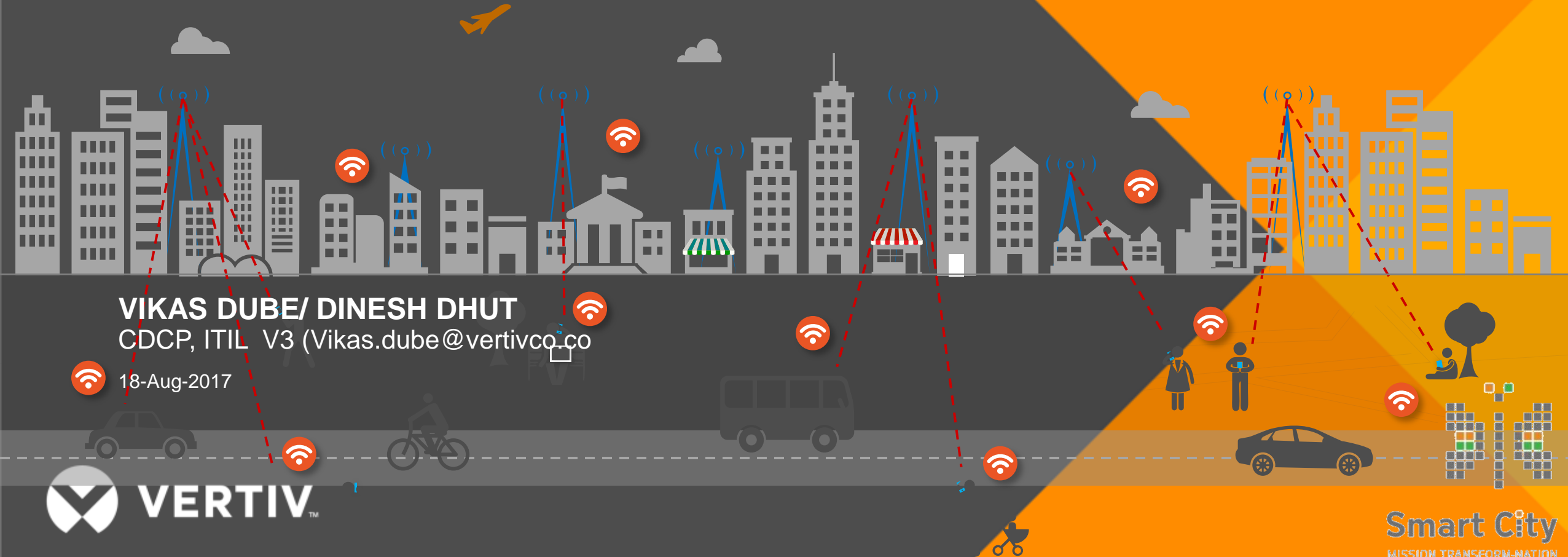


Intelligent Infrastructure for Smart City



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Smart City
MISSION TRANSFORM-NATION

VERTIV OPTIMIZING AND DEPLOYING CRITICAL INFRASTRUCTURE FOR SMART WORLD

WHAT WE DELIVER

Hardware, software and services that are intelligent, resilient and rapidly deployable for:

Data Centers

Communication Networks

Healthcare Facilities

Industrial Facilities

OUR BRANDS INCLUDE

ASCO® Avocent® Chloride® Liebert®

NetSure™ *Trellis*™



HOW CAN INTELLIGENT INFRASTRUCTURE HELP REALIZING VISION OF SMART CITY?

E GOVERNANCE



- Public Information, Grievance Redressal
- Electronic Service Delivery
- Citizen Engagement
- Citizens – City’s Eyes and Ears
- Video Crime Monitoring

ENERGY MANAGEMENT



- Smart Meters & Management
- Renewable Sources of Energy
- Energy Efficient & Green Buildings

