FROST & SULLIVAN

UNITRONICS®

2016 Global Advanced PLC Product Line Strategy Leadership Award

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Background and Company Performance

Industry Challenges

Globally competitive markets require manufacturers to produce more, faster, and to do so with a minimum of manpower. To this end, the PLC + HMI controller is fast becoming a popular choice for automating small-to-mid-size machines and processes.

The Programmable Logic Controller (PLC) is the computer 'brain' that controls machines and automatic systems.

The Human Machine Interface (HMI) is the panel that people use to interact with the system, to both view and edit system-critical data.

Combining both into a single PLC + HMI controller brings a number of benefits. The most obvious are reduced physical requirements: a single device takes up less space and requires less wiring; in addition there is no need to set up PLC – Panel communications. This alone is reason for the rising popularity of such devices.

However, OEMs and control engineers—those who design automatically controlled systems—look for PLC + HMI controllers that feature added functionality. For example, in the age of IOT, embedded Internet capability that enables a system manager to remotely access, view, and edit system data, and the ability to monitor systems via mobile app are increasingly expected.

In this scenario, a company that provides a comprehensive line of advanced PLC + HMI controllers with features that benefit the price/performance ratio will stand out from its competitors offering similar products and be successful.

Product Line Strength and Customer Impact

Unitronics designs, produces, and markets All-in-One controllers. All-in-One refers to:

- The physical products - All-in-One controllers integrate an advanced PLC and an HMI touchscreen interface into a single, highly compact, full-featured controller that can include onboard I/Os.
- The programming software - a single environment for all tasks: configuration, control application, HMI user interface, and all communications including Web access.
- The company policy of customer care - personalized customer service is provided for all aspects of care, from pre-sale consult to technical support.

Breadth

Unitronics offers 3 major product series: Samba, Vision, and UniStream. Each series is designed to address a different range of application needs in a range of industry sectors, such as packaging, food and beverage processing, water treatment, oil and gas, textiles, and printing.

Samba targets small machine/process applications. From the palm-sized Samba 3.5 with a 3.5" HMI touch-panel, Samba 4.3 with 4.3", and Samba 7 with 7.0", the members of this All-in-One controller series comprise a full-function PLC with an integrated on-board I/O configuration. It features 2 auto-tuned PID loops, RTC, data logging and recipes, and up to 0.5 MB (megabytes) of application program. The Samba HMI application supports 24 user-designed screens and 5 MB images per application.

Vision addresses medium-size applications. This series is available with HMI panel dimensions of 3.5", 4.3" 5.7", 7", 10.4" and 12.1". The advanced PLC can process up to 1,000 local and remote I/Os, and features 24 auto-tuned PID loops, RTC, data logging and recipes and up to 2.0 MB of application program. Up to 32 MB of memory space is reserved for storing images used in the HMI display.

UniStream provides a scalable control platform. Completely modular, available with panel sizes 7", 10.4" and 15.6" it is the most powerful series. A single UniStream can process up to 2,048 local and remote I/Os and stores up to 2 MB of application program. The powerful PLC supports virtually unlimited PID loops, complex data trends and recipes, in addition to a rich feature set. In addition to images, the HMI application supports video, audio, and .pdf media.

Best Practices Example: Hydroelectric Turbine application, designed by Andrea Della Bosca, EV Srl, Italy. Vision1040 PLC+HMI (Vision series) controls a hydroelectric system via a variety of sensors and drives, using several different protocols, including MODBUS RS485, CANOpen and Ethernet. Vision1040 logs dam levels, temperatures and other data, and displays it on the HMI panel as a running Trend graph. Data is communicated to a UniStream controller; UniStream's embedded webserver allows the process to be monitored and controlled remotely from anywhere in the world.

Scalability

Samba controllers comprise onboard I/O configurations that vary according to model—digital, analog, temperature—the user selects the combination of I/O configuration and panel size to best support the application.

