FROST & SULLIVAN

PLATAINE®

people-smart automation

2018 North American IIoT Software for Manufacturing Digitalization & Optimization Customer Value Leadership Award

2018

BEST PRACTICES

AWARDS

Contents

Background and Company Performance

Industry Challenges

Embarking on their digital journey, industrial enterprises are embracing the Industrial Internet of Things (IIoT) technologies in their manufacturing environments to optimize the operational efficiency of their businesses and record high margins. Large-scale manufacturing facilities depend upon numerous complex processes and systems, most of which are either manually handled or poorly connected to one another. Many times, these enterprise-level systems, such as enterprise resource planning (ERP) systems or product lifecycle management (PLM) systems, do not function optimally, affecting the productivity and efficiency of manufacturing processes, and, consequently, margins.

Low visibility into these systems during the product designing phase and on the production floor prevents industrial enterprises from gaining valuable insights from their business operations. Failing to collect data at the granular level prevents them from generating meaningful actionable intelligence that otherwise facilitates quick decision-making. Poorly connected systems on the manufacturing floor compel industrial manufacturing enterprises to rely upon manual touch points to fill the gaps between systems. Consequently, human-driven decisions affect the operational efficiency of industrial processes, as staff does not have access to data at the granular level. Furthermore, manual intervention intended to monitor and analyze manufacturing operations and processes fails to create value, as it limits the scaling of variables used to collect and analyze data.

Enterprises have, therefore, been on the lookout for a robust IIoT-based manufacturing optimization solution that delivers uninterrupted connection between machines, processes, products, and personnel on the factory floor. Well-connected systems, with advanced capabilities such as artificial intelligence (AI), create unprecedented value as they transform existing business models by connecting factories to not just products and people but also to processes that lend visibility into the raw materials used. They empower industrial enterprises to predict performance-related issues, such as sudden production downtime, even before it actually happens, and implement corrective actions based on prescriptive analysis to maximize their manufacturing efficiency, prevent huge losses, and record high margins.

Customer Impact and Business Impact

Price & Performance Value

Built on its in-depth technical know-how and nearly decade-long experience in designing smart automation software solutions for industrial manufacturing applications, Plataine has introduced an IIoTand AI-based manufacturing digitization solution that simplifies industrial enterprises' digital journey as they smoothly transition from manual-driven paper intensive manufacturing processes to digital, connected factories that will enhance manufacturing yield.

Running on the cloud, the Plataine software platform offers enterprises end-to-end visibility throughout the product manufacturing cycle by gathering data from sensors embedded not only on the machines and raw materials but also on the finished product. Putting the collected data in the product development context enables customers to keep a digital, real-time tab on the performance of manufacturing processes, technologies, and resources, such as raw materials and parts. In essence, the Plataine software automatically collects data from numerous connected sensors on the factory floor to generate actionable insights. For example, the predictive alerts that customers receive make them aware of the quality and utilization status of raw materials being used in the production process. If any quality issue is identified, it can be immediately addressed to prevent a defect at the end of the manufacturing cycle. This not only optimizes production time but also cuts down on the cost of identifying faults late in the process.

Advanced automated monitoring and analytical capabilities empower industrial enterprises to gain holistic visibility and better quality control of the industrial manufacturing processes. Customers get a clear view of the performance quality of manufacturing processes at a granular level. While such in-depth insights enable customers to predict potential issues and trace their root cause, advanced technologies built into the platform, such as Plataine's patented AI technology, empower the platform to instantly prescribe recommendations and corrective optimization measures that guide users to take the right steps needed to fix issues before they can have an impact.

In fact, deploying Plataine's cutting-edge system into their factories enables manufacturing companies to record a surge in manufacturing throughput, optimize usage of raw materials, and reduce cost of quality by 10 to 20% driven by fully optimized production cycles and quality of the finished product. Frost & Sullivan applauds Plataine for giving its customers the power to implement corrective steps at the early stages of product development to expedite the manufacturing cycle. In other worlds, manufacturing products with zero defects first time ensures on-time, on-quality delivery while reducing waste, and cutting down time to market.

