



Guidehouse
INSIGHTS

Research Report

Guidehouse Insights Leaderboard: Intelligent Building Software

Assessment of Strategy and Execution for 14 Key Market Influencers

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Section 1

Executive Summary

1.1 Market Introduction

Intelligent building software is a growing market segment as commercial building owners and managers adopt new technologies for reducing energy use, increasing building efficiencies, and satisfying tenant demands for comfort, productivity, and sustainability. It takes advanced software solutions to harness the data to reach these interlocking goals. Legacy software and hardware systems can help but are limited as data volumes increase and the complexities mount. The latest software offerings integrate data from multiple building systems, providing valuable business outcomes previously difficult to achieve with point solutions.

This *Leaderboard* report from Guidehouse Insights examines 14 intelligent building software providers and their platforms for optimizing commercial facilities. The various types of companies covered in this *Leaderboard* reflect an emerging market with well-known brands competing against innovative startups. No provider has a complete solution given the complex business challenges buildings present (e.g., energy efficiency, indoor air quality, workspace management, predictive-proactive maintenance, digital and physical security, digital twins, edge analytics), though some are moving closer to that goal. Their platforms and applications provide actionable insights that help reduce energy consumption, drive occupancy use, or lower costs in a comprehensive manner. As the market evolves, Guidehouse Insights expects ongoing improvements in these solutions and some breakthroughs as companies improve their capabilities in using building data with artificial intelligence (AI) and machine learning (ML) techniques.

1.2 Criteria Overview

The criteria by which manufacturers are compared in this *Guidehouse Insights Leaderboard* include the following:

- Vision
- Go-to-Market Strategy
- Partners
- Technology
- Cybersecurity
- Product Capabilities

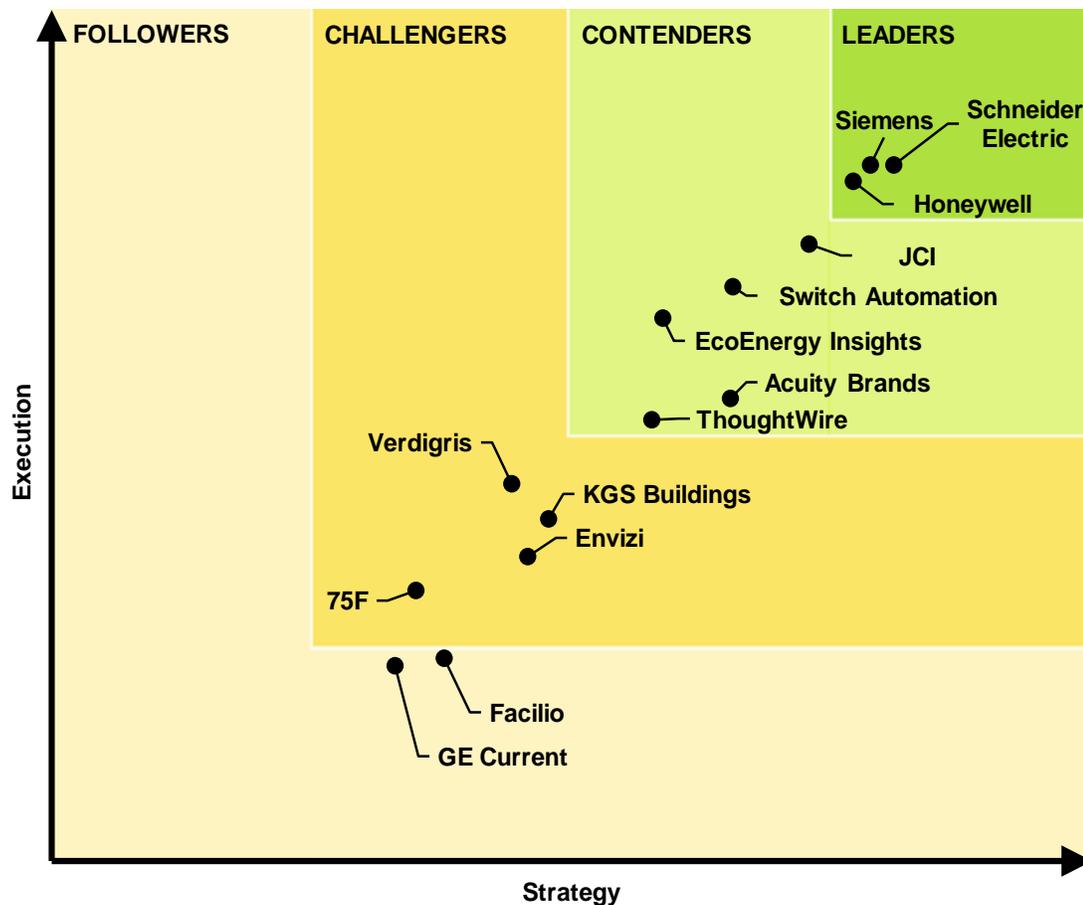
- Complementary Services
- Hardware Integration
- Breadth of Offerings
- Pricing

Detailed descriptions of each criterion are provided in Section 8.2.3 of this report.

1.3 The Guidehouse Insights Leaderboard Grid

Three companies achieved Leader status in this report: Schneider Electric, Siemens, and Honeywell. Each company stands out from the competition because of their ability to provide valuable software that can meet the growing and diverse needs of clients as well as deliver impactful data insights for both customers and tenants in the commercial building space. Although all three offer solutions that cover a range of intelligent building applications, Schneider Electric holds a slight lead due to its technology and vision.

Chart 1-1. The Guidehouse Insights Leaderboard Grid



(Source: Guidehouse Insights)

Section 2

Market Overview

2.1 Market Definition

Harnessing data in new ways is a fundamental process in creating intelligent commercial buildings. Legacy technologies, such as a building management system (BMS), already generate significant data volumes that are converted into valuable business outcomes. But often these systems are single purpose and do not combine with other systems and data flows from occupancy sensors, security cameras, or water leak detection systems. The data gets stuck in a silo or is not fully utilized.

With increasing data volumes from a variety of solutions, the challenge becomes how best to distill and harmonize the many data sources in an intelligent building. The answer is software that can ingest the data, optimize it, and increase its value across multiple use cases now and in the future. An intelligent building software platform or suite of applications can meet this challenge, providing insights that reduce energy consumption or increase occupancy utilization in a holistic approach. The software helps drive added valuable business benefits both for the owner's bottom line and for meeting tenants' needs.

2.2 Market Drivers

Intelligent building solutions continue evolving with advances in technology and growing acceptance among commercial building owners, managers, and tenants. New and more robust software is key to many of the advancements. The main drivers propelling this market forward include the following:

- **Greater availability of the sophisticated software:** Numerous vendors keep improving their software offerings to commercial building customers. The latest solutions use cloud and edge computing processes, and employ advanced tools and methods, such as data analytics, artificial intelligence (AI), or machine learning (ML).
- **Increased awareness of the value of sophisticated software:** A small but growing number of building owners and managers realize that investing in advanced software is key to creating and maintaining an intelligent building. By deploying advanced software solutions in their buildings, owners benefit by lowering costs and keeping tenants satisfied.
- **ROI improvements:** Vendors cite examples of positive ROI from software spend, with gains in the single to low double-digit percentage range in areas such as energy consumption improvement or lower costs through predictive maintenance instead of traditional scheduled maintenance work. ROI calculations, however, can vary given the complexity of buildings and the variety of solutions.

- **Tenant demands for data:** Building owners and managers face increasing demand from tenants for data about space utilization and energy efficiency. Advanced software can supply the quantitative evidence that an intelligent building is delivering a cost-effective and productive space for tenants and their employees.

2.3 Market Barriers

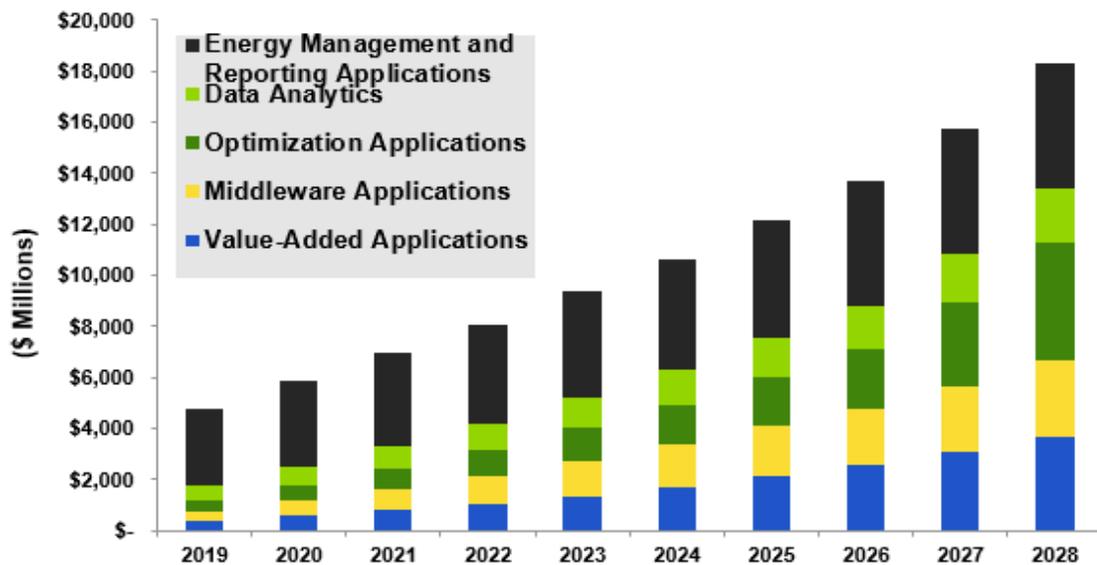
There are barriers to adoption of the latest software for intelligent buildings as there are with any newer technology. These are not insurmountable hurdles, but they do reflect an early stage market where trailblazing building owners and facilities managers have been leading the adoption curve while others take a wait-and-see stance. The key barriers include the following:

- **Greater cost:** Buying, installing, and using the latest software adds to costs. Using existing software can always seem like the best solution and building owners or facilities managers on tight budgets are going to hesitate to make new investments.
- **Unclear value proposition:** There are cases where the ROI can be demonstrated with advanced software that helps lower energy or maintenance costs or provide other business benefits. But the value proposition can be vague to skeptical buyers that have little experience with digital tools or that need clear validation before agreeing to purchase.
- **Lack of knowledgeable staff:** Not many buildings teams have staff members that can work with the latest software tools. Outsourcing this to vendors is an obvious option but having trusted staff to oversee and manage the process can be a hurdle for many firms.
- **Risk averse attitude:** Many potential adopters are risk averse when it comes to buying new software, or they take a wait-and-see attitude. This slows market growth.

