ConnectM
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ConnectM Corporate Overview

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Our Vision

To be a leading global M2M technology Solutions & Services company

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About Us

Key Facts

- 80+ Man years of M2M expertise
- 60,000+ assets managed by our M2M platform
  - Telecom Towers: 30,000 assets
  - Enterprise Buildings: 25,000 assets (3 Mn sq. ft. Energy Mgmt)
  - Others: Construction, Industrial, Utility, Fleet, Roads
- 30+ customers: 75% customers are big multinational corporations
- Winner of Logica's India Innovation Partner award
- Winner of IBM Smart Camp for innovative start-ups
- Patent pending technology
- Ready to use M2M frameworks and components.
- Global Investors: IDG, Sasken

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ConnectM Investors

Sasken Communication Technologies and IDG Ventures India

- Sasken is a Telecom R&D Services major
- 3500+ people, 200M$ in Revenue
- Listed on BSE and NSE in India

- 150M$ early stage VC Fund
- Global network of 220 invested companies, 1B$
- 9 companies in the India portfolio

ConnectM, Members of the Board

Rajiv Mody, Chairman of the Board

- Chairman and CEO, Sasken
- Founded Sasken in 1989
- Sasken is now a 200M$ public-listed company

Dr G Venkatesh

- Executive Director & CTO/CSO, Sasken
- His role at Sasken has spanned from Technology, Engineering, Telecom and as head of the Product Division of Sasken

Sudhir Sethi

- Founder, Chairman & Managing Director, IDG Ventures India
- Leading venture investor in technology space in India; On the Board of Global Indian VC Association and UTI Ventures; Member NASSCOM Regional Council; DQ “Top 10 IT Professional”; Red Herring Top 5 Venture Investor; Seed investor and Board Member Mindtree Consulting; Served on Board of Infotech Enterprises.

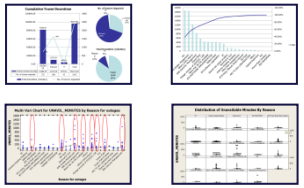
T C Meenakshisundaram

- Founder, Managing Director, IDG Ventures India
- Formerly, Chief Financial Officer and President of Corporate Services at Venture Infotek, a leading payments processing company in India