Platforms offered by Plataine's competitors focus on the technological aspect of industrial manufacturing and offer generic services in the form of data management, machine learning algorithms, or cybersecurity, among others, which enable only applications. By contrast, Plataine's approach to its solution is to lift it from the conventional technology level to a practical application level using its advanced patented AI technology that promises a superior value proposition to customers. Therefore, while competing platforms solve only technical problems and may display simple reports and dashboards, Plataine's cutting-edge AI-embedded software platform resolves business–related issues, which differentiates it from the top market competitors.

Customer Ownership Experience

What positions Plataine ahead of the competitive league is the powerful combination of its proprietary AI technology and the rich skillset and expertise of its employees in industrial manufacturing. The company is supported by a team of not only data scientists, mathematicians, and algorithm software engineering experts but also industrial engineers and staff that have experience in production management. The unique mix of skill and experience gives the company an edge to quickly identify and comprehend issues on customers' manufacturing premises and deploy the Plataine solution to successfully resolve them. For instance, even when dealing with "brownfield" facilities, Plataine's engineers can easily identify manufacturing-specific problems and recommend measures to quickly fix them, thereby cutting down on customers' operational costs and lowering their total cost of ownership (TCO). Plataine serves customers from all levels of the supply chain in a variety of advanced manufacturing verticals.

Best Practice Example 1: Harbin Hafei Airbus Manufacturing Centre (HHACMC) is a joint venture between Airbus and its Chinese partners, responsible for manufacturing and assembly of the Rudders, Elevators, Belly Fairings for A350 XWB and also Rudder for A320 using the latest manufacturing technologies based on Airbus's standards and processes. By tracking parts, material and tools using Plataine's solution, HHACMC can accurately monitor items' movement on the production floor, raise predictive alerts, and make concrete recommendations for a range of production decisions. This automation can increase quality and enable staff to optimize material selection and minimize waste. Plataine enables HHACMC to gain full traceability of the Digital Thread, from raw material to end-product improving quality control.

Best Practice Example 2: Renault Sport Formula One Team™, the seventh-most-winning Formula One Grand Prix constructor, have been associated with *Formula One* as both constructor and engine supplier for various periods since 1977. Most components in a Formula One™ car have a limited service life to allow optimized performance of lightweight structures operating in extreme conditions of high loads, extreme heat and fatigue due to vibration, all caused by racing at high speeds – often over 220 miles per hour. At times, with just a week between races, teams work relentlessly to deploy performance improvement to the twenty-one race tracks around the globe. This intense innovation cycle means components are often superseded even before the end of their natural service life. As a consequence, the Composites Department at Renault Sport Formula One™ Team is required to manufacture parts to new designs within a few days. Plataine's Industrial IoT solution, based on Artificial Intelligence algorithms, allows automated tracking of time-sensitive material expiration date and exposure time, allowing better inventory control, avoiding waste and reducing risk of error. The digital transformation with Plataine is improving quality, lead-time and traceability in composite production at Renault Sport

Formula One™ Team. Plataine's technology is agile to respond in real-time to sudden changes in Renault Sport Formula One™ designs and production scheduling.

Best Practice Example 3: Stark Aerospace Inc. operates as an aerospace defense contractor that manufactures and supplies aerospace systems to its customers worldwide. It operates through three divisions: Unmanned Aerial Systems, Sensors, and Engineering. By implementing Plataine's Material and Asset Tracker (MAT), Stark's production floor has become fully automated and digitized, resulting in reduced quality issues and driving substantial savings of raw material. Additionally, the automation of repetitive manual processes has freed up significant amounts of time that Starts' skilled engineering staff can now spend on productive tasks.

Best Practice Example 4**:** Composites Horizons (CHI), a chief supplier of advanced composites to aerospace companies, was on the lookout for an automation solution that would enable it to reduce errors in cut-planning workflows for better usage of resources and time, thereby enabling it to save on raw materials. With the commendable collaborative assistance of Plataine's expert engineers, CHI went live with the automated cutting-plan workflows in just 2 months. Adopting Plataine's TPO FabricOptimizer solution enabled CHI to bring down the cutting time to 4.5 hours from 6–7 hours (on average). Plataine's smart automaton solution has enabled CHI to record enhanced productivity by 66%, increase material yield by 4–15%, and reduce cut-shifts to 2 from 6. Such optimization of time and resources has certainly brought down its operational expenses, lowering its TCO in the process.

