

IdeaSquare

The innovation space at CERN

Basis for the Future



1. Introduction: Document's Rationale

This document constitutes a forward-looking and compact reflection about the essence and direction of IdeaSquare for the years to come. It starts with the IdeaSquare vision and principles (section 4) and continues with the strategy and tactics enabling them (section 5). It then describes the operational objectives and identifies tangible impact parameters (section 6).

It should be clarified that the aim of this document is not to elaborate in fine detail the concrete activities, managerial and financial implementation roadmaps, and mechanisms that IdeaSquare will develop in the coming years, to achieve what is said in the previous paragraph. Such reporting and analysis will be done through the periodic meetings with the IdeaSquare Advisory Board (ISAB) and through the [IdeaSquare progress activity reports](#). This document mainly aims to establish a solid basis for IdeaSquare present and future actions. IdeaSquare is poised to continue its role as a transformative force in education and training to enable transformative and sustainable innovation for society, whilst also being strongly aligned with CERN's mission, and its global scientific community.

2. Preamble

IdeaSquare owes its past, present, and future success to the fact that it is a CERN facility. CERN's daunting scientific mission infuses the IdeaSquare philosophy. Out of the four values of CERN below,

- world-class research in fundamental physics.
- a unique range of particle accelerator facilities.
- Uniting people from all over the world to push the frontiers of science and technology, for the benefit of all.
- Training new generations of physicists, engineers, and technicians, and engaging citizens in research and in the values of science.

IdeaSquare naturally aligns and contributes in a more specific way to the two last ones.

3. Structure of the Document

The overall structure of the document is illustrated in figure 1. (Fig. 1).

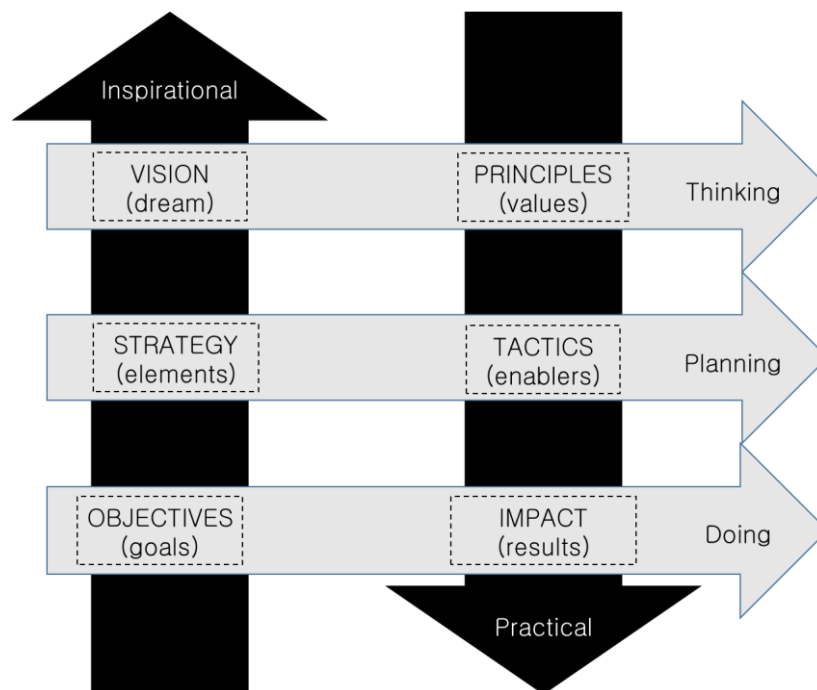


Fig. 1. Scheme illustrating the structure of this document. Explanation in the text.

To illustrate our philosophy, figure 1 shows two interlinked vertical blocks: Inspirational and Practical. Our philosophical approach is to transit from “the ideal” (inspirational) to the real (“practical”). Figure 1 also shows three differentiated domains:

1. The domain of “thinking” (within the inspirational and practical block respectively), which contains IdeaSquare vision (dream) and the principles behind it (values).
2. the domain of “planning”, including IdeaSquare strategy (elements behind it) and the tactics (enablers) for translating this strategy into action.
3. the domain of “doing” which contains the objectives behind IdeaSquare strategy and the seek impact behind them.

