S+T+ARTS PRIZE

# S+T+ARTS PRIZE POLICY RECOMMENDATIONS: FOR A SYSTEMATIC ECOSYSTEM'S GROWTH

NOVEMBER 2023

European Commission

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# INDEX

# EXECUTIVE SUMMARY

This policy brochure summarises the work conducted within the S+T+ARTS Prize project, funded by the European Commission, aimed at identifying the strengths and weaknesses of the ecosystem around the S+T+ARTS framework in order to derive concrete recommendations for policy makers.

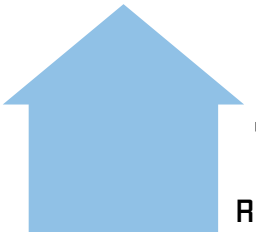
The document introduces the European framework and the S+T+ARTS Prize project, who elaborated this document, and it reports the results of the research conducted with the sectorial stakeholders and ends with concrete recommendations for policy makers that aspire to learn more on the experience launched in 2016 by the European Commission or are willing to implement national, regional and local strategies supporting the intersection of art, science and technology as a powerful tool for innovation, economic growth and response to societal challenges.

# INTRODUCTION

S+T+ARTS is an initiative launched and supported by the European Commission with the aim of fostering alliances between technology and artistic practice. Science, Technology and Arts (S+T+ARTS) form a nexus with an extraordinarily high potential for creative innovation. Such innovation is precisely what is called for to master the social, ecological, and economic challenges that Europe is currently facing and will face in the near future.

Thus, the role of artists is no longer perceived as simply propagating scientific and technological knowledge and skills among the public, but much more as a catalyst that can inspire and trigger innovative processes. The artistic practice of creative exploration and experimental appropriation of new technologies has a wide-reaching potential to contribute to the development of new products and new economic, social, and business models.

S+T+ARTS FRAMEWORK
2016 - 2022



**151**
RESIDENCIES

*funded with*

**€4.5**Mio

As reported on the official website of the European Commission, S+T+ARTS implements the following actions:

- Residencies that deepen knowledge sharing and collaboration;
- Academies focused on bridging the gap between the arts and technology through education;
- Regional centres intended to expand the initiative at the local level;
- Thematic pilots and prizes which support radically innovative technologies developed in collaboration with artists and focused on contemporary challenges.

# BACKGROUND

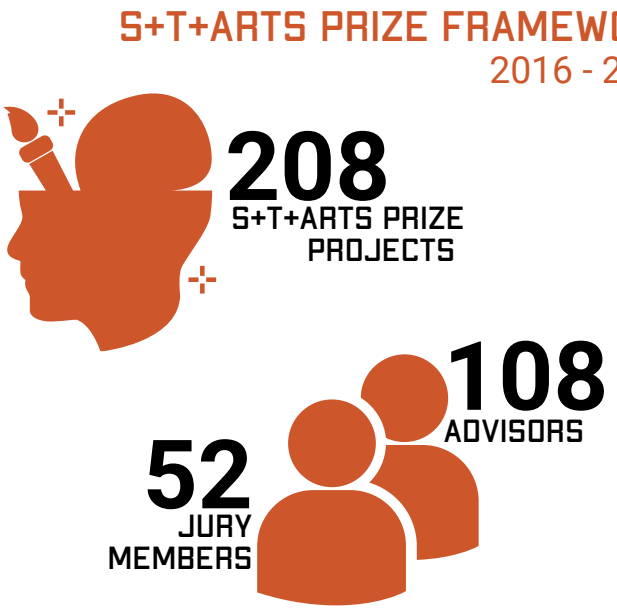
As part of this initiative, the S+T+ARTS Prize is awarded to the most pioneering collaborations and results in the field of creativity and innovation at the crossing of science and technology with the arts. The innovative process implemented by the S+T+ARTS Prize has been relevant for boosting discussion and raising awareness on the role of the arts fostering scientific and technological outcomes.