UniStream and Vision are highly scalable; in addition to onboard I/Os, both support local and remote I/O expansion. Each line has a series of compatible I/O expansion modules, and support remote I/O at distances of up to 1000 meters.

I/O expandability, combined with the ability to interconnect Unitronics PLC + HMI controllers and to connect them with third-party devices of other manufacturers via a broad variety of communication protocols, endows UniStream and Vision with the capacity to control larger machines and control operations.

Another advantage is that while the Samba and Vision product series operate with a single central processor unit (CPU), UniStream operates with dual CPUs and achieves faster scanning and responsiveness, even in cases of high load. Dual CPUs offset a problem common to many PLCs, where during times of high user interaction with the HMI, less processor capacity is available for the PLC for critical control tasks.

Technology Leverage

All of Unitronics' PLC + HMI controller product series incorporate several leading-edge technologies, such as the Internet of Industrial things (IoIT), for greater product performance and value. The product series are sold along with unified, all-in-one software environments for programming the PLC, designing the HMI screens, and configuring hardware and communications. This provides a seamless experience for Unitronics' customers and end users throughout the life of the product.

UniStream's product line is provided with a software platform free of charge. UniLogic, ergonomically designed to save programming time, offers advanced features:

a) Design and Re-Use Paradigm: The user can build Ladder and C functions, design HMI screens, create Web pages, and save them in a Library to reuse in other projects or share with others

b) Tag Database + Structs: In addition to user-created tags, UniLogic automatically creates structs—data tags of different types organized into a single unit—to simplify configuring and managing hardware, communication, and complex functions such as PID

c) Graphics Library, User Controls, Widgets: These allow any user to drag and drop elements, to easily design attractive HMI screens and complex Web pages

d) Drag-and-drop Ladder: Elements snap into place for quick programming, aided by Intellisense; typing a few characters rapidly locates elements and assigns tags

e) 'Alarm Management System', added in June 2015, that helps operators view all active alarms and act on the alarms by entering commands through HMI interface, manage alarms by adding new alarms or by disabling unnecessary alarms to prevent alarm flooding conditions.

f) Advanced Data Tools: The Data Sampler records dynamic application data. Data Tables organize and manipulate data via Ladder functions and HMI elements. Data Recipes enable easy implementation of dynamic, complex production processes

g) Language Support: Text used in HMI screens can be translated; the user can then, for example, touch the HMI screen to switch from Italian to Chinese

h) Broad Communication Support: plug-and-play for major fieldbus protocols such as MODBUS, CANopen, CANLayer2, DF1 slave, and EtherNet/IP. The Message Composer enables communications with devices such as frequency converters, bar-code readers, and printers via Ethernet, CANbus or serial third-party protocols. UniStream also supports FTP, SNMP, SMS, email, and communications via GSM/GPRS modem

The Vision and Samba product series are provided with the software platform, VisiLogic, free of charge.

All product lines support a range of Ethernet, CANbus, and serial communication protocols, as well as GSM/GPRS modems.

In addition, all series may be remotely accessed, enabling end users to control and manage production processes from anywhere in the world. UniStream may be accessed from PC, tablet, or smartphone via common VNC utilities. Unitronics supplies Samba and Vision with a special remote access utility for PC, and in December of 2015 released an app enabling remote access from mobile devices running Android and iOS. Vision and UniStream can act as Web servers, hosting pages that enable approved users to view and edit application data via any Internet browser.

Best Practices Example: A water and wastewater treatment provider, Apa Serv in Romania, has deployed a unit of V570, a unit of V350, and 83 units of V130 in its water distribution network. End users are now able to perform real-time monitoring of the flow and pressure of water across the entire network, and control all of the pumps and valves along the network remotely from a central location in Piatra Neamt.

Customer Purchase Experience

Unitronics provides a wide choice of advanced PLC solutions to match the needs of end users from different industries who require different features, at a competitive price. Customers can also choose from various communication protocols such as RS485, CANopen, UniCAN, serial MODBUS, and Ethernet MODBUS.

