annual fees.** All useful data from the administrator's archives will be digitized to complement and rectify on-field information.
5. **Integrating all information into the geospatial database** prevents problematic situations such as conflicting concessionaires for the same site or unresolved burial requests due to a lack of burial space records (occupied/reserved/available).

What is the Cemetery Map software and what is its utility?

Installing and customizing the Cemetery Map software provides access to an interactive map, offering statistics regarding burial places, interred individuals, concession holders, concession contracts, taxes, aids in photo management, and assists in quickly generating documents such as:

- Grave location record;
- Concession contract;
- Thematic reports.

The professional services offered by HartaCimitir guarantee that the working time of administrators and officials will be optimized by over 75%, the accessibility will increase by at least 25% in the first year, and the interaction between the administrator and the client will be much more stable and clear. Obviously, in addition to all these, there is also an ecological benefit through minimizing paper consumption. The precise location and its presentation in a universally understandable manner have been a concern since ancient times. Today, it is possible to do this with great precision, where easy navigation to a grave is complemented by rapid access to information, texts, images, and sounds related to a personality.

Positive feedback encourages us to continue this activity. We strive to encompass as much of our history as possible, emphasizing without ethnic or religious differentiations. It is important to remember with the most accurate information the identity of our people for future generations and to cultivate a mentality of care and respect for both our present fellow beings and those who have passed away.

On our website, you will find more details regarding the implementation of this idea, as well as articles that legislate the administration of gravesites.

Anyone interested in such a service can contact us through the contact form displayed on the site:

<https://cimitire.ro/contact/>.



DIGITAS

New perspective of digital era



The European Solution for Preventive Maintenance of Smart Microgrids



The SMARTech Project - Smart Microgrid Development Technology based on Digital Twin (financed through the Norwegian Financial Mechanism 2014-2021, within the Energy Program in Romania, intervention area in the 5 R&D calls, ID project: 2021/332805) aims primarily at implementing predictive maintenance technology for microgrids, using real-time data collected by IoT sensors, Digital Twins, and ML algorithms.

Premises

To achieve the EU objectives for climate change and energy policy by 2030, it is not only necessary to build new power lines and stations but essential to exploit electrical systems by integrating Information and Communication Technologies (ICT), building controllable microgrids, and accelerating the realization of the smart grid. Through the SMARTech project, the Romanian-Norwegian team (SIS - NORCE) aims to meet the requirements of the energy transition towards the Smart Grid, starting from existing infrastructures by implementing renewable energy production equipment, storage solutions, smart consumption strategies, monitoring, and energy efficiency.

Developing smart microgrids requires special attention, necessitating a shift towards the Microgrid Technology (MT) concept.

Target Group

This project supports microgrid owners/administrators (e.g., photovoltaic parks) to

use their capitalizations more efficiently. The project aims to increase the number of implemented microgrid systems at the national and European levels, supporting sustainability in the use of green technologies.

Project Outcomes

- **SMARTech microgrid development technology:** Sizing model for microgrid components and performance calculations;
- **Control and interface modules:** Developing algorithms for balancing production and consumption in energy market conditions;
- **Design and development solution services:** Based on standardized formats, documentation for each project phase will be largely automatically generated from the platform;
- **Monitoring and evaluation reports for microgrid performance (during operation):** KPIs such as consumption, green energy production/total consumption, ROI will be constantly monitored, and management will have up-to-date reports on the technical and economic performance of the business;
- **Platform as a service (PaaS):** Scalable and configurable solution for multiple installations, including screens for parameter visualization (status, operating conditions, etc.), graphs, predictive maintenance indicators, tables for centralized intervention operations, technical specifications with estimates and observations, spare parts stock

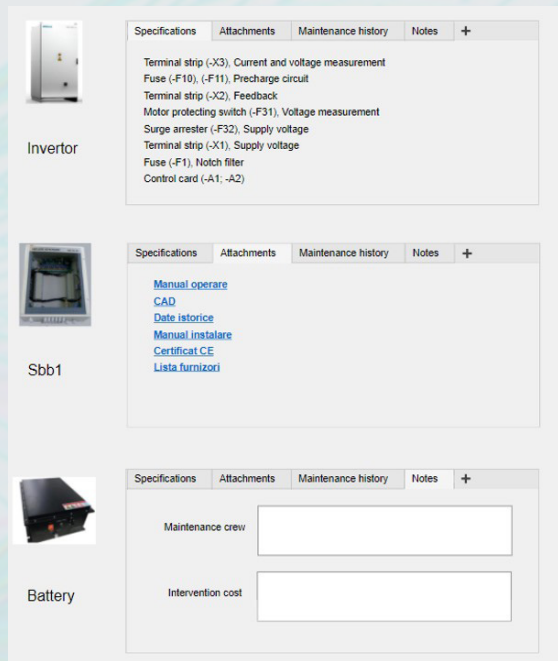
status, notification/messages for events, automatic reporting on points of interest, etc.

We support IoT integration and the implementation of ML algorithms in predictive maintenance.

IoT sensors are vital in the predictive maintenance process. These sensors help detect, collect, and store critical data for tracking and monitoring the 'health' of machinery and assets throughout the facility.

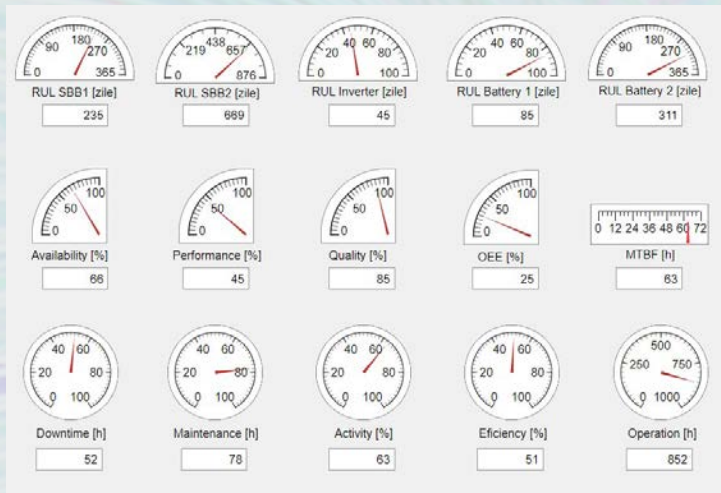
Predictive models require historical data to evaluate the probability of future equipment failures. The predictive maintenance solution uses Artificial Intelligence (AI) and Machine Learning (ML) to achieve this. Balancing algorithms for production and consumption in energy market conditions (Time Shifting, Peak Shaving, Cuckoo Search) were developed using MATLAB R2022b. These present various methods where surplus is stored and used in another time interval or methods to reduce consumption during idle times or even communicating energy demand through a dispatchable system with other microgrids.





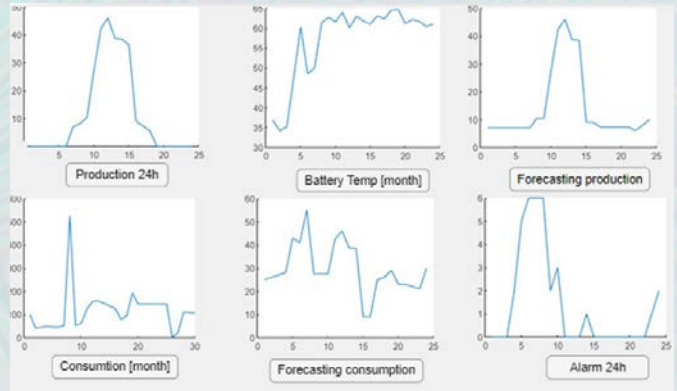
At this stage, the Smartech platform utilizes multiple data sources, primarily focusing on implementing predictive maintenance technology for microgrids. Real-time data collected remotely from SCADA applications are archived into historical data and analyzed using another tool developed by SIS with machine learning algorithms (Machine Learning) for defect indicators and calculating the health status (a tool developed with Matlab).

These resulting parameters are displayed on the Smartech platform screens (developed with Matlab).

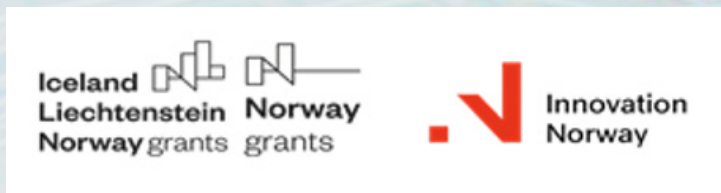


Benefits of predictive maintenance for businesses:

- Cost reduction by eliminating downtime: By identifying possible equipment failures in advance, preventive maintenance can be scheduled, avoiding downtime, reducing operational costs, and increasing process efficiency;
- Longer lifespan for installation assets: With predictive maintenance, managers can more accurately schedule revisions, reducing equipment downtime and increasing asset availability;
- Improved team performance: If you have more functional equipment and fewer downtime periods, employees can work more safely and efficiently, increasing company productivity;
- Enhanced team performance: If the ratio of functional equipment vs. number of downtime intervals is above unity, maintenance teams can intervene more securely and efficiently, thereby increasing company productivity.



If you want to learn more about the project and the solutions developed by SIS, we invite you to contact us by visiting www.sis.ro or at teodora.mindra@sis.ro.





Navigation Application with A.I. & Blockchain

Atlas Navi is a navigation application that uses artificial intelligence to analyze a driver's route in real-time.

The app captures video footage from the driver's smartphone (or any dashcam connected to the smartphone) and automatically detects traffic issues: roadwork, accidents, congestion in each lane, police cars, potholes, and available parking spaces.

It uses this data to alert and reroute other drivers on the same route. The applications are free, and within 14 months of launch, they have reached nearly 900,000 downloads and scanned approximately 120 million kilometers. Atlas Navi competes with giants like Waze/Google Maps but has an advantage: generating about 100 times more data per kilometer. On a large scale, it is impossible not to provide better routes and alerts than existing applications.

ATLAS APPS SRL, the developer of the Atlas Navi app, is a Romanian company that has been active in the transport software industry for over 12 years.

George Grama, CEO of ATLAS APPS, was the founder of the popular taxi-hailing app Star Taxi in Romania, as well as other transport applications internationally, licensing rideshare, dispatch, and fleet management software to over 100 companies in the last 8 years. Until recently, he worked as an expert consultant on transport issues at the European Union.

The company's focus is to innovate in the field of transportation by merging artificial intelligence algorithms for B2C software products and advancing

research in autonomous vehicles, connecting them to future smart cities. Atlas Navi is the first navigation app that rewards users for the data generated for every kilometer traveled. The 'Mile' points received by Atlas Navi users for transmitted data can be used to access discounts and promotions with its partners: fuel in OMV/Petrom networks, auto maintenance services at Țiriac Auto, car insurance, and much more.

The collected data is anonymized and used for automatic alerts and rerouting other drivers to avoid congested traffic. Even if a user doesn't use the camera, the app is useful for more efficient routes and the alerts it generates.

The app is free and available on both Android and Apple App Stores.

With a team with over 11 years of experience in mobility software, ride-share, taxi dispatch through mobile apps, Atlas Navi's founder, George Grama, co-



founded applications such as Star Taxi in Romania, Mondo Ride in the Middle East and Europe, Flag Taxi in Ireland, and others, aiming for the project to become a global navigation application using the most advanced artificial intelligence and computer vision technologies.

Atlas Navi was funded by the European Union through the POC 2.2.1 program with a grant of 1 million euros, to which the company contributed approximately 450,000 euros. After three years of software development, with licensing partnerships from most auto brands, with rich past experience, the team is well-positioned to scale this project internationally.

Continuously expanding, with increasingly strong partnerships in the automotive field, Atlas Navi's mission is to integrate its technology into new vehicles to be launched in the coming years, using the car's video cameras automatically for data collection, with processing done on a customized device provided by the company to the car manufacturers. Having advanced discussions on these integrations, Atlas Navi has a totally different competitive advantage from major players in the navigation app market.

Through a partnership with Măgurele Science Park, the Atlas Navi team has been in contact with potential partners, participated at the MSP booth at high-quality events (GoTech World Bucharest), and hopes to contribute to the development of other partners in the MSP ecosystem.



Main functionalities of the platform:

- Precise navigation app with live and offline maps worldwide;
- Video recording of journeys stored in the cloud;
- Live video transmission of the journey to any friend (even without having the app);
- Group trips - track and communicate with group members on a long trip;
- Multi-stop trips - planned trips with multiple stops, including the 'most efficient' route between all stops;
- Driver score - analyzes driving style and improves driving habits;
- Vehicle maintenance alerts - alerts for insurance expiration, vehicle inspection, road tax expiration.

Project Link: <https://linktr.ee/atlasnavi>
Website: <https://www.AtlasNavi.com>
Telegram: <https://t.me/AtlasNaviRomania>
Twitter: <https://twitter.com/AtlasNavi>



Biodegradable waste management

Climate change in recent decades is a major concern for the entire planet: drought, desertification, floods, large temperature variations in a short time, increasingly violent storms, torrential rains of increasing intensity.

As it is a situation that is becoming more and more serious, urgently applicable solutions are needed. An important aspect is the most appropriate treatment of biodegradable waste, waste that is responsible for the emission of greenhouse gases. An important first step in logical order would be to avoid generating biodegradable waste as much as possible. The first step at the individual level is the awareness of the need for a rational consumption of goods of any kind, including foodstuffs.

We can rationalise the consumption of goods to some extent, we can exchange some technologies for others, but it is impossible to completely eliminate waste. We can't eat bananas without leaving banana peels behind, and we can't have cow's milk without cows producing cow manure. Given this impossibility, it is necessary to do something with this waste to minimise the emission of greenhouse gases and eliminate the pollution of the soil, subsoil, water and atmosphere. Biodegradable waste that is not subjected to any predetermined treatment, left still, naturally undergoes an anaerobic fermentation process that generates large amounts of methane, which is a powerful greenhouse gas. In addition to climate change, the methane produced in this way is responsible for the fires in some landfills, such as those in Cluj Napoca, Râmnicu Vâlcea and others, amplified by the existence of plastic waste that was not collected separately to be recycled. Apart from producing methane, they also produce extremely unpleasant odors and are a source of microbes.

The leachate generated by this waste reaches the water table and poisons the wells or infests the rivers. It would therefore be much better that said methane gas is used and the environment is protected.

Depending on the nature and amount of biodegradable waste, several solutions for their treatment can be approached. For larger amounts of waste, it may be feasible to produce biogas, which in turn generates electricity and heat. The material resulting from the production of biogas can be used as fertiliser if the waste has been collected selectively. For the other cases, producing compost is the appropriate solution.

In the case of biogas production, depending on the nature of the waste, wet technology or dry technology can be adopted. Wet technology involves a very finely ground material that takes on the appearance of a paste. Dry technology is generally applicable to the biodegradable fraction of municipal waste that results from passing through a sorting sieve in waste recycling stations.

