

# **Building Automation System Market Assessment, By Component [Hardware, Software], By Application [HVAC Control Systems, Lighting Control Systems, Electronic Security & Safety, Building Energy Management System], By Communication Technology [Wired, Wireless, Others], By End-user [Commercial, Industrial, Residential], By Sales Channel [Direct, Channel], By Region, Opportunities and Forecast, 2016-2030F**

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## **Abstracts**

The global building automation system market was valued at USD 93.6 billion in 2022 and is expected to reach USD 219.4 billion in 2030, with a CAGR of 11.24% for the forecast period between 2023 and 2030. The global building automation system (BAS) market is experiencing significant growth due to energy efficiency, sustainability, and occupant comfort. Environmental concerns and regulations drive organizations to adopt BAS solutions to optimize energy consumption and reduce environmental impact. Moreover, the COVID-19 pandemic has emphasized indoor air quality and touchless controls, prompting innovation in BAS technology. IoT and AI-driven solutions are gaining prominence, enabling real-time monitoring and personalized settings. Also, cloud-based solutions are gaining momentum for their scalability, flexibility, and remote accessibility. Data-driven decision-making is on the rise in BAS systems.

Smart cities and buildings are integrating building automation systems (BAS) with urban infrastructure, enhancing functionality and sustainability. Innovations like advanced analytics, edge computing, and blockchain improve data security. 5G technology is transforming real-time connectivity, amplifying the impact of BAS. Siemens Smart

Infrastructure introduced the Connect Box in March 2023, an IoT solution for small to medium-sized buildings. This solution helps to improve indoor air quality and energy efficiency by up to 30%. Also, Siemens Xcelerator, a digital business platform, streamlines digital transformation efforts on a larger scale.

### Rising Adoption of Internet of Things (IoT) Technology

The global building automation system (BAS) market is transforming due to the rise of IoT technology. IoT enables the integration of sensors, devices, and systems within buildings, improving efficiency, comfort, and sustainability. IoT-driven BAS solutions provide real-time data on building parameters, allowing intelligent control and personalized occupant experiences. Remote monitoring and management reduce operational costs and enable predictive maintenance. As businesses prioritize sustainability and cost-effectiveness, adopting IoT technology in the BAS market will continue driving innovation and growth.

In 2023, 75F, a leading IoT-based building management system provider, introduced a range of innovative solutions at the ACREX India event. These new offerings are designed to improve building efficiency, enhance indoor air quality, and reduce operational costs. 75F aims to encourage commercial buildings to embrace advanced technology, promote energy efficiency, and work towards achieving net-zero emissions. The newly introduced products include the chiller plant manager, occupancy temperature node, true CFM, hyperstat, helio node, portfolio analytics manager, occupant app, domain modeler, and QR code for asset tracking. These solutions aim to drive sustainability and efficiency in building operations.

### Rising Need for Energy-Efficient Structure

The market is expected to experience notable growth, driven by the increasing need for energy-efficient buildings. Building automation systems play a pivotal role in enhancing the overall energy efficiency of structures. These systems integrate various subsystems like HVAC, lighting, security, and utilizing sensors, controllers, and software to optimize their performance. It reduces energy consumption and costs while improving occupant comfort and productivity. The demand for energy-efficient buildings has grown significantly due to the growing concerns surrounding climate change and sustainability.

Governments and organizations worldwide are implementing stringent regulations and incentives to promote green building practices, further fueling the demand for building automation systems. For instance, in April 2023, scientists at the Indian Institute of

Technology (IIT) Mandi developed an innovative algorithm capable of autonomously identifying operational issues in building heating, ventilation, and air-conditioning (HVAC) systems. When integrated into HVAC automation systems, this algorithm can optimize energy efficiency and enhance occupant comfort in buildings.

