

WP T3: INNOVATION 4.0 COOPERATION HOTSPOT

D.T3.1.3 - Documentation of the
selection criteria for SMEs/teams for the first
test run of the scheme

Version 2
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Executive Summary

There is a need to develop objective criteria for assessing the project ideas that will be collected within AMiCE's Innovation 4.0 Cooperation Hotspot. This document describes the procedure for evaluating these ideas at the regional as well as the consortium levels. The structure for the Evaluation Board that will assess the project ideas is described with an emphasis on achieving a balance between members to represent research and business backgrounds. To maximize the impact of the selected projects, the project cases are requested to seek achieving a combination of: operational efficiency, business growth, and/or restructuring the business strategy. The selected project ideas will be supported to reach a mature level that can compete at international levels. Hence, the selection criteria for European competitive programs (e.g. H2020 and SME Instruments) are considered as guidelines and customized to meet the speciality of AMiCE with innovative projects in the fields of Additive Manufacturing and Circular Economy. AMiCE introduces specific selection criteria that will help partners to assess the project ideas and select 55 highly promising cases for the test run support scheme. Also, 11 project ideas will be identified and supported through specialized innovation camps.



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Abbreviations

ABBREVIATION	DEFINITION
3DP	3d-printing
AM	Additive Manufacturing
AMiCE	Additive Manufacturing in Central Europe
CE	Circular Economy
CZ	Czech Republic
DE	Germany
EC	European Commission
EU	European Union
IT	Italy
PL	Poland
R&D	Research and Development
RIS3	Research and Innovation Strategies for Smart Specialisation
RTO(s)	Research and Technology Organisation(s)
SME(s)	Small & Medium sized Enterprise(s)
SK	Slovakia



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A. Context and motivation

AMiCE aims at creating a support environment for SMEs and RTOs in Central Europe to develop competitive innovative projects in the fields of Additive Manufacturing (AM) and Circular Economy (CE). Therefore, AMiCE will collect innovative project ideas through the direct interaction and collaboration between AMiCE partners and their regional innovative actors. Selected project ideas will be administered through the AMiCE's support scheme (that will be detailed in deliverable D.T3.2.1) to reach high maturity levels and become competitive at the regional and European levels. In other words, project ideas do not have to be perfect as they are presented at this stage, because the goal of AMiCE is to help the contributing actors to develop their ideas and reach the required level of competitiveness. It is necessary to start with a wide base of project ideas that allow enough diversification and a bigger pool for selection and optimization. The dataset for project ideas will be collected through AMiCE's Cooperation Hotspot as required in deliverable D.T3.1.2. It is also important to develop quantitative measures and criteria for filtering these project ideas and selecting the highest innovative cases. Hence, the objective of this deliverable is to introduce and document the project assessment procedure with the selection criteria.

In general, the project ideas will be assessed at two levels:

- **Regional pre-assessment**, where the tandems in each participating country will evaluate the projects and provide a recommendation for the next stage.
- **Evaluation board**, where the decision will be made for the entire consortium with all regions participating in AMiCE.

Results of these evaluation stages will consist of the most promising 55 project ideas that will receive AMiCE's first run support scheme, and 11 project cases that will be fully supported.

B. Evaluation procedure

The method for selecting, approving and managing project ideas goes through the following steps:

- Partners actively seek SMEs for ideas with high application potential. Partners will collaborate with the originators of ideas and assist them to fill in the template for the project case. The template is available in Microsoft Word format (provided to partners through the project's shared folder), as well as at the AMiCE innovation hotspot (https://cxi.tul.cz/amice_hotspot).
- It is very important to have direct interaction between AMiCE partners and the originators of ideas at SMEs and/or RTOs; because detailed information might be required during the evaluation steps and these clarifications will be obtained only through direct communication and interaction.
- Each AMiCE tandem (two partners from the same country) will assess the project ideas according to the "form for evaluation" that will be introduced later in this document.
- The evaluation will be based on a point system (e.g. with a scale from 1 to 5 points), and the project ideas will be ranked in descending order, then the highest 20 scored project cases per tandem will be submitted to the "AMiCE Evaluation Board".
- The AMiCE Evaluation Board is an internal representative entity that will be authorized on making final decisions on project ideas that will be selected for AMiCE's support scheme.



