



Driving Embedded Instrumentation

2015 North American
Printed Circuit Board (PCB) Design Validation & Test
Customer Value Leadership Award



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



50 Years of Growth, Innovation & Leadership

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Background and Company Performance

Industry Challenges

Frost & Sullivan recognizes that soaring technological complexity is driving the need among companies designing and manufacturing circuit boards for increased visibility. More cores, faster data movement between chips, and Moore's Law are making hardware test and software debugging more challenging than ever. In addition, they are also looking to accelerate board bring-up to reduce their time-to-market and generate revenue sooner than later.

Meanwhile, due to increasing competition in the 64-bit market, a plethora of server chips is emerging including Applied Micro's X-Gene, AMD's Seattle, and Cavium's Thunder. Companies therefore need design validation and test solutions that can address a broad range of designs based on ARM and Intel.

Increasing complexity is also driving the need for solutions that cover both software and hardware as engineers strive to determine the cause of performance issues.

Technology-related challenges aside, customers are struggling in supporting their development teams across geographies, fostering collaboration among their engineers, and keeping costs in check.

ASSET InterTech's Customer Impact and Business Impact

Price/Performance Value

Over the years, ASSET InterTech® has strived to increase its value proposition to customers organically and via acquisitions. The company expanded into the processor-controlled test (PCT) market with the acquisition of International Test Technologies (ITT) of Ireland in 2007, added IJTAG-based and FPGA-controlled test capabilities in 2011, and more recently expanded its coverage of software debug with the acquisition of Arium™ in 2014. Frost & Sullivan firmly believes that Arium's strong market position with its software debug and trace tool for Intel Core and Xeon processors, as well as ARM cores, perfectly complements ASSET InterTech's Intel High-Speed Input/Output (HSIO) hardware validation product line.

Building on its history of providing customers with one platform (ScanWorks®) that features a number of engineering tools, the Arium acquisition also added a strong ARM software debug product line to the company's offering. This translates into immense value for customers who deal with different technologies such as in the growing microserver market. With ASSET InterTech's SourcePoint™, which tackles the complex debug and trace issues involving multicore 64-bit technology, customers can use one tool and reassign it for different designs based on different silicon, saving training time.

Another significant benefit of ASSET InterTech's offering is its subscription-business model, which contributes to lowering the unit cost per engineer, helping customers deal with cost pressure. Most of the company's install base for its validation, test and debug tools has been transitioned to this model including the HSIO and PCT product lines while the transition is under way for SourcePoint.

Finally, with the Arium acquisition, ASSET InterTech is now in the unique position of offering both software debug and trace tools, and hardware validation and test tools, enabling it to act as a system-level solution and therefore address the potential software/hardware integration issues faced by customers. Working with customers, the company has now identified several areas in which the combination offering would benefit customers' engineering process and systems.

Customer Ownership Experience

ASSET InterTech is an innovative company in the PCB design validation and test industry and has taken the lead on the subscription-based business model, extending significant benefits to its customers from a user experience standpoint. With the advent of cloud computing and Software as a Service (SaaS), companies in general have become increasingly open to the idea of subscription-based models. Today, most of the install bases for ASSET InterTech's HSIO and PCT product lines have moved to the subscription model. The HSIO product line was the first product line the company converted from a perpetual business model to subscriptions while the transition of the install base for the PCT product line started in 2013. 2014 marked the beginning of the transition of its install base for its boundary-scan line, which is expected to be complete by the end of 2015. While the company has made a real push towards the subscription-based model, it is cognizant of the fact that some customers still require perpetual licenses and accommodates such customers. Also, the thrust towards subscriptions has been stronger with the company's tools for design validation in comparison to its manufacturing product lines as the implementation of the model is more complicated for such applications. However, interest from customers in the manufacturing environment for this model is growing and the company is working closely with early adopters to overcome challenges.

With the emergence of the 64-bit market that includes Applied Micro's X-Gene, AMD's Seattle and Cavium's Thunder, there is convergence between the ARM and Intel worlds as the former challenges the latter in the server and enterprise market space. Frost & Sullivan notes that as a result, customers need tools that support all the processors being pushed into the enterprise market. ASSET InterTech's software debug and trace tool, SourcePoint, translates into high value to customers from this standpoint as it can be used for different designs. End users may swap the silicon in a design and still use SourcePoint. Not only does ASSET InterTech's ScanWorks platform cover both ARM and Intel, but it also includes software and hardware tools, enabling customers to deal with only one tool platform. Furthermore, the platform can be used across the lifecycle during board development, board bring-up, manufacturing, and even later on in the field. It provides

customers with a constant environment enabling a consistent engineering process throughout the product lifecycle.

