



# I4MS learnings and recommendations



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## 1. Successful workshop. Stages for an I4MS to organise workshops

I4MS is an initiative to support digital transformation of manufacturing SMEs and mid-caps in Europe. It has collaborated with Innovation Actions (IA), Digital Innovation Hubs (DIH), other related networks and ecosystems to solve the challenges faced by technology suppliers and public bodies, when trying to accelerate the take up of digital technologies by manufacturing SMEs and midcaps in Europe. For that purpose, in between 2013 and 2019 the initiative supported the setup (Phase 1), the extension (Phase 2) and the reinforcing (Phase 3) of the I4MS ecosystem. In the current **Phase 4**, the objective has been **to consolidate and accelerate the uptake of digital technologies**. For this purpose, several activities have been carried out including the:

- Contribution to **broader I4MS coverage** e.g.: technology, application, innovation, EU regions and Member States, internationally.
- Provision of **support to the network of DIHs/EDIHs**.
- Connection of I4MS with regional and national initiatives to support manufacturing SMEs by means of the I4MS Contact Points.
- Facilitation of **collaboration among the Innovation Actions**.
- Sharing of **best practices**, and facilitating **brokering between users and suppliers**, leveraging **investment and training**.
- Gain of knowledge in **cooperation with I4MS Community** by means of the **Working Groups** as well as sharing the lessons learnt with the larger audience.
- Cooperation with **EFFRA and other CSAs** in the area “Digitalising and transforming industry services”.

This report presents the **overall findings and lessons learnt of I4MS project** and a set of **recommendations** that aim at capturing those key messages and suggest actions to improve the support provided to the SMEs, paving the way of accelerated digitalisation of the European manufacturing SMEs and midcaps.

A lean consortium of three expert entities FundingBox Accelerator, Mobile World Capital and, TECNALIA has guaranteed a smooth connection with previous I4MS Phases and other initiatives and networks.

## 2. I4MS lessons learnt

I4MS, has worked to consolidate and accelerate the uptake of digital technologies by means of the implementation of several activities (e.g. provision of support to the network of DIHs; connecting with regional and national initiatives to support manufacturing SMEs by means of the I4MS Contact Points; facilitating collaboration among the Innovation Actions; sharing best practices, and facilitating brokering between users and suppliers; leveraging investment and training; gaining knowledge in cooperation with I4MS Community by means of the Working Groups) to mention some.

The following **lessons learnt** are highlighted resulting from this work on I4MS:

- The **I4MS Strategy for SME Reach** overall, has managed to share opportunities with over 100,000 SMEs. This is the result of a dedicated and targeted quality communication and awareness strategy as well as culture-matching trainings that included sector-specific events and leveraged on the already existing communities using online and physical settings (e.g., LinkedIn and Facebook, groups on sector-specific topics of advanced manufacturing, I4MS Community, I4MS network of Contact Points).
- The **I4MS Community** has been the central information, meeting and interaction point of a community of more than 2,200 interactive and enthusiastic members; a rich ecosystem with SMEs, experts in the field, DIH & EDIHs, European projects supporting manufacturing SMEs and technology providers. With members coming from all corners of Europe, the I4MS Community is an agora to exchange ideas, keep each other informed and network.
- The **I4MS brokering and matchmaking system** has been launched for manufacturing SMEs that wanted to improve their technology adoption cycle in a quicker and smarter way. The I4MS brokering system has permitted to connect and help companies to boost technology adoption matching company's needs and specially in relation to financial resources to test new technologies, training to upskill your workers, as well as grow the network.
- A network of **96 Contact Points** has permitted to access to new markets. Contact Points are in almost all Member States but also internationally. I4MS Contact Points have played a key role in I4MS, they managed to bring the project to the regional and local ecosystems and engage actively with SMEs. The learnings gained show that the ecosystem perceives that there is a need to offer more services on technologies such as 3D printing; ICT management, logistics and business systems; cyber physical systems; human-robot interaction or augmented and virtual reality. Most of the technologies offered by I4MS and I4MS Contact Points fit the company's demand.
- The **I4MS Disruptors Award and Success Stories**, that honour the most innovative Application Experiments in additive manufacturing, CPS and IoT, robotics and HPC. During this I4MS Phase, the Winner 2022 has been FOLD; a Bulgarian manufacturing company, Europack Bulgaria M EOOD, a Dutch artist, Isaac Monte B.V., and a Romanian technology supplier, Oviso Robotics SRL. Also, a compendium list **37 Application Experiments** expecting to influence and serve as inspiring examples on how to use digital technologies for improving efficiency of manufacturing processes, and overall, productivity of companies has been produced. I4MS Innovation Actions have already provided technical support and cascade funding for the implementation of over **392 AEs**, 280 implemented in Phase 1 and

Phase 2 and 112 in Phase 3. It is expected that this number will reach an approximate of 600 by the end of Phase 4.

