



Advanced Technologies for Industry

“Moving from technology-based networks to value chain-based networks: How to improve the effectiveness of cross-border networks of ATI technology centres?”

Online workshop

24th of September (13:00-17:00), Zoom meeting

Organised on behalf of:

European Commission DG GROW

Executive Agency for Small and Medium-sized Enterprises

by IDEA Consult

The workshop “Moving from technology-based networks to value chain-based networks: How to improve the effectiveness of cross-border networks of ATI technology centres?” is one of the workshops and policy seminars organised within the Advanced Technologies for Industry (ATI) project (<https://ati.ec.europa.eu>) commissioned by the Executive Agency for Small and Medium-Sized Enterprises and the European Commission DG GROW.

The main purpose of the workshop was to gather insights to develop a series of recommendations for future networks of technology centres (TCs) providing services to SMEs in the field of Advanced Technologies. This label comprises several technologies¹ that are key for the European industry to maintain and increase their levels of innovation and competitiveness: Advanced Materials, Industrial Biotechnology, Nanotechnology, Advanced Manufacturing Technologies, Micro and nano-electronics, Photonics, Artificial Intelligence, Security, Connectivity, AR/VR, Big Data, Blockchain, Cloud, IoT, IT for Mobility, and Robotics.

ATI Technology Centres are defined as public or private organisations carrying out applied research and close-to-market innovation (Technology Readiness Levels TRL 3 to 8, including at least one TRL >5) in Advanced Technologies. The concept of networks of ATI technology centres refer to networks providing technology facilities, services and expertise to SMEs in the field of Advanced Technologies (AT). These networks act as a single-entry point ("one-stop shop") for SMEs willing to get access to the technology services and facilities available from the technology centres in the network.

In order to structure the discussions and recommendations, three models of collaboration between TCs were presented. Participants discussed the relevance of these models, as well as their advantages and limitations with respect to facilitating the access of SMEs to these technologies.

¹ <https://ati.ec.europa.eu/sites/default/files/2020-06/Technology%20definitions.pdf>



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Agenda

13:00-13:15	Welcome
13:15-13:45	Introduction to the concept of value chain-based networks: recommendations from the “Study on Access of SMEs to KETs technological centres”
13:45-14:45	Presentation of three best practice models of cross-border networks of ATI technology centres
14:45-16:30	Discussion
16:30-17:00	Conclusions and Next Steps

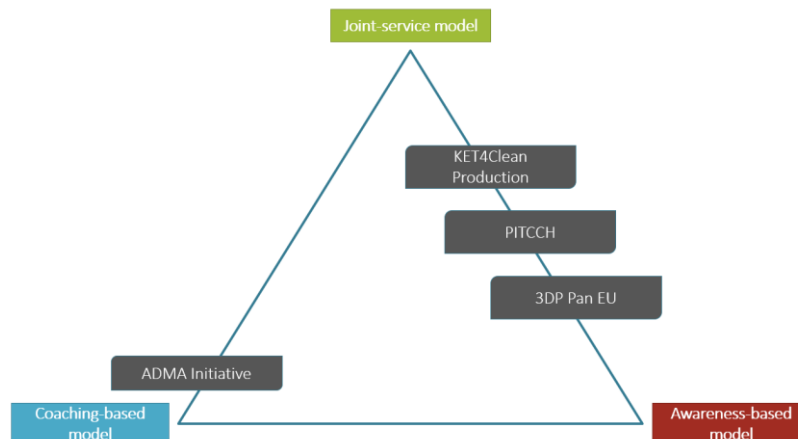
The three models of collaboration discussed were the following:

- **Joint-service model:** The primary target of this type of networks would be SMEs that have a previous understanding of their technological needs. This includes supplier SMEs, start-ups and some downstream SMEs if they have the knowledge on the type of technological solution they need. These TC networks are best placed to provide support in the provision of joint services to companies, hence increasing their offer to companies by complementing it with that of other centres in the network. In so doing, these networks also facilitate the access to services required when these are located in another country. In addition, these networks can assure the streamlining of the innovation process across different TCs or other service providers as the project moves up the TRL ladder. This diminishes the costs for the SME and lowers the barriers of access as it is clear from the beginning of the project which technology centre can develop/work on which part of the project.
- **Awareness-based model:** Like the previous model, these networks target primarily SMEs that are looking for a certain technological solution. The main difference with the former model is that this kind of networks mainly focus on making visible the available offer. It is up to the companies to find the service providers that are more suited to their needs. There is hence no streamlining of the services along the innovation chain across different technology centres (i.e. no joint services).
- **Coaching-based model:** These networks are characterised by their focus on downstream SMEs, that is, those SMEs that require support in 1) identifying the challenges that could be addressed through technology development or uptake; 2) determining the priorities in terms of development or investments. These networks are best placed to provide support in coaching the SMEs to start the innovation process by helping them identify and prioritise their needs and deriving them to the most appropriate technology centre, or “joint-service” or “awareness-based” network.

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Key points from the presentations

Figure 1: Location of the presented initiatives across the three models of collaboration



Source: IDEA Consult

- Conclusions:** The three models of collaboration were displayed in a pyramidal shape showing that current models of collaboration tend to be closer to one or two models. The location of the four initiatives presented during the workshop was discussed with the speakers. In general, there was an agreement on the location of the initiatives although it was stressed that even though the networks might be closer to one or the other model, they often integrate elements from another model. This was the case for instance of the KET4CleanProduction project, whose main aim is to offer joint services to SMEs. It also integrates elements however from the other models of collaboration, such as the mapping of technology centres (i.e. awareness-based model) or the support to SMEs to carry out their innovation projects (i.e. coaching-based model).
- Some questions addressed the distinction between networks of technology centres and Digital Innovation Hubs (DIHs).** The latter were presented as more “place oriented”, focused on developing the ecosystem and the provision of services to local industry. The networks of technology centres were presented as more “excellence oriented”, bringing together state-of-the-art technology and support to companies, making available services to companies that they might not find in their local environment. The representatives of the four projects presented in the workshop agreed that the link with the Digital Innovation Hubs in each of their projects is evident and that they are complementary to the work carried out by the DIHs. It was noted that the more downstream one goes, the more place-oriented the approach needs to be in order to be able to give a tailored solution to the needs of the local industry. Language and geographical proximity were also pointed out as important factors when trying to facilitate the access to SMEs to these networks.
- All presented projects indicated that they are exploring alternatives for self-sustainability** of their initiatives after the end of public funding, yet all of them were still in the early stages of this process.



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Questions and Answers:

The discussion was structured on four main dimensions, each of them addressing a different aspect of the future of collaboration networks of technology centres:

- Openness to relevant contributors
- Internal functioning
- Service portfolio
- Pan-European scope

Openness to relevant contributors: which actors should be involved in the future networks of ATI technology centres and how should they be involved?

The participants and speakers were inquired about the types of organisations that need to be involved in the network and how this involvement could take place. Several examples of other types of collaboration were given, such as clusters, technology providers, regulatory/IPR experts or even actors specialised in access to finance, life cycle or market analysis.

It was stressed by various participants that other organisations should also be taken into account, especially those that are closer to the SMEs, such as **clusters or Digital Innovation Hubs**. The main purpose of this would be to facilitate as much as possible the SMEs' access to the network(s). In this sense, it was noted that clusters are "multipliers" and that one of their aims is to connect their companies to these networks.

While the connection with clusters and DIHs was cited as an important element for the three models of collaboration, it was also stressed that it becomes even more important for downstream SMEs – i.e. those with little in-house R&D knowledge and skills - , as it is more difficult for these companies to know which networks and services are available and which ones are better suited for their needs. The members of the European Enterprise Network (EEN) were also mentioned as potential actors able to support ("coach") the SMEs.

Internal functioning: how should the internal functioning of future networks look like?

