MAKING BUILDINGS SMARTER

Growing awareness on digital and Internet of Things (IoT)-based technologies and demand for connected ecosystem in the upcoming buildings will drive the demand for building automation in the coming years. **Construction Times** finds out the emerging trends.

The Indian Building Automation and Control Systems Market stood at US$ 1,883.89 million in FY2021 and is forecast to grow at a CAGR of over 11.08% until FY2027, owing to the increasing infrastructure development and construction of new residential and commercial buildings. In addition, the growth can be attributed to the rising demand from the construction industry as the newly constructed buildings tend to be electronically secured and equipped with all the smart appliances. The success of smart cities relies on the efficiency of connective technologies and their benefits that streamline operations, maintain a data-driven environment, and the ability to address urban challenges. Rapid urbanization in various developed and developing economies is providing tailwinds to the adoption of building management systems to create sophisticated smart cities.

SMART BUILDINGS

Increasing demand for smart buildings is expected to be the primary driver of global building automation system market growth over the forecast period. According to a report by Researchdive, the global building automation system market share was valued at $75,757.0 million in 2021 and is projected to grow at a CAGR of 10.0%, by generating a revenue of $194,864.1 million by 2030.

The market for smart building automation systems is expected to grow because of increasing consumers' interest in smart buildings. To conserve energy and power, smart buildings are built using building automation system software. The smart building constructions are designed in such a way that they can adjust building activities such as ventilation, heating, air conditioning, and others automatically. Due to the numerous benefits of building automation systems, there is a rising demand for smart buildings, which is expected to drive the market throughout the forecast period.

Ashish Modi, President, Honeywell Building Technologies – Asia, says that today, building owners and occupants are more conscious than ever about

ASHISH MODI
President, Honeywell Building Technologies – Asia

the health and safety of their building environments. Urbanization has both reinforced and amplified the growing need for sustainable operations and technologies that help enhance the safety of a building, minimize its overall carbon footprint and reduce its energy consumption.

"Before the pandemic, building technologies were largely focused on driving efficiencies which reduced energy consumption and saved costs. While these aspects are still important, the definition of a smart building has now evolved to include a spectrum of requirements, including smart zone-based cooling solutions, improved indoor air quality, reduced exposure to contaminants, advanced video analytics, carbon emissions management, remote monitoring and OT cyber security, and real-time data monitoring," he points out.

Kiran Dutt, President, Electrification Business, ABB India, is of the view that with sustainability playing a pivotal role in the development of real estate overall, smart building systems are becoming an economic necessity. Smart buildings optimize utilization of resources and hence, we would witness a shift in which majority buildings will operate in the near future.

KIRAN DUTT
President, Electrification Business, ABB India

SMART CITIES

The Researchdive report noted that increasing number of smart cities now demand innovative solutions to long-term concerns such as trash management, traffic flow, attaining energy efficiency targets, preventing security breaches, and managing municipal surveillance as a result of increased urbanization. To solve the long-term difficulties caused by increasing urbanization, governments in countries, particularly China and India, are focusing on the development of smart cities with major government and stakeholder funding.

TECHNOLOGY

The evolution of smart buildings is powered by technological growth for seamless control and optimal comfort of indoor/outdoor operations. One of the pillars driving technical growth is the surging popularity of using IoT (Internet of Things) products due to improved quality of service, inexpensive assemblage, ease of installation, Do-It-Yourself (DIY) tutorial.

Modi says that smart technologies like Honeywell's healthy buildings solutions and Carbon

and Energy Management software can help enhance the safety and sustainability of a building and are designed to help building owners support occupant well-being, reduce cost of operations and improve business continuity.

"These technologies enable real-time monitoring of critical sustainability and building health key performance indicators (KPIs) and help reduce energy consumption using advanced building control capabilities. They also help facility owners reduce the carbon footprint of buildings without compromising on occupant well-being or comfort."

FUTURE OUTLOOK

As green and energy efficient building concept gain pace, development of energy efficient buildings will spur building automation systems demand. The Indian Government's efforts like 'Digital India' and 'Make in India' programes will also spur smart buildings and smart homes businesses to capitalize on growth and demand opportunities. Digital India promotes high-speed Internet connectivity across the country, which promotes adoption of smart technologies in households and living spaces alike.

Dutt mentions that the '5G India 2020' initiative by the government has also boosted the rise of smart buildings as it promotes the expansion of a 'Networked Society'. Major metropolises like Bengaluru, Pune, Mumbai, Delhi NCR, and Pune continue to lead the way in terms of home automation technology adoption.

"The rapid urbanization and growing economy have provided lucrative growth opportunities to create sophisticated smart cities within the country. Being a leading automation provider, ABB has witnessed the increasing demand for building automation services. India is one of the leading nations with smart homes in the world due to the rapid growth of home automation. With smart home innovation on the rise, the Indian home automation industry is expected to grow exponentially in the coming years. This will further enhance demand for home automation solutions in India," he concludes. CT

The transition to smart building systems becomes inevitable for creating smarter cities.

