

Formnext 2023

Siemens, DyeMansion, HP, BASF Forward AM and EOS navigate AM users through the complex landscape of additive manufacturing

- **Leading additive manufacturing companies are forming the Additive Manufacturing Industrialization Navigator (AM I Navigator) initiative.**
- **The initiative offers AM users individual guidance with a comprehensive approach to navigate the complexity of the evolving landscape in industrial 3D printing.**
- **Holistic maturity model defines the five stages of additive manufacturing (AM) industrialization – reflecting the big picture of what it takes to adopt and realize AM applications for specific business cases.**

AM industrialization ahoy! Every pioneer only reaches his destination with a good navigator. But what level of automation does a company need for its specific applications and business cases? It is a long and complex road to evolve their production through additive manufacturing. This requires a. o. different degrees of automation, connectivity, repeatability and quality, process know-how and material knowledge. Recent developments along the entire 3D printing process chain promote the reproducibility, throughput and productivity of additive use cases - from material to final product. However, the applications only unfold their full potential if everything is aligned with the company's actual business model.

But pragmatists doubt whether industry or its companies are ready for it yet. The Additive Manufacturing Industrialization Navigator (short AM I Navigator) charts the course through the complexity in industrial 3D printing for companies with varying levels of industrialization in additive manufacturing and different application requirements.

AM I Navigator - What's behind it?

The AM I Navigator Initiative is being introduced at this year's Formnext by leading additive manufacturing companies – Siemens, DyeMansion, BASF Forward AM, EOS and HP. Its holistic maturity model is shaping the stages of industrialization in the AM industry, increasing interoperability in additive manufacturing. The model defines the stages of industrial 3D printing along the entire process chain from material to machines to automation. Moreover, creating a common understanding of the different stages helps AM users find ways to scale and integrate additive manufacturing into traditional production workflows.

The factors for the respective stages come from different areas and include more than just production:

- a strategy setup composed of an additive manufacturing strategy, applications and business cases
- Organizational structures and cultural maturity of employees
- Expertise, automation and connectivity along the entire value chain from design through production to quality, maintenance and service

With the AM I Navigator to the right strategy for additive manufacturing

The status quo of additive manufacturing can be analyzed by applying a Maturity Check for each company following the structure of the AM I Navigator framework. The check is a structured approach that will show the current maturity level of additive manufacturing and the potential for improvement for the company in question. The approach is based on the Siemens Digital Manufacturing Excellence learnings. Depending on the use case and business model, a company requires a different "maturity level" in additive manufacturing. With the framework AM users can refine their current status as well as their future target into five levels: from basic manual production to fully autonomous additive production.

Based on this structured approach, detailed recommendations are available for action on how production can be further developed in the respective company. It is particularly important that the individual steps in the process chain are coordinated with each other. Only open and interoperable additive manufacturing adds value to the entire

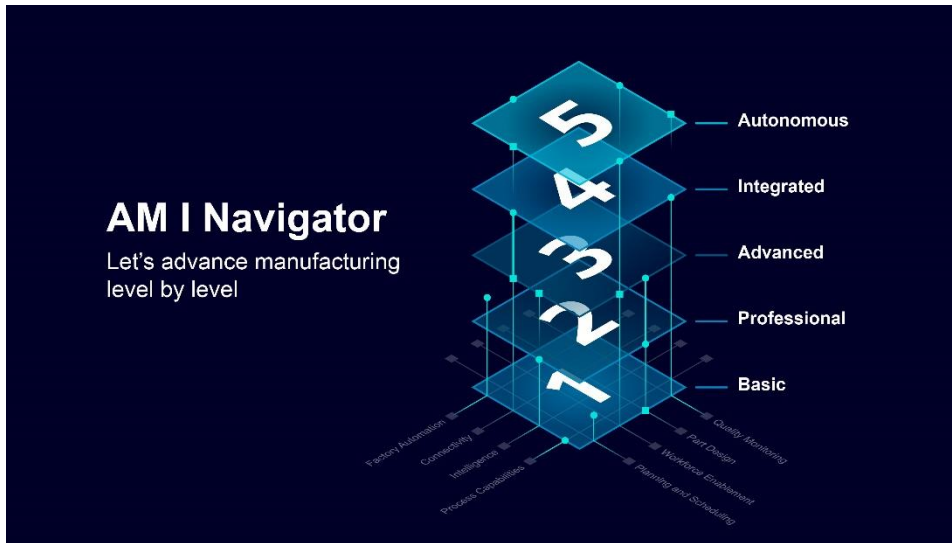
production. Suitable action steps will lead to the individually desired target state - depending on the application and maturity level of the company. The results from the checks are made available to the respective company and may act as best practices to provide a detailed picture of the evolution of industrial 3D printing.