Customer Acquisition

The cutting-edge capabilities of Plataine's AI-based intelligent automation software have enabled it to acquire key Tier I and Tier II suppliers as well as original equipment manufacturers (OEMs) as its customers. The key customers include verticals such as manufacturing, aerospace and defense, wind power, furniture and upholstery, automotive and transportation. Plataine has successfully established a global presence, with its customer-base covering countries such as China, Taiwan, Thailand, and Vietnam from East Asia; Germany, United Kingdom, and France from Europe; and the United States and Canada from North America.

Airbus, Boeing, Triumph Group, Inc., MT Aerospace, GE (Aviation), Israel Aerospace Industries, Stark Aerospace, and General Atomics are customers from the aerospace and composites sector; Ethan Allen, Ashley, and Steelcase hail from the furniture industry. Renault Sport Formula One Team is a major customer from the automotive and transportation industry; Hengshi, and TPI Composites, Inc. come from the wind blades industry. Clearly, the company's customer scope is vast, and with increasing awareness and interest from companies looking to adopt advanced technology-based automation solutions that can revolutionize their manufacturing processes, Plataine will see a significant expansion of its customer base in the next 5 years.

Brand Equity

Plataine's list of technology and business partners, most of which are market leaders in their domain of operation, is indicative of the strong brand value and equity it enjoys in the market. For instance, with GE Digital and Siemens as its partners, Plataine adds value to their technologies and is synergetic with their core products. Google Cloud's recent signing of a contract with Plataine for the use of any of Google's solutions—ranging from Google Glass and other wearables to AI-based services—illustrates strong brand positioning. Having been lauded by leading organizations, such as Shanghai Society of Aeronautics (SSA), for its proprietary technology and called on to present at over 35 industry conferences around the globe are distinct recognitions of the company's rich technology knowledge and practical experience.

Frost & Sullivan's analysis of key benchmarking criteria among top market participants indicates that Plataine's unmatched domain expertise along with its cutting-edge technology are increasingly driving its success as more and more companies desire advanced IIoT-based automation solutions that can help them smoothly transition to an automated factory environment.

Growth Potential

Globally, and especially in the North American and European regions, there is immense potential to adopt Plataine's advanced IIoT-based manufacturing optimization solutions. As customers expect quick time-to-value and high return on investments (ROI)—less than 6 months in most cases while less than 3 months in some cases—Plataine foresees high market adoption of its solution in the coming years, particularly because the solution enables customers to create tangible value in the form of optimized material usage, improved productivity and efficiency, and reduced labor cost, among other benefits.

As companies look to automate their factory floors, faster deployment of the solution in a month or two enables them to start creating value without much lag. What makes the solution even more attractive is the pay-as-you-use pricing model that gives customers the freedom to select and pay for only the services that they require.

Conclusion

Customers across industries are setting out on a journey towards digitization and seek IIoT-based manufacturing optimization solutions that can revamp their production environments and smoothly transition from manually-intervened to automated processes. Ultimately, customers want to enhance the productivity and efficiency of their operations and record high margins.

The process, resource, and asset monitoring capabilities of Plataine's cloud-enabled IIoT-based manufacturing optimization solution allows industrial enterprises to gain holistic visibility into the manufacturing cycle and better control of their operations' performance quality.

Unlike competitors' platforms that only act as technology enablers, Plataine's solution resolves business-related issues by collecting data from multiple sources, contextualizing it, and running it through AI-based algorithms to predict issues way ahead of an impact. This unique predictive approach has impacted its business operations positively. The differentiating aspect of Plataine's industrial manufacturing optimization software solution has driven companies such as GE and Siemens to partner with it to leverage its AI capabilities and power their digital automation platforms. Google Cloud's move to jointly build products with Plataine's proprietary AI-based solution clearly testifies to how powerful Plataine's technology is.