### Increasing Security Threat for Integrated Security Systems

The market is experiencing an increased demand for integrated security systems in response to rising security threats. While building automation systems are widely adopted for controlling and monitoring functions like lighting, temperature, and energy usage, the growing interconnectedness of buildings and the heightened risk of cyberattacks have necessitated integrated security systems. These systems encompass video surveillance, access control, intrusion detection, and fire alarms integrated into a single platform for efficient management and monitoring. The surge in demand for integrated security systems reflects building owners' and operators' desire to safeguard their assets and occupants against potential security risks. For instance, in September 2023, Johnson Controls introduced the OpenBlue Service: ensuring security device performance to enhance building safety, minimize risks, and optimize investments in security technology. This service combines Johnson Controls' OpenBlue solutions, enabling the monitoring of various brands' security devices, remote support, expert insights, and comprehensive zero-trust cybersecurity protection.

### Government Schemes

Governments worldwide are enacting diverse initiatives to encourage the uptake of building automation systems (BAS), with the primary objectives of curbing energy usage, elevating energy efficiency, and bolstering the overall sustainability of buildings. Among the noteworthy government initiatives, the programs targeting the global building automation system market are:

In India, the government extends various incentives to support the BAS initiatives, like the Energy Efficiency Services Limited (EESL) program, the Smart Cities Mission, and the National Solar Mission. Additionally, the Indian government provides valuable resources to assist building owners in executing BAS projects, such as the Bureau of Energy Efficiency (BEE) and the Indian Building Automation Systems Association.

In the United States, the Federal Building Performance Standard has set a target to reduce energy consumption and transition for electric-powered

equipment and appliances within 30 percent of federally owned building spaces by 2030. This initiative underscores the government's commitment to enhance energy efficiency and sustainability while driving the adoption of environmentally friendly technologies in federal buildings.

### Impact of COVID-19

The COVID-19 pandemic significantly impacted the global building automation system market. With many countries implementing lockdowns and restrictions, the demand for building automation systems has decreased, as many buildings were closed or had reduced occupancy. The pandemic has also led to delays in construction projects, causing a slowdown in the installation of building automation systems. However, with the increasing focus on reducing energy consumption and improving indoor air quality, there is still a growing demand for building automation systems in the long term. As the world begins to recover from the pandemic, the market is expected to rebound with increased investments in smart buildings and energy-efficient systems.

### Impact of Russia-Ukraine War

The Russia-Ukraine war significantly affected the global building automation system (BAS) market. The conflict has disrupted supply chains, particularly in the semiconductor and electronics sectors, leading to shortages of critical components used in BAS technology. Escalating energy prices and geopolitical uncertainties have dampened investment confidence, resulting in delayed or canceled construction projects, especially in Europe. Additionally, the sanctions imposed on Russia have created instability in the energy markets, impacting the operational costs of BAS systems. As a result, the BAS market has faced increased pricing pressures, supply chain challenges, and reduced demand, posing obstacles to growth and innovation in the industry. Companies in this space are navigating a complex landscape with heightened economic and geopolitical risks.

### Key Players Landscape and Outlook

The market is highly competitive and comprises several major players. Companies compete based on product features, pricing, reliability, and after-sales service. Additionally, several emerging players in the market are focused on providing innovative and customized BAS solutions. The market is characterized by mergers, acquisitions, and partnerships, with companies seeking to expand their global footprint and gain a

competitive edge. The increasing focus on energy efficiency, sustainability, and smart building automation is expected to drive growth and intensify competition in the BAS market.

For example, in October 2022, ASSA ABLOY successfully concluded its acquisition of Bird Home Automation GmbH, a distinguished German company recognized for its high-quality IP door intercoms tailored for both single and multi-family buildings. These intercoms are controllable through indoor stations or smartphones and are marketed under the DoorBird brand.

