

HONEYWELL BUILDING TECHNOLOGIES

An aerial night view of a city skyline, likely Shanghai, featuring several prominent skyscrapers. The scene is overlaid with a complex network of glowing yellow and white digital lines that arc and connect various points across the city, symbolizing a smart building or IoT network. The sky is dark with some clouds, and the city lights create a vibrant, futuristic atmosphere.

Honeywell

HBT | DATA CENTER CAB

Agenda – Inaugural Data Center CAB Session – Tuesday June 15th, 2021 10:00AM EST

Agenda Item	Speaker / Session Leader	Time
Welcome & Agenda	Sabi Varma, VP Strategy & Datacenter	10 Mins
Intro to CAB Members (Bio & Fun Fact)	All	15 Mins
Intro Video	Vimal Kapur, CEO HBT	5 Mins
Datacenter of the Future	Sabi	30 Mins
Break		15 Mins
External Speaker – Data Center Dynamics (Sustainability Survey)	Dan Loosemore, CEO DCD	30 Mins
Facilitated Discussion <ul style="list-style-type: none">• Demo of Environet Unify (SPOG)• CAB Charter• Desired Outcomes of CAB• Topics for next CAB meeting	All	45-60 Mins
Actions	Sabi	10 Mins

HONEYWELL INTERNATIONAL INC. OVERVIEW

NYSE: **HON** | ~**834** sites | ~**103,000** employees | **Charlotte, N.C.** headquarters | **Fortune 100**



BUILDING TECHNOLOGIES

Commercial building owners and operators use our hardware, software and analytics to help create safe, efficient and productive facilities. Our solutions and services are used in more than 10 million buildings worldwide.

\$5.2B
Sales



PERFORMANCE MATERIALS AND TECHNOLOGIES

We develop advanced materials, process technologies, automation solutions and industrial software that are revolutionizing industries around the world.

\$9.4B
Sales



AEROSPACE

Our products are used on virtually every commercial and defense aircraft platform worldwide and include aircraft propulsion, cockpit systems, satellite communications and auxiliary power systems.

\$11.5B
Sales



SAFETY AND PRODUCTIVITY SOLUTIONS

We improve enterprise performance and worker safety and productivity with automated material handling and voice scanning and mobile computing technology, software solutions and personal protective equipment and sensing technology.