2.4 Market Trends

Guidehouse Insights, a Guidehouse company, expects global revenue attributed to intelligent building software solutions to grow from \$4.8 billion in 2019 to \$18.2 billion in 2028 at a compound annual growth rate (CAGR) of 16.0%. Energy management and reporting applications software represent the largest software spending category by far. These kinds of applications permeate all types of building solutions and are often an entry point for energy efficiency in smaller buildings. Revenue associated with energy management and reporting applications is expected to increase from \$3.0 billion in 2019 to \$4.8 billion in 2028, growing at a CAGR of 5.3%. A relatively low growth rate and year-over-year revenue declines in later years indicates market saturation and a likely shift to more advanced software that competes on cost with the basic applications. Although still emerging, the optimization applications (at a CAGR of 29.8%), middleware applications (at a CAGR of 26.5%), and value-added applications (at a CAGR of 28.9%) market segments are expected to show significant growth and adoption over the forecast. Each of these categories is expected to increase globally from several hundred million dollars to multi-billion-dollar markets during this forecast.

Chart 2-1. Intelligent Building Software Solutions Revenue by Software Application Type, World Markets: 2019-2028



(Source: Guidehouse Insights)

Section 3

The Guidehouse Insights Leaderboard

3.1 The Guidehouse Insights Leaderboard Categories

Guidehouse Insights scored the vendors in this *Leaderboard* according to four categories: Leaders, Contenders, Challengers, and Followers. These categories are defined in the following section.

3.1.1 Leaders

Leaders are vendors that scored 75 or above in both Strategy and Execution. These companies have clearly differentiated themselves from the competition through exceptional technology development, strong partner relationships, a sustainable business model and significant market traction. Leaders are currently in the strongest position for long-term success in the intelligent building software market.

3.1.2 Contenders

Contenders are vendors that scored between 50 and 75 in both Strategy and Execution. While these companies have a solid foundation for growth and long-term success, they have not attained a superior position in the market. They are well-positioned to become Leaders but need to better differentiate themselves through innovative or unique tools, software modules, analytics capabilities, partnerships, and strategies that drive increasing adoption of their products.

3.1.3 Challengers

Challengers are vendors that scored higher than 25 in Strategy and Execution but are not yet Contenders for market leadership. While the vendors are fundamentally sound, they face significant challenges stemming from a lack of strategic vision or other risks to successful potential execution such as limited scaling capabilities or limited offerings in a crowded market. Challengers may also be early in their arc of new technology development and launch, therefore resulting in Execution scores that are based on small numbers of customers.

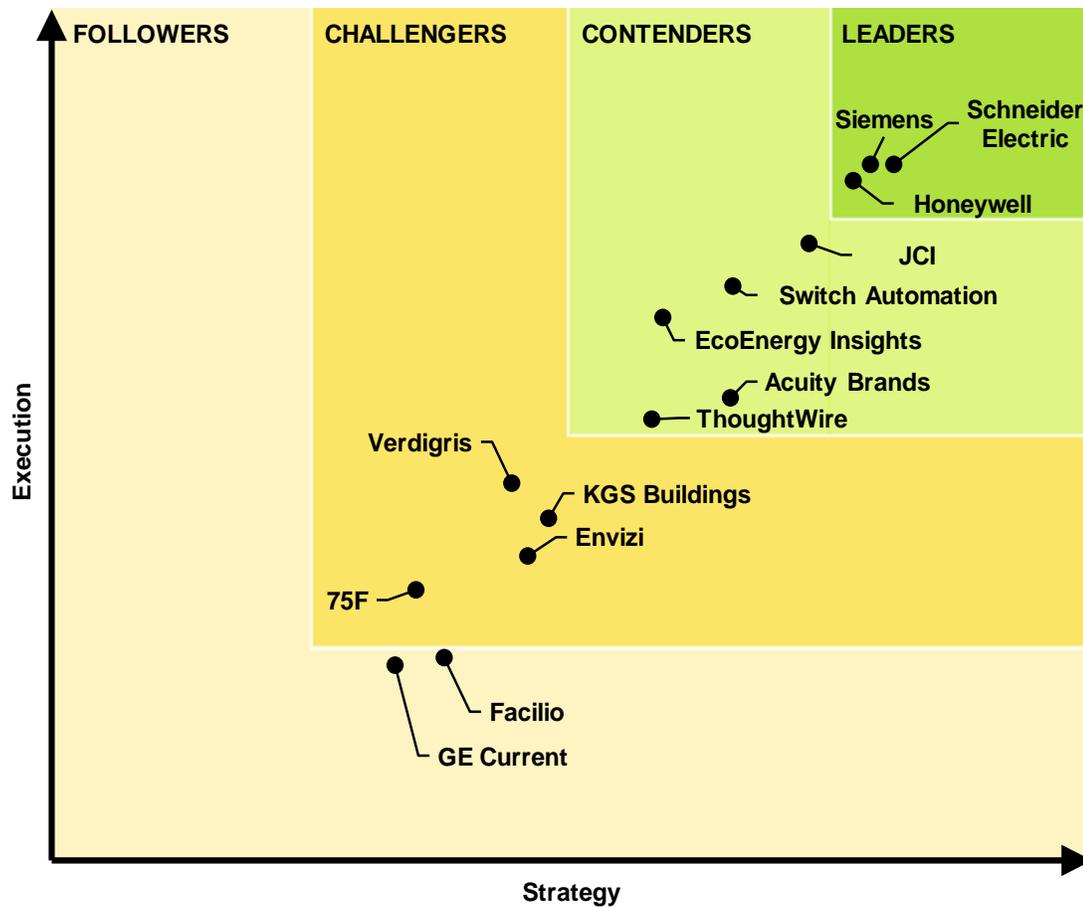
3.1.4 Followers

Followers are vendors that have failed to distinguish themselves and scored below 25 in Strategy and Execution. These companies are not currently expected to challenge the leaders unless they can substantially alter their strategic vision and improve their execution. Their longer-term viability as a key player is in doubt unless systemic changes are made within the organization.

3.2 The Guidehouse Insights Leaderboard Grid

Three companies have achieved Leader status in this *Leaderboard*: Schneider Electric, Siemens, and Honeywell. These companies have distinguished themselves in the intelligent building software market by offering a broad portfolio of applications that meet the growing and diverse needs of clients, delivering operational efficiencies that reduce energy consumption and increase occupant comfort and usability. Their products also combine data in new ways, breaking down silos that tend to hinder valuable insights and greater efficiencies. Schneider Electric ranks slightly higher than Siemens and Honeywell due to a more comprehensive vision and the breadth of its offering.

Chart 3-1. The Guidehouse Insights Leaderboard Grid



(Source: Guidehouse Insights)

Five competitors earned a Contender ranking: Johnson Controls International (JCI), Switch Automation, EcoEnergy Insights, Acuity Brands, and ThoughtWire. What these companies have in common is the level at which they executed on their vision for the intelligent building software market. JCI succeeds through its deep understanding of building automation and controls as well as its ability to integrate software and hardware for its customers. Switch Automation has gained market traction through its configurable platform that integrates current and future systems at scale. EcoEnergy Insights, now part of Carrier, has a solid vision for its software and is executing on a forward-looking set of analytics capabilities. Acuity competes with software that combines more traditional building energy management tools and its focus on lighting with applications for occupancy and space utilization. ThoughtWire is executing with a platform that employs digital twin technology to improve operational outcomes.

Four players rank as Challengers: Verdigris, KGS Buildings, Envizi, and 75F. Verdigris offers a competitive platform emphasizing building energy monitoring and forecasting, though, like other firms in this group, it lacks the scale demonstrated by companies in the upper groups. KGS Buildings competes with software that analyzes building system data and for improving facilities operations, maintenance, and planning. Envizi has gained traction with software focused on building automation and sustainability. 75F's software offering emphasizes optimized occupant experiences and operational efficiency, though could benefit from a broader vision.

Finally, two companies rank as Followers: Facilio and GE Current. Facilio has a reasonable strategy for its software but lacks the kind of traction that other companies have gained in this market. GE Current, though a well-recognized brand, lacks vision and execution with its building software and would greatly benefit from a significant pivot to become more competitive.

Table 3-1. The Guidehouse Insights Leaderboard Overall Scores

Rank	Company	Score
1	Schneider Electric	81.4
2	Siemens	80.3
3	Honeywell	78.4
4	Johnson Controls International	72.6
5	Switch Automation	66.5
6	EcoEnergy Insights	61.3
7	Acuity Brands	60.0
8	ThoughtWire	54.8
9	Verdigris	44.3
10	KGS Buildings	44.2
11	Envizi	41.1
12	75F	33.4
13	Facilio	31.5
14	GE Current	28.4

(Source: Guidehouse Insights)

Section 4

Company Rankings

4.1 Leaders

To qualify for the Leaders category, a company must score 75 or higher in both Strategy and Execution. This *Guidehouse Insights Leaderboard* features three Leaders: Schneider Electric, Siemens, Honeywell.