Similarly, in December 2022, Mitsubishi Electric Trane HVAC US LLC (METUS) and Variable Refrigerant Flow (VRF) heat-pump and air-conditioning solutions received an Honorable Mention Award in the Connected Heating and Cooling Equipment category in 2022 CEE Integrated Home Competition. METUS earned this accolade for its Deluxe wall-mounted system with H2i plus technology and the kumo touch wireless controller.

## Contents

### **1. RESEARCH METHODOLOGY**

### **2. PROJECT SCOPE & DEFINITIONS**

### **3. IMPACT OF COVID-19 ON GLOBAL BUILDING AUTOMATION SYSTEM MARKET**

### **4. IMPACT OF RUSSIA-UKRAINE WAR**

### **5. EXECUTIVE SUMMARY**

### **6. VOICE OF CUSTOMER**

- 6.1. Demographics of the End Consumer
- 6.2. Product and Market Intelligence
- 6.3. Brand Recall and Loyalty
- 6.4. Factors Considered in Purchase Decision
  - 6.4.1. Quality
  - 6.4.2. Pricing/Overall Expenses
  - 6.4.3. Energy Efficiency
  - 6.4.4. Reliability
  - 6.4.5. After Sales Support
  - 6.4.6. Technical Specifications and Features
  - 6.4.7. Scalability and Integration
  - 6.4.8. Reviews and Recommendations
- 6.5. Purpose of Purchase
- 6.6. Frequency of Purchase
- 6.7. Medium of Purchase
- 6.8. Consideration of Security and Data Privacy

### **7. GLOBAL BUILDING AUTOMATION SYSTEM MARKET OUTLOOK, 2016-2030F**

- 7.1. Market Size & Forecast
  - 7.1.1. By Value
- 7.2. By Component
  - 7.2.1. Hardware
  - 7.2.2. Software
- 7.3. By Application

- 7.3.1. HVAC Control Systems
- 7.3.2. Lighting Control Systems
- 7.3.3. Electronic Security & Safety
- 7.3.4. Building Energy Management System
- 7.4. By Communication Technology
  - 7.4.1. Wired
  - 7.4.2. Wireless
  - 7.4.3. Others
- 7.5. By End-user
  - 7.5.1. Commercial
  - 7.5.2. Industrial
  - 7.5.3. Residential
- 7.6. By Sales Channel
  - 7.6.1. Direct
  - 7.6.2. Channel
- 7.7. By Region
  - 7.7.1. North America
  - 7.7.2. Europe
  - 7.7.3. South America
  - 7.7.4. Asia-Pacific
  - 7.7.5. Middle East and Africa
- 7.8. By Company Market Share (%), 2022

## **8. GLOBAL BUILDING AUTOMATION SYSTEM MARKET OUTLOOK, BY REGION, 2016-2030F**

- 8.1. North America\*
  - 8.1.1. Market Size & Forecast
    - 8.1.1.1. By Value
  - 8.1.2. By Component
    - 8.1.2.1. Hardware
    - 8.1.2.2. Software
  - 8.1.3. By Application
    - 8.1.3.1. HVAC Control Systems
    - 8.1.3.2. Lighting Control Systems
    - 8.1.3.3. Electronic Security & Safety
    - 8.1.3.4. Building Energy Management System
  - 8.1.4. By Communication Technology
    - 8.1.4.1. Wired



