Plataine Recognized for

2021

Technology Innovation Leadership

Global Digital Assistants
for Advanced Manufacturing Industry

Excellence in Best Practices

FROST & SULLIVAN

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. Plataine excels in many of the criteria in the digital assistants for advanced manufacturing space.

AWARD CRITERIA

Technology Leverage	*Business Impact*
Commitment to Innovation	Financial Performance
Commitment to Creativity	Customer Acquisition
Stage Gate Efficiency	Operational Efficiency
Commercialization Success	Growth Potential
Application Diversity	Human Capital

Strategic Imperatives

As Industry 4.0 and internet of things (IoT) took center stage in manufacturing in the past decade, many companies struggled to identify critical nodes in their value chain that could offer the right balance between capital costs, productivity gains, and revenue growth. The strategic imperative for manufacturers embracing digital transformation is to find the right pathway to translate investments in production line modernization efforts on the factory floor into tangible business outcome improvements at the enterprise level. Factories operating across sectors, including automotive, aerospace, defense, food and beverage, and electronics, are highly selective of their digitalization efforts. Due to cost constraints, manufacturers focus on building functions on top of existing data models without making significant changes to legacy infrastructure to speed up time-to-value of digital transformation projects. The COVID-19 pandemic further accelerated fundamental changes in how manufacturers interact with enterprise resource planning (ERP) and manufacturing execution systems (MES) to maintain business continuity and improve agility and responsiveness to market disruptions. The demand

> *"The path to zero-waste manufacturing requires integrating software solutions to help manufacturers meet deadlines, ensure product quality, and remain competitive. Plataine's context-aware digital assistants that constantly interact with factory assets to augment decision-making at the enterprise level are key to achieving factory-level optimum in three critical areas: scheduling, quality, and utilization of material & resources."*
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> ***– Isaac Premsingh, Senior Consultant***

for agile applications that can be deployed on top of existing systems as digital assistants for production planners and factory managers has increased.

Frost & Sullivan identifies three top areas of concern for manufacturers in zero-waste manufacturing, where digital assistants can play a critical role through total production optimization: demand variability, changeovers and downtimes, and defects and recalls.

In a world where consumer preferences drive new product innovation, big-box retailers constantly look for ways to offer a unique product mix with special packaging every season. For manufacturers, this introduces new uncertainties and increases risk as dynamically predicting and reassigning raw materials, machines, and assets in factories has become impossible. The inability to predict seasonal demand variability reduces true process efficiency and affects material utilization contributing to waste. In addition, poor production schedules can result in high inventory and transportation costs for companies when plants developing single products are located miles apart.

The time taken from installation to full production after big changeovers involving product or package size can extend for days. In a 24/7 operation, a prolonged start-up time translates to a 20%–30% decline in efficiency in the production line. Downtimes directly affect customer service and could potentially result in a costly lost sale. This gives rise to the need for systems that can predict the optimum inventory level required to service orders and offset production loss during scheduled downtimes.

Big automotive original equipment manufacturers (OEM) and prime contractors in aerospace and defense spend billions of dollars every year to manage recalls of defective products delivered to customers. The lack of an efficient in-process quality control and inability to track and trace dominant failure modes and prevent work process deviations from prescribed standard operating procedures are factors contributing to increases in product waste, material waste, and recall costs. Manufacturers actively seek digital solutions that can track and trace critical assets, monitor quality of materials and products throughout the process, and provide real-time alerts to prevent defects and enable total production optimization. With 60% of factories in North America still undergoing digitalization and workflow automation, digital assistants will play a critical role in improving speed, agility, and accuracy in production planning and scheduling.

Frost & Sullivan firmly believes Plataine's context-aware digital assistants that constantly interact with factory assets to augment decision-making at the enterprise level are key to achieving factory-level optimum in three critical areas: scheduling, quality, and utilization of material & resources.