Best Practices Example: INFO d.o.o., a Croatian printing company, specializes in devices that mark and label goods for identification and traceability purposes for the packaging industry. Samba 4.3 controls a multistep label printing process. INFO uses Samba to run the entire system; controlling a Videojet printer and Cognex ID reader. After printing, a sensor reads the ID codes to check for correctness. If the code is missing or damaged, production stops. Samba's color-touch HMI allows operators to monitor the process. The onboard high-speed inputs enable rapid response.

Customer Service Experience

In 2014, Unitronics commissioned an impartial firm to run a survey of Unitronics' customers. The company has a high rate of customer retention; a policy of fostering long-term relationships has successfully retained steady business with a large number of customers for over a decade. The survey reported great customer satisfaction, particularly with the high levels of both customer service and technical support. Flexibility and speed of response were highly rated, as was personalized service; generally the same staff member provides service to a support/service request from initial query to resolution.

Customization service for large-scale customers is also worthy of note; requested services may be cosmetic in nature, such as a printed faceplate logo, or hardware-related, such as a particular I/O configuration.

The company runs a highly active technical support forum with over 13,000 members as of the writing of this report. This forum is moderated both by the Unitronics support team and by a select group of veteran users of Unitronics products. The community comprises a core member of power users who participate regularly. A section of the forum is dedicated

to feature requests; the company monitors such requests and takes them into account when planning future product development.

As a global company, Unitronics maintains a network of distributors in over 55 countries. This provides customers with localized sales and support in the local language.

Unitronics standard policy of customer care provides all software, including utilities, at no additional cost. Additionally, pre-sale, post-sale, technical support, and membership in the technical support forum are provided to each customer without added fees or tiers. Customer queries are always answered by an experienced member of the support team, not be an automated system. The same support team is available for consultation regarding the project requirements, installation, and follow-up technical support throughout the project life-cycle.

Brand Equity

Unitronics positions itself as a company that provides one-stop modular and scalable advanced PLC + HMI control solutions, with maximum possible value, at the lowest possible price.

Unitronics focuses on increasing brand awareness and top-of-mind awareness among its potential customer base by continuously publishing articles and advertisements about its products in leading industrial magazines such as “Drives & Controls,” “Automation World,” “Control Engineering” and “IEN Europe.”

Awards for product excellence have been given to Unitronics products for three consecutive years. In 2015, the readership of “Control Engineering” voted Samba the award for “Engineer’s Choice, Integrated HMI Controllers”; in 2014 UniStream won the same award, as did the Vision570 in 2013. In addition, UniLogic, the software environment for UniStream, was voted an honorable mention in 2015.

Unitronics also builds its brand reputation by delivering products that achieve superior value and performance after deployment. This is affirmed by the positive customer feedback that the company continuously receives from its clients.

Best Practices Example: "The Vision570™ was selected because of its ideal size, color touch screen, and terrific feature set for the price”, says Matthew Cronin of MSI Tec, a distributor of Unitronics. Vision570 was used in a control panel to regulate natural gas engines in the city of Tucson in the United States. Some of the key requirements for the control panel were the ability to remotely connect to the customer’s supervisory control and data acquisition (SCADA) system and HMI touchscreens that could withstand temperatures above 100-degrees Fahrenheit, and humidity variations between 5% and 75%.

Conclusion

By providing a breadth of products with highly customizable features and advanced technology functions, such as remote access and control of the production system, Unitronics provides a comfortable purchase and user experience for its customers.

Through its vast experience of more than 25 years of producing advanced PLC +HMI controllers, and as attested to by market reception, Unitronics creates successful products that are uniquely adapted to the dynamic sector of machine and industrial process control.

With its strong overall performance, Unitronics has earned Frost & Sullivan's 2016 Global Product Line Strategy Leadership Award.

