An introduction to Vertiv

Architects of Continuity[™]

Data Centers
Communications Networks
Commercial and Industrial Facilities
Updated: May 2021



NYSE: VRT

Technology underpins and enriches almost every aspect of our lives.

Technology drives the global demand for data.

Vertiv provides the products and services infrastructure needed to manage that data.





Data is essential to human progress and is built into the very fabric of our society. Imagine, without the transfer of data, the world just might be silent.

The transfer of data is reliant on the continuity of the vital applications inside data centers, communication networks and other critical facilities.

Vertiv helps to make it all happen.

We do this by:

Bringing together hardware, software, analytics and services.

Ensuring uninterrupted operations, optimal performance and scalability.

Doing it differently through visionary expertise, immersive collaboration, relentless agility, intelligent ecosystems and scalability.

Architects of Continuity™

Architects of

Continuity

ar-chi-tect noun

1. Visionary builder of futureready digital infrastructures

con•ti•nu•i•ty noun

- 1. Reliable, safe, uninterrupted operations
- 2. Bringing customers' current reality to future aspiration

Building future-ready digital infrastructures that deliver continuity.



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Discover Vertiv





Vertiv at-a-glance – Fiscal 2020

Sales 4.4 B

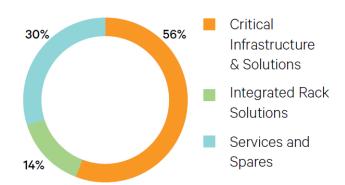




Customers Include

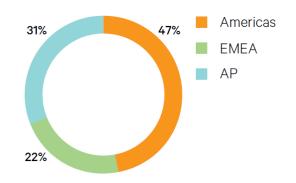
Alibaba, Alstom, America Movil, AT&T, China Mobile, Equinix, Ericsson, Reliance, Siemens, Telefonica, Tencent, Verizon, Vodafone Manufacturing Sites: 19 Service Centers: 300+

Reach: 130+ countries



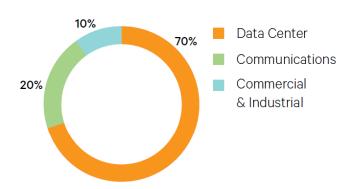
Offering

Broad range of power, thermal, and IT and edge infrastructure, solutions and services portfolio



Geography

Global, well-established footprint, and supply-chain network



End Market

Customers who operate in some of the world's most critical industries

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Our focus on data centers

Enabling reliability, efficiency and scalability: Hyperscale/Cloud, Colocation, Enterprise and Edge.

- Expertise from design through construction and commissioning derived from decades of experience
- Innovative solutions that reduce costs, improve management and speed deployment
- World-class services that drive uptime and deliver insights into performance
- Product, system and integrated solutions for: Enterprise, Colocation, Hyperscale and Edge



Our focus on communication networks

Provide smart, fast, flexible solutions for advanced networks and network management: Macro Site, Central Office, Small Cell and Data Center.

- Innovation-enabling flexible architectures
- Fast deployment, turnkey solutions, seamless service
- Intelligent systems for smart, holistic network management
- Future-forward solutions supporting 5G and a variety of sites including: Small Cell, Macro Site, Central Office and Data Center



Our focus on commercial and industrial

Delivering reliability and simplifying complexity in industrial and rugged environments: Healthcare, Manufacturing, Rail/Mass Transit, Power Generation and Oil and Gas.

- Robust protection in even the most extreme conditions
- Solutions customized to meet specific needs and budgets
- Expert technical teams who get there fast
- Products, solutions, services and expertise for: Healthcare, Rail/Mass Transit, Power Generation and Oil and Gas



Our Board of Directors

Vertiv (VRT) is a publicly traded company on the New York Stock Exchange.





David M. Cote, Chairman



Rob Johnson, CEO, Vertiv



Joseph van Dokkum



Roger Fradin



Jacob Kotzubei



Matthew Louie



Edward L. Monser



Steven S. Reinemund



Robin L. Washington



Vertiv Leadership



Rob Johnson Chief Executive Officer



David Fallon Chief Financial Officer



Giordano Albertazzi President, EMEA



Erin Dowd Chief Human Resources Officer



Jason Forcier Chief Operations Officer and Executive VP, **Infrastructure & Solutions**



Stephanie Gill Chief Legal Counsel



Sheryl Haislet Chief Information Officer



John Hewitt President, **Americas**



Pat Johnson Executive Vice President, **Integrated Rack Solutions**



Stephen Liang Chief Technology Officer



Gary Niederpruem Chief Strategy and Development Officer AU/NZ/Southeast



Anand Sanghi President, **Asia and India**



Robert Zhu President, **North Asia**



Our presence

Meeting our customers demand for data – wherever they are.