Commitment to Innovation and Creativity

Plataine, founded in 2015 and headquartered in Israel, is a provider of AI-Based digital assistants for manufacturing.. After working with a variety of stakeholders and end users, from furniture makers to lightweight fiberglass manufacturers for wind turbines to aerospace & automotive part manufacturers, Plataine noticed that existing ERP & MES solutions are not sufficiently designed to help achieve factory-level optimum and sustainable manufacturing goals. These ERP & MES systems provide production floor managers with management tools, reports and dashboards, but not real-time recommendations and alerts such as: optimal production plans, identifying best materials for specific jobs, running tooling maintenance, let alone the ability to coordinate all these decisions on a single platform.

For instance, in a manufacturing plant supplying parts for Aerospace OEMs. Product designs and manufacturing processes are complex, and require consideration of multiple production factors, constraints and dependencies between tasks, materials, tools, machines and HR requirements. Moreover, COVID and the erratic recovery of the global markets, present further challenges with unstable production demand, supply chain disruptions, and unexpected employee presence on the production floor given local lock-downs or personal quarantines.

To address these challenges, Plataine combined the capabilities of Artificial Intelligence (AI), industrial IoT (IIoT), edge computing, and context-aware intelligent software in a suite of digital assistants that can be deployed on secure cloud servers. By integrating with the ERP backbone, MES and product life cycle management systems of customers, Plataine's digital assistants receive production demand, customer requirements, design files, bills of materials, order quantities, and due dates to set boundary conditions and analyze real-time data gathered from machines and sensors on production floor. The digital assistants then generate optimized production schedule to maximize material yield, equipment effectiveness and waste reduction as well as, recommendations on best available material choices and coordinated maintenance plans for tools and other assets.

Plataine's newly announced Practimum-Optimum™ algorithm represents a further paradigm shift in production optimization, integrating Machine Learning and Optimization/Search capabilities to create a self-learning system, that emphasize not only optimal production KPIs, but also practical production plans that consider all facets of the production plan and are robust to execute.

Stage Gate Efficiency and Customer Acquisition

Plataine follows a structured process in deploying its digital assistant suite with zero disruption to the day-to-day manufacturing process. In collaboration with the customer, Plataine first conducts an analysis to identify critical areas of improvement and creates key performance indicators and strategic goals for the digitalization project. In special cases, the company offers a proof-of-value program to help customers in understanding the expected business outcomes before the deployment begins. Once the extensions required for ERP integration are developed, Plataine's Total Production Optimization Suite™ is ready for deployment and will be hosted on either a public or private cloud. Through constant interactions with the customer right from the start, Plataine ensures successful deployment of its solutions within four to eight weeks. Post-deployment, Plataine's global customer support and training team provides users with online assistance directly to manufacturing sites to ensure smooth onboarding and provide functional enhancements as required. Frost & Sullivan commends Plataine for its resilience and agility in delivering high-quality customer experience while navigating service delivery challenges during lockdown restrictions and travel bans in 2020. As a testament to its consistency in building customer pipeline, Plataine successfully completed online deployments with several new customers in new geographies, including an aerospace parts manufacturer in Brazil and a wind turbine blade maker in Turkey, despite the challenging year.

Application Diversity and Commercialization Success

Plataine's Production Optimization Suite™ houses several different application modules that perform specific functions in line with the enterprise-level objectives of manufacturers. Plataine's Production Scheduler utilizes proprietary AI algorithms to automatically create optimal and practical production schedules in real time, integrating all facets of the production floor. The Material & Asset Tracker™ tracks and traces the location, condition, and real-time status of critical assets. This automatically generated asset log eliminates manual reporting processes and paperwork while providing context-driven alerts to reduce rework. The Shelf-life Manager™ integrates with other modules in the system to help production managers handle time sensitive material and choose the right material for each job based on real-time properties, including temperature, to prevent the use of low-quality expired material in production. This helps eliminate material waste and improve product quality. The Cutting & Kitting Optimizer, is the only solution in the market that enables full automation of cutting plans to improve material utilization for jobs involving complex geometries. Plataine's Tool Manager optimizes usage of critical assets such as tools, molds and alike, including AI-based maintenance schedules. Plataine's Quality Manager™ documents every activity throughout the production line in the form of a searchable digital thread. Based on a patented digital twin technology, this digital thread creates an electronic record of manufactured products with all the critical details that affect the final product's integrity and efficiency. The digital thread provides a complete genealogy of the product and helps build trust between suppliers, prime contractors, and aircraft OEMs in product quality and prevents product defect-related recalls.