Significance of Product Line Strategy

Ultimately, growth in any organization depends upon customers purchasing from your company, and then making the decision to return time and again. A full, comprehensive product line that addresses numerous customer needs and preferences is therefore a critical ingredient to any company's long-term retention efforts. To achieve these dual goals (customer value and product line strength), an organization must be best-in-class in three key areas: understanding demand, nurturing the brand, and differentiating from the competition.

Understanding Product Line Strategy Leadership

As discussed above, driving demand, brand strength, and competitive differentiation all play a critical role in delivering unique value to customers. This three-fold focus, however, must ideally be complemented by an equally rigorous focus on building a superior and comprehensive product line.

Key Benchmarking Criteria

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

Product Line Strength

Criterion 1: Breadth
Criterion 2: Scalability
Criterion 3: Technology Leverage
Criterion 4: Features
Criterion 5: Supply Chain Reliability

Customer Impact

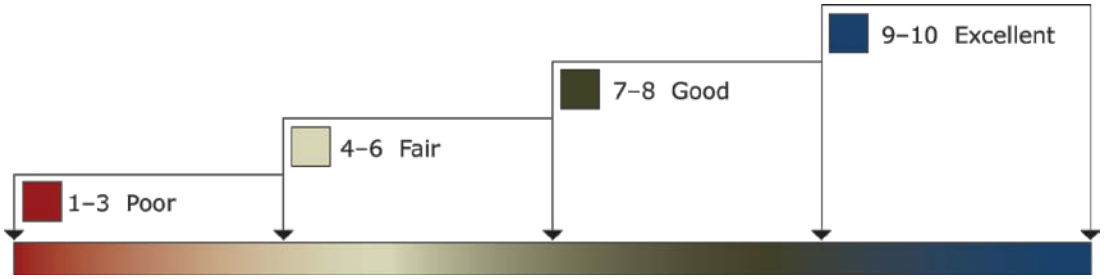
Criterion 1: Price/Performance Value
Criterion 2: Customer Purchase Experience
Criterion 3: Customer Ownership Experience
Criterion 4: Customer Service Experience
Criterion 5: Brand Equity

Best Practice Award Analysis for Unitronics

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 Product Line Strength and Customer Impact (i.e., the overarching categories for all 10 benchmarking criteria; the definitions for each criteria 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, we have chosen to refer to the other key players as Competitor 2 and Competitor 3.

DECISION SUPPORT SCORECARD FOR PRODUCT LINE STRATEGY LEADERSHIP AWARD

Measurement of 1–10 (1 = poor; 10 = excellent)			
Product Line Strategy	Product Line Strength	Customer Impact	**Average Rating**
Unitronics	**9.5**	**9.5**	**9.5**
Competitor 2	8.0	8.0	8.0
Competitor 3	7.0	6.5	6.8

Product Line Strength

Criterion 1: Breadth

Requirement: Product line addresses the full range of customer needs and applications

Criterion 2: Scalability

Requirement: Product line offers products at a variety of price points and functionality levels

Criterion 3: Technology Leverage

Requirement: Demonstrated commitment to incorporating leading edge technologies into product offerings, for greater product performance and value

Criterion 4: Features

Requirement: Products offer a comprehensive suite of features to serve customers at multiple levels of functionality, ease of use and applications

Criterion 5: Supply Chain Reliability

Requirement: There is sufficient control over the supply chain to ensure availability of key components and thereby the availability of products in the product line

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 like 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

