

# Better Bolder Building

Committed to smart, sustainable success

**Investor Day**  
September 8, 2021

The power behind **your mission**

Johnson Controls has deep expertise and a deserved reputation for innovation stretching back more than 135 years.

We prize our past. We are proud of it. But we don't live in it.

We know today is the best time to build tomorrow.  
We have a glorious impatience to make the future.

Johnson Controls is perfectly positioned in this market:  
we have the products, we have the presence, and we have the people.

Three key words guide our vision: **Better** | **Bolder** | **Building**.

We say **Better** as we have always known success. But we want to be better for our customers, better for our people and better for our shareholders.

We say **Bolder** as we reward pioneering thinking that positions us as market leaders.  
We empower decision-makers with the boldness to make the tough, impactful choices.

And we say **Building** - not just concrete, glass, bricks and mortar, but in terms of excelling as we grow our company. We build technology, we build solutions, we build leaders - we are building a smart, safe, sustainable world.

We're transforming our world tomorrow and beyond.

Thank you for your support.



# Forward Looking & Cautionary Statements / Non-GAAP Financial Information

## Johnson Controls International plc Cautionary Statement Regarding Forward-Looking Statements

Johnson Controls International plc has made statements in this communication that are forward-looking and therefore are subject to risks and uncertainties. All statements in this document other than statements of historical fact are, or could be, “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. In this communication, statements regarding Johnson Controls’ future financial position, sales, costs, earnings, cash flows, other measures of results of operations, synergies and integration opportunities, capital expenditures and debt levels are forward-looking statements. Words such as “may,” “will,” “expect,” “intend,” “estimate,” “anticipate,” “believe,” “should,” “forecast,” “project” or “plan” and terms of similar meaning are also generally intended to identify forward-looking statements. However, the absence of these words does not mean that a statement is not forward-looking. Johnson Controls cautions that these statements are subject to numerous important risks, uncertainties, assumptions and other factors, some of which are beyond Johnson Controls’ control, that could cause Johnson Controls’ actual results to differ materially from those expressed or implied by such forward-looking statements, including, among others, risks related to: Johnson Controls’ ability to manage general economic, business, capital market and geopolitical conditions, including global inflation; Johnson Controls’ ability to manage the impacts of natural disasters, climate change, pandemics and outbreaks of contagious diseases and other adverse public health developments, such as the COVID-19 pandemic; the strength of the U.S. or other economies; changes or uncertainty in laws, regulations, rates, policies or interpretations that impact Johnson Controls’ business operations or tax status; the ability to develop or acquire new products and technologies that achieve market acceptance; changes to laws or policies governing foreign trade, including increased tariffs or trade restrictions; maintaining the capacity, reliability and security of Johnson Controls’ enterprise and product information technology infrastructure; the risk of infringement or expiration of intellectual property rights; any delay or inability of Johnson Controls to realize the expected benefits and synergies of recent portfolio transactions such as its merger with Tyco and the disposition of the Power Solutions business; the outcome of litigation and governmental proceedings; the ability to hire and retain key senior management; the tax treatment of recent portfolio transactions; significant transaction costs and/or unknown liabilities associated with such transactions; the availability of raw materials and component products; fluctuations in currency exchange rates; labor shortages, work stoppages, union negotiations, labor disputes and other matters associated with the labor force; the cancellation of or changes to commercial arrangements. A detailed discussion of risks related to Johnson Controls’ business is included in the section entitled “Risk Factors” in Johnson Controls’ Annual Report on Form 10-K for the year ended September 30, 2020 filed with the United States Securities and Exchange Commission (“SEC”) on November 16, 2020, which is available at [www.sec.gov](http://www.sec.gov) and [www.johnsoncontrols.com](http://www.johnsoncontrols.com) under the “Investors” tab. Shareholders, potential investors and others should consider these factors in evaluating the forward-looking statements and should not place undue reliance on such statements. The forward-looking statements included in this communication are made only as of the date of this document, unless otherwise specified, and, except as required by law, Johnson Controls assumes no obligation, and disclaims any obligation, to update such statements to reflect events or circumstances occurring after the date of this communication.

## Non-GAAP Financial Information

This presentation contains financial information regarding adjusted earnings per share, which is a non-GAAP performance measure. The adjusting items include restructuring and impairment costs, integration costs, net mark-to-market adjustments, transaction costs and other nonrecurring costs, Power Solutions divestiture reserve adjustment and discrete tax items. Financial information regarding organic revenue growth, adjusted segment EBITA, adjusted segment EBITA margin, adjusted Corporate expense, free cash flow and free cash flow conversion are also presented, which are non-GAAP performance measures. Adjusted segment EBITA excludes special items such integration costs, transaction costs and other nonrecurring items because these items are not considered to be directly related to the underlying operating performance of the Company’s business units. Management believes that, when considered together with unadjusted amounts, these non-GAAP measures are useful to investors in understanding period-over-period operating results and business trends of the Company. Management may also use these metrics as guides in forecasting, budgeting and long-term planning processes and for compensation purposes. These metrics should be considered in addition to, and not as replacements for, the most comparable GAAP measure. For further information on the calculation of the non-GAAP measures and a reconciliation of these non-GAAP measures, refer to the attached appendix.



## STRATEGIC OVERVIEW

George Oliver, Chairman & Chief Executive Officer



## ENVIRONMENTAL, SOCIAL & GOVERNANCE

Katie McGinty, VP, Chief Sustainability, Government & Regulatory Affairs Officer



## PRODUCT LEADERSHIP

Jeff Williams, VP & President Global Products



## TECHNOLOGY LEADERSHIP / OPENBLUE

Vijay Sankaran, VP & Chief Technology Officer

## *BREAK*



## DIGITAL SERVICES

Ganesh Ramaswamy, VP & President Global Services



## SMART BUILDINGS

Michael Ellis, EVP, Chief Customer & Digital Officer



## DECARBONIZATION / HEAT PUMPS

Visal Leng, VP & President Asia Pacific

Nate Manning, VP & President North America

Tomas Brannemo, VP & President EMEALA



## FINANCIAL OUTLOOK

Olivier Leonetti, EVP & Chief Financial Officer



## CONCLUSIONS AND Q&A

Moderated by: Antonella Franzen, VP, Chief Investor Relations & Communications Officer





# Better | Bolder | Building

## Strategic Overview

George Oliver, Chairman & Chief Executive Officer

The power behind **your mission**



# LEADING THE EVOLUTION OF SMART, HEALTHY & CONNECTED BUILDINGS



**\$24B broad synergistic portfolio** spanning across HVAC, Controls, Fire, and Security



**OpenBlue digital platform** is fundamentally disrupting the built environment



**\$300B global market** with an exciting decade of opportunity ahead



Demonstrated **leadership in ESG** focused on sustainable solutions



Proven history of **product leadership** and **domain expertise**



High quality leadership team fully aligned to a **high-performance culture**

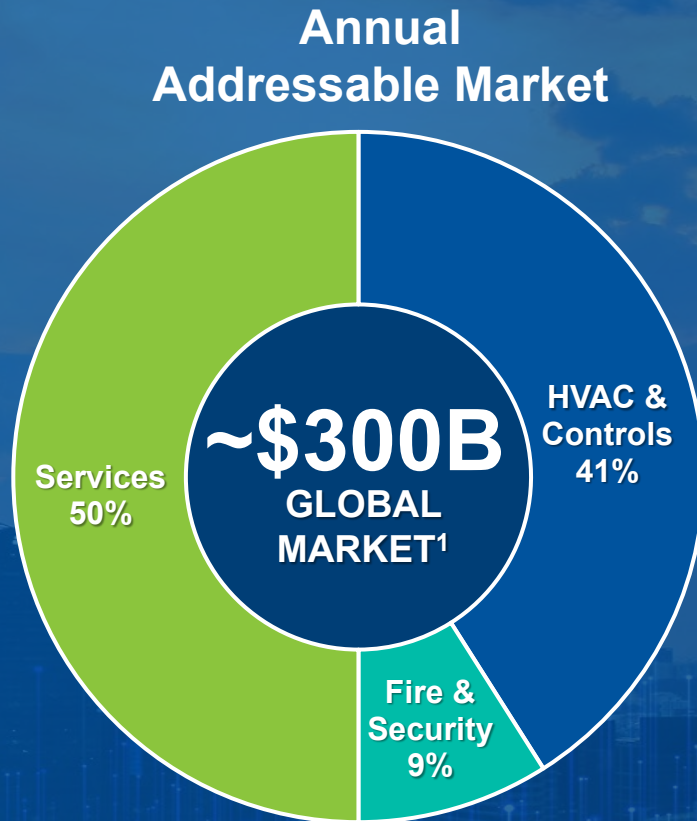


**Unmatched direct channel** presence creates a unique competitive advantage



Delivering **top tier financial performance** & creating **attractive shareholder returns**

# We Are a Leader in Attractive Markets With Significant Upside for Growth



## Decarbonization

We can address **60%** of future decarbonization demand, today



## Healthy Buildings / IEQ

Post-pandemic focus on operating **healthier buildings** will be sustained



## Smart Buildings

Digital technologies – **Cloud, Big Data, IoT, AI/ML** – are changing the basis of value creation

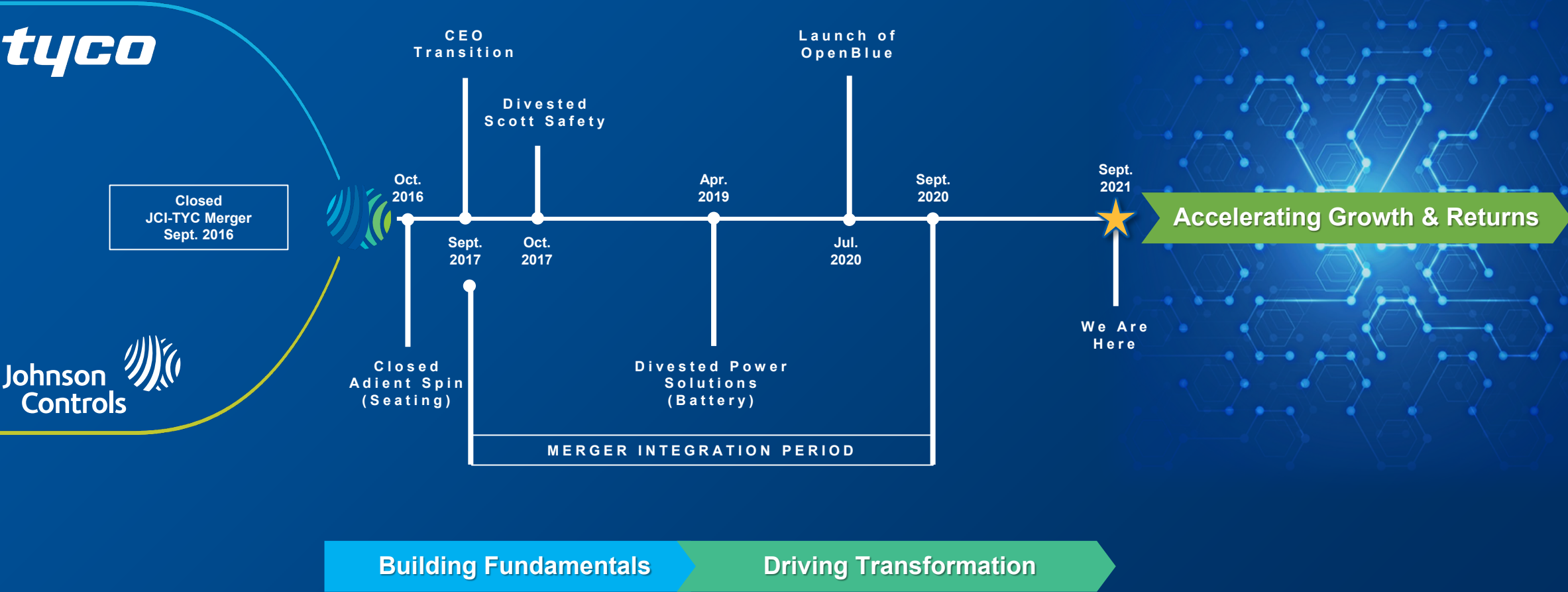
**~\$250B²**

Incremental market revenue opportunity **over the next decade**

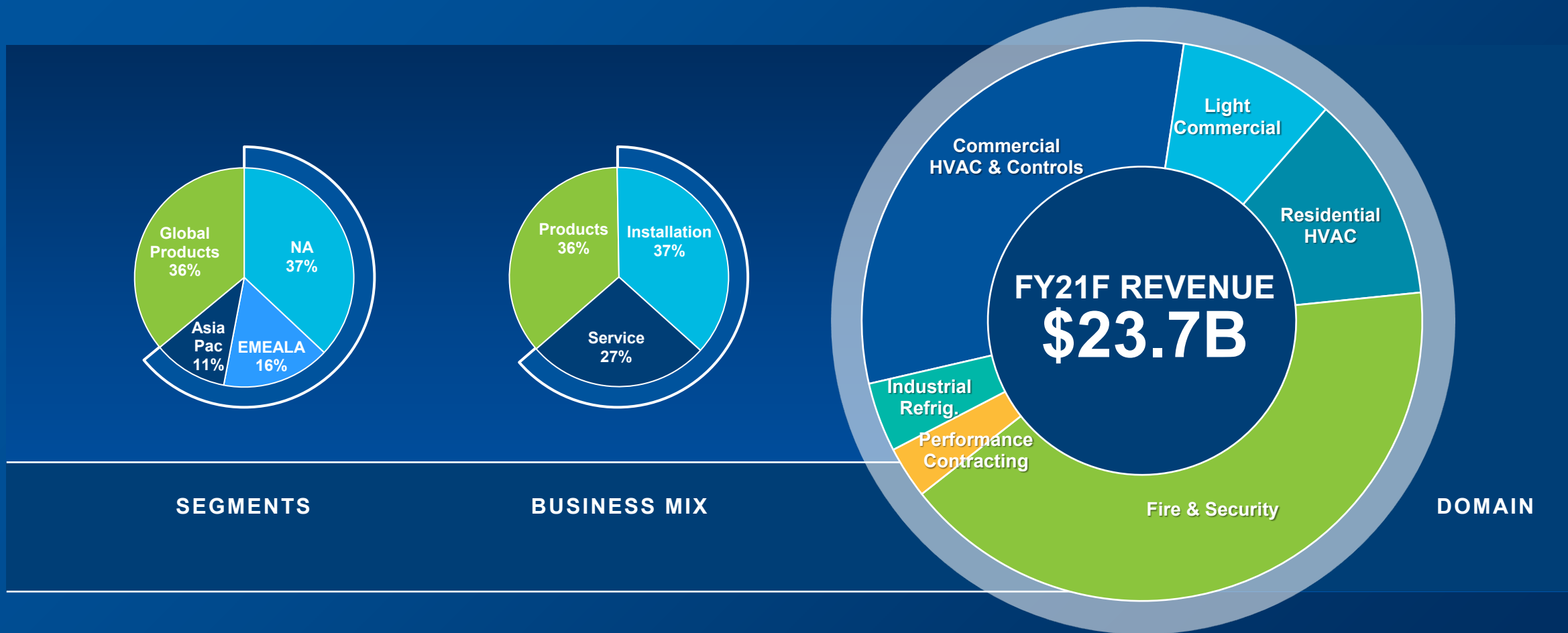
<sup>1</sup> Source: BSRIA, AHRI, Omdia, Navigant, JCI analysis

<sup>2</sup> Source: Navigant, Guidehouse, Memoori, JCI analysis; excludes overlap between markets

# Our Journey to a Smart Buildings Solutions Leader

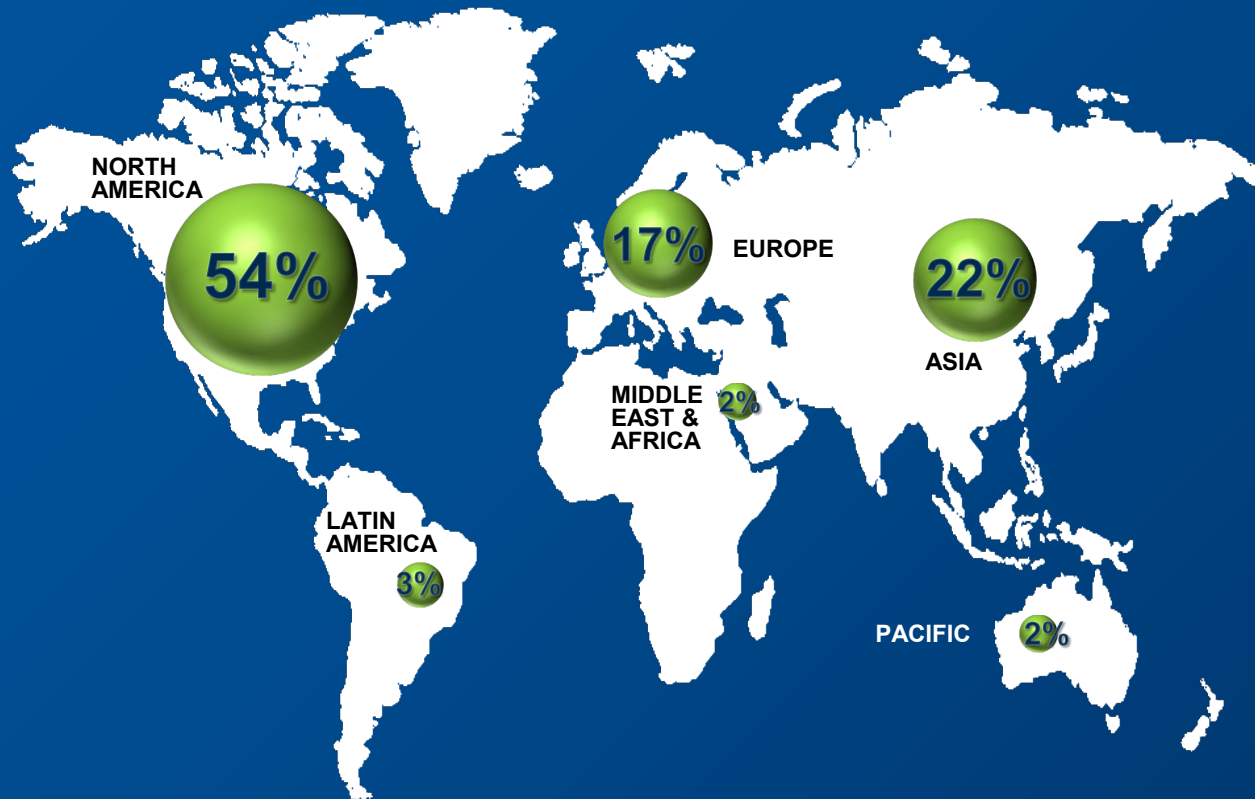


# Balanced Portfolio Mix Provides Strong Base for Growth



# Global Footprint With Local Leadership

FY21F Revenue: \$23.7 Billion



## Geographic Mix



**46%** of revenue is generated outside of North America



**\$7 Billion** of revenue generated from growth market countries



**Local** market-driven R&D supported by JCI's global technology and resources

**Global Reach And Significant Scale Of Operations**

# Serving The Most Mission Critical **Vertical Markets**...

Smart Cities

Schools

Campuses

Airports

Hospitals

Data Centers

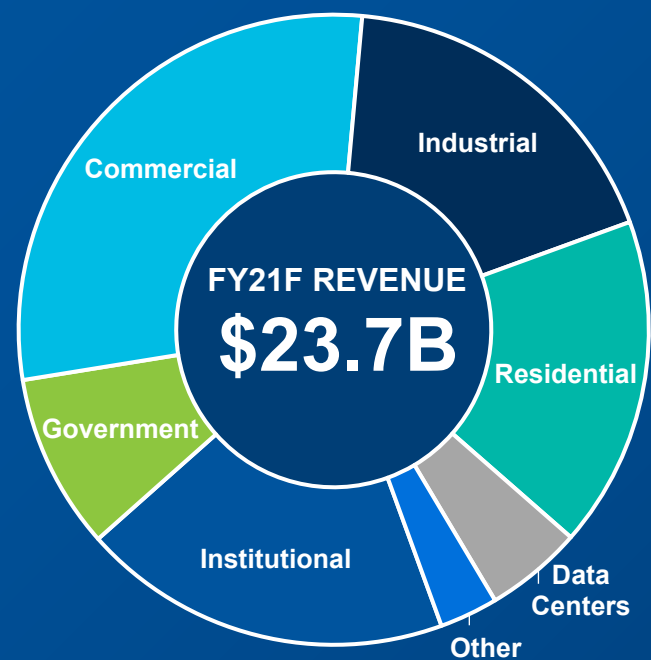
Sports & Entertainment

Oil & Gas

Life Sciences

Mfg. / Industrial

## ...With Tailored **Solutions** to Meet Full Building Lifecycle Needs



Customer Vision Workshops

Risk Assessment

Expert Consulting

Project Management

Advanced Engineering & Integration

Expert Installation & Commissioning

“XaaS” Models

Equipment Tests & Inspections

Comprehensive Audits

Retrofit Services

Financing Models

Performance Guarantees

Remote Diagnostics

Predictive Maintenance

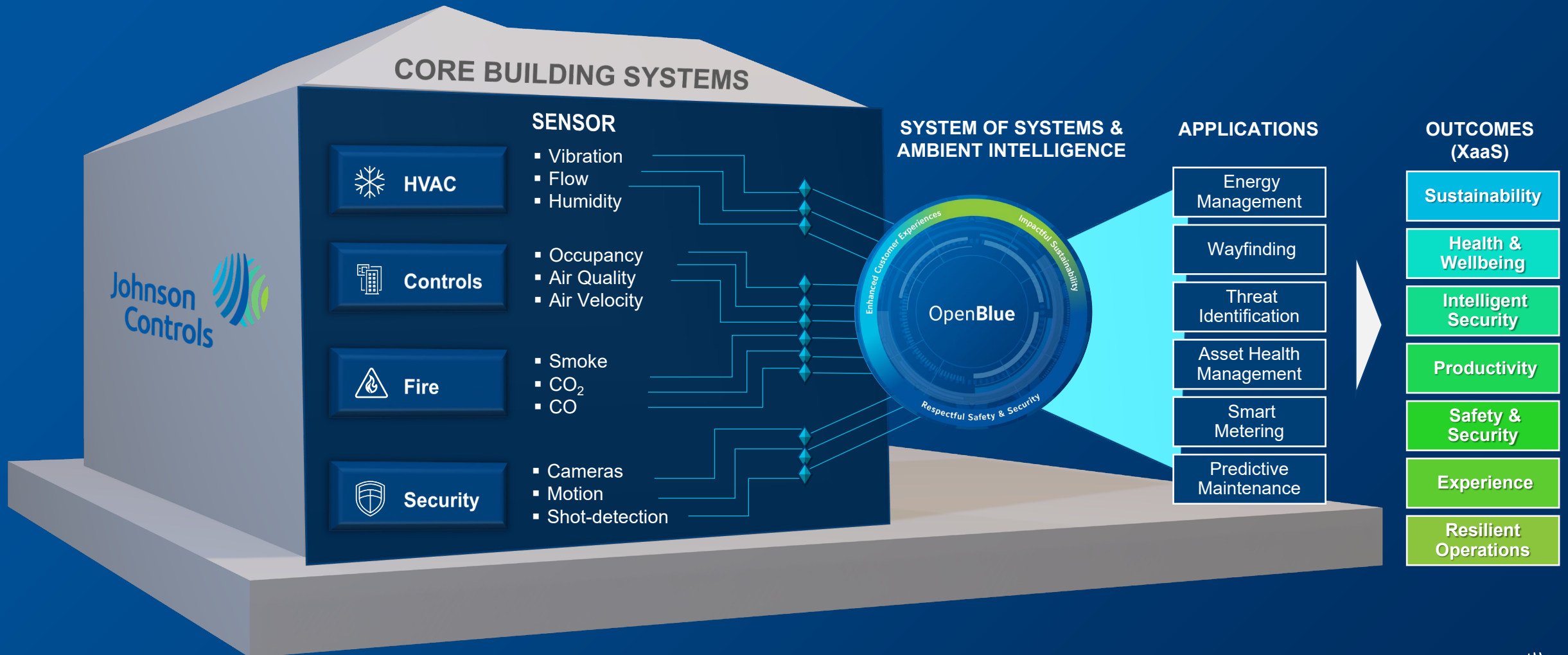
Managed Access Control & Video

Advanced Monitoring

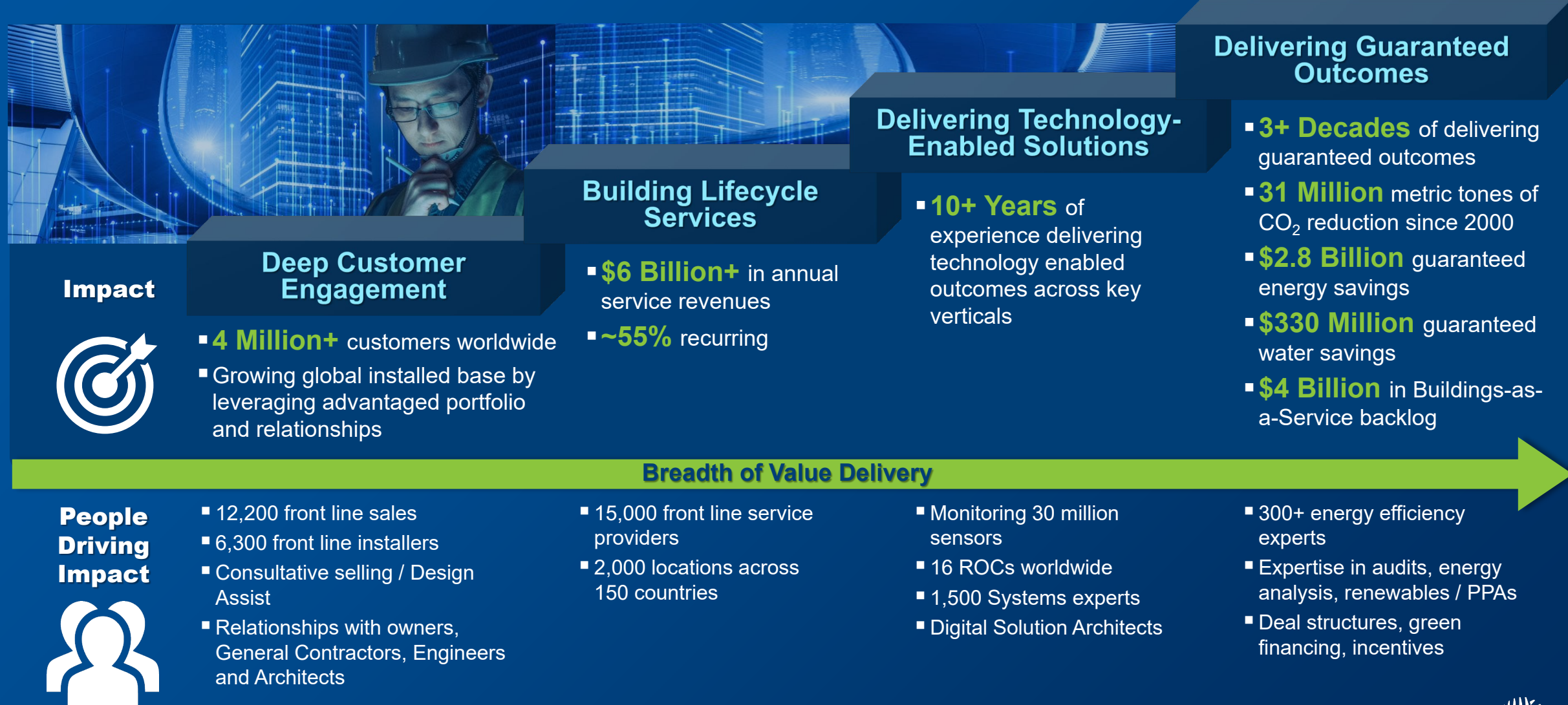
# Multi-Channel Presence Supports Go-To-Market Strategy