M2M Solutions Overview

Typical M2M Solution

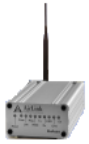
DG Set



ConnectMi
BUSINESS INTELLIGENCE ENGINE

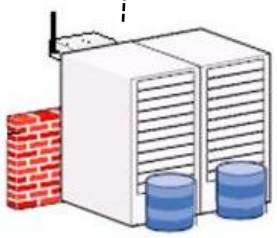
Integration to TOC, NOC

Telecom Tower



CONNECTM i DATA AGGREGATOR

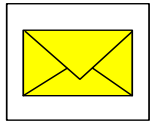
TCP/IP, GSM/GPRS



CONNECTM M2M PLATFORM

Web Application

Commercial & Industrial Complex

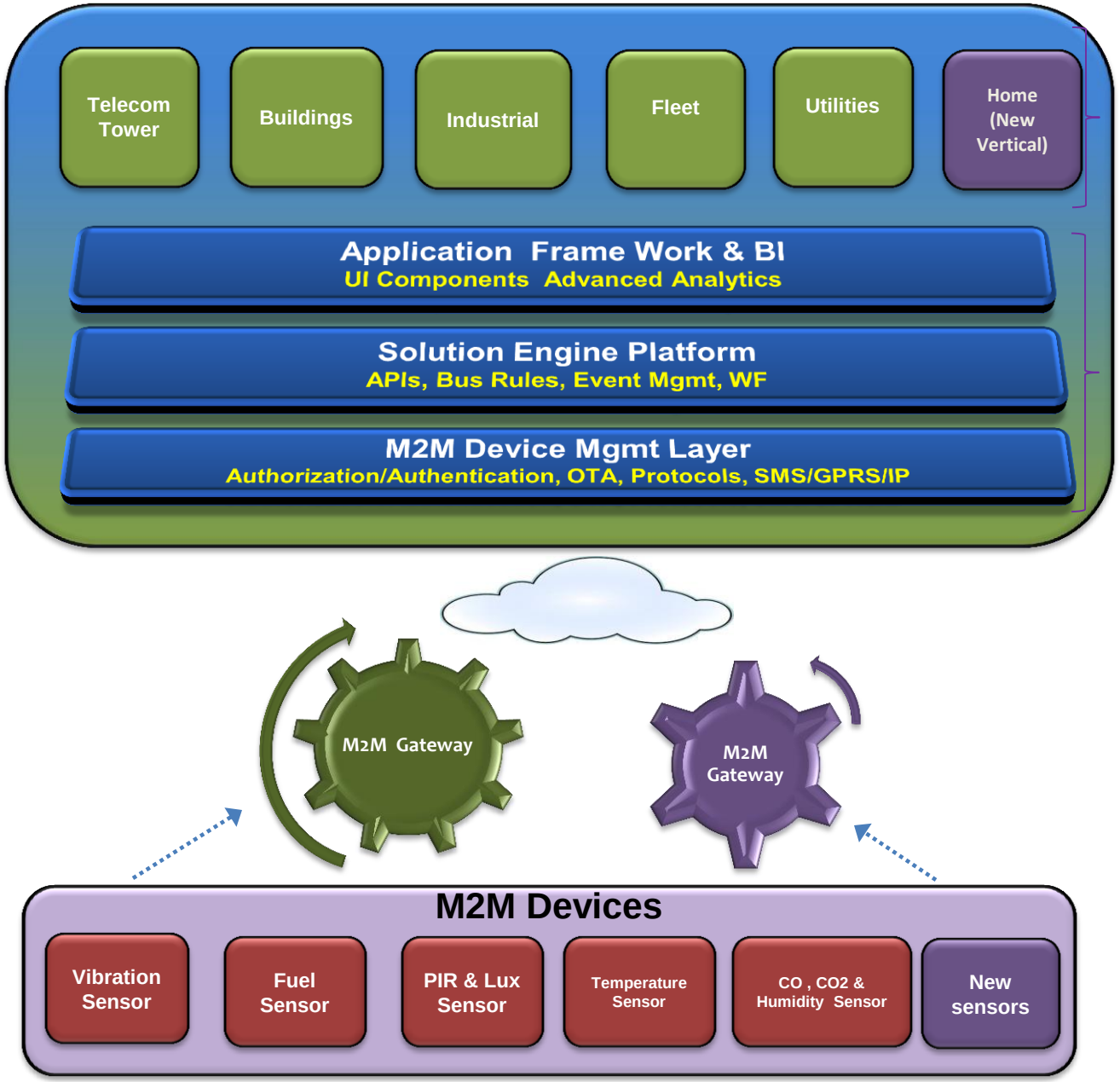


Mobile Apps, SMS & E-mail Alert Service

Enhance productivity | Improve utilization of assets | Maximize availability
Minimize operating cost | Optimise energy consumption

IRIS, ConnectMi are trademarks being considered for registration

ConnectM M2M Solution Offering Overview



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ConnectM – M2M Solution Platform

M2M Solution Platform & Technology Stack

- *Message Queue*
- *Data logging*
- *Remote Configuration*
- *Device Protocols*
- *Command Controls*

- *Security*
- *TimeSync*
- *Acknowledgement*
- *Data load balance*
- *Multithreaded*
- *Multi-protocol*

- *Rule Engine*
- *Report Engine*
- *Workflow Engine*
- *Notification service*
- *Diagnostic*
- *BI Engine*

- *Location Management*
- *User Management*
- *Dynamic reporting Tool*
- *Trouble Ticket*
- *Asset data store*

M2M Gateway:

- Sierra Wireless Modem for GSM/GPRS
- ARM,PIC and Atmel(Microcontroller)
- ZigBee for wireless Communication

Platform & Application:

- SOA Governance
- Platform agnostic to middleware's technologies
- Built on Java, JEE
- ESB - message-oriented and event-driven integration

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M2M – Instrumentation Framework

- **Proven data acquisition modules using various sensors like:**
  - Fuel
  - Temperature, Humidity, CO, CO2
  - Energy Meters(AC&DC)
  - RFID Tags, I-Button
  - Digital Signals
  - Vibration
  - Battery Voltage/Current
  - Pressure, Flow
  - GPS
  - PIR , Lux
- **Reliable Data access using standard protocols MODBUS, CAN, PROFIBUS etc.,**
- **Focus on Innovative technology:**
  - Wireless sensor networking
- **Strong partner network for providing customized M2M requirements**