- **Communication services** have included social media channels permitting to achieve 2,044 connections in LinkedIn, 1,608 Twitter followers, and 984 newsletter subscribers. I4MS CSA continuously executed different marketing activities to disseminate the I4MS brand, showcase the benefits of digital transformation, as well as to promote the opportunities offered by the I4MS Innovation Actions, I4MS has (co-)organised (33) events and has counted on an active participation of the I4MS CSA in a total of 122 different events from the beginning of the project.
- The **I4MS Training Catalogue** collects 235 training offers available from IAs, DIHs, universities and other organisations to help SMEs better identify the right upskilling programmes for the digital transformation of their companies. The Catalogue has been revised and updated regularly during I4MS CSA duration.
- **I4MS Working Groups** have been organised to share and build I4MS value proposition with relevant stakeholders, to discuss on common challenges and to set up joint strategies to leverage investments for the benefit of European manufacturing industry. These 9 WGs organised have been the main mechanisms to ensure active cooperation and engagement among I4MS community. They have been acting as 'advisory bodies'/think tanks helping to validate I4MS aggregated value proposition and plan specific actions that can complement I4MS support. WGs have been very successful in terms of participants. The methodologies used have been always participative to make the discussion more active. The I4MS Challenges have guided the discussion of the WGs. The lack of support to manufacturing SMEs to take full advantage of digital transformation, remains the main challenge, although other challenges such as awareness on the importance of digital transformation and skills mismatches are prioritised as equally relevant for a successful digital transformation process.

### 3. I4MS recommendations

A set of **recommendations** is suggested to improve the support provided to the SMEs, paving the way of accelerated digitalisation of the European manufacturing SMEs and midcaps. The **key target group** of the recommendations are the **manufacturing SMEs and midcap companies**, that are embarking for the digitalisation journey, although they are also targeting stakeholders and audiences at the EU, national, regional, and local levels (e.g. policymakers, funding agencies, intermediary agencies such as DIH and EDIHs, EU-projects managing cascade funding, competence centres, etc.).

#### I4MS recommendations for digital transformation pathway

The digital transformation of the European manufacturing SMEs is advancing. According to DESI 2022, more than half of the EU SMEs are using digital technologies in their business activities. At the same time, however, more than 60% of the SMEs are facing barriers related to digital transformation. These are related to skills, funding, and links with the ecosystem. Within this framework, I4MS considers the need of:

- Setting up a **common vision and a shared strategy for digital transformation**. Without fluent communication and alignment of actors within the ecosystem and different policymaking arenas, it is hard to make the digital transformation a reality. Many actions of I4MS have helped to set the scenery for open dialogue.
- Raising awareness on the benefits of digital transformation and keep on **bringing together the digital know-how and the SMEs**. The I4MS activities have shown that SMEs, need more and better information about the benefits of digital transformation and a good tool is to bring more digital transformation success stories of SMEs forward. The role of DIHs and EDIHs is especially relevant in finding a match between the offer of digital solution providers and the actual demand of companies.
- **Keep on investing in skills and training**. One of the obstacles for the digital transformation of manufacturing SMEs is the lack of adequate digital skills. The upskilling of current workforce and the skill mismatch are long processes; thus, continuity of efforts is recommended.
- **Systematising the use of Financial Support for Third Parties (FSTP) and considering novel funding mechanisms**. The FSTP mechanism comes with many benefits, although to fully leverage the broader impacts improvement are needed. In addition, a consideration of novel funding mechanism blending public and private funds according to digital maturity is recommended.
- **Exchanging good practices in digital transformation policies**. The learning from peers should not only be the privilege of SMEs, but also the regional policymakers are encouraged to share their learnings and good examples from their work in supporting digital transformation of SMEs.