Please note that figure 1 is a compact as well as holistic representation of the different aspects behind IdeaSquare, as will be clarified in the following sections.

4. Thinking

4.1. Vision (dream)

IdeaSquare’s wants to **become a global reference facility dedicated to the development and implementation of transformative educational and training programs to address complex social problems in a sustainable and inclusive way**. IdeaSquare leverages on its CERN core identity as a unique setting that enables participants from various backgrounds — scientists, industrialists, educators, students, entrepreneurs, business



professionals, policymakers, etc. — to converge and generate an adequate mid-set for pondering solutions that can be applied to real world issues.

4.2. Principles (values)

IdeaSquare at CERN embodies a vision grounded in a **set of core values**.

The first value is a **spirit of openness and collaboration**. IdeaSquare fosters an environment where transparency and teamwork are paramount, encouraging the free exchange of ideas and collective problem solving. This open approach ensures that diverse perspectives are integrated into the transformative innovation process, where the actors involved in IdeaSquare's educational and training programmes develop more robust and effective solutions.

Embracing diversity is another cornerstone value of IdeaSquare strategy. By welcoming individuals from all social, cultural, and geographic backgrounds, as well as from all educational disciplines and levels of experience, IdeaSquare cultivates an inclusive space that values and leverages unique contributions and perspectives. This diversity enriches the collaborative efforts and enhances transformative creativity, thus driving the development of novel and comprehensive solutions to complex problems.

A spirit of **integrating different cultures** is also pivotal. IdeaSquare promotes cultural understanding and synergy, recognizing that global challenges require a diversity of perspectives. This integration facilitates the blending of different viewpoints and methodologies, fostering a rich tapestry of ideas and approaches.

A Passion for generating transformative innovation is at the heart of IdeaSquare's team, which is driven by a shared commitment to creating impactful change. This passion is coupled with a dedication to excellence, ensuring that all initiatives are pursued to the highest quality standards and professionalism. The **commitment to excellence** ensures that the solutions developed at IdeaSquare are not only innovative, but also sustainable and effective in addressing societal challenges.

5. Planning

5.1. Strategy (elements)

IdeaSquare's vision and values are underpinned by two strategic elements for its realization: **the people (IdeaSquare team) and the physical space itself**. Together, they form the backbone of IdeaSquare.

The People: IdeaSquare's Team

The driving force behind IdeaSquare is its **dedicated team**, characterized by an **entrepreneurial and critical spirit**. The team members are not just innovators, but pioneers who passionately seek to transform education and training. Their entrepreneurial, creative, and forward-thinking mindset aligns strongly with the thinking



lines of the ‘Gestalt theory’¹, which argues that ‘the whole is greater than the sum of its parts’ when it comes to innovation. IdeaSquare team members are eager to facilitate the jump from theoretical ideas into practical applications, bridging the gap between conceptual knowledge and real-world implementation. This eagerness is crucial when developing new educational programs and training modules are applicable to multiple societal contexts. **Striving for excellence** is another hallmark of the IdeaSquare team. This drive is manifested through **constant and intensive dedication** to their work. The team members invest significant time and effort into collaborative projects, thus ensuring that every educational initiative meets the highest standards of quality and impact.

The Physical Space: IdeaSquare

The physical space of IdeaSquare is designed to be an **open and collaborative environment**. This openness is essential in fostering a **culture of transparency and mutual respect, where ideas can be freely exchanged and tested**. The physical setup encourages teamwork and interaction **towards common goals**. This environment is crucial for interdisciplinary projects, where the integration of different perspectives can lead to more holistic and innovative solutions.

IdeaSquare is also a **space for integrative, and multicultural dialogue**. The facility is structured to foster interactions between individuals from a wide variety of disciplines, and socio-cultural backgrounds. This approach ensures that solutions are comprehensive and consider multiple dimensions of the problems at hand. By integrating diverse viewpoints and life experiences, IdeaSquare has been able to create dialogues and solutions with high impact on those that have come through its doors.