- The Evaluation Board consists of six members (one member from each participant country), with three members from AMiCE organizations that have research and academic background, while the remaining three members coming from AMiCE organizations with a background in business support.
- The structure of the Evaluation Board was discussed and determined during the consortium meeting in Bratislava, Slovakia Republic on 29.03.2019.
- AMiCE partners with **research and technology** background contributing to the Evaluation Board are:
 - o Chemnitz University of Technology, DE
 - o Institute of Technology Transfer (ITT), or Technology Park of Legnica (LETIA), PL
 - o Technical University of Liberec, CZ
- AMiCE partners with **business support** background contributing to the Evaluation Board are:
 - o Genova Chamber of Commerce, IT
 - o BIC Bratislava, SK
 - o LEITAT, ES
- The tandems and the Evaluation Board will leverage on the transnational workgroups as well as the online teleconference meeting (e.g. through the Webex service provided by the project's coordinator at TUC) to carry out their assessments.
- The Evaluation Board will have a quorum with a presence of the majority of its members, and they will vote for projects by secret ballot.
- The Evaluation Board will choose 55 cases from the pool of project ideas that were recommended by the tandems (5 tandems x 20 ideas/tandem = 100 project ideas).
- The selected 55 ideas will go through the AMiCE test run support scheme (that will be described in deliverable D.T3.2.1), while the highest 11 project cases will receive the full support scheme and will be invited to the innovators camps organized by AMiCE.
- A graphical representation for this selection process is demonstrated in **Figure 1**.

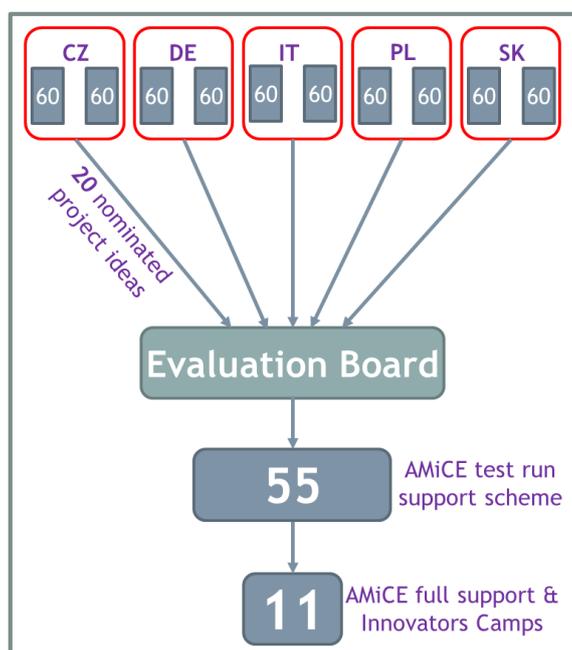


Figure 1. Projects evaluation and filtration for complete support by AMiCE



C. Projects considerations

The goals behind all project ideas that will be collected by partner are to *maximize the impact and add value to the participating SMEs and RTOs through the adoption of AM and CE*. Profit is a major motivator for companies to utilize AM, CE and relevant new technologies to their strategies. The impact of these technologies can be envisioned at three levels [1]:

- **Operational efficiency:** Most companies shift toward new technologies such as AM and CE to increase their efficiencies in the supply chain by:
 - Accelerating the product development cycle and reaching faster to the market,
 - Optimizing the existing production tools,
 - Minimizing the costs for operation and maintenance,
 - Minimizing the inventories and logistics costs,
 - Offering digital spare-parts with flexible after-market strategy.
- **Business growth:** Practically, there is a less number of companies that utilize AM and CE to achieve a growth via product design and customers' added value. This growth can be achieved by:
 - Penetrating new markets and attracting new clients,
 - Redesigning products with structures that were limited by traditional technologies,
 - Customizing products to fit the individual consumer's needs,
 - Adding more functionalities to the current products.
- **Business strategy:** Depending on the maturity of the technology at the company, the lowest number of companies adopt AM and CE technologies as a new business strategy through:
 - Creating new business models that affect the structure of the company,
 - Repositioning the value chain in the company,
 - Restructuring the legal position of the company,
 - Adopting new models for intellectual property rights.

A representation for these business drivers is shown in **Figure 2**. AMiCE will consider these impacts during the evaluation of the project ideas and will help SMEs and RTOs to maximize the value proposition from each project. AMiCE will also try to connect project ideas with similar objectives to combine the maximum number of the above considerations and create projects with bigger impact.

