

F R O S T & S U L L I V A N

*A*PRIORI

# 2022 NEW PRODUCT INNOVATION

*GLOBAL DIGITAL MANUFACTURING  
SOLUTIONS INDUSTRY*

Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. aPriori excels in many of the criteria in the digital manufacturing solutions space.

AWARD CRITERIA	
New Product Attributes	Customer Impact
Match to Needs	Price/Performance Value
Reliability	Customer Purchase Experience
Quality	Customer Ownership Experience
Positioning	Customer Service Experience
Design	Brand Equity

A Market Snapshot

The rise and proliferation of Industry 4.0 and digital transformation continue to impact the industrial fields through automation influenced by the convergence of disruptive and emerging technologies. Various manufacturers leverage these solutions to alleviate the pressure to accelerate time to market, improve

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**- Samantha Fisher**  
**Best Practices Research Analyst**

product sustainability, and comply with regulatory bodies, while also cutting costs. More importantly, the effect of COVID-19 on global supply chains persists, resulting in prolonged wait times for materials.

As a result, the manufacturing industry is currently experiencing a paradigm shift to regional sourcing and production models, with many product manufacturers re-strategizing and designing their supply chain and supplier relationships, while simultaneously heavily investing in technology to address the labor skills shortage crisis.

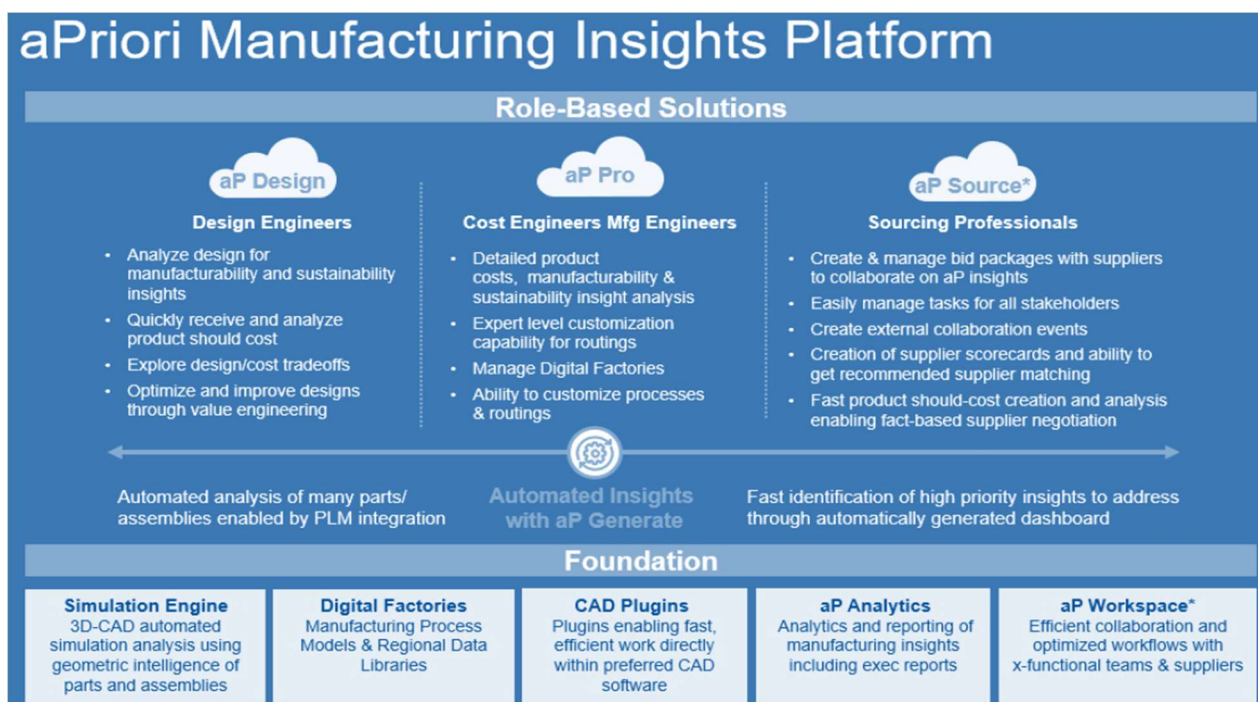
### *Innovation Excellence: aPriori*

Founded in 2003, headquartered in Concord, Massachusetts, and with offices in Japan, Germany, and Ireland, aPriori is a digital manufacturing solutions provider. A leader in the manufacturing simulation software space, the company alleviates the time constraints that pervade the product development process, moving product design and sourcing to the production floor through various cloud-based solutions, including cost analysis and manufacturability. aPriori's target industries include automotive & transportation, aerospace & defense, energy, electronics, and industrial equipment manufacturers, such as CNH Industrial, Parker Hannifin, Danfoss, and Alstom. Moving forward, the company plans to expand its presence in these sectors to strengthen its position further.

### *Setting New Standards*

Traditional product development processes often trap operators in an exhausting and expensive design process and prototype testing phase. In recent years, companies have developed digital manufacturing solutions to offer an improved experience by streamlining the process, thus saving time, manpower, and costs; however, such solutions typically fall short. Therefore, a digital manufacturing solutions provider must offer revolutionary capabilities to meet the industry's needs, enabling organizations to run efficiently on all levels.