Americas

Manuf. and Assembly Locations	8
Service Centers	165+
Service Field Engineers	1370+
Technical Support/Response	100+
Customer Experience Center/Labs	5

Europe, Middle East, and Africa

Manuf. and Assembly Locations	6
Service Centers	70+
Service Field Engineers	580+
Technical Support/Response	80 +
Customer Experience Center/La	bs 6

Asia Pacific

Worldwide

Service Centers

Manuf. and Assembly Locations

19

300+

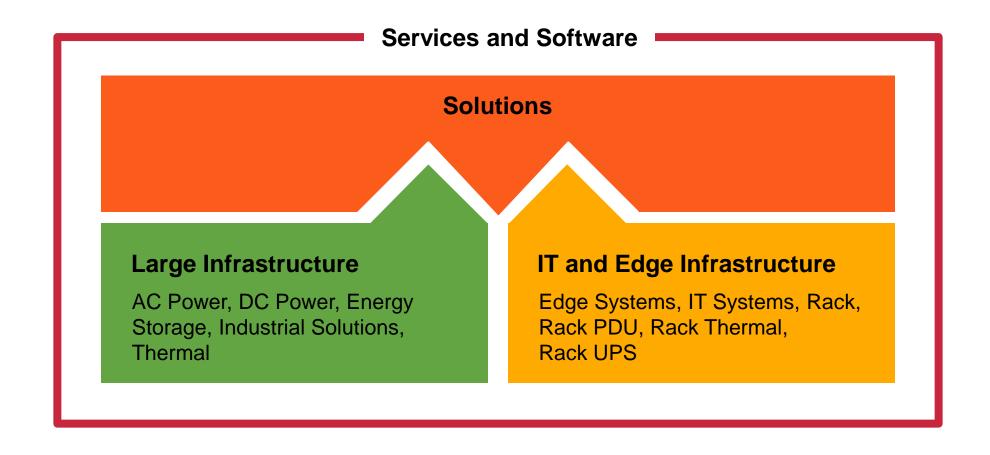
250+

3100+

Manuf. and Assembly Locations	5
Service Centers	57+
Service Field Engineers	1150+
Technical Support/Response	70+
Customer Experience Center/Labs	4



Vertiv brings together hardware, software, and ongoing services to ensure our customers' vital applications run continuously and perform optimally.





Our portfolio

POWER MANAGEMENT

THERMAL MANAGEMENT

INTEGRATED RACK SOLUTIONS

SERVICES

Description

- Small, medium and large uninterruptible power systems (UPS)
- Industrial-grade UPS
- AC power distribution systems

- 12V to 400V DC power systems
- Custom DC UPS systems along with DC battery chargers and distribution
- Rack power distribution

- Small thermal systems including room and row/ rack cooling
- Air handling and chiller: large systems located outside the data room that provide climate control
- IT and infrastructure management solutions
- Rack PDUs
- Integrated solutions

- Diverse array of services to handle ongoing customer equipment and product needs
- Maintenance, project and training services
- Tailored customer offerings

Select offerings





EXL S1







FPC





5000



7000



8000



rPDU



iCOM™



CRV



PDX



Packaged System





Avocent® and

Cvbex™ KVM &

Serial Console



Monitoring





Solutions



Maintenance Optimization





Services

Project Services

Brands

Liebert[®] Chloride[®] NetSure[™] Geist[™]

Liebert®









Award-winning leading provider of innovative power, thermal and IT infrastructure solutions and services for digital infrastructure.

- Recognized leadership across served markets, offerings and geographies
- Strong projectmanagement capabilities differentiates Vertiv from other market participants
- Rewarded by customers for the ability to collaboratively work to provide solutions for critical needs
- At the forefront of energy efficiency applications
- Multiple awards won as independent company



The CEO Forum Group has selected Rob Johnson and Vertiv for the 2020 Transformative CEO Award in Innovation in

the category of Communication Infrastructure. This is bestowed for excellence in building and protecting the critical telecommunications networks around the world and in data security and delivery of uninterrupted power. Most significantly, Vertiv's communication infrastructure has become our backbone during the COVID-19 crisis.