This fraction is no longer crushed and is introduced without any mechanical processing into some tunnels. After closing the tunnel, the entire mass of material is heated by an intense airflow. The large amount of oxygen thus circulated through the biodegradable waste generates an aerobic fermentation that heats the material.

In about 24 hours, the appropriate temperature for anaerobic fermentation is reached, at which point the aeration is stopped and a liquid called percolate is sprayed from the ceiling, a liquid that is continuously recirculated and that accelerates the anaerobic fermentation of waste, a fermentation that generates methane. After about three weeks, methane production drops significantly



and the process is stopped. The material removed from the tunnel is then subjected to aerobic fermentation for about two weeks, after which it is completely stabilised and can be used as fertiliser, as long as it does not contain unhealthy elements, or, much more frequently, it is used to cover landfills.

In the case of wet technology, the process takes place continuously in a reactor, so that finally the material that no longer has resources to generate biogas is removed and prepared to be used as fertiliser. Wet technology has the advantage of extracting more biogas than dry technology, but the investment cost is higher. Wet technology is justified for that kind of waste with high biogas productivity and whose shredding does not present too much difficulty.

In the case of municipal waste, their eventual shredding would entail additional operating costs, costs that could not be justified by the biogas surplus. For this type of waste, the dry biogas production technology is the one that must be adopted.

However, not all biodegradable waste is recommended for biogas production. For example, continuously collected poultry droppings can be good for biogas production.

Those that are collected once every 3-4 weeks no longer have good biogas productivity and can only be used to produce compost. There is also no point in generating biogas from small amounts of biowaste. The investment cost would be too high compared to the energy produced to justify such a project. In such conditions, biowaste composting is the most suitable solution.

Composting involves creating favourable conditions for the aerobic fermentation of biodegradable waste. The main conditions consist of ensuring a certain degree of humidity, sufficient oxygen and a favourable ratio between waste containing predominantly nitrogen (animal waste, food waste, sludge from sewage treatment plants, etc.) and waste containing predominantly carbon (straw, chopped wood waste, paper or cardboard, etc.).

Depending on the machines that are used to aerate the material, the windrows can be next to each other or arranged at a distance from each other. For small amounts of material and existing platforms, tractor-driven turning machines can be used. The advantage of such a machine is the lower price compared to a self-propelled one. Its disadvantage is that a free space must be left between the windrows for the tractor to move. Providing clearance for the tractor becomes more expensive as the amount of material increases and it can be much more economical overall to use a self-propelled machine instead of a tractor-driven machine so that more of the platform area is used for composting rather than additional space.

When the quantities increase more and more, a machine with increasingly large dimensions is preferable, because this ensures high windrow heights, i.e., an increasing amount of material on the same platform area.

A special solution appeared when it was possible to manufacture a multilayer membrane capable of retaining odours to a great extent, but being permeable to air and water vapour. In these conditions, a machine was designed to combine the composting solution in the tunnel with the windrow covering solution, not with a simple fleece, but with a membrane that performs well in retaining odours, combined with a machine that turns, agitates and evens the material. This version is usually combined with floor ventilation. When the platform and the side walls are made, a series of pipes are placed on the floor, in which nozzles for blowing air are arranged at equal intervals.

In the case of selectively collected biodegradable waste, the product resulting from composting is a very good quality fertiliser. Its use in soil fertilisation has multiple series of advantages:

- **Unpleasant smells, sources of spread of microbes and infestation of soil, water and air are eliminated;**
- **Improves soil fertility with an ecological fertiliser, free of toxicity, increases the quality of agricultural products obtained from a soil treated in this way;**
- **Weed seeds are destroyed by the high temperatures reached inside the composting windrows;**
- **Soil improved with compost becomes looser and more penetrating. thus, in case of heavy rains, this soil absorbs a large amount of water, while other soils behave like a tin roof, facilitating flooding;**
- **The soil's ability to "breathe" increases by up to 40% compared to the situation in which no such treatment is applied;**
- **Fertile soils can be created on completely infertile land, for example in areas of former surface mining.**

**Eng. Constantin Geangu
Manager at C Geangu Consulting SRL**

SUSTAINABILITY: WEALTH'S STEP-SISTER

by George Crețu, PhD
Ana-Maria Paraschiv, PhD. ENG

A HISTORY

Luca Pacioli, an Italian mathematician and Franciscan friar born around 1450, is considered the founder of accounting and accounting reporting, being the first to publish a treatise on the double-entry accounting system. He is also recognized for his work in mathematics and collaborations with Leonardo da Vinci. In his writings, Pacioli emphasized the importance of business ethics, often drawing on his spiritual affiliation. In his view, ethics focused on recording and reporting financial or adjacent assets. Over 600 years ago, Paciolo introduced a measurable and formal picture of wealth.

A POSSIBLE FUTURE

Recently, a new dimension of wealth that needs to be measured has emerged and formally crystallized: sustainability. Formal sustainability reporting is beginning to carry the same weight as accounting as we know it today. Managers, along with economists, should prioritize, in addition to wealth of financial (and business) assets, another form of wealth that has more to do with ethics. We know that very soon the moral dimension of this type of wealth will turn into financial wealth. It is indisputable that we are moving towards a transactional development of the whole concept.

So, will we be able to go to the store with sustainability assets to buy goods and services?

Most likely, yes; these will also have a real financial understanding. Sustainability assets will be less volatile than cryptocurrencies; they appeared in the

context of the noblest of purposes that can be associated with the human being: the salvation of humanity.

WHY INTEGRATION IS IMPORTANT

In this context, sustainability is increasingly becoming an integral component of wealth, especially in asset and investment management. Therefore, the way individuals and corporations perceive and measure wealth is changing, moving from a purely financial perspective to a holistic one, which includes sustainability factors with all the psychological charge of the concept. Here are some ways this happens:

- **Investment.** More and more investors are considering environmental, social and governance (ESG) factors in their investment decisions, recognizing that firms with strong sustainability practices can be better long-term bets.
- **Value.** There is a growing understanding that companies that prioritize sustainability are likely to be more successful and resilient in the long run. This can increase the value of assets held by shareholders and can be a significant component of a company's overall value.
- **Risk.** Climate change and other sustainability issues pose significant risks for many companies; this way, companies can protect and enhance their value.
- **Market.** It is observed that in recent years, consumers are increasingly choosing to align with businesses that prioritize sustainability. This transformation of consumption can influence a company's reputation, brand value, and overall value.

The discussion presented focuses on the complex relationship between sustainability and financial success, stressing that they are not exclusively reciprocal, but in fact are deeply interconnected. This understanding has prompted a shift in corporate operations and investment strategies, recognizing sustainability as a key component of wealth in the 21st century.

CHALLENGES

However, this integration faces significant challenges, mainly due to issues related to data accessibility, greenwashing and the lack of standardized reporting metrics. These challenges undermine the credibility and effectiveness of sustainability initiatives in contributing to the wealth equation.

Specifically:

- **Lack of global standards.** The absence of universally accepted standards for sustainability reporting makes it difficult to compare the performance of different organizations, creating an obstacle to effectively integrating sustainability into wealth evaluation.
- **Reliability of self-reported data.** The nature of self-reporting sustainability data raises questions about its accuracy and vulnerability to greenwashing, where organizations may exaggerate their sustainability efforts.
- **Complexity in data collection.** Collecting comprehensive

sustainability data is a resource-intensive task. Many organizations struggle with collecting, managing, and analyzing necessary data, especially without digital tools for interpreting context.

- **Measuring intangible aspects.** Quantifying certain aspects of sustainability, such as social impacts or biodiversity is challenging due to the lack of formal measurement methodologies.
- **The need for independent audit.** The potential uncertainty of self-reported data requires independent verification of sustainability reports, which is complex and difficult to implement.

Addressing these challenges is crucial, as neglecting sustainability practices can lead to significant impairments to financial assets.

Partnership Unbox Management Solutions & ENTERTEQ SOFTWARE:

Wallachia eHUB (WEH) is an innovation and digitization center, a regional consortium of 16 partners, which is the beneficiary of a **European project funding (DIGITAL-2021-EDIH-01)**. As a partner of WEH, **Unbox** values innovation, collaboration and social responsibility. We are committed to find new and creative solutions to help our clients grow and succeed, and we believe that by collaborating with other organizations and communities we can create a better future.

Enterteq Software, through its research and development programs and its product **EmissionX**, seeks to address these problems by developing systems based on modern technologies (AI, machine learning, etc.). These systems aim to improve data accuracy, processing and allocation, and apply calculation algorithms in accordance with current standards. This approach, involving applied AI, data science, and NLP, is designed to support diverse industries in collecting, processing, and securing sustainability data.

Unbox & Enterteq's efforts represent a significant step towards solving data challenges in sustainability reporting, thus facilitating the effective integration of sustainability into the economic chemistry of companies as well as their wealth equation and financial performance.

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FIA Integra World 2023

Raja Constanta - "Project of the Year 2023"

We are delighted and profoundly appreciative for the privilege to host an extraordinary event that has garnered the attention of an illustrious audience. FIA Integra World 2023 brought together 150 attendees and 60 distinguished organizations, all unified in celebrating a remarkable success story that not only featured cutting-edge technologies but also inspirational narratives of triumph in the realm of business.

We would like to extend our profound gratitude for the invaluable contributions made by our esteemed technological partners, including Schneider Electric, AVEVA, IBM, ACE Industrial Software Solutions, and Waterfall Security Solutions.

Throughout this event, we celebrated the achievements of our company's successful projects and acknowledged the addition of RAJA SA Constanta to our esteemed client portfolio. RAJA SA Constanta stands as the largest regional entity in Romania, specializing in the provision of potable water supply and wastewater treatment services, serving a vast population exceeding three million residents across the counties of Constanta, Ialomita, Calarasi, Ilfov, Dambovitza, Brasov, and Bacau.

The RAJA SA Constanta project was geared towards the implementation of a digitized infrastructure management platform for water and wastewater within the company's operational jurisdiction. This project was carried out under the purview of the "Operational Program Large Infrastructure (POIM), Priority Axis 3 - Development of Environmental Infrastructure under Efficient Resource Management," with substantial financial support from the European Commission. Its overarching goal was to digitize the company's operational activity management system, encompassing real-time equipment and material resource management, data collection, reporting, and analysis to optimize overall company management, integration of workflows, enhancement of data transfer between various departments.

An important component of the project concerned the integration of data from SCADA equipment, alongside continuous communication and updates with the GIS platform. Additionally, significant enhancements were made to the Customer Relations module, particularly the Dispatch and Call Center (IVR), which involved amalgamating all incident reporting processes and call center operations into a unified administration panel for incident management. The contract's total value was 11,632,409.36 lei, inclusive of VAT.

The integration platform was underpinned by the AVEVA PI System solution. The PI System serves as a comprehensive suite of software components designed to aggregate, store, and consolidate data derived from diverse facility and process sources, thereby making this data accessible to requisite end-users. Essentially, the PI System serves as the intermediary layer between data sources and their consumers. It is equipped to establish connections with a plethora of data source types via standardized interfaces or connectors.

AVEVA has developed over 450 interfaces with a spectrum of manufacturers (including Siemens, Honeywell, Emerson, Yokogawa, etc.). The PI System can seamlessly connect to an extensive array of data source types and distribute data to end consumers, even on mobile devices.

The implementation of AVEVA PI System facilitated the automation of both business and operational processes, enabling the real-time collection of data from all subordinate units. These data streams constitute the wellspring of information for informed decision-making at the management level, thereby aiding in the elimination of factors contributing to losses and data processing delays. Consequently, this has led to the provision of enhanced services to customers.

RAJA SA serves a vast clientele comprising 3 million subscribers via an extensive network spanning over 4000 kilometers. Timely remediation of any network-related issues is of paramount importance.

For instances demanding immediate attention, customers possess the facility to contact RAJA S.A.'s call center, sensors closely monitor network pressures and flows, alerting operators of possible network losses.

Complex projects pertaining to network maintenance, improvement, and expansion, often involving multiple subcontractors, intricate permitting requirements, and numerous interactions with other utility providers, must be meticulously planned and closely tracked.

The platform is composed of three modules, all of which are integrated with the help of PI System:

Real-Time Equipment Data Management Module

By creating the Real-time Equipment Data Management Module, all the company's data sources were integrated into the AVEVA PI System: approx. 320,000 connections,

300 HWM loggers that measure flow rates and pressures in the city of Constanța, 2,000 measurement points from the SCADA system, 5 parks of photovoltaic panels.

Project Planning and Tracking Management Module

As projects to improve and expand the water and sewerage network are complex and large-scale projects, they require extensive financing and are generally financed with the help of European funds. The financing of projects with European funds also requires a complex way of reporting to the verification forums of the European Union. In addition to complex reporting, in order to complete the projects within the required time and in all related areas, RAJA is forced to use multiple subcontractors, juggle interactions with other utility providers, keeping up-to-date notices, permits and building permits.

To monitor these aspects, Oracle Primavera P6 Enterprise Project Portfolio Management was instituted—an exceptional system capable of proficiently planning and managing colossal projects across diverse industries, encompassing the likes of oil and gas, energy, utilities, construction, automotive, finance, and more.

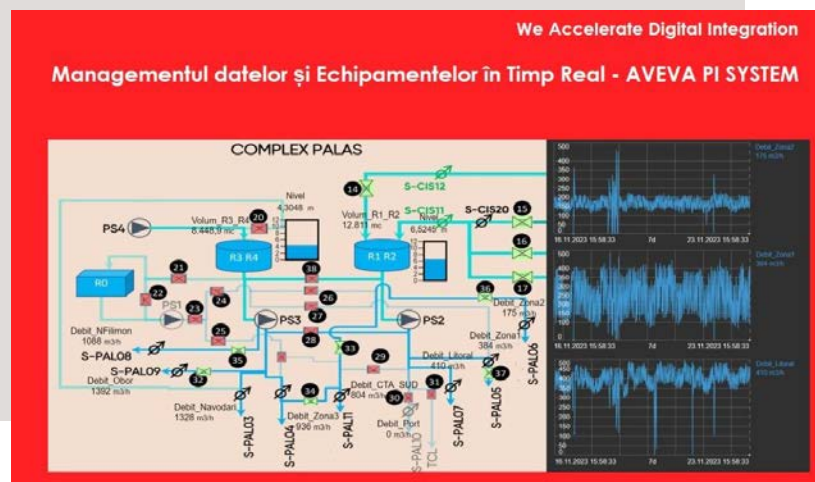
To streamline interactions with multiple subcontractors, two additional applications, PrimaDev and PrimaBoQ, were introduced. These applications facilitate the importation of estimates and lists of quantities (BoQ).

Dispatching and Call Center Module

In order for the residents of the city of Constanța to be able to report network failures or unforeseen situations as easily as possible, the Dispatching and Call Center Module was created. It will be used not only for receiving various customer requests (customer relations), notifications and breakdowns, but also for their dispatch (informing customers about ongoing breakdowns), entering intermediate data taken from the field, entering data related to the mode of troubleshooting, as well as for automatic retrieval of indexes.