As customers become aware of how remarkably IIoT-enabled solutions can optimize their manufacturing operations, Plataine will witness rapid adoption of its solution owing to the unprecedented value proposition it offers.
For its strong overall performance, Plataine has earned Frost & Sullivan's 2018 Customer Value Leadership Award.

Significance of Customer Value Leadership

Ultimately, growth in any organization depends upon customers purchasing from a company and then making the decision to return time and again. Delighting customers is, therefore, the cornerstone of any successful growth strategy. To achieve these dual goals (growth and customer delight), an organization must be best-in-class in three key areas: understanding demand, nurturing the brand, and differentiating from the competition.

Understanding Customer Value Leadership

Customer Value Leadership is defined and measured by two macro-level categories: Customer Impact and Business Impact. These two sides work together to make customers feel valued and confident in their products' quality and long shelf life. This dual satisfaction translates into repeat purchases and a high lifetime of customer value.

Key Benchmarking Criteria

For the Customer Value Leadership Award, Frost & Sullivan analysts independently evaluated two key factors—Customer Impact and Business Impact—according to the criteria identified below.

Customer Impact

Criterion 1: Price & Performance Value
Criterion 2: Customer Purchase Experience
Criterion 3: Customer Ownership Experience
Criterion 4: Customer Service Experience
Criterion 5: Brand Equity

Business Impact

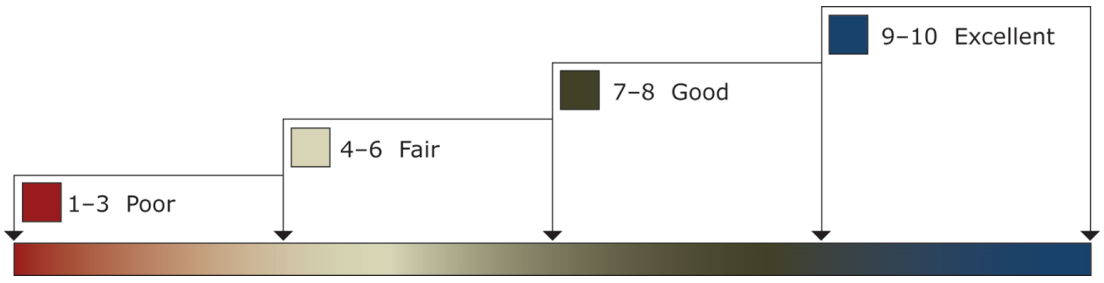
Criterion 1: Financial Performance
Criterion 2: Customer Acquisition
Criterion 3: Operational Efficiency
Criterion 4: Growth Potential
Criterion 5: Human Capital

Best Practices Award Analysis for Plataine

Decision Support Scorecard

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Scorecard. This tool allows our research and consulting teams to objectively analyze performance, according to the key benchmarking criteria listed in the previous section, and to assign ratings on that basis. The tool follows a 10-point scale that allows for nuances in performance evaluation. Ratings guidelines are illustrated below.

RATINGS GUIDELINES



The Decision Support Scorecard is organized by Customer Impact and Business Impact (i.e., These are the overarching categories for all 10 benchmarking criteria; the definitions for each criterion are provided beneath the scorecard.). The research team confirms the veracity of this weighted scorecard through sensitivity analysis, which confirms that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

The results of this analysis are shown below. To remain unbiased and to protect the interests of all organizations reviewed, Frost & Sullivan chooses to refer to the other key participants as Competitor 2 and Competitor 3.

Measurement of 1–10 (1 = poor; 10 = excellent)			
Customer Value Leadership	Customer Impact	Business Impact	**Average Rating**
Plataine	**9.5**	**9**	**9.25**
Competitor 2	8.0	7	7.50
Competitor 3	7.0	7	7.00

Customer Impact

Criterion 1: Price & Performance Value

Requirement: Products or services offer the best value for the price, compared to similar offerings in the market.

Criterion 2: Customer Purchase Experience

Requirement: Customers feel they are buying the most optimal solution that addresses both their unique needs and their unique constraints.