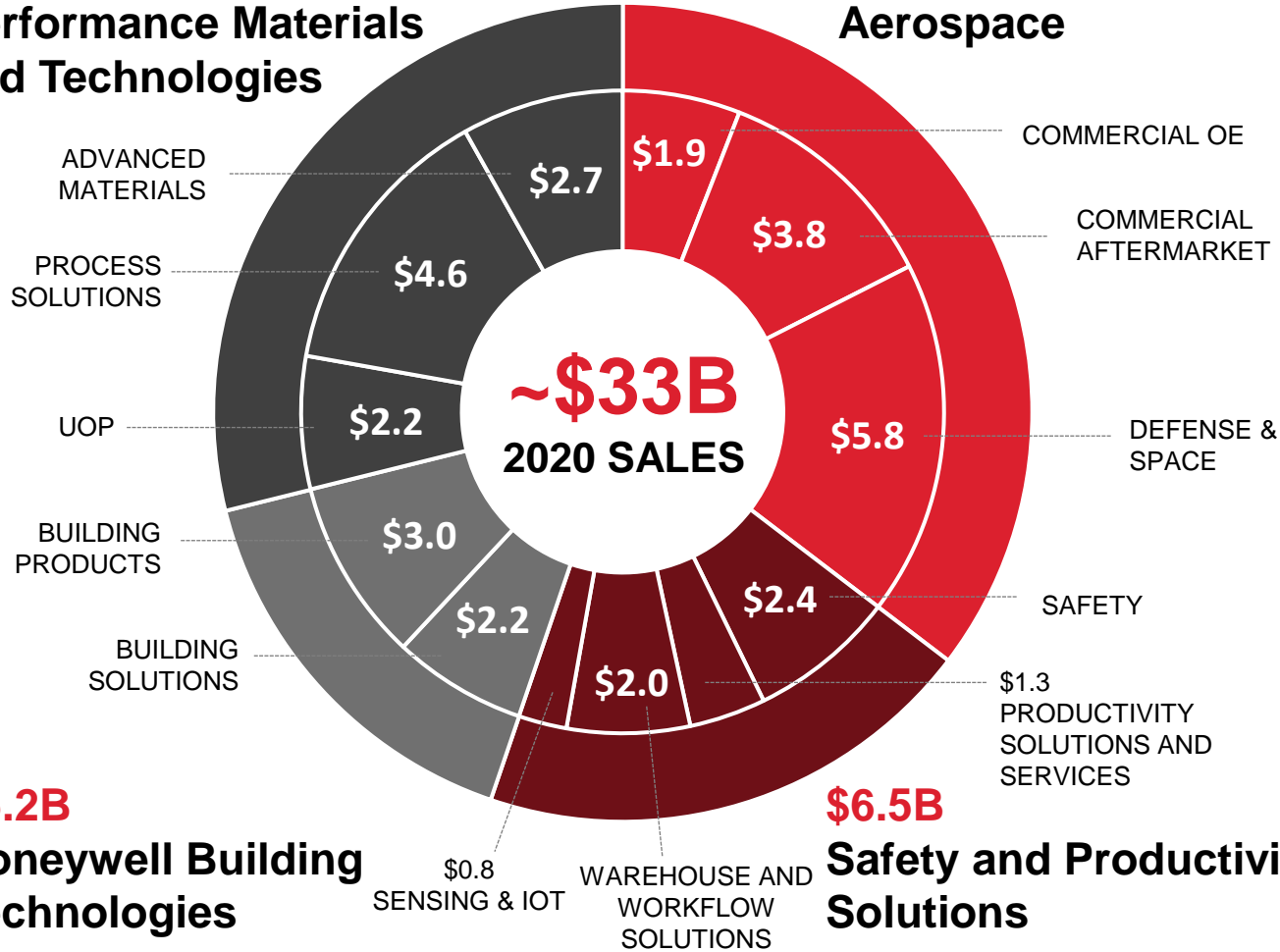
\$6.5B
Sales

Aligned to Key Global Macro Trends

HONEYWELL AT A GLANCE