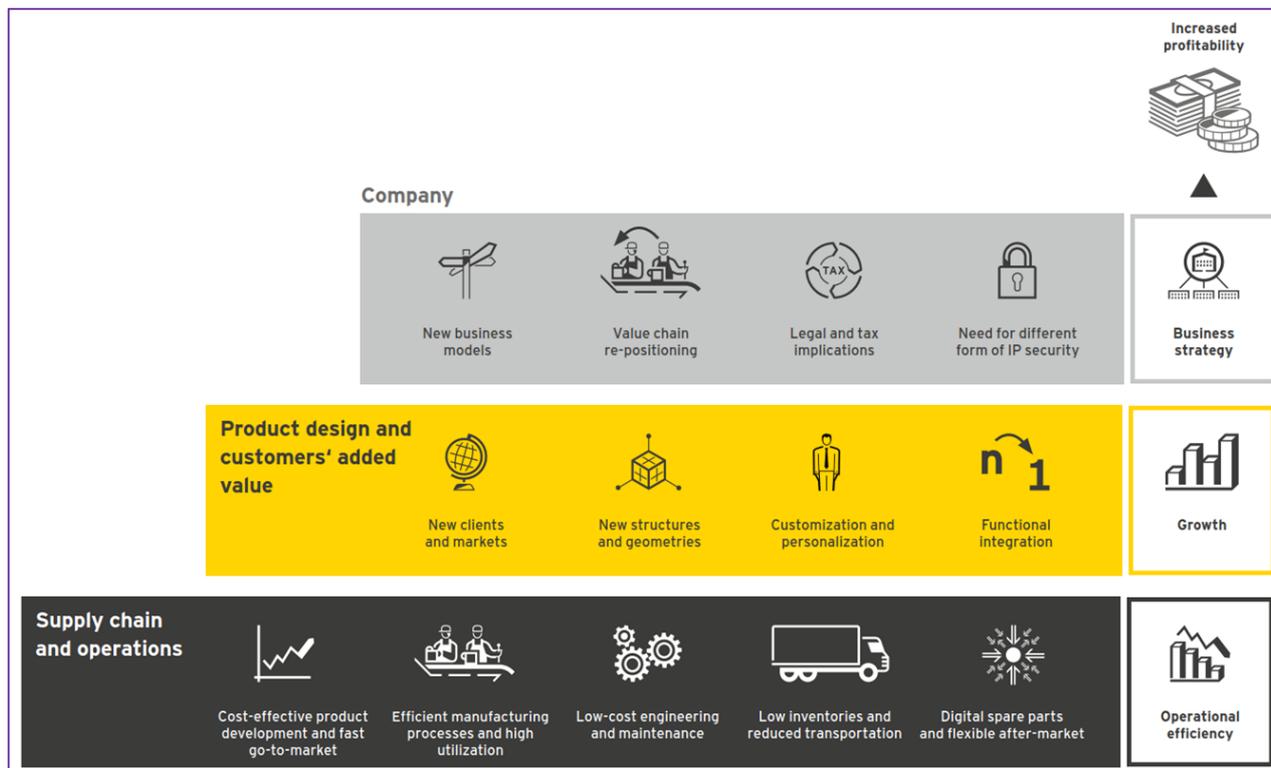


Figure 2. Impacts of AM on the business strategies (Source: EY) [1]

D. How project ideas are selected?

AMiCE aims at supporting the project originators to develop projects that will compete at strong funding programs such as the European SME Instruments, Horizon 2020, ...etc. Therefore, AMiCE will start with that end in mind, and will take the evaluation criteria for these programs as a guideline for selection and evaluation.

For these programs, projects are commonly evaluated based on three awarding criteria [2]:

- **Excellence:** the project has high innovation potential and is beyond the state of the art. It has a strong added-value, it is viable and better than existing solutions.
- **Impact:** the project's innovation meets a pressing need on European and global markets. It will generate revenue and create jobs and has an international dimension.
- **Implementation:** the project's work plan is efficient and coherent with a realistic time-frame. The project team has the technical and commercial competence to deliver the proposed ideas.

While these overall selection criteria are considered, AMiCE developed special measures for project ideas related to AM and CE. AMiCE detailed these overall criteria into particular evaluation points as represented in the following section.



