

ADDITIVE MANUFACTURING AND 3D PRINTING EUROPEAN CONFERENCE

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organised by

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European Association of
the Machine Tool Industries

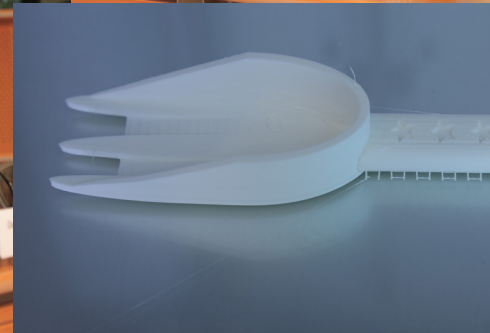
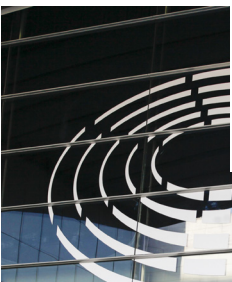
**Helping industry and policy makers to build together a
European strategy for additive manufacturing**

Takeaways

Organised by CECIMO and co-hosted by the Members of the European Parliament Dario Tamburrano (EFDD - IT), David Borrelli (EFDD - IT), Reinhard Bütikofer (Greens/EFA - DE), Eva Kaili (S&D - GR) and Andrey Novakov (EPP - BG), the second edition of the Additive Manufacturing European Conference gathered policy-makers, leading companies in advanced manufacturing and machine tool building as well as a wide range of stakeholders. Their presence confirmed the heightened interest of these actors in forging a European strategy on additive manufacturing, seen as the best way to make it a mainstream technology.

Four key conclusions have been drawn during the conference:

- **A global race is under way to industrialise additive manufacturing, and Europe has to increase the intensity of its coordinated efforts to prevail.**
- **Policy measures are necessary to improve access to finance for the industry, especially for its resource-limited SMEs.**
- **Skills are crucial for accelerating the uptake of additive manufacturing across Europe. A paradigm shift in education is needed to provide learners with the skills they truly need.**
- **Common standards and a uniform certification system would greatly facilitate the exploitation of additive manufacturing capabilities by businesses.**





A common approach for pushing European interests

"Europe is at risk of lagging behind", said **Dario Tamburrano** while giving an overview of initiatives across the globe on additive manufacturing. He brought the audience's attention on the struggle of European policy-makers to catch up with the rapid pace of developments in additive manufacturing. Drawing a parallel with the readiness to act in other regions of the world, Mr. Tamburrano later said that a shift in approach must be made at European level, since additive manufacturing brings undoubted advantages when meeting societal challenges such as energy saving and resource efficiency.



Filip Geerts, director general of CECIMO, came to similar conclusions. While mentioning the well-aimed initiatives by EU authorities in the area, he stressed these were scattered and mostly concentrated on earmarking additional public funds. "Europe lacks a common strategy to compete with actors such as the US, China and Japan. If we want to raise the know-how bar and outperform international competitors, we need to pool expertise and devise a coordinated approach to foster the AM-uptake."



The risk for Europe to miss the next round of innovation was also raised by **Reinhard Bütikofer**. "In this global race, it will be the pace at which actors will commercialize technology that will dictate who will win", he said. "Europe is in a good starting position, with its wide array of talented engineers. Yet, what we miss is ambition and a real common European strategy." He then explained some of the reasons for such absence of coordination, addressing the dysfunctional relationship between the national and European layers of government. Mr. Bütikofer cited the Juncker Investment Plan as an example. In its design, further potential for European added value was relegated to the background in favour of projects merely satisfying local needs.



For **Andrey Novakov**, it is also a question of keeping up with a fast-paced economy. The rise of new business models triggered by technologies like additive manufacturing, he said, challenges the expected speed for policy-making decisions. European authorities now have to always stay current on technological developments, as these cut across a wider range of sectors than ever before.



While policy-makers seem to struggle to get a grip of the latest developments in this area, practitioners are already embracing the disruptive force of additive



manufacturing. As **Jean-Camille Uring**, Executive Board Member Five Group and member of the CECIMO Board, affirmed, the machine tool builders' interest for AM's capabilities is in constant growth. The industrialists' appeal to decision-makers is ultimately this one: to create a truly European strategy for the development of this technology, that will be able to capitalize on the expertise accumulated and to position the European sector as the global leader in this area.

Skills at the service of machine tool builders

The importance of relying on a competent workforce emerged as a pressing priority in Europe's quest to industrialize additive manufacturing. All panellists emphasized, to various degrees, this technology's impact on the skills needs in advanced manufacturing. This all comes at a time when the European Commission, as underlined during the event, is set to present a new ambitious initiative for a Skills Agenda. In this context, education plays a major role. For **Claudio Becchetti** of CrowdforAfrica, "formal education systems need to be modernized in order to better reflect the new reality of skills". Today, he said, skills development in industrial technologies is too often confined to the non-formal education environment. According to Mr. Becchetti, schools should make 3D printers available for students during teaching hours, as youngsters are well-positioned to quickly acquire digital competencies. **Eva Kaili**, involved in employment affairs at the European Parliament, pointed out how digital abilities will be increasingly needed to fill the jobs of the future. "We have to foster today the competencies of tomorrow's generation by mobilizing investments not only on the technology as such, but also on the societal aspects linked to it," she remarked.