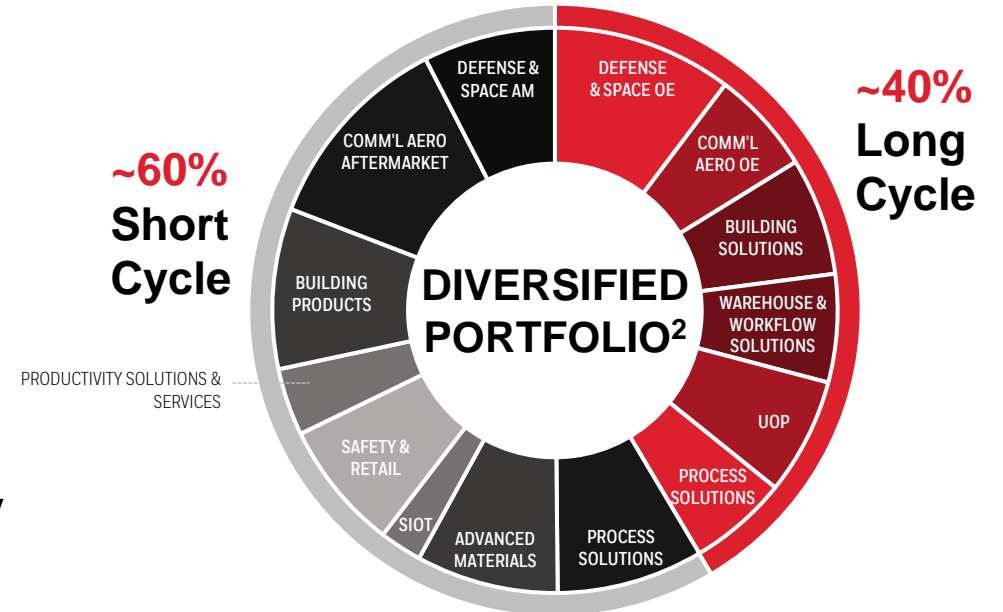
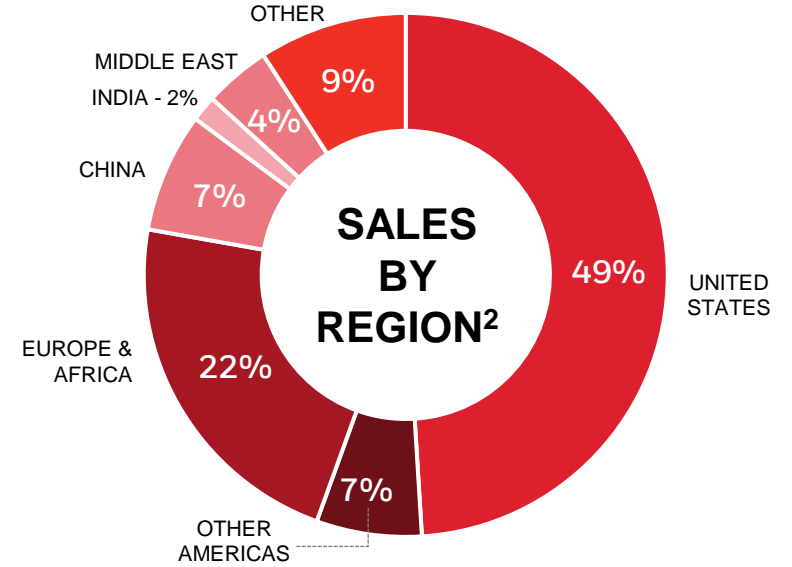
\$9.4B
Performance Materials
and Technologies