FIA Integra stands as an IT company that has been a fixture in the Romanian market since 2014. It is primarily focused on four distinct avenues of operation, which have organically evolved and expanded over the years.

Photo: "Real-Time Data and Equipment Management - Raja Constanta"



Jobful /Playful Software SRL/

Mihai Cepoi

the co-founder and CEO of Jobful, spearheading the pioneering gamified recruitment platform in Romania. Prior to Jobful, Mihai was at SAP, where he held a pivotal role in HR solution sales and garnered recognition as an MVP for HR sales. In 2018, he made the bold decision to fully commit to Jobful, a move that bore fruit in 2019 when he earned a coveted spot in the Forbes Romania 30 Under 30 list.

In 2020, Jobful successfully secured a pre-seed investment totaling 250,000 euros, building upon the angel financing of 100,000 euros obtained in the summer of 2019. Additionally, Jobful made a significant mark by becoming the sole Romanian company selected for participation in the SAP.io accelerator in Berlin. Their journey has been marked by notable achievements, including securing third place and the public vote at the Startarium PitchDay in 2018.

Mihai's entrepreneurial voyage embodies a perpetual learning experience, masterfully weaving together the fabric of his diverse past endeavors. He earned his degree in computer science from the Politehnica University of Bucharest and channeled his passion for education and entrepreneurship into various transformative programs, including the School of Leaders, Aspire Academy, Alternative University, and other innovative educational initiatives.



Jobful - Gamify your candidate attraction into an experience people love!

Jobful is an innovative Romanian Scale-up focused on making recruitment and engagement about people instead of processes through gamified frameworks & human focused design.

The Jobful Career platform stands as a fully customizable end-to-end SaaS solution, designed to assist companies in attracting, hiring, and nurturing the right professionals. This platform seamlessly integrates sourcing channels and various third-party systems, creating a comprehensive talent acquisition hub.

Drawing from their initial research, the Jobful team recognized that the recruiting landscape often adheres to outdated practices, driven solely by the quantity of resumes. Their vision was to **pioneer technology capable of reshaping recruitment** from a transactional process into a dynamic experience, fostering connections while streamlining operations. Jobful's ultimate aim is to empower individuals across generations to unlock their potential and shape the future workforce.

At Jobful, **our mission is to facilitate an interactive, equitable, and efficient way to bridge talent with the ideal opportunities**. We firmly believe that everyone deserves a workplace where they can thrive, while businesses deserve dedicated, high-performing, and engaged employees. Our commitment to this cause is underpinned by cutting-edge technology and a human-centric approach to design.

Key Business Highlights & Achievements

Over the past five years, Jobful team has been actively involved in various startup acceleration programs, and they are proud to highlight some of their significant achievements:

- In 2018, Jobful participated in the Spherik by KPMG acceleration program, where got 3rd place and the popularity award at Startarium
- In 2019, we successfully completed the SAP.io Berlin Acceleration Program.
- 2020 marked our graduation from the NUMA Acceleration Program (WEVE) in New York.
- In 2021, the Jobful team wrapped up the InnovX Scale-up Acceleration Program and took part in the Empire of Lions at PROTV.
- In 2022, Jobful was selected by the European Bank for

Reconstruction and Development for the Star Venture program, offering specialized consultancy for critical development projects.

- We also received the Innovation and Technology Leadership Award at Aspen Gala.
- In response to the Ukraine-Russia conflict, we adapted our platform to support displaced individuals from Ukraine in regaining their financial stability, with the valuable support of ERSTE-BCR Bank (<https://jobs4ukr.com>).

In terms of investments, our journey commenced in 2019 with our first Angel investment round of EUR 100,000, followed by subsequent investments totalling EUR 600,000.

In 2023, Jobful successfully closed a bridge round on Rönin, securing EUR 120,000 in funding, with our sights set on achieving over 300% year-over-year growth.

Jobful team also **forged strategic partnerships with tech giants such as Microsoft, SAP, Oracle, and AWS, as well as financial institutions including BCR/ERSTE and EBRD.**



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Meet the Mentors

We propose to meet some of the #MSP mentors who embarked on the journey to support our community.

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place



Mădălina Samoilă

What inspired you to get involved in this field?

After 13 years 'live' on television, the career of Public Speaking Trainer came as an extension of my personality. I've always been looking for growth, been concerned with being where my destiny lies, and Public Speaking—training people who need to speak better, MEANINGFULLY, as I always say — this is my destiny. I've been doing this for the last 5 years, and I'm often told that I manage to 'change lives,' but it is them, my clients, changing their lives as they have chosen to develop their public speaking skills. I just accompany them on their journey. People need confidence in their abilities, and techniques to apply. Because I have abilities and knowledge to work on both aspects, I have chosen to be a Public Speaking Trainer and I support my clients in their journey to memorable speeches. And now, in 2024, after working exclusively with the corporate and entrepreneurial sectors, I have chosen to focus on the younger generation too. I will soon launch a public speaking project dedicated to high school students and another one for University students. Basically, their start into communication will be an early one, as it is compulsory in a working/business environment that is constantly evolving.

Profile: Public Speaking Trainer
Full Name: Mădălina Samoilă
Years of Experience: 14

Greatest Challenge: To overcome my limits every day and to always find fulfillment in what I do.

Greatest Achievement: The ability to enjoy everything I have and everything around me. Gratitude.

What are the most common challenges your clients face when it comes to public speaking?

Confidence that they will be able to make it. Many have unpleasant experiences that have taken them into “freeze mode” or even to the point of giving up. As soon as they reach me they realize there is still hope. One last attempt. Many say they are coming “to prove” to themselves for the last time that they cannot do it. My talent is to prove the opposite. That would be one category. Another category includes those who are aware of their abilities but do not know in detail how to leverage them because they lack the necessary skills. They are not as afraid to speak in public, but they are unsure if what they do is correct or what could improve. They don't know how to reduce the amount of information they present. This is where I intervene with specific techniques related to message construction and non-verbal language and voice techniques.

What tips & tricks do you use that help people who work with you to overcome the fear or, in many cases, the anxiety of public speaking?

Our mindset and own perception on public speaking are crucial to our success or failure as good speakers. There are no inherently good and charismatic people versus those who have no place on stage. There are only people who know the techniques and have the courage to perfect them, to make mistakes, and start over. And there are people who give up either too soon or before they even start. The fear of public speaking will never completely disappear. But it can be transformed into fuel if our brain receives the evidence it needs that it's possible and knows the techniques. My suggestion is to work on changing negative thoughts into positive ones, to make positive affirmations that guide our actions toward the results we desire.

What techniques or tips do you recommend to improve body expression and gestures during the speech?

We are born perfect, with all the abilities to speak. Natural movements when we talk to friends about our favorite movie, the smile on our face when we look at loved ones, approving or disapproving gestures related to a particular subject—all take place and are ideal in public speaking. Everything that looks and feels natural for you as an individual is suitable for public communication. Let's step out of the roles and be ourselves, authentically educated. People who move naturally, who don't hold objects in their hands because of fear, who don't gaze into the distance despite having people in front of them. Good people who speak well. Because that is the ideal of public speaking.

What learning resources or materials do you recommend in this area (books, videos or practical examples)?

In the first stage, any book about the power of positive thinking, to calibrate the most valuable equipment: our mind. From books of Norman Vincent Peale - "The Power of Positive Thinking", "You Can if You Think You Can" to the books and available video content of prof. Joe Dispenza. Carmine Gallo - "Five Stars" - is another excellent book about communication. And, additionally, anything that involves video resources of yourself in moments when you feel comfortable and not restricted at all. A valuable component in your evolution as a speaker is the analysis of oneself and improvement step by step.

What are the methods of self-assessment or self-reflection that we can use to improve our public speaking skills?

First of all, we need to understand this: communication is a process where it is important to allow ourselves to make mistakes and not to put so much pressure to be perfect while speaking. The best speakers, in my opinion, are those who stay in the field. They actively seek and say 'yes' to opportunities to speak publicly and are not afraid of mistakes and the learning process. The mistake most make is viewing public speaking as a performance rather than an act of communication. It means they imagine that every time they appear,

they're put under a microscope and every mistake is hunted down, as if they're performing at the Olympics. However, reality shows the opposite. People want to connect with the speaker, they don't notice mistakes as much, and they are accepted if embraced rather than vehemently condemned. So, to improve, we need to step into the arena to evolve and embrace every step of the journey.

How do you see the evolution and future trends in the field of public speaking, in general, and specifically in public speaking training?

I see more and more interest in the market, and one area with a lot of potential is the educational sphere: high school and college students who have a great thirst for knowledge and an impressive capacity to absorb information. I recently worked with young people and I was pleasantly surprised by the fact that they identified so early this need to develop in communication, the fact that they understood how important it is to master communication regardless of the field they want to develop a career. It is also one of the reasons why I started developing activities for them: Workshop sessions live on stage for high school students and university students starting early in February 2024.

They will be the heroes, the central characters with me on stage. They will practically see and experience how much power words can carry and how they can transform themselves and the audience.





Cernian Alexandra

What inspired you to get involved in this field?

Passion for technology, desire to solve complex problems and the aspiration to be part of an environment that shapes the future inspired me to choose this career in technology. I was captivated by the speed with which technology evolves and the significant impact it has on our society, since I was little.

On the other hand, I was always curious about the unlimited possibilities that technology brings to solving complex problems. Whether we are talking about software development, artificial intelligence or other advanced technological fields, I see this industry as fertile ground for innovation and for shaping the future. Participation in this field gives me the opportunity to contribute to change our world by offering creative and effective solutions to current and future challenges.

I was also inspired by the industry pioneers and visionaries who have made significant contributions and changed the way we interact with the world around us. The fact that I can be part of a community that generates innovative ideas transforming and turning concepts into reality motivates me to constantly contribute and evolve in a dynamic and challenging environment.

Profile: PhD in Systems Engineering
Full Name: Cernian Alexandra
Years of Experience: 15

Biggest challenge: *Doing research and innovation in a poorly funded system like the Romanian one*

Biggest Achievement: *Generating innovative ideas innovative and transforming concepts into reality*

How do you perceive the current landscape/context of the digital domain? What are the trends and notable challenges?

The digital field is developing rapidly, with trends such as advancement in artificial intelligence, cyber security and 5G adoption.

Challenges include ethical management of algorithms, data security and the need for sustainable digital transformation. The global ecosystem raises questions about standards, ethics and geopolitical impact, highlighting the need for a responsible approach, which is adaptable to technological progress.

What do you consider to be the most important asset every teacher must have, in order to attract young people to technology and innovation?

I believe that the most important asset of a teacher who wants to attract young people to technology and innovation is genuine passion for the subject and the ability to communicate this passion, so as to inspire and motivate young people. An enthusiastic teacher not only reveals knowledge but also cultivates curiosity and desire to explore, thus contributing to the training of a new generation of technology professionals.

Is the new generation eager to bring innovation to their home country? Are there institutions that can provide support for the new generations of entrepreneurs?

Today, young people are open to new ideas and technology and have an entrepreneurial approach to societal and economic challenges. Many of them want to make a significant contribution, to change and improve their community through

innovation and entrepreneurship. It is important to create an ecosystem that provides support and resources for young entrepreneurs so that they can turn their ideas into reality and contribute to sustainable and innovative development of the country. Currently, entrepreneurs receive the most support at the level of non-governmental organizations or within the private ecosystem, through business incubators, technology hubs, educational initiatives and non-governmental organizations. More involvement would be helpful from also government institutions, through dedicated grants and funding programs, as well as the adaptation of legislation for startups.

What are the implications of virtual currencies in today's economy and in the near future economy? What benefits and risks to expect?

Virtual currencies have brought benefits such as financial decentralisation, financial inclusion and rapid transfers. However, risks include price volatility, uncertain regulation and the possibility of being used in illegal activities. Overall, virtual currencies have generated significant changes in the financial paradigm, but they involve both notable benefits and risks. Their future depends on how aspects such as regulation, adoption and continuous technological developments are managed.

What will the computer of the future look like and what will it be able to do? What value will it add to the industries of the future?

The computers of the future will integrate advanced technologies such as powerful processors, artificial intelligence (AI), augmented reality (AR) and virtual reality (VR), edge computing and innovative operating systems, which will bring new transformations in various industries, including medicine, manufacturing, education and cyber security. It is expected to see an increase in efficiency, data analysis capabilities and a more intuitive interaction between users and computers.

The computers of the future will play a key role in the transformation of digitalization of society and industry, opening up new possibilities and tackling complex challenges in innovative ways.

What would you like the next great digital invention to be?

The next big digital invention I wish I could see would be a significant advance in the field of artificial intelligence, particularly a breakthrough in artificial intelligence that fosters a deeper comprehension of context and human emotions, displaying a more nuanced understanding.

Being part of this field provides the opportunity to contribute to changing our world for the better.





Andreea Avramescu

What makes you the happiest in the fields in which you activate?

I am excited about the mix between technology, creativity and digital entrepreneurship. My journey extends into the IT area **to serve founders and entrepreneurs looking to grow their digital presence through various online platforms** and with a visual identity that reflects their brand personality and target audience. **The work I do is a mix of strategy, the power of design and user-centered web development.**

I am happy to work in such a dynamic field where technology comes and complements or helps to implement business objectives. And above all, **I am happy when I bring positive change in organizations, when I launch a new brand on the international market after a creative and strategic process, and clients call me with positive post-launch feedback.** At first I was happy for the results, meanwhile I learned to be happy along the journey.

This **"trace of progress"** that I leave in the lives of organizations and founders fuel and energize me to continue what I do in the technical-creative area.

Profile: IT, UXD, Branding Consultant, Tech Enthusiast

Full Name: Andreea Avramescu

Years of Experience: 10+

*It's not what you do, It's why you do it.
It's not who you are, It's who you become.
It's not how you start, It's how you finish.*

To what extent can new technologies be integrated to optimize digital service and product companies?

My commitment to the founders is not only the modernization of interfaces and visuals, but also the correct application and information about the latest tech tools that can improve both internal processes and those related to customer acquisition, engagement, analytics, fundraising, etc. .

In the last 3 years, there have been many possibilities for expansion in the digital area through low-code tools, which allow non-technical users to move forward faster with implementations in the area of software development, and the last year... was focused mostly on the advancement of AI-type technology.

In the **bubble of pro-AI people**, this advance is amazing and there are many companies that implement optimization processes for performance or even integrate tools for customer engagement.

The **Romanian reality**, from the ground up, is that often in SME* or start-up companies, budgets are limited, technical people capable of correctly evaluating the options do not exist and implementations are still "long way" on the financial planning list. And within the institutions, we are still at the level of simple online presence. **The gap becomes enormous in the coming years, between those who will have the power of automation vs. those who are still at the baby-tech level.**

In international life, depending on the specifics of the markets, these aspects vary, from the Dubai market, USA - pro AI, metaverse, blockchain, since 5 years ago, to the European market where the capacity for innovation and implementation is more limited and even with potential of governance differently, from the perspective of the European AI directives.