# This Portfolio is Key to Enabling Customer Outcomes



# Our Direct Channel Is a Competitive Advantage



# Our Advantaged Portfolio Enables Greater Value Creation

## Lifetime Value Economics Transitioning from 5X to 10X



### Example Customer: Complex Hospital

Building Size: 500,000ft<sup>2</sup>  
Building Life Span: 50 years  
Chillers: 3 York YZ  
BAS System: Metasys Controls

### Traditional LTV

5x

### Start with \$1

#### Equipment Value

- Product & Install margin

#### Service Value

- Maintenance agreement
- Break-fix labor and parts

#### Retrofit Value

- Product & Install margin

### Smart Building LTV

7x

#### Digital Solution

- Connected equipment
- Monitoring
- Predictive maintenance

10x Lifetime Value

#### OpenBlue Platform Outcome-based Solution

Customer partnerships, recurring revenues

- OB Central Utility Plant
- OB Enterprise Manager
- OB Net Zero Buildings as-a-Service

# A Look Ahead...Driving Continued Long-Term Earnings Growth



**Culture & Leadership**



**Accelerate Our Growth Strategy**



**Drive Margin Expansion**



**Disciplined Capital Allocation**

The power behind  
**your mission.**

# 1 Strengthening Leadership for Today and Tomorrow

## Attributes

Growth mind-set

Entrepreneurial spirit

Constant learnings

Balanced risk taking

## Capability Investments

- Blend of digital and core skills / acumen  
*(+500 adds in digital talent across AI, Twin, Platform, Sustainability through 2024)*
- Solution orientation for outcome-based offerings and consultative sales  
*(2,000+ hand-picked salespersons globally)*
- Learning agility, growth mindset and diversified skills  
*(Growth board, Intrapreneur program, internal and external Venture Capital investments)*



## Our Values

Integrity First, Purpose Led, Customer Driven, Future Focused, One Team

# Core to Our Culture Is “Zero Harm to People and the Environment”



## Zero Harm is part of our DNA

**39%** reduction in Total Recordable Injury Rate, since FY17

**54%** reduction in Lost Time Injury Rate, since FY17

**210%** increase in pro-active Near Miss & Unsafe Condition reporting, since FY17

**Distracted driving policy implemented in FY19**

**33%** decrease in share of “driver - at fault” Motor Vehicle Accidents, since FY19



## Safety

- Foster a caring, no-blame culture
- Promote proactive preventative safety
- Focus on key risk factors and drivers



## Health and Wellness

- Promote a harmonious work-life balance
- Encourage a positive, healthy lifestyle
- Support useful health education



## Environment

- Minimize our environmental footprint
- Reduce our products' environmental impact
- Champion zero landfill strategies and activities

# Ambitious New ESG Commitments

 **Double**  
customers' annual avoided emissions by 2030 through Johnson Controls OpenBlue digitally-enabled products and services

**Link**   
executive compensation to sustainability and diversity goals to drive leadership accountability

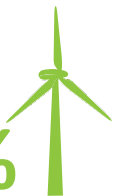
Since **2002**   
history of transparency sustainability data publicly reported

**Double**  
the representation of **women leaders** globally and minority leaders in the United States within 5 years


 **75%**  
Direct **R&D investment** on new product development to sustainable solutions

**net zero**   
Achieve carbon emissions before 2040

 **Maintain a Board**  
diverse in gender, ethnicity, citizenship and skills

**Use 100%**   
renewable energy by 2040




 **Set 2030**  
**science-based targets** consistent with the most ambitious 1.5°C IPCC scenario

 **Sustainability oversight**  
elevated to Board of Directors (Governance & Sustainability Committee)

Launch an initiative focused on underserved markets and increase spend with **women and minority owned businesses**

**Elevate sustainability**  
as a key performance metric for preferred suppliers and create supplier sustainability council; provide training to help suppliers cut their emissions

 launch initiative **to educate**  
next generation of diverse sustainable building industry leaders; partnering with HBCUs

 Non-Financial reporting align with recommendations of the task Force for Climate-related Financial Disclosures (TCFD)

## 2 Accelerating Our Growth Strategy

### Vectors of Growth

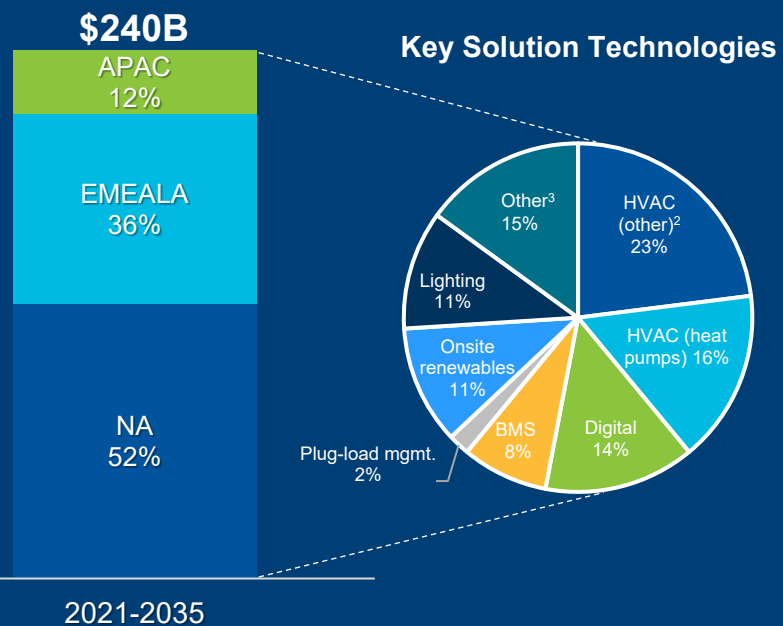
~\$250B+<sup>1</sup> Incremental Market By 2035



# A Decarbonization – Buildings Play a Crucial Role We Are Positioned to Lead the Industry

## Why Attractive

### Global Decarbonization Segment<sup>1</sup> (by region)



## Strategy to Win

**HVAC and BMS Technology  
powered by OpenBlue**

**Leverage our Installed  
Base and Direct model**

**Build on our Market  
Leadership**

**Innovative Deal  
Structures**

<sup>1</sup> Source: Energy Information Administration, Guidehouse, Urban Green Council, Rocky Mountain Institute, JCI analysis  
Represents incremental opportunity; majority of total opportunity is retrofit. Remainder is onsite renewables and advisory services

<sup>2</sup> HVAC includes replacement of existing equipment with: (a) high efficiency units or (b) heat pumps / VRF; addition of VFD; etc.

<sup>3</sup> Other includes structural or building envelope retrofits and advisory services

## **B** Healthy Buildings – Leading Suite of Cross-Domain and Digital Solutions to Meet Sustained Indoor Air & Environmental Quality Needs

### Why Attractive



Global focus on Healthy Buildings  
\$10-\$15B<sup>1</sup> industry through 2030



Expect sustained demand post-pandemic due to increase in health awareness



Solutions include cross-domain combination of products, services, and digital solutions with health-focused outcomes

### Strategy to Win

**Metasys & HVAC  
Equipment Installed Base**

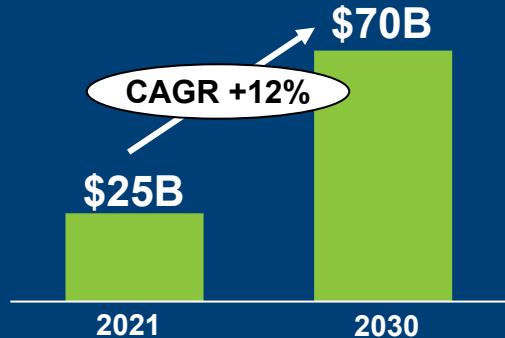
**Comprehensive  
IEQ Portfolio**

**5-Pillar Solution  
Strategy**

## C Smart Buildings – Disrupting the Built Environment With Cutting Edge Digital Technology & Data Analytics

### Why Attractive

#### Intelligent Buildings Solutions<sup>1</sup>



- **Increasing acceptance** that digital offerings and services deliver real economic value
- Complements building systems such as HVAC and Security to **deliver new operational insights** – creating financial value

### Strategy to Win

**Digitalizing Services & Products**

**Unifying Software**

**New Solutions**

**Go-to-Market Capabilities**

## D Digital Services – Digitally Enabled Innovation Changing the Traditional Services Market

### Why Attractive



*Additional derivative opportunities from decarbonization and healthy buildings will be incremental to this market opportunity*

- Large fragmented market globally – ~\$150B growing at GDP (excluding retrofit)
- Market evolving from local / mechanical to regional / digital

### Strategy to Win

**Broad Capabilities**

**Digital Enabled  
Innovation**

**Enhancing Customer  
Relationships**

## E Product and Technology Leadership – Solving Our Customer’s Most Relevant and Pressing Problems



**Broadest Building-Technology Portfolio**



**Best-in-Class Heat Pump Portfolio**



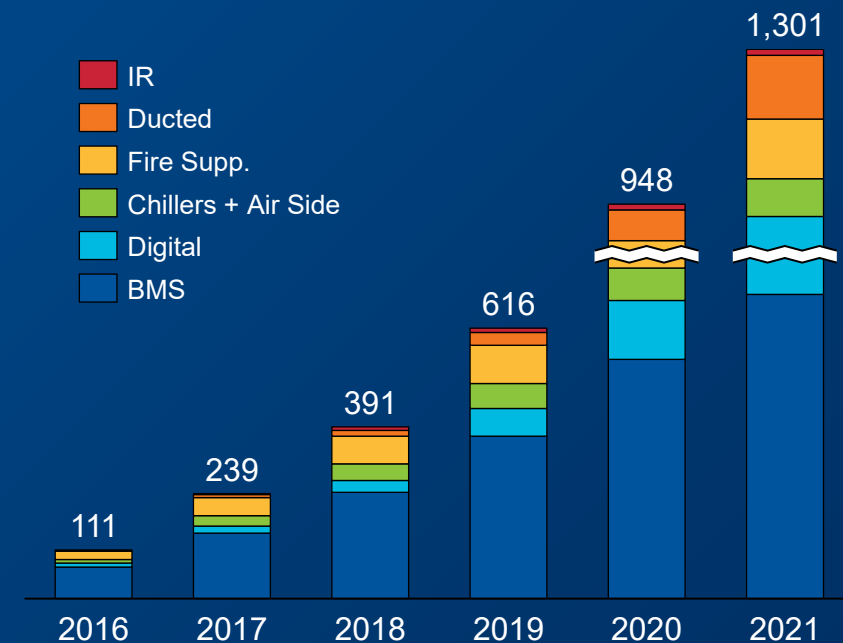
**Industry Leading Building Automation System**



**Cutting-Edge OpenBlue Digital Platform and Applications Suite**

### Growth in Patent Portfolio

Cumulative count of US patents granted since FY2016



### 3 Aggressive Productivity Program Creating Significant Margin Runway



## 4 Disciplined Capital Allocation



### Competitive Dividend

Dividend growth in-line with earnings growth



### Strategic M&A

Targeting 1 to 2 additional points of top-line growth per year



### Share Repurchases

Annual share repurchases



# LEADING THE EVOLUTION OF SMART, HEALTHY & CONNECTED BUILDINGS



\$24B **broad synergistic portfolio** spanning across HVAC, Controls, Fire, and Security



**OpenBlue digital platform** is fundamentally disrupting the built environment



**\$300B global market** with an exciting decade of opportunity ahead



Demonstrated **leadership in ESG** focused on sustainable solutions



Proven history of **product leadership** and **domain expertise**



High quality leadership team fully aligned to a **high-performance culture**



**Unmatched direct channel** presence creates a unique competitive advantage



Delivering **top tier financial performance** & creating **attractive shareholder returns**

# Building Long-Term Shareholder Value



## MSD+ Sales Growth

- Accelerated service growth
- Above market product growth
- Secular trends



## 250 to 300bps Of Margin Expansion

- Strong leverage
- SG&A / COGS program



## 100% FCF Conversion

- Continued improvement in WC as % of sales
- Disciplined capex



## ~\$8B In Capital Deployment Potential

- Organic re-investment
- Attractive dividend
- Share repurchase
- M&A



## Double Digit Adjusted EPS Growth

- Revenue growth
- Accelerated margin expansion
- Capital deployment

***FY22 through FY24***

**Targeting 1 To 2 Points of Top-Line Growth From M&A**



# Better | Bolder | Building

## Sustainability & ESG

Katie McGinty, Vice President & Chief Sustainability,  
Government and Regulatory Affairs Officer

The power behind **your mission**



# At Johnson Controls, we transform the environments where people live, work, learn and play

As the global leader in technology that powers smart, healthy and connected buildings, our mission is to reimagine the performance of buildings to serve people, places and the planet.

And we've been doing it since 1885.



# Sustainability has been at the heart of our business since its inception and is fundamental to everything we do

- 2003** Johnson Controls publishes its first sustainability report and joins EPA Climate Leaders Program
- 2004** Johnson Controls became one of the first companies to become a U.N. Global Compact signatory
- 2007** Chosen as World's Most Ethical Company for the first time. As of 2021, on the list 14 times
- 2018** 100 percent of our U.S. manufacturing electricity consumption offset with renewable energy, a commitment we continue
- 2020** One of the first industrial companies to issue a Green Bond in the U.S. in 2020. Linked senior revolving credit facility to specific sustainability metrics in 2019
- 2021** Named Corporate Knights Most Sustainable Corporation in the World and Forbes Best Employer for Diversity
- 2021** Sustainability and diversity performance goals are required for our CEO and executive team. Our CEO reports progress quarterly to the board of directors
-  ~50% of our revenue contributes to the clean economy. ~75% of R&D is directed to sustainable products & solutions

## Delivering sustainability



## Improving our operational footprint



# Executing on Our 2025 Sustainability Strategy



## Solutions

Provide increasingly sustainable products and services  
Integrate sustainable design for products and services identified as having the highest environmental and social impact



## People

Foster a culture of sustainability that engages and attracts people who want to make a difference  
Volunteer 2.5 million hours and establish employee engagement groups globally, furthering the United Nations Sustainable Development Goals



## Partnerships

Lead in global sustainability partnerships  
Leverage our impact through at least three strategic global sustainability partnerships



## Performance

From a 2017 baseline  
we are delivering:

**25%**

reduction for energy  
and greenhouse  
gas intensity

**10%**

reduction for  
water use at  
stressed locations

**25%**

of manufacturing  
locations  
landfill-free

**25%**

reduction in  
recordable  
safety incidents

**Increase**

diverse supplier spend  
at a rate exceeding  
revenue growth



## Governance

Demonstrate our commitment from the top  
Continue integration of sustainability into company goals and decision-making



Johnson Controls has also committed to aligning these goals with a science-based emissions target in 2020.

# Recognized ESG Leader



Awarded World's Most Ethical Company in 2021 by Ethisphere for the 14th time since 2007



Named one of the 100 Best Corporate Citizens in 2021 for the 16th year in row



Named in Corporate Knights' 2021 Global 100 index as one of the 100 Most Sustainable Corporations in the World



Johnson Controls recognized by CDP for Leadership in Climate Action



MSCI AAA rating since 2018



Johnson Controls named to prestigious FT European Climate Leaders list



CLEAN200™

Honored as one of the Carbon Clean 200 by Corporate Knights and As You Sow since 2016



2020 R&D 100 Awards winner for Building Efficiency Targeting Tool for Energy Retrofits (BETTER)



Awarded Prime status by ISS ESG



Ecovadis Gold Sustainability Rating 2019 & 2020



An Eaton Vance Company

Listed on the Calvert Responsible Index since February 2009



FTSE4Good

FTSE4Good Index Series and FTSE Environmental Opportunities 100 Index

S&P 500 ESG Index

Listed on the S&P ESG Index



Named to Euronext Vigeo Eiris World 120 and U.S. 50

STOXX

One of STOXX Global ESG Leaders



Since 2004, Johnson Controls has been committed to the UN Global Compact and its principles of human rights, labor, the environment and anti-corruption.



ENERGY STAR Most Efficient 2020



Johnson Controls ranked on Forbes Best Employers for Diversity List 2021

# Strengthening Our ESG Leadership with New Ambitious Commitments



## Sustainability is Imperative for Better Buildings



**~40%** of global CO<sub>2</sub> emissions are generated by the building sector



**Innovating** sustainable products & solutions



**Disrupting** traditional delivery models



OpenBlue digital/software is essential to **delivering** on customers' **energy efficiency & emission reduction** targets



**Digital Service capabilities** that generate outcomes

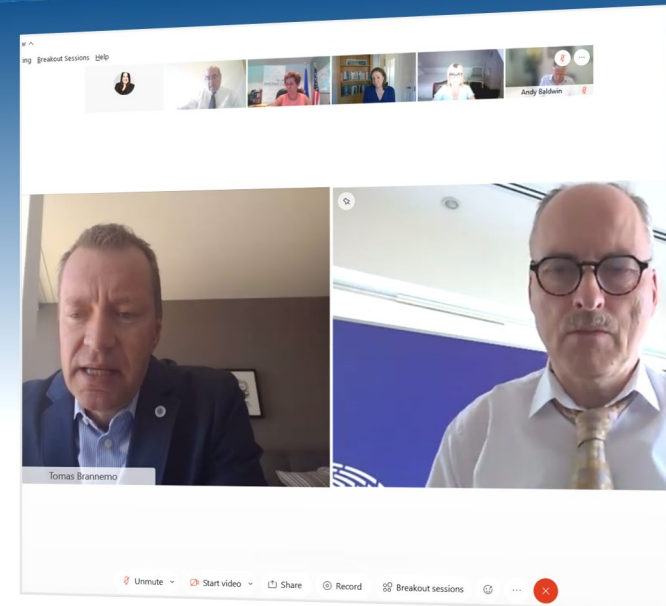
# Proactively Supporting Public Policy Development



**China Development  
Forum**



**President Biden  
Climate Summit**



**Green Deal  
Discussion with  
European Parliament**



## Healthy People

Power wellness & high performance teams



## Healthy Places

Optimize the performance of customers, buildings and assets



## Healthy Planet

Drive customer sustainability goals and community health



# Better | Bolder | Building

## Product Leadership

Jeff Williams, Vice President and President,  
Global Products, Building Technologies & Solutions

The power behind **your** mission



# Product Leadership With Synergistic Portfolio

## Key to Big Data & Enabling Outcomes



Unparalleled portfolio breadth



Leading player in attractive industries



Global coverage with deep expertise



Cutting edge technology with robust R&D pipeline



Multiple channels to market

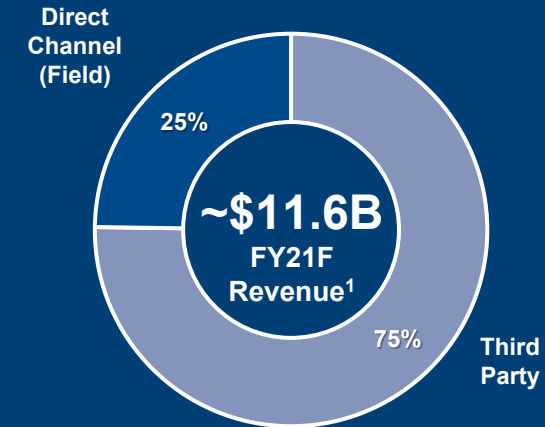
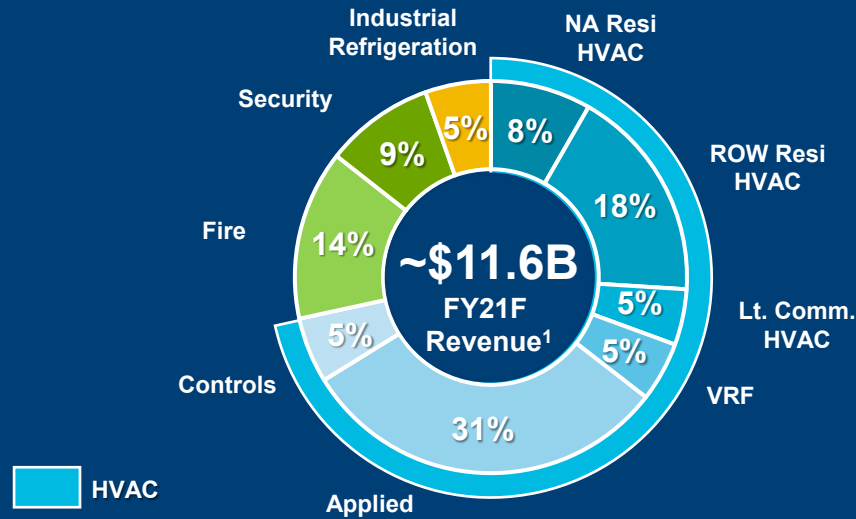


Secular trends support future growth



# Unparalleled Portfolio Breadth Poised for Growth

## Revenue Mix



## Business Drivers

- **Construction starts & aging installed base**
- **Regulation:**
  - Environmental – decarbonization
  - Sustainability – energy usage and efficiency
- **Health and Safety** - safe & frictionless environments, clean air / IEQ
- **Technology developments** – IoT, Cloud, mobility, and edge intelligence

## Key Elements of Future Growth

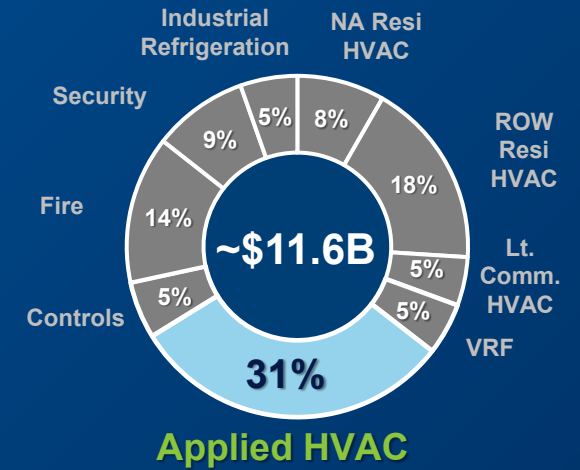
- Digitalization and integrated solutions
- Rebound in non-Residential segments
- Incremental growth driven by ESG trends: sustainability & higher efficiency, decarb and net zero
- Growth in Data Center vertical
- Continued momentum in Global Residential HVAC

# Leading in Applied HVAC – Equipment

## Enabling Customers' Efficiency and Environmental Goals



**#1** in Global Applied HVAC Equipment  
~\$20B chiller addressable market segment



## Advanced Global Chiller Platforms



- Global coverage across platforms, with leading positions in NA & China
  - Large chiller installed base...~100k globally
  - Best-in-class efficiency; advantaged magnetic bearing; competitive capacity range
  - Leader in Centrifugal chillers (i.e., YZ, YMC2, YK)
  - Full line includes Air-cooled and Water-cooled screw & scroll, Heat Pumps and Absorption chillers
- Strategy to Win
  - Low/Ultra-low GWP refrigerants
  - Digitally enabled, "connected chiller" program
  - Strengthen leadership in centrifugal chillers
  - Refresh air-cooled platform + tailored technology (e.g., data centers, European market)
  - Expand heat pump portfolio (e.g., modular, 4-pipe)

## Connected Chiller Program

### Customer Value

**+66%**  
Increase in uptime

**30%**  
Reduction in total cost of ownership, longer asset life

**50%**  
Reduction in mean time to repair

**30%**  
Reduction in energy and carbon footprint

### Enterprise Impact

**97%**  
Avg. retention rate

**+50%**  
Higher Digital attach rate

**+25%**  
Value of Digital service contract vs. traditional

**+15%**  
L&M value



# Leading in Applied HVAC – Controls

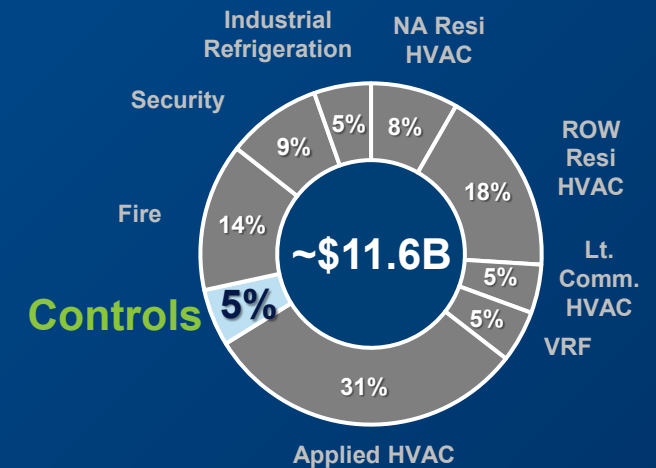
## Integrating Building Systems to Create Smarter, More Optimized, Energy Efficient Facilities



#3

in Global Controls

~\$8B commercial buildings controls addressable market segment



## Building Automation Controls & Software



- Metasys BAS Software (#1 in complex buildings)
- Advanced Field Equipment Controllers
- I/O Modules
- Network Engines (automation, control, integration)
- Commercial thermostats
- Strategy to Win
  - Integrate Metasys with OpenBlue platform and applications, cloud migration
  - Healthy / Critical Environments support for IEQ
  - Differentiate in software (Metasys R12+)
  - Transition to Cloud / SaaS
  - Faster, flatter networks (IP-enabled)
  - Edge device capabilities (wireless, secure, I/O)

## HVAC Controls (Tier 1- 4)



- Embedded control sensors (e.g., CO<sub>2</sub>, temperature, humidity, pressure, gas detection, network)
- Smart End-devices (sensors, actuators)
- Control panels (Metasys, Facility Explorer)
- Actuators & Valves, Sensors
- Critical environment solutions
- Variable speed drives
- Thermostats
- Strategy to Win
  - Expand in light commercial & mid-market
  - Increase adoption of EasyIO in contractor channel
  - Innovate in IP controllers and AI capabilities