\$11.5B
Aerospace



\$5.2B
Honeywell Building
Technologies

\$6.5B
Safety and Productivity
Solutions



Differences between segment sales figures and the sum of sales figures for the businesses within each segment are due to rounding
² Represents 2020 sales

BUSINESS OVERVIEW

Extensive Go-To-Market Resources & Customer Support Capabilities



7,000

Registered
Partners



96

Countries



2,100

Honeywell
Sellers



30

Factories &
Distribution Centers



1,200

Support
Specialists

Installed base > 10M buildings

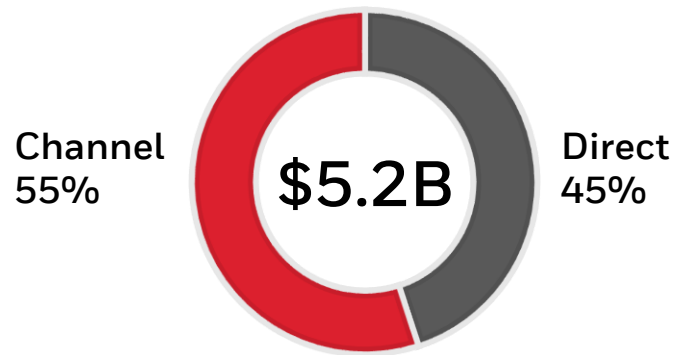
Over 100M connected IoT devices

Top brands in every automation category

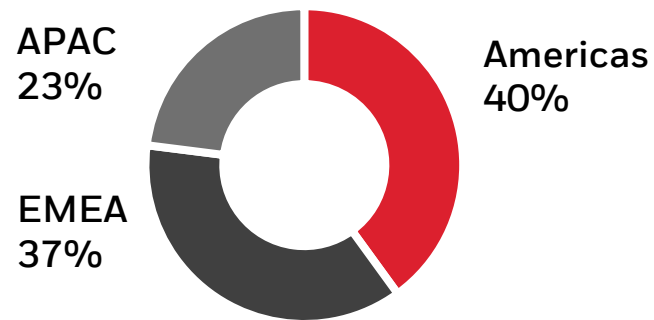
24/7 customer service in regional hubs

Honeywell Forge enterprise platform

Balanced Sales Mix

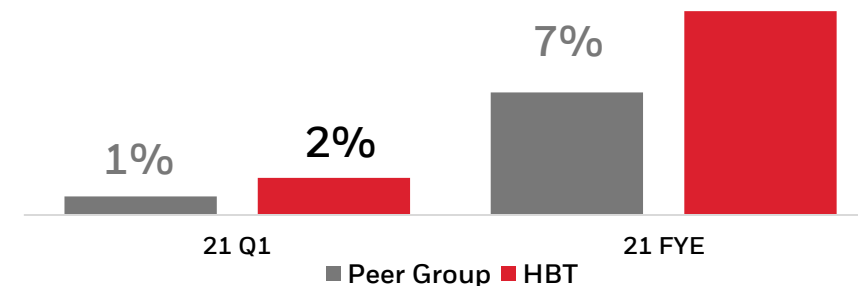


Broad Geographic Mix



Out-Performing The Peers

Honeywell Building Technologies
Revenue v Peers **11%**



Data on 2021 YE projections from company financial reports

HBT WHERE WE OPERATE

HBT PRODUCTS, SOFTWARE AND SERVICES ARE FOUND IN MORE THAN

10 MILLION BUILDINGS WORLDWIDE

- Building portfolio management
- Building comfort and control systems
- Fire alarm systems and detection
- Video management and security
- Access and intrusion control
- Smart city and community solutions
- Air and water purification



