



# Design and deliver better products, faster.

Creating new competitive advantages with additive manufacturing.

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## **The opportunity: Supercharge your concept-to-launch cycle time**

It's been said that the early bird gets the worm. And in business, this is especially true. As time-to-market remains a strong focus to improve production speed, quality, and become a first-mover, additive manufacturing (AM) is emerging with new possibilities to put products into customers' hands quickly and uncover advantages that can help put you ahead of your competition. From rapid prototyping to accelerated delivery, tapping into the full capability of AM can bring a new level of transparency, value, and agility to the most critical points in your product life cycle.

### **Lock down the right design—fast**

Using AM for design iterations creates opportunities to quickly adapt products and test for fit, form, and function based on user experience. This ability to instantly touch and test prototypes from each design iteration allows your organization to generate valuable feedback and translate them real-time into product improvements. This, in turn, allows the final design to be realized sooner and accelerates the product cycle time.

## Go to market quickly and affordably

After the design is locked, during production planning and launch, AM provides unique opportunities to reduce lead times, lower production costs, and achieve efficiencies—even at low-volume production. Product iterations can be honed and tested before operation teams make massive investments in new production tools, equipment, and space. That means smarter use of resources and added flexibility for the enterprise.

## Align your design and supply for peace of mind in production

As you scale production, unpredictable demand signals inevitably emerge. AM assets can be distributed throughout the supply chain to help improve responsiveness and production speed, as well as achieve a sustainable, scalable advantage on costs. Design changes, production recalls, and feedback can be moved through product introduction, redesign cycles, and back to customers quickly. As a result, these enhancements tend to have a significant impact on collaboration, coordination, and the efficiency of new product introductions (NPIs).

## The next step: Changing how you design, launch, and scale

Establishing and scaling AM capabilities across your product development lifecycle requires a thoughtful approach to strategy and execution. Here are key principles to keep in mind:

- **Business case development:** To account for the full value of AM in product development, it's important to first determine and answer the "hows" of your organization. For example, "how can we quantify and project the ROI of using AM to increase responsiveness and shorter NPI cycles?"
- **Digital thread:** A digital thread can capture, store, and analyze digital design files, simulation information, and product feedback in a secure, traceable architecture. It is critical to unlocking value across design innovation and manufacturing efficiency.
- **Quality assurance:** There must be an understanding of the connection and tradeoffs of design, functionality, and speed achievable through AM in order to balance your customer expectations with design specifications.
- **Talent development:** New design and manufacturing tools will only be as good as their users. Engineers need to be trained in design for AM capabilities and AM-enabled product development to determine best practices.
- **Process redesign:** To properly use physical AM components for collaboration, testing, product definition, and cost minimization, higher levels of engineering collaboration are required. Standard R&D and production processes will need to be adjusted and redefined as your organization evolves.
- **Organizational roles and structure definition:** Increasing collaboration between R&D, product manufacturing, and NPI teams will require planning for how these groups interact and prioritize feedback in NPI processes.

To effectively scale additive manufacturing to its fullest benefit, you need the right support. Deloitte has the digital transformation experience and ecosystem capabilities necessary to help redefine your organization through additive manufacturing and understand how the technology can improve your bottom line. Give us a call to set up a workshop.

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