Together, these recommendations are expected to pave the way towards smoother path for digital transformation of manufacturing SMEs.

## Financial Support to Third Parties, ingredients to leverage its impact

I4MS has been delivering Financial Support to Third Parties (FSTP) since 2013, and more than 600 experiments have been funded through the years, generating some knowledge on the distribution of funds to manufacturing companies. I4MS has collected some of these lessons through interviews targeted to the I4MS IA' coordinators and other experts. This has allowed to identify some successful practices, common trends, and recommendations to leverage the impact of this funding mechanism.

Overall, the FSTP has been recognised as a useful mechanism to support SMEs in the uptake of new technologies. It allows SMEs to test how the different technologies could be applied in their business and the impact that the digital technologies could have on the productivity, reduction of costs and material use, or energy efficiency.

- Experts agree that during the **preparation of the open call**, the needs and challenges of the SMEs should be better considered. Some projects are considering two different mechanisms for SMEs, one, to first understand the technology and assess what it can bring to them and second, to test this technology to improve a product, service or process. Additionally, during the design of the open call it should be foreseen to request applicants to fill-in a standardised KPIs, which would also be monitored at later stages. The monitoring system would allow to follow-up the digital maturity of the SMEs (at the beginning of AE, at the end and at later stages).
- When it comes to **awareness raising and dissemination**, all experts agree that the network of DIHs built around each project has been key to reach SMEs. The organisation of info sessions, creation of helpdesk and offering support to potential applicants during the application process is a common practice in projects delivering funds. Info sessions are as well an opportunity to spread the word about the applications and advantages of adopting the technologies promoted by the projects.
- In relation to the **selection of Application Experiments**, projects concur that, although external evaluation is a system that offers transparency and independency, projects need to add mechanisms to facilitate the selection of proposals that will better contribute to the objectives of the project (e.g., the selection of SMEs that use different approaches to adopt a technology or, combining external and internal evaluations). No matter how the evaluation is done, strong efforts to select the best fitting experiments are required from the projects, either to train evaluators, organise pitching session or stages.
- Concerning the **mentoring and support to SMEs**, projects are not only offering technical support, but also, business mentoring among others. Throughout the interview process, it became clear that mentors play a key role during the technology adoption process, therefore, the creation of a network of mentors and evaluators in specific technology areas would be of value for the I4MS project but also for the newly established EDIHs.

## 4. Detailed recommendations

The way ahead for the digitalisation of EU manufacturing SMEs



To set-up a **common vision and a shared strategy for digital transformation**. This enables direction setting and commitment for all the relevant stakeholders involved. The alignment of the actors allows coherence and mobilisation of public resources, as well as favourable conditions for private co-investment, which is one of the key factors for the success of the digital transformation policies. The existence of different national and even regional frameworks makes it difficult for SMEs to navigate among all the available mechanisms. Coherence and shared strategy are needed at different levels:

- **Public and private stakeholders.** To continue fostering open exchange of opinions and experiences among the different regional stakeholders regarding digital transformation. Without truly understanding the needs of the companies and digital technology developers, the digital transformation policies are unlikely to meet their targets. The I4MS Community, and I4MS WGs, have opened a path for wide-ranging discussion and trust building process among the different actors. For the years to come of the Digital Decade strategy by 2030 and the Digital compass, open dialogue between the key actors and policymakers is further encouraged to reach those targets.
- **Policymakers and policies at EU and national/regional level.** Despite progress made, the uneven levels of innovation in the different Member States remain, and there is still room for further alignment of the EU, national and regional policies supporting digital transformation of manufacturing SMEs. Synergies between Horizon Europe and other EU/national initiatives could still be improved to provide a more holistic support covering the needs of SMEs from the development and deployment of new technologies to its commercialisation. The role of the EDIHs can contribute to align the support and policy development at national and European level. EDIHs can be seen as the compass for SMEs, since digitalisation is not a matter of excellence, but rather a change on day-by-day work. It also a good example of blended funding by co-investing European and national funding into the EDIHs actions to support SMEs. This can contribute to facilitate the policy alignments between national and European policies.
- **Horizontal areas supporting digital transformation at EU level.** Better leverage of the synergies among different horizontal policy areas, supporting digital transformation will be recommended. Digital transformation is supported by different policy areas such as education and skills, science and technology, and industrial policies. Furthermore, digital technologies are playing a key role in achieving green growth, thus, acting as an enabler in twin transition. The coherence in governance is important for achieving the objectives of dual transitions.