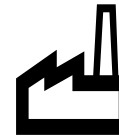
Airport



Data Centers



Healthcare



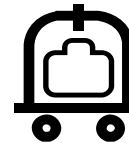
Industrial



Smart Cities & Communities



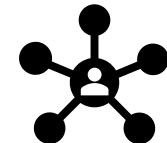
Education



Hospitality



Office



Multisite

HIGH GROWTH END MARKETS

Addressing critical needs in key verticals with differentiated outcomes

Airports / Metros



~\$115B in planned & necessary infrastructure projects over the next five years

Data Centers



~\$30B+ investment in Colocation
+14% growth in Datacenter Inventory

Healthcare



+5% growth in Healthcare Construction Spending

Premium Commercial



Likelihood of returning to Office to reach ~98% by Q3 2021; space demand picking up

Education



~\$3B U.S. Government Spending in Air Quality & HVAC
~70K schools need IAQ upgrades in U.S.

Hospitality



~2K projects scheduled to start in the next 12 months (U.S.)
~1.3K projects planned in China
~620 projects in Middle East

Retail



~\$1B in incremental eCommerce sales generates ~1.25M sqft of warehouse space demand

Industrials / Pharma



Pharma investments up +5-8%
~250M sqft of industrial & logistics space to be absorbed in 2021 (U.S.)

CUSTOMER EXPECTATIONS ARE RISING...

80-90% time in buildings



Budget pressure & ROI scrutiny increasing



Productivity impact
Increase: 11% ventilation, 23% lighting
Decrease: 4% cold, 6% hot



Smart Buildings growth
\$7.0bn to \$17.4bn '19
(22.6% CAGR)



Buildings consume >40% global energy consumption



Social responsible investors demanding green buildings



Introduction of WELL building standards



Buildings = 45% of total connected things by '20



>80% building TLC occurs post construction



Heightened security physical & cyber



Consumer expectations transcended into building ecosystems



Gen Y contemporary expectations = 75% of workforce by 2020



204% growth in social media usage 2010 - 2020



85% global organizations considering, exploring or implementing an IoT strategy



37% of data in the cloud will come from buildings (2020)



2020 more users of smartphones than fixed line subscriptions at 6.1B



...AND TECHNOLOGY IS RAPIDLY EVOLVING



Automation



Video Analytics



User Experience



Cybersecurity



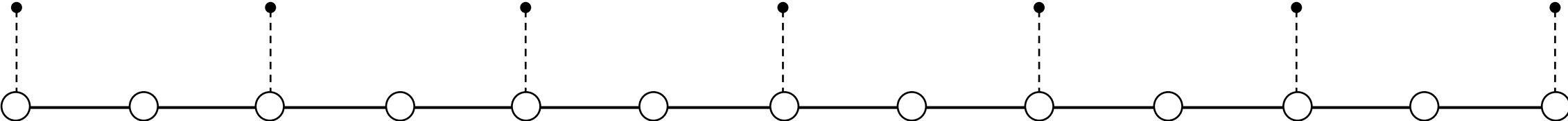
IoT



Augmented Reality



Self Diagnosis



Integration

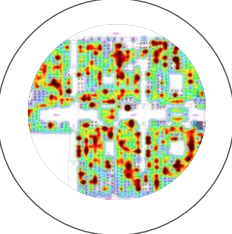
Workflow

Mobile

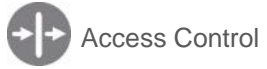
Cloud

Location Services

Artificial Intelligence



HBT CAPABILITIES



Access Control



Energy Management



Occupant and Asset Location



Public Address and Voice Announcement (PA/VA)



Service and Maintenance



Building Management Systems



Fire Detection and Alarm



Occupant Wayfinding



Public Information Video/Noticeboards



Structured Cabling and Cable Management



Digital Lighting



Heating, Ventilation and Air Conditioning



Perimeter Protection



Security/Closed Circuit Television (CCTV) and Digital Video Surveillance



Systems Integration



System Validation










CREATING A HUMAN CENTRIC BUILDING

TRENDS DRIVING BUILDINGS



OUTCOMES WE PROVIDE CUSTOMERS

-  Healthier
-  Inviting and innovative
-  Safer
-  Resilient and continuous
-  Secure
-  Productive
-  Sustainable

The image is a composite of two scenes. The left side shows a perspective view of a data center aisle with rows of server racks on both sides. The racks are illuminated with a greenish light, and there are circular lights on the ceiling. The right side shows a modern glass skyscraper with a blue sky and white clouds reflected on its surface. The building has a grid-like pattern of windows and is set against a bright, sunny background.