4.1.1 Schneider Electric

Overall Score: 81.4

Strategy: 81.0

Execution: 81.8

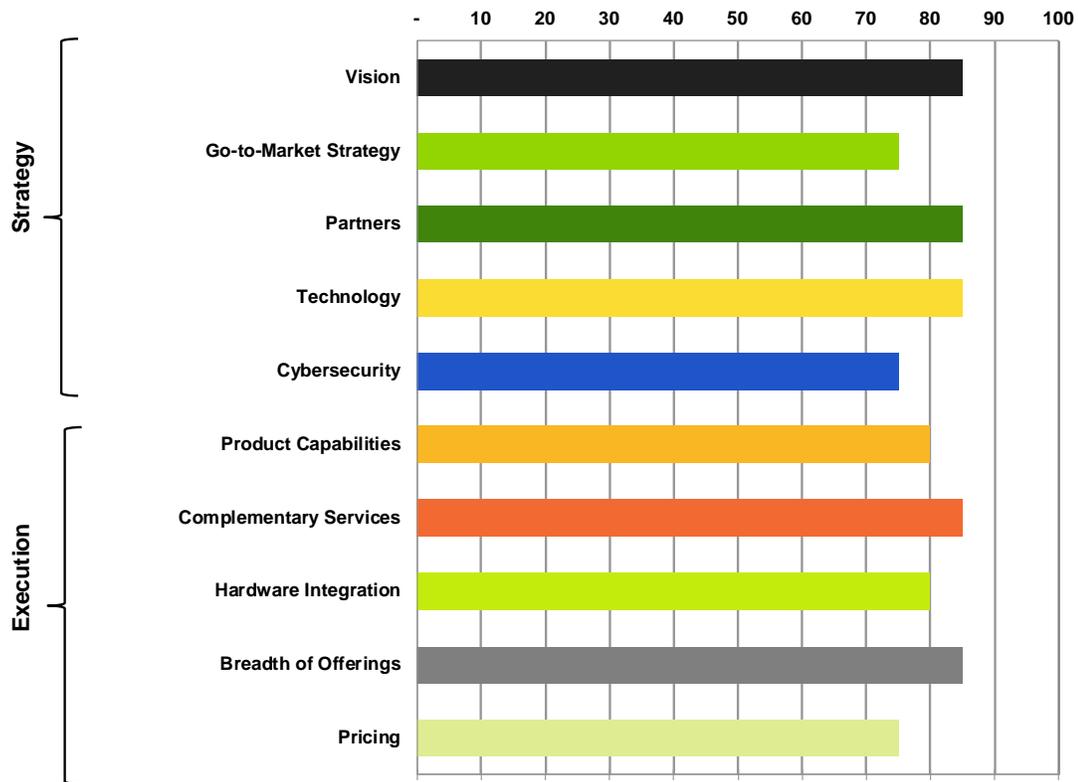
Schneider Electric provides digital energy and automation software solutions for efficiency and sustainability. Based in Rueil-Malmaison, France, the company combines energy technologies, real-time automation, software, and services into integrated solutions for homes, buildings, data centers, infrastructure, and industries. Founded in 1836, the company has a presence in more than 100 countries and employs more than 137,000 people worldwide. In 2019, the company generated \$30 billion in revenue.

Built on the Schneider's EcoStruxure platform, the EcoStruxure building portfolio features a plant-to-room IP backbone that captures and analyzes data from IoT-enabled devices, including sensors and controllers, then offers predictive analytics to improve building efficiency, performance, and occupant comfort. The open framework enables powerful integration and control with support for a variety of protocols and mobile experiences. Users can connect to the EcoStruxure platform remotely and make building control decisions across a variety of building systems. For cloud analytics, the company uses Microsoft Azure as its preferred partner, though customers can use their own cloud infrastructure. Schneider Electric has a large global presence and is frequently recognized for its corporate sustainability practices and focus. Clients include leading companies and large asset managers such as Hilton, Deloitte, Marriott International, and Blackstone.

As corporations and building managers continue to move toward more sustainable operations and net-zero buildings, Schneider Electric is well-positioned to be the provider of choice for emerging IoT and predictive analytics building performance software and capabilities. The company's software ranks at the top for its strong vision, go-to-market strategy, and partnerships as well as executing with its breadth of offering and complementary services. To maintain its top position, Schneider Electric must continue leading with innovative software solutions that meet the changing demands of clients seeking the most valuable and cost-effective tools.

www.se.com

Chart 4-1. Schneider Electric Strategy and Execution Scores



(Source: Guidehouse Insights)

4.1.2

Siemens

Overall Score: 80.3

Strategy: 78.8

Execution: 81.8

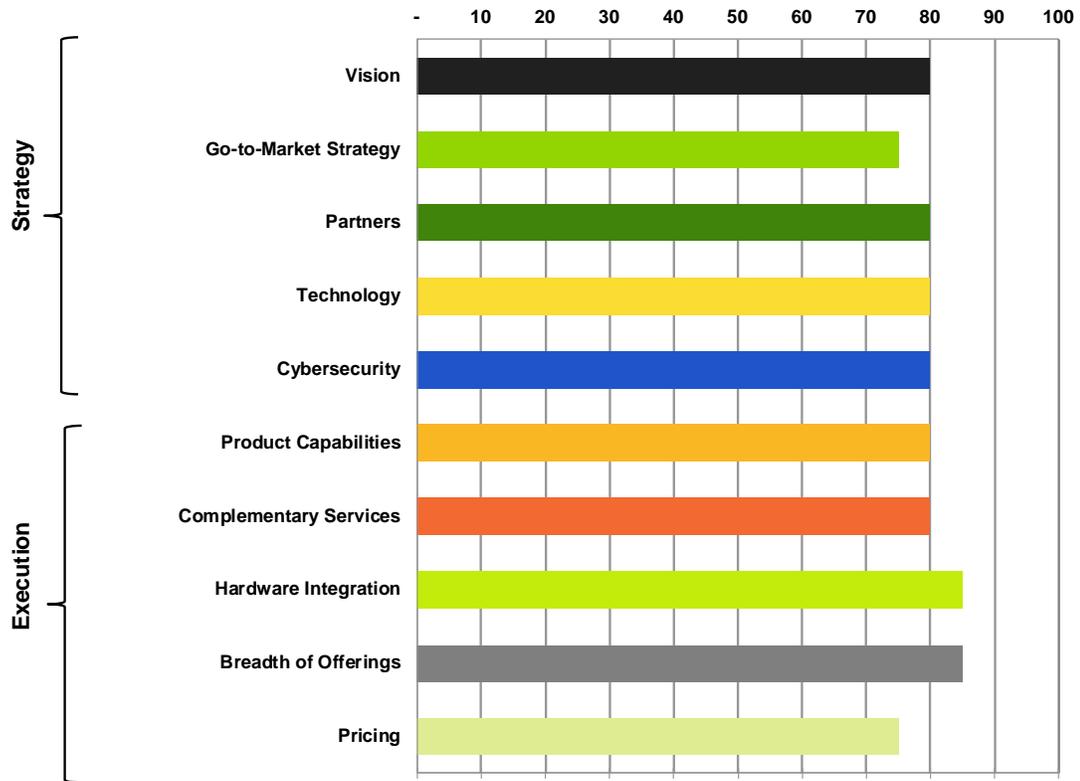
Siemens is a global engineering and electronics multinational conglomerate organized around four business sectors: energy, healthcare, industry and infrastructure, and cities. Based in Munich, Germany, and founded in 1847, Siemens has approximately 385,000 employees and a presence in 200 countries. The company reported annual revenue of \$94.1 billion for fiscal year 2019.

Siemens offers multiple building automation and control systems and takes a platform approach to its software, using digital twin techniques to create robust applications. Among its offerings is Desigo, a suite of products that allows customers to control, regulate, automate, and optimize various building systems, including HVAC, lighting, energy management, security, and safety systems. Designed to be open and modular, Desigo enables customers to modify the software to meet specific building management needs no matter the size, type, or number of buildings. Another Siemens product is Building Operator, a cloud-based application that features remote monitoring and control of BACnet-enabled buildings and equipment, delivering real-time building status to customers and operational updates. In addition, Siemens' building software uses AI techniques, taking a holistic approach to data ingestion then preparing it for analysis and producing beneficial outcomes for enhanced efficiencies and forecasting.

Siemens' ranking as a Leader stems mainly from its breadth of offering, hardware integration capabilities, and a strong vision for its products. The company also ranks high based on its go-to-market ability on both a global and regional scale. From a technology perspective, the company's intelligent building software has the advantage of the shared knowledge from its MindSphere IoT platform, which helps a broad range of enterprise customers digitally transform their business processes. Though Siemens has a solid vision for its offerings, it could improve its standing with a more cohesive articulation of that part of its strategy.

www.siemens.com

Chart 4-2. Siemens Strategy and Execution Scores



(Source: Guidehouse Insights)

4.1.3

Honeywell

Overall Score: 78.4

Strategy: 77.0

Execution: 79.8

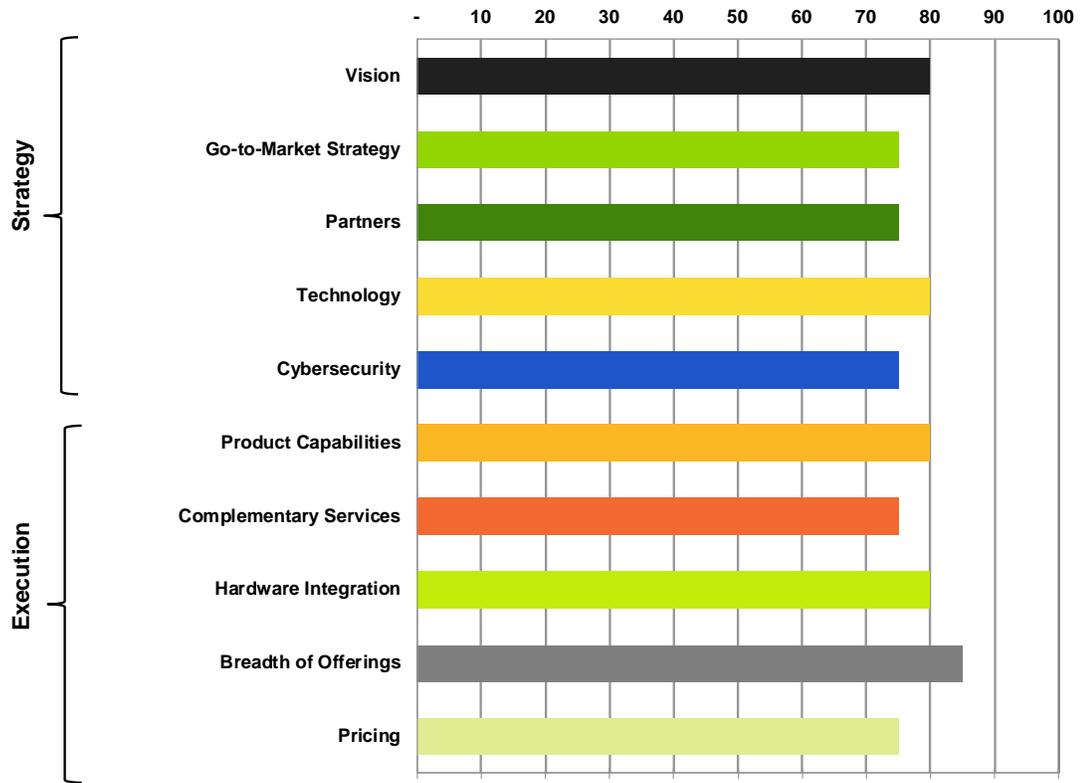
Honeywell is a large software-industrial conglomerate that manufactures electronics and technologies aimed at addressing safety, security, and energy issues. Honeywell is headquartered in Charlotte, North Carolina, and employs an estimated 114,000 people globally, with 44,000 in the US. For its 2019 fiscal year, the company reported \$36.7 billion in revenue.