To **raise awareness on the benefits of digital transformation** and keep on **bringing together the digital know-how and the SMEs**.

One of the obstacles for SMEs to departure their digital transformation journey is simply lack of information of digital technologies, and especially related to the benefits digitalisation can offer to their business. Therefore, the work on **raising awareness** is still of utmost importance. I4MS experience has shown how **peer-learning** and **exchange of information on real business cases** are of interest for the SMEs and stakeholders. Companies, and especially SMEs, need to see the benefits and the value-added of digital transformation through real-world examples. The good practice examples should be collected widely, in terms of industrial sector and geographical location of companies, to provide peer-to-peer learning opportunity for a broad spectrum of SMEs. The I4MS Success Stories represent some examples of how SMEs can reap benefits from the on-going transition. Examples of success stories from I4MS and similar initiatives could be used to showcase the impact of the technologies in daily business operations. Presenting technologies as a way to improve productivity, despite the investments needs, might be crucial to change SMEs mindset and make small companies more prone to invest in new technologies. The EDIHs should have a clear role identifying these success stories.

In addition, European experts and manufacturing SMEs have worked together in I4MS WGs to better target the challenges and recommend actions to support them. Still, I4MS has learnt that the ecosystem perceives mismatches between the **technological offer and the real needs and demands from manufacturing SMEs**. More precisely, regarding technologies such as 3D printing; ICT management, logistics and business systems; Cyber physical systems; Human-robot interaction or augmented and virtual reality. There is a need to offer more services related to these technologies, and this could be also the role of the recently created EDIH network, ensuring at the same time cooperation, also cross-border among EDIHs to avoid potential duplication of investments.

The work of I4MS has allowed **improved understanding of the needs of SMEs**, support the SMEs through I4MS brokering system and through I4MS Innovation Action brought together the technology solution providers, and SMEs in several Application Experiments. Evidencing that the best examples are always coming from other SMEs having gone through similar process or having adopted specific technologies.

The **Digital Innovation Hubs** (DIHs) and the newly launched network of **European Digital Innovation Hubs** (EDIHs) have key functions in raising awareness of digital transformation and acting as intermediaries between digital technology providers and SMEs. This “one-stop shop” approach is clearly needed to ease the access of SMEs to technical expertise and funding opportunities on the one hand, and to open-up the market for technology providers on the other. DIHs and EDIHs are playing a key role that should be further improved and supported. Awareness raising is a key activity to make this process successful. Also, EDIHs, will have an important role bringing new services and opportunities closer to the local SMEs.

The **reach to underrepresented regions** should be further explored, as so far, European Projects have had a limited capacity to attract SMEs from certain widening countries. Communication activities that rely more on traditional media and craft organisations are recommended.



Developing innovation ecosystems around the projects that maximise the impact of the project or initiatives has resulted very efficient, as shown by the I4MS Contact Points networks. It has been made clear that FSTP might not be sufficiently attractive for SMEs in widening regions, as there are still a numerous grant programmes driven by the national authorities that are more interesting.



### **To keep on investing in skills and training.**

Europe's plans for the future of work are exactly on their way to empowering the manufacturing sector at a human level. During the last years, I4MS initiatives have work hard to digitalise the European manufacturing SMEs and to give them support to explore new opportunities of growing, not only by producing more, but also by producing better products with a human-centric approach. Manufacturing SMEs and public sector should keep on investing in skills and training, as evidenced in the WGs discussions and I4MS Talks organised.

Industry 4.0 has been an essential driver for implementing the most powerful technologies, such as digital twins, cyber-physical systems, and cloud computing, transforming production processes within the manufacturing sector. But nowadays, a more **human-centric approach is needed**, to lean towards Industry 5.0., where "the worker is not to be considered as a 'cost', but rather as an 'investment' position for the company. It is essential to follow up on upcoming projects funded by the EC, such as Up-Skilling for Industry 5.0 Roll-Out, which will foresight and study the balance between humans and tech, focusing on the collaborative relationship between skilled workers and automation. Although digital skills training is essential for the manufacturing sector, the vision of training must be enlarged to include more transversal concepts, such as e.g., soft skills, green skills, etc.