Asia Pacific Data Center Integrated Power Infrastructure Growth Excellence Leadership Award



Excellence in Thermal Management; EMEA UPS Product Leadership Award; Modular Data Center Customer Value Leadership Award



DC Power Systems Competitive Strategy Innovation and Leadership Award

2018 EXCELLE

Electrical Review Excellence Award for Power (Noriker Power Project)

2017



ACR News Environmental
Project of the Year
(Amdocs Data Center in
London)

2018, 2017 and 2016



DCS Awards
Cooling Product of the Year



We collaborate with our customers to build future-ready digital infrastructures.

Let us show you how we can turn your aspirations into reality.

Our capabilities. Our difference.

Thermal

<u>Power</u>

Integrated Rack Solutions

IT Systems

Solutions

Services

Software



VertivTM Thermal Management



Thermal Management

A complete line of energy-efficient and reliable technology

- Perimeter, in-row and high-density cooling
- Free cooling chillers, heat rejection and economization
- Evaporative free cooling
- Custom air-handling solutions
- Small systems for edge applications, small computer rooms and network closets
- Direct liquid cooling
- Modular smart solutions to add capacity with IT growth

Controls to optimize efficiency and uptime

- Unit and supervisory controls with machine-to-machine communication and real-time monitoring
- Advanced algorithms for system auto-tuning, energy optimization, and capacity management



Thermal Management











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Vertiv difference

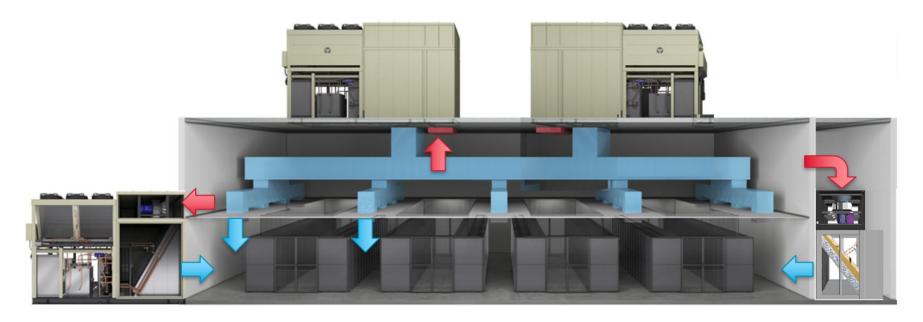
Thermal Management

Unmatched efficiency and reliability for mission-critical applications

- We deliver the highest level of protection and uptime
- Industry-leading efficiency levels (Power Usage Effectiveness as low as 1.1)
- Up to 50 percent lower capital and operating costs.
- Industry-leading, award-winning technologies

Deep design and application knowledge

- We partner with each customer to develop and deploy solutions that best meet their needs
- Intelligent, self-optimizing solutions that enable customers to spend less time managing cooling and more time managing their facilities





Customer spotlight: Amdocs

Thermal Management

Customer Need

- A more economical mode of operation when external temperature is lower than the internal temperature of the facility
- Up to 50 percent energy savings
- Eco-friendly solution
- Maximizing efficiency of the data center

Solution

- Liebert® PDX with EconoPhase
- Liebert[®] Microchannel Condenser

Benefit

- Enhanced, flexible freecooling and low total cost of ownership (TCO)
- The most advanced refrigerant economizer
- Supreme levels of efficiency and easy installation



"Vertiv's deep technical knowledge allowed us to make an informed risk-benefit analysis and identify the most efficient thermal management solution for our Chiswick Park data center."

Ronnen Perry Global Technical Manager at Amdocs



VertivTM Power Management



Power Management

Project, maintenance and performance services for data centers, communication networks and industrial markets.



















Vertiv difference

Power Management

Continuous operation and optimal performance of your vital applications

- Comprehensive range of power solutions for data centers, communication networks, commercial and industrial networks
- Industry-leading safe and reliable power solutions for heavy-duty, data center and edge of network applications
- Advanced Lithium-ion battery solutions for single- and three-phase applications
- Complemented by our full software suite and global service organization





Customer spotlight: Equinix

Power Management

Customer Need

• Update and redesign the entire 4 x 800 kVA parallel UPS system based on a centralized, N+1 architecture for one of Equinix's data centers

Solution

- Implemented a new distributed redundancy model with three chains, each composed of 1 MW Liebert[®] Trinergy[™] UPS system in a (N+1) configuration
- Vertiv[™] LIFE[™] Services for cutting-edge remote diagnostic and preventative monitoring service

Benefit

- Three different power lines, powering each rack with a 2(N+1) UPS configuration for utmost reliability
- AC power capacity expansion of up to roughly 500 kW, leading to an increase in rack density per square meter
- Up to 96 percent UPS efficiency



"We will make good use of the three Liebert®
Trinergy™ UPS systems' scalability by upgrading the power capacity whenever the critical load evolves. And Vertiv will enable us to do it without any service disruption for our data center customers."