*Romania has around 500,000 SMEs, i.e. approximately 99% of all companies in the economy, according to the most recent analyzes of the European Commission.

For those companies willing to test and implement AI tools, I leave some suggestions, which are accessible on the website

<https://binno.com/bytes-beyond-tech-innovation/>.

AI Impact in the Workplace

Stay Ahead of the Curve – AI for business

These artificial intelligence tools represent a diverse and innovative range of options, providing organizations with the skills needed to improve business by extracting insights from unstructured data and optimizing various aspects of work, from communication and creativity to effective team organization and generation attractive content fast.

- 40% of employees believe that AI can improve the workplace;
- 71% of CEOs who invested in AI reported ROI+ (hubspot);
- only 18% of Americans have ever used ChatGPT; students who used chatGPT increased task quality by 18% (MIT).

What is the best professional experience that helped you develop? Can you tell us a few words about your experience in Silicon Valley?

It was a lifetime experience. I met a lot of young founders from the international environment, investors present in SV and in general people willing to materialize their idea in a startup. It was a time that reminded me that **the role of an entrepreneur, in addition to profit, is to promote freedom, to lead, build and pursue progress and innovation**, to set positive examples for others, etc.

What trends in digital marketing should we not miss in 2024?

Modern Communication

You should know that 75% of millennials prefer to communicate via SMS or chat instead of having phone conversations or sending emails.

95% of Romanians do not leave home without a smartphone according to a Huawei & Ipsos study. Therefore, SMS marketing offers direct access to your target audience, with an open rate of 99% compared to an average of 20% for email.

All age groups prefer short video content. Investments in platforms like YouTube Shorts, Instagram/Facebook Stories/Reels and TikTok are beneficial for most businesses.

Strategy Adaptation

Adapting communication and promotional campaigns to these trends is essential.

The importance of Customer Service

In addition to delivering a good product, 63% of customers appreciate brands with excellent customer service. Also, 45% would give up buying from a brand after two negative experiences.

Content Marketing and GPT Chat

Creating relevant and viral content takes time and resources. Marketers can use Chat GPT to streamline the process of creating copy, articles, and FAQs.

Website optimization (especially for mobile)

The site must be 100% functional, display correctly on mobile devices, load quickly, and provide clear and attractive product information.

User Experience & Automated Marketing

Algorithms in online marketing are geared towards improving user experience. A detailed analysis of the current business can provide possible solutions to the brand's challenges.

The Power of the Online Community (Slack Channels, Telegram, Instagram)

Building a community around the brand is crucial. You can solve audience problems through social media presence, online channels or creating your own educational platform.

B2B on LinkedIn

LinkedIn is gaining ground in the B2B environment. Integrating the web into online marketing plans brings significant benefits to positioning, awareness and overall brand health.

You can join the [binno ecosystem](#) to access free resources and other consulting services for your business or [2webservices.com](#) for creative webpicks.



Mihai Tudor

What sparked your interest in innovation management and how did you get started in this field?

I have always been attracted to the area of entrepreneurship, and the innovation component is the most interesting, as we are dealing with new things, which have a great influence on the future of the organization. It is also the most complex because there are so many variables to consider. In innovation management we learn to reduce the risks that come with bringing something new to market by running small-scale experiments that can validate or invalidate the concept, based on real feedback from the market. They say if you don't risk, you don't win. Or the greater the risk, the greater the gain. Through what I do, I want to provide entrepreneurs with higher returns than the risks taken. It's fascinating that there are methodologies to achieve this result and there are so few people who know what steps to take to achieve the desired results. Graduating from the Faculty of Business & Innovation in the Netherlands was a trailblazer in this world of innovation management consulting, and the more I worked on more projects and saw that the steps followed always yielded results, I decided to specialize in this branch, aiming to return to Romania to share these experiences and working methods.

Profile: Startup Mentor, Innovation Consultant, Entrepreneur
Full Name: Mihai Tudor
Years of experience: 9

Biggest challenge: Being comfortable with the idea that we can't be in control and all things happen for our good, even though it's not always apparent.

Biggest achievement: Being able to do what I love and make a living from it.

How do you perceive the current innovation management landscape/context? What are some notable trends or challenges?

I will answer this question from the perspective of a person who had the opportunity to work in this field in two countries that appear in opposite positions in the ranking of the most innovative countries in Europe. In the Netherlands there is a greater appetite for risk, people are willing to try new things and are not so afraid of failure. We will consider the financial power that the population has, the spirit of independence, the level of education in the business area and beyond, and the highly organized lifestyle, among others. Bringing these elements together makes long-term thinking and the courage to be visionary possible. When you start thinking about innovating, as an existing organization, you must already have financial security and sales predictability.

Through innovation, more often than not, we are preparing to solve a problem that we don't yet have, but know we will inevitably face.

To make a connection with the level at which innovation management is done in Romania, from my discussions with SMEs, there are extremely few companies that have allocated concrete activities for innovation. Most are reactive to what is happening and less proactive to prevent problems and be one step ahead. This can be understood, given the characteristics mentioned above to be able to do innovation management. The situation is different at the Corporate level, where we have seen that companies with innovation departments are starting to exist. These are mainly foreign companies with offices in Romania, imposing certain western practices. They allocate resources for training in innovation methodologies such as Design Thinking, and more and more IT companies are making the transition from outsourcing to developing their own products, an activity that requires a 180-degree change in the employees' way of thinking, from executor to creator.

As an innovation management mentor, what role do you play in guiding individuals or organizations?

As a mentor, I have the opportunity to work with organizations that are at different stages of development, from defining the concept and creating an MVP (minimum viable product), to companies that are old on the market and want to find new ways to create other sources of income. A mentoring program is about setting and achieving goals over a defined period of time. My role as a mentor is to help the team I work with move from a high level of uncertainty at the start of the project to an increased level of clarity and confidence about the method by which they will succeed in bringing a new product or service, improve internal processes, discover new ways of working to identify opportunities and minimize risks. I tend to do most of my sessions online, which allows me to collaborate with people from all over the world.

In your experience, what are the key principles that drive successful innovation within organizations?

If I were to answer this question from an entrepreneur's perspective, I would say that motivation, perseverance, flexibility and creativity make the difference between a winner and the rest. In order to innovate successfully, we need a compass to show us the direction, because there is no map to guide us yet. Innovation is about navigating a world of uncertainty and risk, fueled by a burning desire to change things. We need to be organized and plan, but at the same time be able to change course if a better opportunity arises. In fewer words, I would say that there is a need for medium-term (5 years) and long-term (over 10 years) planning, executed by motivated people, working in an environment that encourages new initiatives and where failure is accepted and seen as part of the game, a learning opportunity.

What common challenges do organizations face when it comes to innovation and how do you recommend overcoming them?

To be able to give a complete answer to this question, we will have to define the three stages of innovation because each of them comes with its own challenges. So, when we refer to innovation, we can discuss three types, according to the Harvard Business Review: **1) core innovation**, where the activities that already bring secure income to the organization are made more efficient (for

example, lower costs, reduced lead time production); **2) adjacent innovation**, where incremental adjustments are made to products to serve new customer segments with unmet needs from the current offering (for example adding new functionality to an application) and **3) disruptive (transformational) innovation** where the organization launches new lines of business, with products totally different from the current portfolio, which address other needs and implicitly other customer segments (for example Kodak, which had to switch from film photos to digital, requiring totally different technologies and model of business).

Now, back to the question above. For a company to be prepared to maintain a competitive advantage, it must always develop. This development is indicated to appear on all three levels of innovation mentioned above, allocating resources in the following way: **core 70%, adjacent 20%, disruptive 10%**. For each of these three stages, organizations face different obstacles.

In the **first phase (basic innovation)**, attention is devoted to efficiency, so it is necessary to analyze in detail the processes of production, sales, purchases, customer services, etc. The longer you work in a position in the same company, the harder it is to identify things that can be improved, because the person gets used to the poor way of working and comes to consider it as the best option. This is where the fear of newness and change comes in, with many people preferring to keep their way of working. This fear occurs in all stages of innovation and can be overcome by creating a work environment that encourages failure and own initiative, along with a training program for the new way of working.

In the **second phase (adjacent innovation)**, the interest is to pay attention to things happening outside the company (industry trends, trends in customer behaviors and expectations, etc.). Based on these external factors, firms create new products and services and hope that people will buy them. Starting from this phase we can say that innovation management really comes into play. The risks are to invest in creating a product or service that the world does not need and that will not sell, resulting in major losses. Even if the management team thinks it's a good idea, it's the customers who decide. So at the level of adjacent innovation it can be difficult to find the right methods to create the right small-scale experiments to collect data and improve the concept based on feedback received from potential customers in a certain market segment. It can be difficult to put our own opinions aside and prioritize what the market information is telling us. Moreover, once started on this path, the level of uncertainty and new information can be overwhelming, requiring a high

level of analytical thinking. One solution for overcoming these obstacles is to follow a set methodology from the beginning, along with having a plan for what to do when things don't go as planned. From the position of mentor and consultant on innovation, it is at this stage that I can offer the most help to organizations.

In the **last phase (disruptive innovation)**, the focus is on the creation of new business lines, sometimes even the creation of completely different businesses, in other industries. The major challenges are the high level of risk, the increased uncertainty of the steps to be taken, the limited knowledge of the customer segments and the low performance of the products or services offered (as they have not yet had customers to use them and give feedback). An increased entrepreneurial spirit is needed at this stage. The obstacles are numerous, but some general suggestions to overcome them are the best possible documentation on the new market you want to conquer, the most valuable connections, sufficient capital and a thinking directed towards finding solutions.

Are there specific skills or mindsets that you consider essential for success in this field?

If I mentioned above the skills that can help entrepreneurs to innovate, now I can talk about the skills that one should have in the field of innovation management. I'm not entirely sure that these criteria will work for everyone, so I can only reflect on what has been helpful for me. As a consultant, mentor, coach, or any position where you provide support to an individual or a team, I find that asking the right question is often much more difficult and rewarding than providing the answer. In this role, I have the duty to gather all the relevant information in order to succeed in creating a plan that will lead to the achievement of the client's objectives.

To succeed in asking the right questions, I must already have in mind what kind of answers I am looking for and know how to create a comfortable and trusting environment for the client. Equally important I think is the ability to create and maintain relationships, to be authentic and to create a positive and motivating energy.

Where do you think the future of innovation management is headed in the next 5-10 years?

Looking at Western European countries, we see more and more innovation agencies outsourcing innovation

management consultancy services, as well as companies creating their own internal innovation department, all with the aim of discovering new ways to bring products with added value on the market, with as little risk as possible.

Currently, in Romania, corporate companies, in particular, have begun to educate their employees on innovation methodologies such as Design Thinking, but this is only the beginning. **Innovation management** is a subject that encompasses several methodologies, such as the one mentioned above. So, I think that only after 2030 will we have companies with Romanian capital with their own innovation departments and SMEs will start to give more importance to this topic because it will be increasingly difficult to differentiate yourself.

Until then, firms will continue to invest in Design Thinking training programs and even call on **external experts to facilitate workshops** in internal **3-6 month incubation programs as an experiment, then growing to 24 month programs** of identifying new opportunities, testing ideas, launching them on the market and scaling, with the support of mentors and external experts.

At the same time, there will be internal **Hackathon -type events** of 1-2 days, in which the company's employees participate in **ideas contests** on certain topics, such as solutions for what the company can do for a reduced impact on the environment, improving internal processes, offering an experience better customer experience with the product or even new product and service ideas that can be created using existing resources.



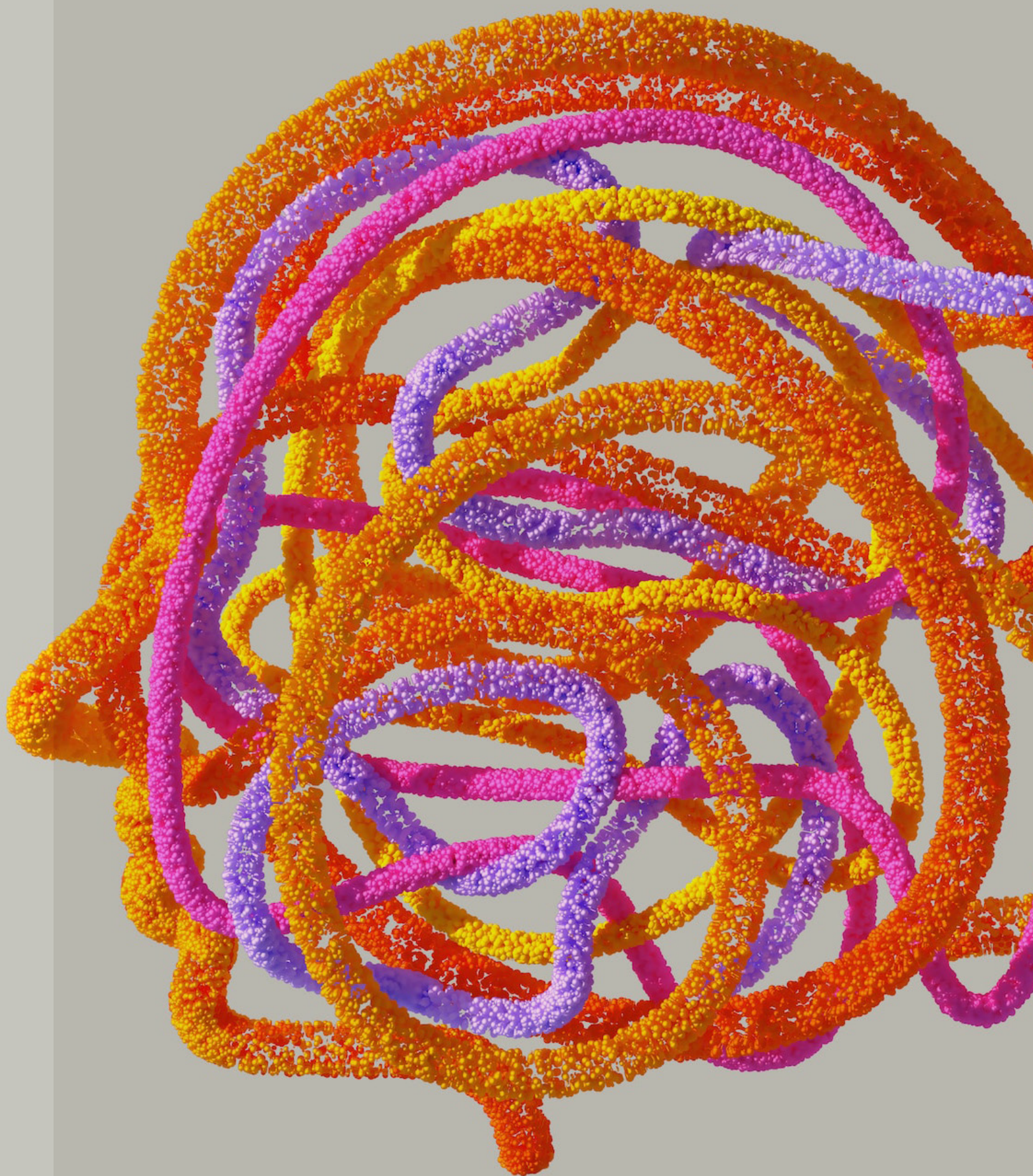
**INNOVATING
SOCIETY**

For more information on topics related to innovation, I have several articles written on my blog at **www.innovatingsociety.com/blog**, and if you liked the article and want to connect, I can be found on **www.linkedin.com/in/tudormihai**



