



OPEN MANUFACTURING
PLATFORM

Accelerating Manufacturing Innovation at Scale:

Solving mutual challenges through open collaboration

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The State of Manufacturing

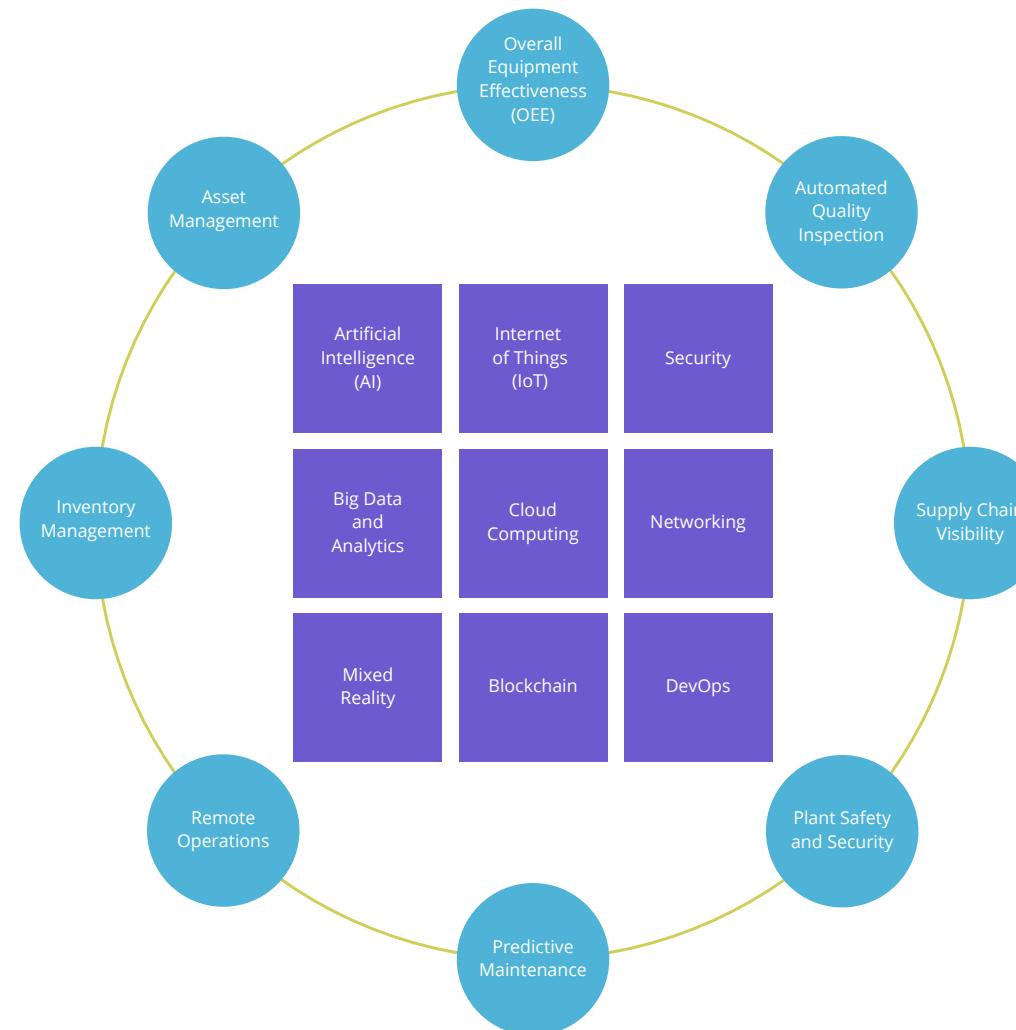
Our sector is undergoing a wholesale digital transformation in both the things we make and the way that we make them. New technologies are reinventing what's possible, upending the competitive landscape, making smart factories a reality and smart products pervasive.