The second dimension that was discussed referred to the internal functioning of the networks: i.e. which are the best approaches for the internal functioning and structure of these networks? Different modes of functioning were presented for each of the collaboration models.

There was an agreement on the fact that joint-service models tend to be less flexible as they require more coordination between their members. These networks are however the ones that are able to provide a more complete set of technical services to their SMEs. It was mentioned that the awareness-based model requires little coordination with the TCs or other organisations involved in it (e.g. those displayed in the mapping or catalogue) but that these initiatives tend to face a high competition with commercial mappings that ask a fee to organisations to appear in them.

This argument raises the topic of risks related to the long-term sustainability of publicly funded models. Networks that require more coordination between their members, also require more public support. The importance of having a clear and strong value proposition was pointed out as a relevant dimension. Companies will be inclined to pay for certain services if they really see a value in doing so.



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In addition, it was noted that often the fact of paying for (part of) the services make the service more valued by the company compared to a situation in which the service is provided for free.

Participants raised the question on the extent to which the type of services provided by these networks should be considered as a public good and hence should be financed by the public sector or, whether, in the absence of public support, there would be no market failure.

- Some answers to this question pointed at the fact that these networks have important **positive externalities** that also need to be taken into consideration, such as the increased collaboration between centres and synergies, leading to a greater capacity to support companies and to a stronger innovation capacity.
- The **broader context** is also important: in the absence of public funding there could be some scattered brokers carrying out suboptimal searches for the SMEs. In addition, in order to follow this approach, SMEs would need to have a stronger access to venture capital to be able to implement and develop major innovations (as in the US model).
- The **involvement of national and regional authorities** was also pointed out: participants indicated that regions and countries often only support financially those innovation projects carried within their own borders. More support for cross-border provision of services would therefore be necessary.
- Another aspect that was raised during the discussion was that many networks have an **“explorative” approach**, implementing new methods to try to solve existing problems. In this sense, public support is essential to foster this type of innovation. In addition, flexibility was mentioned as one of the major cornerstones for future networks aiming at being self-sustainable in the future without public support.

The three models of collaboration that were presented could be considered as tasks that have to be performed in parallel. As pointed out previously, for most SMEs coaching is essential. Joint-service and awareness would be more suited for technology savvy SMEs.

Participants raised the idea that downstream SMEs or start-ups will usually approach very different networks and that they will be willing to pay for different services. This needs to be taken into account when designing a sustainable network. One of the participants indicated that one of the biggest problems for SMEs is to identify where they can get trusted support among the myriad of different centres and networks.

Facilitating new opportunities for collaboration was also discussed. Many ongoing collaborations are based on long-term relationships that have enabled the generation of trust among their members. The fact that public support often focuses on short term actions jeopardizes the creation and development of new opportunities for collaboration. The idea of trust was also raised by other participants indicating that there should be support to look for new collaborations between TCs: otherwise future networks would mostly rely on the existing ones because they are the ones that have already developed sufficient trust among their members over time. In addition, this lack of new collaborations could also hinder the capacity to innovate at a broader level.

In terms of the structure of the network, some participants indicated that it would be preferred for the coordinating entity not to be a provider of services, hence ensuring that the requests from companies are attributed to those service providers that can best fulfil the needs of the company.



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Possibilities for training were also discussed: There are a lot of competing free educational resources in the marketplace, so the services offered by the networks need to provide an added value.

Service portfolio: How to design the service portfolio of future networks of ATI TCs?

Information on how the service portfolio could be structured in each of the collaboration models was presented. Participants raised the idea that awareness raising activities of the potential of advanced technologies should always be part of these networks as these are key for SMEs to be aware of the solutions and the tools that can be implemented in their companies. In this sense, it was mentioned that this would be the type of network for which SMEs would be less inclined to pay for their services.

There was consensus on the idea that downstream SMEs require more support to access the networks as they often require assistance and support to determine the priorities in terms of development or investments. However, this does not imply that technology suppliers or start-ups do not require coaching, but rather that the type of coaching is different: in the case of start-ups, for instance, this coaching would be more focused on other elements, such as market development, IPR, etc.