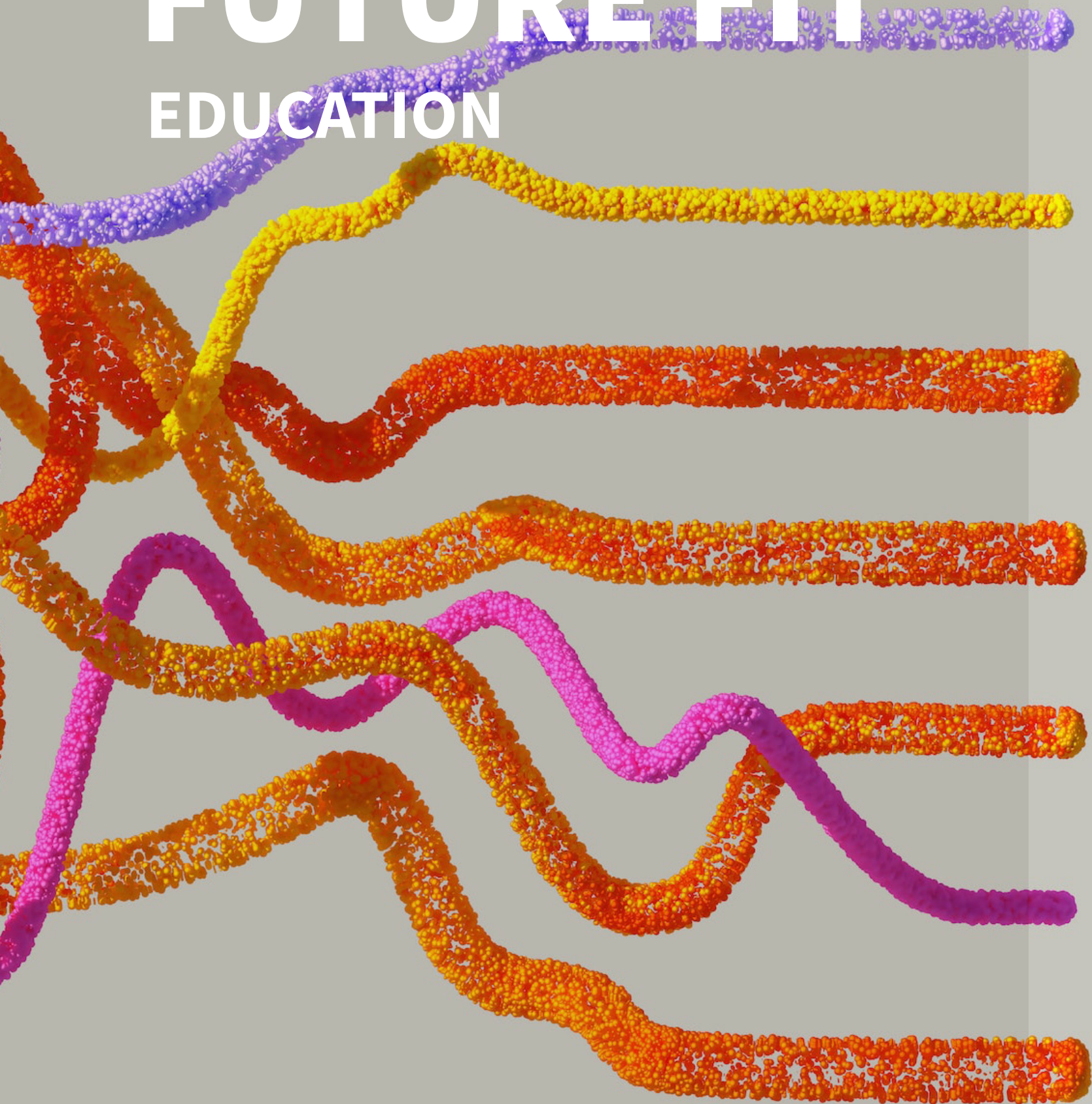
Want to join the MSP community?

Access the
community
registration form
on our website
magurelesciencepark.ro



FUTURE FIT

EDUCATION



What is Hour of Code and why Code School Clubs have joined this global initiative?

In Romania, there is a growing interest in programming. However, student access to resources may still encounter challenges. Code School Clubs wants to be a part of change and help kids get tech education by supporting the initiative Hour of Code. Hour of Code is not just an event, but a global movement, developed by Code.org and it brings technology and programming closer to school students. Originally designed as a fun and educational introduction hour in the world of programming, Hour of Code has evolved into a global effort supported by over 400 partners and 200,000 teachers worldwide.

In Romania, the Hour of Code was brought by the Adfaber Association, which organizes events every year for students, and the **kids' technology club Code School Clubs,** which supports a part of the projects of the Adfaber Association, is once again the national sponsor of the Hour of Code.

To what extent are Romanian school students interested in programming?

Romanian students' interest in programming has increased in last years, along with growth awareness of the importance of skills in the field. Diversification of the educational program offer and events such as Hour of Code Romania have contributed to attracting attention and stimulating interest in programming. A personalized approach, practice and explanations provided step by step, accompanied by "shortcuts" presented by people who practice in the field of technology is a recipe for success within Code School Clubs and contributes to students' desire to improve.

The goal of some of the students who are beginning to learn programming is not always about becoming programmers, but about becoming familiar with those concepts that are useful to them in future fields or to support their hobbies.

Briana, an avid reader, started with HTML and built a blog telling the world about her favorite books, then she continued with different programming languages because she fell in love irremediably by this field.

What would be the most appropriate professions in programming?

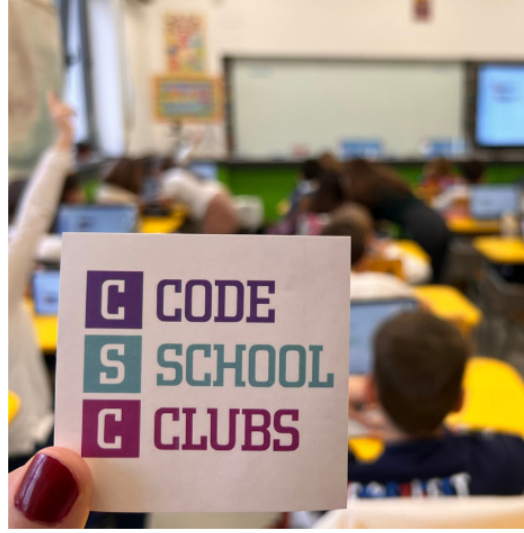
In terms of programming professions, most Code School Clubs students are currently attracted to the idea of a game developer. They want to learn Java, JavaScript, Python, C++ and a part goes to the creative side like 3D graphics with Blender like complementary part of programming knowledge. In addition to the development of video games, which is quite a popular choice, there are a number of areas that are constantly expanding, and among them we count:

RPA developer - RPA (Robotic Process Automation) developer is a professional who deals with the development and implementation of process automation solutions. RPA involves the use of software or "bots" to automate repetitive processes in an organization.

Cyber Security Specialist - security is a growing concern at global level. Security professionals are responsible for protecting systems and data against cyber threats.

Specialist in Artificial Intelligence and Machine Learning - development and implementation systems based on artificial intelligence and machine learning are booming fields and young people should seize the moment to catch the wave of change.

Programming skills and an understanding of technology are useful in a wide range of fields. Regardless of your chosen career path, programming skills can benefit your career or entrepreneurship and can open doors to limitless opportunities.



How can we stimulate and encourage students to use technology in a beneficial and productive way for their future?

At Code School Clubs we believe in the power of example and the impact a mentor can have on a child's educational path. We want to be among the new "influencers" generations to count those people who have initiative and who transform the world for the better through projects, practical experiences and educational events that align with the needs of communities.

We have students with us who, using programming, develop solutions to real problems with which they and those around

them were facing. To start on this path, they needed mentors and the opportunity to participate in educational programs that showed them that they have the power to do what they propose to do and that programming is not an untouchable field.

What are the biggest and most important challenges and satisfactions of the programming profession?

A challenge often mentioned by employers and seniors in the software development field is having effective communication skills and developing soft skills such as the ability to be a good listener and a good empathetic communicator. In this sense, we created for our school students, courses of podcasting, video creation and editing, courses that help them grow in complementary areas, while acquiring an effective way of communication.

The need for continuous development in the programming profession also comes as a big advantage. Programmers are those people who are always up to date with everything new, every innovative solution and easily adapts to the accelerated changes in the labor market.

What other projects for children do you have planned for 2024?

In 2024, we aim to give the children who walk through the door of Code School Clubs, as much as possible real life experiences. Connecting them with people in companies, showing them a day in the life of a programmer is the next step, after the practical approach of programming courses because it exposes them to opportunities and opens their horizons.

What is the most important skill to develop for students interested in a programming career?

Critical thinking is essential for tech jobs and fortunately programming contributed to the development of it. Critical thinking involves the ability to analyze a situation or problem, to take a step behind to identify essential parts and develop effective solutions. It also contributes at planning a project, when debugging, when optimizing the efficiency of a program and at optimization of algorithms.

In addition to critical thinking and technical skills, communication, planning and teamwork skills are also worth mentioning.



National College "Gheorghe Lazăr"

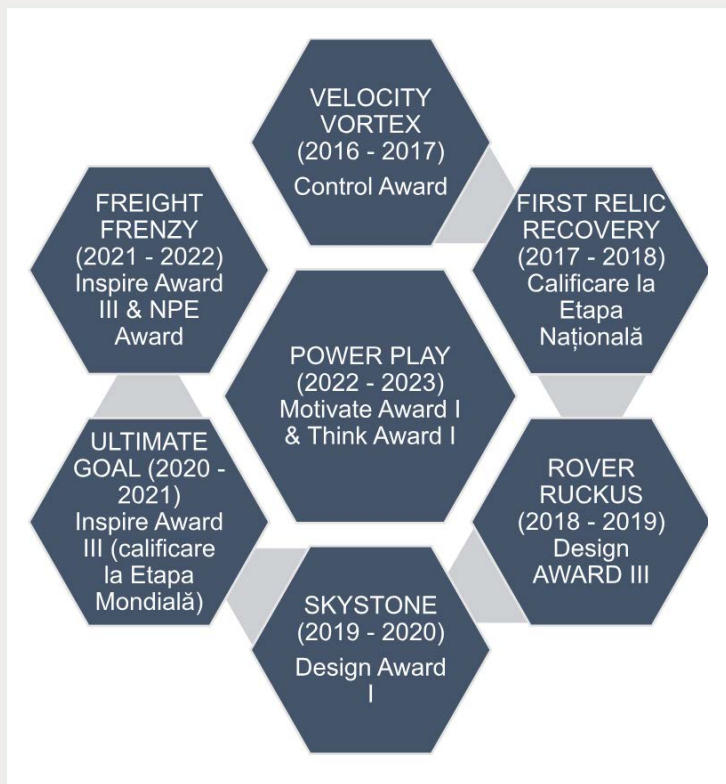
The MSP community is constantly expanding, and because we aim to establish new, long-term, and impactful collaborations for students, we are always seeking partners who have demonstrated seriousness, involvement, and performance through their activities. Recently, the National College "Gheorghe Lazăr" became part of the MSP community, which brings us great joy. Established in 1860, it is the second oldest high school in Bucharest and among the most reputable in the country.

Together, we already have several project ideas in mind that we are eager to share. However, until then, we invite you to read the following presentation article, where we can highlight both the perseverance and involvement of students in the field of robotics. So, without further ado, let's allow them to introduce themselves through the initiatives and extracurricular activities they have undertaken.

I INTRODUCTION - TITANS RO017 Robotics Team of the National College "Gheorghe Lazăr" International First Tech Challenge (FTC)

Robotics Championship In 2016, when Nation Through Education (NPE) introduced and popularized the First Tech Challenge competition in Romania, originally from the United States, the newly established TITANS team participated in the campaign to promote this type of robotics. In September 2023, we began the 8th competitive season representing a veteran team of the competition, accumulating numerous achievements over the years.

The competition involves building, assembling, and programming a robot based on the annual theme of the season, directing its operation to participate in 150-second matches where cooperation skills, not just the robot's functioning, are tested. Additionally, each team must present a technical notebook, a portfolio reflecting their activity, encompassing the process and stage of their robot's development, as well as how they promoted their own team, the FTC competition, and its values (Gracious Professionalism & Cooperation).



Control Award - best use of sensors and programs to improve the robot's performance.

Design Award - the best industrial design, both functional and aesthetic.

Inspire Award - the team is an "ambassador" (role model) of the FIRST program, embodying the challenge of the season itself.

Motivate Award - promoting the values of the competition and a deep understanding of what it means to be a FIRST team.

Think Award - impeccably documented robot-building process from a technical point.

II Team's Activities

Apart from the First Tech Challenge competition, our main objectives are to promote STEAM (Science, Technology, Engineering, Art, Mathematics) field values and to encourage young people to pursue their passions while introducing them to science and ecology. However, to meet the competition's requirements, the TITANS team operates with three departments: Hardware, Software (technical departments), and Marketing & PR (non-technical).

a. Activities of technical departments

Their work is deeply interconnected as the programming process requires a comprehensive understanding of all the physical mechanisms present on the robot. This is particularly crucial as the first 30 seconds of matches are dedicated solely to autonomous operation (without team intervention). By learning to operate in CAD (Computer-aided design) programs, we design a 3D model of the robot, offering us infinite assembly possibilities (as long as they meet competition-imposed limits) and facilitating the design of customized components, highlighting the team members' adaptability and innovative spirit.

b. Non-technical department activities

Besides drafting the technical notebook and the aforementioned portfolio, the Marketing & PR department is responsible for securing sponsors and managing the team's budget necessary for the entire season's activities. Moreover, aiming to promote the competition's values or acquire and refine old skills with the help of STEAM field specialists, we organize various thematic events.

The most significant among these are:

EcoRobot educational project – we teach primary/secondary school students about ecology in an interactive, fun way, demonstrating its applicability in everyday life;

Demonstrative competitions – these simulate official competitions, where, with the support of the Polytechnic University of Bucharest, we host robotics teams from across the country for six years;

European Researchers' Night (ERN) – we participate annually as exhibitors, organizing numerous workshops to inspire and encourage spectators (children and parents) to follow their passions.