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Plataine's value drivers have attracted and retained leading manufacturing customers including Airbus, GE, Triumph, Alpine Racing team, IAI, AAT Composites, and Enercon. The company continues to strengthen its position through strategic partnerships with market leaders, including SAP, Siemens PLM, Google Cloud, the AMRC with Boeing and CTC GmbH, driving market adoption and enabling customers to improve their returns on digital investments and accelerate time-to-market for sustainably manufactured products. Frost & Sullivan praises Plataine's market-leading technology that combines proprietary artificial intelligence (AI)–enabled scheduling algorithms and searchable digital threads to arm manufacturing business leaders and factory managers with the cognitive flexibility required to make accurate time-sensitive decisions quickly in a dynamic environment.

Conclusion

Manufacturers are aligning their digital transformation efforts with sustainable development goals as Industry 4.0 technologies emerge as the key solution for manufacturers to optimize operations while reducing material waste. With more than 60% of factories still transitioning from Industry 2.0 to 3.0, the short-term impact of AI is felt predominantly in the adoption of software solutions as digital assistants on the factory floor to augment human decision-making to improve speed, agility, and accuracy of production plans and schedules. Through its unique features including Production Scheduling, Tooling Management, cut plan optimizer, shelf-life manager, and digital thread to deliver smart recommendation and real-time alerts that affect material utilization and product quality, Plataine's cloud-based digital assistant suite for total production optimization is well positioned to address the challenges of advanced manufacturers.

With its strong overall performance, Plataine earns Frost & Sullivan's 2021 Technology Innovation Leadership Award.

What You Need to Know about the Technology Innovation Leadership Recognition

Frost & Sullivan's Technology Innovation Award recognizes the company that has introduced the best underlying technology for achieving remarkable product and customer success while driving future business value.

Best Practices Award Analysis

For the Technology Innovation Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Technology Leverage

Commitment to Innovation: Continuous emerging technology adoption and creation enables new product development and enhances product performance

Commitment to Creativity: Company leverages technology advancements to push the limits of form and function in the pursuit of white space innovation

Stage Gate Efficiency: Technology adoption enhances the stage gate process for launching new products and solutions

Commercialization Success: Company displays a proven track record of taking new technologies to market with a high success rate

Application Diversity: Company develops and/or integrates technology that serves multiple applications and multiple environments

Business Impact

Financial Performance: Strong overall financial performance is achieved in terms of revenues, revenue growth, operating margin, and other key financial metrics

Customer Acquisition: Customer-facing processes support efficient and consistent new customer acquisition while enhancing customer retention

Operational Efficiency: Company staff performs assigned tasks productively, quickly, and to a high-quality standard

Growth Potential: Growth is fostered by a strong customer focus that strengthens the brand and reinforces customer loyalty

Human Capital: Commitment to quality and to customers characterize the company culture, which in turn enhances employee morale and retention

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™

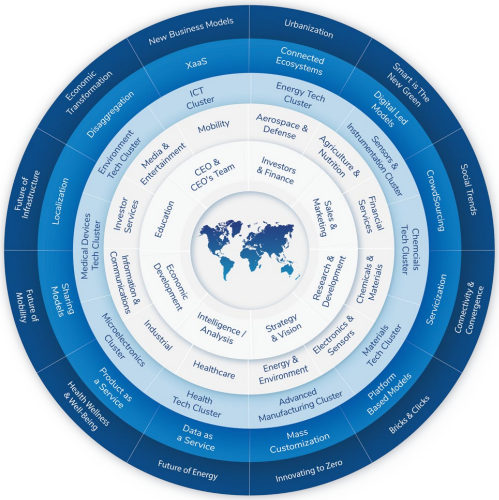
Frost & Sullivan's proprietary model to systematically create on-going growth opportunities and strategies for our clients is fuelled by the Innovation Generator™. Learn more.

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 six 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)