Participants raised the idea that in most cases, SMEs do not have a technology need but rather a need for a quick solution to address the needs of their customers. They mentioned that the key value of a network is to 1) deliver value to the relevant stakeholders (users) and 2) to keep a critical mass of participants (supply side). Most efforts have been focused on the supply side, but that there is still a lot of barriers to overcome on the demand side that prevent SMEs from accessing to these networks: e.g. cultural barriers, language, distance, etc.

Participants mentioned that two important success factors for the joint-service model are 1) a clear definition of the core competences of the network and 2) having a mechanism that gives quick feedback to SMEs on whether the requested service can be provided. Some participants warned against the development of "one-stop-shops for everything". This idea was linked with the different services needed by different types of SMEs (i.e. downstream SMEs vs start-ups and technology suppliers). There were some comments on the extent to which a pure coaching model would be able to understand the needs of the SME quickly and fully.

Pan-European scope: making visible the available offer?

Various participants mentioned that there are many networks active at present, and that it is often difficult for technology centres to keep up to date with this evolving landscape, even more so for SMEs. There was consensus on the idea that a future European meta-network offering a comprehensive and transparent overview of the EU landscape of ATI technology centres and related initiatives would be needed. Figure 2 shows the level of support for a series of statements expressed by the participants of the workshop. The strengths of such a pan EU meta-network would be diverse: first, it can help to integrate the existing offer, to identify synergies and complementarities across existing initiatives and to facilitate the transmission of information from policy makers to organisations and networks. In addition, such pan EU networks could be interesting for transversal technologies and interdisciplinary needs. The initiative Smart Anything Everywhere (SAE)² was mentioned as an example of several initiatives being promoted together.

However, some nuances were made: the design of this pan EU network would need to be user oriented to facilitate SMEs' access to the information on these networks. Other nuances referred to

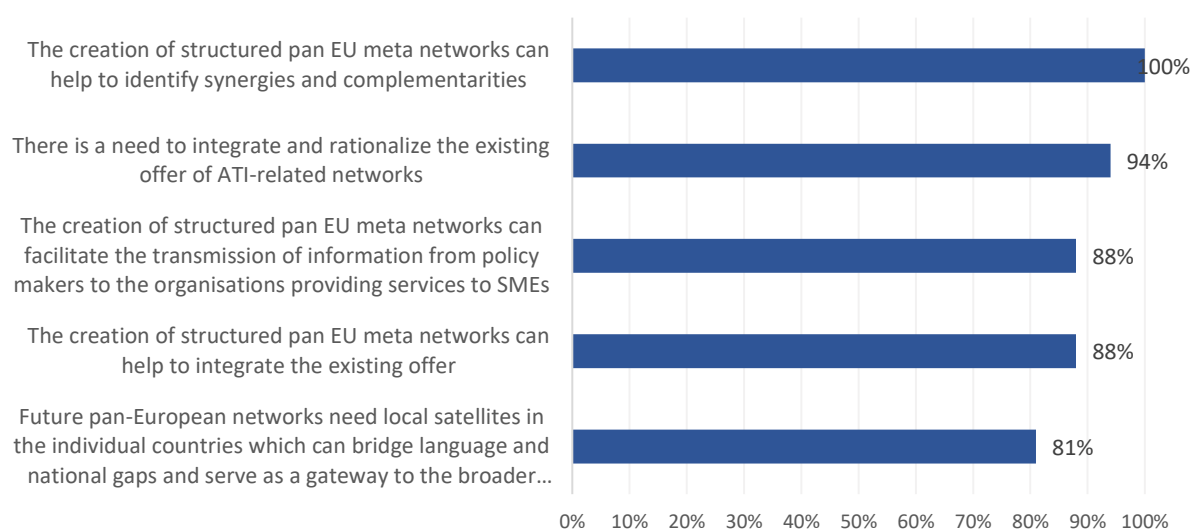
² <https://smartanythingeverywhere.eu/>

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the type of initiatives that could be integrated in such pan EU network, such as the European Pilot Production Network³ or the Vanguard Initiative⁴.