Criterion 3: Customer Ownership Experience

Requirement: Customers are proud to own the company's product or service and have a positive experience throughout the life of the product or service.

Criterion 4: Customer Service Experience

Requirement: Customer service is accessible, fast, stress-free, and of high quality.

Criterion 5: Brand Equity

Requirement: Customers have a positive view of the brand and exhibit high brand loyalty.

Business Impact

Criterion 1: Financial Performance

Requirement: Overall financial performance is strong in terms of revenues, revenue growth, operating margin, and other key financial metrics.

Criterion 2: Customer Acquisition

Requirement: Customer-facing processes support the efficient and consistent acquisition of new customers, even as it enhances retention of current customers.

Criterion 3: Operational Efficiency

Requirement: Staff is able to perform assigned tasks productively, quickly, and to a high quality standard.

Criterion 4: Growth Potential

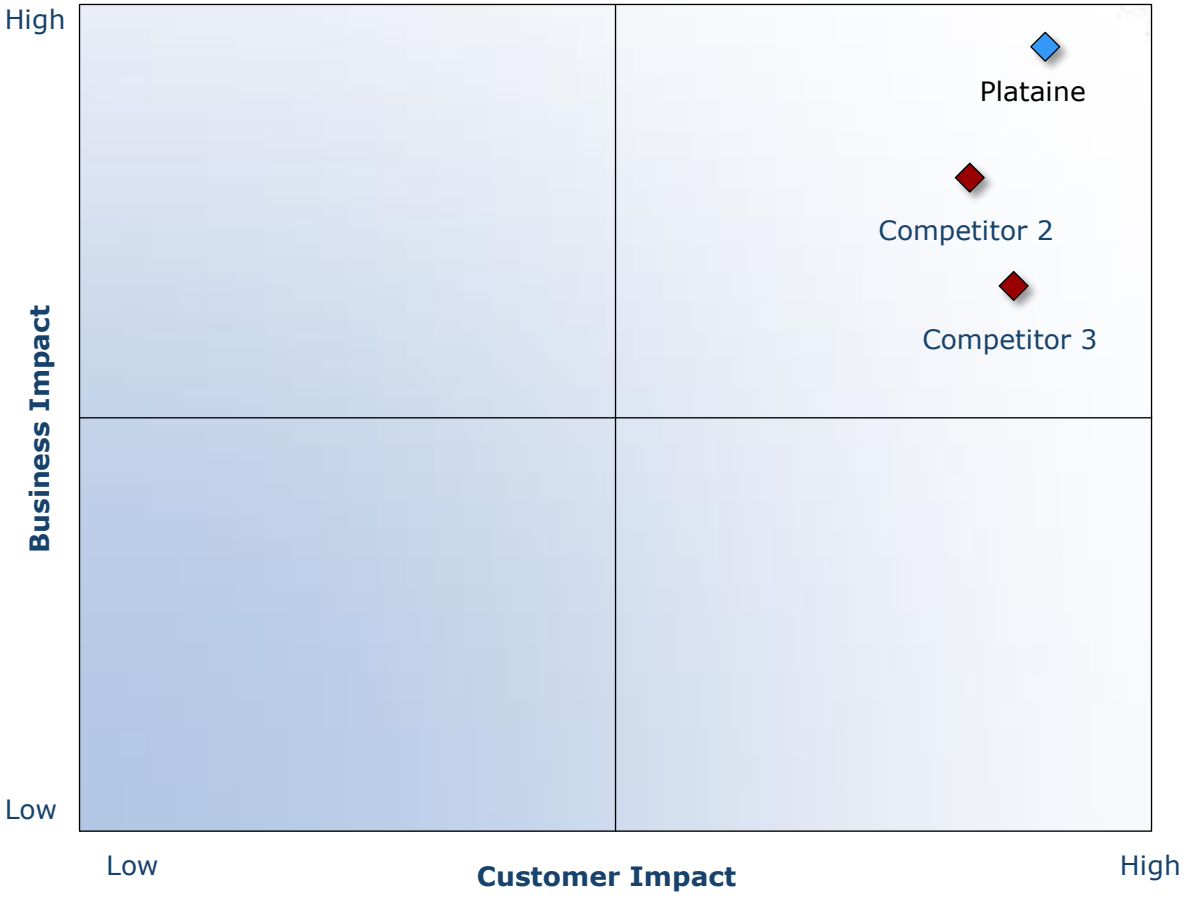
Requirements: Customer focus strengthens brand, reinforces customer loyalty, and enhances growth potential.