# Top Global Player in Industrial Refrigeration

## Enabling Customers' Mission Critical Needs



#2

in Global Industrial Refrigeration

~\$4B industrial refrigeration addressable market segment

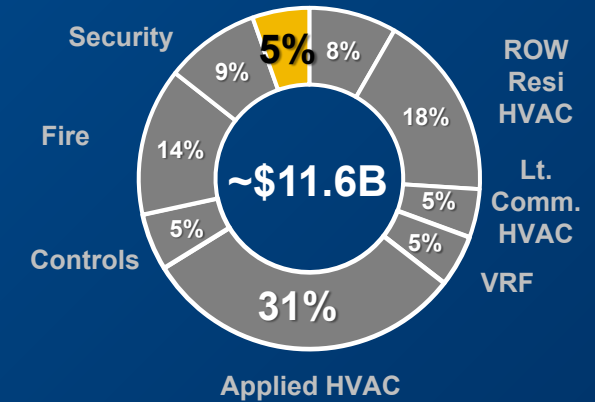
Industrial Refrigeration

NA Resi HVAC

ROW Resi HVAC

Lt. Comm. HVAC

VRF



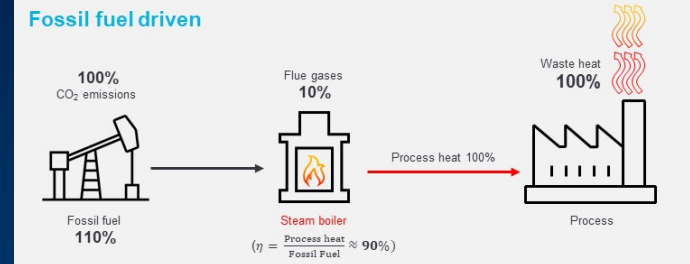
## Comprehensive portfolio across the value chain



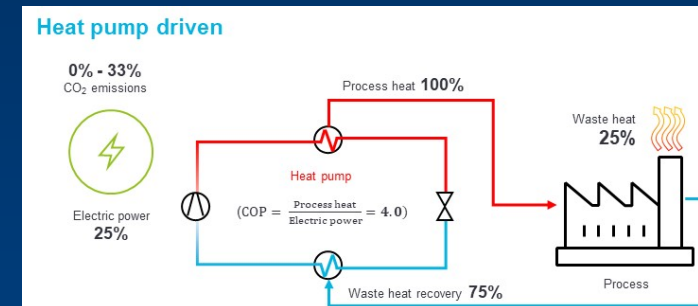
- Global coverage across food & beverage, energy, process segments (oil & gas, petrochemical)
  - Mission critical equipment driving high service attach
  - Heat pump applications for industrial process & district heating
  - Broad and leading portfolio
    - Packaged systems, compressors, controls, pressure vessels, condensers
  - Nearly entire portfolio uses Ultra-low GWP refrigerants
- Strategy to Win
  - Electrification - Heat pumps for District Heating (DH) expected to grow at 15-20% CAGR
  - Ultra-low GWP - CO<sub>2</sub> usage as a natural and efficient refrigerant
  - Digitalization – OpenBlue integrations for energy optimization

## IREF: Heat Pumps & District Heating

From:



To:



Significantly reducing CO<sub>2</sub> emissions **(-66%)** while delivering **4x** energy savings



# Targeted New Product Launches in Rooftops and VRF

## New platforms demonstrating cost, technology and efficiency leadership

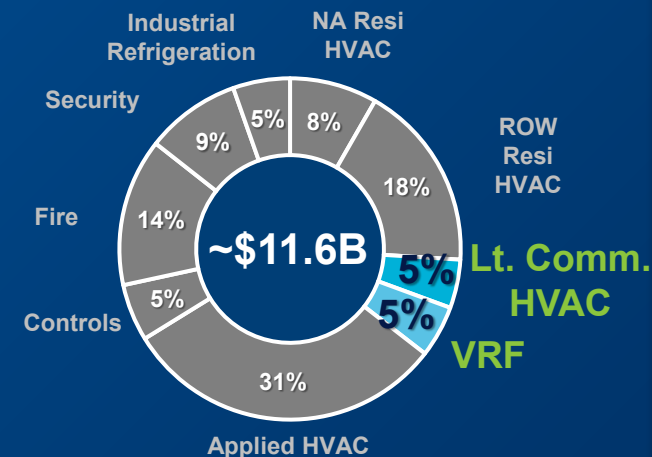


### #3 in NA Unitary Rooftops

~\$3B Unitary Rooftop addressable market segment

### #2 in Global VRF

~\$12B VRF addressable market segment



## Unitary Rooftop Equipment (RTU)



- Highly differentiated new RTUs
  - Choice (15-27.5T)
  - Select (27-50T)
  - Premier (25-150T)
- DOE 2023 compliant / Low-GWP refrigerant
- Lowest installed cost; 50% reduction in start up time
- Best-in-class energy efficiency (IEER)
- Integrated controls
- Strategy to Win
  - Gain share through targeted NPI and channel expansion
  - Expand key platforms: Heat Pump, DOAS, large tonnage RTUs

## Variable Refrigerant Flow (VRF)



- IAQ product innovation – ventilation, indoor unit & heat exchanger cleanliness
- Addressing decarbonization
  - Gen. 3 global VRF and platforms offering localized customization to reduce design/install costs
  - Top efficiency, extended low ambient heating range for colder climates
- First to market in modular side-flow VRF
- Adopting IoT & AI for smart AC control & operation in buildings with Air Cloud Pro™
  - Simplifies installation & OpenBlue integration
- Expanding residential sales through improved e-commerce experience
- Increasing distribution channels in China

# Gaining Share in Residential HVAC

Focused New Product Development, Expanding Channel Presence and Improving Scale



HITACHI



HEATING AND  
AIR CONDITIONING

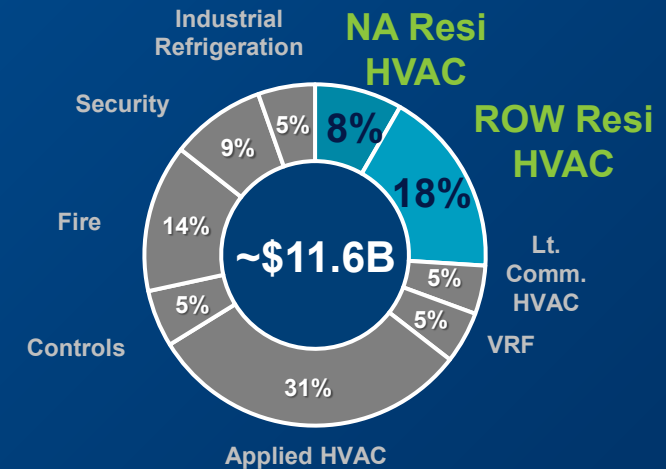


**#5** in NA Residential HVAC

~\$15B Resi HVAC addressable market segment

**#8** in Global Ductless HVAC

~\$63B Resi HVAC addressable market segment



## Ducted Residential (North America)



- Full line portfolio
  - First to market with Ultra-Low NO<sub>x</sub> furnace
  - Gained 70bps of share since 2019
  - Launched low-cost heat pump targeting \$1.5B replacement segment and decarbonization
- Strategy to Win
  - Refreshed portfolio – added entry level product
  - R&D focused on meeting regulatory requirements (DOE 2023) and expand into new segments
  - Developing more efficient and low ambient capable heat pumps
  - Complete refresh of furnace platform (90% AFUE)
  - Adding test labs and manufacturing capacity to improve scale
  - Multi-tiered distribution strategy to expand channel footprint

## Ductless Residential (Rest of World)



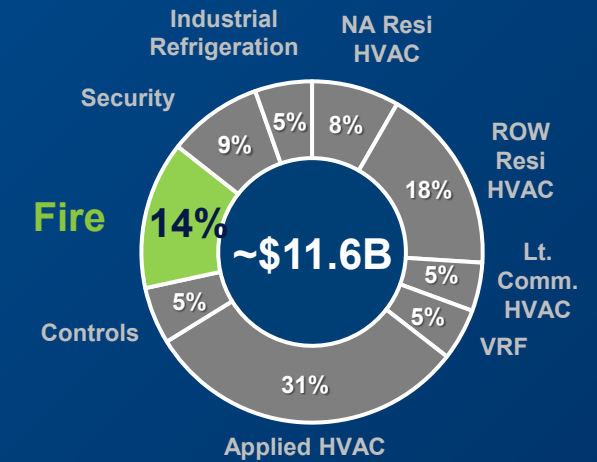
- Leadership positions in Japan, Taiwan, India and Europe
- Expanding share in RAC/PAC
  - Global platforms
  - New product introductions in FY22+
- Strategy to Win
  - Next Gen RAC/PAC/VRF heat pumps with low GWP refrigerant for top efficiency and decarbonization
  - Improve performance, efficiency and cost competitiveness
  - Increasing investment in indoor environmental technologies (e.g., “frost wash,” DOAS / ventilation solutions)

# Leading Positions Across Core Fire Products

## Large Installed Base of Sensing & Detecting Edge Devices, Integral to Digitalization, Regulated services

tyco Simplex Grinnell ANSUL AUTOCALL CHEMGUARD AquaMist

**#1** in Global Fire Products  
~\$10B Fire products addressable market segment

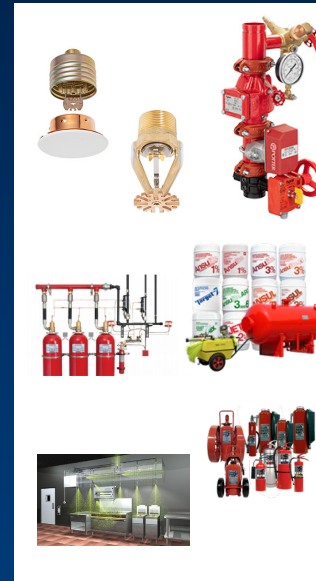


## Fire Detection



- Market driven by compliance with codes & standards
- Next generation connected detection and early risk prevention
- Direct and indirect channels
- Strategy to Win
  - Adapt to regulatory proliferation with configurable platforms and gain channel access in key regions
  - Next gen detection, new hazards and prioritize high-growth verticals with water portfolio (i.e. data centers & warehouses)
  - Digitalizing for remote monitoring & control and field productivity
  - Expanding into Tier-3 segment globally

## Fire Suppression



- Comprehensive portfolio including water/mechanical and special hazards (portables, vehicle systems, restaurant systems, industrial, engineered systems, foams)
- R&D focused on installation innovation and next generation hazard suppressants
- Strategy to Win
  - Capitalize on installation efficiency as a differentiator
  - Next gen inert gases with phase out of halocarbons; shift to non-fluorinated foams
  - Solutions for high growth verticals (data-centers, warehouses, transport) – water-mist and anti-corrosion solutions
  - Digital fire suppression platform: absorb latent service opportunity through digital and remote as-a-service offerings, self-test sprinkler components

# Leader in End-to-End Security Solutions

## Solutions Across Video Management Systems, IP Cameras, Access Controls, “aaS”, and Smart Home

tyco

Golsys

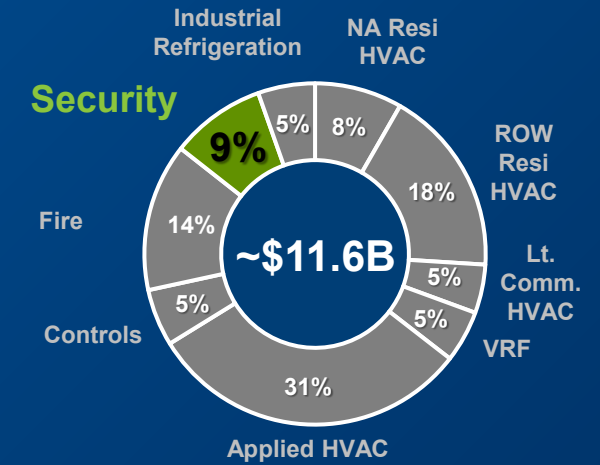
Sensormatic  
by Johnson Controls



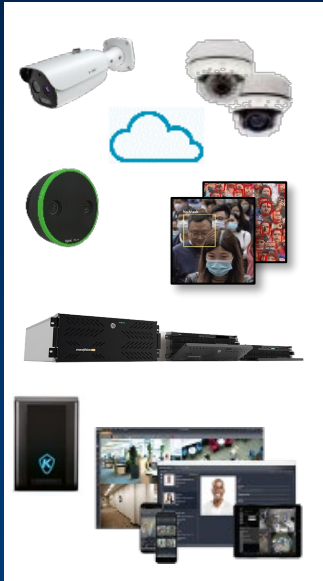
#3

in Global Security Products

~\$18B Security products addressable market segment



## Access Control & Video Surveillance



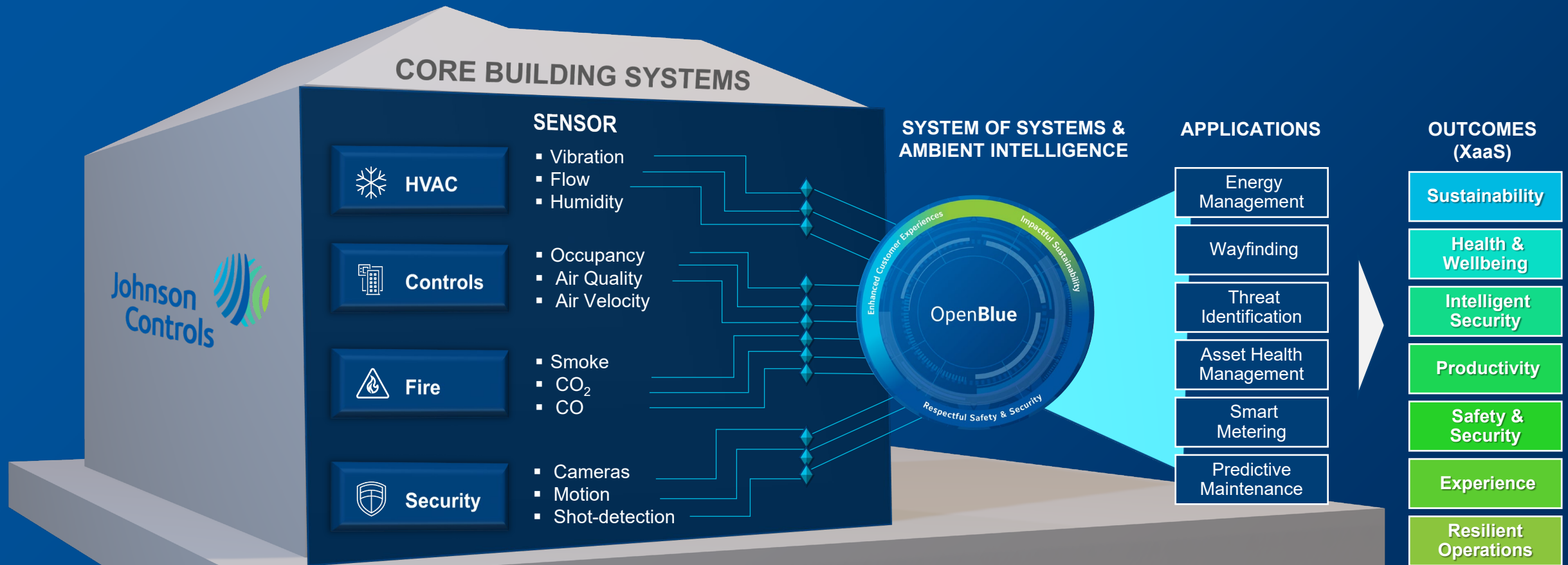
- Industry leading Access Control and Video platforms
  - AI/ML enabled edge devices and intelligent software
- Strategy to Win
  - Accelerate AI & Cloud capabilities
  - Modernize software ecosystem to manage cloud migration, mobile, cybersecurity and ‘aaS’
  - Leverage OpenBlue platform to grow SaaS
  - Continue to invest in new products (e.g., sensor tech)
  - Migrate portfolio towards wireless edge devices
  - Grow in key geographies, expand channel presence and evaluate DIY opportunities

## Intrusion



- Feature rich products
  - Smart Home – IQ4 (next gen panel), IQ Router, & IQ Hub
  - Multiple communication protocols to connect with sensors, cloud, mobile
- Strategy to Win
  - New integrable, interactive, cloud-connected, user-friendly products
  - Converged platforms for Smart Home
  - Expansion into next-gen routers as part of connected converged solutions
  - Data analytics/AI for greater value to dealers
  - Wireless networking and edge devices
  - Grow in key geographies, expand channel presence and evaluate DIY opportunities

# This Broad Portfolio in Core Building Systems Key to Big Data and Enabling Outcomes



- **Extensive installed base** across core systems - key **source of Big Data**
- **Common Data Models** across JCI systems – faster set-up, commissioning, and interoperability

- **Relationships** between spaces, assets, events, and people **more easily mapped**
- Easier execution of **cross-domain use cases**

- **Faster** innovation cycles
- **Streamlined** experience
- **Better integrated** outcomes

# Product Strategy Enables Complex and High Value Service / Solution Outcomes



## Sustainability

Supporting Sustainability Mission  
Through OpenBlue Enterprise Manager

### Customer Needs

- North America's first fully-digital hospital for building management and patient care
- Improve patient journey visibility
- **Meet goal of long-term energy efficiency and resilience**

### JCI Core Systems Solutions

- Metasys BAS system, security system, chillers, air handlers



### JCI Advanced Technology Solution

- **OpenBlue Enterprise Manager**
- JCI **connected chillers**

### Customer Impact

- **Reduced** energy consumption equal to **44.3 million kilowatt hours** since 2016
- Customer has set the **benchmark for energy intensity** per square foot

### Value to JCI

- Replaced traditional PSA **with 30-year Service Agreement and outcome guarantee** by JCI to achieve annual energy efficiency targets
- Higher recurring revenues  , lower attrition risk  , higher profitability over time 




**Humber River Hospital**  
(Toronto, Canada)

# Allocating Product R&D to Vectors of Growth



**~75%** of R&D spend allocated to sustainability and IAQ



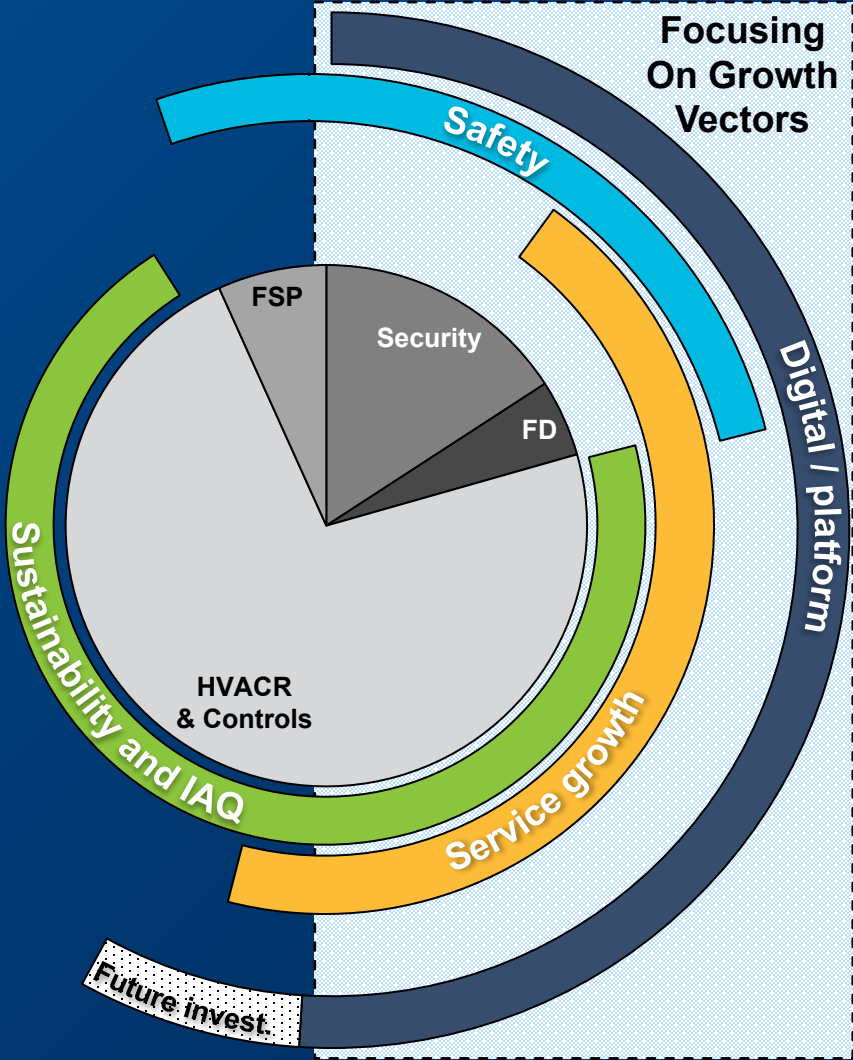
**50%+** of R&D Spending related to product lines supporting service / digital



R&D focus includes developing software capabilities and **smart connected** products / services



Investments will yield **new products** / services that will be **launched in FY22-FY24**



# Leveraging M&A to Drive Growth

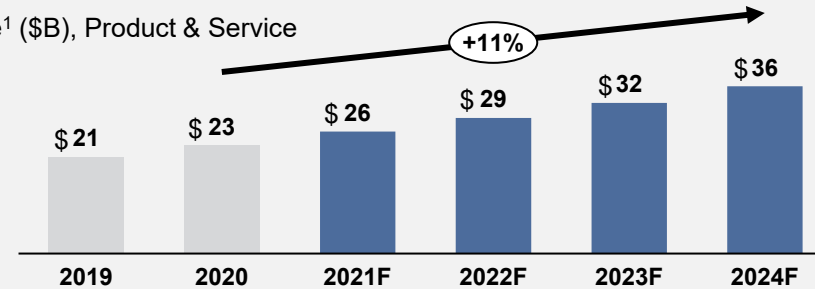
## Inorganic Focus Areas

- Lead in **fast growing industries**
- Strengthen our **geographic coverage**: channel relationships, manufacturing footprint
- **Broaden portfolio** – broaden breadth and depth of offerings
- **Enhance ESG leading position** with best-in-class products that support ESG trends
- Be at the **front-end of technology** with cutting edge digital products, hardware and software
- **Maximize enterprise value** with solutions that drive service

Together with Silent-Aire, we have a strong foundation to grow

### Data Center spend is accelerating

Market Size<sup>1</sup> (\$B), Product & Service



### We are uniquely positioned to capture market growth

- **Deep customer relationships**
  - 20+ global hyperscale customers
  - Scale relationships with the biggest hyperscale builders
- **Broad range of products & solutions**
  - Mission-critical cooling (DEC, Chillers)
  - Modular data center (MDC) offerings
  - Comprehensive fire & security offerings
  - Complete range of service offerings
- **Global footprint**
  - Service footprint across 150 countries
  - Ability to serve growing APAC & EMEALA



# Delivering Above Market Growth Through the Cycle



Unparalleled portfolio breadth



Leading player in attractive industries



Global coverage with deep expertise



Cutting edge technology with robust R&D pipeline



Multiple routes to market



Secular trends support future growth

***Target Growth at ~100bps Premium to the Market***





# Better | Bolder | Building

## Technology Leadership / OpenBlue

Vijay Sankaran, Vice President & Chief Technology Officer

The power behind **your** mission



# OpenBlue

*The Blueprint of the Future*

OpenBlue is the space where  
**BUILDING SOLUTIONS COME  
TOGETHER AND CONNECT**

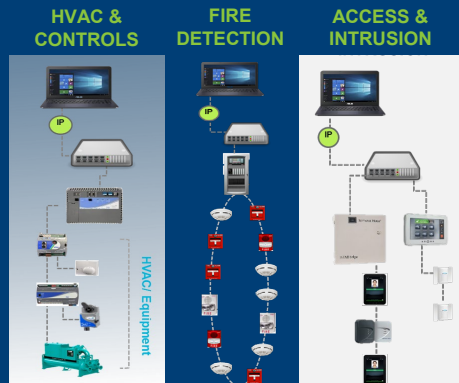
to deliver new experiences,  
solve new **customer problems**,  
provide better **safety** and ensure  
impactful **sustainability**  
— and so much more.