aPriori offers technology to help its customers create high-quality parts and products faster by simulating every dollar spent during the design and manufacturing process while simultaneously minimizing their environmental impact. The company accomplishes this through its Manufacturing Insights Platform, a cloud-based solution designed to circumvent the arduous design and prototyping phase. This approach enables manufacturers to adhere to price and time constraints by incorporating and combining the most efficient manufacturability, costing, sourcing, quoting, and sustainability practices.



Source: aPriori

The technology leverages a customer's product lifecycle management (PLM) system to predict manufacturing feasibility and related costs. It also generates real-time feedback relevant to a company's manufacturing requirements and goals, such as existing manufacturing processes, supplier background, product design characteristics and costs, and CO<sub>2</sub> footprint.

aPriori reports also enable customer management teams to transparently identify major and minor impediments that hinder a product's development, hitting cost targets, manufacturing, and timely launch.

The platform also enables real-time data-sharing via the cloud, customized cost analysis for a customer's specific supply chain, and actionable insights that result in cost savings. Moreover, aPriori empowers engineers with tools, such as a simulation engine, digital factories, automated insights and notifications, analytics and reporting, collaborative workspaces, and third-party integration.



*Source: Frost & Sullivan*

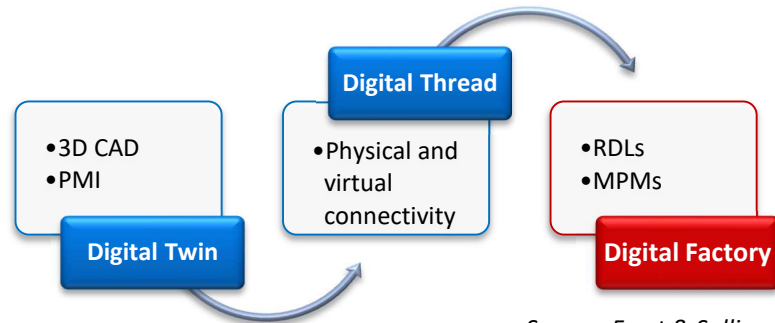
The Digital Factory is the most innovative solution that stands out among the Manufacturing Insights Platform components. As indicated by its name, a digital factory is a virtual mirroring of a real, physical factory, capable of integrating with business processes and enterprise solutions to make real-time decisions based on the latest product, sourcing, and manufacturing information. A digital factory leverages all the features captured within a digital twin (three-dimensional computer-aided design [CAD] model plus product and manufacturing information [PMI]). To create the framework for simulated production runs, aPriori uses the digital thread, which is responsible for connecting both the digital and physical domains, and automatically processing and extracting information, such as size, geometry, complexity, weight, tolerances, material, and properties.

The two key elements of aPriori's Digital Factories are Regional Data Libraries (RDLs) and Manufacturing Process Models (MPMs):

- RDLs provide geographical cost insights, including a global library of machines, labor, overhead, and tool shop rates. aPriori's Digital Factory contains 79 regional data libraries, which are updated every quarter.
- MPMs simulate manufacturing processes and calculate their associated costs. aPriori's Digital Factory supports 440+ MPMs.

