

FROST & SULLIVAN

azbil

**2022
COMPANY
OF THE
YEAR**

*SOUTHEAST ASIA
SMART BUILDING 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. Azbil Corporation excels in many of the criteria in the smart building solutions space.

AWARD CRITERIA	
<i>Visionary Innovation & Performance</i>	<i>Customer Impact</i>
Addressing Unmet Needs	Price/Performance Value
Visionary Scenarios Through Mega Trends	Customer Purchase Experience
Implementation of Best Practices	Customer Ownership Experience
Leadership Focus	Customer Service Experience
Financial Performance	Brand Equity

Uniquely Addressing Societal Challenges with Human-centered Buildings

The COVID-19 pandemic brought some of the direst challenges society faces today. There is a growing need for operational cost enhancement and building performance optimization through efficient security, tenant, and performance management solutions.¹

Cities generate two-thirds of the planet’s greenhouse gas (GHG) emissions, and 30% of global energy consumption comes from buildings. Smart-building companies are integrating advanced technologies to save energy and reduce carbon dioxide (CO₂) emissions². These groups strive to enable human-centered buildings to ensure green cities and digital transformation while improving air quality, density, comfortability, potential exposure tracking, and cleaning.

The pandemic caused disruptions in indoor space usage, and experts anticipate it will continue to spread despite successes in fighting the disease. Hence, building indoor areas are being planned, used, and managed differently to improve safety and health outcomes.

For instance, preventing the COVID-19 spread requires adequate indoor ventilation and heating, ventilation, and air conditioning (HVAC) controllers to increase ventilation in areas with observed high CO₂ levels. In the pandemic era, smart buildings are platforms of safety, resilience, and transformation.

¹ *Smart Society Building a Better Future for Citizens with Smart Technologies* (Frost & Sullivan, September 2020)

² Ibid

Smart building automation solutions are gaining widespread adoption across Southeast Asia, propelling the building automation systems (BAS) market and fostering smart city projects. Azbil Corporation (Azbil) is well-positioned to capitalize on this trend through its high-quality, state-of-the-art solutions catering to the smart building market's fast-growing needs. Azbil distinguishes itself by driving synergy between people and technology while including energy and environmental conservation efforts. It has more than 100 years of know-how and cutting-edge automation technologies.

The company delivers solution-oriented services to its customers by leveraging its Group-wide synergies (both in Japan and overseas), 2,784 patents, and over 10,000 employees.³ It fosters "human-centered automation" while outstandingly contributing to energy conservation through its three businesses: Building Automation (BA), Advanced Automation (AA), and Life Automation (LA).

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*- Manuel Albornoz,
Best Practices Research Analyst*

In 2018, Azbil established the Strategic Planning & Development Office for Southeast Asia. It stimulates business activities in the region while strengthening its affiliates in Singapore, Thailand, Indonesia, Vietnam, Philippines, Malaysia and India, supporting business growth. Azbil enables delivering a range of goods and services with a regional focus and involving regional business marketing, strategic planning, and business management. Through this establishment, the company has catered to growing opportunities in the smart building sector in Southeast Asia.

Unmatchable Offerings: A Leader's Path

As a leading smart building automation solution provider, Azbil's BA business offers a robust portfolio that creates comfortable and efficient office and productive spaces while developing a business that contributes to environmental load reduction:

- Sensor and measurement devices sense and measure room temperature/humidity.
- User-operated devices enable users to set temperature, humidity, and other variables.
- BA systems monitor and manage the indoor environment, security, equipment, and energy usage throughout the building.
- Regulators and controllers keep facilities and instruments in an optimal state.
- Valves and actuators adjust buildings' hot/cold water or steam flow rates.