Additionally, IdeaSquare **serves the CERN stakeholder ecosystem** across its Member States and beyond. It is a platform for non-routine collaboration. This global reach has proven vital in addressing complex social challenges that are inherently international in scope.

The facility also acts as a bridge between CERN and society, facilitating the transfer of knowledge through education. This connection is instrumental in translating scientific discoveries into practical applications that can benefit society. By leveraging CERN’s expertise and resources, IdeaSquare enhances its capacity to drive innovation and address pressing social issues.

¹ [Gestalt theory](#) is a theory of perception that emphasises the processing of entire patterns and configurations, and not merely individual components. Lately the Santa Fe Institute is an [active proponent](#) of this approach and argues that interdisciplinarity often simply leads to a sum of parts (meaning: the outcome of existing knowledge of participating scientific disciplines), but not to transformative solutions. For that, a wider field of vision is needed. IdeaSquare is experimenting with this, for example through the introduction of embodiment techniques in its collaborative and educational projects.



5.2. Tactics (enablers)

The IdeaSquare strategy rests on several critical enablers that ensure its effectiveness and impact.

Active Participation in European Funded Projects

A key enabler of the IdeaSquare strategy is its **active leadership and participation in European funded research and innovation projects**. These projects are carefully selected to align with CERN's mission and values, to ensure that they contribute to the broader goals of scientific advancement and innovation. By engaging in these projects, IdeaSquare fosters international collaboration and knowledge exchange and positions it as a central hub for delivering cutting-edge and innovative education and training in Europe. Additionally, European funded projects enables the IdeaSquare's team to pursue research regarding novel education and training methodologies.

Competitive Space for Ideation and Prototyping

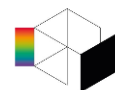
IdeaSquare offers a unique **space for ideating, prototyping, and developing hands-on educational and training projects**. It nurtures young innovators and provides them with tools and resources needed to bring budding ideas to life. The facility is equipped with collaborative workspaces that encourage experimentation on real-world challenges. This hands-on approach helps to bridge the gap between theoretical knowledge and practical implementation, and helps participants prepare for future careers.

Co-developing Executive Education Workshops

Another significant enabler is the **co-development of on-demand executive education workshops in collaboration with specialists**. These workshops are tailored to meet the specific needs of professionals and organizations, providing advanced training and insights into the latest scientific and technological developments. By partnering with experts, IdeaSquare ensures that the content is relevant, cutting-edge, and applicable to future challenges. These executive education programs not only enhance the skills and knowledge of participants, but also foster a deeper understanding of CERN's mission and the broader scientific community. It also strengthens the ties between academia, industry, and research institutions, promoting a more integrated and innovative ecosystem.

Hosting Innovative R&D&I Projects

IdeaSquare plays a critical role in **hosting innovative R&D&I projects and programs that align with CERN's scientific mission**. By providing a supportive and resource-rich environment, IdeaSquare supports researchers in their push to expand the boundaries of knowledge in particle physics and related fields. The facility offers access to advanced equipment and technical expertise in prototyping, 3d printing and laser cutting, and collaborative workspaces. IdeaSquare has been used for collaborations to advance basic scientific understanding, and for the development of practical applications in areas such as medical technology, environmental sustainability, and information technology.



By hosting these projects, IdeaSquare reinforces its position as a facilitator in scientific innovation.

Establishing Open and Pro-active Communication and Outreach Channels

IdeaSquare is an expert in combining innovation and collaboration in education and training with open and proactive communication and outreach activities. Transparent communication ensures that ideas are freely exchanged, fostering a collaborative environment. By engaging with a broad audience that includes researchers, students, industrial and academic partners, public, etc, IdeaSquare leverages diverse perspectives and expertise. Moreover, clear, and accessible communication channels attract external collaborators, and thus increase the scope and scale of initiatives as well as widespread dissemination of outcomes.