ERASMUS – such projects enable our team's outreach to grow exponentially, since we are able to interact with talented people from a diverse range of European countries.



Demonstrative competition



EcoRobot



NCE

This year, the Măgurele Science Park team organized two educational competitions for high school and middle school students: the 3D Modeling and Printing Contest - 3D In My School, and the Robotics Contest - Make Your City Smart.

Together with our partners from the Bucharest-Ilfov Regional Development Agency, we launched **the third edition of the '3D in My School' contest**, which involved students from the 9th and 10th grades of the 'Cezar Nicolau' Technological High School in Brănești (member of the MSP community). As always, the project benefited from the support of our sponsor FormWerk, a staunch advocate of healthy education. The competition took place between October and November and the students developed a project under the guidance of our colleague Laurențiu Dinu, receiving both online and practical training.

The challenge posed to the students who participated in the 2023 competition was to create a project that combines 3D modeling and printing processes with their favorite subject at school, aiming to make it more interesting and easier to understand. Additionally, **the competition helped students familiarize themselves with the ways of exploring the use of 3D technology in projects related to their chosen vocational field**, given that 2023 was the European Year of Skills. Filled with enthusiasm, the students designed projects ranging from practical use, such as educational materials that can be used in biology classes (such as a 3D model of the human eye), to commercial products (such as a 3D board of the solar system) that can be scaled up and purchased from specialized stores.

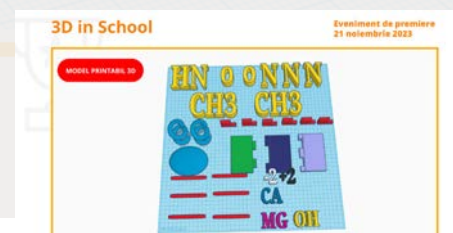
The judging took place on the Zoom platform on 20th of November 2023, and **the awarding ceremony was held on 21st day of November, 2023, at the "Cezar Nicolau" High School**. The jury consisted of Mihai Peca (ECDL Romania trainer), Ana Maria Melinte (coordinator of the 3D Printing and Modeling Laboratory at the Faculty of Mathematics and Computer Science, University of Bucharest), and Daniel Vieru (representative of the partners from the Bucharest-Ilfov Regional Development Agency). The winners on the podium received three 3D printers from the sponsor FormWerk, which we hope will serve as vehicles to further their passion.

We thank all the members of the MSP community for their involvement.

Additionally, our gratitude goes to the nine finalist students for the dedication and passion they showed in this competition. Last but not least, we extend our thanks to Director Marinela Culea for motivating and encouraging the students to break boundaries and showcase their creativity.

For 2024, we promise a larger-scale competition and we can't wait to witness the evolution and further development of the innovative spirit among the youth.

Behind the Scenes of the 3D In My School



Behind the scenes of the robotics competition - Make Your City Smart

The **robotics competition - Make Your City Smart** took place between October and December 2023 and represented an initiative carried out **in collaboration with RoboHub**.

The competition was aimed at students aged between 10 to 12 years old from the Bucharest-Ilfov region and aimed to provide them with knowledge about programming a robotic system to facilitate traffic in a smart city.

The registration process involved a small exercise of imagination: What does a smart city look like? and what role robots can play within it?

The participants with the most creative and innovative ideas were invited along with their parents to the introductory session held by Ana Maria Stancu at the RoboHub headquarters. There, the children received the robotics kits and were instructed on how to use them. The next stage, where students clarified their uncertainties and obstacles encountered in the project, took place online. Once again, the children surprised us with their imagination and commitment to the project, as well as their determination of not being intimidated by the new.

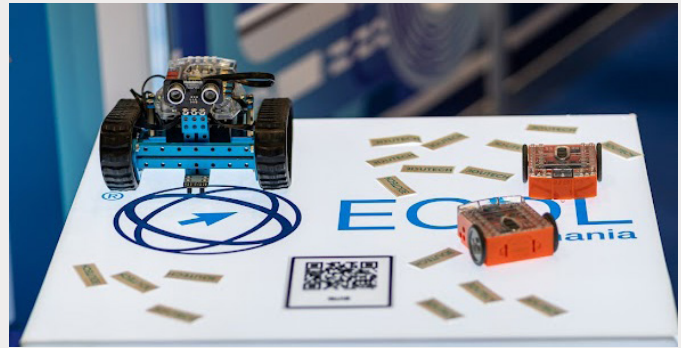
The jury consisted of Mihai Peca from E.C.D.L, who was again with us in this project, **Ana Maria Stancu from RoboHub**, and **George Tuță, Quaestor of the Chamber of Deputies**.

All participants received at the end of the competition cute prizes as a reward for their efforts.

We thank all the partners involved, the success of these competitions being proof that anything is possible when there is a constantly expanding community, whose members collaborate for the benefit of education. Thanks also go to the children, who through their contribution showed us joy for knowledge and a desire for development in the field of robotics. We hope that this experience gives courage to everyone that anything is possible when there is a passion dedicated with time and energy.

And in 2024, we hope it will be just as productive and we aim to organize even more interesting competitions for children, expecting an even greater number of participants eager to innovate and test new concepts.





Interview with Mihai Peca, ECDL Romania Trainer

I'm not sure if I could make a very precise classification of the things I enjoy from all that I do, but I know for sure that education will always be in the first place.

Mihai, you have an impressive background in education, business and training in 3D printing. What do you do at the moment and what do you like most about what you do?

From the first moment I interacted with 3D printers, I felt like I had discovered a new world of almost limitless possibilities. First as a hobbyist, then as an educator, 3D printing has never left me feeling bored or like there was nothing new to learn. Sure, my attention has always been drawn to all "new technology" things, but even now most of my time is dedicated to 3D printing. On the other hand, I don't know if I could make a very precise ranking of what I like about everything I do, but I do know that education will always come first. So, of all the things I do, education is and will always be at the top of the list (even more so when it comes to 3D modeling and printing), followed of course by the other projects I'm involved in.

What are the ingredients to attract the kids into learning the 3D processes and, implicitly, the jobs they can access through them?

The "ingredients", I believe, lie in the freedom that such technology gives them. We, ECDL Romania, through our projects and courses in this area, have tried to give children and adults the opportunity to let their imagination and creativity run free.

For example, we have had groups of children modeling and making their own toys. I'm sure we all dreamed of having this 'superpower' when we were children. Well,

today's children have that opportunity and I think it really appeals to them. As they grow up, they will eventually think about jobs in this field, so all the skills they are developing 'in play' now will help them to become specialists in this field in the future.

What do you think will be the craziest thing printed by a 3D printer in, let`s say, 10 years, and what do you think is the field it will revolutionize?

Since its early days, 3D printing has been a revolutionary technology. First, it revolutionized prototyping, then certain business segments in different industries and last but not least, education. I think it is difficult to make predictions for such a long period of time, considering that this technology develops at an incredible pace and is always ready to adapt to new situations.

How many of us could have imagined 5 years ago that 3D printing would help people in a difficult time like the pandemic period! At that time, even the 3D printing hubs activated by ECDL Romania in high schools in our country helped hospitals to produce various necessary non-medical equipment.

Last year, for example, in the competitions that we held, we had students who made innovative designs of robots to help people with different conditions.

So, I think we will see some really exciting projects in the following period, from robots and vehicles that can be made using this technology, to food or human organs that can be used for transplants.

We already know that A.I. is involved in several fields of activity, but we would like to know how well will A.I. simulate human consciousness in the future and if there is a limit, we should be aware of?

What a great question!

So far, the ability of artificial intelligence to simulate human consciousness has been debated and researched from different perspectives by many experts in different fields.

Many experts in the field of artificial intelligence believe that AI cannot fully simulate human consciousness because it involves not only processing and learning information, but also subjective understanding and interpretation through personal experience.

I believe that as long as AI is developed and promoted in an ethical and responsible way, the limits we must

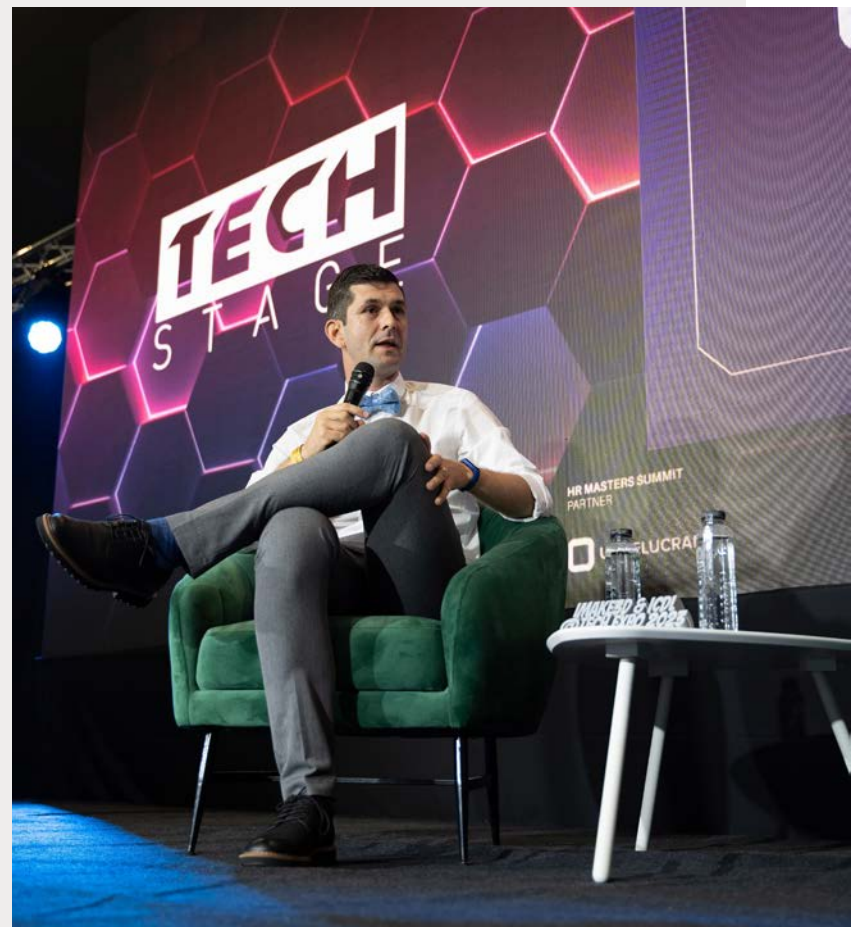
consider are privacy and the protection of personal life, which must be a priority.

Is people's fear / reluctance about robots justified? Do you think we could be facing a future where they could largely replace us or are they just futuristic scenarios?

I believe that people's fear of new technologies in general, and robots or AI in particular, is primarily fueled by a lack of education and knowledge in this area. This is precisely why we are trying to develop a set of digital skills through our modules that will remove these fears.

We already know and have countless examples where robots or AI have taken over human activities, but this should not necessarily be seen as a bad thing, on the contrary.

It goes without saying that humans must also evolve, and this is natural given the current context and the new information society that is constantly evolving, but it is important to understand that Robots and AI are not a threat, but an opportunity and an ongoing challenge, and transparency, research and appropriate regulation can help shape a future that is part of a utopian rather than a dystopian scenario.





Instrumente Structurale
2014-2020

Ilfov County School Inspectorate supports Innovation and European Values in Education

Ilfov County School Inspectorate pays increased attention to educational projects with European funding, for improving the quality of educational services and strengthening the European dimension in education. European projects also play an important role in optimization language learning and transnational cooperation between schools, promoting intercultural awareness and innovation in educational leadership, pedagogical methods and information techniques.

EDUCATION AND SKILLS THROUGH INTERNSHIPS

The Ilfov County School Inspectorate implemented five projects with European funding between 2019 and December 2023, on Priority Axis 6 - Education and Skills. Two of them ("**PROFESIONIST - Practice for a successful career**" SMIS Code: 132827 and "**STAGIAR 2020 - Transdisciplinary internships dedicated to students**" SMIS Code: 132828) were implemented in the period August 2020 - November 2022 and aimed to increase participation in workplace learning programs for secondary and non-university tertiary education students and apprentices, focusing on economic sectors with competitive potential through internships for students. The target group was represented by students from 5 technological education high-schools in Ilfov county, from the communities of Brănești, Buftea and Dragomirești-Vale, which come from less developed regions, specifically from neighboring counties, but who have been enrolled in schools in Ilfov county.

EDUCATION THROUGH THE SECOND CHANCE PROGRAMME

Through three other European-funded projects ("**Education, a continuous chance**" - ID: 133158, "**Back to school**" - ID: 136044 and "**A second chance for education**" - ID 136066) ending this month, the Ilfov County School Inspectorate has provided the Second Chance program in 18 educational schools in 15 Ilfov localities, ensuring access to over 1000 beneficiaries in the county. Thus, the following beneficiaries were selected:

- early school leavers aged 12-16 years old who are at least four years older than the age of the unfinished class
- employed young people aged 16-24 who have not completed compulsory education
- adults aged 25-64 who have not completed compulsory education

Support for returning to school and completing courses through the Second Chance program for young people or adults who have dropped out of school also consisted of grants (up to 1,500 lei/level of study completed), material support (school supplies, hygiene and sanitation packages) and lifelong career guidance and counselling services.

The target group also included more than 400 pre-university staff (teachers and assistant teachers) who benefited from in-service training programs in the areas of dropout prevention, ADS - career counselling and guidance, and trainer/training instructor.



EDUCATION. A CONTINUOUS OPPORTUNITY



BACK TO SCHOOL





UNIUNEA EUROPEANĂ



GUVERNUL ROMÂNIEI



Instrumente Structurale
2014-2020



Pocui/666/6/23, Project Code 136066

Partnership Leader: European Convergence Foundation
Partner 1: Bucharest Municipality School Inspectorate
Partner 2: Ilfov County School Inspectorate

Objective: Addressing the school dropout phenomenon and improving the skills of pre-university teaching staff to promote quality educational services in the Bucharest Ilfov development region.

Total project value: 9,523,800.43 Lei EU

Co-financing value: 7,619,040.31 Lei

Project co-financed by the European Social Fund through the Human Capital Operational Program 2014-2020



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NON-FORMAL OUTDOOR EDUCATION

Another project of the inspectorate to be completed in December 2023 is **"PRO INGENIO-Educational practices and interactive learning to stimulate students' thinking"**, SMIS Code 154259, Component 1: Nonformal education in outdoor system.

The project aimed developing outdoor non-formal education in the schools of Dascălu and Crețești-Vidra, both in terms of activities with students and teacher training. The aim of the project was to identify the needs of pupils for a better adaptation of the learning process, to accelerate the inclusion process of the people targeted by the specific activities, and to increase the quality of life through education. In this way, pupils belonging to vulnerable groups developed complex competences, attitudes, skills and abilities.

