Protolabs' Innovation in Manufacturing Report Details Industry's Rapid Digital Adoption

March 24, 2026

The inaugural report examines how artificial intelligence and other emerging technologies are benefiting each stage of the product life cycle

MINNEAPOLIS--(BUSINESS WIRE)--Mar. 24, 2026-- Protolabs (NYSE: PRLB), the world's leading provider of digital manufacturing services, today released a new research report, Innovation in Manufacturing 2026, examining factors accelerating a broader technological evolution across the manufacturing industry and throughout the product life cycle. The report finds that innovation leaders are moving beyond Industry 4.0 and into Industry 5.0 as they embrace artificial intelligence to maximize speed and efficiency on the production floor**.**

Recent data showed AI-enabled manufacturing software and hardware cut development costs in half while shrinking time-to-market by 30%. Nearly 75% of manufacturers that build machine learning into processes reported reduced costs and improved operational efficiency. With that, the transformation of manufacturing through digital twins, generative AI (GenAI), accelerated manufacturing, autonomous systems, and more is occurring at a rapid pace.

"Manufacturing is at an inflection point, as the rise of artificial intelligence and digitalization provides a pathway to faster and more efficient production," said Protolabs CEO and President Suresh Krishna. "The future of our industry will be shaped by the technologies that enable companies to meet innovation pressures and shrink go-to-market timelines."

The Innovation in Manufacturing report uncovers emerging technologies used at each stage of the product life cycle:

- **Product Ideation and Concepting**: GenAI is optimizing ideation with nearly half of product development teams planning to use the resource. Digital twins and advanced simulators used in combination with GenAI are further accelerating timelines and improving quality.
- **Product Development**: Once a sequence of stages, product development activities are now happening simultaneously through the use of multi-physics simulation and AI-driven testing platforms. Developers can now execute thousands of test scenarios to dial-in design concepts.
- **Product Introduction and Growth**: With 94% of companies reporting revenue impacts due to supply chain disruption, Digital Product Passports are used to track supply chain activities and impacts, while AI-driven forecasting provides real-time supply chain analytics.
- **Maturity and Production Operations**: Scenario modeling via digital twins forecast demand for mature products. Meanwhile, manufacturers are using predictive maintenance to prevent downtime and quality management systems to report any issues before production is impacted.
- **End-of-Product Life**: The future of end-of-life production will be shaped by developing technologies including molecular recycling, biotechnology applications, and advanced materials science.

"Artificial intelligence is reshaping the entire product lifecycle, turning linear processes into continuous, data-driven loops where generative design, digital twins, and predictive analytics accelerate innovation," said Protolabs Chief Technology and AI Officer Marc Kermisch. "The future is bright as we continue to pair human ingenuity with emerging AI technologies."

Overall, the Innovation in Manufacturing report depicts a notable transition to Industry 5.0. Manufacturers on the cutting edge of adoption are complementing human expertise with emerging technologies to speed up timelines. As companies continue to embrace digitalization and AI in product development workflows, manufacturers are undergoing their own evolution to propel innovation.

Download and read the full report here.

About Protolabs

Protolabs is the world's fastest manufacturing service enabling companies across every industry to streamline production of quality parts throughout the entire product life cycle. From custom prototyping to end-use production, we support product developers, engineers, and supply chain teams along every phase of their manufacturing journey. Get started now at protolabs.com.

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