Cast off toward a larger initiative

Additional AM technology providers worldwide are welcome to join the first wave pioneers to further shape the AM I Navigator initiative together. The initiative is open to other thought leaders from all industries to build related offerings on it.



The AM I Navigator Initiative navigates through the complexity of the evolving landscape in industrial 3D printing.



With the model companies can refine their current status as well as their future target into 5 levels

You can find this press release and press photos under <https://sie.ag/CzmRb>

Attend [the joint panel of all participants](#) of the initiative on Wednesday, 08.11.23 from 16:15 - 16:45 on the Technology Stage.

More press information about Siemens and Formnext:

www.siemens.com/presse/formnext23

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Siemens Digital Industries (DI) is an innovation leader in automation and digitalization. In close collaboration with partners and customers, DI drives the digital transformation in the process and manufacturing industry. With its Digital Enterprise portfolio, Siemens offers companies of all sizes end-to-end products, solutions and services for the integration and digitization of the entire value chain. Optimized for the specific requirements of each industry, the unique portfolio enables customers to increase their productivity and flexibility. DI is continuously expanding its portfolio through innovations and the integration of future technologies. Siemens Digital Industries is headquartered in Nuremberg and employs around 72,000 people worldwide.

Siemens AG (Berlin and Munich) is a technology company focused on the fields of industry, infrastructure, mobility and healthcare. Resource-efficient factories, resilient supply chains, smart buildings and power grids, low-emission and comfortable trains, and advanced healthcare - the company supports its customers with technologies that deliver tangible benefits. By combining the real and digital worlds, Siemens empowers its customers to transform their

industries and markets, improving everyday life for billions of people. Siemens is the majority owner of publicly traded Siemens Healthineers - a global leader in medical technology that is shaping the future of healthcare. Siemens also holds a minority stake in publicly listed Siemens Energy, one of the world's leading companies in power transmission and generation.

In the fiscal year ending Sept. 30, 2022, Siemens Group generated sales of €72.0 billion and profit after taxes of €4.4 billion. As of Sept. 30, 2022, the company employed around 311,000 people worldwide. For more information, visit www.siemens.com.

DyeMansion is the global leader in post-processing solutions for industrial polymer 3D-printing that turns 3D-printed raw parts into high-value products. From perfect fit eyewear to personalized car interiors, their technology makes 3D-printed products become a part of our everyday life. Starting in 2015 with the first industrial coloring solution for powder bed fusion parts, the Munich-based company extended its portfolio with advanced part cleaning and surfacing solutions for a wider range of 3D-printing technologies in the field of plastics. Today, DyeMansion's Print-to-Product workflow combines industry-leading hardware with the widest range of color and surfacing options on the market. Their systems are applicable for Industry 4.0 and can be integrated seamlessly into various production processes. The ability to provide a flexible solution for both small batches and high volumes makes DyeMansion a trusted partner for future factories. Through close collaboration with customers across all industries, the 3D-finishing technology and expertise continuously grow with the market. Reduced cost per part, unmatched quality, and high sustainability are core values that drive each innovation of the fast-growing company. In addition to these principles, finding the right finish for every application is what drives them.

Learn more about DyeMansion and visit www.dyemansion.com, [LinkedIn](#), [Instagram](#), [Twitter](#) or [YouTube](#).

HP Inc. (NYSE: HPQ) is a global technology leader and creator of solutions that enable people to bring their ideas to life and connect to the things that matter most. Operating in more than 170 countries, HP delivers a wide range of innovative and sustainable devices, services and subscriptions for personal computing, printing, 3D printing, hybrid work, gaming, and more. For more information, please visit: <http://www.hp.com>.

BASF 3D Printing Solutions GmbH, headquartered in Heidelberg, Germany, is a 100% subsidiary of BASF. It focuses on establishing and expanding the industrialization of 3D printing applications under the Forward AM brand with advanced materials, system solutions, components, and services in the field of 3D printing. BASF 3D Printing Solutions operates in an agile structure to create customer value with complete 3D printing solutions, in collaboration with partners, for the most innovative applications. It cooperates closely with the global research platforms and application technologies of various departments at BASF and with research institutes, universities, startups and industrial partners. Potential customers are primarily companies that intend to use 3D printing for industrial manufacturing. Typical industries include automotive, aerospace and consumer goods. For further information please visit: www.forward-am.com.

At **EOS**, we provide responsible manufacturing solutions based on additive manufacturing technology to companies around the world. Connecting high-quality production efficiency with pioneering innovation and sustainable practices, we were formed in 1989 and since then, are shaping the future of manufacturing. Our industrial 3D printing solutions enable our customers to be successful by having access to a holistic portfolio of services, materials and processes. Acting responsible for our planet and keep on thriving for sustainable alternatives and solutions is part of our DNA and anchored in our purpose of responsible manufacturing.