- Director of Operations, Equinix



VertivTM IT and Edge Infrastructure



IT and Edge Infrastructure

Support for Edge applications that require moving processing and storage closer to the customer.

Use Cases



Data Intensive

- Restricted Connectivity
- Smart Cities / Factories / Home and Building
- HD Content Distribution
- High-Performance Computing
- Virtual Reality

Machine to Machine

- Smart Security
- Smart Grid
- Low-Latency Content Dist.
- Arbitrage Market
- Real-time Analytics
- Defense Force Simulation

Human-Latency Sensitive



- Augmented Reality
- Smart Retail
- Natural Language Processing

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Life Critical

- Digital Health
- Connected/Autonomous Cars
- Drones
- Smart Transportation
- Autonomous Robots

Architecture



<u>Traditional</u>

· Cloud / Data center



Local

- · Aggregation sites
- Metro data centers



Edg

Rooms / Building

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IT and Edge infrastructure – Integrated rack solutions

Flexible portfolio of point products for IT and Edge infrastructure.



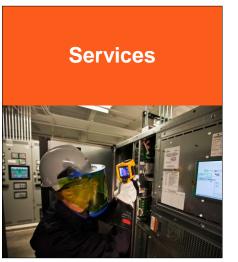












IT and Edge Infrastructure

Integrated solutions for IT and Edge infrastructure.



<u>Vertiv™ SmartMod</u>™

Vertiv SmartMod is a flexible platform, optimized for simplified deployment of your critical IT assets



Vertiv™ SmartRow™ DCR

The SmartRow DCR is a self-contained, modular data center designed to simplify IT deployments in indoor spaces



Vertiv™ SmartRow™ DCX

SmartRow DCX provides a complete data center in weeks, utilizing an enclosed room-neutral system that meets today's needs while being prepared for tomorrow

Vertiv difference

IT and Edge Infrastructure

A leader in Edge infrastructure

- Easy integration of components
- Fully customizable for your IT needs
- Rapid deployment for quick installation
- Remote monitoring and management
- End-to-end service

Edge infrastructure portfolio benefits

- From racks and enclosures, to power protection and distribution, to cooling and thermal management solutions, our compact and reliable small-space infrastructure delivers the reliability you need to grow your edge network
- Pre-built, factory-integrated systems can give you the flexibility of a custom solution with the convenience of an offthe-shelf product



Customer spotlight: Property and casualty insurance provider

Edge – Data Center

Customer Need

• Improve the visibility and control of the company's distributed digital assets to effectively manage its network from the core to the edge

Solution

Vertiv[™] Environet[™] data center monitoring system

Benefit

- Improved uptime
- Increased cooling efficiency
- Enhanced safety
- Better asset management
- More educated workforce



"I was able to show that where the vendor was saying he would save us \$1,000 a month, in reality, it was only savings of about \$230 a month. That kind of information is very helpful for us...when we go to purchase new hardware."

- Technology Lead, Property and Casualty Insurance Provider



VertivTM IT Monitoring and Management



IT Systems

Data center IT infrastructure and operations

 Centralized, secure access to IT devices from any vendor over IP – in traditional enterprise data centers, co-location and remote or edge applications

Control room solutions

 Real-time access to high-resolution content across multiple workstations – in broadcast and post-production applications

Desktop productivity and security

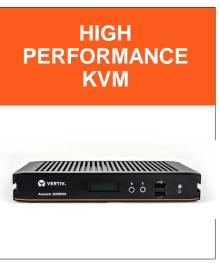
 User access to multiple desktop computers with a single keyboard and mouse – in the office environment, test labs and locations with access to both secure and un-secure machines



IT Systems











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Vertiv difference

IT Systems

The leader in IT management

- A portfolio unmatched for remote data center IT access and control for IT infrastructure and operations professionals. Our portfolio spans devices and software and is supported by cutting-edge services
- Our IT management products and services make us not only an outstanding performer in the traditional data center but our portfolio is also uniquely positioned to deliver outstanding performance in edge applications

Vertiv™ IT management customer benefits

- Improved IT operations with an ecosystem of IT Management products
- Streamlined workflows in environments using multiple workstations
- Secured access between security levels in sensitive environments
- Sourcing from a single supplier