Honeywell's building management services include solutions for airports, commercial buildings, data centers, government, healthcare, higher education, K-12 education, pharmaceuticals, public events and stadia, and utilities. The company offers a variety of smart building management solutions, including products such as Enterprise Building Integrator (EBI), WEBs building automation system (BAS), Ascent Building Management System, Centraline Integrated Building Management, ComfortPoint Open BMS, and Trend BMS. EBI, for instance, is a network-based intelligent building automation and management software. Cloud-based EBI allows for remote monitoring and controls, and interfaces with HVAC, lighting, energy management, and other building performance and occupant comfort systems. Honeywell's WEBs BASs integrate the WEBs-N4 interface with various remote building control devices and sensors, allowing for building performance data analytics and control. Another Honeywell brand, Centraline, is the Niagara eXtended (NX) integrated BMS, which integrates a variety of meters, thermostats, sensors, HVAC controllers, and other building operations systems under the ARENA NX integration and supervision platform.

The company ranks as a Leader for its breadth of offerings, vision, and hardware integration, and relatively high scores for other criteria. The company could move higher in the rankings in one aspect; an improvement in its vision would help move it ahead of the top competitor, Schneider Electric.

www.honeywell.com

Chart 4-3. Honeywell Strategy and Execution Scores



(Source: Guidehouse Insights)

4.2 Contenders

To rank in the Contenders category, a company must score above 50 but not above 75 in both Strategy and Execution. Within this *Leaderboard*, five companies are considered Contenders: Johnson Controls, Switch Automation, EcoEnergy Insights, Acuity, and ThoughtWire.

4.2.1 Johnson Controls International

Overall Score: 72.6

Strategy: 72.8

Execution: 72.5

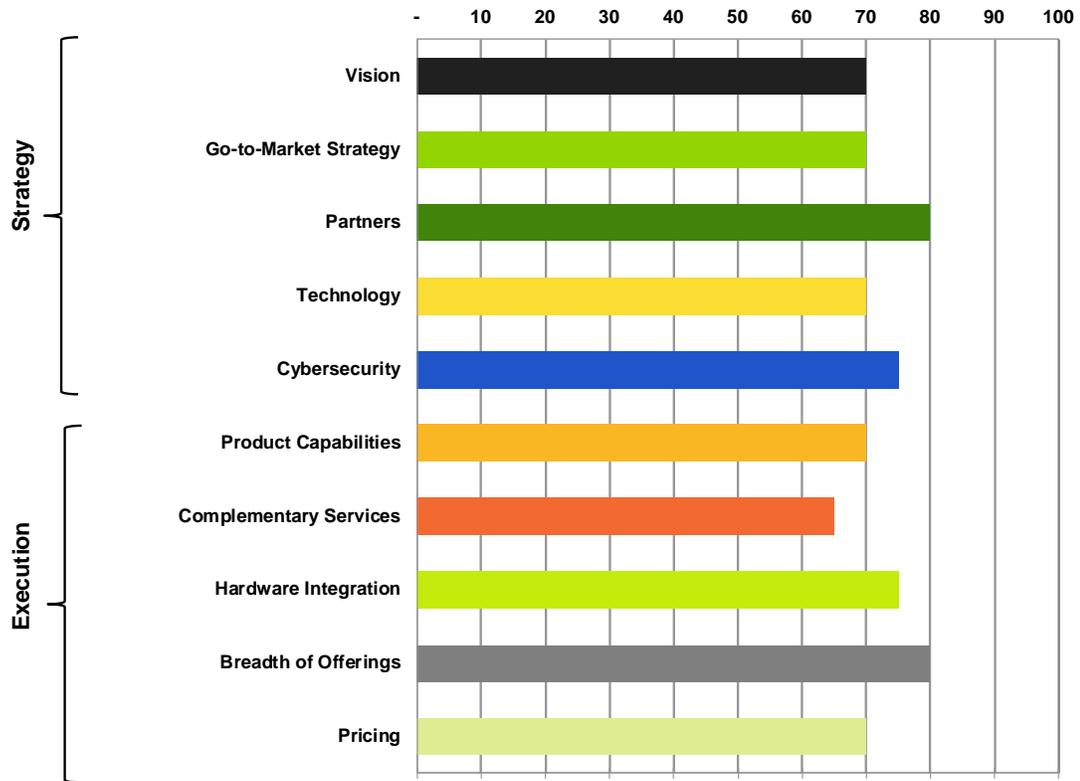
Johnson Controls International is a building equipment company focused on HVAC, fire, and security solutions. Founded in 1885, the company is headquartered in Cork, Ireland, and employs an estimated 105,000 people globally. Johnson Controls reported \$23.9 billion in sales for fiscal year 2019. The company supports a range of industrial sectors, including healthcare, education, data centers, and manufacturing. Its portfolio of building technology solutions includes brands such as Tyco, York, Metasys, Ruskin, Titus, Frick, Penn, Sabroe, Simplex, Ansul, and Grinnell.

Johnson Controls' smart building software is Digital Vault, a platform combining data integration and analytics. Digital Vault incorporates data from a variety of building systems, including energy use, security, equipment performance, and space utilization. The aim is to enable facilities managers to achieve their key metrics goals (reducing energy use, increasing productivity, and providing safe and comfortable environments for tenants). The company also offers several other products for facilities management, asset monitoring, and plant optimization as well as a mobile app for building occupants called Companion.

Johnson Controls ranks as the top Contender for its breadth of offerings, emphasis on security, and partnerships. The company could move up and become a Leader by improving in areas such as its technology compared to current leaders and a stronger vision for intelligent buildings platform.

www.jci.com

Chart 4-4. Johnson Controls International Strategy and Execution Scores



(Source: Guidehouse Insights)

4.2.2 Switch Automation

Overall Score: 66.5

Strategy: 65.5

Execution: 67.5

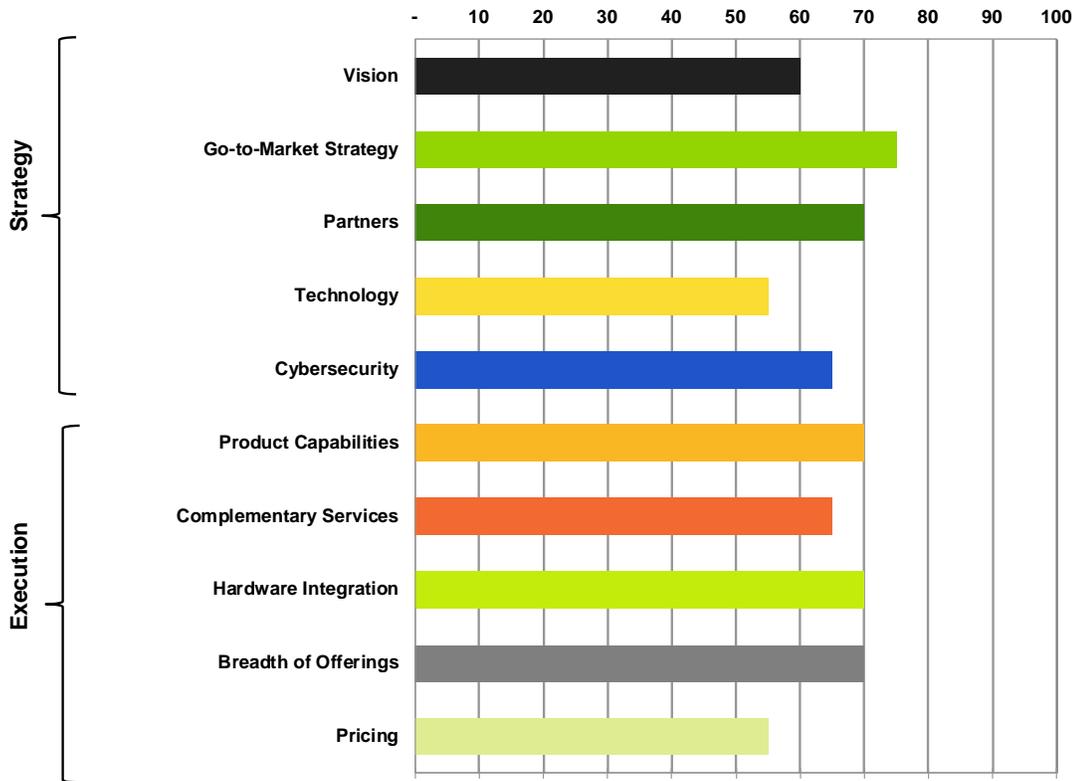
Privately held Switch Automation is a real estate software vendor with headquarters in Denver, Colorado, and other offices in Australia, Asia, and Europe. The company was established in 2012 and currently employs about 50 people globally. Switch Automation targets a range of customer segments, including commercial real estate, retail, grocery, and financial services.

The Switch Platform is a facilities management software platform that integrates building data with equipment to enable performance benchmarking, optimization, and control capabilities. The cloud-based platform is noted for its open architecture and being data agnostic, meaning it can integrate with a wide range of devices and systems. It also features user-configurable tools with advanced business intelligence, ML, automation and remote control capabilities. The company's Switch Dx³ offering is part of a solution set that connects sensors and devices then provides an overview of a building's systems, highlighting potential vulnerabilities and suggesting options for enhanced integration. Key company partners include Microsoft, Dell, and Intel. A recent win for the company is a project with the US Department of Defense (DOD) that involves collecting and aggregating building data on Switch's platform. The objective is to improve the efficiency of DOD's facilities management with a view to reducing energy usage and maintenance costs.

Switch Automation ranks as a leading Contender for its product capabilities and hardware integration capabilities. Its partnerships also help its standing in this group. However, the company could move up and potentially become a Leader by improving its technology with more advanced AI and ML capabilities and a stronger overall vision.

www.switchautomation.com

Chart 4-5. Switch Automation Strategy and Execution Scores



(Source: Guidehouse Insights)

4.2.3 EcoEnergy Insights

Overall Score: 61.3

Strategy: 58.8

Execution: 63.8

Founded in 2009, EcoEnergy Insights is an IoT analytics company acquired by Carrier in 2017. Carrier, formerly UTC Climate, Controls & Security, is a leading global provider of innovative HVAC, refrigeration, fire, security and building automation technologies. Carrier employs approximately 53,000 people in 160 countries and reported 2019 revenue of \$18.6 billion. Based in Kennesaw, Georgia, EcoEnergy Insights alone employs several hundred people. Its target customers include banks, public and commercial buildings, hotels, manufacturing, retail, restaurants, and water utilities.