WATER MANAGEMENT



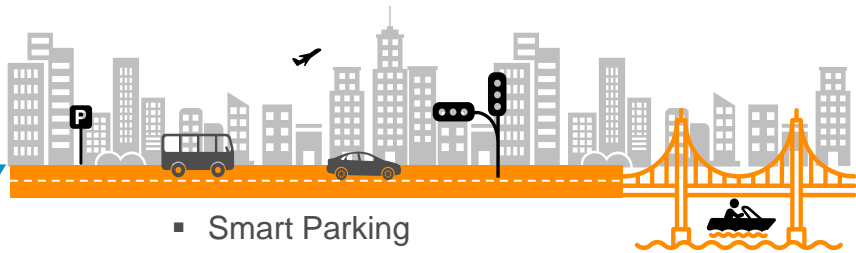
- Smart Meters & Management
- Leakage Identification, Preventive Maintenance
- Water Quality Monitoring

WASTE MANAGEMENT



- Waste to Energy & Fuel
- Waste to Compost
- Waste Water to be Treated
- Recycling and Reduction of C&D Waste

URBAN MOBILITY



- Smart Parking
- Intelligent Traffic Management
- Integrated Multi-Modal Transport

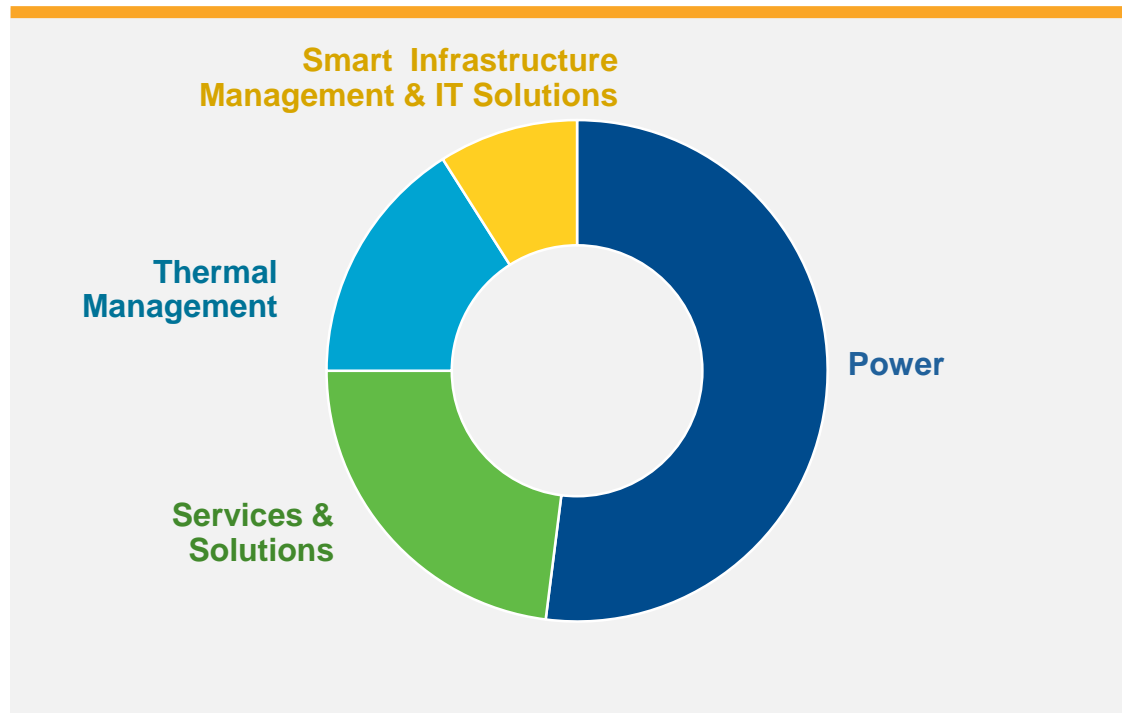
Sales

\$4.4B

Employees

~20,500

Product