Customer spotlight: DigitalGlue

IT Systems

Customer Need

 DigitalGlue (a Vertiv reseller and systems integrator), on behalf of a Hollywood production studio, sought equipment that supported today's video resolution quality while establishing a path for eventual migration to 4K broadcasting. To reduce disruption and save time and money, the studio specifically required a solution that would be compatible with the facility's existing CAT 6/7 ethernet cables and network switches

Solution

Avocent® HMX 5000 Series IP-based KVM Switch

Benefit

- Zero-configuration networking simplified implementation by automatically obtaining the media access control (MAC) address of devices as they are attached to the network
- Switch times were reduced to less than a second greatly improving workflow
- Customizable hotkeys led to an enhanced user experience
- Productivity improved with the ability to access two different computing resources from one dual-monitor edit station
- USB extenders enabled the integration needed to perform color correction sessions
- The quality of the digital video at the workstation was improved
- System scalability supported growth by enabling hundreds of users to securely connect in real time with multiple servers and workstations





"The Avocent® HMX 5000/6000 KVM is highly scalable and configurable, which makes it so easy to connect multiple users to multiple servers and workstations. It's really an ideal solution for a large Hollywood studio."

- Sean Busby, DigitalGlue President



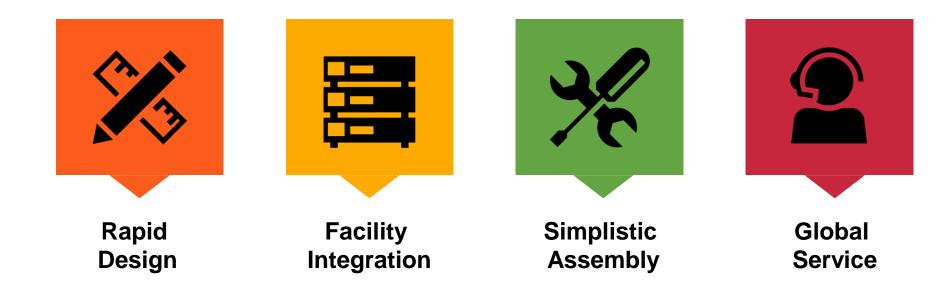
VertivTM Prefabricated Modular and Integrated Solutions



Vertiv capabilities

Solutions

Our customized, standard solutions offer you the ideal combination of best value and rapid delivery. Our factory-integrated solutions offer you a low-risk, high-value global solution that can be rapidly delivered and assembled on site.



Vertiv capabilities Solutions

CABINET



Cabinets integrated with PDU and cooling units; could include storage and IT gear in addition to all hardware; could be a combination of off-the-shelf products

ROW



Integrated sets of cabinets with PDU, cooling units, and monitoring systems as needed; could be a combination of off-the-shelf products

AISLE



Integrated, often enclosed, sets of rows with cooling and power infrastructure

MODULAR



Integrated, comprehensive set of modular infrastructure in a **free-standing enclosure** for data centers and other related applications

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Network Closet, Micro, Edge, Core and Critical Facilities, Cloud and Colo, Cable Landing Stations

Vertiv difference

Solutions

Our Methodology

Complete Critical Infrastructure Solutions and Deep Domain Knowledge

Vertiv applies ultra-modern technology and massproduction principles to enable exceptional scale, velocity, and quality for every project regardless of size or complexity.



Structural Engineering



Thermal Management



Power Management



Software Controls



Life Cycle Services

Our Partners

Vertiv uses modular integration techniques to help our customers, contractor, and consulting partners more effectively design and build data centers.





Customer spotlight: T-Systems

Solutions

Customer Need

- Provide cloud services across Europe
- Meet customer SLAs of availability, reliability, security, scalability, transparency, efficiency and sustainability
- Quickly deploy a state-of-the-art, Tier III, twin-core data center

Solution

 A modular, containerized structure to achieve rapid availability, high scalability, streamlined expansion and staggered investment

Benefit

- Nine-month deployment time frame
- ~99.98 percent availability
- Site Power Usage Effectiveness of ~1.3
- ~30 percent reduction in power use over comparable facilities



"(Vertiv) worked with us to deliver true expertise and industry knowledge, positioning us to provide a strong cloud platform that serves both domestic and regional customers in Europe."

- Program Manager, T-Systems



VertivTM Services



Service capabilities

Services

A complete lifecycle approach to service, from project launch to ongoing maintenance and performance optimization.