Criterion 5: Human Capital

Requirement: Company culture is characterized by a strong commitment to quality and customers, which in turn enhances employee morale and retention.

Decision Support Matrix

Once all companies have been evaluated according to the Decision Support Scorecard, analysts then position the candidates on the matrix shown below, enabling them to visualize which companies are truly breakthrough and which ones are not yet operating at best-in-class levels.



Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Frost & Sullivan analysts follow a 10-step process to evaluate Award candidates and assess their fit with select best practice criteria. The reputation and integrity of the Awards are based on close adherence to this process.

	STEP	OBJECTIVE	KEY ACTIVITIES	OUTPUT
1	**Monitor, target, and screen**	Identify Award recipient candidates from around the globe	• Conduct in-depth industry research • Identify emerging sectors • Scan multiple geographies	Pipeline of candidates who potentially meet all best-practice criteria
2	**Perform 360-degree research**	Perform comprehensive, 360-degree research on all candidates in the pipeline	• Interview thought leaders and industry practitioners • Assess candidates' fit with best-practice criteria • Rank all candidates	Matrix positioning of all candidates' performance relative to one another
3	**Invite thought leadership in best practices**	Perform in-depth examination of all candidates	• Confirm best-practice criteria • Examine eligibility of all candidates • Identify any information gaps	Detailed profiles of all ranked candidates
4	**Initiate research director review**	Conduct an unbiased evaluation of all candidate profiles	• Brainstorm ranking options • Invite multiple perspectives on candidates' performance • Update candidate profiles	Final prioritization of all eligible candidates and companion best-practice positioning paper
5	**Assemble panel of industry experts**	Present findings to an expert panel of industry thought leaders	• Share findings • Strengthen cases for candidate eligibility • Prioritize candidates	Refined list of prioritized Award candidates
6	**Conduct global industry review**	Build consensus on Award candidates' eligibility	• Hold global team meeting to review all candidates • Pressure-test fit with criteria • Confirm inclusion of all eligible candidates	Final list of eligible Award candidates, representing success stories worldwide
7	**Perform quality check**	Develop official Award consideration materials	• Perform final performance benchmarking activities • Write nominations • Perform quality review	High-quality, accurate, and creative presentation of nominees' successes

	STEP	OBJECTIVE	KEY ACTIVITIES	OUTPUT
8	**Reconnect with panel of industry experts**	Finalize the selection of the best-practice Award recipient	• Review analysis with panel • Build consensus • Select recipient	Decision on which company performs best against all best-practice criteria
9	**Communicate recognition**	Inform Award recipient of Award recognition	• Announce Award to the CEO • Inspire the organization for continued success • Celebrate the recipient's performance	Announcement of Award and plan for how recipient can use the Award
10	**Take strategic action**	Upon licensing, company is able to share Award news with stakeholders and customers	• Coordinate media outreach • Design a marketing plan • Assess Award's role in future strategic planning	Widespread awareness of recipient's Award status among investors, media personnel, and employees

The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

Frost & Sullivan's 360-degree research methodology represents the analytical rigor of our research process. It offers a 360-degree-view of industry challenges, trends, and issues by integrating all 7 of Frost & Sullivan's research methodologies. Too often companies make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. The integration of these research disciplines into the 360-degree research methodology provides an evaluation platform for benchmarking industry participants and for identifying those performing at best-in-class levels.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS

About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best practice models to drive the generation, evaluation and implementation of powerful growth strategies. Frost & Sullivan leverages more than 50 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 45 offices on six continents. To join our Growth Partnership, please visit http://www.frost.com.