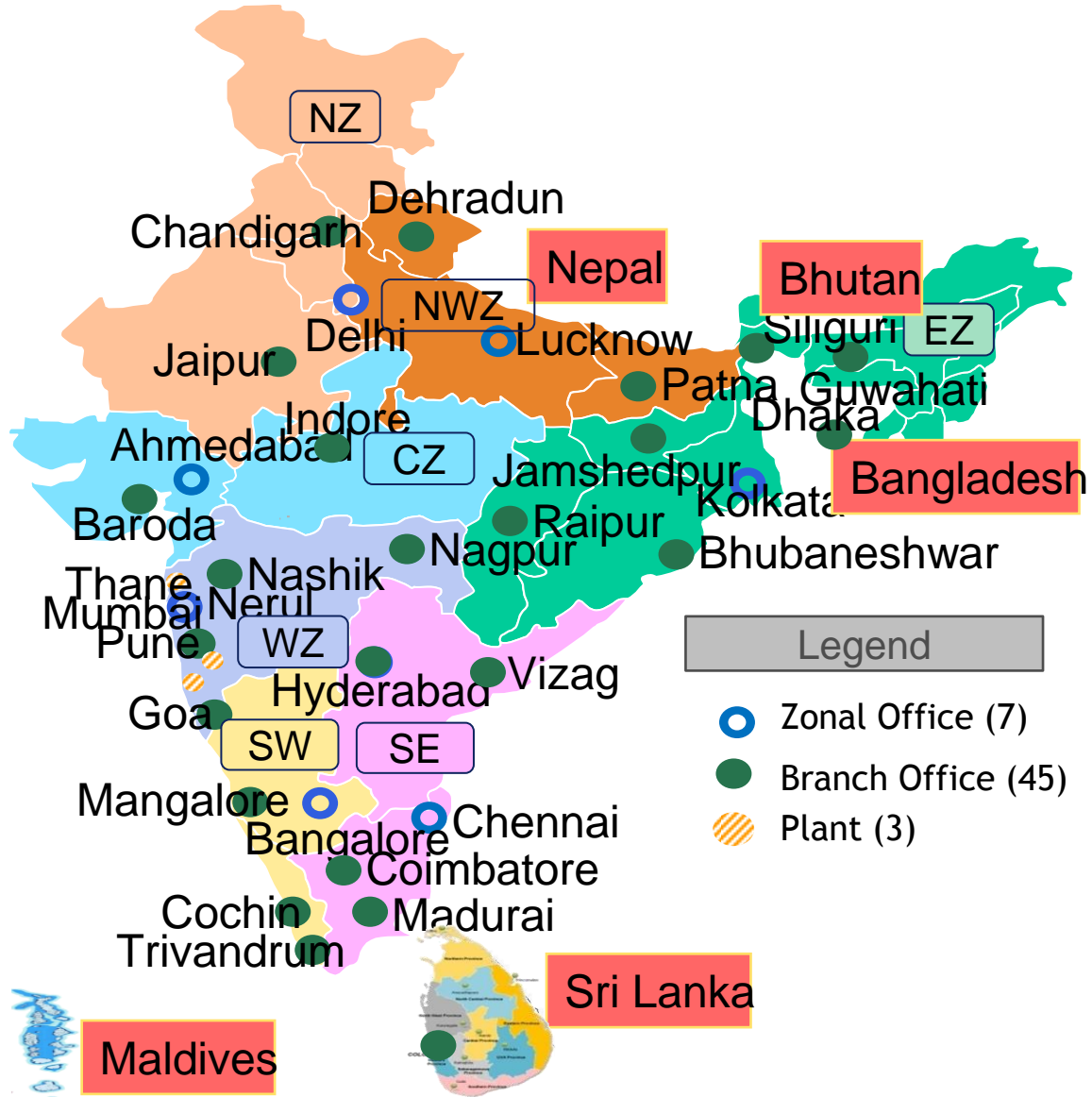


VERTIV GREATER INDIA



- Established in 1993 and formerly known as Tata-Liebert till 2001
- H.O. and R&D Center at Thane, Maharashtra
- ISO14001 and ISO-9001:2000 certified company
- Dedicated Team for tailored *“Business-Critical Continuity”* Key Industry Verticals
 - IT/ITES
 - Telecom
 - Defense & Govt. Vertical
 - Industrial Manufacturing Vertical
 - Oil & Gas
 - Power & Energy
 - Infrastructure
 - Retail, FMCG & Logistics
 - Education & Media Services