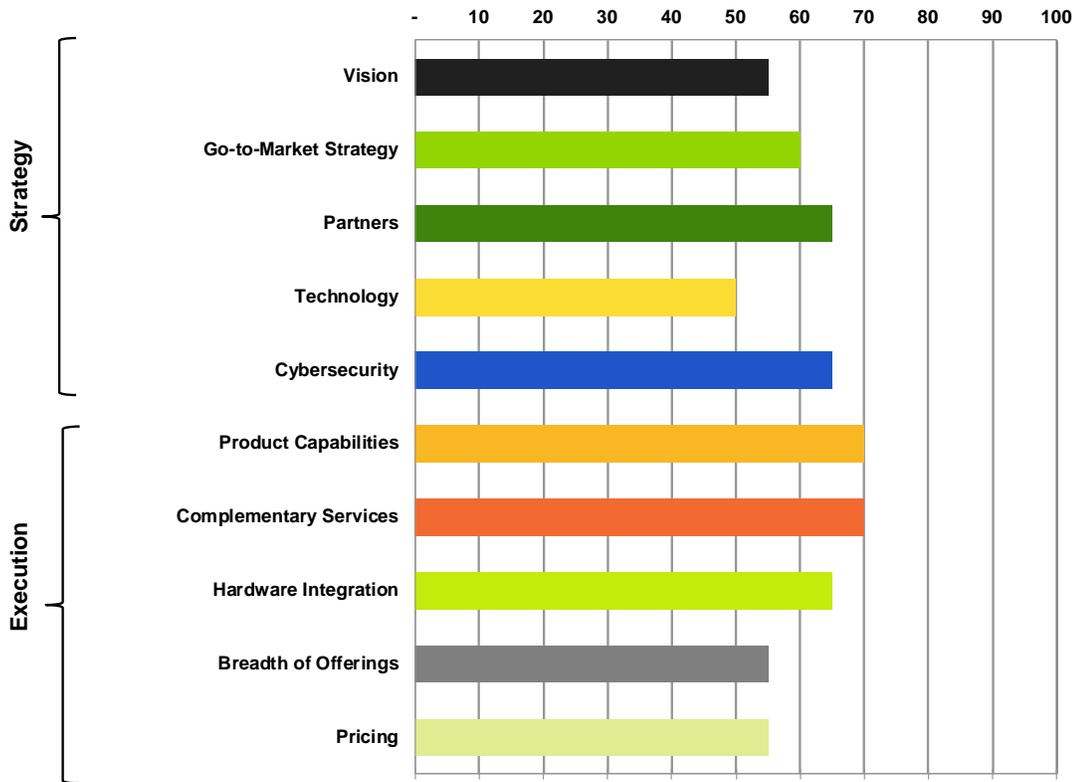
The CORTIX platform is EcoEnergy Insights' flagship offering, an AI-powered building IoT platform. The platform analyzes buildings, sites, and equipment data, then highlights opportunities for increasing efficiency, compliance, and building

performance. The CORTIX platform is a cloud-based product and is compatible with a range of IoT-enabled devices and equipment. Another offering from the company is its CORTIXedge system, a plug-and-play solution that features data collection and integration of equipment at the facilities, as well as enabling configuration of control logic and deploying firmware upgrades using a unified console. The system also provides insights to improve building operations. EcoEnergy Insights operates a command center with a team of data scientists, analysts, and experts that offer remote commissioning, monitoring, diagnostics, and prognostic support for building operations.

EcoEnergy Insights ranks among the Contenders in this *Leaderboard* for its product capabilities and complementary services. Being a part of Carrier and ultimate parent United Technologies gives the company a strong global presence and a more firm go-to-market pathway. Nonetheless, in order to move up in the rankings, EcoEnergy Insights could benefit from a wider breadth of its offerings (for example in space utilization) and a more aggressive technology strategy.

www.ecoenergyinsights.com

Chart 4-6. EcoEnergy Insights Strategy and Execution Scores



(Source: Guidehouse Insights)

4.2.4 Acuity Brands

Overall Score: 60.0

Strategy: 65.3

Execution: 54.3

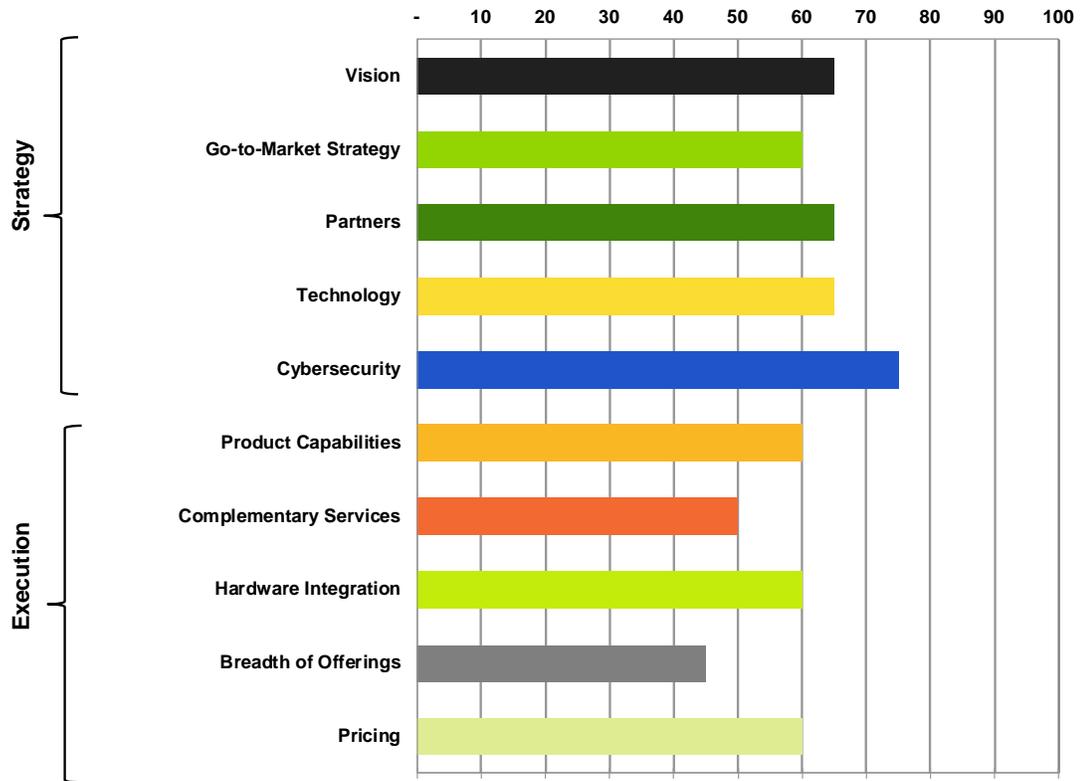
Acuity Brands is a leading manufacturer of lighting and building management solutions. Headquartered in Atlanta, Georgia, Acuity employs more than 12,000 people in North America, Europe, and Asia. In fiscal year 2019, Acuity Brands reported net sales of \$3.7 billion.

Acuity Brands' primary software services include Atrius, BuildingOS, LocusMaps, and Distech Controls. Atrius is a location-aware data and services platform that uses connected lighting networks to deliver location data to improve occupant and shopper experiences. It also offers facility operations through wayfinding, asset tracking, and spatial analytics. BuildingOS is a building energy management solution and analytics platform that centralizes and analyzes building energy data to improve energy performance across commercial building portfolios. Acuity Brands' 2018 acquisition of BuildingOS has allowed the company to tap into a significant base of large institutional and commercial customers with building portfolio management and potential IoT needs. LocusMaps is a location as a service platform that helps venue operators make built spaces more functional and discoverable through consumer-grade interactive mapping. The Distech Controls platform enables enhanced automation for occupant comfort and control as well as energy efficiency. A key feature of Distech's capabilities is a suite of mobile apps that allow users to easily control their indoor environment. Acuity Brands' solutions can be unified to provide enhanced building intelligence across multiple verticals such as retail, light industrial, healthcare, airport, commercial office, and other spaces.

Acuity ranks as Contender for its product capabilities and partnerships. Acuity could benefit, however, from a more robust set of product capabilities and a wider breadth of its offerings, for instance in workforce management or asset utilization. To move higher in the rankings could also develop a stronger set of complementary value-added services, streamlining options for customers.

www.acuitybrands.com

Chart 4-7. Acuity Brands Strategy and Execution Scores



(Source: Guidehouse Insights)

4.2.5

ThoughtWire

Overall Score: 54.8

Strategy: 57.8

Execution: 51.8

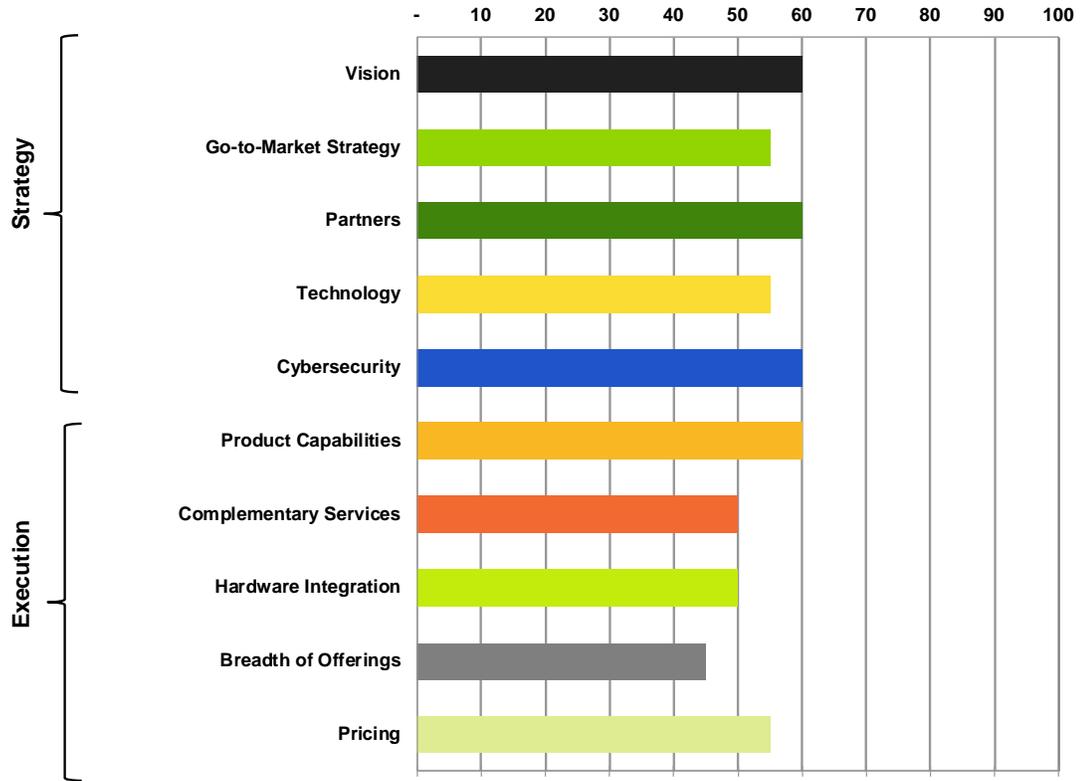
ThoughtWire is an IoT and smart buildings software provider based in Toronto, Ontario. Founded in 2009, the privately held company employs approximately 50 people. Its main clients are in the hospital and commercial building sectors.