Finally, it was suggested that in addition to a pan EU meta network, there was a need for a wide communication campaign about the ongoing initiatives. Reaching out to SMEs is always a challenge for networks and a structured pan EU communication campaign would be useful in this regard. The previous WATIFY project⁵ was mentioned as an example of the type of initiative that could be rolled out and expanded.

Figure 2: Support for Pan EU meta networks



Note: Share of workshop participants indicating that they agree with each statement.

Source: IDEA Consult

Quantitative overview

The workshop organisers launched a short poll among participants to gather quantitative input to substantiate some of the ideas discussed during the workshop. In this poll, 70% of the participants indicated that their organisation is currently working in networks following at least one of the models discussed during the workshop, and 100% indicated they plan to do so in the future.

Participants were asked to rate the added value of the different collaboration models for each type of company. The results are shown in

Table 1 below. These figures confirm the ideas discussed during the workshop:

- **The joint-collaboration model is perceived as having a higher added value for technology supplier SMEs.** 85% of the participants considered that this model offers a high added value for these companies, compared to 38-40% for the other types of companies.

³ <https://www.eppnetwork.com/>

⁴ <https://www.s3vanguardinitiative.eu/>

⁵ <https://ec.europa.eu/growth/tools-databases/dem/watify/>

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- **The coaching-based model is more interesting for downstream SMEs and for start-ups** than for technology supplier SMEs. This finding relates to the idea that different types of coaching would be required by these two types of companies: downstream SMEs would require support in the identification of innovation needs, investment priorities and innovation partners to support them in the process, while start-ups would require support for the development of new markets and applications, IPR, etc.
- **The awareness-based model obtained a similar added value for both downstream SMEs and start-ups:** approximately half of the participants indicated that this type of model could have a high added value for these companies. The benefit for technology suppliers was, on the other hand, less obvious: 31% of the participants indicated that this model could have a high added value for this type of companies.

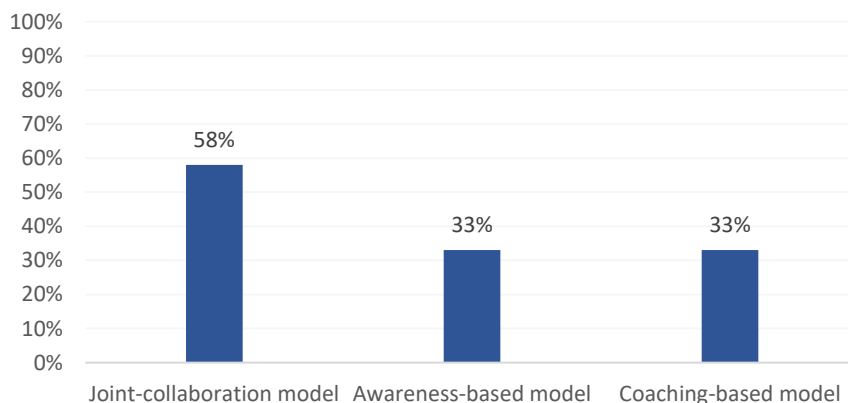
In terms of the added value of the models of collaboration networks for the ATI technology centres, two out of three respondents indicated that the most valuable model for these organisations was the joint collaboration model (see Figure 3). Only one out of three participants indicated that the awareness-based model and the coaching-based model had a high added value for TCs.

Table 1: Share of participants indicating a that the model has a high added value for each type of company

	Joint-collaboration model	Awareness-based model	Coaching-based model
Downstream SMEs (little in-house R&D knowledge)	40%	50%	60%
Start-ups	38%	54%	69%
Technology supplier SMEs	85%	31%	15%

Source: IDEA Consult

Figure 3: Added value of the models of collaboration for AT Technology centres



Source: IDEA Consult