The company is a pioneer in the air-conditioning control field, particularly for large buildings. Its environmental and management technology uses networks, cloud computing, and artificial intelligence (AI) to increase performance. To this extent, Azbil's novel air-conditioning control technologies support various working styles, adapt to infectious diseases, and operate a virtual power plant (VPP).⁴

³ azbil Report 2021 (Azbil Corporation, March 2021)

⁴ Azbil Corporation Interview with Frost & Sullivan (Frost & Sullivan, September 2022)

Azbil responds to the expanding demand for decarbonization, modern safety and security, and comfortable offices for the “new normal” age alongside the increased demand for building refurbishment in Southeast Asia. It integrates Internet of Things (IoT) devices and field equipment to improve energy usage, air quality, and temperature using the acquired data and knowledge to offer practical solutions. With its savic-net™ G5 building management system, the company provides interactivity with products made by various manufacturers. The system is compatible with BACnet (a data transmission protocol for building automation and control networks).

Azbil offers solutions from consulting and sales proposals to engineering, installation, and services. It has sales, systems, field, and service engineers that provide solutions tailored to each site to meet different requirements at various life-cycle stages: planning, operation, maintenance, improvement, and refurbishing.

Another core business for the company is AA, which develops measurement and control technologies for factories and plants from industries in oil, chemical steel, pulp and paper, automobiles, electronics, semiconductors, food & beverage and more. Finally, Life Automation (LA) contributes to enhancing safety, security, comfort and energy saving in various fields ranging from lifelines and living spaces, to research, pharmaceutical, and medical facilities that benefit people's health.

Continuous Innovation and Environmental Commitment

Azbil plans to invest 56 billion yen in research and development (R&D) between 2021 and 2024.⁵ In the United States (US), it is focusing on developing next-generation measurement technology and researching IoT and international standardization. In Europe, the company is strengthening its pharmaceutical manufacturing product line. In Japan, Azbil's investments will enhance Fujisawa Technology Center's capabilities. By boosting productivity, improving product quality, and enhancing product reliability, the company strengthens its corporate structure and competitiveness, enabling the following innovations:

- **New air-conditioning system for “new-normal” ways of working:** It was developed based on the know-how gained from testing performed with Azbil volunteers. It has highly adaptable layouts for infection prevention and is compatible with crowded workspaces. The technology offers cell-based temperature control in precisely segmented zones (outlet units), with available zone-by-zone and smartphone-based temperature controls.
- **Early warning system for time series data:** The software tracks changes in monitored parameters and issues alarms. It quickly notices problems by scanning changes in time-series data patterns, looking for crucial measurement values.
- **Network Instrumentation Module Smart Device Gateway:** The multi-vendor IoT gateway reduces the development time of programmable logic controllers for device data collection, leveraging IoT and the company's expertise.
- **Humidity element miniaturization and sensor units:** A compact humidity element and a modularized sensor allow users to swap out the temperature and humidity sensing components, reducing maintenance tasks. It also has digitalized measurement signal processing.

⁵ azbil Report 2022 (Azbil Corporation, March 2022)

Azbil is focused on three growth fields: new automation, environment and energy, and life-cycle solutions contributing to resolving societal issues and spurring its growth.

Pandemic-ready Airflow Control System. The Smart Urban Co-Innovation Lab is Southeast Asia's first industry-led Lab focused on smart city solutions.

The company will seek potential partnerships through the Lab to create and oversee projects that call for energy management solutions throughout the buildings' life cycle. Azbil has installed its pandemic-ready airflow management system at CapitaLand's 5G-enabled Singapore Science Park as part of this endeavor. It enables meeting rooms to temporarily morph into a "pandemic-ready room", keeping anyone suspected of harboring an infectious disease isolated while awaiting transport to medical facilities.

Intelligent Building Management Systems (IBMS). With support from the Singapore Economic Development Board (EDB), Azbil announced the development of its new digital solutions with intelligent building management systems.

The company launched a technological development project that enables cross-sector information sharing. It seeks to create new IBMS digital solutions integrating AI and big data to transform contemporary cities into smart cities. These solutions aim to increase building occupants' safety and convenience, reduce energy consumption and operational costs, and contribute to a more sustainable society.