Since 2016, the S+T+ARTS Prize has organised a yearly competition to single out innovative projects at the nexus of science, technology and the arts that have what it takes to make a significant impact on economic and social innovation. Every year, the two most pioneering projects win the prestigious award generously endowed with €20.000 in prize money and are prominently featured at the events organised by the project and with honorary mentions.

S+T+ARTS PRIZE FRAMEWORK
2016 - 2022

**14.291**
SUBMISSIONS
**96** *from* NATIONS

In addition to this, S+T+ARTS Prize has worked to implement research and analysis on the ecosystem investigating the needs and opportunities to further support and incentivise the development and growth of a multidisciplinary and creative network of artists, researchers, and scientists working together to generate innovation.




## THE ANALYSIS

During three years of project funding (2021-2023), S+T+ARTS Prize has coordinated a systematic conversation with several stakeholders highly engaged in the network. The aim of the interviews was to collect data to reflect on the theoretical issues related to the intersection of art, technology, and science, while also merging these aspects with practical implications such as political support and funding opportunities. The stakeholders that took part in the conversations are mainly S+T+ARTS Prize winners and honorary mentions from 2021-2023, policy makers and sectorial stakeholders participating in the policy events organised by the project and project partners.

Data collected during the interviews have been analysed through a thematic analysis, with the use of a qualitative software called Nvivo, to identify the most pressing issues that should be considered and discussed to guarantee the proper support for the definition of a stable ecosystem based on the collaboration between art, technology, and science. The results have been reported extensively in a project deliverable (D5.3 Policy Brochure, available on the project website) and are summarised here to guarantee a wider dissemination of the results toward specific target audiences, mainly policy makers working at European, national and local level. The target audiences are two groups of policy makers: i) those who know already about S+T+ARTS but want to learn more ii) those who are not familiar with the framework but want to learn so that they can inform policies.

## POLICY OUTCOMES

According to the analysis conducted, it has been possible to identify the most pressing issues that should be considered and discussed to guarantee the proper support for the definition of a stable ecosystem based on the collaboration between art, technology, and science. The issues have been translated in potential actions to be undertaken by policy and decision makers in the form of recommendations.

**The first issue is related to the support of a solid framework to foster the collaboration between artists, technologists, and scientists**. In particular, recommendations focus on the role of European and local policy measures addressing funding allocation and ecosystem support. **The second issue is the need to reframe the role and approaches to the economic impact of the S+T+ARTS framework and the economic exploitation of art, science, and technology outcomes.** Finally, **the last issue highlights the need to foster cross-sectorial education to strengthen transdisciplinary innovation and research.**

# RECOMMENDATIONS

## The allocation of specific funding measures

According to our findings, some concerns do emerge in the ecosystem about the future of the network. Stakeholders are worried about losing access to research calls that could guarantee the experimentation of the intersection as it has happened so far. The ecosystem is emphasising the need to plan for a dedicated budget for the S+T+ARTS ecosystem in the next work programme. Without a dedicated budget in the research framework, indeed, the community will lose the most recognised and institutionalised European source of funding to support research and innovation in the AST (Art, Science, Technology) field. However, some concerns have been also mapped in the way in which the calls are structured.
First, it seems that the priorities of the funding schemes are often set without a clear mapping of the community's needs. In this sense, setting in a top-down way the priorities and needs can have a limiting effect. In fact, it seems that giving too specific and narrowed references for the elaboration of certain topics can reduce the artistic freedom and exclude new and most innovative projects or solutions that could emerge from a wider reflection. So, the recommendation is:

> TO PLAN FOR CALLS FOR PROPOSALS THAT COULD HELP THE CRITICAL REFLECTION OF THE PARADIGM IN ORDER TO COLLECT EVIDENCE ON THE LIMITS AND OBSTACLES ENCOUNTERED BY THE COMMUNITY AND TO SUBSEQUENTLY PREPARE AD HOC TOOLS TO SUPPORT THE COMMUNITY.