Some businesses have already coped with the issue on their own. **Antonio Alliva**, co-founder of 3D Italy, shared the example of his company. After establishing contacts with regional authorities, he started setting up an academy of digital manufacturing to train future talents in additive manufacturing processes. "We thought about gathering all our expertise and put it at disposal of companies," he said. Mr. Alliva then addressed a proposal to the European institutions: "Creating a European observatory on additive manufacturing skills demands would be useful for firms. It could provide market intelligence tailored to the specific peculiarities of different companies, and allow industry to rely on a competent workforce".



From the top: Dario Tamburrano, Filip Geerts, Reinhard Bütikofer, Andrey Novakov, Jean-Camille Uring, Claudio Becchetti, Eva Kaili, Antonio Alliva

Easier access to finance for innovative businesses

A common theme among speakers was the need for adequate access-to-finance conditions for companies in additive manufacturing. **Peter Dröll**, Director for Key Enabling Technologies at DG Research & Innovation of the European Commission, affirmed that the number of EU research projects on the commercialization of this technology has considerably increased. This, he mentioned, reflected the high attention that the European Commission devotes to this issues. Mr. Dröll added, however, that “while it is true there are multiple paths for access to finance in Europe, availability of risk capital is scarce across the continent, and about 20% lower than in the US.” That is the reason why, he says, the European Commission has launched an initiative with the intent to offset this problem: its venture capital fund of funds will put at disposal of entrepreneurs over 100M EUR. Nevertheless, private investments will also be relevant, according to Mr. Dröll. Even if their leverage effect is indirect, there is a pressing case for them to play a supportive role, he stated.

Ronan Burgess, Deputy Head of Unit at DG Communications Networks, Content and Technology, pointed out the public authorities’ major role in supporting Europe’s industry in its path towards digitalization. Recognising that additive manufacturing lies at the core of this digitalization process, Mr. Burgess indicated public-private partnerships as one useful instrument for the set-up of digital platforms. “We need to create more digital hubs by building upon the strengths of our industrial base, and look at SMEs in particular. It will be key to further exploit opportunities already present at regional level.”

David Borrelli emphasized the CECIMO’s recommendations on access to finance contained in its European draft strategy on additive manufacturing. He recalled how strengthening the still underdeveloped venture capital market in Europe remains essential for European SMEs, especially in the light of the overwhelmingly low level of venture capital investment in comparison to that in extra-European markets. Public incentives, he further stated, are also important, but need to be better fitted for the continent’s innovation-prone SMEs in additive manufacturing.

Stefan Ritt, Head of Global Marketing and Communications at SLM Solutions, raised a notable point on public incentives too. “European funds should not only be earmarked for firms and their infrastructure. They should rather also finance the new business models that are emerging in companies involved with this technology. For example, in metal-based additive manufacturing, there is only one model

of mass customization, and it is for dental crowns”, Mr. Ritt stated.

Common standards and a uniform certification system

“Even if our products have the CE mark and are marketable in Europe, we still encounter problems in selling them in some European countries. In the US, on the contrary, products who get federal certification can be sold everywhere across the country,” affirmed **Bart Van der Schueren**, Vice-President for Industrial Production at Materialize. Harmonizing the certification system all over Europe would facilitate the recognition of health and safety standards and boost the use of additive manufacturing products in sectors such as medical devices, according to Mr. Van der Schueren. “It would allow the EU to move forward on the path for a real single market, instead of the 28 national markets we have today.” The case for common standards and a harmonized certification system was made by most of the panellists at the conference.

Martin Schäfer, Project Manager at the Siemens Research & Technology Center, shared with the audience a viable option for defining common standards on additive manufacturing. He explained the goals and intent of the AM platform, of which he is also President. The initiative brings together a wide and heterogeneous group of AM stakeholders, who meet to discuss about specific issues with a view to maintain at the core the commercialization aspect of additive manufacturing. Results are already tangible. A solid proposal on common standards was presented in the platform’s roadmap paper.

For **Jeroen Wijnen**, Senior Vice-President Product Management at Ultimaker, certification is an area where contributions are needed from a broader range of actors than first expected. Mr. Wijnen explained how enterprises in additive manufacturing have to seek quality inputs from materials suppliers as well. These would make the issue clearer and facilitate a more solid approach.

Phil Reeves, Vice President of Strategic Consulting at Stratasys, shared this view for an ample approach on certification if fostering a uniform model is the goal. He explained how his company is often called to provide inputs on the issue, but support is also needed from other industries. “We invite various sectors, such as the aerospace and medical devices, to collaborate on certification. We should know, however, that this would imply for them to share specific information, which could lead to losing some competitive advantage.”



From the top: Peter Dröll, Ronan Burgess, David Borrelli, Stefan Ritt, Bart Van der Schueren, Martin Schäfer, Jeroen Wijnen, Phil Reeves



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