There is also a **need to improve skill assessment and standardisation efforts**, to incorporate industry skill ontologies, specifically tackling the advanced manufacturing sector into the ESCO framework (European Skills, Competences, Qualifications and Occupations).

SMEs who want their employees to have the knowledge, skills, and competencies matched to the market and technological evolution must create **a culture of lifelong learning**. The goal is to improve human capital and equip people with the necessary skills. Therefore, the workplace must be transformed into a place of learning. Lighthouse projects for skill development are essential, and initiatives such as Digital Skills and Jobs Platform or Marie Skłodowska-Curie Actions (MSCA) are highly relevant, and SMEs should be encouraged to train their workforce and offer them opportunities to gain the necessary skill set to develop new jobs or responsibilities.

The SMEs need to be ready to be aligned with the European Climate Pact by promoting and supporting **green skills and employment** and address the upskilling and reskilling of workers towards the twin transition, essential specifically in the manufacturing sector. The European industrial strategy (2020) has been updated to focus on strengthening the resilience of the single market, supporting Europe's open strategic autonomy by addressing strategic dependencies, and accelerating the twin transitions to a green and digital economy.

Additionally, the future of work in **10 recommendations**<sup>1</sup> produced in the context of this WGs, shows the need for the workers to get an improved vision of the future.



To **systematise the use of FSTP, innovative vouchers** and consider **novel funding mechanisms** that blend public funding and private investments.

Availability of funding for digital transformation is among the key challenges identified by SMEs. The **Financial Support for Third Parties (FSTP)** has many benefits from the perspective of SMEs – it is characterised by easy access with low bureaucracy, it is focused on problems close to their day-to-day business, and it opens a door for the SMEs to a broad international network of technology solutions providers. Apart from funding, the SMEs receive support in various forms including e.g., mentoring, and coaching. From the perspective of policymakers, the FSTP is reaching SMEs that would not else participate in EU-projects, it is putting together the digital technology supply and demand and have shown to be good tool for building local ecosystems and DIHs.

The use of **innovation vouchers** is seen very useful to encourage the ecosystem actors to work together. Vouchers or limited scale publicly provided credits allow SMEs to purchase services from local knowledge and technology providers including universities, research organisations, and technology solution providers. The I4MS ecosystem considers vouchers as relevant mechanism not only because of providing administratively simple and easy access of funding for SMEs but also because of fostering collaboration among the actors of regional ecosystem.

**New types of public-private funding** should be encouraged to support the development of regional or local ecosystems. The funding should bring companies and digital technology providers together, but differently from the FSTP, include an adequate mix of public funds and private investments (own funds, loans, venture and risk capital). The blend between public funds and private investments should depend on the maturity of the digital technology, the share of private investments increasing together with the maturity.

The role of EDIHs should be also to connect with other funding sources, such as private or investment banks, perhaps plan on capacity building activities to improve their competences in these areas should be proposed to the Digital Transformation Accelerator.



To **exchange good practices on digital transformation policies** among regional policymakers. Learning and exchanging experiences among peers is important also for regional policymakers. The network of I4MS Contact Points forms basis for establishing regional digital transformation policy network and shared learning community.

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<sup>1</sup> <https://i4ms.eu/10-recommendations-for-the-future-of-work/>

The WGs approach has resulted very appealing and revealing to identify common pains and best practices at regional and project level. Perhaps a closer connection between H2020 and Interreg project in terms of use of results, regional benchmarks and policy recommendations should be explored in future projects. Also, the creation of future CSA programmes that can connect both programmes and manufacturing related projects could be explored.

**Flagship experiments** such as the I4MS Disruptors Award 2022 winner, are good practices that can influence policy-making activities. FOLD<sup>2</sup>, the Better Factory Knowledge Transfer Experiment (KTE) on creating stone paper innovative products with modular cobots, is a good example of collaboration with different technical disciplines and visions that can be united to provide something unique and innovative. The winner is a good practice that shows the importance of bringing together different technologies and disciplines for the success of a digital transformation process.