Secondly, the suggestion is

> TO CREATE CALLS THAT ARE NOT TOO RESTRICTIVE AS IT INCREASES THE RISK OF ATTRACTING THE SAME PEOPLE WORKING ON THE SPOTLIGHT TOPICS, OR IT FORCES ARTISTS TO CREATE PROJECTS THAT TARGET WINNING THE GRANT BUT LOOSE THE ATTENTION TO THE CREATIVE EXPRESSION AND INNOVATION POTENTIAL.

The calls should really take into consideration the topic priorities addressed by the stakeholders in terms of research and innovation, merging the needs of the institutions with the priorities expressed by the community through a deep and structured conversation among the parties.
Finally, a further element that emerged several times, both with the prize's participants and the experts, is the issue related to access to funds. Access to funding opportunities is not easy for anyone. There are strong barriers that impede a lot of artists and researchers to apply for European funds. Most of the barriers are related to the bureaucratic procedures, considering administrative and budgeting needs, that are not so common for artists and creative people. This means that the network of people applying for funds is quite limited to the ones that already have the skills or can rely on a bigger team where these competences and skills already exists. In both cases, the implication is that a large number of people are left out of the funding opportunities and the circle of people applying is reduced and recurring. Accordingly, there is the need

> TO LOWER THE BARRIERS FOR THE ARTISTS AND CREATIVES ACCESSING THE EUROPEAN FUNDS, AS WELL AS TO WORK IN PARALLEL TO GUARANTEE FINANCING FOR NON-INSTITUTIONALISED FUNDING.

# RECOMMENDATIONS

## The support to ecosystem building

In addition to the need to further support the implementation of a S+T+ARTS framework, the issue to be investigated is how to better design the framework to support AST in an effective way. Even if the importance of the collaboration is quite recognised in the literature, the same scientific production highlights that from an epistemological perspective we are missing a solid framework to structure the collaboration between artists, technologists, and scientists (Birsel et al., 2023)*1*. Such a framework for collaboration is essential to provide a space where artists, scientists and technologists can explore their collaboration defining new practices and innovation, while building a solid network. According to our findings, there are two emerging issues that need to be taken into consideration. First, the intersection between AST is not easy and needs to be critically addressed. This means that a framework supporting AST should also explore which are the barriers that impede the collaboration and not take for granted that collaboration will happen and will be successful. In the conversations with the S+T+ARTS winners and honorary mentions, the issue of the complex convergence between different expertise areas and cultural backgrounds emerged frequently. However, it seems that from the side of the institutions, there is more interest in knowing the successful case studies, rather than understanding which are the limits for these collaborations and what institutions and infrastructures can do to overcome those issues. Accordingly,

> MORE ATTENTION TO THE BARRIERS, OBSTACLES AND LIMITS TO THE AST COLLABORATION IS NEEDED TO ADAPT MEASURE AND ACTIONS APPROPRIATELY. IN THIS SENSE, A GUIDELINE THAT WILL COMBINE THE MOST SUCCESSFUL CASES AND THE MOST COMPLEX ISSUES COULD BE OF HELP TO ADVISE NEWCOMERS AND STAKEHOLDERS THAT WOULD LIKE TO FOSTER ACTIVITIES CONNECTED TO AST.

In addition to the reflection on European policy measures, there is another scale that deserves focused and deep attention, and this is the role of local policies and territorial stakeholders in supporting the European ecosystem. According to the main findings, in addition to European activities, the recommendation is

> TO FOCUS ON THE CREATION OF REGIONAL COMPETENCE CENTRES FOR THE DEVELOPMENT OF ART AND SCIENCE.