VERTIV INDIA OPERATION, SALES & SERVICE PRESENCE



Ambarnath, Thane

Manufacturing Facilities



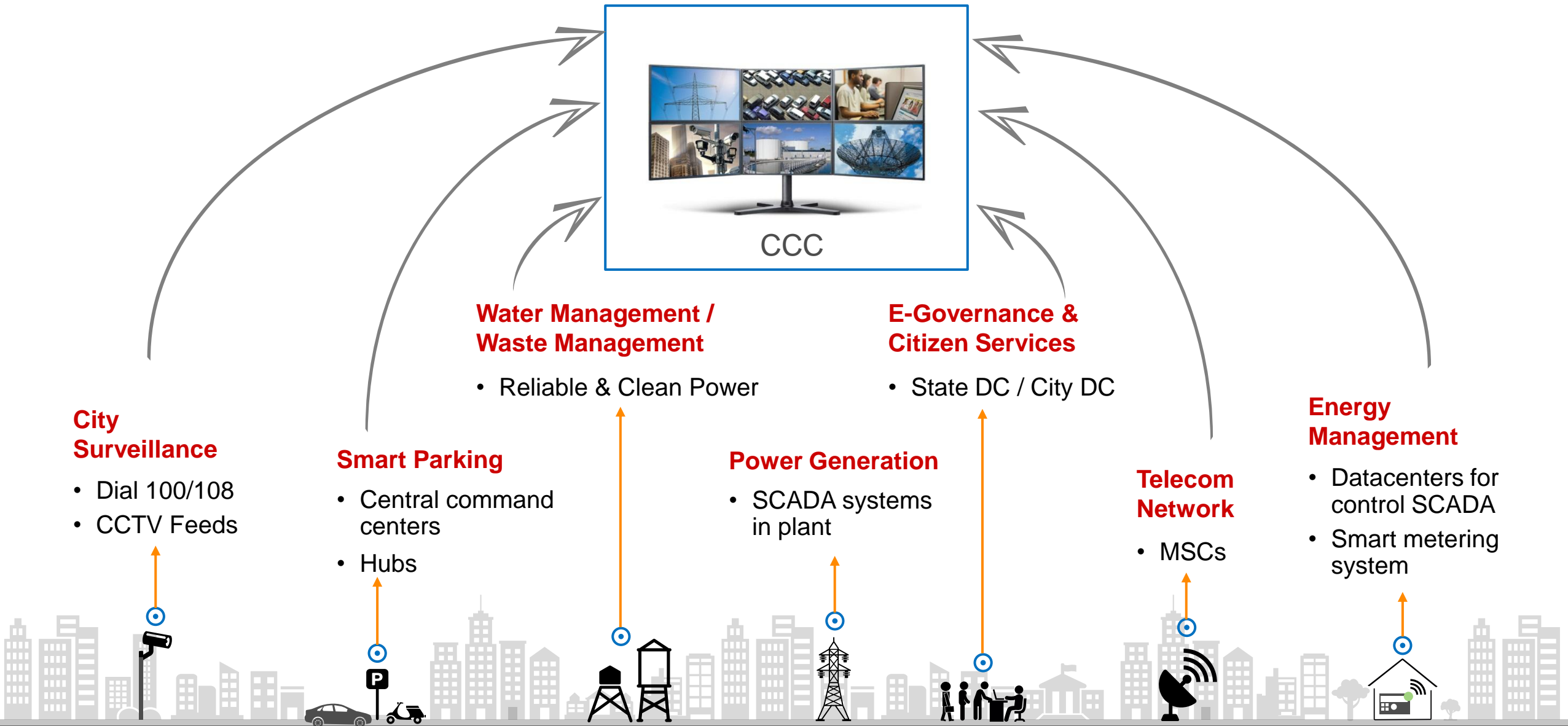
Pune



Channel Presence

Distributors	3
Enterprise Business Partners	100+
Value Added Resellers	2000+

CONTRAL AND COMMEND CENTER



CRITICAL DECISION FOR THE CCC OWNER



Parameter	On Premises	Cloud
Over all Control	High	Low
Latency Probability	Low	High
Ease of Bulk data(Video) management	Better	Dependency on service Provider
Data security/Risk	Low	High