E. Evaluation criteria

In light of the above general guidelines, AMiCE combined some evaluation criteria and developed four main categories for evaluation. These main categories were assigned different weights of importance (expressed as a percentage next to the category name) as follows:

- **Business development opportunities for SMEs (40%)**
- **Feasibility of the innovation / project (30%)**
- **Research related aspects (20%)**
- **Program relevance (10%)**

Each of these categories include sub-criteria for assessment that are indicated below:

1- Business development opportunities for SMEs (40%)

- Does the project have the potential to take up the AM / CE technologies successfully?
- Does the project offer a good opportunity to develop the company's strategy?
- Does the project offer an approach transferability (i.e. technology transfer potential)?
- Does the project fill a gap or a need in the market?
- Is the market of application large enough? Will it eventually grow?
- Is there more than one possible application of the results?
- Is there any direct competitive product(s)?
- Does this market have significant barriers to entry (i.e. obstacles in the form of patents or extremely dominant players)?
- Do products developed in the project have a reasonable time-frame of production cycle (e.g. in some cases such as automotive industries, the production cycle might reach three years)?
- Is the impact/effect of AMiCE support high enough for the given project idea?
- Does the project include defined and specific timeframe with milestones for the required AMiCE's support?
- Does AMiCE support scheme's timeframe meet the expectations of the project?
- Does the project have exit criteria? In other words, is there any measurable parameters to identify the success of AMiCE's support to the project preparation? What will happen to the project idea in case it does not fit AMiCE's support scheme?

2- Feasibility of the innovation / project (30%)

- Does the project provide clear plan for the financial resources required for its development?
- Does the project include sufficient evidence for availability of capacities and capabilities required for its implementation?



3- Research related aspects (20%)

3.A. Context & IPR-background

- Does the project clearly identify the objectives and problem(s) addressed?
- Is there any pre-existing intellectual property rights (IPR) or any need for disclosing the results in the short term?
- Is there any survey for innovations or patents in the field?
- Was the freedom to operate (FTO) conducted?
- Do applicants have full rights to the idea / product / solution that is to be developed in the program?

3.B. Result of the research

- Is the project up-to-date and in-line with the latest technology or improvements of existing established technologies?
- Is the project idea part of the major speciality areas for the SME?
- Is there a working prototype? How much effort is needed to develop a prototype?
- How easily can the results be realized? does it require permits, additional treatment, time to obtain necessary information?
- Is there a real possibility for significant commercial exploitation of the results?
- Does the result or product improvement lead to a cost reduction of more than 20%?

3.C. Technology transfer

- What is the current and targeted Technology Readiness Levels (TRL)?
- Is this a revolutionary technology (i.e. disrupting normal functioning in the market)?
- Does the project include technologies that can be transferred to other sectors / industries?
- Is the project idea funded by a specific industry?
- Is there, or will be, a potential license? Will the license require a significant investment to reach the market?

4- Program relevance:

- How far is the project in terms of developing / improving linkages among the innovation actors in the regions of Interreg Central Europe and Spain?
- How the project idea will provide opportunities to create an international / interregional innovations?



F. Conclusion

Majority of the current SMEs that adopt additive manufacturing and circular economy technologies target an increase in the operational efficiency inside the business. AMiCE aims at maximizing the impact of these projects by helping SMEs to customize their technologies and achieve higher growth and/or restructure the strategy of their business. Taking these considerations into account while developing the project will help businesses to increase their profits and maximize their benefits. Therefore, project ideas will be assessed according to these particular measures at the regional level. Successful project cases will be short-listed to manageable amounts (20 projects per AMiCE participating country). Then, an Evaluation Board with a balanced structure of members with research and business backgrounds will scrutinize the nominated projects to select the best representative 55 cases that will go through AMiCE's first run support scheme. Moreover, 11 project cases will be identified for full support and will be invited for AMiCE's specialized innovators camps that will help SMEs to develop competitive projects.

G. References

- [1] A. Müller and S. Karevska, "How will 3D printing make your company the strongest link in the value chain?," Wirtschaftsprüfungsgesellschaft, 2016.
- [2] SME Instrument, "Evaluations EIC SME Instrument | EASME." [Online]. Available: <https://ec.europa.eu/easme/en/section/sme-instrument/evaluations-eic-sme-instrument>. [Accessed: 24-Nov-2018].