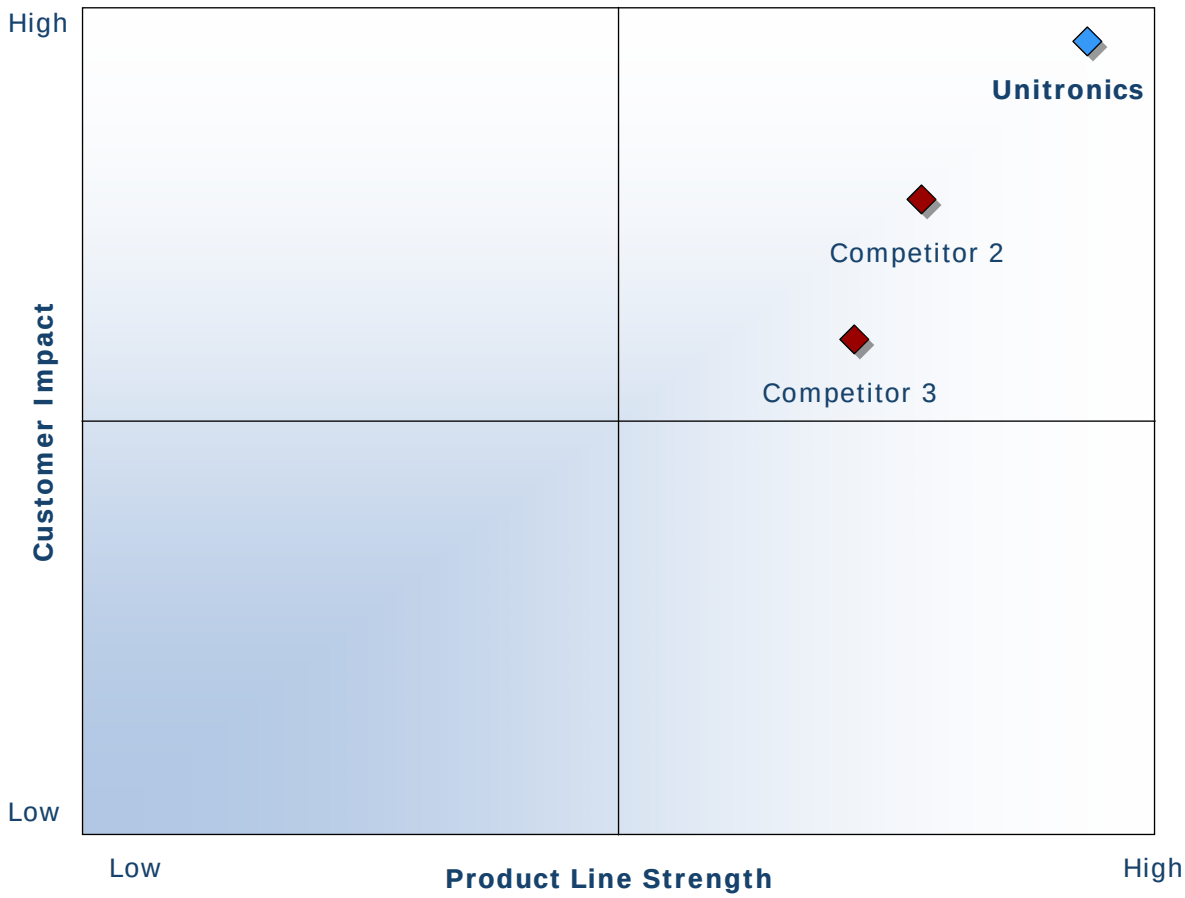
Criterion 5: Brand Equity

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

Decision Support Matrix

Once all companies have been evaluated according to the Decision Support Scorecard, analysts can 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.

DECISION SUPPORT MATRIX FOR PRODUCT LINE STRATEGY LEADERSHIP AWARD



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 players and for identifying those performing at best-in-class levels.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS

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

Frost & Sullivan Awards 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 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
8	**Reconnect with panel of industry experts**	Finalize the selection of the best-practice award recipient	• Review analysis with panel • Build consensus • Select winner	Decision on which company performs best against all best-practice criteria
9	**Communicate recognition**	Inform award recipient of award recognition	• Present 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 to enhance the brand
10	**Take strategic action**	Upon licensing, company may 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

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 almost 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from 31 offices on six continents. To join our Growth Partnership, please visit http://www.frost.com.