KIRAN DUTT
President, Electrification Business, ABB India

How do you look at India's transition from traditional to smart building system?

With the rapid urbanisation within the country, India has seen an increase in development and adoption of smart buildings systems. This is due to the spread of digitization and growing need for sustainability. With sustainability playing a pivotal role in the development of real estate overall, smart building systems are becoming an economic necessity. Smart Buildings optimize utilization of resources and hence, we would witness a shift in which majority buildings will operate in near future. The technology used in smart buildings encompass all the building's functions from lighting and HVAC to security. These are essential for improving quality of life for residents as well as making buildings more efficient. Therefore, the transition to smart building systems becomes inevitable for creating smarter cities.

ABB has witnessed the increasing demand for building automation services.

How is the demand for building automation in the country and what future you envisage going forward?

The rapid urbanization and growing economy have provided lucrative growth opportunities to create sophisticated smart cities within the country. Being a leading automation provider, ABB has witnessed the increasing demand for building automation services. India is one of the leading nations with smart homes in the world due to the rapid growth of home automation. With smart home innovation is on the rise, the Indian home automation industry is expected to grow exponentially in the coming years. This will further enhance demand for home automation solutions in India.

What are the latest technologies from ABB in building automation systems?

We offer a wide variety of connected Building Energy Management Solutions that are scalable for automation and energy control for any sized commercial or industrial building. Through the implementation of open protocols, the use of common and secure internet standards, and the inclusion of emerging technologies, ABB Building Solutions' products and solutions fully meet market requirements to provide safe, smart and sustainable buildings of the future. In the residential space, we offer the very best in comfort, security, design and energy efficiency for tomorrow's smart home, today. All the functions that can be controlled such as blinds, lighting, heating, air-conditioning or door communication are designed to make your life simpler and smarter.

As green and energy efficient building concept gaining pace, what are the solutions offered in this space?

Understanding the energy consumption patterns becomes the first step in regulating energy utilization in buildings. Evaluating these consumption patterns gives clarity on the solutions required to achieve energy efficiency and adapt to green alternatives. Achieving all the benefits of a smart building may seem like a distant goal, but ABB Ability™ Building Ecosystem

makes the journey simple. This open and scalable digital platform fits building needs, thereby enabling energy efficiency and sustainability. By adopting such innovative technologies, one can lessen overall emissions and energy use to become greener.

How do you see the government policies and development programmes driving the demand for building automation systems?

Indian government's efforts like 'Digital India' and 'Make in India' programs welcome smart buildings and smart homes businesses to capitalize on growth and demand opportunities. 'Digital India' promotes high-speed internet connectivity across the country, which promotes adoption of smart technologies in households and living spaces alike. This supports the goal of developing smart cities. The '5G India 2020' initiative by the government has also boosted the rise of smart buildings as it promotes the expansion of a 'Networked Society'. Major metropolises like Bengaluru, Pune, Mumbai, Delhi NCR, and Pune continue to lead the way in terms of home automation technology adoption.

What are your future plans on providing building automation solution in India?

Given increasing adoption of building automation in India, we believe it is imperative to keep this growth sustainable. Sustainability for us has always been one of the core driving forces in building future plans. Our goal is to create a safe, smart and sustainable future for building automation. Therefore, we are actively enabling a low-carbon society by working with our customers and suppliers to implement sustainable practices across our value chain through the Mission to Zero™ campaign. Smarter homes and smarter buildings are the areas in which we produce many innovative and novel solutions. Through our solutions, we implement multiple ideas, creating a sustainable ticket into the future. This happens through thorough control, monitoring, and analysis all in real time. By using the entire potential that intelligent automation and digitalization offer, we can turn conventional buildings into smarter buildings. CT

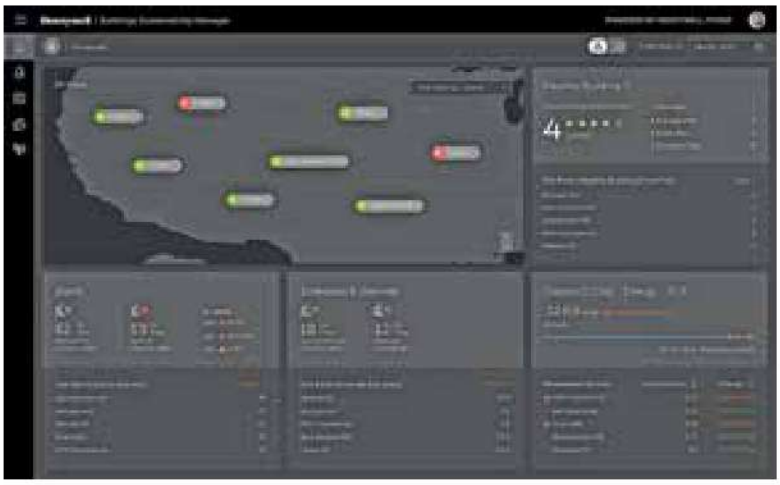
India is one of the fastest growing building automation and control systems markets.

