
- **Commercial**
  - Office Buildings
  - Mixed Use

- **Retail & Hospitality**
  - Retail
  - Hotels & Casinos
  - Restaurants
  - Banking

- **Public Venues**
  - Transport (Airports, Transit Facilities)
  - Stadiums
  - Other Public Venues

- **Medical**
  - Hospitals
  - Clinics
  - Care Facilities
  - Labs

- **Institutional**
  - Educational Institutions (K-12; Higher Education)
  - Government

- **Mission Critical**
  - Factories & Plants
  - Warehouses
  - Data Centers
Device Shipments Will Grow at 10.9% Annually

Number of Shipped Devices by Buildings Sub-Segment, North America 2018-2023 (units, millions)

- HVAC Systems
- Fire Detection Equipment
- Gas/Chemical Detection Equipment
- Security & Access Control Equipment
- Lighting Systems and Controls
- Electrical Power Distribution
- Power Quality & Standby
- Metering
- People Moving
- Transaction & Tracking Devices
- Appliances & Fixtures (Primarily Hospitality Sub-segment)
- Data Aggregation Equipment
- Other

CAGR: 10.9%

124M (2018) to 209M (2023)
Device Installed Base Will Reach Just Over 1 Billion Units in 2023 (CABA Monetization of Intelligent Buildings 2018)
The Intelligent Building Opportunity Will Reach $32B in 2023 (CABA Monetization of Intelligent Buildings 2018)

**Total Intelligent Buildings Opportunity by Revenue Type, North America 2018-2023 ($, millions)**

- Enablement
- Network Services
- System Applications
- Value Added Applications

**Total Intelligent Buildings Opportunity by Building Segment, North America 2018-2023 ($, millions)**

- Commercial
- Retail & Hospitality
- Public Venues
- Medical
- Institutional
- Mission Critical
Number of Installed Devices by Buildings Sub-Segment, North America 2018-2023 (units, millions)

- HVAC Systems
- Fire Detection Equipment
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- Metering
- People Moving
- Transaction & Tracking Devices
- Appliances & Fixtures (Primarily Hospitality Sub-segment)
- Data Aggregation Equipment
- Other

'18-'23 CAGR: 9.5%

CABA Monetization of Intelligent Buildings (2018)
Tenants Report Climate and Lighting Control As Top Technology Preferences

Interactive ‘Smart’ Signs
Convenience Services
Building Use of Renewable Energy
Smart Phone App for Maintenance
Smart Sensor for Automated Lighting Control
Building Energy Efficiency Measures
Conference Room Reservation App
Smart Conferencing Room
Smart Sensors for Automated Climate Control
Keyless security access
Open Floor Office Plan
Emergency alert systems
Verification of visitors
Recycling and composting programs
Security cameras

- Not currently part of the building I work in, but would improve my experience very much
- Not currently part of the building I work in, but would improve my experience somewhat
- Not currently part of the building I work in, and would improve my experience not at all
- Already included in the building I work in, and improved my experience very much
- Already included in the building I work in, and improved my experience somewhat
- Already included in the building I work in, and improved my experience not at all
Key Smart Systems Opportunities in Commercial Buildings

- **Innovation**: As the world trends towards smart systems, innovations coinciding with each segment, will be necessary — monetization is dependent on the solution, supplier, and operator.

- **Addressing Horizontal Needs**: The intelligent commercial buildings space is defined by horizontal pain points as well as segment-specific elements such as budget options, willingness to pay, and consumer interaction.

- **Proving Value**: Horizontally, pain points such as budget and intangible ROI lead to operator preference sets that typically need up-front solutions that increase operational efficiencies of existing and necessary systems are top of mind.

- **Targeting Early Adopters**: There are unique use cases across segments. Early adopters are used as proving grounds, before new products demonstrate tangible ROI and can be implemented in segments with operators that have a lower willingness to pay.

- **Optimizing Monetization**: Important factors of monetization include use case category, operator attitudes (prefer to pay upfront, wants the solution to prove its worth with performance-based evaluation, etc.), and several other key considerations.
Metrics:

• Absenteeism
• Employee turnover intent
• Self-assessed performance
• Job satisfaction
• Health and well-being
• Complaints to the Facility Manager
• Benchmark developed for each

Download the complete report at: www.caba.org/CABA/Research/CABA/Research/Phase2-NRC-Research-Project.aspx
The Forgotten 90% - THE EMPLOYEES!

90% of the costs associated with a building come from the people inside the building - SALARIES AND BENEFITS.

Just 10% of a building's operating costs are attributed to ENERGY, MAINTENANCE, MORTGAGE/RENT, among others.

Phase 2 will examine the effect of building characteristics and systems on multiple metrics in the same organization.

Much of the necessary data already exists – it then must be accessed, collated and analyzed by building features.

Consortium of funding and data partners via CABA.
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