### Role of Financial Support to Third Parties (FSTP) in supporting digitalisation of SMEs

The Financial Support to Third Parties (FSTP), or cascade funds, is a mechanism developed by the European Commission (EC) within the framework of the Funding Programme for Research and Innovation. It allows European projects to distribute money to third parties, such as start-ups, scale-ups, SME and/or mid-caps, in form of grants. The funding is organised and provided through the intermediary role of the Innovation Action, which makes the evaluation process much quicker and effective. The FSTP process can be divided into different phases, namely (1) Preparation of the open call, (2) Awareness and support to applicant, (3) Application process, (4) Selection, (5) Mentoring, and (6) Additional support. Together, these phases form what we call FSTP pathway, which guided by the overall recommendations of the I4MS presented in the previous chapter. The following figure and tables present the recommendations and good practices identified along the FSTP pathway.



<sup>2</sup> The Bulgarian manufacturing company, Europack Bulgaria M EOOD, the Dutch artist, Isaac Monte B.V., and the Romanian technology supplier, Oviso Robotics SRL, are the team behind.

Figure 1: FSTP Pathway

Table 1: Legends of the FSTP journey



I4MS recommendations are guiding the whole journey looking at aspects that need to be considered when designing policy initiatives supporting digitalisation of manufacturing SMEs.



Phases of the FSTP journey: (1) Preparation of the open call, (2) Awareness and support to applicant, (3) Application process, (4) Selection, (5) Mentoring, and (6) Additional support.



Specific recommendations: The specific recommendations are grouped along the FSTP journey.



Sightseeing spots: Sightseeing spots are presenting good practises identified in different parts of the FSTP journey.

Table 2: Recommendations along the FSTP journey



### Preparation of the open call

Preparation of the **open call** specifications provides a direction setting and boundaries for the rest of the FSPT journey. Open calls need to serve to the objectives of the IA project, be aligned with the project implementation and define very clearly all the steps of the FSTP management process, but also guarantee that SMEs will have access to high quality resources and support that allows them to improve their products, services, and processes. This is the most time-consuming phase as it needs to define the whole process considering EC guidelines and requirements and describe the criteria, needs and application form that will be key for the selections and mentoring of the SMEs.



- The FSTP funding instruments should be designed **balancing between solid structures and rules, and flexibility**. The structure and clear rules are needed to ensure correct functioning of the instrument and to avoid misuse. The flexibility is needed to allow the open calls to focus on the needs of SMEs that vary significantly depending on the country of origin, type of SME, industry sector, digital technology etc. The call and participation rules should be easily accessible, lean, and written in an easy to grasp format. The call texts should always be translated to local languages to properly reach the SMEs.



- The call preparation should better consider the **needs of the SMEs**, instead of being driven by the technology push. The FSTP process should incorporate a preparatory phase including a diagnosis of SME needs. Furthermore, the FSTP

owners should be aware of the different innovation levels across EU countries and promote a wider geographical coverage. An analysis of the submitted proposal in phase 4 projects against awarded suggests that even if the participation from Eastern countries has increased, the innovation level across European countries is uneven. This fact may require additional activities in specific countries to improve the proposals and understanding of the technologies or project goals. There are some good practices from projects that facilitated the access to proposal from certain countries, such as Ukraine, by giving them extra points during the evaluation process. Also, projects such as DIH-World or BOWI have focused their efforts on the widening regions.



Setting a requirement of and **implementing a monitoring system** to check the progress and better evaluate the progress of the experiment. The difficulties in analysing the impact of the FSTP mechanism, and lack of cross-AE and cross-IA progress indicators, suggest that the use of a common monitoring system including a set of predefined KPIs would be beneficial. The definition of the open call should request the applicants to fill-in a standardised KPIs, which would also be monitored at later stages. The monitoring system would allow to follow-up the digital maturity of the SMEs (at the beginning of AE and at the end) and better assess impact of the FSTP funding.



### Awareness raising and dissemination

It is important to build a strategy how to raise awareness and disseminate the open call. The awareness raising campaign should start well in advance before launching the call to sensitivities and familiarise the SMEs with the opportunity. After the launching the call, the awareness raising strategy should on one hand reach European SMEs broadly but at the same time proving targeted support for the SMEs.



- The dissemination of the open calls should be done **in local languages** to guarantee the access of manufacturing SMEs. Here DIHs and EDIHs play an important role bringing closer the opportunities to companies. I4MS projects have noticed that the majority of applicants come from countries where the consortium is present.