Frost & Sullivan observes that aPriori delivers a robust tool for fact-based negotiations as the technology clearly indicates the features driving an organization's overall cost through the cost breakdown and part summary.

aPriori integrates high reliability and quality into its products, from developing robust, user-friendly solutions to working closely with clients and partners to guide its product roadmap and enhance/add features. The company's extensive testing and validation ensure consistent performance. The company leverages multiple measures to align software development with the customer and market needs,



Source: Frost & Sullivan

including client surveys, market surveys, competitive analysis, and customer success teams that share user feedback with product development teams. As a result, the company reports over a 90% retention rate and continually receives positive Net Promoter Scores from its clients.

aPriori's customer responses are a testament to its reliability and quality, as 2021 fiscal year sales for its cloud-related technologies grew by 133%. More than 300 customers currently use the Manufacturing Insights Platform to accelerate their businesses, including AGCO, Xylem, Hitachi, Toyota, Peloton, and Honeywell.

Frost & Sullivan finds aPriori's technology prowess and proven results well-positioned as a preferred vendor and commends the company on its continued innovation leadership in the market.

### Continuous Enhancement

aPriori initiates regular improvements and product releases to its portfolio. For example, the company made significant waves in June 2020 with the general availability of its cloud-based aP Generate (formerly Cost Insight Generate). The solution automatically initiates a detailed manufacturability analysis, calculating overall manufacturing costs, including required tooling. This solution responds to increasing challenges, such as missed product launch dates, exceeded costs and profit margins, and carbon footprint reduction. Key features of this best-in-class technology include:

- Automatic digital twin CAD model analysis and guidance
- Parts and materials cost and manufacturability identification
- Automated report generation for all stakeholders
- Simplified and streamlined rollout via cloud-based deployment

The company rounded out this announcement with critical updates in September 2020, which included Matrix Costing, which provides automatic cost scenarios with essential user inputs, supporting customers in decision-making.

Frost & Sullivan observes aPriori's technology gives control back to the manufacturers during a time of unstable supply chains and rapidly transforming customer needs.

***Roadmap to Success: Customer-centric, Continuous, Proactive***

aPriori's approach goes beyond its extensive expertise and best-in-class capabilities, with customer value as a strategic imperative. Through the years, the company has earned a reputation for supporting its clients' path towards high-quality, time-conscious, and cost-efficient manufacturing. Unlike many competitors, aPriori builds its solutions collaborating closely with a range of stakeholders and partners to evolve alongside market needs and trends.

**Use Case: Arrival**

Arrival, a global electric vehicle company, required a manufacturing cost modeling tool to support cost optimization goals such as new design cost and manufacturability. Arrival selected aPriori's aP Design (formerly Cost Insight Design) to meet or stay under their design cost targets. As a result, the customer eliminated wasteful feasibility loops and design churn with suppliers. Rather than using the quoting process to determine costs and manufacturability, Arrival can generate cost models when the CAD-based design is ready. The company also uses aPriori's solution to identify the optimal country, the most cost-effective machine, and the best target price for manufacturing.

**Use Case: HARMAN**

HARMAN, an American audio electronics company, has an internal team that evaluates and enhances value across its product lines. However, the organization required technology that offered third-party

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**- Sebastián Trolli**  
**Sr. Industry Analyst, Industrial Technologies**

supplier cost transparency. To this end, the team identified a significant need for rapid design analysis to allocate costs correctly. Using aPriori's best-in-class digital factories to provide critical cost variables for different suppliers, HARMAN worked with its suppliers to identify cost inefficiencies and facilitate transparency into their cost structure. These capabilities keep HARMAN's costs down while simultaneously driving considerable operational efficiency improvements.

The company maintains a customer-centric approach to its internal and external operations to deliver high-impact, quantitative customer results by focusing on speed, cost, resiliency, human capital, and viability.



### ***A Promising Outlook for 2022 and Beyond***

Since its inception, aPriori's sterling reputation and customer-centric framework led to its coveted preferred partner status. Over the years, it added a range of new customers to its established base. The company's recurring revenue grew by 400% throughout 2021, which it largely achieved through early acceptance of its newest cloud-based offering, aP Generate.