Local ecosystems are crucial in bringing together communities to solve local issues but also in functioning as a real place for the experimentation of the framework. Such a network does not necessarily aim at the creation of a physical infrastructure, but rather it is supposed to unite different local stakeholders and promote the collaboration among them. To be successful, this kind of ecosystem should work on the definition of a multi-stakeholder strategy where multiple agents work together bridging competences to find solutions to societal issues, having an impact on the local level and also becoming a relevant factor for regional economic value. What is clear from the examples analysed is that it is often the result of a combined matched scheme. It means that European funded projects are only one part of the solution; these are often matched and associated with other funding schemes and opportunities. In this sense, cohesion policies could also be helpful. The EU Cohesion Policy is aimed at strengthening economic, social, and territorial cohesion in the European Union correcting imbalances between countries and regions. In line with this, such policies could be highly effective in creating regional networks and synergies, also connecting with other stakeholders such as Digital Innovation Hubs, European Institute of Innovation & Technology (EIT) and activities put in place at a regional level.

(1) Birsel, Z., Marques, L., & Loots, E. (2023). Daring to disentangle: towards a framework for art-science-technology collaborations. Interdisciplinary Science Reviews, 48(1), 109-128

# RECOMMENDATIONS

## Rethinking the economic impact of the S+T+ARTS framework

A recurring issue emerging from the conversations with the European Commission and policy makers at different levels is the need to map and measure the economic impact of the creative and cultural industries. Indeed, over the last years there have been significant efforts from different high-level stakeholders, among others UNESCO, Eurostat, the EC, and the EP, to define proper indicators to map the industry and provide comparable statistics. This aspect of the assessment and monitoring is even more complex when we discuss the economic impact of projects or initiatives such as the ones funded by the S+T+ARTS ecosystems. The first issue is the lack of a defined and structured methodology to assess the economic impact. Secondly, from our analysis it emerged that the economic impact is not the most relevant impact area taken into consideration by the artists or the principal project investigators. In most cases, the artists interviewed stated that they are not focused on the quantification of the economic impact, giving more importance to other impact areas (e.g., social impact) and to non-monetary factors (e.g., inclusion, justice, awareness). Additionally, as the economic impact is measured according to the traditional standard indicators (employment, income, etc.), artists and creatives are not ready to map the indicators.
The reason is twofold. On the one hand, they often lack expertise and skills to keep track of such indicators; on the other hand, they deny the importance of such indicators considering it as not sufficiently complex to map and assess the value of the initiatives. This creates a huge epistemological gap between what policy makers expect as return of their investment and what the artists want primarily to achieve with their works. To reduce the gap, there is the need to harmonise expectations from the two sides. On the one hand, increasing the awareness and capabilities of artists and creatives in the importance to collect data on the economic impact of their projects. On the other hand, creating indicators and variables that can assess the complexity of the initiatives bridging the economic aspect with the social value, recognizing that projects linking science, art and technology can foster economic growth but also well-being, social inclusion, and sustainability. According to the data collected from the artists and combing it with the experts' opinions the recommendation is

> TO FURTHER INVEST IN RESEARCH THAT COULD LEAD TO THE CREATION OF AN AD HOC METHODOLOGY TO ASSESS THE INTERSECTION OF ART, SCIENCE, AND TECHNOLOGY. A POSSIBLE APPROACH TO INVESTIGATE IS THE DEFINITION OF CO-DESIGN INDICATORS, TO GATHER BOTH INTERESTS AND PRIORITIES FROM THE COMMUNITY AND POLICY MAKERS. THE CO-DESIGN SHOULD ADOPT A CROSS-DISCIPLINARY APPROACH PUTTING TOGETHER ACADEMICS AND PRACTITIONERS, FROM WITHIN AND OUTSIDE INSTITUTIONALISED RESEARCH COMMUNITIES.

# RECOMMENDATIONS

## The definition of innovative business models for arts, science, and technology

In addition to the definition of tools and methodologies for measuring impact, another element that needs to be further investigated is the definition of innovative business models for arts, science and technology initiatives and projects. It seems, in fact, that the definition of business models poses several problems. First of all, looking at the traditional art world, products, installations, and artworks that are at the crossroad of art, science and technology are not usually in the radar of the traditional art gallery business. Indeed, nowadays only few galleries around Europe commercialise these kinds of art and creative products. More often, these are bought or hosted by foundations, museums, and cultural institutions.