Manufacturers that have effectively implemented these technologies gain significant advantages such as greater operational efficiencies, factory output, customer loyalty, and net profits. They quickly adapt to new challenges – including the unexpected, like COVID-19 – because these technologies empower them with capabilities such as:

- visibility and agility across the entire supply chain
- the ability to make quick, data-backed decisions by rapidly simulating alternatives and identifying patterns in large data samples
- the ability to ramp-up production of urgently needed supplies through the use of 3D printing

However, as manufacturers, we face formidable challenges in adopting these new technologies. We often share the same problems and have struggled to solve them alone, investing significant resources for an indeterminate ROI. For instance, a common challenge felt throughout our sector is connecting industrial equipment to the cloud, ensuring data from modern and legacy systems is interoperable and usable to make holistic decisions and predictions, building autonomous systems, and more.

But these challenges can be overcome through the power of open collaboration. Experience tells us that when industry faces a non-differentiating challenge or opportunity, it is a common, collective and collaborative response that results in the most powerful innovation. Efforts like the WC3 that established and maintains standards for the World Wide Web, the IEEE and Linux Foundation networking can't be underestimated in their ability to address disruption and speed adoption of new technologies. In this eBook, we explore the most critical challenges and opportunities facing manufacturers today, and how the Open Manufacturing Platform can help them collectively solve real-world problems, accelerate innovation, and define the future of manufacturing.



The Most Common Challenges Limiting Manufacturers

What keeps manufacturers up at night, and what are the obstacles to smart manufacturing?



An ever-changing landscape

As manufacturers, we face increasing trade and regulation uncertainties, ever-changing market opportunities and customer demands, as well as tremendous competitive pressures from companies that have embraced new technologies and disrupted the sector.



Scaling from POC across the enterprise

Data shows the majority of manufacturers get stuck in proof-of-concept (POC) purgatory and developments rarely go into production. When projects encounter deeper complexities and challenges, companies lose sight of the value they originally aimed to deliver. The group championing the POC has a small voice in keeping it alive.



Disconnected silos

Data, product lines, and business groups are disconnected, causing widespread fragmentation and ultimately slowing the pace of innovation. Opportunities for cost synergies and shared resources are lost. Operational technologies (OT) remain disconnected and miss out on the opportunity to create new efficiencies by applying the intelligence of information technologies (IT).



Lack of in-house skills and expertise

Solutions that are effective, secure, and scalable take time to design and build. They require skills and experience that are often difficult to obtain in-house. And despite the long-term benefits, companies need internal alignment on the up-front investment.



Agility in crisis response

The COVID-19 pandemic brought to light the need for agility in responding to crises quickly. From keeping up with changes in demand to ensuring worker safety and supply chain resilience, we need solutions that enable us to quickly adjust processes and practices.

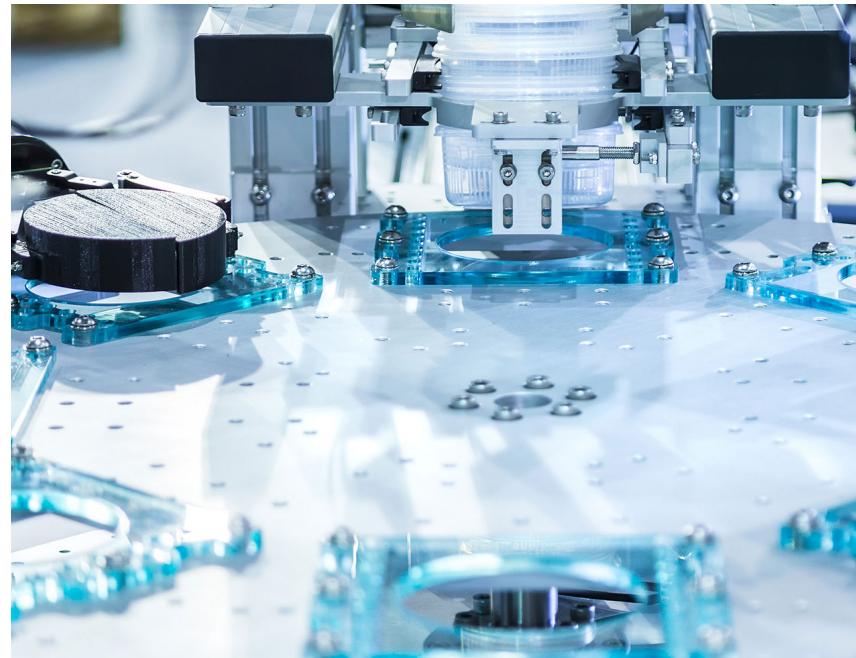
The Open Manufacturing Platform: Building the Future of Manufacturing, Today

Founded in 2019 under the umbrella of the Linux Foundation, the Open Manufacturing Platform (OMP) is a global alliance helping manufacturing companies accelerate innovation at scale through cross-industry collaboration, knowledge and data sharing, and access to new technologies.