6. Doing

6.1. Objectives (goals)

The IdeaSquare strategy is operationalised in four tangible objectives.

Contributing to CERN's Mission and Values

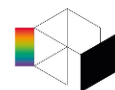
IdeaSquare contributes both qualitatively and quantitatively to the fulfilment of CERN's mission and values. This involves contributing to the advancement of scientific knowledge through groundbreaking research and fostering international cooperation. IdeaSquare provides a collaborative and hosting space where scientists can develop and implement frontier projects in the field of Particle Physics.

Enhancing CERN's Role in European R&D&I Strategy

IdeaSquare plays a pivotal role in **increasing CERN's footprint in European R&D&I strategies and policies**. By positioning itself as a hub for innovative research and development around education and training, it aligns its objectives with broader European goals of fostering innovation, competitiveness, and sustainable growth. Through partnerships with academic institutions, industry leaders, and policy makers, IdeaSquare facilitates the transfer of knowledge, thereby reinforcing CERN's position as a key player in the European R&D&I landscape. This strategic alignment not only enhances CERN's influence, but also contributes to the development of policies that promote scientific and technological advancement across Europe.

Educating and Training Future Generations

Impactful contribute to the **education and training of young minds** who will become the main research pillars of our future society. By offering a variety of educational programs, workshops, and experiential training opportunities, IdeaSquare equips students and young professionals with crucial skills needed to become thought leaders. These skills include analytical and creative thinking, curiosity and self-awareness, and resilience and flexibility. This investment in education and training not only prepares individuals for



future careers but also ensures a steady pipeline of talent capable of driving innovation and societal progress. Moreover, it provides with tangible added value for CERN Member States.

Supporting CERN's Research Community at Large

IdeaSquare **supports CERN's research community in managing technological projects** at the forefront of human knowledge in particle physics. As a recognised collaboration hub, IdeaSquare is a crucial facilitator for the transfer of knowledge through education across different scientific and technological domains linked to particle physics that translates into social innovation.

6.2. Impact (results)

By fulfilling the mentioned objectives, IdeaSquare seeks to amplify its impact on the global stage.

One pivotal avenue through which this is achieved, is by being a regular partner and leader in **European research & innovation projects**. This allows IdeaSquare to experiment and facilitate the development of innovative education and training programs, and – as a side-effect – ensures its financial sustainability.

In view of the high need and demand, IdeaSquare will continue to upgrade and expand **its prototyping facilities**. This means not only providing access to these tools, but also **tailored technical training and advice**.

IdeaSquare will continue to build robust **collaboration links with other departments and groups at CERN**. IdeaSquare has proven its value as a fertile cross-pollinator of ideas that lead to transformative innovations.

IdeaSquare is committed to **co-developing executive education workshops together with prestigious business schools**. These workshops serve as a nexus for knowledge exchange between academia and industry, empowering leaders and decision-makers with insights and skills needed to navigate the complexities of the modern innovation landscape.

Lastly, IdeaSquare will continue to promote open, pro-active, and engaging dissemination and outreach of diverse perspectives and results. We will further enhance communication channels as create new communication avenues where possible.

7. Conclusions

IdeaSquare is an innovative CERN **facility aligned with CERN mission**. It serves as a **collaborative space** designed to stimulate creativity, innovation, and interdisciplinary collaboration among scientists, students, and other societal actors.

At its core, IdeaSquare aims to **bridge the gap between fundamental research and real-world applications** by fostering a dynamic environment where diverse perspectives converge to tackle some of the most pressing challenges facing society now and in the



future. It provides a space where individuals from different backgrounds come together to exchange ideas, explore innovative solutions, and prototype novel transformative technology concepts.

Furthermore, IdeaSquare serves as a **testbed for new in-house developed education and training methodologies, related to transformative social innovation**. It also provides researchers with access to rapid prototyping facilities and offers technical training to help them realize their project ideas.

Overall, IdeaSquare represents a **pioneering human effort** to harness the collective intelligence and creativity of the global community to address some of the most complex challenges facing humankind. In other words, a place where minds have a “license to dream”.