This is how value...  
**keeps building.**

# Lead and Accelerate the Transformation to a Smart Autonomous Buildings' Future

## Traditional Buildings

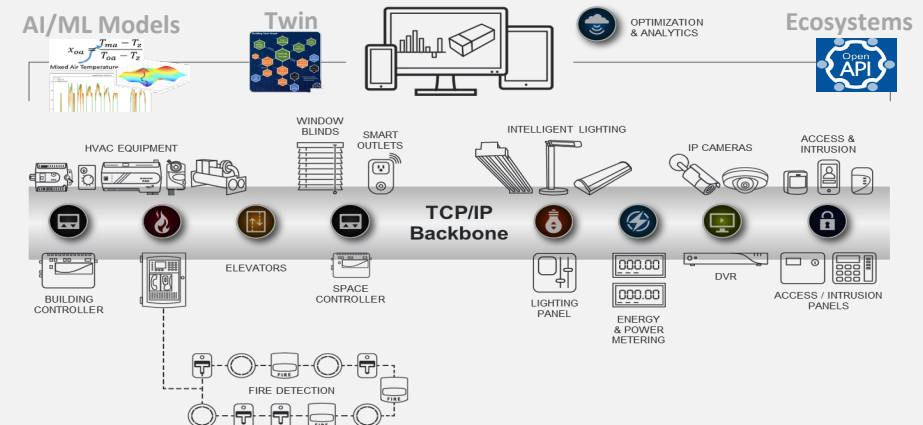
*(Buildings with static manual sequences, that are reactive to needs of environment and people)*



- Siloed single systems, operate independently
- No embedded knowledge of building processes
- Limited analytics
- Performance is reactive, and a compromise
- Manual programming, discovery, commissioning

## Smart Autonomous Buildings

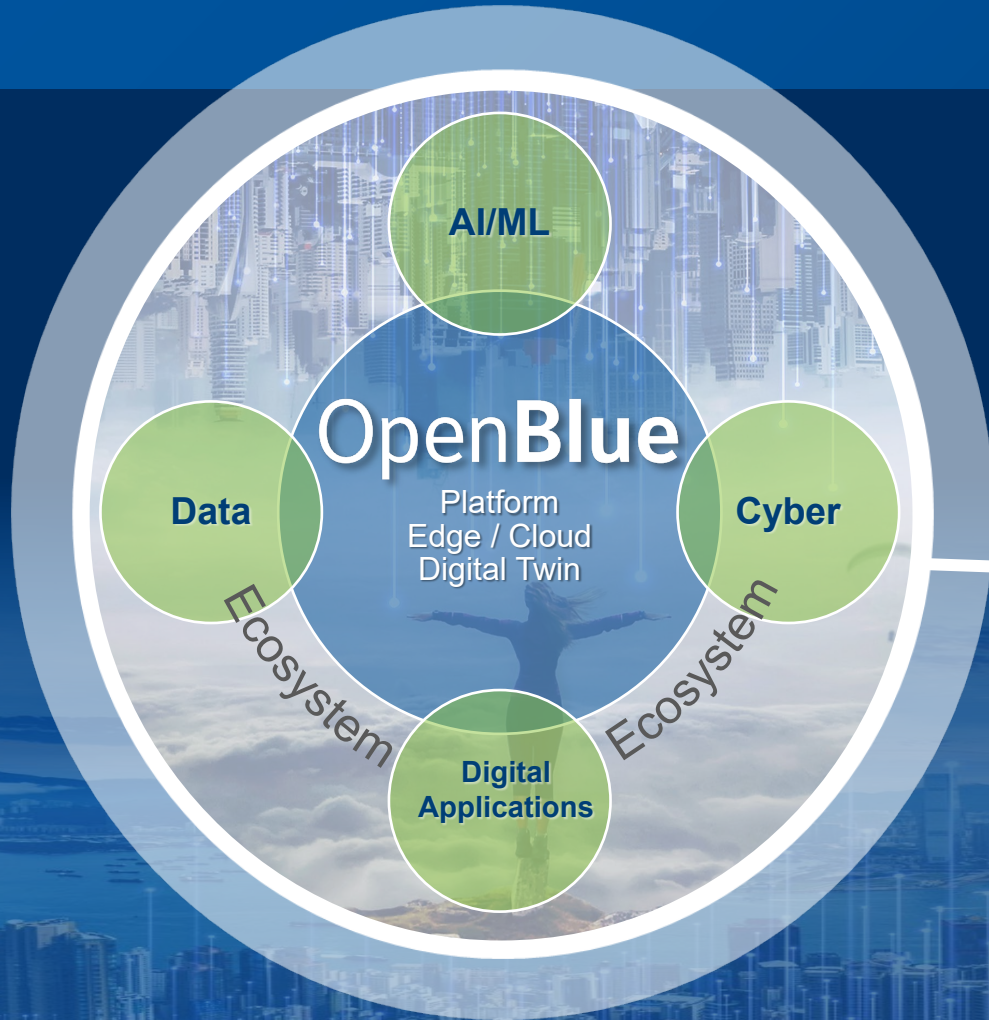
*(Buildings that continuously learn, adapt and automatically respond to the needs of the environment and people)*



- Fully IP connected building systems, sensors, people
- Platform/Twins – understanding underlying physics
- Deep insights using AI/ML
- Insights enabling autonomous adaptive control
- Fully automatic commissioning and optimization

**Power of Digital Is Amplified by the Breadth of Our Portfolio (Multiple Sensing) And Our Direct Business Model (Ability to Act)**

# Disrupting Buildings Through Digital Solutions – With OpenBlue At The Core



## Customer Outcomes

Energy/sustainability, smart building, healthy spaces, customer experience



### Service

- Remote management
- Predictive ML based
- Subscription Tiered



### Global Products

- Controls
- ACVS
- Intrusion
- Fire Detection



### Digital Solutions

- World class apps
- Enterprise early adopter
- Single pane of glass across the building

# OpenBlue – Enabling Enterprises to Manage All Aspects of Their Physical Spaces

## OpenBlue SOFTWARE PLATFORM



Single Data Repository represented as a “twin”

Analytical insights and AI models

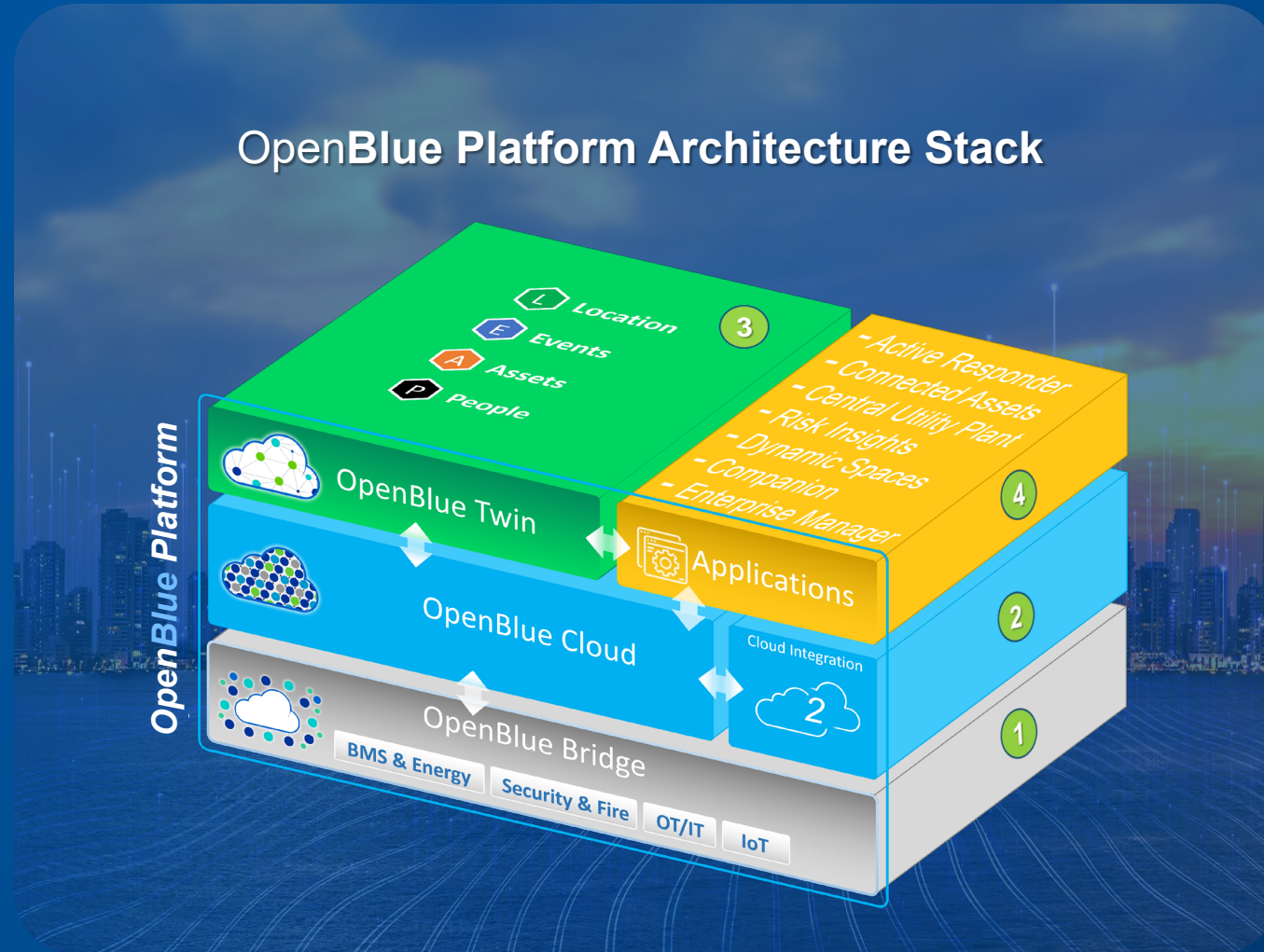
In-the-cloud and On-prem

Digital Experiences to support twin visualization, energy optimization & sustainability

Alerts and monitoring

Delivering smart, healthy, sustainable outcomes leveraging connectivity, data, analytics, automation

# OpenBlue Architecture – Four Key Building Blocks



## 1 Connected Devices

- Software defined smart edge to connect devices, equipment and control systems (BMS, ACVS)
- Support for popular OT-IT protocols and cyber security, with support for remote command and control

## 2 Data Collection

- Digital Twin and Knowledge graph mapping out spaces, assets, events and people
- Data tagging (BRICK standards), aggregation, enrichment and organization for consumption by application developer community







## 3 AI/ML

- AI to model building and equipment performance, factoring building system data and external input such as weather
- Optimization for reducing energy spend, and improve clean air, space utilization, occupant comfort and chiller plant performance

## 4 Applications

- Purpose built solutions such as OBEM, CEP, Companion, Location Services & Risk Insights
- Features built for customer and JCI Service user personas, with enhanced user experience, workflow and reporting capabilities

## OpenBlue Currently Enables Several Applications That Create Tangible Value for Customers...

	<b>OpenBlue</b> <b>Enterprise Manager</b>		A comprehensive suite of apps delivered through a single pane of glass, empowering customers to drive ESG attributes that improve property value, operational efficiency, and tenant revenue
	<b>OpenBlue</b> <b>Central Utility Plant</b>		Self-driving AI-enabled predictive cost optimization of central utility plants
	<b>OpenBlue</b> <b>Connected Equipment</b>		Detailed management of connected equipment starting with chillers leading to energy optimization, proactive maintenance, and fault detection
	<b>OpenBlue</b> <b>Companion</b>		A mobile app that delivers amazing, connected experiences to building occupants while also supporting building goals like secure access, flexible space use, and self service
	<b>OpenBlue</b> <b>Secure</b>	Active Responder Risk Insight	Enhancing enterprise security through threat intelligence and prioritization and digitalized Standard Operating Procedures response
	<b>OpenBlue</b> <b>Platform</b>	Twin Bridge Cloud	The foundation for our digital offerings. Providing software layer for data ingestion, organization, and reporting for JCI and ecosystem partners, resulting in unification, speed, and efficiency

## ...Also Creates Growth and Efficiency Opportunities for JCI



### OpenBlue.

Positions JCI as a Smart Buildings Solutions leader, drives top-line growth in digital-enabled services & subscriptions, and delivers EBIT improvements



#### Digital-enabled Services

- Connected Equipment Monitoring & Updates
- Remote Security Operations Centers
- Smart Building Operations
- Cybersecurity Monitoring

Examples

- **+25%** value of digital service contract vs. traditional
- **+15%** L&M value



#### Subscription Revenues

- Energy Management solutions
- Decarbonization solutions
- Digital Twin Visualization
- Security Alert solutions
- Space Diagnostic solutions (Air Quality, Employee Population)

- **+20%** of retrofit value for decarb solutions (\$240B through 2035) from digital and BMS solutions





#### OPEX Improvement

- Reduce service dispatch for troubleshooting
- Over-the-air activation and firmware upgrades to reduce on-site deployments
- Single connectivity architecture and edge stack leads to engineering efficiencies & scale

- **80%+** reduction in edge gateways reducing cost and complexity

# OpenBlue Capabilities Augment Traditional BMS Systems...



- Monitor, control and automation of core systems (mainly HVAC) - within a building
- On-prem
- Limited data / analytics

- Data from disparate sources – within and outside building, HVAC and other sources
- Data on most aspects of building operation
- Advanced data management and analytics for actionable insights across variety of use-cases
- Cloud-based
- Unlimited data/advanced analytics

*“How are my building systems operating **today**?”*

*“Help me **automate & operate** my building systems”*

*“How are all my **buildings** performing?”*

*“How does my data look **compared to last year**?”*










*“How much **energy** is my building **consuming**?”*

*“**Does an asset** need maintenance?”*

- **Building management systems** assist building operators in managing and monitoring equipment in the building – but they are not an analytical, visualization and optimization platform
- **Metasys and other BMS solutions** are a part of the solution but **cannot fully represent all the activities** in the built space ecosystem like a Building Internet of Things (BIOT) platform such as OpenBlue
- **OpenBlue can** ingest building telemetry, spatial representation, alarm notification events, security feeds, non-BMS integrated IoT controls to **holistically manage a space**
- **OpenBlue also has a digital twin 3D viewer** which allows for virtual representation of the building and its devices

## ...Significantly Enhancing Functionality Critical to Delivering Holistic Outcomes

### Functionality Improvements of an OpenBlue Enabled BMS

	Functionality <sup>1</sup>	Traditional, on-premise BMS	OpenBlue Enabled BMS
	Automation of buildings systems	✓Yes	✓Yes
	Remote Management	No	✓Yes
	Equipment Health Monitoring	No	✓Yes
	Administer System Updates	Difficult, with need for on-site presence	✓Yes
	Two-way Data Transfer	No	✓Yes
	Extend to Capture New Data	Very difficult	✓Yes
	Support New Use Cases	No	✓Yes
	Integration with Other Solutions	Very difficult	✓Yes
	Use Cases	Energy optimization	✓Multi-dimensional optimization



# Customer Example – Extending BMS Capabilities For Increased Value Creation

## Large Global Real Estate Management Firm

### Operational Pain-Points

#### Energy Efficiency

- Efficiency drop as equipment ages
- Energy fees bulk of the building operation cost

#### Fixed Maintenance Routines

- Slow to identify equipment faults
- Faulty equipment wastes more energy

### OpenBlue Digital Enablers



Integrate BMS  
to operations platform



Automate equip/  
CCTV data-pulls



Advanced Analytics  
& Diagnostics



Centralized monitoring  
& decision making

### Outcomes to Date (~2 months)

Energy  
Savings

~5% energy reduction savings (~\$1M)

Installed  
Base

40+ properties

Installed  
Base

Key differentiator for future land bids

40+  
Buildings

~75,000  
Points Connected

10+  
BMS Vendors

3  
BMS Protocols

\$4M+  
Energy Savings in 5 Years

\$2M+  
OPEX savings from SaaS



Value to JCI: SaaS Recurring Revenues, Software Margins, Services Growth from  
Fault Detection/Resolution, Pull-through of JCI products/services

# OpenBlue Is Differentiated and More Holistic Relative to Competitive Offerings

## Competitive Landscape Across BMS, HVAC, Start-Ups

	Competitor	HVAC Equipment	Material Controls Share	Security Products	BloT Platform	Applications & Analytics Breadth	Ability to Integrate 3rd Party Data
BMS Players ↓	Competitor A				"Manufacturing centric platform"		
	Competitor B				"Manufacturing centric platform"		
	Competitor C						
BMS & HVAC	Johnson Controls						
HVAC Players ↑	Competitor D						
	Competitor E						
Start-up	Competitor F				Digital Twin Focus		
	<div><div> Addressing all value layers</div><div> Addressing most value layers</div></div> <div><div> Addressing partial value layers</div><div> Addressing few value layers</div></div>						

- Most competitive offerings are not built-for-purpose for built environment
- They tackle a smaller part of the building space ecosystem - energy or security, or digital twin
- OpenBlue is much more holistic
  - Captures telemetry, alerting, spatial representation
  - Integrates them into a common data repository and digital twin schema
  - Allows for a range of software applications to aid with energy optimization, sustainability planning, asset tracking, security, twin visualization and more

Proactively Managing Customers' Cybersecurity And Privacy Risk From Development to Operations

Obtaining Platform Security and Privacy Certifications Including ISO 27001, SOC 2, FedRAMP

Driving cybersecurity best practices and innovative secure-by-design features and services to reduce risk and help customers achieve business outcomes



# Amplifying Our Reach Through Ecosystem Partnerships

## Ecosystem Partners

*Sell with / Build co-innovate*

 <b>accenture</b>	Both
 <b>Alibaba Group</b> 阿里巴巴集团	Both
 <b>Ansys</b>	Build
 <b>arm</b> PELION	Build
 <b>Atos</b>	Sell
 <b>CBRE</b>	Both
 <b>cisco</b>	Both
 <b>Google</b>	Both
 <b>Microsoft</b>	Both

## Technology partnerships

- Enhancing capabilities in: AI/ML, edge, cloud, device management & visualization
- Increases speed to market

## Go-to-market partners

- Formalized partnership program with central and regional alignment and support
- Utilizing Sell-to / sell-through / sell-with sales motions

## China market

- Porting OpenBlue to Alibaba cloud to accelerate penetration into China



## OpenBlue Positions JCI as a Smart Buildings Solutions Leader



Software platform enables services, products and digital solutions



Creates tangible value for customers and growth and efficiency opportunities for JCI



Significantly enhances functionality critical to delivering holistic outcomes

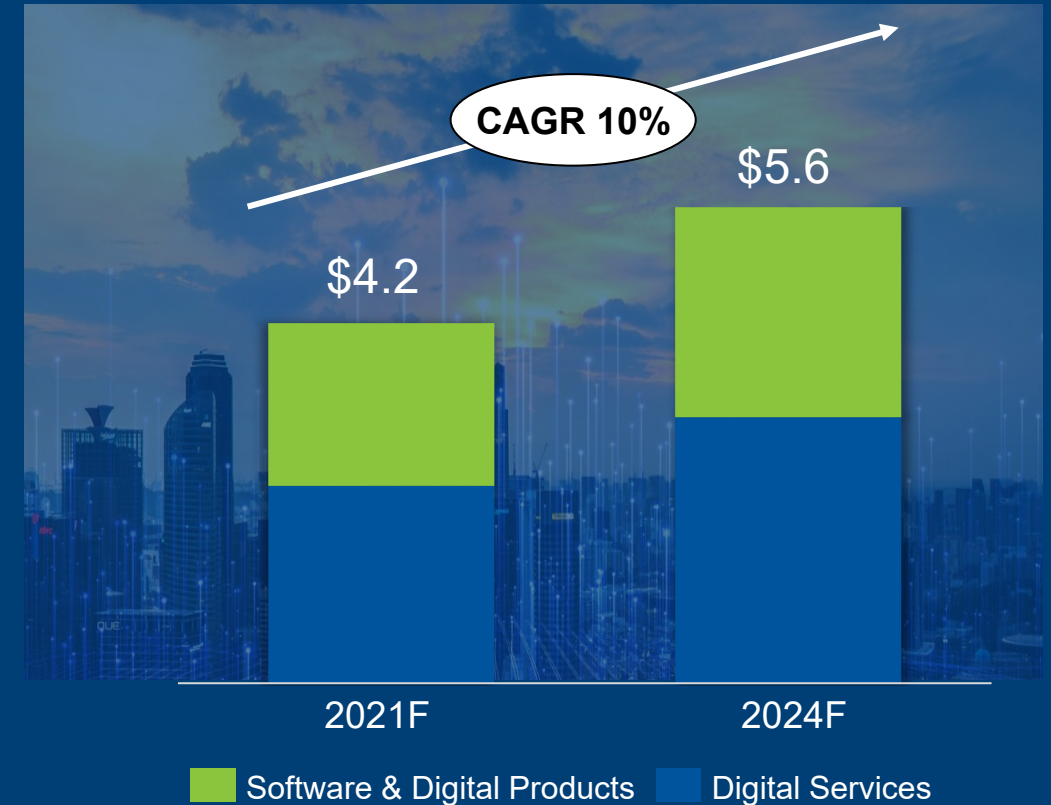


Power of digital is amplified by the breadth of our portfolio and our direct business model



Accelerating and leading the transformation to a smart autonomous buildings' future

### Digital Revenue (\$B)





# Better | Bolder | Building

## Digital Services

Ganesh Ramaswamy, Vice President & President Global Services

The power behind **your** mission



## Driving Value Creation Through Services



\$6B+ global service portfolio with accretive margins



Large and fragmented market (\$150B)<sup>1</sup>; derivative opportunities from secular trends: decarbonization, clean air / IEQ and smart buildings



Digital enablers deliver enhanced value outcomes in cost, energy, uptime and productivity



Demographic shifts and technology evolution favor scale players such as JCI



Our strategy and digital service transformation position JCI to realize these opportunities

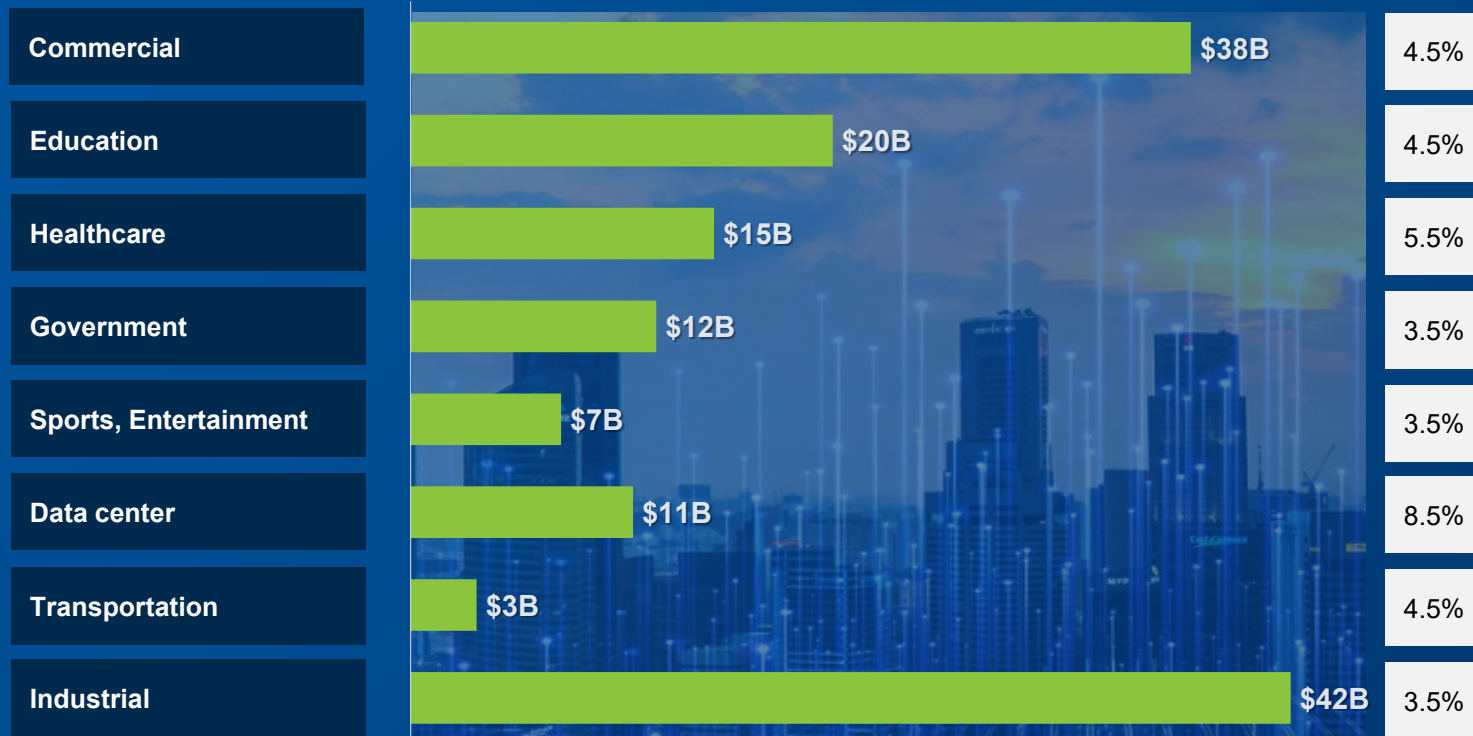


# Global Services Market – Large & Fragmented

## Global Services Market Opportunity (\$B)<sup>1</sup>

[HVAC, Controls, Fire, Security]

2021 – 24  
CAGR



## Key Characteristics

- Large market globally – ~\$150B growing at GDP (excl. retrofit)
- Services include:
  - Planned service agreements
  - Labor & Materials (L&M)
  - Operations & Maintenance
  - Monitoring
- Multitude of players - OEMs, national / regional providers, local providers & self-performers

*Additional derivative opportunities from decarbonization and healthy buildings will be incremental to this market opportunity*

# Services Market Is Changing – Accelerated By Post-Pandemic Needs and Technology

## Market Dynamics<sup>1</sup>

- **Demographic shifts** with one in five technicians to exit the labor force
- **Indoor environmental quality** - permanent shift post-pandemic
- Competing demands on **building performance** (e.g. decarb vs. IEQ)
- Customers moving towards **outcome-based models** with increasing technology adoption
- Shift from **local / mechanical to regional / digital** with scale players better positioned to serve future needs

## Winning Attributes



Ability to access and activate installed base with solutions – for scale and efficiency



Portfolio breadth and solutions experience to serve wide spectrum of needs



DIGITAL CAPABILITY

Platforms and digital capabilities that optimize multiple competing demands

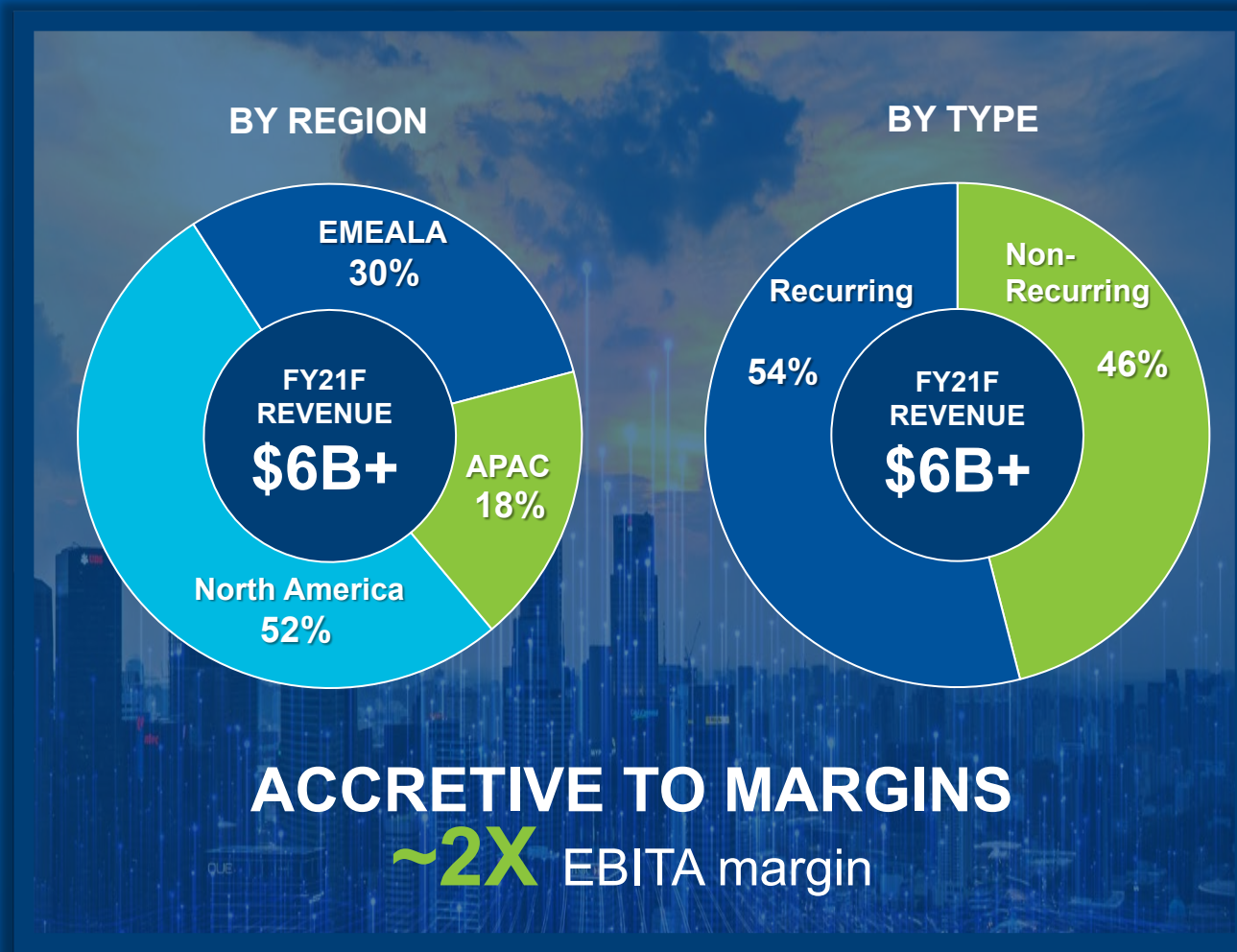


Direct channel presence and responsiveness to address needs of global customers



Ability to structure and deliver outcome-based models with high reliability

## Large & Profitable Global Service Portfolio



### Key Value Drivers:

- Low Total Cost of Ownership (TCO)
- Meeting Compliance
- Cost avoidance
- Energy efficiency
- Asset uptime
- Operational outcomes