Additionally, the company completed a Series D investment round of \$30 million in September 2021, and Frost & Sullivan estimates the company's valuation at \$280 million. Various organizations continue to implement cloud-based solutions for manufacturing simulation to cut costs during the engineering design and prototyping phases. In August 2021, the United States Patent and Trademark Office awarded aPriori an exclusive patent for its design for manufacturability technology.

aPriori continues to build out its team with talented individuals to spearhead innovation. For example, in July 2022, the company announced the appointments of Chief Technology Officer Ronnie Thomson and Chief Product Officer Fielder Hiss. These new additions follow the February 2022 promotion of Chris Morris to Chief to Customer Officer and onboarding Chief Information Officer Michael Crones and Chief Marketing Officer Philippe Adam. This expanded leadership team brings significant experience and proven results to the company.

Frost & Sullivan finds aPriori well-positioned to drive the digital manufacturing solutions space into its next growth phase, capture additional market share, and sustain its leadership in the coming years.

## **Conclusion**

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To create a new solution, a company must understand the market's needs and deliver a solid solution designed and embedded with high quality and reliable performance. Frost & Sullivan finds that aPriori embodies this concept. The company's Manufacturing Insights Platform delivers best-in-class tools and their innovative Digital Factory solution empowers users/operators to determine various elements of the early design/prototyping phase, such as cost, manufacturability, and sustainability. The company's continued financial success and proven results position it for a bright future. Furthermore, aPriori integrates a customer-centric approach to ensure that its offerings address its customers' goals for today and tomorrow.

With its strong overall performance, aPriori earns Frost & Sullivan's 2022 Global New Product Innovation Award in the digital manufacturing solutions industry.

## What You Need to Know about the New Product Innovation Recognition

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Frost & Sullivan's New Product Innovation Award recognizes the company that offers a new product or solution that uniquely addresses key customer challenges.

### Best Practices Award Analysis

For the New Product Innovation Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

#### *New Product Attributes*

**Match to Needs:** Customer needs directly influence and inspire product design and positioning

**Reliability:** Product consistently meets or exceeds customer performance expectations

**Quality:** Product offers best-in-class quality with a full complement of features and functionality

**Positioning:** Product serves a unique, unmet need that competitors cannot easily replicate

**Design:** Product features an innovative design that enhances both visual appeal and ease of use

#### *Customer Impact*

**Price/Performance Value:** Products or services provide the best value for the price compared to similar market offerings

**Customer Purchase Experience:** Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

**Customer Ownership Experience:** Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

**Customer Service Experience:** Customer service is accessible, fast, stress-free, and high quality

**Brand Equity:** Customers perceive the brand positively and exhibit high brand loyalty



## About Frost & Sullivan

Frost & Sullivan is the Growth Pipeline Company™. We power our clients to a future shaped by growth. Our Growth Pipeline as a Service™ provides the CEO and the CEO's growth team with a continuous and rigorous platform of growth opportunities, ensuring long-term success. To achieve positive outcomes, our team leverages over 60 years of experience, coaching organizations of all types and sizes across 6 continents with our proven best practices. To power your Growth Pipeline future, visit Frost & Sullivan at <http://www.frost.com>.

## The Growth Pipeline Engine™

Frost & Sullivan's proprietary model to systematically create ongoing growth opportunities and strategies for our clients is fuelled by the Innovation Generator™.

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### Key Impacts:

- **Growth Pipeline:** Continuous Flow of Growth Opportunities
- **Growth Strategies:** Proven Best Practices
- **Innovation Culture:** Optimized Customer Experience
- **ROI & Margin:** Implementation Excellence
- **Transformational Growth:** Industry Leadership



## The Innovation Generator™

Our 6 analytical perspectives are crucial in capturing the broadest range of innovative growth opportunities, most of which occur at the points of these perspectives.

### Analytical Perspectives:

- **Mega Trend (MT)**
- **Business Model (BM)**
- **Technology (TE)**
- **Industries (IN)**
- **Customer (CU)**
- **Geographies (GE)**