Over and above, Azbil participates in the Environmental Goods Agreement, showing solid results in reducing CO₂ at customer sites, with a total annual decrease of 2.94 million metric tons, sorting out COVID-19 obstacles. By 2030, the company aims for a 3.4-million-metric-ton reduction and a 100% recyclable product line.⁶

Building Trust through a Customer-centric Approach

Azbil operates on the central tenet that its success depends on customer satisfaction. It constantly monitors changing customer needs and determines contentment through dedicated account teams, customer interviews, and interactive communication systems with stakeholders. Its service engineers secure optimized operation, regular inspections, and maintenance while responding fast to urgent problems and sharing feedback with the company. To this extent, Azbil integrates customers' viewpoints within all its business segments to achieve customer satisfaction.

For instance, to ensure safety in hospital settings and stop the spread of infections, it deploys specialized Azbil workers to maintain the air conditioning systems, utilizes its risk management program, and executes numerous procedures while working closely with the hospital personnel

Azbil's Quality Assurance department maintains its corporate reputation across all service lines, monitoring quality target achievements, quality improvement activities, and crisis management in emergency events. Furthermore, the Safety Assessment department oversees safety guidelines, risk assessment, authorization systems, and other standards with its risk-level management process.

⁶ Azbil Corporation Interview with Frost & Sullivan (Frost & Sullivan, September 2022)

The company helps its customers stabilize their operation quality, simplifying complex processes with maintenance technology and automation. It reduces energy use while considering expected and actual consumption without affecting indoor environment quality or productivity. Additionally, Azbil puts

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together solutions to manage automated control devices more efficiently by collecting data remotely, analyzing event outputs, and having technical specialists look over control operations. Currently, the company is creating a systematic program to train its measurement, control, and maintenance specialists worldwide.

Several successful customer service examples are a testament to Azbil’s excellent customer strategy. For the Gaysorn group’s Amarin Plaza project, a 30-story office and commercial building, the company uniquely

shortened the payback period from 3.2 years to 2.8 years.⁷ Overall, the company’s remarkable capability displays lead to customer loyalty, establishing its status as a preferred partner among the globally competitive candidates.

Positioned for Growth: Going Beyond Automation

Despite the COVID-19 pandemic, several large-scale projects completed in 2020, and increased R&D expenses, Azbil achieved sales growth in 2021. Sales overseas accounted for 52.1 billion yen, a 16.3% increase from 2020, and total sales rose from 246.8 to 256.5 billion.⁸ In the BA segment, the total number of orders received in 2022 increased by 11.8% from the previous year. This outcome was brought about, among other things, by an increase in building renovations. Sales increased by 1.9% on an annual basis to 119.765 billion yen.⁹

In 2022, Azbil’s vision centers on developing new automation, environment and energy, and life-cycle solutions as a response to climate change, natural disasters, behavioral changes due to infectious diseases, declining birthrates, and an aging population. As a part of this objective, the company set specific goals of reaching 300 billion yen in net sales in 2024.¹⁰

- **New automation field.** The company will transition from automation to autonomy with data utilization and digital transformation promotion.
- **Environmental and energy field.** Azbil will provide customer initiatives to become carbon neutral by leveraging independent and distributed energy resources with interconnected facilities.
- **Life-cycle solution field.** The company will address insufficient human resources with 24/7 solutions that provide primary decision support/instructions in the event of anomalies, like alarms or complaints.

⁷ Gaysorn Tower, Case Study, Azbil Field (Azbil Corporation, 2019)

⁸ azbil Report 2021 (Azbil Corporation, March 2021)

⁹ azbil Report 2022 (Azbil Corporation, March 2022)

¹⁰ azbil Report 2022 (Azbil Corporation, March 2022)

This medium-growth term plan visualizes the company's objectives for the three business segments, materializing an upward trajectory. After the transformation phase, Azbil will set the road for a growth phase to propel toward 400 billion yen in net sales in 2030.¹¹

By fostering its "human-centered automation" philosophy and unique business model, all employees feel proud about contributing to a sustainable society.