PROJECT

When launching new facilities or powering up new equipment, you want to do it right – right from the start

- Plan
- Design
- Engineer
- Integrate
- Commission
- Project Management

MAINTENANCE

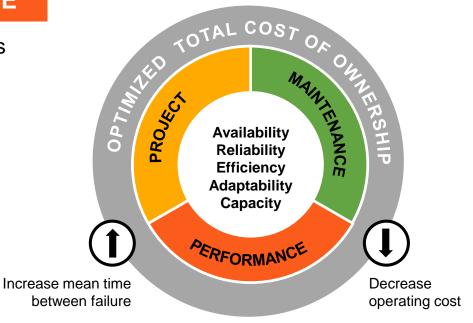
Services to ensure that your business-critical infrastructure operates reliably, safely and efficiently

- Preventive and corrective maintenance
- Remote services and monitoring
- Cap / Fan / Battery replacements
- Repair
- Spare parts

PERFORMANCE

Full range of services designed to optimize infrastructure performance and reduce process complexity

- Assess
- Audit
- Model
- Configure
- Upgrade
- Train



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Vertiv difference

Services

Services ensure that your vital applications stay up and running. We do this through our vast array of project, maintenance and performance capabilities, supporting you in making better decisions to operate more efficiently and reduce complexity.



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Customer spotlight: Pacific Seafood Services

Customer Need

 Acquire a high-quality UPS to replace an aging unit while minimizing disruption. Provide clean, protected power to Pacific Seafood's IT operations while ensuring a path for future growth

Solution

- Liebert® EXM 40kVa, 208V three phase UPS with scalable power, reliable battery runtime and a Maintenance Bypass Cabinet
- Vertiv[™] Quick Configure and Delivery Program
- Vertiv[™] Services

Benefit

- Quickly ordered, delivered and installed UPS within four days, restoring IT operations
- Vertiv coordinated the installation and completed the UPS start-up ahead of schedule within a demanding timeline
- Delighted the customer who expressed their gratitude to the entire team for responding fast with an excellent, economical solution



Thanks to the Liebert® EXM, the Quick Configure and Delivery Program and a tremendous amount of teamwork, Vertiv was able to exceed our expectations and ensure our business continuity.

- Evan Wiercx, Infrastructure Services Manager at Pacific Seafood



VertivTM Software



Vertiv capabilities

Software

- Monitoring of the critical infrastructure that is vital to the delivery of service from IT installations and data centers
- Management of power and energy usage across the entire power infrastructure used to power the IT and facilities equipment
- Management and control of the use of expensive resources like space, power, cooling allowing the maximum use of these resources when deploying IT assets
- Remote monitoring of equipment performance with automated or manual recommendations on how to gain improved efficiency or resilience
- Enable capturing of stranded data to provide new insights into critical infrastructure operations and performance

DATA CENTER MONITORING

ENERGY MANAGEMENT

POWER MANAGEMENT

CAPACITY MANAGEMENT

REMOTE MANAGEMENT

CHANGE MANAGEMENT

DATA ENABLEMENT

Vertiv capabilities (continued)

Software

Intelligence Software

END MARKETS

- Edge
- Enterprise
- Colocation
- Communications
- Commercial and industrial

VERTIV™ INTELLIGENCE

- Artificial Intelligence
- Machine Learning
- Analytics
- Data Scientists



CONTROL

USERS

- Service Technicians
- FacilitiesDepartments
- IT Departments



OPTIMIZE

MONITOR



Vertiv difference Software

Expertise

Encapsulates our long experience in data center systems engineering and management.

- Comprehensive capability across data center inventory, power, thermal and space management
- Deep, rich connectivity across all domains covering IT and facilities equipment from all vendors
- Tightly integrated hardware and systems offerings for optimal performance and efficiency

Scale

Global software and services capabilities for all data center operating models.

- Modular software architecture that allows customers to choose the right components as needs dictate
- Installed base of over 5,000 global customers across numerous industries and geographies
- Extensive, experienced channel and business partner ecosystem to serve customers globally

Commitment

Extensive and ongoing investment in products and research to continue our leadership position in critical infrastructure management.