ThoughtWire's software leans heavily on digital twin technology for smart buildings. Its Smart Building Digital Twin software integrates IT and OT systems, IoT devices, and third-party data into a digital model of building operations and performance. The software aims to monitor, control, and optimize building operations, and includes energy management, security, and communications applications. ThoughtWire's Smart Hospital Suite offers similar capabilities but includes additional hospital management-specific functionalities, including patient monitoring, warning systems, workflow management, and response capabilities. The company has a noteworthy partnership with Schneider Electric. In October 2019, the two firms struck a deal to create smarter digital hospitals that operate seamlessly.

ThoughtWire ranks as a Contender for its product capabilities focused on hospitals and its partnerships. To move up in the rankings, it would benefit from a broader portfolio of software and a stronger ability to execute across a more diverse set of building types.

www.thoughtwire.com

Chart 4-8. ThoughtWire Strategy and Execution Scores



(Source: Guidehouse Insights)

4.3 Challengers

To fall into the Challengers category, a company must score above 25 and below 50 in both Strategy and Execution. Four firms are considered Challengers in this *Leaderboard*: Verdigris, KGS Buildings, Envizi, and 75F.

4.3.1 Verdigris

Overall Score: 44.3

Strategy: 44.3

Execution: 44.3

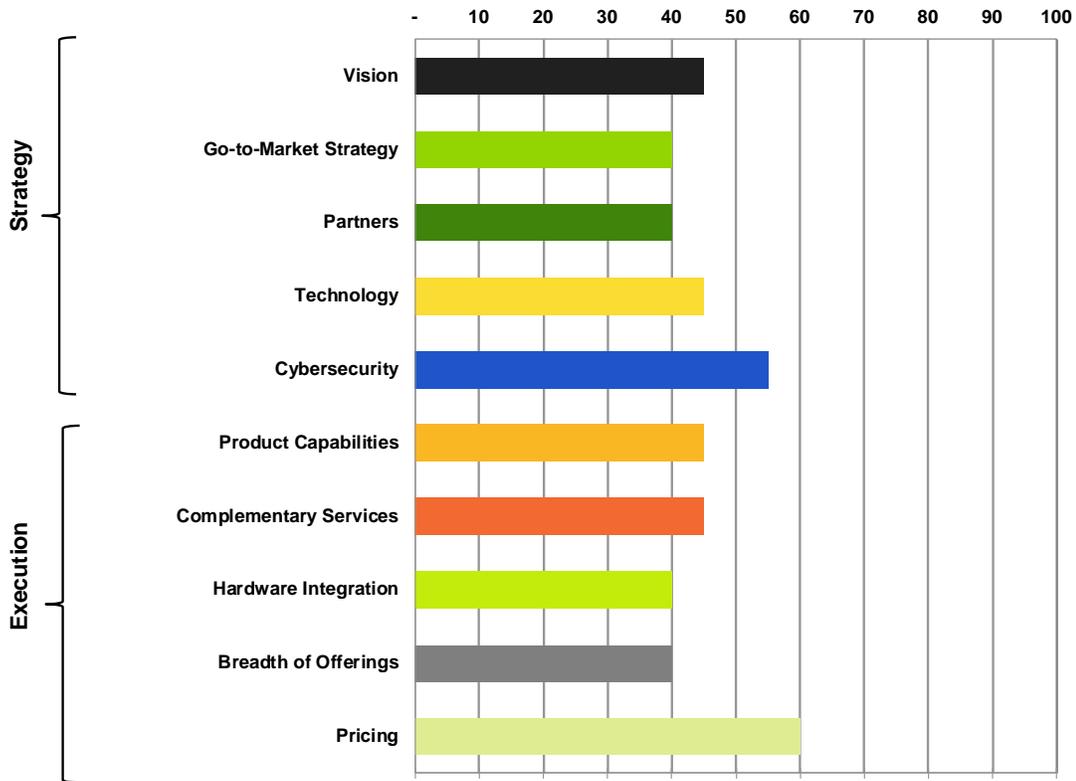
Verdigris is a privately held startup focused on smart building applications for energy efficiency. The company was founded in 2012 and is headquartered in Mountain View, California. The company employs about 30 people.

Verdigris' solution includes energy meter sensors that attach to a building's electrical panel to track energy consumption. The meter data is sent over Wi-Fi or Verizon's 4G-LTE network to a cloud where it is monitored and analyzed using AI technologies. The software identifies where there are energy inefficiencies or discrepancies and sends alerts of anomalies and notification workflows via web app or email. Verdigris provides dashboards and performance reports that suggest improvements for building performance. The software can also predict future energy usage levels and automate demand management by adjusting building systems and equipment.

Verdigris ranks as a Challenger for its competitive pricing, security capabilities, and focused AI product capabilities. However, the company would need to make significant strides with its breadth of offerings, partnerships, and go-to-market strategy to compete with companies that offer more robust solutions that improve overall building performance and meet management and tenant needs.

www.verdigris.co

Chart 4-9. Verdigris Strategy and Execution Scores



(Source: Guidehouse Insights)

4.3.2 KGS Buildings

Overall Score: 44.2

Strategy: 47.8

Execution: 40.3

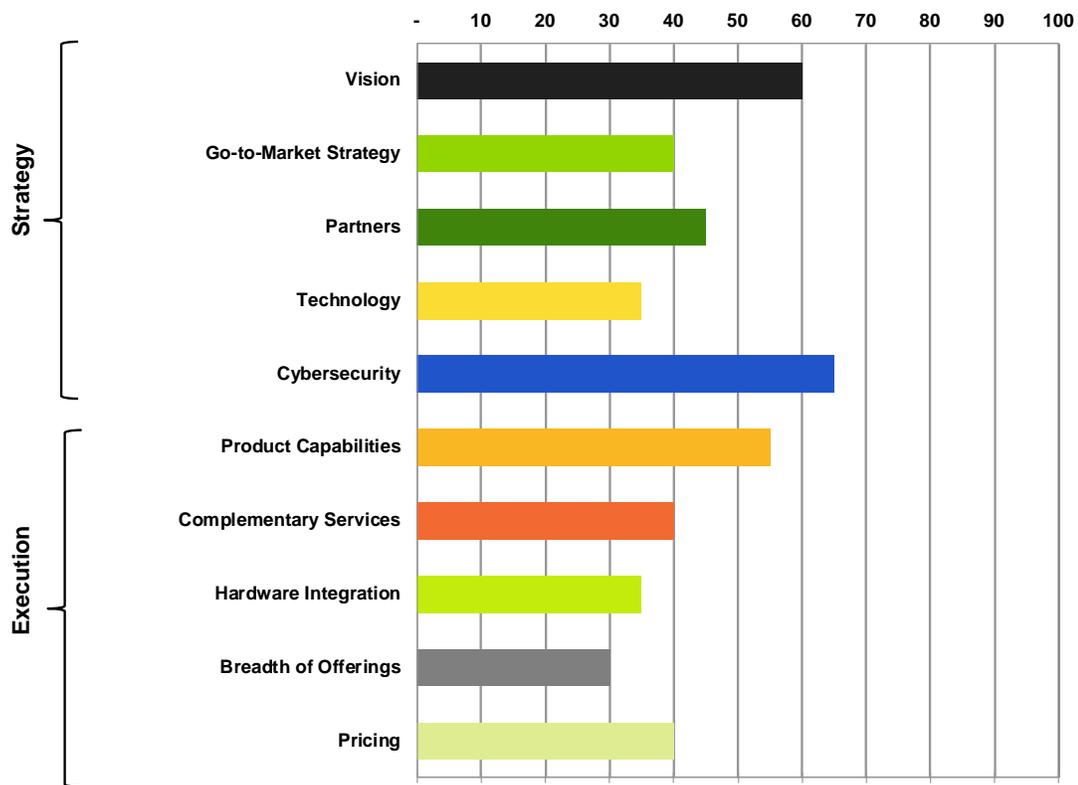
KGS Buildings is a privately held building performance management software provider. Headquartered in Somerville, Massachusetts, the company was founded in 2008 within MIT’s Building Science Department and employs approximately 25 people. KGS Buildings’ target clients include the healthcare industry, universities, corporate real estate, and facility management providers.

The company's flagship software platform is Clockworks. The main focus of Clockworks is on fault detection and diagnostics, but it also provides virtual metering, key performance indicators for building systems, and workflow tools. The cloud-based solution identifies building performance trends, diagnoses issues, and detects opportunities for improving efficiency, comfort, and maintenance. The company uses Microsoft Azure as its cloud provider. Schneider Electric is a key KGS partner in this space. The company received \$2 million in Series C funding from Schneider in 2016.