Large Volume of data –Including
Video Streaming

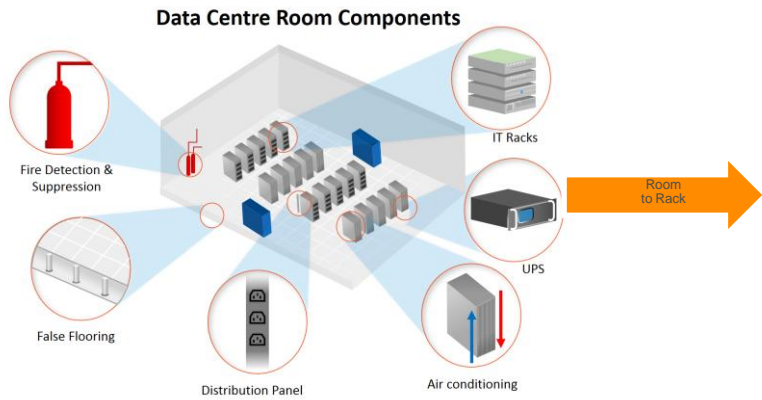
Data Sensitivity- Security Issues

Overall Control

Network Edge and Accessibility

Bandwidth and Latency

INTRODUCING –RACK BASED SMART CCC



This System is More efficient Scalable, Modular and IOT enabled

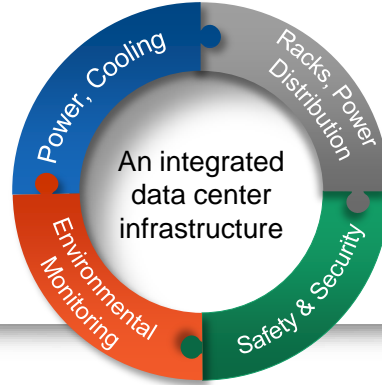
No site Preparation required , No wet work & Partitions is Required

Easy and Fast to deploy , Transferable - One Size fits All Solutions

Vertiv is at the Forefront of Technologies Used to Deliver this “Data Infrastructure”

 **Smart Solutions**
Intelligent, Integrated Infrastructure for the Data Center

 **SmartCabinet™**



 **SmartRow™**

City Surveillance

- Spoke DC's
- Central DC's

Smart Parking

- Central command centers
- Hubs

Water Management / Waste Management

- Reliable & Clean Power

Power Generation

- SCADA systems in plant

E-Governance & Citizen Services

- State DC / City DC

Telecom Network

- MSCs

Energy Management

- Datacenters for control SCADA
- Smart metering system

OUR CREDENTIALS IN RAJASTHAN SMART CITY

Project : Rajasthan Smart City Project

Establishment and Commissioning of Command & Control Centre (Video Surveillance Room, Dial 100 Control Room, Forensic Investigation Room, ITMS Room and Data Center& FMS/NOC Room) under Surveillance and Incident Response Project at seven cities of the State of Rajasthan

Authority :

RajCOMP Info Services Ltd (RISL)

Selection Process:

TCO of 5 Year =Capex (5 year) + Opex (5 year)

Locations:

Jodhpur, Bikaner,Udaipur,Ajmer, Kota,Bharatpur, Jaipur

Our Scope:

Data centre (10 Rack Smart solution _ Jaipur , rest of the City with 8 Rack solution), UPS for datacentre 80KVA×2, UPS for Command and control Centre 60KVA×2.

Four City Already installed and commissioned the Project .

OUR CREDENTIALS-ACTUAL SITE PHOTOGRAPHS



INTELLIGENT MONITORING



Nagpur Smart City

Application: Smart City Surveillance, Intelligent traffic management for the entire city

Solution: Complete DC power solution with Junction box

Advantages: Remote monitoring, rugged and reliable solution, one stop solution

Other Ex: [Telangana City Surveillance](#)



Rajasthan Seven Cities Surveillance

Application: Data centre city wise application for 7 cities

Solution: Integrated modular Data Centre (Smart Solution)

Advantages: Reduce space & energy upto 30%, Reduce Ops cost & Go live time, Integrated and modular, flexible



Punjab Seva Kendra

Application: Power back up solution

Solution: Power back up solution AC

Advantages: Proven and rugged technology, vast service network, efficient solutions