 Solid track record of partnering with customers to address their unique needs



Customer spotlight: Mobile network operator Software

Customer Need

- World's largest mobile network operator in terms of active subscribers needed to move its nearly 100k sites, included core and access devices, to a more effective and efficient management
- Needed a single business partner that could help achieve efficiency and reliability targets by continuously monitoring sites distributed in many locations

Solution

• *Trellis*™ Critical Insight was deployed to over 3,000 customer sites to integrate environmental, energy, security and safety systems into one powerful management tool that reduced energy consumption, increased occupant comfort and achieved sustainable site operations

Benefit

- Monitoring was possible both on premise, from the customer headquarter and remotely by Vertiv 24x7
- Quickly began showing ROI
- Experienced 70% reduction of inaccurate alarms that lead to reduction of unnecessary visits and optimized personnel workload

Insight is a powerful web-based building and site monitoring platform with software tools to manage energy conservation projects, identify key operational problems and analyze the results.



Learn more about Vertiv.













Vertiv Blog

LinkedIn

Facebook

Twitter

Instagram









YouTube

YouKu

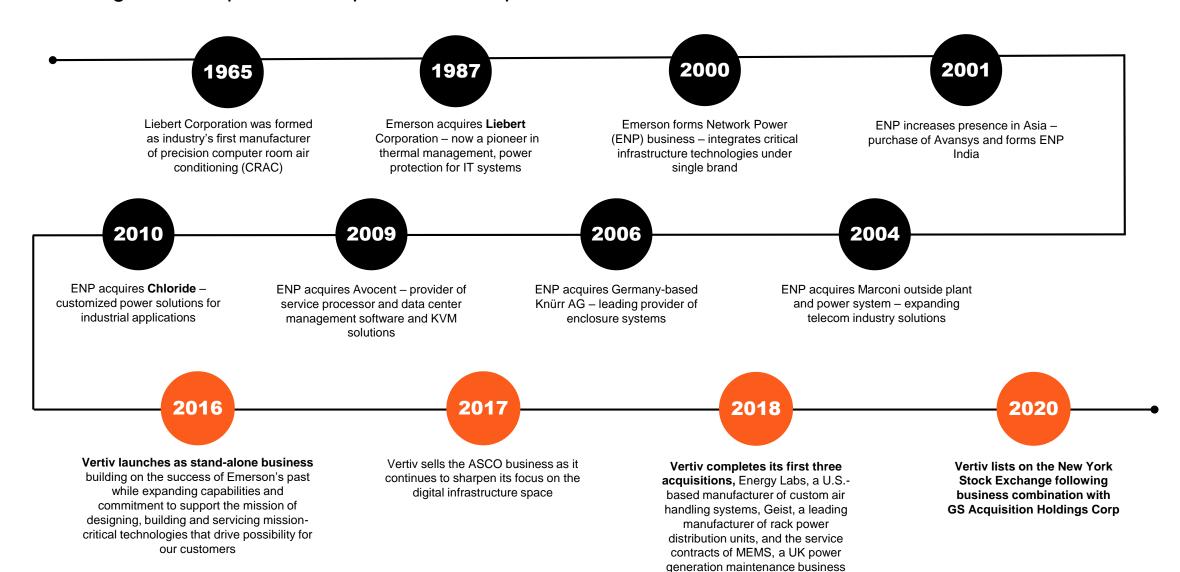
WeChat

Weibo



Vertiv timeline

Combining the entrepreneurial spirit of a startup with the resources and reach of an established leader.



Other noteworthy Vertiv stats

500

Customer base

We serve +70% of Fortune 500 companies



Operating capabilities

We have 20+ GW of installed cooling capacity and 14+ GW of installed UPS power. Creating a ~\$15B installed base



Customer satisfaction

We have a **Net Promoter Score of 73%in 2020**



Data

We make decisions based on data collected from 1,000,000+ pieces of equipment



Support

We employ ~3,100 field service engineers and ~250 tech support reps delivering the #1 service footprint in the industry



Performance

We have excelled with an 83% service renewal rates and 58% warranty capture rate in power* * For medium and large UPS



Sites

We keep 750,000+
customer sites connected



First-time fix

We have averaged an 87% first-time fix rate in site emergency visits. Returning critical load within 24 hours