## TRACK RECORD OF SUCCESS

- ✓ Historical service growth aligned with GDP
- ✓ FY21 Q3 double-digit orders and revenue growth
- ✓ Increased service attach rate by **~400bps** in FY21
- ✓ Supported by **industry tailwinds**:
  - Rising demand for and stimulus funding for healthy buildings
  - Increase in customer sustainability goals

## Way Forward

1

Build Strategic  
Capabilities through  
**Digital Service  
Transformation**

2

Launch  
**Outcome Based  
Services & Solutions**

DELIVERING  
**200 to  
300bps**  
ABOVE MARKET  
GROWTH

# 1 Developing Strategic Capabilities Enabled by Digital Technologies



## Connect digital ready equipment

- Ramp up brownfield/installed base connectivity (installs post FY15: 97% connectable to date)
- Full connectivity of new placements
- Cost ↓ and Speed ↑



## Collect & process data from connected equipment

- Common user interface and data platform
- Scalable and secure
- Edge technologies



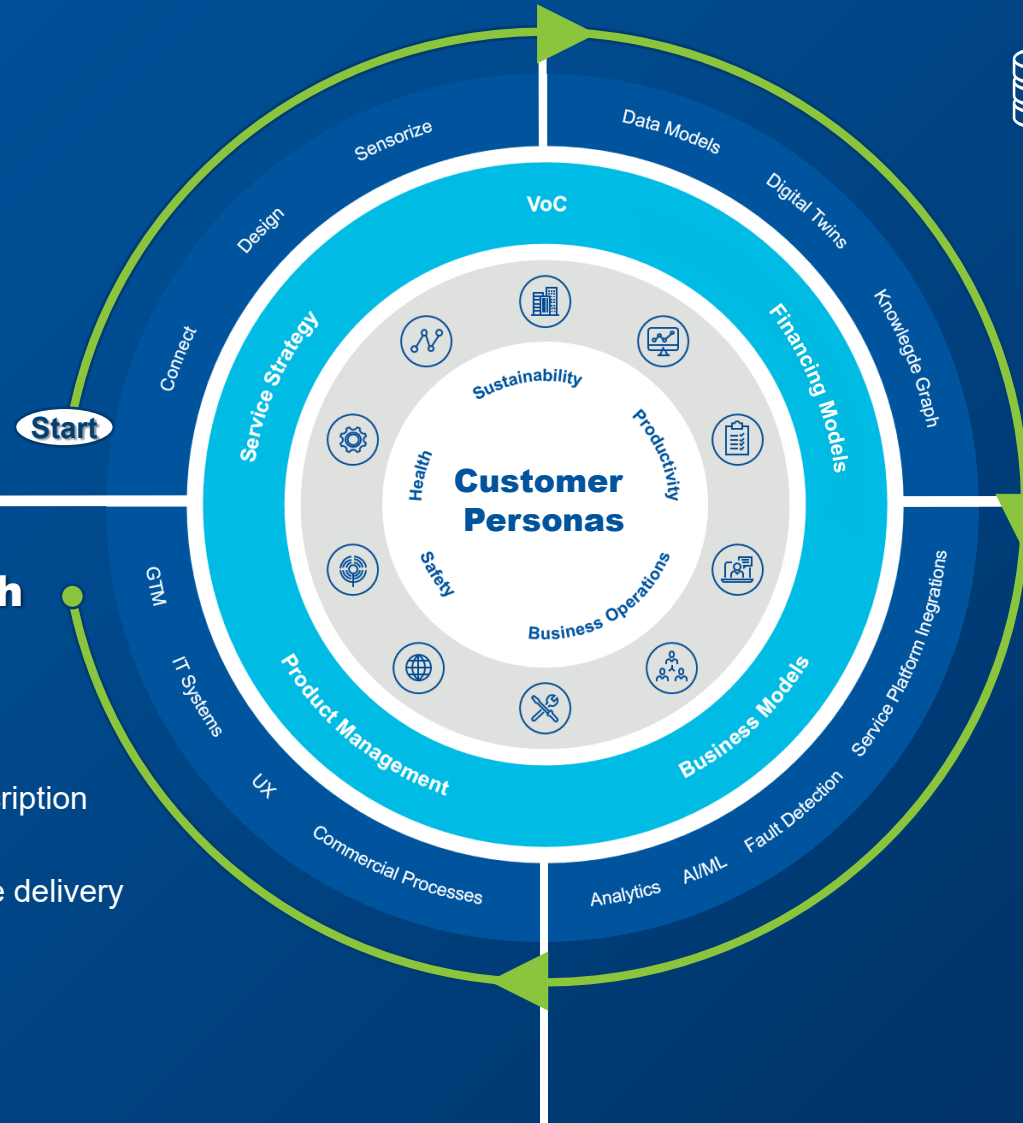
## Deliver services through direct channel via streamlined workflows, systems & processes

- Systems for digital services (e.g. subscription platforms)
- Technician enrollment for digital service delivery
- Customer experience expansion







## Translate data into insights & intelligence

- AI-based predictive analytics
- Condition-based maintenance
- Enable as-a-service outcomes



# 1 Leveraging OpenBlue to Deliver Strategic Digital Service Capabilities

	Examples of Advanced Analytics Capability	Area of Impact
 <b>Predictive Analytics for condition-based maintenance</b>	<ul style="list-style-type: none"><li>▪ <b>Robust, ML-based anomaly detection</b>, fault triaging, condition-based maintenance prediction, alarm prioritization, and optimization of operations</li></ul>	<ul style="list-style-type: none"><li>– Proactive Maintenance</li><li>– Remote Services</li></ul>
 <b>Smart Edge for scalable and secure connectivity</b>	<ul style="list-style-type: none"><li>▪ <b>Remote device management, authentication and edge AI</b></li><li>▪ <b>Analytics predictions at the edge</b> for performance and time sensitive decision making</li></ul>	<ul style="list-style-type: none"><li>– Energy, Operations, Optimization</li></ul>
 <b>Common data platform and UI across connected products</b>	<ul style="list-style-type: none"><li>▪ <b>Single pane of glass</b> enterprise view with subscription-based access to apps</li><li>▪ Real time data, alerts &amp; Chiller Performance Index (CPI) tracking, notifications</li></ul>	<ul style="list-style-type: none"><li>– Asset Optimization</li><li>– Business Decisions</li></ul>
 <b>Video Analytics</b>	<ul style="list-style-type: none"><li>▪ <b>Proactive, predictive, individualized Intelligence</b> to determine anomalies in real-time and proactively warn of impending threats</li></ul>	<ul style="list-style-type: none"><li>– Security as a Service</li></ul>

## 2 Service Offering Example: Connected Chillers

### Voice of Customers

#### Customers' Top Goals & Objectives

- Expand asset capacity without adding asset footprint
- Reduce unplanned failures and time to repair
- Reduce costs (total cost of ownership "TCO" & operational)
- Leverage technology to provide outcomes



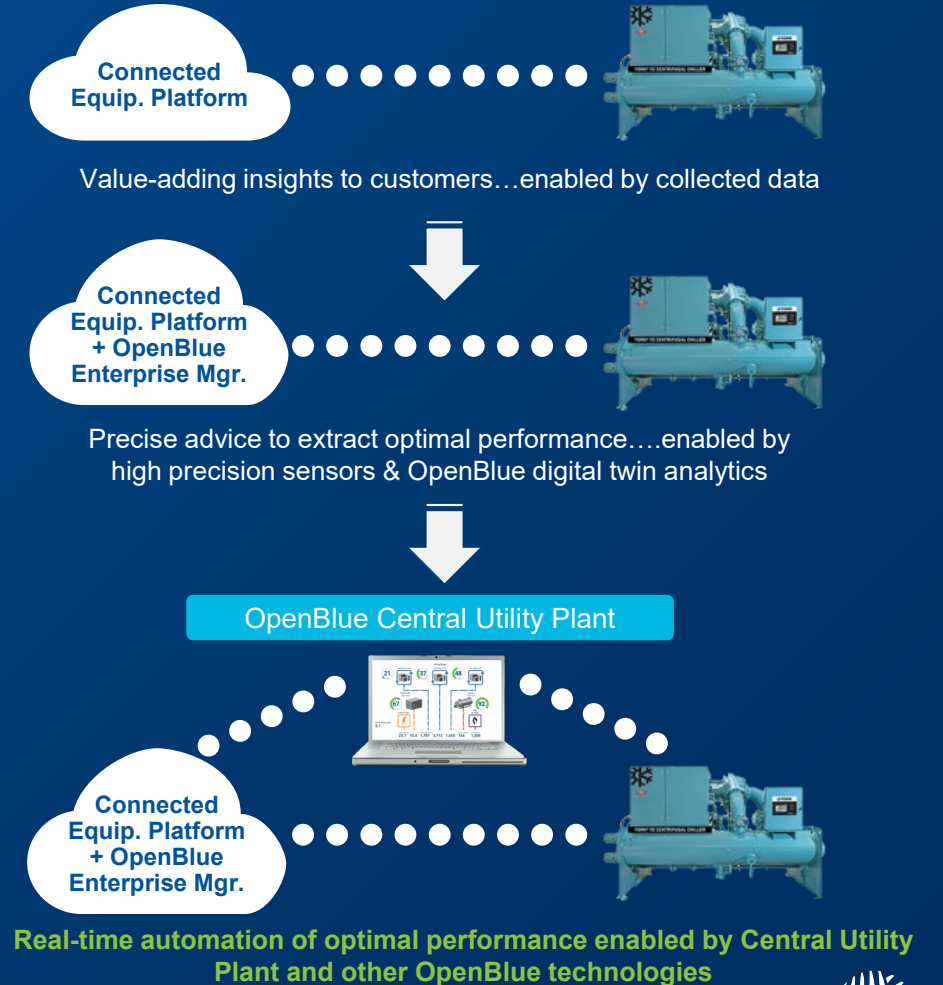
#### Value Drivers

Reduced TCO	Reduce Unplanned Downtime	Reduced Energy Use	MTTR
30% ↓	66% ↓	30% ↓	50% ↓
Reduction in TCO & longer asset life	Reduction in unplanned downtime	Reduction in energy and carbon footprint	Reduction in mean time to repair

#### Strategic Enablers

- ✓ **40%** of JCI chiller installed base connected by 2024
- ✓ **Attach Rate** ↑ **Attrition** ↓ **Recurring Revenues** ↑

### Connected Chiller Strategy



## 2 Example Offering: Healthy Buildings

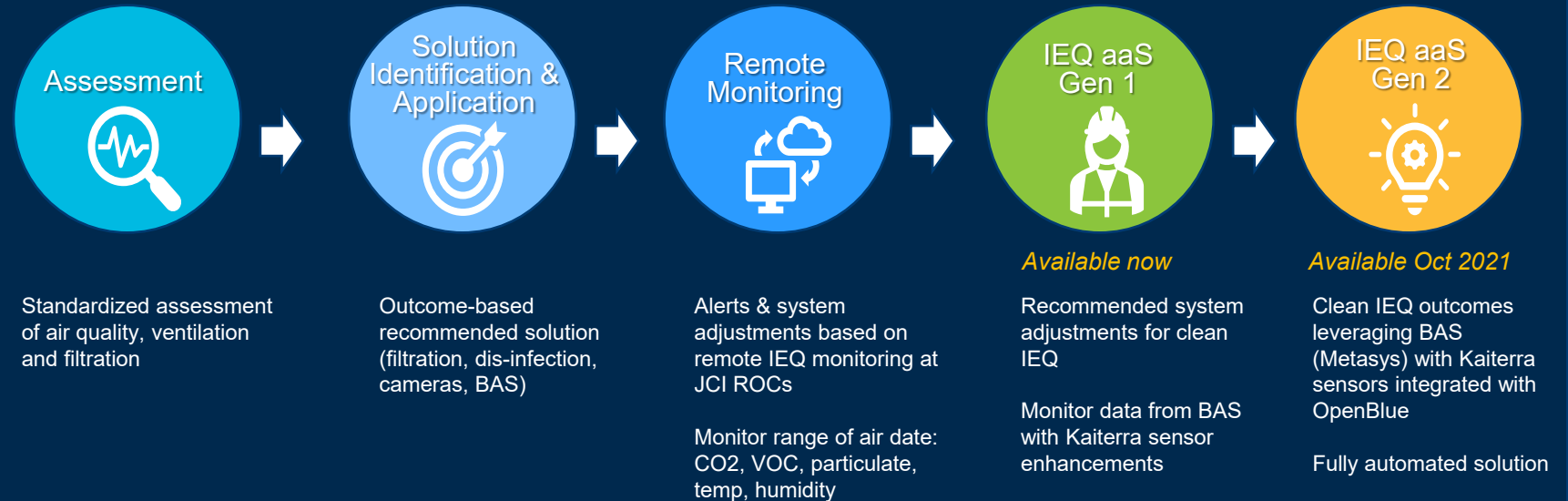
### Continued Demand for Healthy Buildings

- Global focus on indoor air & environmental quality (IAQ/IEQ) post-pandemic
- \$10 to \$15B** market through 2030<sup>1</sup>

IEQ	Frictionless Access
Digital Solutions	Monitoring Services

- Demand expected to be sustained post-pandemic due to increase in health, safety and productivity drivers

### Healthy Buildings Solution Strategy

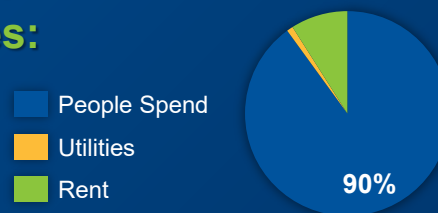


### Partnerships:



### Customer Outcomes:

#### Spend Profile of Typical Building Operations



Occupant productivity (10%+)<sup>2</sup>

Employee retention

Insurance costs

Employee engagement

Rent premiums (5-8%)<sup>3</sup>



<sup>1</sup> Source: CleanTech Research & Markets, Guidehouse, JCI analysis

<sup>2</sup> Source: World Green Building Council

<sup>3</sup> Source: MIT

IEQ = Indoor Environmental Quality

## 2 Groundbreaking Security-as-a-Service Platform Leveraging Exponential Technologies

### Key Shifts Shaping the Future of Security Services



### New Security-as-a-Service Platform

- **Platform** that bridges Access Controls/Video Systems with OpenBlue, drives powerful intelligence, and leverages robust ecosystem of digital services and partners
- Proactive, predictive, individualized intelligence with **devices, sensors and software in One Subscription**
- Breaks traditional forensic and capex security models – **Capex to Opex, lower TCO**
- Extensive use of **exponential technologies** – AI/ML, cloud, cybersecurity, Big Data
- **Cybersecurity** compliance
- **OpenBlue integrations** for Risk Insights, Active Responder, Location based services, Companion

Recurring Revenues  DD% Growth 

# Customer Examples

## Connected Chillers

Digital Transformation of Maintenance



### Healthcare Company

- Standardize globally & transform to **condition based maintenance**
- **Virtual diagnostics** and **energy analytics** for actionable insights
- **Reduce unplanned failure**, time to repair, total cost of ownership with **~50%+ reduction in unplanned downtime**
- **Eliminate energy waste** and avoid drift from best operational settings

## Healthy Buildings

Digital Transformation of IEQ



### University

- Installed **high efficiency RTUs, heat pumps, Merv-13 filters, UV-C**
- Implemented **Metasys/digital IEQ** controls to optimize energy consumption
- **Safe, clean and more productive** instructional and learning environments for staff and students
- **~20% reduction in energy usage** while delivering cleaner air

## Security as a Service

Digitally Enabled Security Outcomes

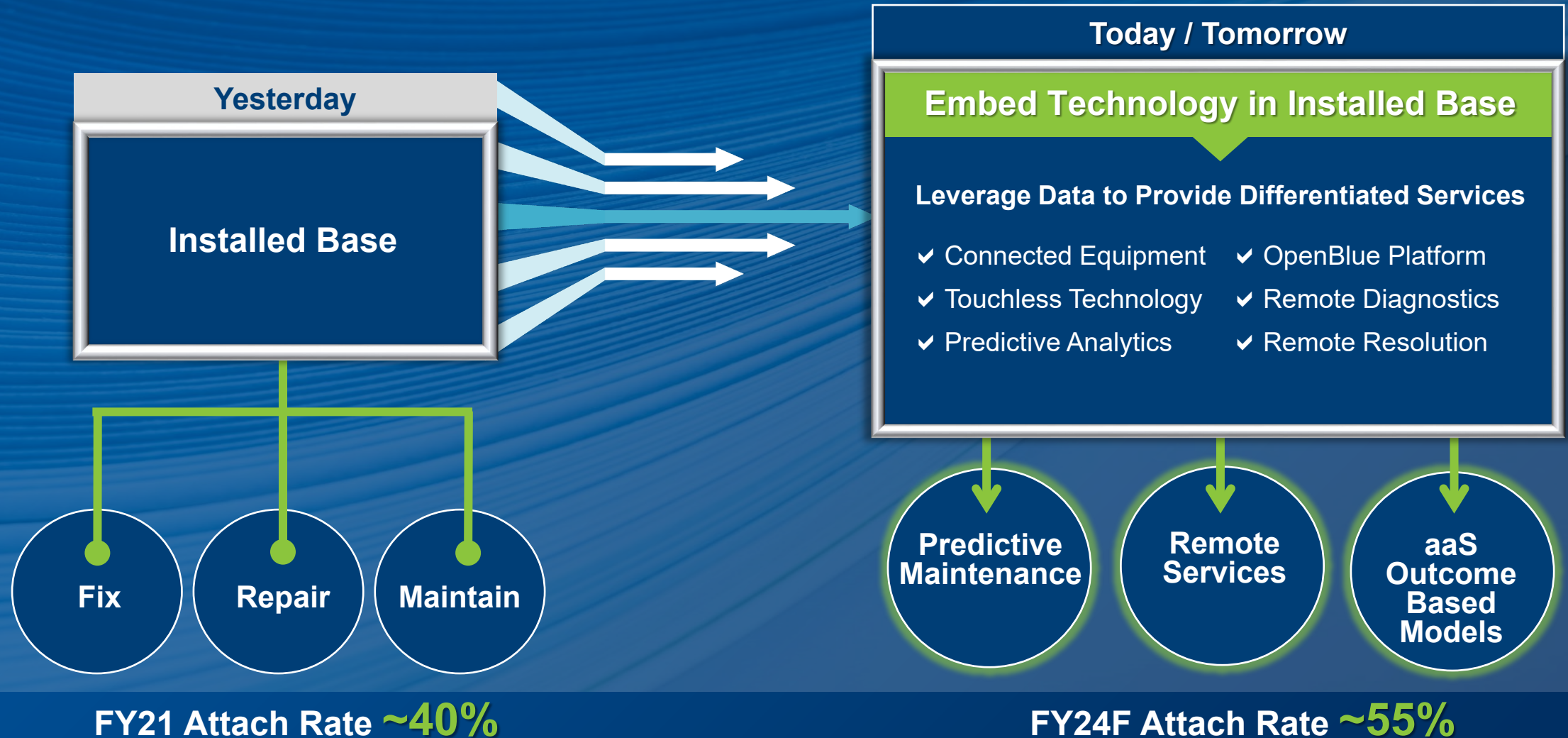


### Major US Retailer Chain

- **One cloud** for access control and video surveillance management of one to thousands of locations
- **Advanced cybersecurity** and data privacy end to end
- **Improves Sustainability**
- **~30% Cost of Ownership Savings** using SaaS and connected devices

Value to JCI: **Recurring Revenues** ↑ **Services Growth** ↑

# Transforming Our Service Strategy Powered by OpenBlue Technologies and Enabled by Our Installed Base, Domain Expertise and Global Coverage



# On the Path to Deliver HSD Growth

## Growth Drivers

### Market Growth

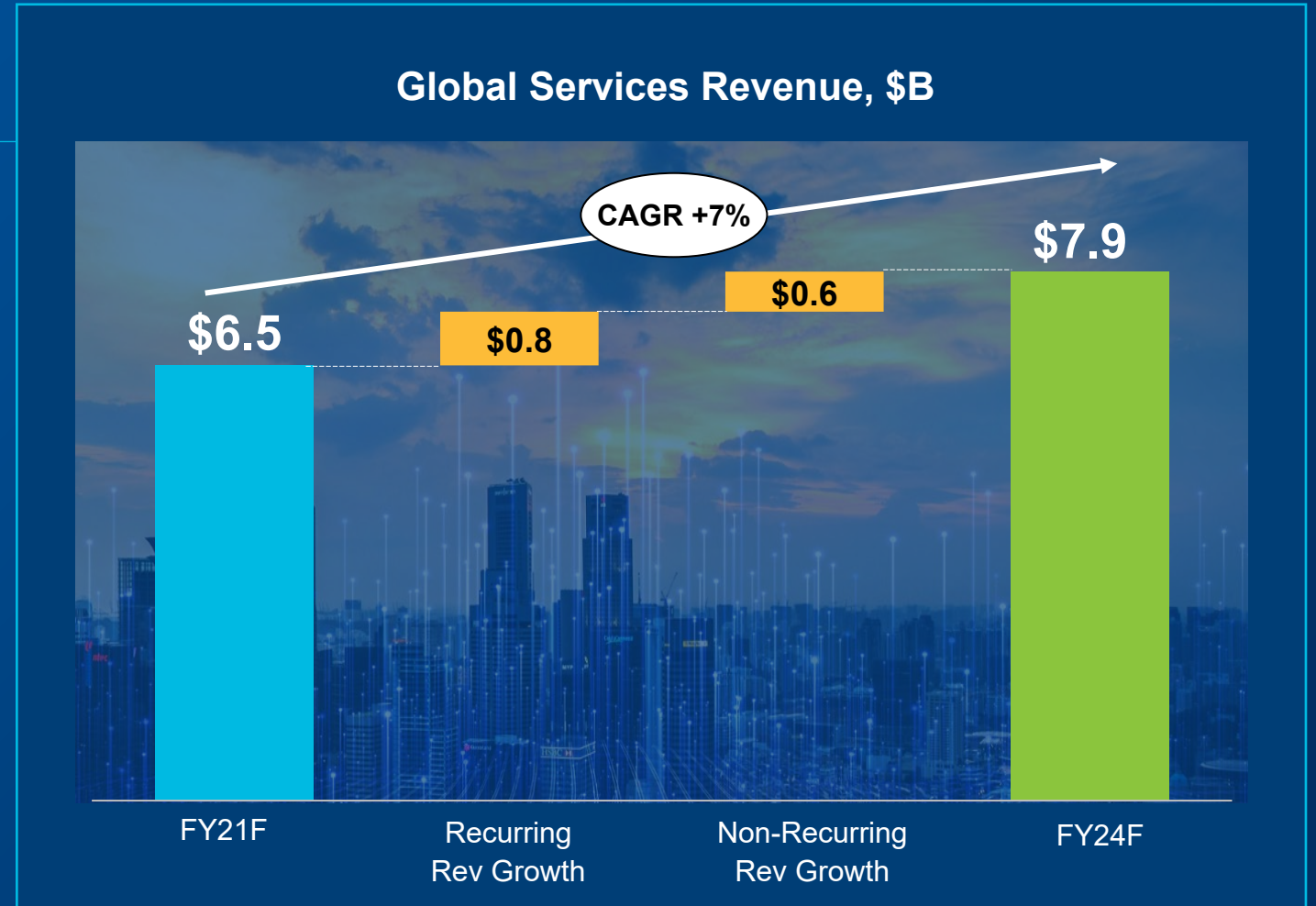
- Reflects GDP growth

### Recurring Offerings

- Attach rate increase (+1pp = \$30M)
  - Increasing from ~40% in FY21 to ~55% in FY24
- Attrition reduction (-1pp = \$35M)
  - Going from ~10% in FY21 to ~7% in FY24
- New services – digitally enabled connected offerings and aaS solutions

### Non-Recurring Offerings

- Labor & material (L&M) pull-through on new PSAs
  - Typical pull through at ~50%
- L&M growth above market





# Better | Bolder | Building

## Accelerating Transformation to Smart Buildings

Michael Ellis, Executive Vice President, Chief Customer & Digital Officer

The power behind **your mission**



# The Power of Operational Technology

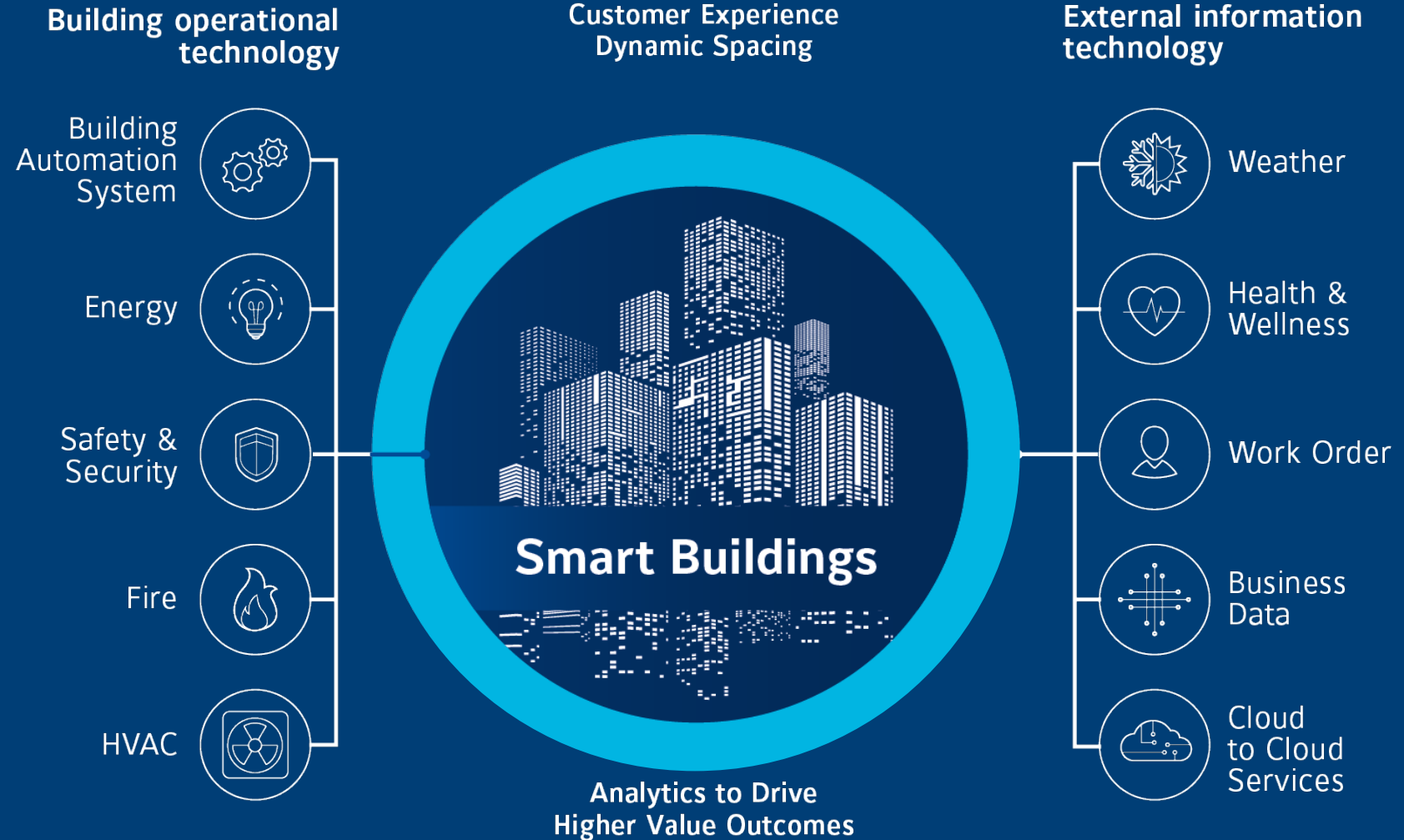
We are digitally transforming environments to more effectively use the data that buildings generate to drive comfort, security and sustainability.