Brand Equity

Although a small-size company, ASSET InterTech's customer base consists of very large and well-known original equipment manufacturers (OEM) and original design manufacturers (ODM). The company has been in business for close to 25 years (including 20 years as an independent company) and has supported many generations of Intel and ARM architectures, which has translated into a high level of confidence from customers in the company's ability to continue to support them in the future. ASSET InterTech has established longstanding relationships with customers who have used its products through several generations. The acquisition of ITT and Arium strengthened the company's position as a supplier to these large companies as they prefer to deal with one vendor rather than multiple ones. Also, by providing a single platform that can be used throughout the lifecycle, ASSET InterTech manages to position itself as more of a strategic supplier to customers that can support them from the power-on phase to the field. Staying in the same tool environment, customers have a consistent engineering process throughout the lifecycle.

Financial Performance

With the acquisition of Arium, ASSET InterTech grew its revenue by about 50%. Its revenues have been stable in 2014 as the company worked to honor commitments made to several customers prior to the acquisition. Now that the company has delivered on these commitments, the hardware of the acquired company has been refreshed, and investments have been made to address the market around ARM 64-bit processors, Frost & Sullivan expects the company's top line to grow in 2015 and beyond.

As a third-party tool provider, the financial performance of ASSET InterTech is dependent upon its ability to work closely with semiconductor companies to evaluate processor adoption. Over the years, the company has worked towards the objective of becoming the preferred/recommended third-party tool vendor and has been able to establish trust and credibility with these companies enabling the sharing of design information. ASSET InterTech is extremely careful with the intellectual property (IP) shared with it by semiconductor companies and has put in place processes to protect it. The company also maintains close relationships with customers. This is critical to the company's financial performance due to their influence on the chip providers as the actual buyers of the products. Also, these strong customer relationships provide the company a sound understanding of the direction in which customers are heading, which is essential to ensure a strong financial performance.

Customer Acquisition

With the acquisition of Arium, ASSET InterTech expanded its customer base significantly as it was heavily hardware-centric, mainly serving the needs of design and test engineers. The company did count software and firmware engineers among its customers via its ScanWorks Processor-Controlled Test Embedded Diagnostics product though, and used those contacts to quickly identify the development engineers in charge of debugging BIOS and other firmware and software in customer organizations. The Arium acquisition also added a strong ARM software debug product line to the company's offering. As a result, ASSET InterTech's revenues grew by about 50% in 2013. Moving forward, large companies' desire to deal with more comprehensive suppliers rather than point solutions from multiple small vendors augurs well for ASSET InterTech. Frost & Sullivan's competitive analysis reveals that key competitors only offer software debug and trace tools or hardware test tools.

Growth Potential

Over the last year, ASSET InterTech has worked to establish a solid foundation to grow from by replacing the hardware in Arium's product lines and making the required investments around ARM 64-bit processors. As the company makes investments that anticipate customer needs, it is expected to grow further. Frost & Sullivan is certain that the company's new value proposition in terms of a system-level solution that perfectly addresses customers' software and hardware integration issues will heighten its growth potential due to the company's unique offering spanning software debug and trace tools as well as hardware tools including boundary-scan, processor-controlled, and FPGA-controlled test. With the ScanWorks platform addressing both ARM and Intel, the company is also uniquely positioned to address the needs of customers for software development stemming from the emergence of the 64-bit market.

Conclusion

Dealing with increasing complexity and technology convergence, companies developing and manufacturing circuit boards are on the lookout for solutions that not only cover their needs but also contribute to lowering engineering costs. Frost & Sullivan's independent analysis clearly shows that via one platform, ScanWorks, and a delivery model based on subscriptions, ASSET InterTech provides design, test and firmware engineers the tools they need and a consistent environment that can be used from the power-on phase of the lifecycle to production and even out in the field for high-end use cases for which reliability and quality are critical. The newly expanded value proposition of ASSET InterTech via the acquisition of Arium has earned it the Frost & Sullivan's 2015 Customer Value Leadership Award.

Customer Value Leadership

Ultimately, growth in any organization depends upon customers purchasing from your 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, differentiating from the competition. This three-fold approach to delivering customer value is explored further below.



Key Benchmarking Criteria

For the Customer Value Leadership Award, Frost & Sullivan 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

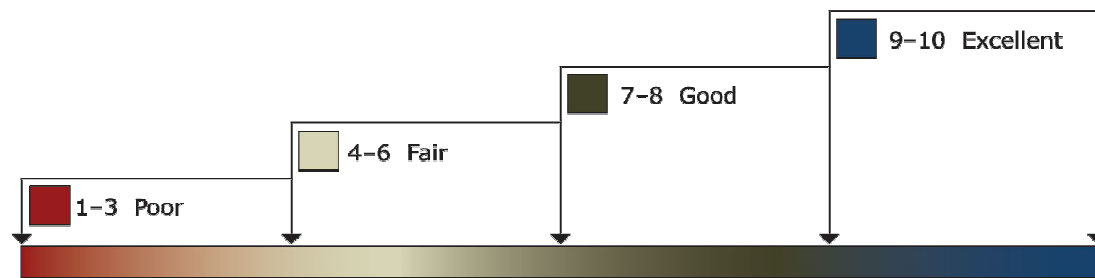
Business Impact

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

Best Practice Award Analysis for ASSET InterTech 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., 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, Frost & Sullivan has chosen to refer to the other key players in as Company 2 and Company 3.