Remote monitor

We remotely monitor

12,000+ customer sites

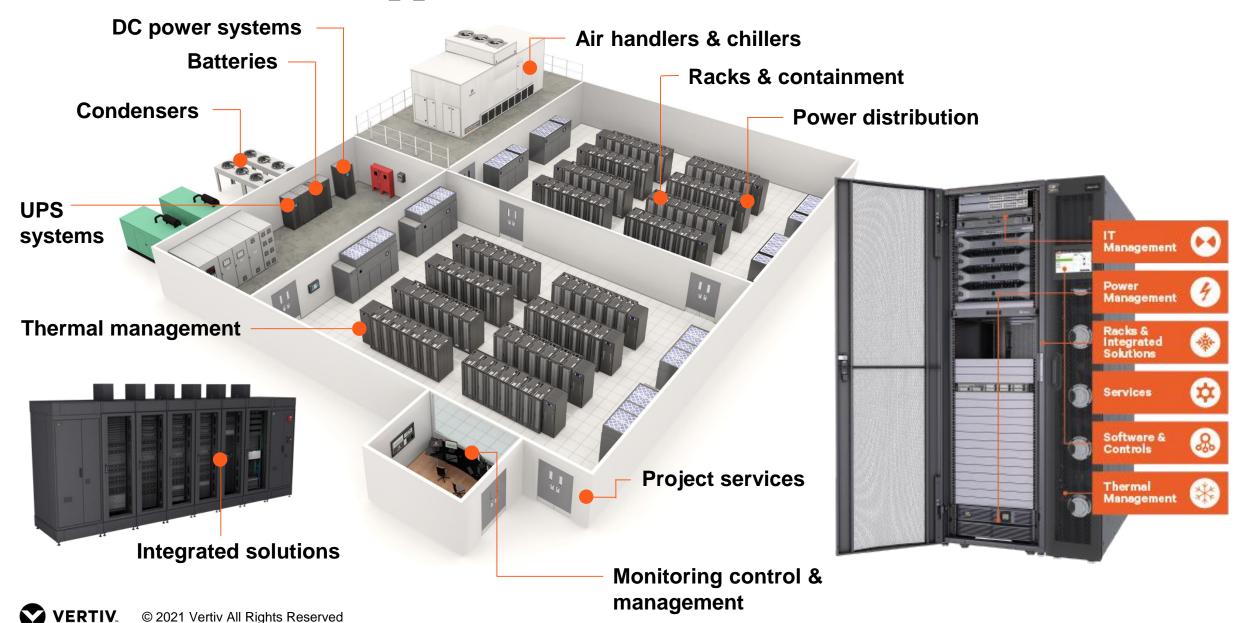


Training

We deliver ~250,000 hours of technical training each year

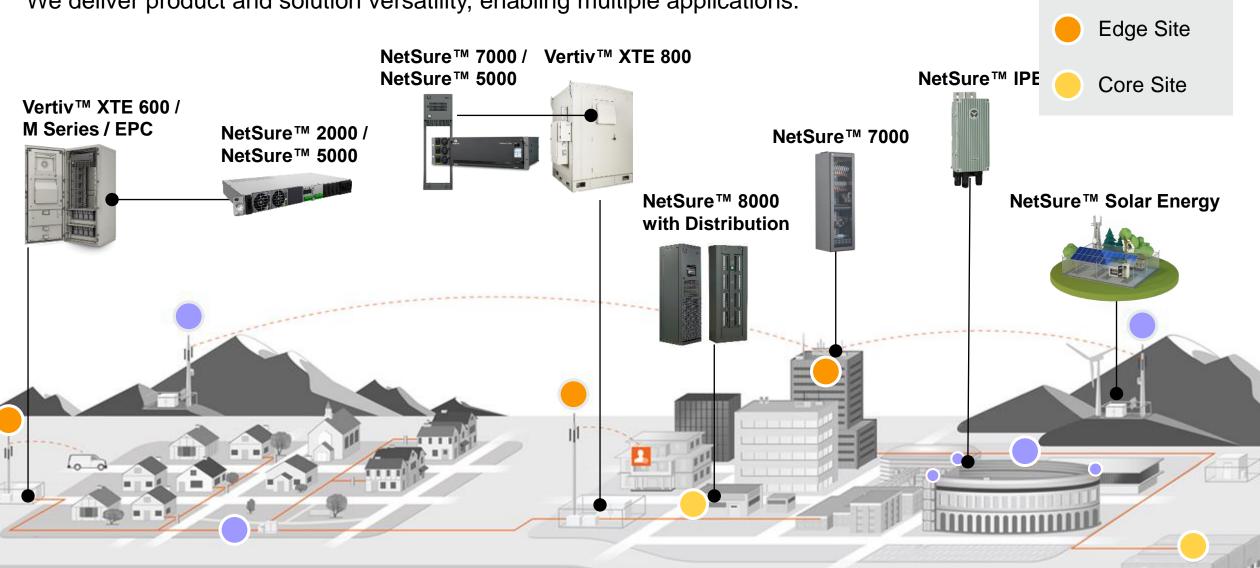


Vertiv data center applications



Vertiv telecom applications

We deliver product and solution versatility, enabling multiple applications.





Access Site