The OMP brings together business leaders and technologists from manufacturing companies, systems integrators, independent software providers, and more to drive innovation across the manufacturing community and value chain. We bring forward platform-agnostic solutions, open standards and technologies to enable smart manufacturing, break down silos, and solve real problems for all of us—regardless of technology, solution provider, or cloud platform.

The OMP consists of a member alliance and community. The alliance includes three membership tiers, all of which may propose working group priorities, as well as contribute and consume code, reference architectures, ideas, publications, and other output. We work alongside leading manufacturers in working groups to define and use a common open data model, influence existing and future standards, and build open solutions. Members must apply, sign a contract, and pay membership fees. At the highest tier is the steering committee which

provides governance and ultimately decides on the working groups. The OMP member alliance consists of manufacturing industry leaders including The BMW Group, Microsoft, Anheuser-Busch InBev, Bosch Group, ZF Friedrichshafen AG, and more.



Anyone can participate in the OMP community, which will allow them to utilize output from any working group and stay up-to-date on OMP progress and innovations.

Under the Linux Foundation's widely respected governance model, the OMP exemplifies collaboration at its best. The table below shows participation levels for each member tier as well as non-paying community members.

OMP Member Alliance				
Benefits	Steering Committee	Associates	Contributors	OMP Community
Use the output of working groups	●	●	●	●
Stay up-to-date on OMP progress & innovations	●	●	●	●
Contribute ideas to the member alliance	●	●	●	●
Access in-depth information on working groups	●	●	●	
Contribute to working groups	●	●	●	
Influence working group solutions	●	●	●	
Propose new working groups	●	●	●	
Influence working group outcomes	●	●	●	
Participate in working group governance	●	●		
Approve new working groups	●			
Participate in OMP governance	●			

Working Groups

The heart of the OMP is collaborative working groups. These small engineering groups focus on solving prioritized challenges and have the ability to influence the future of manufacturing by establishing best practices and standards that affect the entire value chain.

These working groups use implementation frameworks, common data models and open development, following principles of transparency and collaboration. Documentation and use cases are shared by OMP members and are available to everyone. We define and use a common data model aimed at breaking down data silos and overcoming the challenges of proprietary systems and vendor lock-in.

We are currently focusing on several core areas including safely connecting operational technology to the cloud, semantic data models, Industrial IoT reference architectures, and core services for autonomous transport systems. More work groups will be formed as they are proposed and decided upon by the membership.

Members of each working group collaborate to deliver a work item or “project.” Some projects produce a document such as a requirements or use cases document, a whitepaper, or analysis. Others may develop a new capability, or update an existing capability for the OMP technology releases. These projects may create a new repository or may add, delete, or change existing repositories.





Typically, projects will follow this process:



Project ideas are submitted to the OMP Steering Committee for review. Anyone may submit an idea using the template. Proposals must have a well-defined scope and identify initial working group contributors and maintainers.

Approved projects go public and get a working group charter and applicable OMP workspace (e.g., GitHub). The working group explores ideas, builds and tests their code while following a release process, or produces a document collaboratively. Specific work packages are defined and refined throughout this step.

Projects that successfully meet defined criteria enter the implementation phase. Criteria includes legal, test, support, documentation, infrastructure, and other requirements and considerations.

Projects that successfully meet defined release criteria enter the production phase. This includes fulfilling the project's charter, adhering to best practices, completing a security audit if needed, earning approval from the OMP steering committee, and other requirements and considerations. Work packages are finalized and published. A maintenance plan is established and executed.

Get Involved

Visit open-manufacturing.org to explore the working groups, published outputs and become a member, help make smart manufacturing a reality within your organization, and define the future of manufacturing.



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