DECISION SUPPORT SCORECARD: CUSTOMER VALUE LEADERSHIP AWARD

<i>Measurement of 1–10 (1 = poor; 10 = excellent)</i>			
Customer Value Leadership	Customer Impact	Business Impact	Average Rating
ASSET InterTech	9.8	9.2	9.5
Competitor 2	8.6	8.6	8.6
Competitor 3	8.2	8.0	8.1

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

Business Impact

Criterion 1: Financial Performance

Requirement: Strong overall financial performance 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

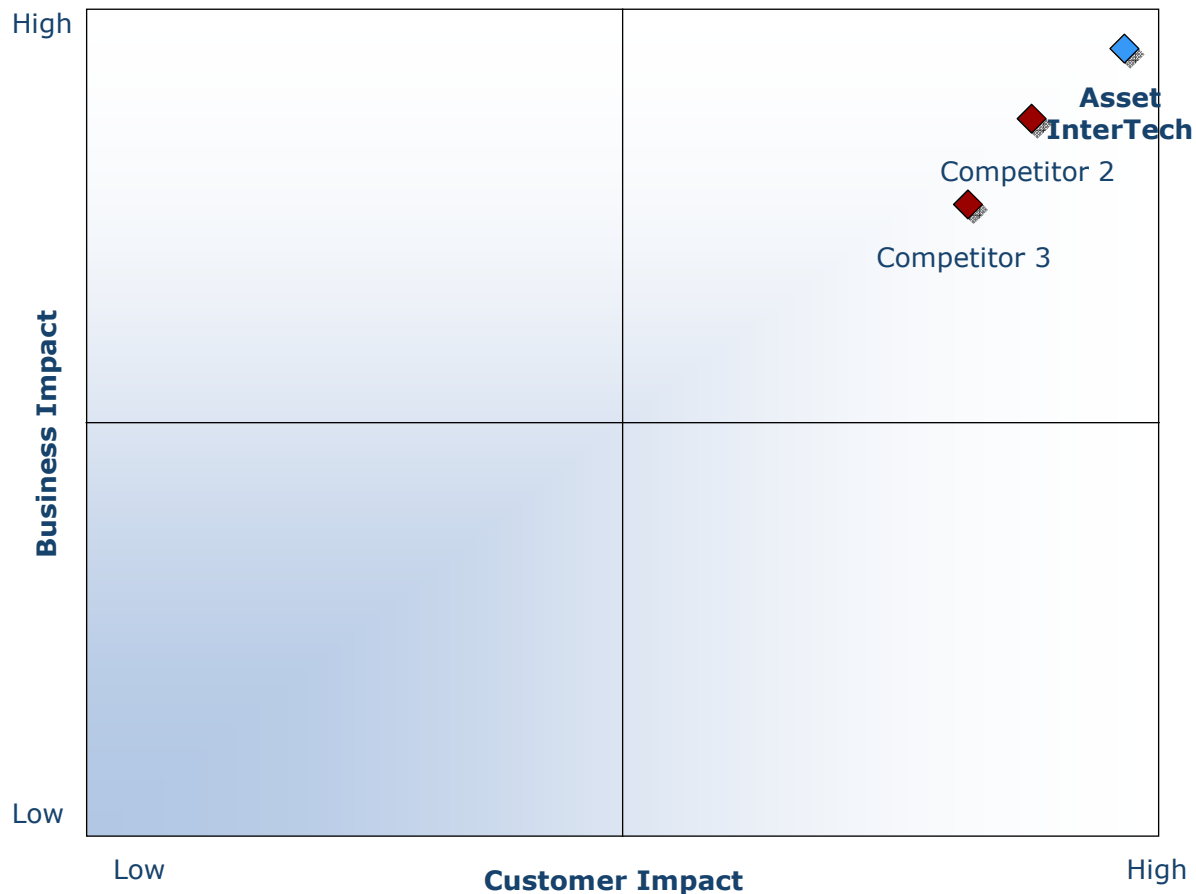
Requirements: Customer focus strengthens brand, reinforces customer loyalty and enhances growth potential

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 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.



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.



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 40 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.