HONEYWELL + VERTIV DATA CENTER

Honeywell

DATA CENTER OF THE FUTURE



**ON
99.9999%
OF THE
TIME**

- Around 14% of DC had a severe or serious outage in the past 3 years which impacted their reputation and led to financial loss



**PUE
APPROACHING
1.0**

- The average DC has stagnated at PUE ~1.6
- Leading Hyperscalers operate at PUE 1.1
- Increasing pressure in OPeX and efficiency



**CARBON
NEUTRAL
OR NET
ZERO**

- Nearly all Hyperscalers and major Collocation want to be Carbon Neutral in the next decades
- 25 to 30% of the Global Electrical generation came from Renewable sources in 2020



**FROM
0 TO 100
IN 6
MONTHS**

- Average time to build a DC is 9 to 12 months
- DC average revenue is \$5M per MW in a year
- Modular Data Centers to grow above market in next decade



**AUTO-
NOMOUS
& SELF
HEALING**

- 50% of DC struggle finding talent
- 20% of Outages are due to Human Error
- Edge Data Centers to grow in the next decade

OUTCOMES ALIGNED WITH FUTURE TRENDS



UPTIME AND RESILIENCY

Improve reliability, reduce downtime risk, improve SLA compliance



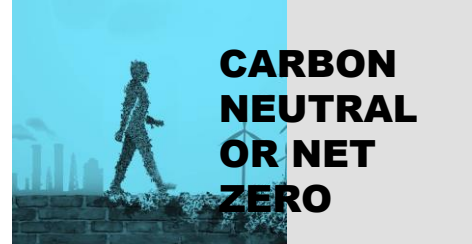
SAFETY AND SECURITY

Improve response time and protect assets



SUSTAINABILITY & EFFICIENCY

Improve PUE, reduce OpEx, and reduce Carbon Footprint



MODULARITY AND AGILITY

Reduce CapEx and reduce time to market



Shape our Outcomes to Be Future Proof

DATA CENTER END-TO-END PORTFOLIO

Industry leaders
 Roadmap solutions

Honeywell & **VERTIV**



UPTIME AND RESILIENCY

Improve reliability, reduce downtime risk, improve SLA compliance

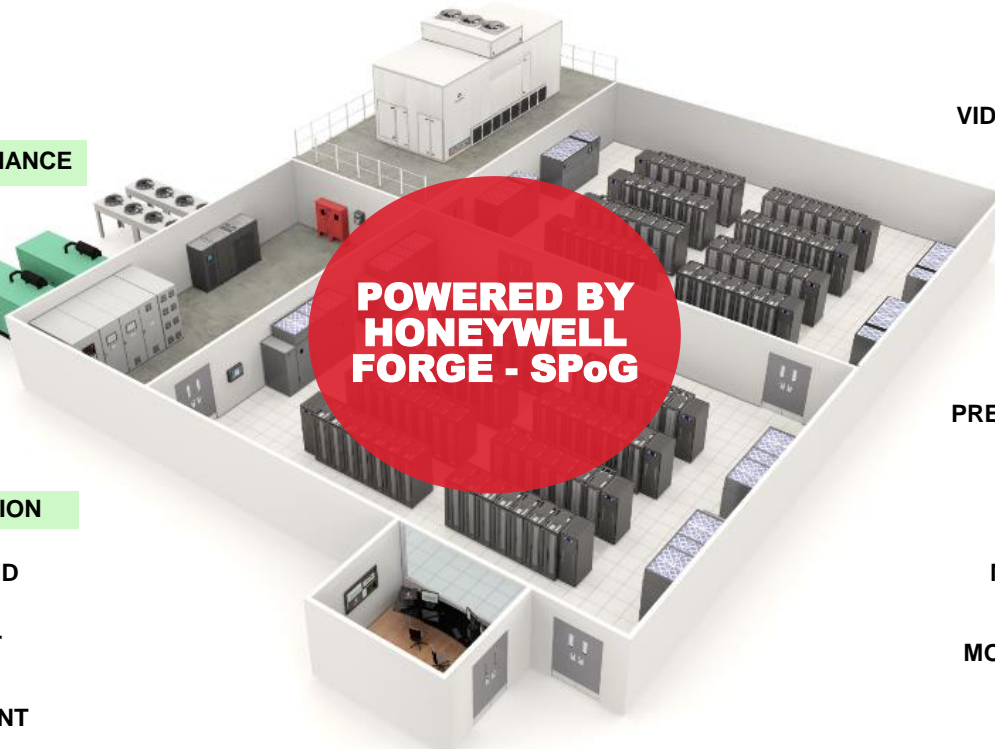
- NIAGARA BMS & CONTROLS
- UPS SYSTEMS
- POWER DISTRIBUTION
- INSTALL & SERVICES
- DIGITIZED MAINTENANCE