Teachers have also improved their skills to promote quality educational services geared to the needs of pupils and an inclusive school.

The main areas of intervention through the project were:

- development of an integrated outdoor non-formal education hub and integrated prevention measures to improve and increase pupil participation in primary and secondary education;
- training of the teaching staff of the two schools through the "Specialized professional development program in the field of organization and delivery of outdoor non-formal education for teaching and support staff in pre-university education";
- implementation of the "Innovative program of outdoor non-formal education" involving 350 children from the two partner schools in the project who are at risk of leaving school early. The children enrolled in the project benefited, through the innovative program, from educational activities oriented towards the development of vocational skills through workshops and thematic circles, socio-educational activities of cognitive development, logical skills, language and reasoning skills, along with outdoor group educational activities with a role in the development of team spirit, communication, civic spirit and community relations.



ISJ ILFOV - DOUBLE ERASMUS ACCREDITED INSTITUTION

Ilfov County School Inspectorate is implementing two Erasmus accreditation projects in the fields of School Education (2021-2027) and VET (2022 - 2027).

Accreditation 2020-1-RO01-KA120-SCH-095531 in the field of School Education facilitates the organization and implementation of a consortium of 16 primary and secondary schools, with the aim of empowering teachers with innovative teaching methods and strengthening the capacity of school management in Ilfov County to engage in Erasmus mobilities and implement high quality

European partnerships. The project also aims to improve communication skills in a foreign language and intercultural dialogue by students and teachers in participating schools. In the first two years of implementation, 58 European mobilities were carried out in Italy, Spain, France, Ireland, Czech Republic and Greece, consisting of teachers and principals participating in training courses in the fields:

- 21st century pedagogy;
- classroom management solutions for teachers: new methodologies,

effective motivation, cooperation and evaluation strategies;

- integrating creativity and innovation in teaching;
- teaching languages and foreign cultures;
- digital tools for mathematics, with a focus on Geogebra and LaTeX;
- European partnerships, leadership and management for school headteachers.

ISJ ILFOV - INSTITUTION HOLDING TWO ERASMUS ACCREDITATIONS



The 58 external learning mobilities were the benchmarks for the organization of dissemination and transfer activities within the pedagogical meetings at county level, but also at the level of each school, part of the accreditation consortium. The testimonies of the participating teachers indicate a high degree of satisfaction with the learning experience, the trainers and the course curricula, but also with the cultural experience, an important aspect targeted by the Erasmus projects.

The Erasmus accreditation project Vocational Training - VET, 2021-1-RO01-KA120-VET-000047829, is managed by a consortium coordinated by ISJ Ilfov in partnership with 8 high schools from Ilfov county. The main objective of the project is to increase the attractiveness of

VET education and to create a competitive VET network for vocational training, to which VET teachers, principals and economic agents contribute. Therefore, the development of VET teachers' teaching skills through participation in training courses and job-shadowing activities was envisaged. In the first year of implementation, 29 external mobilities were organized, of which 21 were job shadowing activities in Spain and Greece for specialists in the fields of services, mechanics and forestry. Eight teachers participated in the courses "New trends in Urban Greening" and "Virtual reality in education" in Denmark and Greece respectively.

The learning experiences were fully appreciated by the mobility participants and were subsequently used in practical-applied activities, enhancing the quality of the high school-economic- agents partnership.

The results of the first year of the project implementation have been the use of new approaches in the teaching of VET subjects and the organization of internships for students in line with European standards. Further work will be done to make the internship partnerships between high schools and economic agents more effective and to propose new and attractive curricula, to be decided by the high schools.

An important aspect in the implementation of Erasmus accreditation projects is the focus on Erasmus standards: inclusion and diversity, sustainability, digitization and active participation in the network of Erasmus organizations. These values have been benchmarks for an integrated approach to both education in general and vocational and technical education, enhancing the quality of in-service teacher training and student performance.

Overall, the educational projects with European funding implemented by ISJ Ilfov have contributed to the promotion of educational leadership adapted to the challenges of today's society in the European context and to the use of inclusive and innovative practices for preventing/reducing early school leaving and increasing students' school participation. It also highlighted the increased attractiveness, quality and relevance of vocational and technical education in Ilfov County.

All this has been achieved as a result of the development of an effective policy in the field of continuous training of human resources, oriented towards impact areas and the challenges of the changing European society.

**Phd. Cristina PETRE-GHIȚĂ,
Deputy General School Inspector
Phd. Daniela BARBU,
School Inspector for educational projects**



PROFESIONIST



Professional – Practice for a Successful Career

ID POCU/633/6/14/132827

Beneficiary: Ilfov County School Inspectorate

Objective: The project aims to increase the participation rate of students in non-university tertiary education in workplace learning programs. This involves the participation of 164 students in relevant and mandatory activities such as internships, career counseling and guidance sessions, as well as involvement in an innovative entrepreneurship program by planning, organizing, and engaging in a type of "Practice Firms". These activities are implemented through sustainable partnerships with the private sector, including entities in economically competitive sectors identified according to the National Classification of Activities, as well as in intelligently specialized domains as per the National Classification of Fields of Study. These efforts aim to facilitate students' transition from education to the workforce.

Total project value (lei): 2,356,523.30 lei EU
Co-financing value (lei): 2,003,044.82 lei

Project co-financed by the European Social Fund through the Human Capital Operational Program 2014-2020.



Trainee 2020 - Transdisciplinary Internships for Students

ID POCU/633/6/14/132828

Beneficiary: Ilfov County School Inspectorate

Objective: The project aims to increase the participation rate of students in non-university tertiary education in workplace learning programs. This involves the participation of 164 students in relevant and mandatory activities such as internships, career counseling and guidance sessions, as well as involvement in an innovative entrepreneurship program by planning, organizing, and implementing a type of "Practice Firms". These activities are implemented through sustainable partnerships with the private sector, including entities in economically competitive sectors identified according to the National Classification of Activities, as well as in intelligently specialized domains as per the National Classification of Fields of Study. These efforts aim to facilitate students' transition from education to the workforce.

Total project value (lei): 2,339,675.39 lei
EU co-financing value (lei): 1,988,724.09 lei

Project co-financed by the European Social Fund through the Human Capital Operational Program 2014-2020.

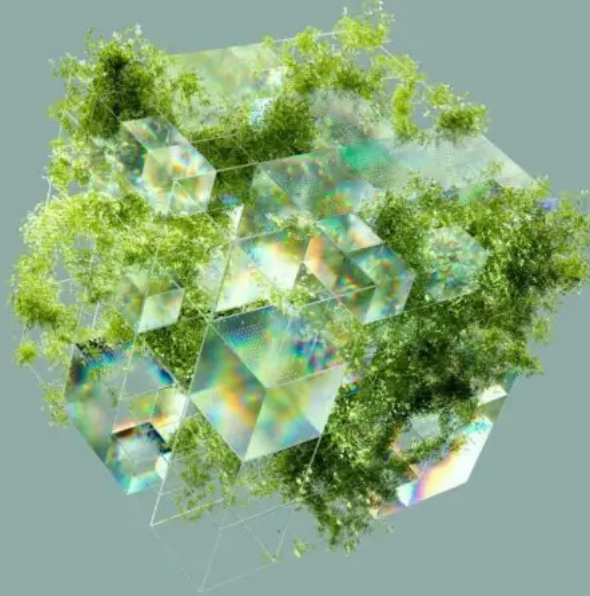


STAGIAR

● 2020 ●

BUCHAREST ILFOV REGION





#SME4GREEN



SME4GREEN: *The first local green deal in Romania emerges in Ilfov*

The European Green Deal is the EU plan to make the EU's economy sustainable by turning climate and environmental challenges into opportunities, and making the transition just and inclusive for all.

The transformation needed to truly implement sustainable development can only be made through the restructuring and integration of EU policies at the local level. Therefore, local governments play a crucial role in the realization of the European Green Deal and the responsibility to facilitate the transformation process generated by the EU objectives belongs to them.

The **“SMEs engagement for a GREEN transition – SME4GREEN”** project, financed by the call for proposals **“Social economy and local green deals supporting SMEs to become more resilient”** within the **“Single Market Programme – SMP COSME”** is implemented in Ilfov County, the logistic core of Bucharest Metropolitan Area, since 2021 and recently delivered

new results by outlining the first Local Green Deal, an ambitious, pioneering initiative at national level.

The **SME4GREEN** project, in which Ilfov County – County Council partners Măgurele Science Park, Turin Municipality and Environment Park Torino SPA, aimed to create the grounds for cooperation between the SMEs in Ilfov and Turin and the public authorities and to facilitate the development of public policies to support the adoption of green and digital solutions by the local SMEs.

Under the project, local norms are analyzed and solutions for the collaboration between the public and the private sector are encouraged, in order to adopt green and digital business models for the development of the resilience of small companies in Ilfov county and the implementation of actions aimed at routing the local economy on a sustainable and inclusive trajectory, by creating new jobs, mitigating the socio-economic impact of the COVID-19 crisis and sustainable social recovery.

Specifically, the creation, design and delivery of the local green deal in Ilfov County is expected to result in a better awareness of sustainability and the improvement of viable business models, a greater capacity for innovation in terms of managing and integrating green and digital programs and the adoption by SMEs of more environmentally friendly models in the activity they carry out.

After the initial stages of the project, namely management, dissemination and evaluation of the legislative frameworks

for the establishment of Local Green Deals in the county of Ilfov and in the city of Turin in Italy, the next step materialized in the approval to conclude the Local Green Deal of Ilfov County, developed in accordance with the principles established by the document “**Local Green Deals - A Blueprint for Action**”, part of the Intelligent Cities Challenge initiative.

According to the transparency requirement of the European Commission, the SMEs participating in the mentoring program within the SME4GREEN project were selected based on a rigorously structured recruitment methodology, which included essential tools in the selection process, such as the eligibility criteria, the guide of the interview, the evaluation grid and other various elements.

The Local Green Deal of Ilfov County, a formal framework for collaboration between the most important players in the county, under the coordination of the Ilfov County Council, supports the achievement of the objectives of the Ilfov County Development Strategy:

- Promoting social inclusion, equal opportunities and diversity;
- Risk management and combating climate change;
- Development of society by capitalizing on the advantages of digitization.

Moreover, **the Local Green Deal** presents factual measures aimed at the development of the county in accordance with the European Green Deal, as stated in the Development Strategy:

- Increasing the level of ambition of the European Union in terms of climate for 2030 and 2050;
- Providing clean, secure and affordable energy;
- Mobilization of the industrial sector for a clean and circular economy;
- Efficient construction and renovation of buildings in terms of energy and use of resources;
- Accelerating the transition to a sustainable and intelligent mobility;
- “Farm to fork”: developing a fair, healthy and environmentally friendly food system;
- Conservation and restoration of ecosystems and biodiversity;
- An ambitious zero pollution target for a toxic-free environment;
- Mobilization of research and encouraging innovation;
- Activating education and training.

In response to the needs of the SMEs in the county and in order to meet the objectives of the Ilfov County Development Strategy 2020-2030, Ilfov County – County Council aims to implement at least the following actions between 2023-2025:

- Supporting the entrepreneurial ecosystem in Ilfov County in the dual transition to a green and digital economy;
- Development of new projects to attract funding aimed at developing social economy, circular economy, combating climate change and waste management;
- Organise networking actions/events through which SMEs in the county develop new partnerships for a clean and circular economy with research institutes, universities, and other administrative and territorial units.

The roles of the signatories of the **Local Green Deal of Ilfov County**, namely Ilfov County – County Council, Măgurele Science Park, Grupul de Consultanță pentru Dezvoltare DCG SRL, Căruțe Vieneze SRL, Quality Habitat SRL, Ecosys Organization SRL, Inquito SRL and Mia Pop Kinder SRL, are well established and cover the full range of actions required to achieve the project objectives, and their progress will be monitored annually.

In order to support its partners, Măgurele Science Park will develop a tool to help collect the needs and requests of SMEs in the region regarding the development of green products/services, will facilitate the access of organizations interested in developing green products/services/technologies to the European Enterprise Europe Network platform through the PROSME project and will organize specific training and mentoring actions for the entrepreneurs in Ilfov county on specific thematic topics for sustainable development, including financing tools.

All the governmental levels – local, regional, national – have a specific responsibility for the green future of our cities, based on the principles of subsidiarity and proportionality. Complex challenges require the cooperation of all the stakeholders, including civil society and the private sector.

Aware of the increasing importance of allocating resources and supporting SMEs in adopting environmentally friendly development plans, Ilfov County – County Council and its partners support innovation and long-term sustainable growth and the efforts of small and medium-sized enterprises that develop not only financially, but also socially sound businesses.



A concept that becomes reality: the first Zer0 Waste Natural Park in Romania

The growing population and rapid urban development in Ilfov County have resulted in a substantial reduction in green spaces and an increased volume of waste generated by the community. At the same time, the recycling rate for municipal waste continues to lag behind the proposed targets. Ilfov County boasts several significant green areas, including Cernica Forest, Pustnicu Forest, Căldăraru Forest, and more which play a crucial role in enhancing the local environment's quality and providing recreational opportunities for the population. *The Zer0 Waste Natural Park* project aligns with these natural treasures, as we aim to complement and extend the county's commitment to environmental preservation and recreation, carrying out all these activities by supporting the ecological network of Natura 2000 protected areas.

The Zer0 Waste Natural Park is an ambitious initiative of Ilfov County Council, designed to convert a forest into a space for appreciating, learning about and safeguarding nature, all while promoting sustainability and a zero-waste way of life. The mission of Ilfov County Council is to establish a sanctuary in nature where visitors can immerse themselves in the beauty and diversity of forest ecosystems, while understanding the significance of preserving these ecosystems and adopting environmentally responsible behaviors. Developing and launching the first *Zer0 Waste Natural Park in Romania* will serve as an inspirational example for the local community but also for other communities willing to embrace sustainable practices to protect the environment. Specifically, this public interest project aims to transform a forest into an innovative urban park, where every element will be recyclable and sustainable.

Together with the project's partners, namely the Ilfov Forest Directorate, the territorial and administrative division Cernica Commune and the Ilfov Împreună Foundation, the Ilfov County Council intends to create a unique space where nature and

innovation coexist harmoniously, providing a memorable experience to the community while also preserving the environment. Through the Zer0 Waste Natural Park project, its promoters, coordinated by the chief architect of Ilfov County, Olivia-Ana Ciobanu Oprescu, wish to introduce a groundbreaking approach to green space development by integrating ecological and sustainable solutions throughout the entire park, while focusing on three core pillars: recycling, education and innovation.