In the BA business, the company is enhancing its remote maintenance technology, enabling it to monitor buildings overseas remotely and provide efficient maintenance services with high added value. It is developing technologies to maintain automated control devices by remotely gathering data and improving site inspections' efficiency. By examining the equipment's self-diagnostic data, Azbil can provide preventive maintenance services that guarantee system reliability.

A Foot in the Present and an Eye on the Future

Azbil will work with NTT Urban Solutions, NTT Facilities, NTT Urban Development, NTT Communications, and Daikin Industries on HVAC devices as part of its GHG emission reduction initiatives. Through these collaborations, the company will establish a green transformation solution in HVAC control technologies to reduce CO₂ emissions from office buildings by 20%.

Ultimately, the company's 2021 smart building projects sustain its corporate philosophy, goals, and momentum in an illustrative manner:¹²

- Azbil plans to implement a monitoring control system for a large-scale development project involving a district cooling plan, five office blocks, three residential blocks, and commercial, art, and cultural facilities in central Bangkok.
- The company is currently developing air-conditioning control facilities that utilize AI for a building that combines research facilities and offices in Singapore.
- Azbil is implementing its building management systems and HVAC control to optimize energy usage in an eco-friendly multi-story office tower of the highest standard in Jakarta.
- The company's BMS and HVAC control optimize energy consumption and the living environment in a multi-story office building next to one of Asia's most recognized banks in Malaysia.
- Major developers from Japan and Thailand are operating a multi-story building complex in central Bangkok using Azbil's BMS and HVAC management systems.

Aside from developing and launching new air conditioning systems, cloud computing, and AI products, the company plans to actively promote collaborative creation with other companies. Azbil intends to expand its overseas customer contact points by introducing products for overseas markets and building relationships with leading companies. The company will also unveil cloud-based energy-saving systems and VPP services.

In the end, Azbil's impressive growth acceleration, trajectory, services, and exceptional strategies earn its customers' trust and loyalty, enabling it to capture more market share.

¹¹ azbil Report 2022 (Azbil Corporation, March 2022)

¹² Ibid

Conclusion

Achieving a sustainable society relies on enabling human-centered buildings that ensure green cities and digital transformation while improving occupants' safety, comfort, and productivity. Contributing to global environment preservation must align with reaching a crystal-clear synergy between people and technology through integration, measurement, and control.

Overall, Azbil addresses these unmet needs with a strong leadership focus that incorporates customer-centric strategies and exemplifies best practice implementation. It optimizes buildings with energy-saving technologies, demand management, innovative machine learning, and predictive control. Its model builds life cycles, encompassing instrumentation design, installation and engineering, maintenance services, energy-saving solutions, and operation/management of facilities. Above and beyond, the company constantly monitors customer needs and changes, responding quickly to emergencies while delivering robust results. Azbil remains a trusted partner, earning a reputation for offering the overall best in the market.

With its strong overall performance, Azbil Corporation earns Frost & Sullivan's 2022 Southeast Asia Smart Building Solutions Company of the Year Award.

What You Need to Know about the Company of the Year Recognition

Frost & Sullivan's Company of the Year Award is its top honor and recognizes the market participant that exemplifies visionary innovation, market-leading performance, and unmatched customer care.

Best Practices Award Analysis

For the Company of the Year Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Visionary Innovation & Performance

Addressing Unmet Needs: Customers' unmet or under-served needs are unearthed and addressed by a robust solution development process

Visionary Scenarios Through Mega Trends:

Long-range, macro-level scenarios are incorporated into the innovation strategy through the use of Mega Trends, thereby enabling first-to-market solutions and new growth opportunities

Leadership Focus: Company focuses on building a leadership position in core markets and on creating stiff barriers to entry for new competitors

Best Practices Implementation: Best-in-class implementation is characterized by processes, tools, or activities that generate a consistent and repeatable level of success

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

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