OpenBlue

Operational Technology

Meets

Information Technology



# JCI Accelerating Transformation to Smart Autonomous Buildings

## The Evolution of Connected Buildings

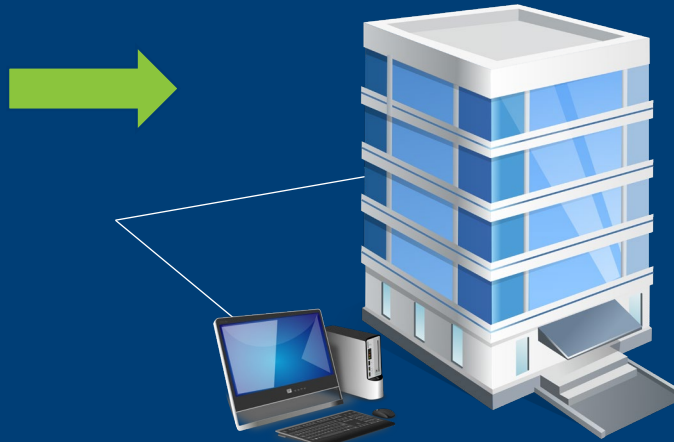
*Improve Performance of Both Buildings and Businesses*

### TYPICAL BUILDINGS



- ✓ Standalone Systems
- ✓ Optimized for cost

### CONNECTED BUILDINGS



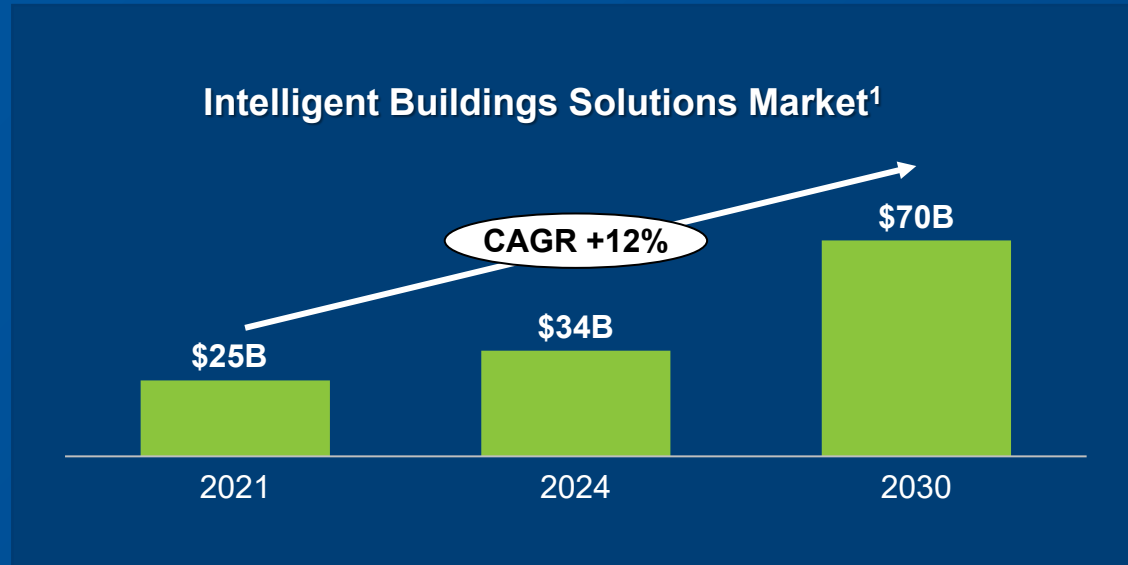
- ✓ Holistic view
- ✓ Optimized for energy
- ✓ Two or more systems manually integrated into single dashboard
- ✓ "If then that" rules
- ✓ Opex savings

### SMART BUILDINGS



- ✓ Most building systems integrated using BIOT platform
- ✓ Connected to commercial systems
- ✓ Delivering complex outcomes – Net Zero, Productivity
- ✓ Opex / Capex savings, commercial mission
- ✓ Continuously learn, adapt and automatically respond to needs of the occupants and environment

# The Value Creation Potential Is Significant



## Intelligent Buildings Solutions Components & Value

Solution	% of Total
Edge & Communication Devices	27%
Energy & Operational Management	26%
Integration Software & Services	21%
Cloud / IoT-based Remote Monitoring & Diagnostics	13%
Space Optimization & Analytics	9%
Occupant Experiential / Value-added Apps	4%



# Investing in Technology and Platforms to Deliver Complex Outcomes



## Managing High Data Complexity Across Intelligent Use Cases and Applications



### Sustainability

- Energy Management
- Utility Pricing and Weather integration
- Indoor Air Quality



### Occupant Experiences

- People Analytics
- Transit Operations App
- Parking App
- Wayfinding



### Event Integration

- Scheduling database
- Fan experience
- Reserved parking



### Tenant Services

- Event & attendance planning
- Digital signage / advertising
- Tenant apps / cloud storage
- Single dashboard



### Building Health

- Pre-construction twin
- Opex / Capex projections
- Interactive 3D BIM
- Preemptive Maintenance
- Work order automation



### Intelligent Security

- Physical / Logical Security
- Risk Insights / Social
- Active Responder
- Cyber Security

# Driving Outcomes to Support Customers' Mission



## Healthcare

- Improve patient health outcomes
- Increase physician and nurse productivity
- Increase patient and family satisfaction

Response time: **-50%**

Satisfaction criteria: **Top 5**



## Retail

- Intelligent merchandising and marketing decisions
- Enhance communication – both frequency and content – with consumers
- Improve in-store consumer experience

Revenue: **+2%-3%**

Inventory costs: **-25% to -30%**



## Commercial Office

- Increase worker productivity and efficiency
- Increase recruiting effectiveness and employee retention
- Ability to attract and retain high-paying tenants
- Net Zero

Productivity: **+20%**

Carbon: **-30%**



## Education

- Improve student learning outcomes
- Enhance student / occupant safety
- Increase sense of community

Graduation: **+2.5%**

Cognitive attention: **+5%**



## High-Rise Residential

- Increase tenant satisfaction, comfort, safety and customization
- Ability to attract and retain high-paying tenants
- Increase sense of community

Rental yield: **+10%**

Sale values: **+20% to +30%**

# Smart HQ

## Delivering Largest Government Zero-Energy Building in the World

### Dubai Electricity & Water Authority

- **Built-up area:** is over 2 million square feet. **Floors:** 15, **Occupants:** 5,000 people
- **Facilities:** 500-people auditorium, training halls, creativity center, exhibition hall, nursery, and a gym
- **Solar Power:** 1,000 Sq.M of Building Integrated Photovoltaics. 6,500 MW/h a year of renewable energy

**JCI Solutions: OpenBlue Platform, OpenBlue Enterprise Manager, OpenBlue Workplace for 31 complex use case spanning sustainability, operations, employee experience**



Value to JCI: **Recurring Revenues** ↑ **Services Growth** ↑ **Pull-through** ↑



## Accelerating Go-to-Market Capabilities

1



**Field Sales/  
GTM  
Capabilities**

**Dedicated regional smart building sales teams** to demonstrate technology, articulate value proposition and deliver results

2



**Customer  
Success**

**Global and regional customer success teams** to ensure best-in-class delivery time and quality

3



**Ecosystem  
Partners**

**Broad mix of channel partners** to increase market access and rapidly scale business



# 1 We Are Engaging Customers Differently

## New Personas



Owners



CEO / CFO



CIO



CSO

## Engagement

- C-suite engagement and management
- Identifying solutions value pools at strategic customers
- Co-Innovation sessions to develop use cases
- Ensuring adoption, optimization and expansion of JCI digital offerings with focus on customer success
- From products to 'as a service' models

**Customers With a Strategic Mindset Focused on Business Outcomes**

## Augmenting Direct Field Sales and GTM Capabilities

### Dedicated Smart Building Teams in Region to Enhance Regional Go-to-Market Capabilities

#### Regional Vice President (Digital)

Business  
Development

Vertical Technology  
Experts

Professional  
Services

Solution Architects

Ecosystem  
Managers

Program Managers

### Regional Teams Are Supported With Additional Expertise and Capabilities

- Targeted **upskilling** of hand-picked sellers across globe
- **Intensive training** to consultatively solve for customer outcomes
- **Solution Architect certification** program train and certify technical resources on OpenBlue, Cloud, Security and Privacy
- **IT enhancements** to support software / subscriptions



2

## Global Customer Success Teams to Ensure Superior Customer Experience and ROI

### Solution Deployment Teams

Global team of solution experts to deploy OpenBlue Suite

### Customer Success Management

Ensuring customers achieve their ROI

### Digital Tiger Team

Be-spoke delivery teams for highly complex

### Customer Experience and UX Design

Design world class user experiences for clients



### OpenBlue Customer Care

Drive customer success and adoption

3

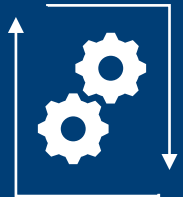
## Ecosystem Partnerships Expanding Market Access and Building Scale



Co-marketing  
and co-selling  
partnerships  
and alliances



Sell to,  
Sell with,  
Sell through



System  
integration



Industry  
engagement  
and joint  
solution  
development

  
**accenture**

**CBRE**

**Google**

 **Microsoft**

**Johnson  
Controls** 

## Growing Market Traction



**60%+** win-rate on major Smart Building projects over the last 12 months



Evidence of **strong value creation** and differentiation



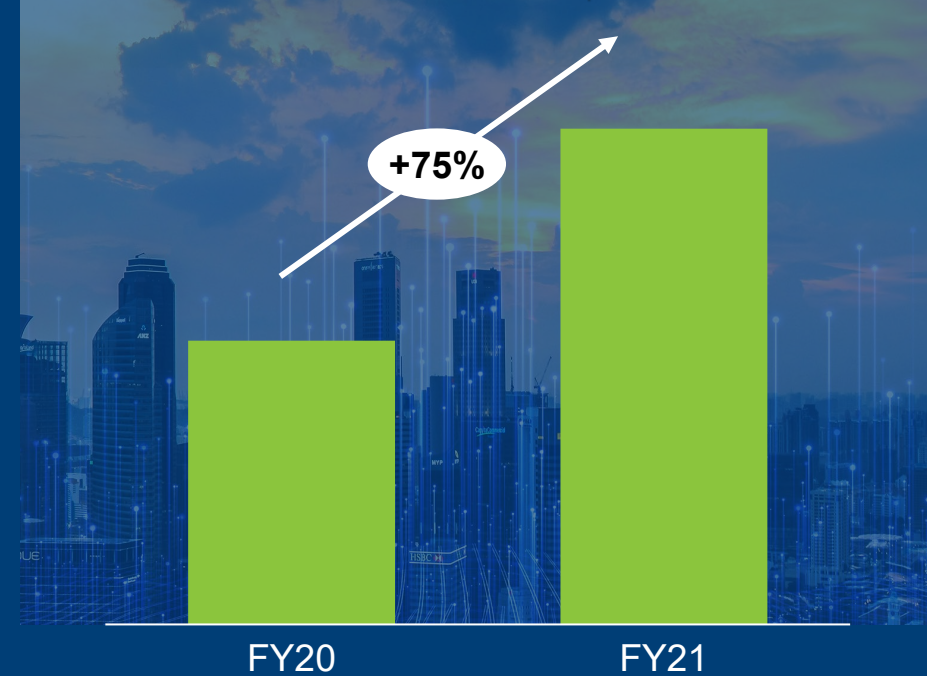
On average, Smart Building projects generate **10x** pull through of JCI products



Subscription revenues, **software margins**

### Smart Building Pipeline Growth

Total deal value \$1.2B



*Pipeline growth in Corporate Campus / Offices, Transportation and Education across all Regions*

## Well Positioned to Lead the Transformation to Smart Buildings

- Attractive market with **double-digit growth**
- Connected buildings drive **10X contract value** over the lifecycle
- Outcome based solutions driving **higher margin growth**
- Customer relationship further strengthened as **“project engineer”** vs sub-contractor



Unified and standardized software development and innovation across all JCI solutions / business units, services, working with CTO



OpenBlue platform is a clear leader for the buildings environment - unifying data/insights in JCI and non JCI IT/OT environments



Integrated edge & cloud capabilities in core / GP solutions prioritized by voice-of-customer value



Top-notch digital talent GTM strategies, customer success



Partner ecosystem



# Better | Bolder | Building

## Decarbonization & Heat Pumps

Visal Leng, Vice President & President Asia Pacific

Nate Manning, Vice President & President North America

Tomas Brannemo, Vice President & President EMEALA

The power behind **your** mission



# Buildings Play a Key Role in Achieving Net Zero



Significant market opportunity ~\$240B<sup>1</sup>  
over the next decade



As an OEM and solutions provider we  
have the technology and capabilities to  
provide complete solutions



Direct channel is a competitive advantage



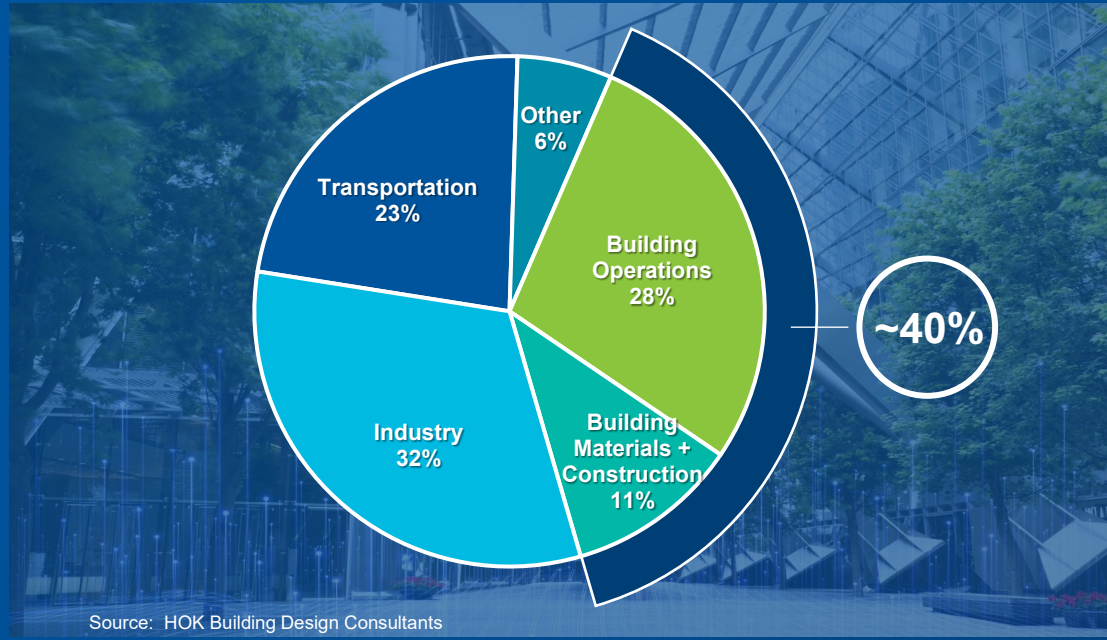
Decades of experience guaranteeing  
outcomes and critical sustainability KPIs



Provide innovative deal structures



# Decarbonization – A Global Imperative With a Major Role for Buildings



Buildings account for nearly **40%** of greenhouse emissions



Over **50%** of S&P 500 companies have committed to CO<sub>2</sub> emissions targets

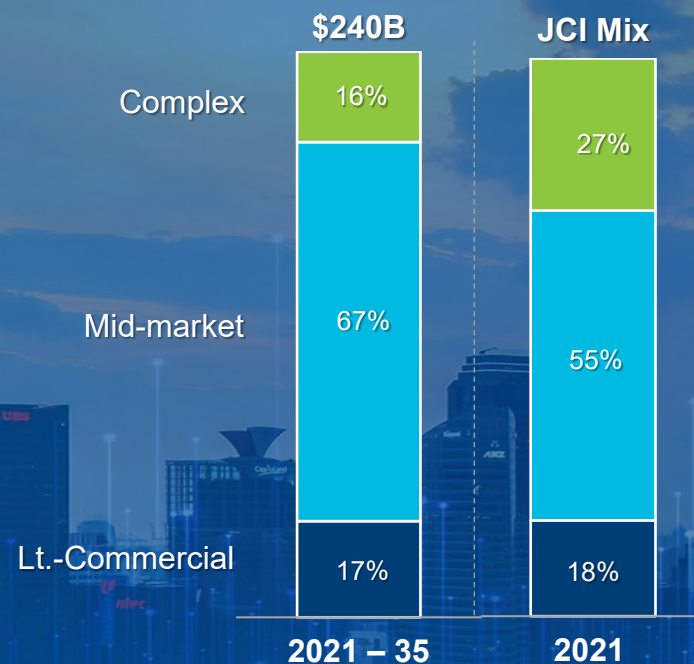


## What Is Driving Action Now:

- ✓ US Government plans to cut greenhouse gas emissions in half by 2030; EU net zero buildings by 2050
- ✓ Policy and government targets – Example: NYC Local Law 97 places carbon caps starting in 2024
- ✓ 15 of the largest commercial banks have committed to aligning lending portfolios to net zero
- ✓ Increased government investment and social attention are opening the door for us to help shape policy
- ✓ Organizations are increasing focus on their supply-chains – large contributors to world carbon emissions

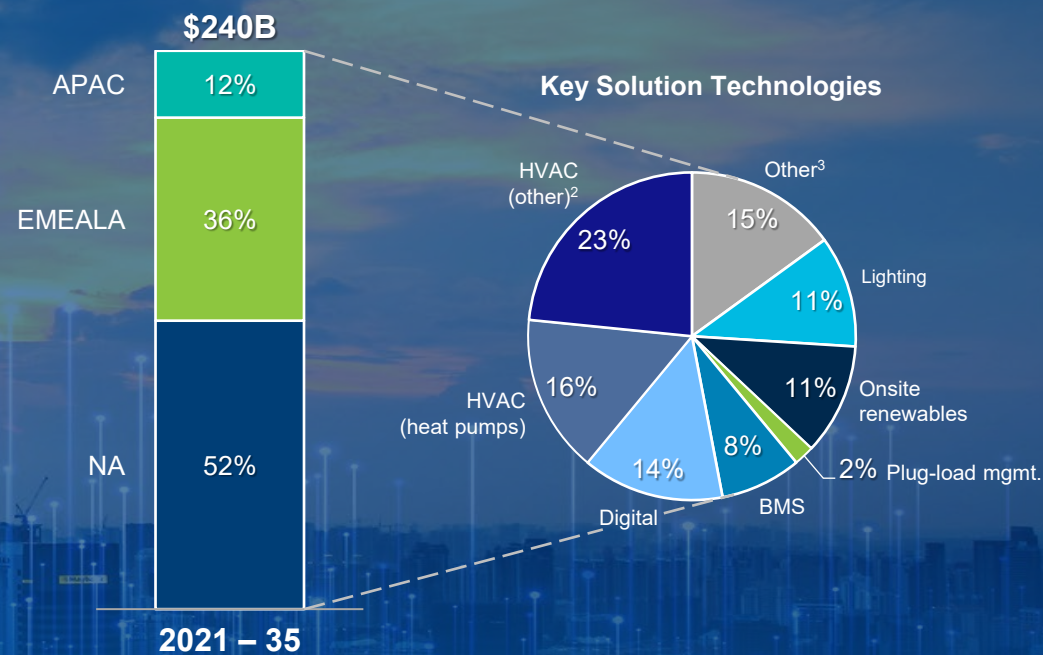
# ~\$240 Billion Opportunity by 2035 With HVAC, BMS, Digital as Key Technologies

**Global Decarbonization Segment<sup>1</sup>**  
(by building type)



- Mid-market is 60%+ of the overall segment
- Business model to serve mid-market efficiently is critical for success

**Global Decarbonization Segment<sup>1</sup>**  
(by region)



- Building retrofit work represents majority of the estimated opportunity – the JCI sweet spot
- ~60% of retrofit solution scope can be supplied by JCI

<sup>1</sup> Source: Energy Information Administration, Guidehouse, Urban Green Council, Rocky Mountain Institute, JCI analysis  
Represents incremental opportunity; majority of total opportunity is retrofit. Remainder is onsite renewables and advisory services

<sup>2</sup> HVAC includes replacement of existing equipment with: (a) high efficiency units or (b) heat pumps / VRF; addition of VFD; etc.

<sup>3</sup> Other includes structural or building envelope retrofits and advisory services

# We Are Differentiated With Full Capabilities Providing Complete Solutions

## Energy Efficiency

- Energy efficient equipment (e.g. – HVAC, lighting)
- Basic building management, automation, controls, meters



- ✓ OEM
- ✓ Solution provider

## Alternative Refrigerants

- Low-GWP options for ducted and applied equipment
- Refrigerant charge/leak fault detection



- OEM
- ✓ Solution provider

## Electrification

- Heat pumps (chillers, unitary, VRF)
- Dual fuel controls (where necessary)



Applied (hydronic heat): Heat Pump Chillers  
Unitary (forced air): Heat Pump RTUs and VRF

- ✓ OEM
- ✓ Solution provider

## Digitalization

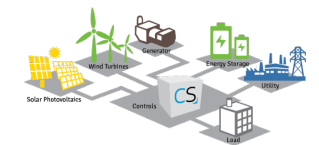
- Data exchange between building, cloud, grid
- Flexible control sequences
- Advanced system automation (e.g. CUP)
- Building / facility dashboards



- ✓ OEM
- ✓ Solution provider

## Renewables

- Procurement optionality (RECs<sup>1</sup>, VPPAs<sup>2</sup>, etc)
- Microgrids (on-site generation + storage)



- OEM
- ✓ Solution provider

# Our Direct Channel Is a Competitive Advantage



## Market Access

- Bulk of market opportunity in key verticals with **JCI direct owner relationships**
- Leverages JCI install base across offices, healthcare, and higher-ed



## Turnkey Capabilities

- **Expertise advising** on sustainability planning and implementation capability in green financing, tax incentives and flexible deal structures
- HVAC, Digital, BMS, Renewables, and Lighting solutions in retrofit sweet spot



## Track Record

- Decades of experience guaranteeing outcomes and critical sustainability KPIs
- **Over \$6B** of energy and operational savings for our customers; **Over 31M** metric tons of CO<sub>2</sub> reduction since 2000



## Footprint / Wallet-share

- Install and service capabilities **across 2,000 locations in 150 countries**
- **70% more wallet share** as OEM and direct-installer



## Our Strategy Has 4 Key Elements to Win



### Portfolio Breadth / Technologies

Leverage portfolio breadth and strengths across HVAC, BMS and Digital to provide **differentiated and advantaged “systems” solutions**



### Innovative Deal Structures

Expand existing innovative deal structures, including off-balance sheet financing for customer acceptance and flexibility

Execute more projects using **“as-a-service” model**



### Go-to-Market Strategy

Expand existing **outcome-based selling** experience with energy and sustainability KPIs to commercial markets

Target Enterprise customers



### Government Actions




**Guide proposed regulations** and legislation globally to favor building retrofits

Maximize opportunity from 2020 U.S. federal energy bill



## Portfolio Breadth / Technologies

# Portfolio Breadth Creates Advantaged Solutions That Reduce Emissions

<div> HVAC/R &amp; Controls</div>							<div> Security</div>		<div> Fire</div>	
Commercial HVAC					Residential HVAC					
Applied Equipment	BAS & Controls	Air Distribution	Unitary Equipment	Industrial Refrigeration	Ducted	Ductless	ACVS	Intrusion	Fire Detection	Fire Suppression
<ul style="list-style-type: none"><li>▪ WC Chillers</li><li>▪ AC Chillers</li><li>▪ Compressors</li><li>▪ Condensing Units</li><li>▪ Absorption Chillers</li><li>▪ Heat Pumps</li></ul>	<ul style="list-style-type: none"><li>▪ Controls/ BAS</li><li>▪ Valves</li><li>▪ Actuators</li><li>▪ Thermostats</li><li>▪ Sensors</li></ul>	<ul style="list-style-type: none"><li>▪ ASC: Grills &amp; Registers, Diffusers, Terminal units, fan coil fans, blower</li><li>▪ Ruskin: Dampers, Louvers, Air measurement station</li><li>▪ Filtration, IAQ/Air Purifiers</li><li>▪ Custom/Standard Air Handling</li><li>▪ Critical/Modular Air Handling</li></ul>	<ul style="list-style-type: none"><li>▪ Commercial Rooftop</li><li>▪ Dedicated Outdoor Air Systems (DOAS)</li><li>▪ Indoor packaged equipment</li><li>▪ Indoor/Outdoor split systems</li></ul>	<ul style="list-style-type: none"><li>▪ Screw Comp. Packages</li><li>▪ Bare Screw Comp.</li><li>▪ Packaged Equipment</li><li>▪ Motors, Starters and Drives</li><li>▪ Condenser</li><li>▪ Evaporator</li><li>▪ Heat Exchanger</li><li>▪ Heat Pumps</li><li>▪ Vessels</li></ul>	<ul style="list-style-type: none"><li>▪ Split Systems</li><li>▪ Gas Furnaces</li><li>▪ Heat Pumps</li><li>▪ Air Handlers</li><li>▪ Indoor Air Quality Products</li></ul>	<ul style="list-style-type: none"><li>▪ VRF</li><li>▪ Mini-split systems (RAC/PAC)</li><li>▪ Inverter Heat Pumps</li></ul>	<ul style="list-style-type: none"><li>▪ Access Control</li><li>▪ Controllers</li><li>▪ Video Mgmt.</li><li>▪ Cameras</li></ul>	<ul style="list-style-type: none"><li>▪ Sensors</li><li>▪ Panels</li><li>▪ Residential automation solutions</li></ul>	<ul style="list-style-type: none"><li>▪ Control Panels</li><li>▪ Sensors</li><li>▪ Notification &amp; Audio Devices</li><li>▪ Networks &amp; Workstations</li><li>▪ Emergency Communications</li></ul>	<ul style="list-style-type: none"><li>▪ Water (sprinklers, valves)</li><li>▪ CPVC Pipe &amp; Fittings</li><li>▪ Engineered Systems</li><li>▪ Vehicle Systems</li><li>▪ Restaurant Systems</li><li>▪ Portables</li><li>▪ Foam</li><li>▪ SprinkCAD software</li><li>▪ Water Mist</li></ul>

Technological Enablement (e.g. OpenBlue)



## Portfolio Breadth / Technologies

# Our Strengths in BMS and Energy Management Position Us Well as RECs Become Unattractive



Large companies are diversifying their **renewable energy and carbon reduction objectives** beyond renewable energy certificates (REC) purchases



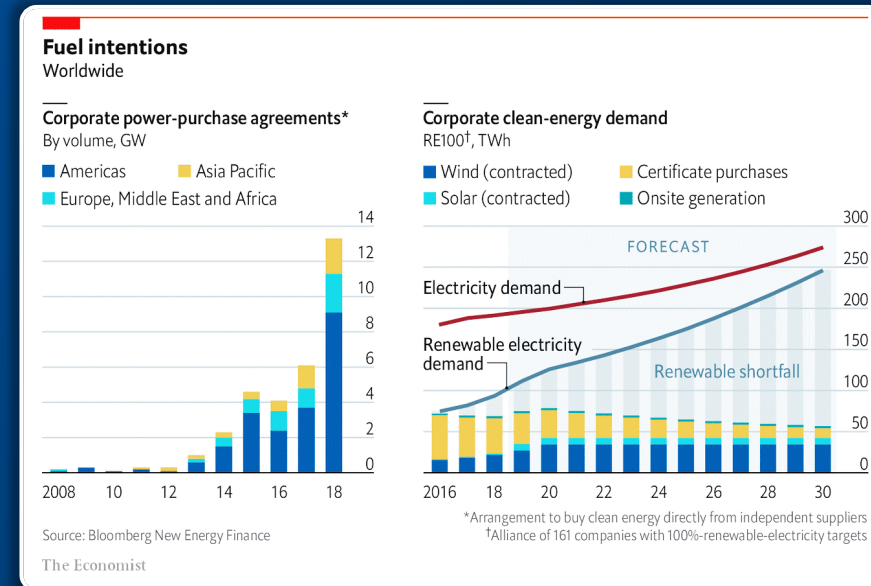
Building **energy management and 'grid edge' technologies** (JCI strengths) will be critical to fully decarbonize the grid – buildings have to be active participants



These solutions will become more attractive as **demand drives REC prices higher** (Fig. 1)

*Example: the price of a US Green-e Wind REC went from \$0.80 to \$3.30 between Apr 2020 – Apr 2021*

Figure 1: Corporate Clean Energy Demand



## REC (Renewable Energy Certificate)

- Market-based instrument that represents the property rights to the environmental, social and other non-power attributes of renewable electricity generation.
- RECs are issued when one megawatt-hour (MWh) of electricity is generated and delivered to the electricity grid from a renewable energy resource.