Other Ex: [Ludhiana City Surveillance – AC solution](#)



BSNL Wi Fi

Application: Power Back up solution – PAN India Wi Fi

Solution: Power back up solution AC

Advantages: Vast service presence, Efficient solution



SMART CITY SOLAR SOLUTION GRID TIED/ HYBRID/ CENTRAL

SOLAR INVERTERS



Electrical Vehicle Charging Centre

Renewable Sources of Energy

Solar Powered Street lights

Smart Grids, Micro Grids

Green Buildings



SMART CITY TELECOM SOLUTIONS

VERTIV is a Leading Supplier of these Next Generation Technologies to Leading Telecom Players

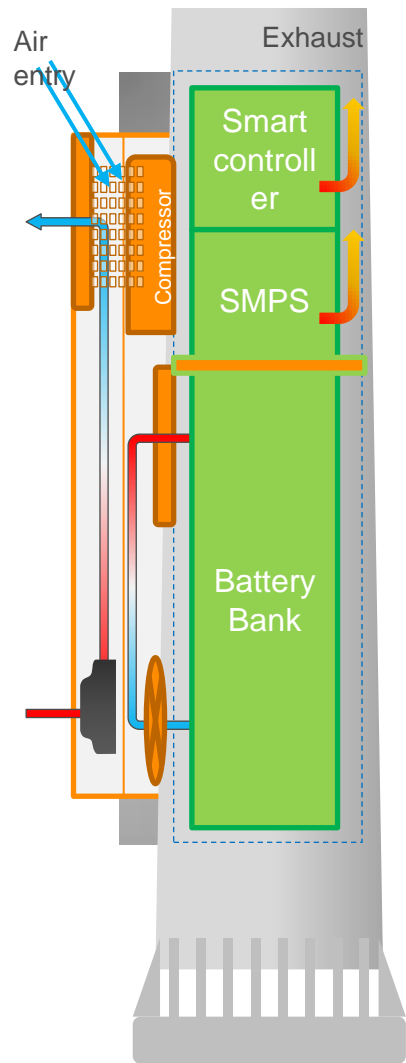
I&C/O&M, EF&I for Telecom Applications for smart cities like - Small Cell Sites (like Micro cell, Pico cell), Ground Based Sites, Energy Saving Solutions (like Solar Hybrid Solutions, Smart Inverter, DCDG, Li-Ion Batteries)

Besides Legacy Telecom Infrastructure, Smart Cities Will Drive the Deployment of New Telecom Solutions for Faster, Wider and Reliable Coverage.

Street Pole Solutions



MAST SITE / GROUND SITE SOLUTION



Cooling

- 48V DC Aircon, Door mounted for Active cooling of Battery Bank
- Passive cooling option for improving the reliability
- Fresh air entry is at elevated level, which avoids any possible restrictions for air entry from base.

Service

- Ease of maintenance as all the components are easily accessible on opening the door.

Value Addition

- Possibility of Solar Power run Aircon.
- Provision for Emergency and Free Cooling



Application:

For Smart city, 4G, Wifi application in urban areas.

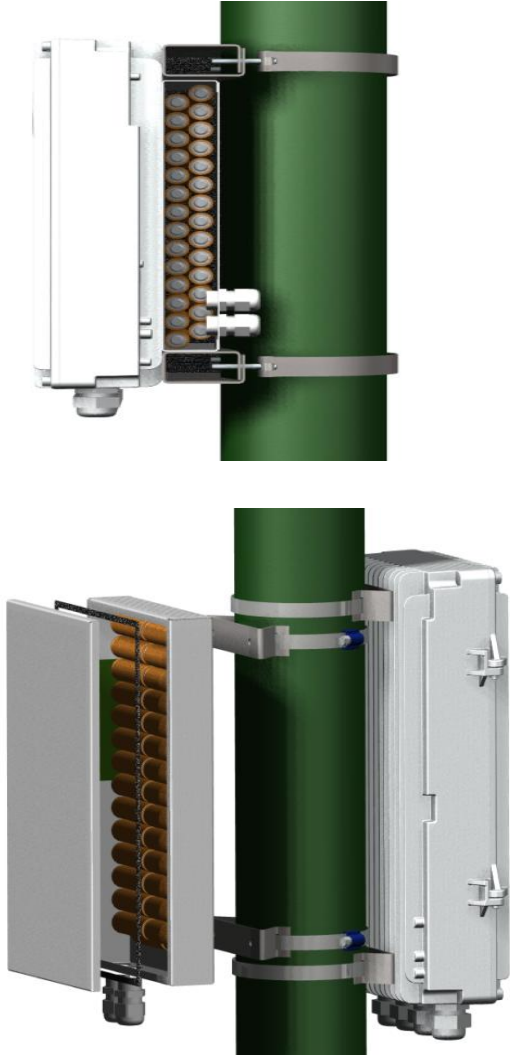
Power & Telecom equipments installed inside Ground and Pole are used to transmitting Signals through hidden multi band Antennas and provide street lightning.