- ADVANCED FIRE DETECTION AND SUPPRESSION
- LITHIUM BATTERY GAS DETECTION
- MULTI-LEVEL SECURITY
- VIDEO MANAGEMENT SYSTEM (VMS)
- OT CYBERSECURITY



SAFETY AND SECURITY

Improve response time and protect assets



POWERED BY HONEYWELL FORGE - SPOG

- SINGLE PANE OF GLASS (SPOG)
- SMART POWER

KVM/SECURE SWITCH



SUSTAINABILITY AND EFFICIENCY

Improve PUE, reduce OpEx, and reduce Carbon Footprint

- ENERGY OPTIMIZATION
- ENERGY AUDITS AND BENCHMARKING
- POWER EQUIPMENT & UPGRADES
- THERMAL EQUIPMENT & CONTROLS

PRE-INSTALLED BMS, FIRE & SECURITY



MODULARITY AND AGILITY

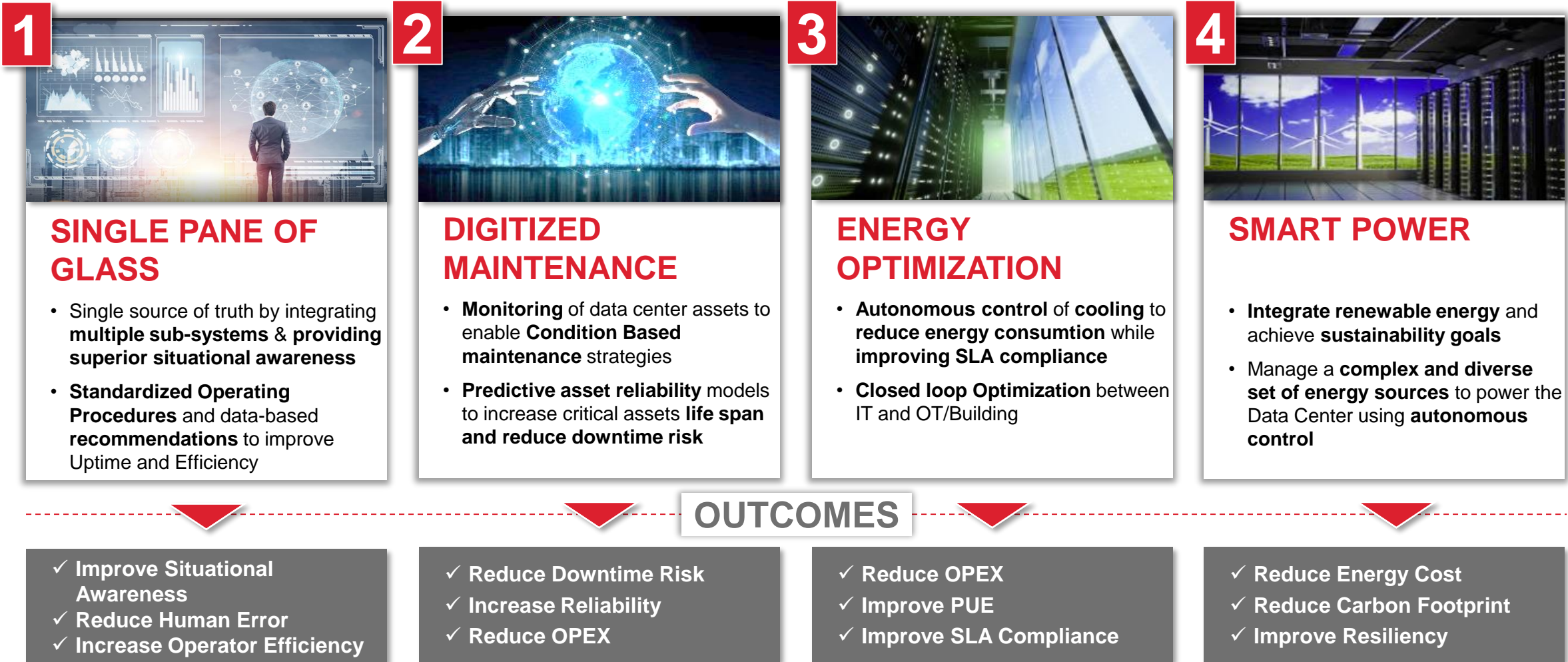
Reduce CapEx and reduce time to market

- MODULAR IT DATA CENTER
- MODULAR POWER DATA CENTER
- MODULAR THERMAL DATA CENTER

HONEYWELL | **VERTIV**

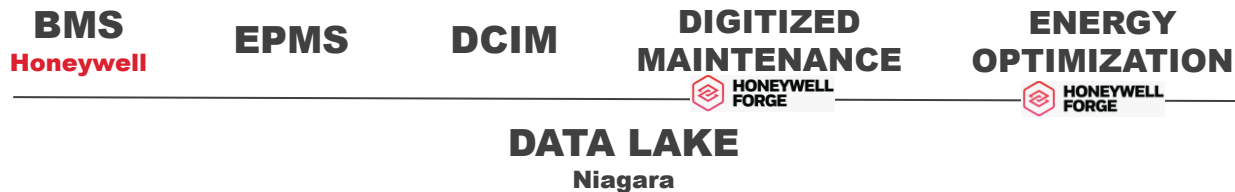
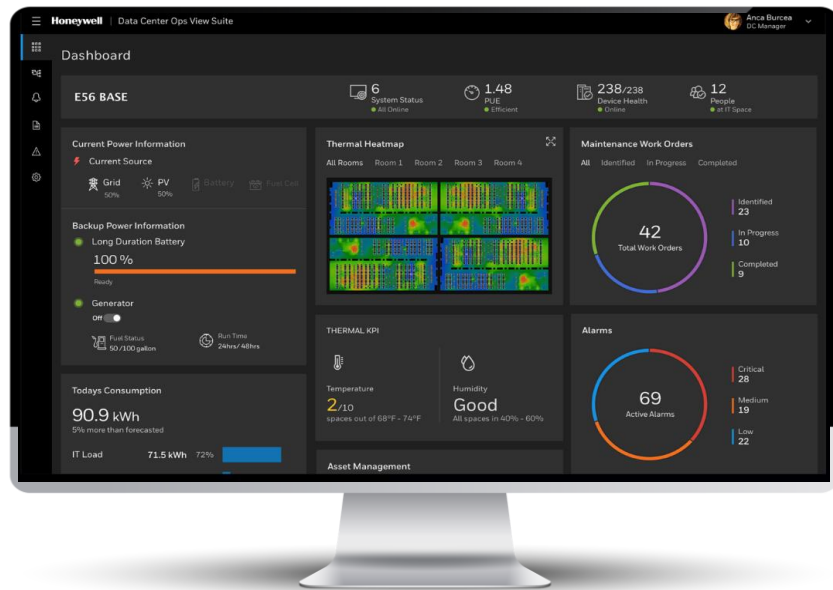
HON and Vertiv Solutions with Leading Position and Innovation

DIFFERENTIATING OUTCOMES



Global Services & Installation | Standard & Reliable Execution

1 SINGLE PANE OF GLASS FOR THE DATA CENTER



On-premises Superior operational system for the data center built on Niagara Open Platform