## Innovative Deal Structures

# Leveraging Existing Experience in Innovative Deal Structures for Outcome-Based Solutions

### Traditional Model



### Outcome-Based Model



### Power Purchase Agreements

### Decarbonization as a Service

Performance Contracts

Infrastructure as a Service

Buildings as a Service

**Our Structured Finance Experience in Performance Infrastructure Enables Us to Move to the Performance-Based Options**



## Innovative Deal Structures

# Partnering on “Energy as a Service” Projects

## JV Partnership With Apollo Adds Additional Financing Flexibility



- Apollo & Johnson Controls form a joint venture to finance certain types of Energy as a Service projects (EaaS)
- Provides customers across the U.S. and Canada with performance-based energy efficiency and smart buildings services at no upfront costs and with predictable monthly fees
- Leverages Apollo’s infrastructure expertise and Johnson Controls decades of expertise in energy efficiency performance contracting & OpenBlue smart buildings technology and services



### DEFINITION

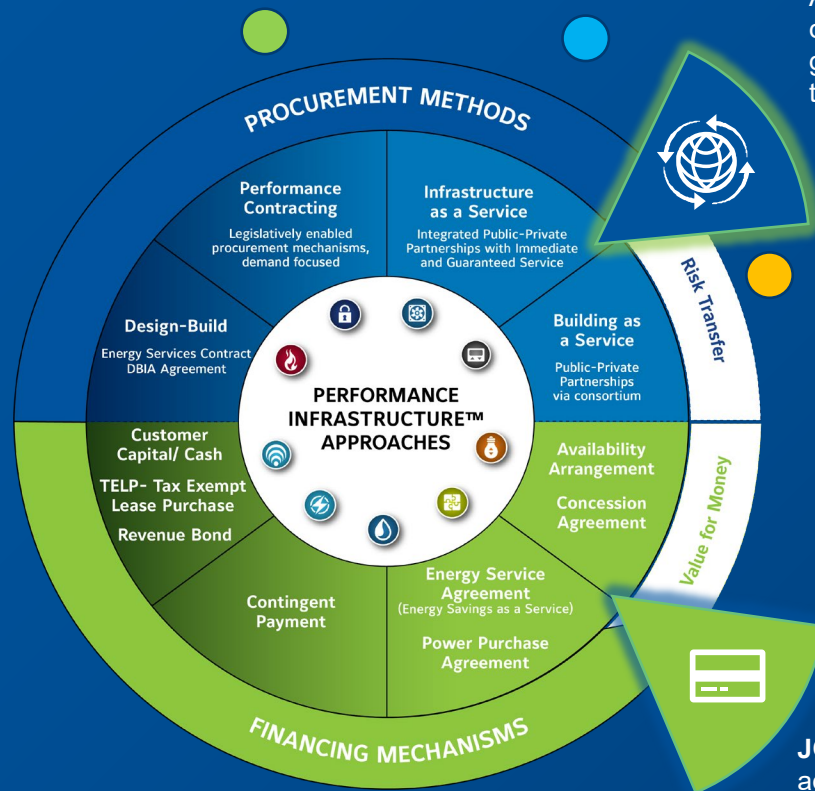
Energy as a Service (EaaS) is a contract mechanism where the customer’s energy portfolio needs are managed by a partner applying new products, services, technology solutions, and both project and enterprise-wide financing instruments that avoid customer capital expenditures while reducing energy use, spend, and risk.



## Go-to-Market Strategy

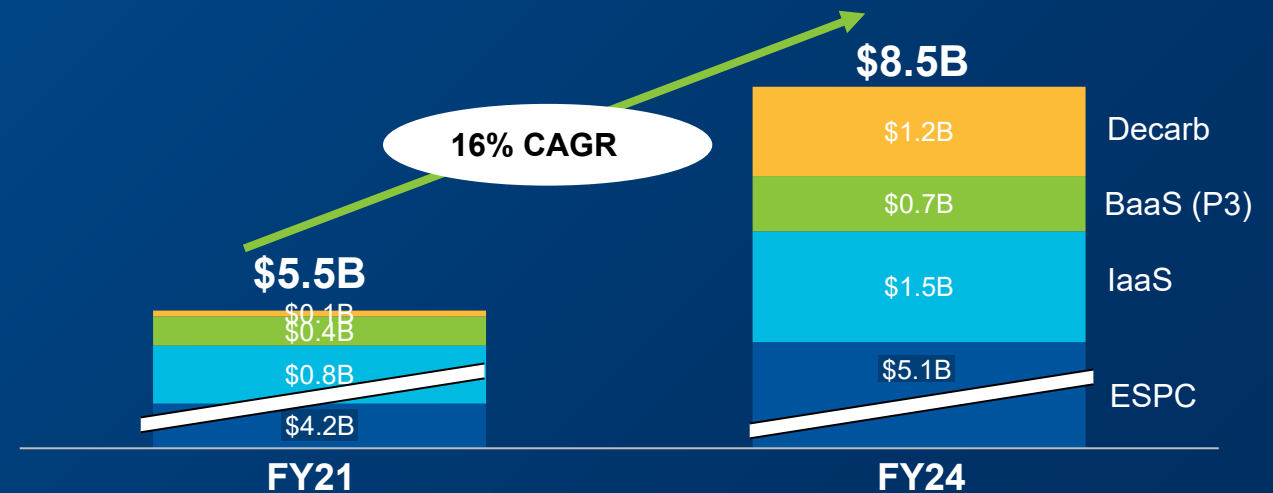
# Building on Market Leading Performance Infrastructure Business

**Net Zero as a Service**  
Achieving decarbonization goals with risk transfer



**JC Capital** – adding another financing option for outcome-based projects

- Current PI Industry is made up of three Industry sectors – ESPC, IaaS and BaaS/P3
- The current U.S. addressable Industry is **\$5.5B** and predicted to grow at mid-teens<sup>1</sup>
- JCI's leading market position is an enabler for Net Zero as a Service





Go-to-Market  
Strategy

## Leveraging Key Capabilities Gained Through Performance Infrastructure Business



Consulting and advising group in place with processes and tools



Expertise in audits, energy and carbon analysis, modeling and advising on sustainability plans



Expertise in renewables, grid management and power purchase agreements



Decades of guaranteeing outcomes and critical sustainability KPIs



Advanced expertise in deal structures, green financing, and incentives



**Proven Customer for Life strategy**

- Additional pull through business for 20-40 years on average
- \$4B un-booked Building as a Service backlog

# Decarbonization – Customer Example

## Colorado State University Pueblo Net Zero

### Customer Challenge

- Meet state mandated greenhouse gas and energy efficiency targets as part of a broader drive toward net zero electricity usage for the campus

### Solution

- 22.3-acre solar array that will be completed by October 2021
- **25-year Power Purchase Agreement** at preferred rates
- Renewable energy supplies over 90% of the campus electrical demand, renewables supply 100% of the academic buildings

### Customer Benefit

- **Locked-in electricity rates for 25 years** with \$2M in excess guaranteed savings from solar microgrid
- University exceeds 3 of 4 greening government goals from Governor Polis

### Value to JCI

Recurring Revenues  Services Growth  Profitability 





## Government Actions

# Guiding Government Actions Will Help Accelerate Market Development

Region	Policy	Initiative	Implications for JCI
EMEALA	<b>EU Green Deal – decarbonized building stock by 2050</b>	<ul style="list-style-type: none"><li>▪ EU Energy Efficiency Directive</li></ul>	<ul style="list-style-type: none"><li>▪ Higher energy efficiency for buildings</li><li>▪ Accelerating heat pump and automated controls opportunity</li></ul>
North America	<b>Federal Infrastructure Bill</b>	<ul style="list-style-type: none"><li>▪ \$42B investment in ports and airports</li><li>▪ \$56B investment in water and wastewater system improvements</li><li>▪ \$73B for energy infrastructure, with:<ul style="list-style-type: none"><li>– \$2B for federal, state, and local including Energy Savings Performance Contracts (ESPC)</li><li>– \$3B for smart grid matching grants including Building-to-Grid retrofit</li></ul></li></ul>	<ul style="list-style-type: none"><li>▪ Significant retrofit dollars for building upgrades</li><li>▪ Water infrastructure retrofits to target by JCI Performance Infrastructure team</li></ul>
	<b>SEC Carbon Disclosure Regulation</b>	<ul style="list-style-type: none"><li>▪ May require public companies to annually or periodically report total carbon footprint</li></ul>	<ul style="list-style-type: none"><li>▪ Opportunity to reinforce our leadership in sustainability globally</li></ul>
APAC	<b>China – Net Zero by 2060</b>	<ul style="list-style-type: none"><li>▪ China: non-fossil fuel energy up to 25% of total by 2030</li></ul>	<ul style="list-style-type: none"><li>▪ Sustainable construction</li></ul>
	<b>Japan &amp; Korea – Net Zero by 2050</b>	<ul style="list-style-type: none"><li>▪ Korea: Green New Deal</li></ul>	<ul style="list-style-type: none"><li>▪ Increased building retrofit opportunities</li></ul>

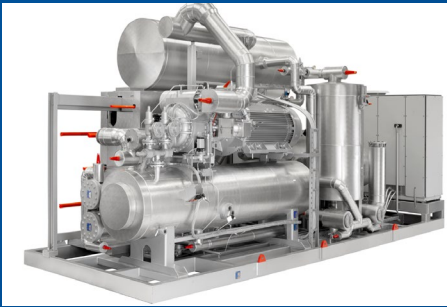


# Heat Pump Technology Presents High Versatility and 3x Higher Energy-Efficiency

## Description

Heat pumps transfer heat from a cool space (*source*) to a warm space (*sink*), by means of electricity

- **Air-to-air** pumps transfer heat between outdoor and indoor air
- **Water-source** systems recover solar energy from open water
- **Ground-source** systems from under the ground using collectors
- **Waste heat** captured and reused as an energy source



## Benefits

- **Highly energy efficient:** produce over 3x the energy consumed
- **Reduce carbon footprint** compared to gas or fuel-fired furnaces
- **Energy cost savings**
- **Reversible:** heating and AC mode

## Customer Example

**WarmteStad starts construction of sustainable heat plant on Zernike Campus (2020)**



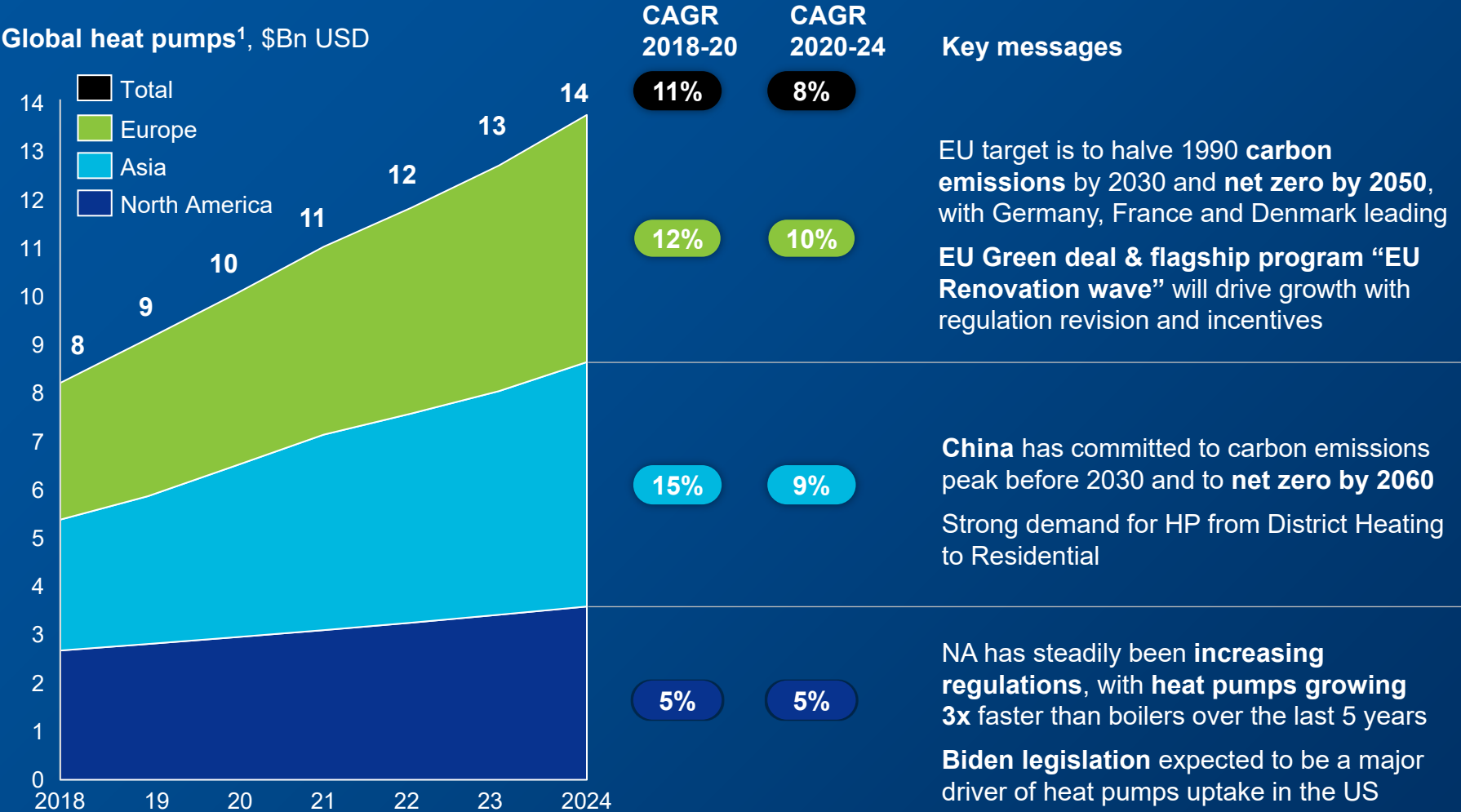
5 x 1800 kW water source heat pumps use waste heat from data center to deliver sustainable heat for 10,000 homes and buildings in the northwest of the city of Groningen

**55% CO<sub>2</sub> savings on the customer heating grid**

# Global Heat Pump Industry Is Growing Driven by Decarbonization Regulations

5%

Global share with 2X share in Complex and Commercial



<sup>1</sup> Source: BISRIA - Global Heat Pump Industry and JCI estimates, based on FY21; 2024 data estimated based on 2020-24 CAGR  
Industry size excludes air-to-air heat pumps (RAC, PAC, VRF) estimated at \$35B+, includes Unitary air-to-air

# A Best in Class Heat Pump Technology Portfolio Enables Growth Across All Building Segments and Delivers on Sustainability Goals

## Building Segment

## JCI Heat Pump Product Portfolio

### Complex



**HeatPAC recip**  
Variable Speed Drive  
Heating Cap: 100 to 2,100 kW



**DualPAC recip**  
2-stage  
Variable Speed Drive  
Heating Cap: 150 to 1,775 kW



**YMC²**  
VSD Mag. Bearing  
Water to Water HP  
Heating Cap: 1,000 to 3,700 kW



**SHP**  
VSD Screw  
Water to Water HP  
Heating Cap: 800 to 7,700 kW



**NS**  
VSD 2-stage Cascade  
Screw  
Heating Cap: 2,000 to 10,000 kW



**YK**  
VSD Centrifugal  
Water to Water HP  
Heating Cap: 1,500 to 11,000 kW



**CYK**  
VSD Dual Centrifugal  
Water to Water HP  
Heating Cap: 2,900 to 11,100 kW



**Titan OM**  
Multi-Stage Centrifugal  
Water to Water HP  
Heating Cap: 5,000 to 21,700 kW



**YHAP**  
Single Stage Absorption  
Steam/Gas/Hot Water  
Heating Cap: 1,000 to 30,000 kW

### Commercial



**YLZ**  
High-Efficiency, Multi-Pipe  
Air to Water HP, Reversible  
Heating Cap: 25 to 200 kW



**AMICHI Series**  
**YMPA**  
Air Cooled Scroll DC Inverter  
HP, Reversible  
Heating Cap: 50 to 250 kW



**YHA**  
High-Efficiency, Multi-Pipe  
Air to Water HP, Reversible  
Heating Cap: 20 to 460 kW



**YLPA/B**  
Air to Water Scroll HP  
Integrated Heat/Cool  
Heating Cap: 350 to 680 kW



**YVWA**  
Water to Water Heat Pump  
VSD Screw  
Heating Cap: 530 to 1,200 kW



**YSPA**  
Air to Water Screw Heat  
Pump, Reversible  
Heating Cap: 360 to 1,500 kW



**YGWE**  
Water to Water Screw Heat  
Pump  
Heating Cap: 350 to 1,700 kW

**Sunline**  
10 to 70 kW  
Packaged Rooftop HP



**Sun Core Hi-Efficiency**  
10 to 35 kW Packaged  
Rooftop HP



**Sun Pro STD Efficiency**  
20 to 50 kW Packaged  
Rooftop HP



**Predator**  
25 to 70 kW  
Split System HP



### Residential



**YUTAKI S**  
Air to Water HP  
Heating Cap: 4.3 to 24 kW



**YUTAKI M**  
Air to Water HP  
Monoblock Unit  
Heating Cap: 4.3 to 16 kW



**YUTAKI S Combi**  
Air to Water HP  
All-in-one compact unit  
Heating Cap: 4.3 to 16 kW



**YUTAKI S80**  
Air to Water HP  
Best high temp performance  
Heating Cap: 11 to 16 kW



**YVAG**  
Air to Water Chiller/HP  
Heating Cap.: 7 to 40 KW



**YHE/YEE: 14 SEER-**  
Single Stage Ducted Air to  
Air HP & Dual Fuel



**THE: 14 SEER**  
3Ph Single Stage Ducted  
Air to Air HP



**YHG/M: 16 SEER**  
Single Stage & modulating  
Ducted Air to Air HP



**YZT- 19 SEER**  
Two Stage Ducted Air to  
Air HP



**YZV- 20 SEER Variable**  
Variable Speed Ducted Air to  
Air HP



**PHE4 14 SEER**  
Single Stage Residential  
Package Heat Pump



**PHG4 14 SEER**  
Single Stage Residential  
Package Dual Fuel HP



**PHE6 16 SEER-**  
Two Stage Residential  
Package Heat Pump



**PHG6 16 SEER-**  
Two Stage Residential  
Package Dual Fuel HP



**HMH7 - 17 SEER**  
Ducted Air to Air  
Modulating

Size (kW/SEER)

# District Heating Flagship Project for German Utilities



Utility Company

## Challenge

- Municipalities play a key role in achieving renewable energy and heat by 2050
- Meeting the stringent regulations objectives of EU CO<sub>2</sub> target reductions
- Financing is critical and subventions possibilities need to be understood:
  - German Government Funding Access is granted (IKWK) when using min. 30% renewable energy

## Solution

- Feasibility study and support to allow for application of public funding
- District heating utilizing waste heat from water treatment plant

## System Deployed

- 3 x 1800 kW water source **heat pumps for district heating system** utilizing waste heat from water treatment plant
- Hot water is supplied for residential heating in Rosenheim.

## Customer Benefit

- The heat pump solution **reduces CO<sub>2</sub> Emissions by 30%** compared to fossil fuel option on natural gas and allows for a reduction of 6,000T of CO<sub>2</sub> emissions annually

## Value to JCI

**Install Growth** ↑

**Services Growth** ↑

**Profitability** ↑

# Strong Secular Trend Coupled With Our Breadth and Depth Puts Johnson Controls at the Pole Position



Significant market opportunity ~\$240B<sup>1</sup> over the next decade



As an OEM and solutions provider we have the technology and capabilities to provide complete solutions



Direct channel is a competitive advantage



Decades of experience guaranteeing outcomes and critical sustainability KPIs



Provide innovative deal structures



<sup>1</sup> Source: Energy Information Administration, Guidehouse, Urban Green Council, Rocky Mountain Institute, JCI analysis  
Represents incremental opportunity; majority of total opportunity is retrofit. Remainder is onsite renewables and advisory services



# Better | Bolder | Building

## Financial Outlook

Olivier Leonetti, Executive Vice President & Chief Financial Officer

The power behind **your mission**



# Building on a Foundation of Strength



## Compelling financial profile positions us well for the future

- Large, diverse revenue stream provides stability
- Solid cash flow generation
- Attractive return on invested capital



## A great track record of improved financial performance

- Managed “best-in-class” decrements during pandemic
- Demonstrated margin expansion
- Significantly improved free cash flow conversion
- Strategic and financial value-enhancing M&A



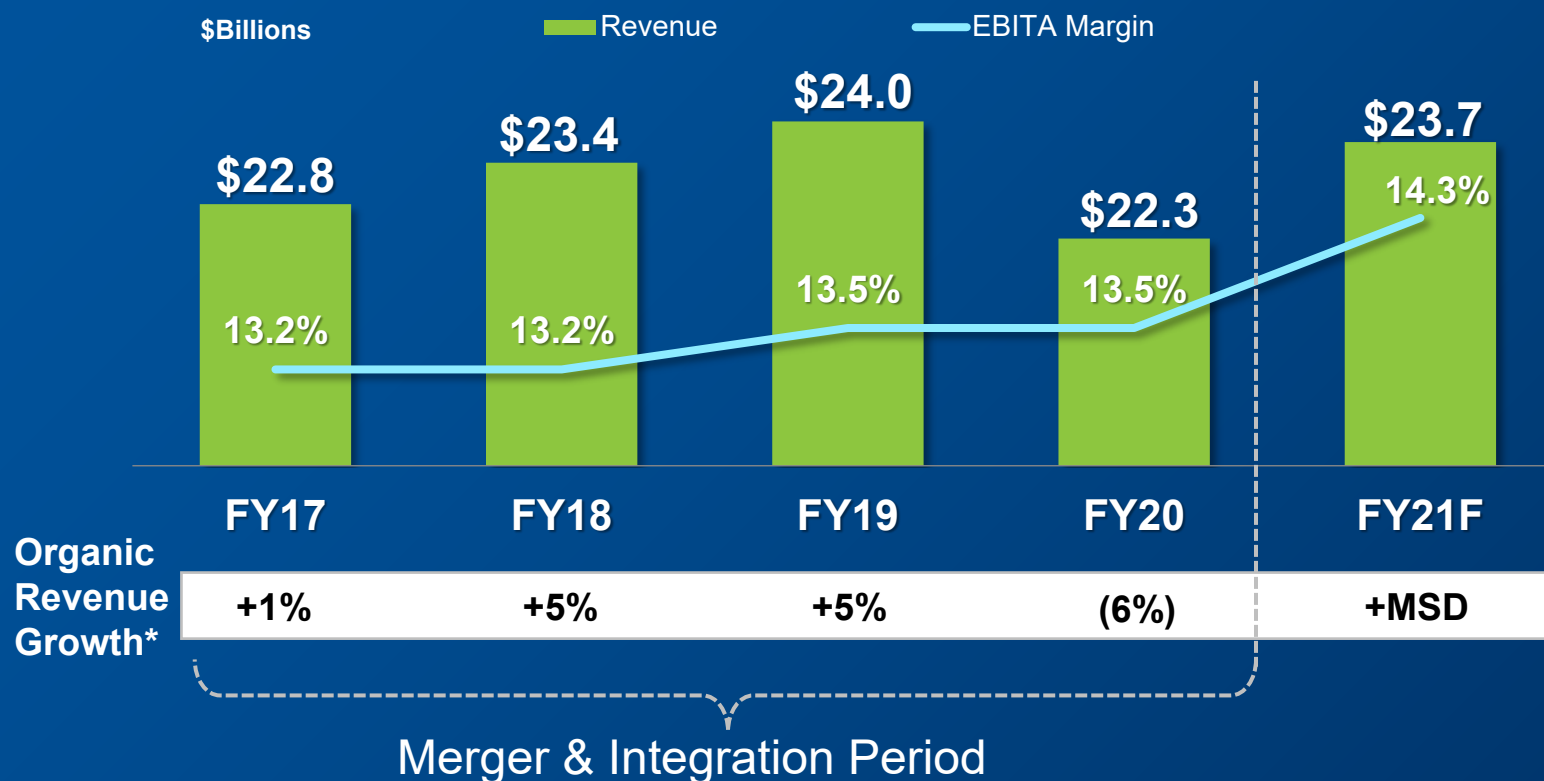
## Strong balance sheet supports financial flexibility