Advantages:

Compact cabinet design for underground site application.

inverter option for powering AC based equipment's.

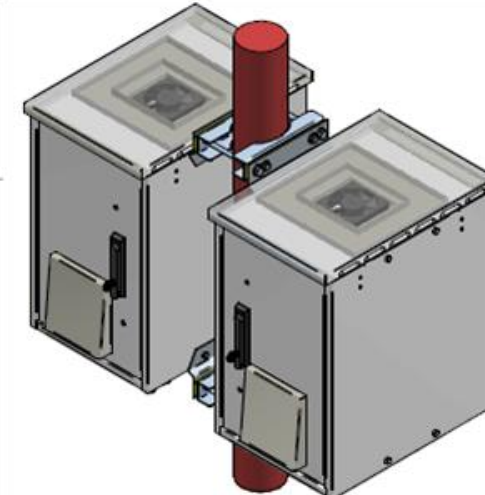
SMART CITY SPLIT OUTDOOR POWER SOLUTIONS



- *Intelligently co-ordinates between available energy sources*
- **Input: 200-400VDC, 85-300 VAC**
- **Output: 1000 W, 48V (up to 6 in parallel)**
- **Convection cooled, IP55**
- **Temperature: -40 to +55 (+75)°C**
- **Efficiency: 95% (peak)**
- **Surge protection (20kA)**
- **1x alarm relay output**
- **4x load outputs**
- **Dimensions: 360 × 180 × 90mm, <5Kg**
- **Separate battery back up solution**
 - **Li-on (5 / 10 Ah)**
 - **VRLA (8 / 12 / 30 Ah)**



Wall mounting application



SMART CITY - NAGPUR

CRITICAL SPECS

- | | |
|--|---|
| ▪ 48VDC & 24VDC Power Equipment | ▪ Fan filter solution IP55 With 4 Hrs Back up |
| ▪ Space for Equipment Mounting & Batteries | ▪ Base mount with Bottom Cable entry |

Application:

- Smart City Surveillance, Intelligent Traffic management.

Advantages:

- One stop solution, Multi outputs connection. Remote Monitoring through LAN.
- Deployed 800nos of Junction boxes in Nagpur city
- Remote monitoring with help of SNMP.
- Remote access control.
- POE cameras. FTZ & Fixed type
- Wifi hot spot
- Environment monitoring.
- Scalable solution



100% OF FORTUNE 500 COMPANIES RELY ON US TO PROTECT THEIR CRITICAL INFRASTRUCTURE



Top Customers in India

Telecom												
Information Technology												
Banking/ Finance												
Government / PSU												
Industrial												



CIO Choice 2014

- Integrated Data Center Solution
- ICT Infrastructure Cooling
- Data Center Infrastructure Management



2014
Best Power Management
Company



CIO Choice 2013

- Data Center UPS
- Data Center Cooling
- Rack Power Distribution
- Infrastructure Appliance



2014
#1 in Channel Satisfaction
Survey

- 2013 Best UPS Company, SME Channel
- 2010 Frost & Sullivan Market Leadership Award

Voice Of Customer UPS Award

- Most Preferred UPS Brands in- IT/ITeS, Manufacturing & Process Industry, Power, Oil & Gas Vertical
- Customer Service UPS Award More Than 20 kVA UPS Category



2013

& Many Such More ...

Thank You