- More focus should be set on **raising awareness of the benefits of digitalisation** as a first step of the FSTP journey for the SMEs. The awareness raising activity should clearly demonstrate with real life examples the business opportunities for SMEs. The awareness raising should start well in advance before launching the call focusing on benefits of digital transformation, and the opportunity for SMEs to receive support from the FSTP process, rather than the funding available. For example, results of the pilot projects of IAs provide a good example in this respect.



- The communication strategy should carefully consider **the balance between reaching high quantity of SMEs across Europe vs achieving high quality of proposals presented by dedicated SMEs**. This balance can be different depending on the open call, and the campaigns should also consider disparities in the innovation levels of the SMEs across Europe. In some cases, a broad European-

wide communication campaign is necessary to attract enough quantity and quality of applications. However, in some other cases it can be more important to organise well targeted, local dissemination campaigns to achieve the interest of committed SMEs.



- The **awareness raising should involve broadly the ecosystem actors**. In some open calls, technology providers and RTOs might play an important role as “evangelisers” to the manufacturing SMEs. Also, EDIHs and DIHs should consider the organisation of roadshows to bring technologies closer to the SMEs, showing the technology in practice and inviting other SMEs that are currently using it. There might be sectors, such as the agricultural, where the connection with the local ecosystem is key to facilitate the access to the funding opportunities using FSTP mechanisms.



The communication campaign should be **accompanied by webinars and info sessions** providing the candidates opportunities to clarify unclear issues. The interested applicants can ask questions and solve their questions on different aspects (e.g., technical, formal, legal, financial). Apart from the info sessions, a good practise is to organise **complementary coaching or mentoring activities** to explain the next steps and roadmap of the FSTP journey.



### Application process

The submission period has been described by the Innovation Actions as a process where many one-on-one interactions happens with the interested applicants, and where the DIHs and partners have a clear role in supporting the SMEs to make sure the objectives and scope of the project are guaranteed. Also, during this process is important that SMEs already include their KPIs and define the clear milestones of their experiments to be able to assess their performance at later stages.



- The organisation of **info sessions, creation of helpdesk and offering support to potential applicants** during the application process is a common practice in projects delivering funds. Info sessions should include information, not only about the application process, but also cover the commitments, processes, documents and information that potential beneficiaries will have to provide during the support programme. It is important for SMEs to understand the steps of their participation process to align expectations.



- Regarding application itself, **clear guidelines and rules for the applicants** is a key for success. The proposal template should have a simple structure and the proposals should be short (max. 10 pp.). The guidelines should use simple language and vocabulary familiar to the SMEs, avoiding “European jargon”. The written guidance should be complemented with one-on-one interactions between the mentors and the potential applicants to ensure the quality of the proposals and the correct understanding of the open call goals.



The **use of the brokering system and brokering events** during the I4MS activities have proven to be a powerful tool to redirect the interest of the SMEs towards the different innovation actions. Similarly, having a network of DIHs that have expertise in the

technologies promoted in I4MS open calls has shown to be a good mechanism to attract manufacturing SMEs to the calls.



#### Selection of the best fitting experiments

The selection process is a critical part of the FSTP management as Innovation Actions need to guarantee the high level of the experiments but at the same time select those projects that best contribute to their project overall objectives and goals. The definition of the selection criteria and structured mechanisms is an important aspect in this phase of the I4MS journey.



- The selection process should be based on **transparent pre-defined criteria**. The selection criteria should not only seek to select the best project but also an **adequate fit of the project to the portfolio of projects** that together would be capable to show the impact of the solutions offered. The selection criteria should have a balanced focus on the background i.e., "standing upon the results of previous work instead of reinventing the wheel again" and foreground i.e., reusability of the results.



- The selection process should be conducted by an **expert panel, involving an adequate mix of "internal" and external experts**. The participation of external evaluators guarantees the transparency of the selection process; however, project's need to train evaluators to understand the overall, "umbrella" objective that the IA aims to achieve.



- The use of **pitching sessions to select the candidates** when it comes to the use of a specific technology requires a high level of preparation. The project has to give clear instructions on the information to be highlighted.



**Commercial visits** funded by the EEN to the different RTOs offering services to FSTP beneficiaries should be explored to find companies that can really take benefits from participating in FSTP projects.