RECYCLING

Each element of the park, from urban furniture and architectural structures to planters and playground equipment, will be meticulously designed and constructed using recycled or recyclable materials, thus promoting the circular economy and minimizing environmental impact. For example, the running track and the basketball court are designed to be built from used pairs of shoes and the bike track from recycled rubber. And these are just a few of the innovative ideas aimed at educating the community about environmental responsibility. Moreover, the project aims to implement a highly efficient selective waste collection system and ensure that recycling facilities are easily accessible throughout the park, encouraging visitors to actively participate in environmental protection.

The Zer0 Waste Nature Park will serve as an innovative educational center, where visitors of all ages can learn about the significance of recycling and eco-friendly practices. Interactive workshops, presentations and themed exhibitions will be organized, with the purpose of stimulating awareness of environmental concerns and providing tangible solutions to minimize the ecological footprint.



EDUCATION

A first concrete step towards the achievement of these bold objectives was the organization of the first interdisciplinary student workshop dedicated to the Zer0 Waste Natural Park, from 20 to 29 of September 2023, in the Căldăraru Forest in Cernica. Under the guidance of Lect. Dr. Archt. Simona Butnariu, the students of the „Ion Mincu” University of Architecture and Urbanism, as well as young architects, had the opportunity to evaluate the accessibility of the site, to receive valuable information provided by the representatives of the local public administration, to gather the first sensitive impressions and photos of the area and finally to come up with original solutions. The projects of the young people who chose to enroll in this workshop were judged within the „Ion Mincu” University of Architecture and Urbanism and appreciated for the multitude of ideas presented in order to build this innovative concept in Romania:

- The first prize was awarded to team no. 3, with the Project „ The Forest in the Circle of Life
- The second prize went to team no. 6, with the Project „ The Mirror of Nature”;
- The III prize was won by the team no. 5, with the Project „Shape of”.

Because each project presented particularities that the Ilfov County Council wants in the implementation of the Zer0 Waste Natural Park, all three winning projects will form the basis of the next stage, that of developing the feasibility study.

INNOVATION

The Zer0 Waste Natural Park project is committed to harnessing advanced technologies and innovative solutions in order to transform itself into a beacon of sustainability, by integrating for example renewable energy systems, such as solar panels and wind turbines, to power the park’s lighting and essential equipment. Additionally, the project intends to implement smart technologies for monitoring energy and water consumption, optimizing resource usage, and reducing the environmental impact. Under the motto „One person’s waste, another’s treasure”, Ilfov County Council, through the Zer0 Waste Natural Park project promotes the principles of sustainability and wishes to inspire a lifestyle where the concept of zero waste becomes a reality. This pioneering initiative for Romania is meant to bring more green into our lives and teach us to protect and love nature responsibly: the environment must be treated with care, and we can contribute to a better future for ourselves and for the community.

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Colour Your Future: *a pilot project that brings an innovative change in the educational environment through the aesthetic transformation of schools*

Due to the economic dynamics of the region, Ilfov is undergoing a rapid demographic expansion, with the majority of newcomers being young, active families aspiring to improve their quality of life and provide better opportunities for their children.

The urban developments in the vicinity of Bucharest offer more spacious residential units, a cleaner environment, and numerous leisure options in natural and easily accessible areas with reduced traffic congestion. However, despite these advantages, a significant number of these families encounter considerable challenges when trying to enroll their children in schools within Bucharest. This situation presents a set of complex issues at both the micro and macro levels.

Challenges at micro level:

Major Transportation Costs: families may have to bear substantial expenses related to transporting their children to and from school. This includes fuel costs, public transportation fares, or potentially the need for a second family vehicle.

Work Schedule Conflicts: parents often have to navigate work schedules that may not align with school hours or their children's extracurricular activities, leading to complications in managing daily routines.

Traffic Congestion: traffic congestion in urban areas like Bucharest can result in longer commute times, causing stress and consuming valuable time that could be better spent with family or on educational activities.

Logistical Challenges: conducting educational and extracurricular activities may be challenging due to logistical reasons, such as distance from the school or limited access to necessary resources and facilities.

Budget Strain: for families without a support network like grandparents or extended family members to assist with childcare or transportation, the financial burden can be significant, impacting the overall household budget.



Challenges at macro level:

Traffic Congestion: the high number of families commuting from Ilfov County to Bucharest for school can contribute to increased traffic congestion in the region, particularly during peak morning and afternoon hours. This not only leads to longer commute times but also exacerbates air pollution and adds to the strain on urban infrastructure.

Environmental Impact: the congestion resulting from these daily commutes has environmental repercussions, with more vehicles on the road emitting greenhouse gases and pollutants. This impacts air quality and contributes to environmental degradation in the region.

Infrastructure and Maintenance Costs: the increased traffic caused by these daily commutes can lead to higher maintenance and repair costs for road infrastructure, as more vehicles result in greater wear and tear on the roads. This requires additional investments in road maintenance and development.

The pilot-project of county public interest „*Color Your Future*”, developed with the Chief Architect of Ilfov county, Olivia Ana Ciobanu Oprescu as the initiator and coordinator, proposes the aesthetic treatment of Ilfov’s educational units, as well as their interiors, through mural painting and the application of educational stickers, while also stimulating the increase in the attractiveness of the county’s educational units among the residents, by creating a new school concept.

Although there have been instances in which this new school concept has arisen in schools, no other county has proposed treating all educational units assigned to localities in this manner. Through the use of mural painting, building facades become challenges for talented artists, who bring color and life to the educational environment. But it’s not just about the appearance. It is about opening new horizons for education.

The pilot project „*Colour Your Future*” started on the 17th of June 2023 during the summer break and was ready for the start of the school year – BACK TO SCHOOL. Secondary School No. 3 in Bălăceanca was the first to benefit from this change, followed by Secondary School No. 1 in Dascălu.

The shapes, colors and symbols adorning Ilfov schools will inspire students to explore, learn and dream. There is an emotional connection between children and their learning space and it is a certainty that this experience will have a significant impact on their development.

Ilfov county has a total of 190 schools. Observing the positive impact, it has generated, the companies developing in Ilfov are invited to join Ilfov County Council, support this transformation and „adopt a school”, thus giving every child the opportunity to enjoy an improved and innovative school environment.

Chief Architect of Ilfov county, Olivia Ana Ciobanu Oprescu: „*Color Your Future*” is a project initiated by Ilfov County Council, with the support of President Hubert Thuma, who made it possible for this project to come to life. We want all schools in Ilfov County, all educational establishments to become full of color, to vibrate in the hearts of children, teachers, parents and all citizens of Ilfov County.

The potential for mural paintings to enhance the overall educational experience and inspire the local community is immense, and the science behind the use of this concept can be summed up as follows:

Increased Attractiveness for Students:

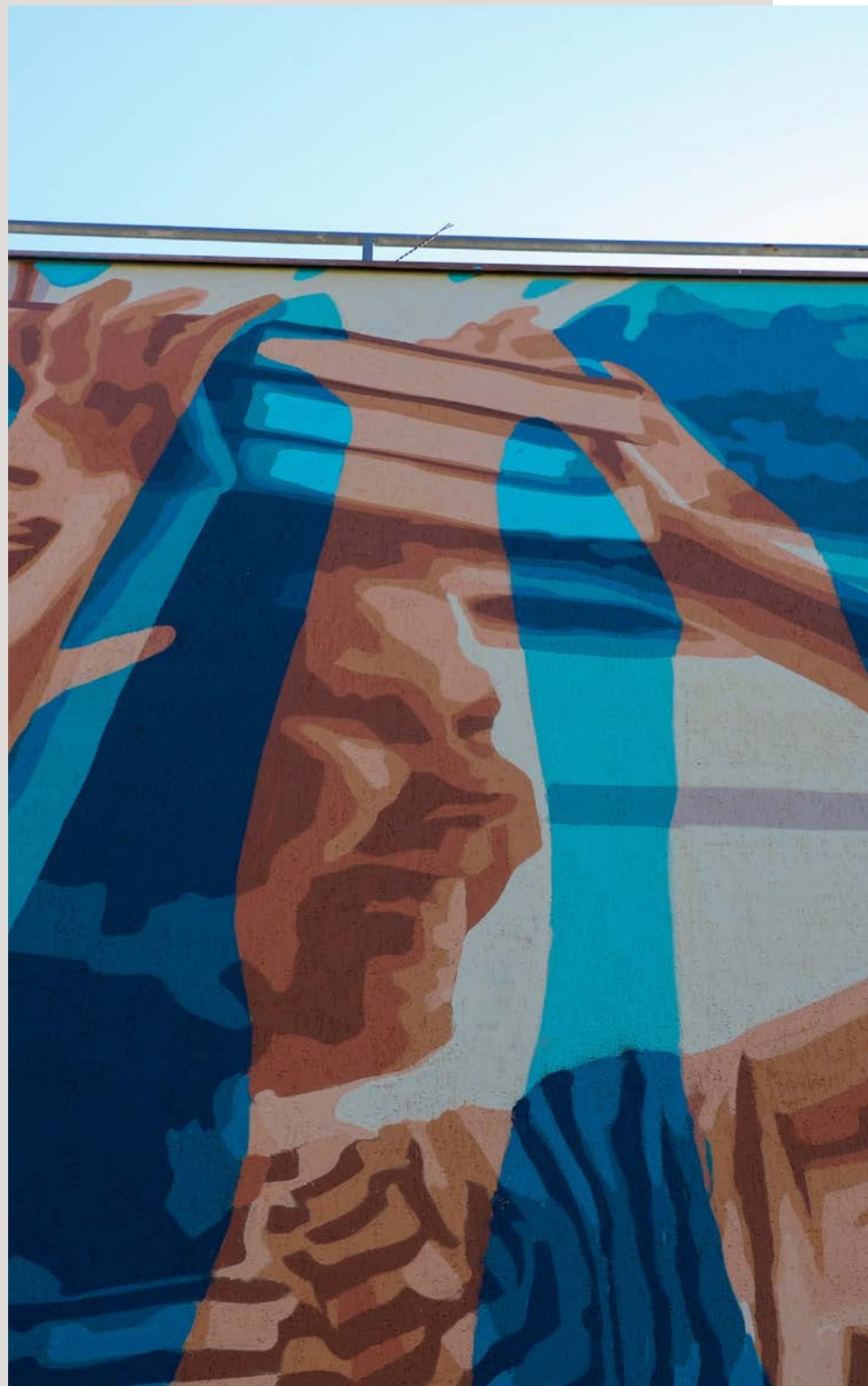
When schools are designed with creativity and educational content in mind, students are likely to find the learning environment more appealing and inspiring. We hope that this will lead to higher student engagement and motivation.

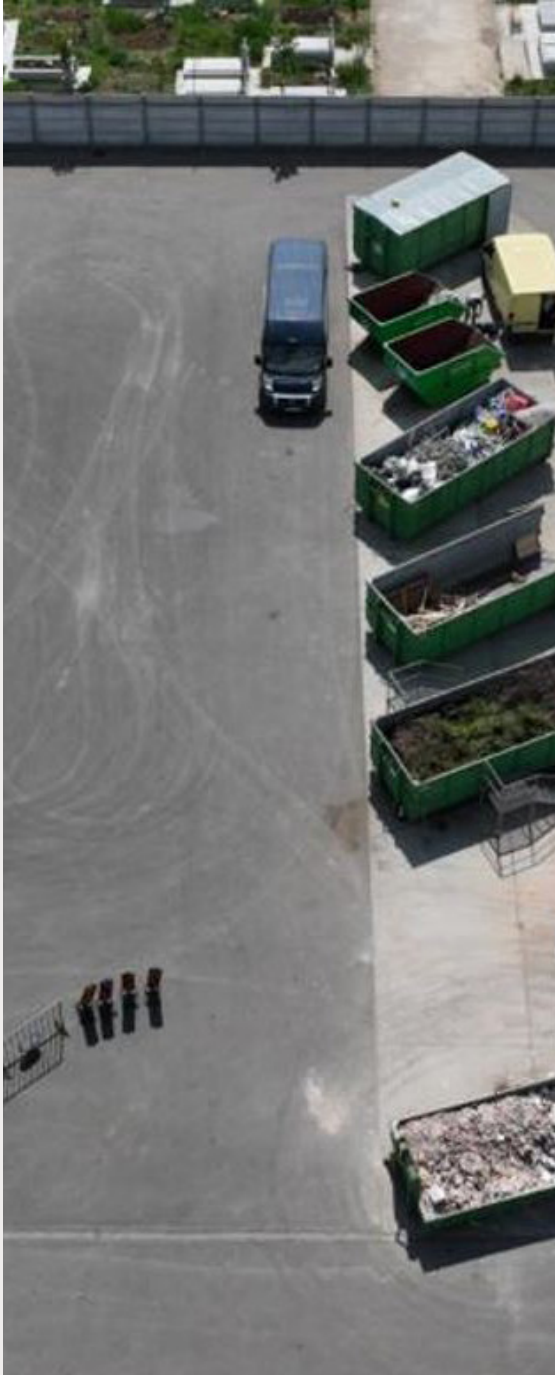
Improved Parental Trust: Parents are more likely to entrust their children's education to schools that invest in creating a positive and stimulating learning environment. The improved aesthetics and educational focus can instill confidence in parents about the quality of education their children will receive.

Community Cohesion: The visual transformation of schools can foster a sense of pride and ownership among the local community. When schools become more than just educational institutions and are seen as integral parts of the community, it can lead to increased support and involvement from local residents.

Enhanced Educational Experience: The incorporation of educational content through stickers and creative designs can make learning more interactive and immersive. This can result in a richer educational experience for students, with content extending beyond traditional classroom settings.

Ilfov County Council wishes to convey a unified and resolute message through this campaign, emphasizing its unwavering support for education in Ilfov, in line with its principles and the Ilfov County Development Strategy.





Consiliul Județean Ilfov

Romania Ilfov County County Council

Efficient waste management in Ilfov: waste collection centers through voluntary contribution

The quality of the environment is an issue of general interest for the whole Europe, including national administrations and citizens. Great efforts are being made to achieve the proposed targets and to create a functioning waste recycling system.

Speeding up the process of expanding and modernization the waste management systems, with a focus on separate collection, prevention, reduction, reuse and recovery measures in order to comply with the applicable European directives and the transition to the circular economy is one of the national objectives.

In the context of sustainable development and in order to ensure compliance with the legal provisions, Ilfov County Council, together with the local public authorities and the responsible institutions, adopts and implements, at county level, strategies and projects aimed at improving the quality of the environment with the purpose of protecting the health of the population and the environment as a whole.

In this regard, through the National Recovery and Resilience Plan (NRRP), Component C3–Waste Management, Ilfov County Council takes another important step towards improving the implementation of separate collection, control and monitoring of environmental quality parameters, by **setting up three collection centers through voluntary contribution in Ilfov County**, in the localities of Brănești, Grădiștea and Moara Vlăsiei. To these three communes are also affiliated the administrative and territorial division of Afumați, Cernica, Găneasa, Nuci, Petrăchioaia and Gruiu, therefore the population served by implementing the project is almost 57,000 inhabitants.





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