KGS Buildings ranks as a Challenger for its product capabilities in diagnosing issues within buildings and for fault detection. Among other steps, the company must expand its offerings, increase its partnerships, and develop a stronger go-to-market strategy to compete with companies ahead of it in the ranking.

www.kgsbuildings.com

Chart 4-10. KGS Buildings Strategy and Execution Scores



(Source: Guidehouse Insights)

4.3.3

Envizi

Overall Score: 41.1

Strategy: 45.8

Execution: 35.8

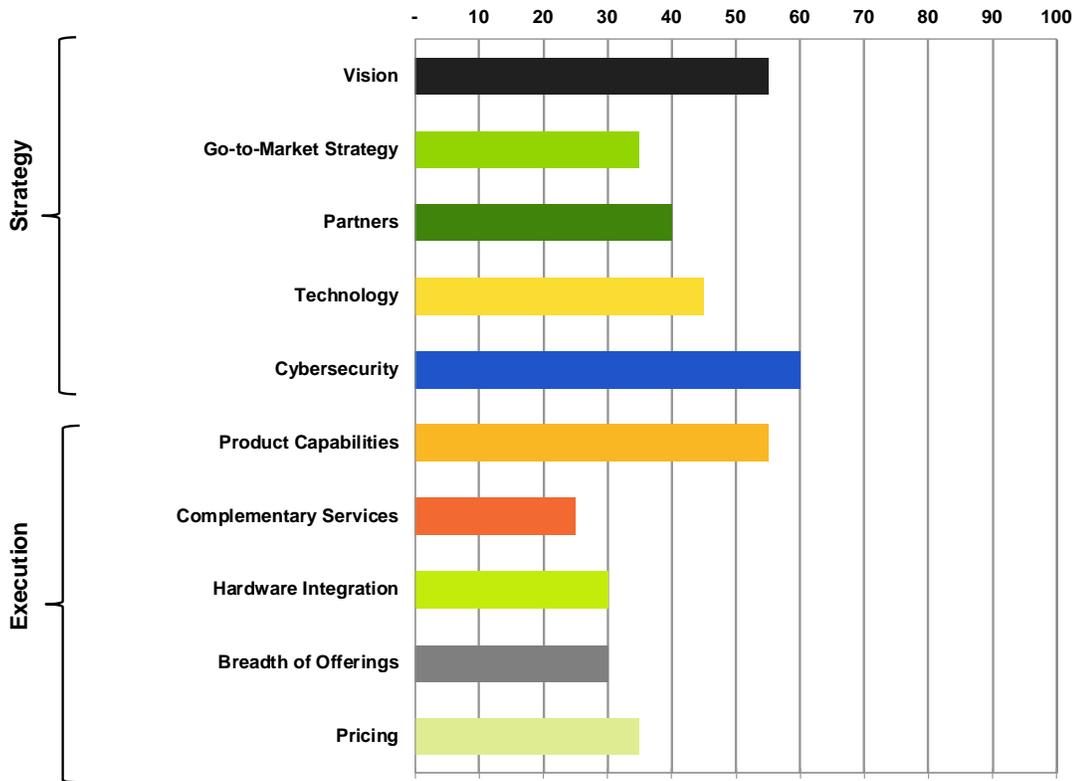
Envizi is a privately held building energy management and sustainability software vendor headquartered at the Australian Technology Park in Sydney, Australia. Founded in 2008, Envizi employs a global team of 60 people and operates offshore offices in the US and UK.

Envizi's software as a service application offers an integrated suite of 12 software modules for building sustainability, energy management, and optimizing overall facility performance. Envizi's energy management solution includes analytics for interval meter monitoring, solar monitoring and efficiency program reporting to support measurement and verification of capital projects. The building optimization suite includes advanced building energy performance analytics, equipment level fault detection for HVAC systems and broad-based asset performance monitoring through IoT technologies. One of its popular modules is Equipment Fault Detection that connects to a facility's BAS and HVAC system and provides real-time fault detection and optimization algorithms to significantly reduce total building energy consumption and maintenance costs. In March 2019, Envizi secured a strategic investment from Accel-KKR, with the funds aimed at helping the company expand globally. Envizi has a number of strategic partnerships with global providers of commercial real estate, facility management, and energy management services. Together with partners, Envizi can deliver end-to-end solutions that identify and improve energy and building performance.

Envizi ranks as a Challenger for its product capabilities for energy management and sustainability as well as an emphasis on cybersecurity measures. The company could improve its ranking with greater hardware integration, a wider product portfolio, and an increase in complementary services.

www.envizi.com

Chart 4-11. Envizi Strategy and Execution Scores



(Source: Guidehouse Insights)

4.3.4

75F

Overall Score: 33.4

Strategy: 35.0

Execution: 31.8

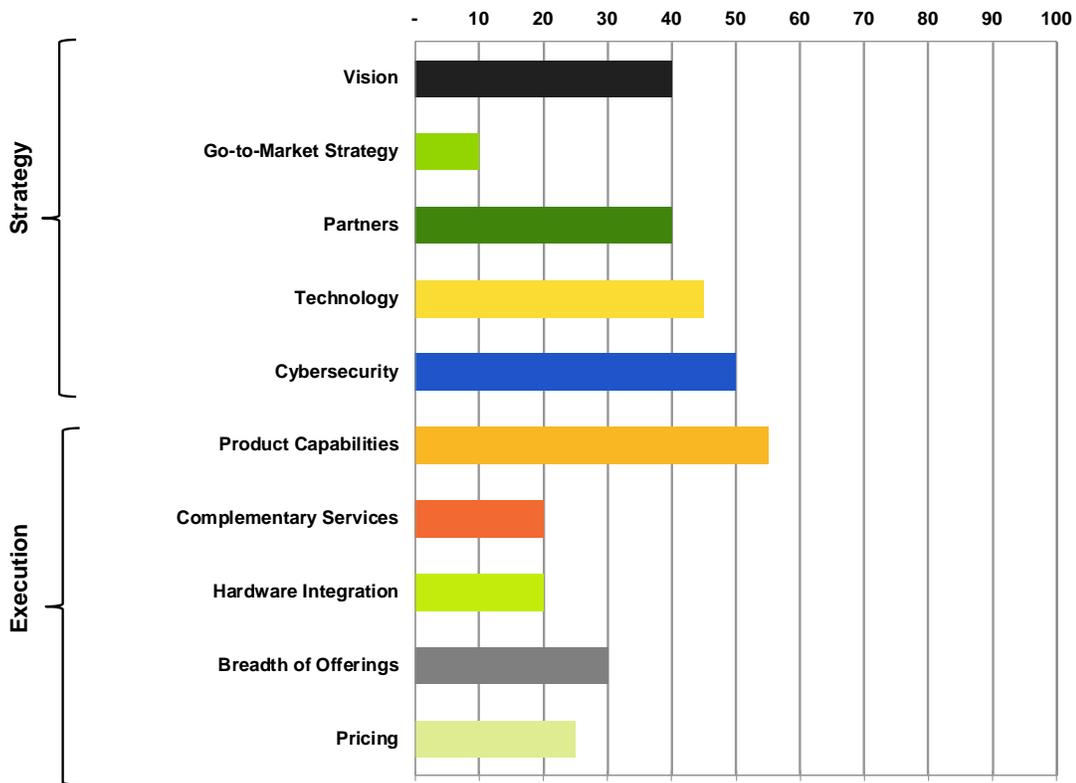
Founded in 2012, 75F is a building automation software provider headquartered in Burnsville, Minnesota. The privately held company employs 125 people. 75F targets its solutions for new construction and retrofits in several categories, including commercial real estate, offices, technology parks, hospitality, restaurants, and retail. In September 2019, the company announced a Series A funding round totaling \$18 million co-led by Breakthrough Energy Ventures and Oil and Gas Climate Initiative.

The company offers a vertically integrated suite of sensors, equipment controllers, thermostats, and cloud-based software designed to optimize occupant comfort and boost energy efficiency. Its platform combines cloud computing with IoT technologies to manage HVAC and chilled water systems, energy use, air quality, and lighting. 75F's Facilisight platform enables customers to monitor and manage an entire portfolio of buildings through web and mobile applications. The software can predictively manage indoor environments based on ML algorithms from sensor and weather data.

75F ranks as a Challenger for its product capabilities in energy management, attention to cybersecurity, and use of new technologies. However, compared to competitors, the company could rise in the ranking with a broader set of offerings, a stronger go-to-market strategy, and more consequential partnerships.

www.75f.io

Chart 4-12. 75F Strategy and Execution Scores



(Source: Guidehouse Insights)

4.4 Followers

To rank as a Follower in this *Leaderboard*, companies score less than 25 in both Strategy and Execution. Two companies landed in this category: Facilio and GE Current.

4.4.1 Facilio

Overall Score: 31.5

Strategy: 37.8

Execution: 23.8

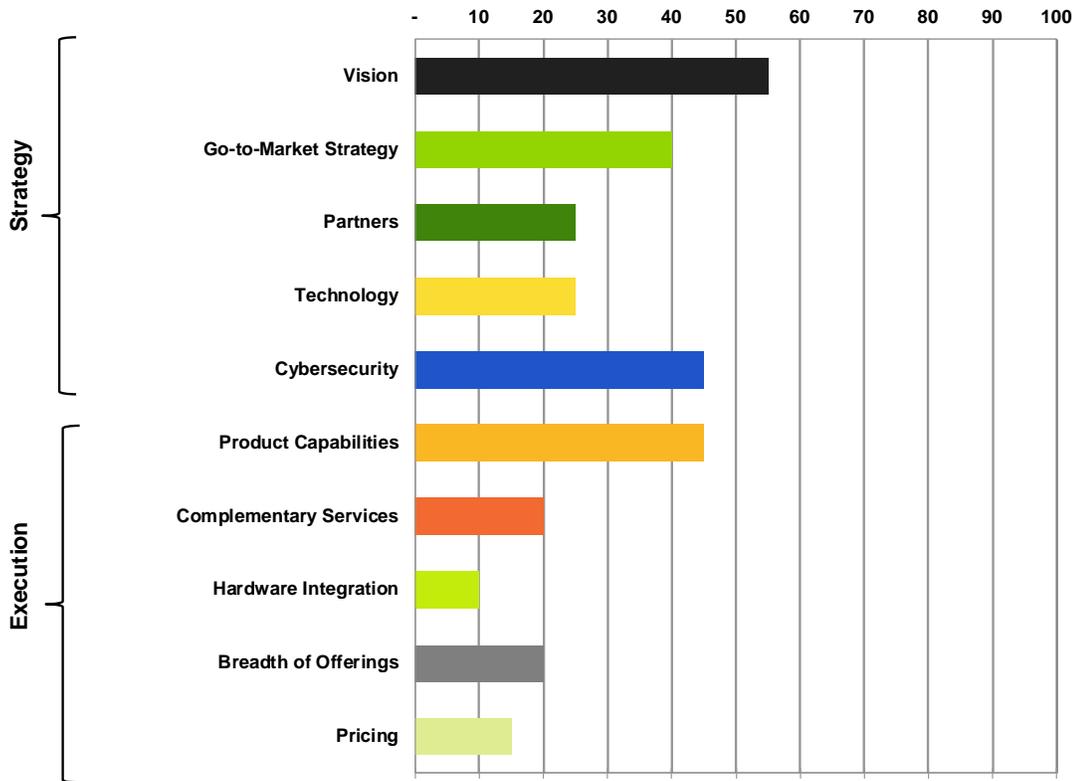
Facilio is a software startup focused on facilities management solutions. Facilio's headquarters are in New York City, New York, with additional offices in Dubai, Chennai, and Singapore. Founded in 2017, Facilio employs an estimated 70 people.