OUTCOMES



UPTIME AND RESILIENCY

Reduce downtime risk, reduce operator error, improve SLA compliance



SUSTAINABILITY AND EFFICIENCY

Reduce OpEx, Improve PUE, reduce carbon footprint, improve operator efficiency



SAFETY AND SECURITY

Improve response time, protect assets and people

KEY USERS



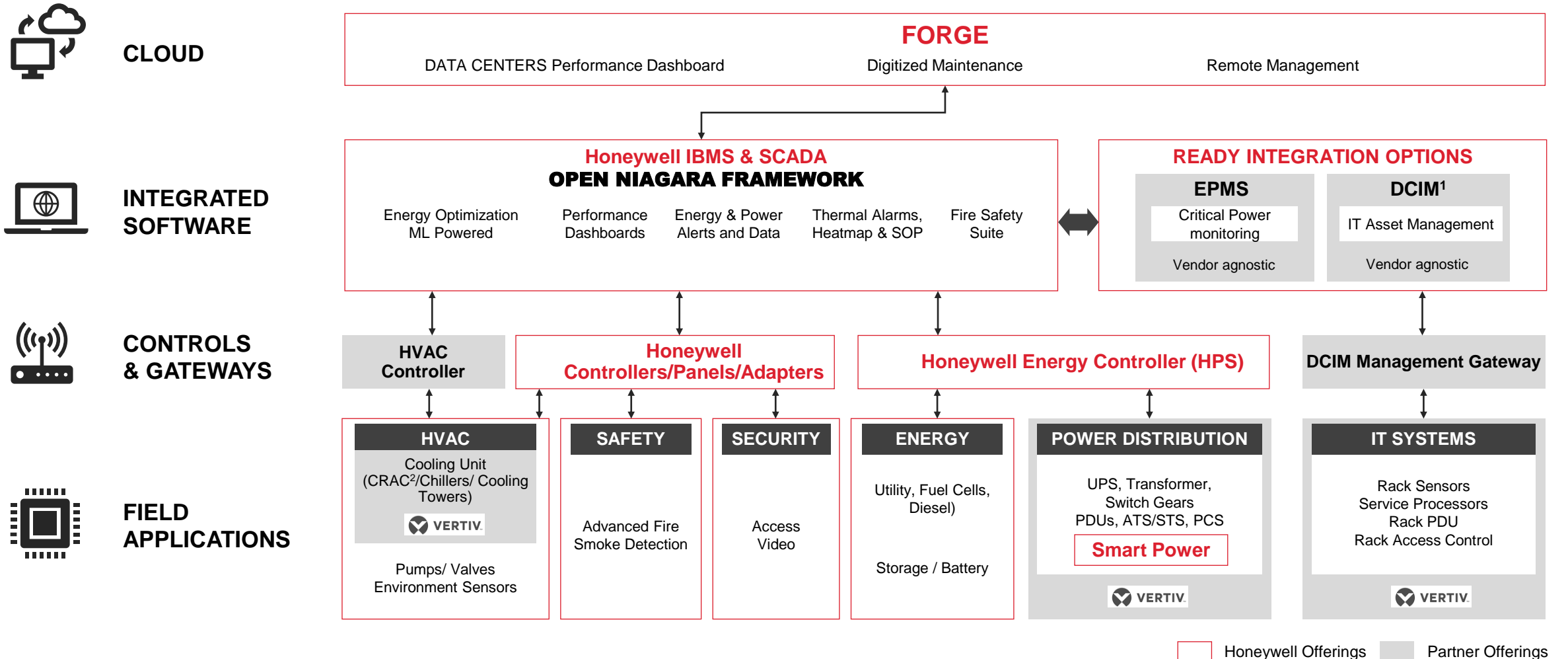
Data center Operator



Data center Technicians

DATA CENTER ARCHITECTURE

DATA CENTER OPEN, SCALABLE, END-TO-END SOLUTIONS



¹ DCIM is Data Center Infrastructure Management, EPMS is Electrical Power Management System
² Computer room air conditioning

HONEYWELL + VERTIV: UNIQUE VALUE PROP

OUR DIFFERENTIATION


1  **Performance-based Outcomes** delivery

- We are the leaders in **PERFORMANCE BASED** contracts and deliver **OUTCOMES**

 **UPTIME & RESILIENCY**

 **SUSTAINABILITY & EFFICIENCY**


 **SAFETY AND SECURITY**

 **MODULARITY AND AGILITY**

2  **Open and End To End Platform** with differentiated solutions

- Our solutions are **OPEN** and work/integrate with **ANY** solution with agility and cybersecurity
- Our **Tridium NIAGARA** is the BMS/HVAC industry standard

- HONEYWELL and VERTIV** have the **MOST COMPLETE** and **DIFFERENTIATED** portfolio for Data Center operations


3  **Unmatched Global Execution** enabled by Direct and channel capabilities

- HONEYWELL and VERTIV** have a leading **GLOBAL PRESENCE**


GLOBAL SALES BRANCHES FOR DC IN +62 COUNTRIES

+10,000 INTEGRATORS

50% OF GLOBAL DC USING OUR SOLUTIONS

4  **Reliable and Global Services** enabled by channel partners and connected services

- We service the most **CRITICAL INDUSTRIAL** environments
- Our **DIGITALLY ENABLED** services are Cybersecure and deliver **GUARANTEED** Outcomes

 **~10% ENERGY REDUCTION (ML ENABLED)**

~10-20% MAINTENANCE COST REDUCTION

Value Proposition Aligned To Outcomes Critical To Data Center Operators