- Ample liquidity
- Balanced debt maturity
- Solid investment grade



# A Look Back: Driving Improved Profitability While Investing in Our Future Growth

## Revenue & Segment EBITA Margin\*



- Low to mid single digit growth (excluding Covid-19)
- Synergies and productivity
- Significant sales force and R&D investments
- Divestiture of the Scott Safety business
- **4% Revenue Growth; 13% Segment EBITA Growth Over Last 4 Years**

\* Organic Growth and Segment EBITA are non-GAAP measures. For a reconciliation, see appendix.  
Note: all results are on a continuing operations basis

# Positioned to Out-Perform End Markets



JCI Revenue Exposure			FY22 – FY24 Expected Market Growth
Other	4%		+MSD
Data Centers	5%	▪ DEC/CRAH <sup>2</sup>	+HSD
Residential	17%	▪ Ducted HVAC ▪ Ductless HVAC ▪ Security Products	+MSD
Industrial	18%	▪ Food & Beverage ▪ Transportation ▪ Oil & Gas ▪ Manufacturing	+HSD
Commercial	29%	▪ Office & Banks ▪ Retail ▪ Lodging & Hospitality ▪ Warehouse ▪ Sports & Entertainment	+MSD
Government	9%	▪ Federal / National ▪ State and Local	+MSD
Institutional	18%	▪ Healthcare ▪ Education	+MSD
<b>Total</b>			<b>4 to 5%</b> <sup>1</sup>

# Exciting Opportunities as a Smart Buildings Solutions Leader



**Digital Revenue** growing at **10%** CAGR



**Smart Buildings** growing at **12%<sup>1</sup>** CAGR



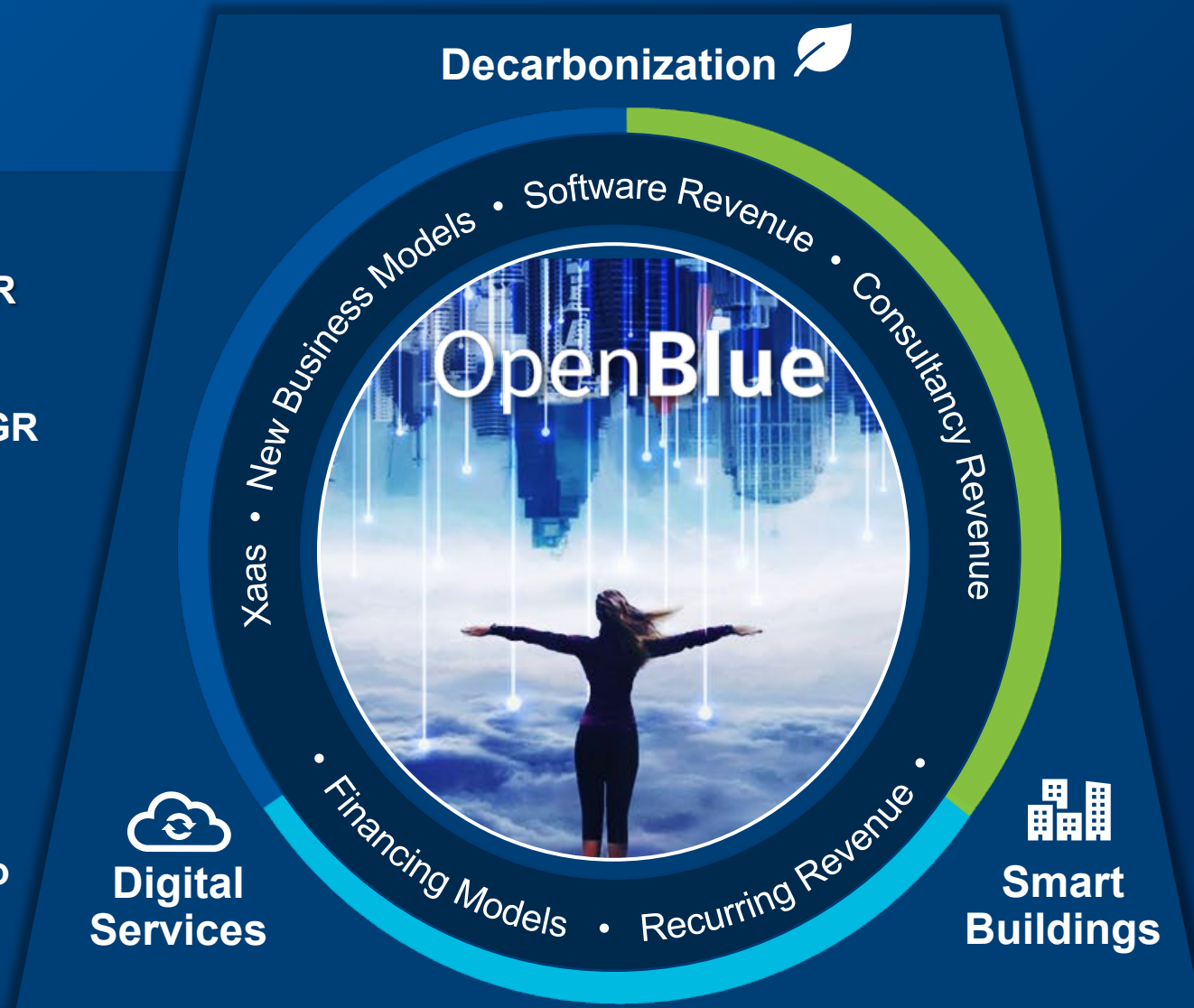
Exponential growth in **Decarb market**



**Service revenue** growth **7%** driven by XaaS and recurring revenue models

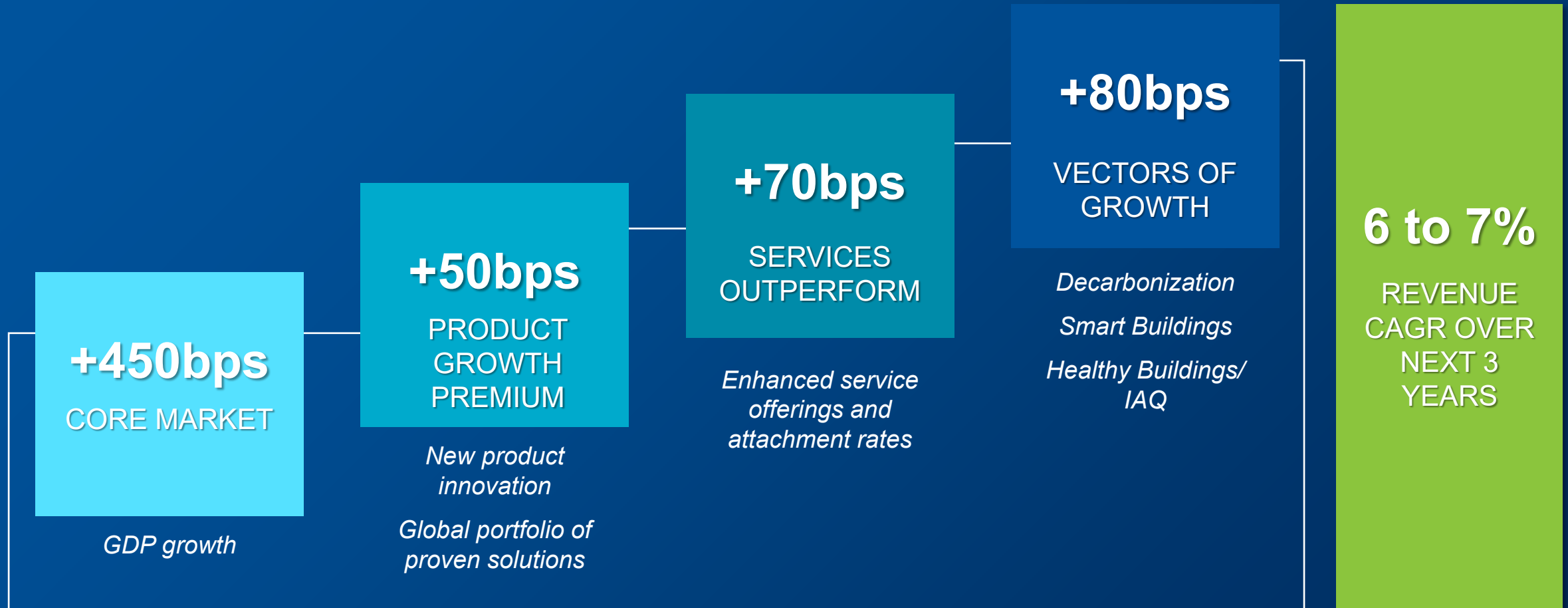


**Product Growth ~100bps** premium to the market



## Secular Trends Driving Long-Term Growth

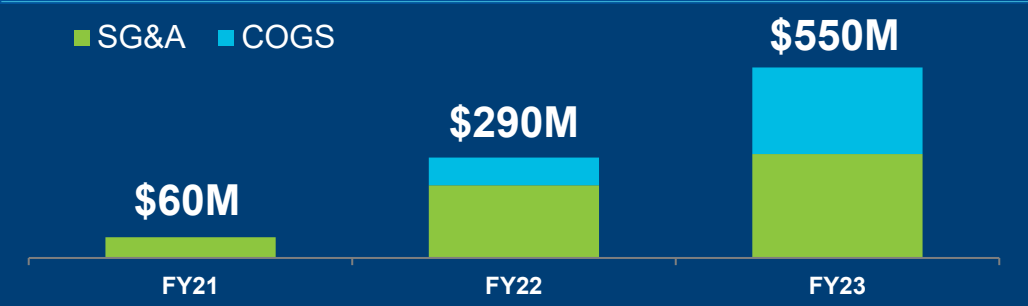
## Driving Mid-to-High Single Digit Top-Line Growth



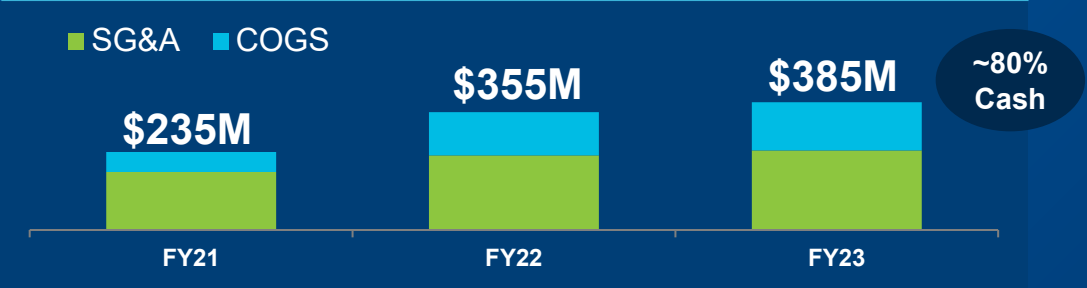
**Targeting Additional 1 to 2 Points of Growth from M&A Per Year**

# Aggressive Productivity Program Creating Significant Margin Runway

Cumulative Net Cost Reductions<sup>1</sup>



Cumulative One Time Restructuring & Implementation Costs



**Levers:** material spend, field labor, manufacturing and distribution, business **simplification** and **standardization**, and external spend



**Strong execution** through project management office

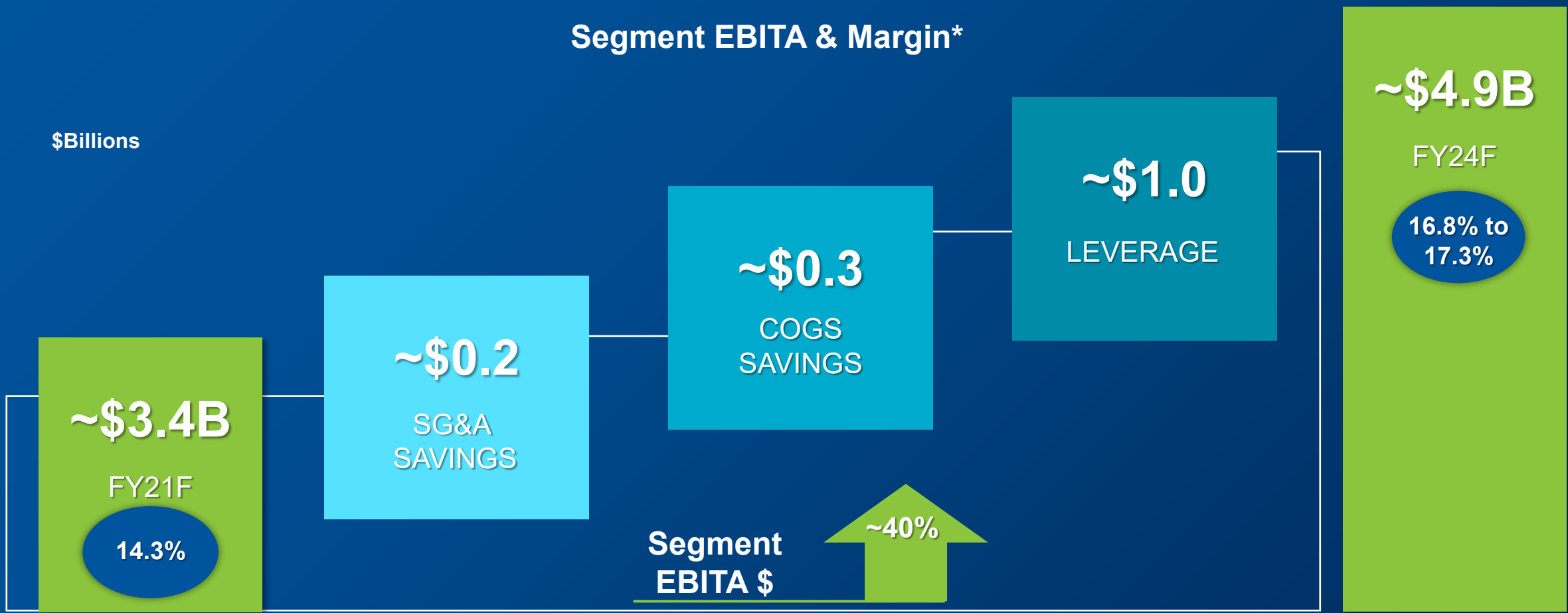


**On track** to deliver net savings



# Closing the Margin Gap

## Segment EBITA & Margin\*



250 to 300bps Of Segment Margin Expansion Over The Next 3 Years

## FY24 Financial Outlook Assumptions\*

	Revenue CAGR	Segment EBITA Margin
NA	6 to 7%	+300 to +350bps
EMEALA	4 to 5%	+150 to +200bps
APAC	5 to 6%	+100 to +150bps
Global Products	7 to 8%	+200 to +250bps
Total Segments	6 to 7%	+250 to +300bps 16.8 to 17.3%

*Assumes Underlying Global GDP of 4 to 5%*

## Below-The-Line Items

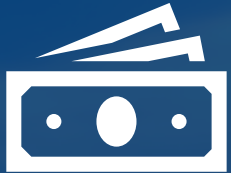
- Amortization Expense of **\$450M to \$475M**
- Corporate Expense of **\$310M to \$330M**
- Effective Tax Rate **~13.5%**
- Weighted average diluted share count **~685M** in FY24

## Strong Free Cash Flow Generation



**Strong Free Cash Flow Conversion Supporting Further Value Creation**

# Disciplined Capital Allocation



## Returning 100% of Free Cash Flow

- Increase Dividends in Line with EPS Growth
- Share repurchase



## Strategic Bolt-on M&A

- Targeting 1 to 2 points of additional revenue growth

# Acquisitions Are an Integral Part of Our Growth Strategy



- Enhance **digital** portfolio
- Expand **product** portfolio
- Broaden **service** and **vertical** solutions



- Fit within our core competencies
- Leadership in key technologies, markets or regions
- Strong growth potential
- Cash EPS accretion by year 2 and ROIC in excess of WACC by year 3



- Leverage acquisitions across our global footprint
- Supply JCI products and services across target distribution channels

**Targeting 1 To 2 Points of Top-Line Growth Per Year**

## Strong Capital Structure Provides Liquidity & Financial Flexibility

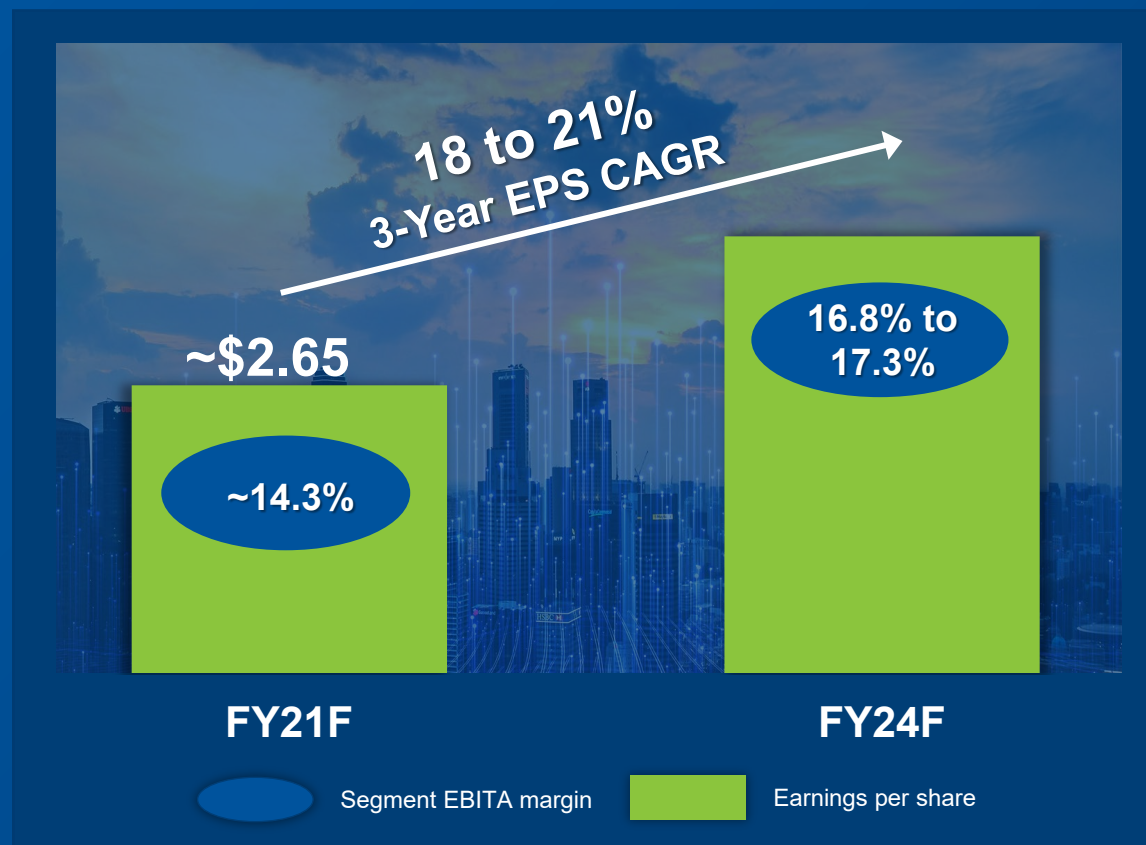
Summary Capitalization (\$B)	
Minimum Cash	\$0.3 - \$0.5
Current External Debt*	~\$7.8
Revolving Credit Facility	\$3.0

\* Weighted average interest rate of 2.8%

- Credit rating of **BBB+**
- Target Net-Debt / EBITDA **~2.0-2.5X**
- Significant liquidity
- Maintain balance sheet flexibility to pursue growth opportunities

# Positioned to Accelerate Top-Line & Deliver Double Digit EPS Growth

## Segment EBITA Margin & EPS\*



## FY21 to FY24

- **3-year revenue CAGR:** **6 to 7%**
  - 1% of revenue growth generates ~1.5% EPS CAGR growth
- + **250 to 300bps** segment EBITA margin expansion
  - Includes ~\$500M of cost savings; EPS CAGR benefit of 6 to 7
- + Assumes **100% of FCF** deployed in dividends and buybacks
  - EPS CAGR benefit of 2 to 3 points over the 3-year period
- **3-year EPS CAGR:** **18 to 21%**

**Targeting 1 To 2 Points of Top-Line Growth From M&A**

# APPENDIX

# Forward Looking Non-GAAP Financial Metrics

The Company has presented forward-looking statements regarding, organic revenue growth, adjusted segment earnings before interest, taxes and amortization (EBITA), adjusted segment EBITA margin, adjusted corporate expense, adjusted earnings per share, free cash flow and free cash flow conversion, which are non-GAAP financial measures. These forward-looking non-GAAP financial measures are derived by excluding certain amounts, expenses, or income from the corresponding financial measures determined in accordance with GAAP. The Company defines organic revenue growth as revenue growth excluding the effect of acquisitions, divestitures and foreign currency. The Company defines segment EBITA as income (loss) from continuing operations before income taxes and noncontrolling interests, excluding general corporate expenses, intangible asset amortization, net financing charges, restructuring and impairment costs, and the net mark-to-market adjustments related to restricted asbestos investments and pension and postretirement plans. Adjusted segment EBITA excludes special items because these items are not considered to be directly related to the underlying operating performance of the Company's businesses. Management believes that organic growth, segment EBITA, adjusted segment EBITA and adjusted segment EBITA margin are useful to investors in understanding the ongoing operations and business trends of the Company. The Company defines adjusted corporate expense as general corporate expenses excluding special items because these costs are not considered to be directly related to the underlying operating performance of the Company's business. Free cash flow is defined as cash provided by operating activities less capital expenditures. Adjusted free cash flow conversion is defined as adjusted free cash flow divided by adjusted net income. Management believes these non-GAAP measures are useful to investors in understanding the strength of the Company and its ability to generate cash. Adjusted earnings per share is defined as earnings per share, less integration costs, net mark-to-market adjustments, restructuring and impairment costs, transaction costs and other nonrecurring costs, Power Solutions divestiture reserve adjustment and discrete tax items. The Company excludes these items because they are not considered to be directly related to the underlying operating performance of the Company. Management believes adjusted EPS is useful to investors in understanding the ongoing operations and business trends of the Company.

The determination of the amounts that are excluded from these non-GAAP financial measures are a matter of management judgment and depends upon, among other factors, the nature of the underlying expense or income amounts recognized in a given period, including but not limited to the high variability of the net mark-to-market adjustments and the effect of foreign currency exchange fluctuations. Our fiscal 2021 full year and fiscal 2022-2024 guidance for organic revenue also excludes the effect of acquisitions, divestitures and foreign currency.

We are unable to present a quantitative reconciliation of the aforementioned forward-looking non-GAAP financial measures to their most directly comparable forward-looking GAAP financial measures because such information is not available and management cannot reliably predict all of the necessary components of such GAAP measures without unreasonable effort or expense. The unavailable information could have a significant impact on the Company's GAAP financial results.

# Organic Revenue Growth Reconciliation

The components of the changes in adjusted net sales for the twelve months ended September 30, 2020, September 30, 2019, September 30, 2018 and September 30, 2017 versus the twelve months ended September 30, 2019, September 30, 2018, September 30, 2017 and September 30, 2016, respectively, including organic growth, is shown below (unaudited):

(in millions)	Adjusted Net Sales for the Preceding Twelve Month Period	Base Year Adjustments - Divestitures and Other	Adjusted Base Net Sales for the Current Twelve Month Period	Acquisitions	Foreign Currency	Organic Growth	Adjusted Net Sales for the Current Twelve Month Period
September 30, 2017 (1)	\$ 22,916	\$ (299)	\$ 22,617	\$ 55	\$ (131)	\$ 260 1.1%	\$ 22,801
September 30, 2018	22,801	(757)	22,044	2	316	1,038 4.7%	23,400
September 30, 2019	23,400	(172)	23,228	22	(463)	1,181 5.1%	23,968
September 30, 2020	23,968	(39)	23,929	53	(150)	(1,515) -6.3%	22,317

(1) Combined adjusted net sales for the twelve month period ended September 30, 2016 includes Tyco adjusted non-GAAP results for the eleven months ended September 2, 2016, as if the JCI/Tyco merger occurred October 1, 2015. Tyco's first three fiscal quarters of 2016 ended on the last Friday of December, March and June, while JCI's fiscal quarters ended on the last day of each such month. Because the historical statements of income of each company represent full and equivalent quarterly periods, no adjustments were made to align the fiscal quarters.

# Adjusted Segment EBITA Margin

The Company provides financial information regarding adjusted segment EBITA margin, which is a non-GAAP performance measure. The Company believes the adjusted segment EBITA margin is useful to investors in understanding the ongoing operations and business trends of the Company. The following is the September 30, 2020, September 30, 2019, September 30, 2018 and September 30, 2017 calculation of adjusted segment EBITA margin (unaudited):

(in millions)	Twelve Months Ended September 30,			
	2020	2019	2018	2017
Adjusted net sales	\$ 22,317	\$ 23,968	\$ 23,400	\$ 22,801
Adjusted segment EBITA	3,020	3,243	3,082	3,018
Adjusted segment EBITA margin (1)	13.5%	13.5%	13.2%	13.2%

The following is the twelve months ended September 30, 2020, September 30, 2019, September 30, 2018 and September 30, 2017 reconciliation of net sales and income from continuing operations as reported to adjusted net sales, segment EBITA and adjusted segment EBITA, which are non-GAAP performance measures (unaudited).

(in millions)	Twelve Months Ended September 30,			
	2020	2019	2018	2017
Net sales as reported	\$ 22,317	\$ 23,968	\$ 23,400	\$ 22,835
Adjusting items:				
Nonrecurring purchase accounting impacts	-	-	-	(34)
Adjusted net sales (1)	\$ 22,317	\$ 23,968	\$ 23,400	\$ 22,801
Income from continuing operations	\$ 795	\$ 1,289	\$ 1,349	\$ 829
Income tax provision (benefit)	108	(233)	197	322
Net financing charges	231	350	401	466
Corporate expenses	371	405	584	770
Amortization of intangible assets	386	377	376	481
Net mark-to-market adjustments	274	618	(24)	(384)
Restructuring and impairment costs	783	235	255	347
Segment EBITA	2,948	3,041	3,138	2,831
Adjusting items:				
Transaction costs	-	-	-	33
Integration costs	33	62	58	78
Acquisition related compensation charge	39	-	-	-
Environmental reserve	-	140	-	-
Scott Safety gain on sale	-	-	(114)	-
Unfavorable arbitration award	-	-	-	50
Nonrecurring purchase accounting impacts	-	-	-	26
Adjusted segment EBITA (1)	\$ 3,020	\$ 3,243	\$ 3,082	\$ 3,018

(1) The Company's definition of adjusted net sales and adjusted segment EBITA excludes special items because these costs are not considered to be directly related to the underlying operating performance of its businesses. Management believes these non-GAAP measures are useful to investors in understanding the ongoing operations and business trends of the Company.

# IR Contacts

## **Antonella Franzen**

Chief Investor Relations & Communications Officer  
[antonella.franzen@jci.com](mailto:antonella.franzen@jci.com)

## **Ryan Edelman**

Executive Director, Investor Relations  
[ryan.edelman@jci.com](mailto:ryan.edelman@jci.com)



# Better Bolder Building

Committed to smart, sustainable success