Accordingly, it would be good to push galleries and traditional stakeholders to enlarge their notions of installation or artwork embracing outcomes coming from the intersection of AST. However, the discussion on commercial exploitation is not limited to that. Artists in the field, in fact, are often not confident in pursuing commercial exploitation and economic sustainability. According to our findings, several artists shared the impression that accessing private funds or moving in a commercial direction could somehow limit their creativity and self-expression. In this latter case, it seems that economic exploitation obliges the artists to reduce their own self-expression, and this not acceptable for them. To conclude,

> THE ROLE OF EUROPEAN INSTITUTIONS COULD BE THE ONE OF FINANCING RESEARCH AND EXPERIMENTS FOCUSING ON THE DEVELOPMENT OF NEW BUSINESS MODELS ABLE TO TRACE THE NON-MONETARY VALUE OF THOSE INITIATIVES, PROVIDING ALTERNATIVE MODELS OF BUSINESS THAT RELY ON VALUES OTHER THAN ECONOMIC IMPACT.

# RECOMMENDATIONS

## Foster cross-sectorial education to strengthen transdisciplinary innovation & research

A central gear in how to accelerate transdisciplinary programs like S+T+ARTS lies in fostering educational programs. European educational systems are in clear need to create and employ more interdisciplinary educational programmes for future-proofing the skillsets of students and professionals not only to ensure that their competences are still relevant on the future job market, but also to enable a more systemic cross-fertilisation between sectors. Cultural organisations and the academic sector are working for years with STEAM (Science, Technology, Engineering, Arts and Mathematics) methods, both in secondary and higher education and developed education curricula to successfully blend formal and informal learning environments. Many visionary projects, highlighting successful methodologies and practices, have been previously funded under Erasmus+ or Horizon 2020. Such practices have proven to deliver interdisciplinary skills needed on the job market, increase intellectual curiosity & critical thinking, develop creative solutions, bring out socially just responses and focus on process-oriented skills. Hence

> A CRITICAL DRIVER TO BE ADDRESSED BY EUROPEAN POLICY MAKERS IS AN INCREASED COLLABORATION ON EUROPEAN LEVEL BETWEEN ERASMUS+ AND THE S+T+ARTS PROGRAMME. THIS SHOULD BE EQUALLY PURSUED AS INTRODUCING S+T+ARTS PRACTICES TO NATIONAL DRIVEN EDUCATION AGENDAS, SPECIFICALLY THOSE FOCUSING ON HIGHER EDUCATION.

There are already some course programs on the nexus of science, technology, and arts available to students and a steadily increasing number of educational programs blending arts, design and architecture with digital technologies, but an increased number of such programs with a deliberate focus on supporting transdisciplinary educational programs to bring out new forms of digital innovation would be necessary. Only by making such programs accessible to the broader society and initiating educational offers on national & regional levels, Europe will be successful in positioning culture and creativity as a transversal skill to master the social, ecological, and economic challenges this continent faces. Finally,

> ONE EXPLICIT URGENCY IN THE CONTEXT OF S+T+ARTS EDUCATION IS TO BUILD COMPETENCES ON HOW TO FACILITATE COLLABORATIONS ACROSS DISCIPLINES THROUGH VOCATIONAL TRAINING AND OTHER LEARNING OPPORTUNITIES.

The sector professionals who are mediating and guiding the partitioners from the various sectors (industry, research, academia, culture, and civil society), building a common language and expectations, negotiating mutual terms and conditions, and leading the process towards achieving results and impacts require substantial competences. This education field is still largely untapped and requires much more investment in building capacities.

# CONCLUSION

The S+T+ARTS Prize has collected data for three years to identify the most relevant opportunities opened by the framework and the most pressing challenges that the ecosystem is experiencing. The results have been translated in inputs that should be used by policy and decision makers to inform local, national, and European policy development.

This brochure intends to be an informative document to guide interested stakeholders in understanding how to work through the current challenges to guarantee that art, science, and technology will soon become a recurring practice opening valuable perspectives for research and business, through a holistic and human-centred approach.

# S+T+ARTS PRIZE

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