#### Mentoring and support to SMEs

Although we refer to FSTP as a mechanism to deliver funds, the real added value of the cascade funds often emerges from the broad spectrum of guidance and mentoring services that SMEs receive. Mentoring and support are offered by the partners within the Innovation Actions, and each projects provides support to SMEs using different schemes according to their resources, project planning and objectives. Mentoring and support activities offered to the SMEs during the different phases of the FSTP journey together form an important value added for the participating SMEs. Furthermore, it is considered that mentoring activities are very important to achieve the impact expected, and the outreach of the mentoring and support activities is often broader than the actual reach of the funding.





- The **FSTP should be considered as a SME support scheme** instead merely a funding instrument because the mentoring and support are very important elements of the FSTP, at least as important as the funding itself. The guidance and mentoring services that the IAs provide to the SMEs includes a large variety of activities such as support related to leading-edge technological and technical aspects, access to infrastructures, legal support related to e.g., intellectual property rights, entrepreneurial and business coaching, support in accessing funds and finance and guidance on administrative tasks related to e.g., proposal writing and pitching, among others. Currently, the support provided to the SMEs varies significantly depending on the IA and its objectives, and sometimes restrictions in terms of time and resources available limit the mentoring and support scheme.
- The different projects and institutions delivering FSTP would significantly benefit from centralised support and guidance to deliver these services. **Better standardisation and packaging of the service portfolio and centralised guidance and support** would avoid duplication of efforts among the IAs and allow more efficient delivery of the mentoring and support services related to FSTP.



- The **mentoring support could be delivered on demand and offered more tailored manner** depending on the needs of SMEs. For example, low tech savvy companies might need a more technological oriented support, whereas larger SMEs might be more interested in networking, reaching customers or connecting with RTOs. The inclusion of KPIs during the application process has been recognised as an important tool to follow-up the project implementation, but what is more important, it can also be used to adapt the support and the mentoring towards its achievement. The elaboration of individual mentoring plans including milestones and review the evolution of the application experiments has proven to be of great support during the mentoring process.
- Mentors play a key role during the technology adoption process, therefore creating a **network of mentors and evaluators in specific technology areas** would be of value for the I4MS projects but also thinking of the new EDIHs.



In general, the **business perspective should be reinforced in the mentoring activities**. For example, synergies among the Innovation Actions and local EEN nodes or Chambers of Commerce should be explored to allow the participating SMEs to improve their business, IP and other skills.



#### **Additional support after the end of the FSTP support programme**

Considering that the role of the FSTP support is mainly focused on “test before invest” phase, the journey and contact with the Innovation Actions comes to an end when financial support ends. In terms of digitalisation process, this is often too early from the perspective of the SMEs.



- **Continuity of the support for the SMEs** should go beyond the sustainability activities of the projects after the end of the funding period. Recommendations for **future technology developments and clear roadmaps** for the time after experiments ends would facilitate the decision taking for the full adoption of the promoted technologies by the beneficiary SMEs. Improved **understanding the value and potential return on investment** related to the use of the technology and

its advantages would support the SMEs to make further investments for technology development.

- As the Innovation Actions resources are limited in terms of funding and timing, we could foresee the **EDIHs and DIHs to have a role** in further supporting the SMEs or providing SMEs during the mentoring phase with the necessary tools and knowledge to further exploit or deploy the solutions, products or improvements achieved during the experiments. EDIHs should have a clear role in support FSTP beneficiaries offering them services to reach new customers, create communication, IPR support and technology adoption plans to facilitate the exploitation of results



- **Lack of synergies between FSTP mechanism and national and regional funding schemes** is shown as one of the main barriers to exploit the results achieved during the support programme of the Innovation Actions. Fast track mechanism from regional or national funding agencies should be considered to reduce the gap between higher TRLs and commercialisation.



Digital transformation should be seen as a holistic process that, although being technology driven, needs to be considered as a **long-term project considering aspects beyond technology** such as organisational structure and governance, current skills and adaptation capacity of the workforce, the strategy and business model, investment opportunities etc. In addition to the current focus of FSTP support to the “test before invest” phase, the FSTP activities should include the design of clear digital transformation roadmaps that analyse all aspects related to digitalisation of the SME and propose a set of activities to allow the full deployment of the I4MS technologies. The different development trajectories of digital technologies, different innovation cycles within companies and differences in organisational culture, suggest that achievement of benefits of participating in FSTP project might vary significantly in time and may not be immediate. FSTP project can pave the way to new avenues of innovation but still requires a deeper analysis from the company to take action or decision to seek further investments.