The company's solution is an IoT-focused and data-driven enterprise platform for real-time, multi-site facility operations and maintenance. Its optimization software combines IoT, AI, and ML technologies to provide construction and commercial real estate customers a unified and predictive command and control capability across an entire operation.

Facilio ranks as a Follower for its product capabilities, vision, and cybersecurity approach. To improve its ranking, Facilio could benefit by broadening its set of offerings, expanding its technology strategy, and engaging new partners.

www.facilio.com

Chart 4-13. Facilio Strategy and Execution Scores



(Source: Guidehouse Insights)

4.4.2

GE Current

Overall Score: 28.4

Strategy: 33.0

Execution: 23.0

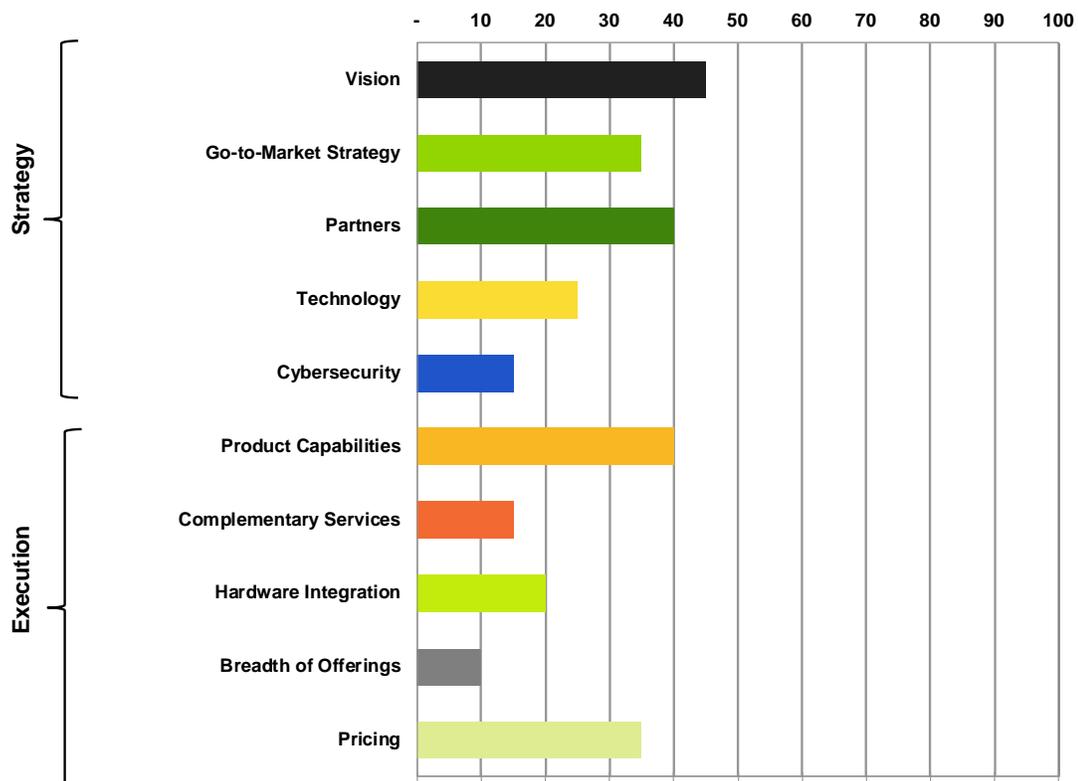
GE Current is a provider of intelligent lighting and energy management solutions. The company was created by General Electric as a startup subsidiary in 2015. In 2016, Current acquired Daintree Networks, and later, GE sold Current to private equity firm American Industrial Partners (with the sale completed in April 2019). Current continues to use the GE brand under a licensing agreement. GE Current is headquartered in Boston, Massachusetts, and employs approximately 2,500 people. GE Current’s main industry targets include banking, commercial offices, horticulture, hospitality, industrial, municipalities, and retail.

GE Current's AllSites Energy Management App and ControlScope Manager both offer smart building management solutions. The AllSites Energy Management App is a unified controls and energy management platform that allows for portfolio-wide scheduling, controls, and overrides as well as visibility into site and equipment data and optimization tools to improve performance and energy efficiency. The AllSites App uses the company's cloud-based Intelligent Environment Platform. GE Current's ControlScope Manager is more focused on IoT-based remote control of building equipment, lighting, and other systems for improved efficiency and occupant comfort.

GE Current ranks as a Follower for its product capabilities in lighting and energy, vision, and partnerships. However, the company would benefit from a stronger emphasis on a broader set of offerings, complementary services, and improved technology.

www.gecurrent.com

Chart 4-14. GE Current Strategy and Execution Scores



(Source: Guidehouse Insights)

Section 5

Acronym and Abbreviation List

AI	Artificial Intelligence
BAS	Building Automation System
BMS.....	Building Management System
CAGR.....	Compound Average Growth Rate
DER.....	Distributed Energy Resources
DOD	Department of Defense
EBI.....	Enterprise Building Integrator
EU	European Union
HVAC	Heating, Ventilation, and Air Conditioning
IoT	Internet of Things
IP	Internet Protocol
IT	Information Technology
JCI.....	Johnson Controls International
ML	Machine Learning
OT	Operational Technology
ROI.....	Return on Investment
SMB.....	Small and Midsize Building
US	United States

Section 6

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Section 8

Scope of Study and Methodology

8.1 Scope of Study

Guidehouse Insights has prepared this report to provide participants in the intelligent building software market with an analysis of the current competitive landscape. The report is intended to help providers in this market understand how companies and brands fit into the overall global market landscape.

The major objective of this *Leaderboard* is to provide a timely overview of the companies involved in the intelligent building software market and their Strategy and Execution in developing, marketing, and delivering intelligent building software solutions. Company ratings capture the vendor's standing at the time of the report and are not a retrospective of past accomplishment or an indication of future success. In this market, ratings are likely to shift as companies consolidate and switch focus while intelligent building software applications continue to evolve.

8.2 Sources and Methodology

Guidehouse Insights' industry analysts use a variety of research sources in preparing Research Reports. The key component of Guidehouse Insights' analysis is primary research gained from phone and in-person interviews with industry leaders including executives, engineers, and marketing professionals. Analysts are diligent in ensuring that they speak with representatives from every part of the value chain, including but not limited to technology companies, utilities and other service providers, industry associations, government agencies, and the investment community.

Additional analysis includes secondary research conducted by Guidehouse Insights' analysts and its staff of research assistants. Where applicable, all secondary research sources are appropriately cited within this report.

These primary and secondary research sources, combined with the analyst's industry expertise, are synthesized into the qualitative and quantitative analysis presented in Guidehouse Insights' reports. Great care is taken in making sure that all analysis is well-supported by facts, but where the facts are unknown and assumptions must be made, analysts document their assumptions and are prepared to explain their methodology, both within the body of a report and in direct conversations with clients.

Guidehouse Insights is a market research group whose goal is to present an objective, unbiased view of market opportunities within its coverage areas. Guidehouse Insights is not beholden to any special interests and is thus able to offer clear, actionable advice to help clients succeed in the industry, unfettered by technology hype, political agendas, or emotional factors that are inherent in cleantech markets.

8.2.1 Vendor Selection

The companies evaluated in this *Leaderboard* are providers of intelligent building software focused on increasing energy efficiency, improving operational efficiencies, satisfying tenant objectives related to comfort and productivity, and reaching sustainability goals. Providers of both advanced software and hardware were not excluded, though primary emphasis in the rankings is on software-based products. Target customers include building owners, building portfolio managers, facilities managers, integrators and strategic partners.

8.2.2 Ratings Scale

Companies are rated relative to each other using the following point system. The ratings are a snapshot in time, showing the current state of the company. These scores are likely to be fluid as new competitors enter the market and customer requirements evolve.

- Very Strong 91 – 100
- Strong 76 – 90
- Strong Moderate 56 – 75
- Moderate 36 – 55
- Weak Moderate 21 – 35
- Weak 11 – 20
- Very Weak 1 – 10

8.2.2.1 Score Calculations

The scores for Strategy and Execution are weighted averages based on the subcategories. The overall score is calculated based on the root mean square of the Strategy and Execution scores.

8.2.3 Criteria Definitions

8.2.3.1 Strategy

- **Vision:** Measures the company's stated goals in designing market solutions against the actual needs of customers based on the entire environment in which they will operate. Clear and compelling visions effectively communicated to the industry result in higher scores.
- **Go-to-Market Strategy:** Evaluates the company's strategy for reaching the target market, including the sales and marketing channels to be used, as well as the processes established for informing the target market about brand differentiation and unique product value.

- **Partners:** Measures the company's established partnerships with key organizations that will provide an advantage in financial backing, sales, business, and product development. Affiliations with well-known established vendors in the supply chain, as well as a track record of financial strength through fundraising or profitable product sales, positively affect scores in this *Guidehouse Insights Leaderboard*.
- **Technology:** Evaluates whether the company has developed and/or patented technology that provides a significant business advantage over competitors and is likely to have an enduring effect on the company's success. Higher scores are given if the company's technology is already a proven market success, delivers unique product attributes, or can use AI and ML techniques to turn data into business value.
- **Cybersecurity:** An evaluation of the company's approach to keeping its software offering as safe as possible from cyber attacks, using secure coding practices and testing for vulnerabilities. An emphasis on data security in both on-premises and cloud scenarios positively affect scores.

8.2.3.2

Execution

- **Product Capabilities:** Evaluates the effectiveness of the software. Higher scores are given to companies that provide robust software for reducing energy usage, lowering operating costs while delivering on customer expectations for more intelligent and automated buildings.
- **Complementary Services:** Evaluates the company's added services related to product installation, integration, maintenance, and support. Available services that help ease adoption, reduce risks, and lower ongoing costs result in higher scores.
- **Hardware Integration:** Addresses the software products' relative ability to combine with legacy and new building hardware. Points are awarded for software that emphasizes interoperability and takes a holistic approach to building operations, moving away from the silo approach.
- **Breadth of Offerings:** Evaluates the company's software products in their ability to span multiple systems in intelligent buildings. Points are awarded for software that encompasses a broader range of functionality.
- **Pricing:** Determines the suitability of product pricing based on its feature set, including whether products are available at multiple price points and how pricing compares with that of competitor products.

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