ASHISH MODI
President, Honeywell Building Technologies – Asia

How do you look at India's transition from traditional to smart building system?

Today, building owners and occupants are more conscious than ever about the health and safety of their building environments. Urbanization has both reinforced and amplified the growing need for sustainable operations and technologies that help enhance the safety of a building, minimize its overall carbon footprint and reduce its energy consumption.

Before the pandemic, building technologies were largely focused on driving efficiencies which reduced energy consumption and saved costs. While these aspects are still important, the definition of a smart building has now evolved to include a spectrum of requirements, including smart zone-based cooling solutions, improved indoor air quality, reduced exposure to contaminants, advanced video analytics, carbon emissions management, remote monitoring and OT cyber security, and real-time data monitoring. These solutions, which use a combination of Artificial Intelligence (AI), Machine Learning (ML) and Internet of Things (IoT) technologies, define the future of smart buildings. Smart technologies like Honeywell's Healthy Buildings solutions and Carbon and Energy Management software can help enhance the safety and sustainability of a building and are designed to help building owners support occupant well-being, reduce cost of operations and improve business continuity.



These technologies enable real-time monitoring of critical sustainability and building health key performance indicators (KPIs) and help reduce energy consumption using advanced building control capabilities. They also help facility owners reduce the carbon footprint of buildings without compromising on occupant well-being or comfort.

What kind of demand for building automation is emerging in the country and what future do you envisage going forward?

India is one of the fastest growing building automation and control systems markets, exhibiting double digit growth in FY2022-2027. The market is driven by the integration of technologies such as access control and video monitoring systems, building management systems (BMS), HVAC systems, lighting controls, and energy management systems, with both single as well as multi-site integration capabilities.

Today, more facilities managers and building owners are demanding higher levels of insight and control over building operations. Integrated security systems can improve situational awareness and operational efficiency. Alarm management systems and real-time monitoring facilitate rapid responses in cases of fires and other emergencies. Facility owners are looking beyond occupant safety and comfort into the operational sustainability of buildings to reduce their carbon footprint. Importantly, they are looking at the seamless integration of these technologies and

tracking them on a common dashboard, both remote and on-premise.

What are the latest technologies from Honeywell in building automation systems?

Honeywell's building technologies help deliver frictionless experiences, healthier environments, real-time visibility, safety and security, and sustainability and efficiency. These solutions can be deployed through interconnected ecosystems, anchored by a building automation system, to provide actionable insights to facility managers to allow for efficient responses to occupants' evolving needs.

The Honeywell Healthy Buildings suite of ready now solutions enables building owners to help improve occupant well-being, meet energy efficiency goals and, importantly, change the way occupants experience a building.

As green and energy efficient building concept gaining pace, what are the solutions offered in this space?

Recently, Honeywell launched the Honeywell Buildings Sustainability Manager powered by Honeywell Forge a suite of ready now solutions, which helps building owners and operators meet two pressing, yet often conflicting, objectives: reduce the environmental impact of buildings while optimizing indoor air quality to support occupant well-being, with the aim of helping them to meet carbon neutral goals.

Developed by Honeywell engineers in India, the suite of solutions includes Carbon and Energy Management that continuously collects 24/7 energy use data, logged at 15-minute intervals, and sub-meters all energy-consuming assets to collect granular consumption information. This data allows Honeywell to help customers establish a rigorously derived baseline, using up to a three-year usage history, live meter data and environmental factors to determine which assets are driving energy consumption. In addition to providing a real-time dashboard of critical sustainability KPIs, this enterprise-level software aggregates carbon data from energy-related emission sources in a building – gas, electricity and fuel sources; reduces energy consumption using advanced building control capabilities; and reduces carbon footprint without compromising occupant well-being or comfort. Importantly, it helps customers to execute a roadmap to help meet their carbon neutral goals. It also allows building owners to avoid capital outlays for technology upgrades to meet sustainability reporting demands and minimize the time required to implement solutions.

What are your future plans on providing building automation solution in India?

Honeywell has a strong engineering footprint in India with centers spread across Bengaluru, Gurgaon, Hyderabad and Madurai. These engineers develop technologies for India and the world and have contributed significantly to the development of building technologies, including the Honeywell Forge Energy Suite, Honeywell Healthy Buildings suite, Remote Building Manager and Carbon and Energy Management software, to name a few.

We will continue to partner with the government, industry and our customers in region to bring best-in-class, cutting-edge building technologies to India. CT

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