8.1.4.2. Wireless

8.1.4.3. Others

8.1.5. By End-user

8.1.5.1. Commercial

8.1.5.2. Industrial

8.1.5.3. Residential

8.1.6. By Sales Channel

8.1.6.1. Direct

8.1.6.2. Channel

8.1.7. United States\*

8.1.7.1. Market Size & Forecast

8.1.7.1.1. By Value

8.1.7.2. By Component

8.1.7.2.1. Hardware

8.1.7.2.2. Software

8.1.7.3. By Application

8.1.7.3.1. HVAC Control Systems

8.1.7.3.2. Lighting Control Systems

8.1.7.3.3. Electronic Security & Safety

8.1.7.3.4. Building Energy Management System

8.1.7.4. By Communication Technology

8.1.7.4.1. Wired

8.1.7.4.2. Wireless

8.1.7.4.3. Others

8.1.7.5. By End-user

8.1.7.5.1. Commercial

8.1.7.5.2. Industrial

8.1.7.5.3. Residential

8.1.7.6. By Sales Channel

8.1.7.6.1. Direct

8.1.7.6.2. Channel

8.1.8. Canada

8.1.9. Mexico

\*All segments will be provided for all regions and countries covered

8.2. Europe

8.2.1. Germany

8.2.2. France

8.2.3. Italy

8.2.4. United Kingdom



- 8.2.5. Russia
- 8.2.6. Netherlands
- 8.2.7. Spain
- 8.2.8. Turkey
- 8.2.9. Poland
- 8.3. South America
  - 8.3.1. Brazil
  - 8.3.2. Argentina
- 8.4. Asia-Pacific
  - 8.4.1. India
  - 8.4.2. China
  - 8.4.3. Japan
  - 8.4.4. Australia
  - 8.4.5. Vietnam
  - 8.4.6. South Korea
  - 8.4.7. Indonesia
  - 8.4.8. Philippines
- 8.5. Middle East & Africa
  - 8.5.1. Saudi Arabia
  - 8.5.2. UAE
  - 8.5.3. South Africa

## **9. MARKET MAPPING, 2022**

- 9.1. By Component
- 9.2. By Application
- 9.3. By Communication Technology
- 9.4. By End-user
- 9.5. By Sales Channel
- 9.6. By Region

## **10. MACRO ENVIRONMENT AND INDUSTRY STRUCTURE**

- 10.1. Supply Demand Analysis
- 10.2. Import Export Analysis
- 10.3. Value Chain Analysis
- 10.4. PESTEL Analysis
  - 10.4.1. Political Factors
  - 10.4.2. Economic System

- 10.4.3. Social Implications
- 10.4.4. Technological Advancements
- 10.4.5. Environmental Impacts
- 10.4.6. Legal Compliances and Regulatory Policies (Statutory Bodies Included)
- 10.5. Porter's Five Forces Analysis
  - 10.5.1. Supplier Power
  - 10.5.2. Buyer Power
  - 10.5.3. Substitution Threat
  - 10.5.4. Threat from New Entrant
  - 10.5.5. Competitive Rivalry

## **11. MARKET DYNAMICS**

- 11.1. Growth Drivers
- 11.2. Growth Inhibitors (Challenges and Restraints)

## **12. KEY PLAYERS LANDSCAPE**

- 12.1. Competition Matrix of Top Five Market Leaders
- 12.2. Market Revenue Analysis of Top Five Market Leaders (in %, 2022)
- 12.3. Mergers and Acquisitions/Joint Ventures (If Applicable)
- 12.4. SWOT Analysis (For Five Market Players)
- 12.5. Patent Analysis (If Applicable)

## **13. PRICING ANALYSIS**

## **14. CASE STUDIES**

## **15. KEY PLAYERS OUTLOOK**

- 15.1. Siemens AG
  - 15.1.1. Company Details
  - 15.1.2. Key Management Personnel
  - 15.1.3. Products & Services
  - 15.1.4. Financials (As reported)
  - 15.1.5. Key Market Focus & Geographical Presence
  - 15.1.6. Recent Developments
- 15.2. Schneider Electric SE
- 15.3. Hubbell Incorporated

15.4. Johnson Controls International plc

15.5. Honeywell International Inc.

15.6. Mitsubishi Electric Corporation.

15.7. Dialight PLC

15.8. Leviton Manufacturing Co., Inc.

15.9. Lutron Electronics Co., Inc

15.10. Beijer Electronics Group.

\*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work

## **16. STRATEGIC RECOMMENDATIONS**

## **17. ABOUT US & DISCLAIMER**

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