M2M Solutions

ConnectM portfolio of M2M Solutions

Industry Verticals

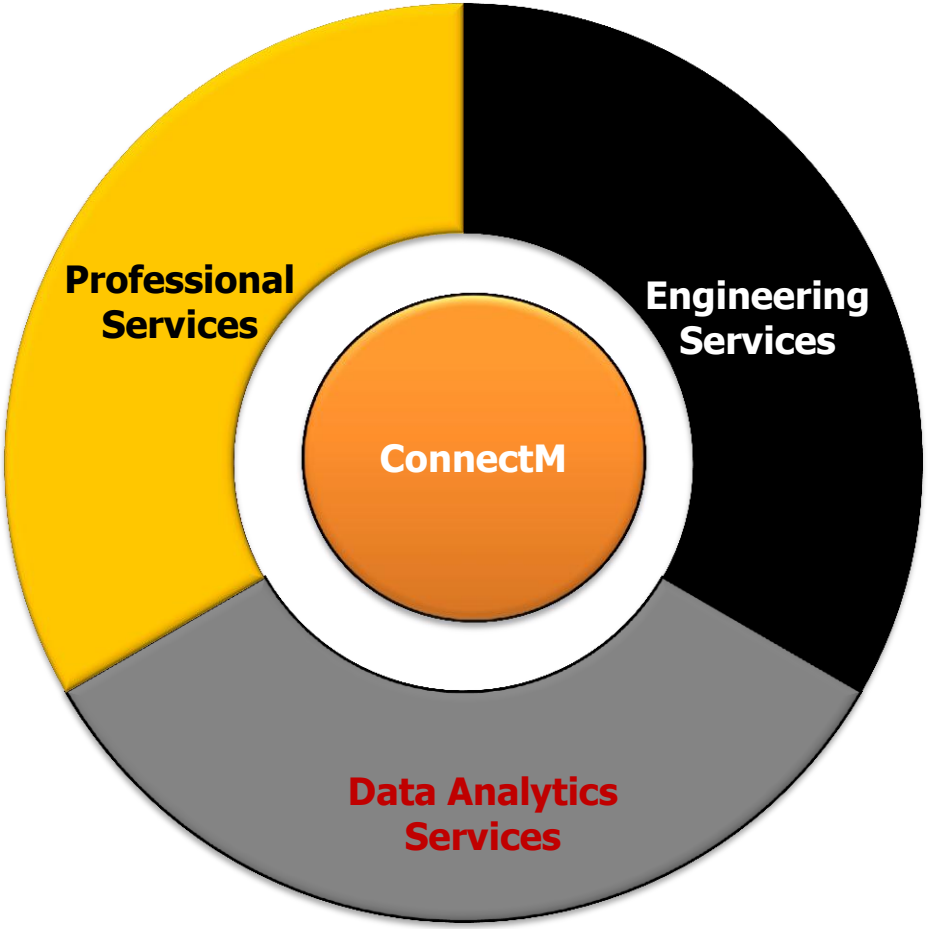
Construction		Packaging		Fleet		Home
	Telecom Towers		Banking		Highways	
Mechanical		Utilities		Office Buildings		

Readily Available Solutions

- Remote Monitoring of Telecom Towers
- Remote Monitoring of DG Set & Energy Management
- Remote Monitoring of UPS/Batteries
- Automated Meter Reading for Water, Energy and Gas meters
- Fleet Management Solution
- Remote Monitoring and Energy Management for Bank ATMs
- Wireless Energy – Building Management System (EBMS)
- Remote Monitoring of Industrial Assets (Cranes, Batching Plants, Chemical Plants)

M2M Services

M2M Services



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Professional Services

- **Data Management**
  - ✓ Data Hosting Services
  - ✓ Data Integration Services
  - ✓ Protocol Integration Services

- **Consulting & Implementation**
  - ✓ Architecture, Sizing, Deployment strategy
  - ✓ Platform & Application customization services
  - ✓ Energy Audits
  - ✓ Implementation Services

- **ODC Services**
  - ✓ Shared ODC
  - ✓ Dedicated ODC

- **Managed Services**
  - ✓ 24x7 Control Room Manning

- **Trainings**
  - ✓ Standard Classroom
  - ✓ Customized Courses

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Technical Competency Matrix

M2M Solutions

Energy Management
- Wireless ems
- Wireless Energy management System
- Enthalpy Free cooling system
- e-Metering

Remote Monitoring
- Telecom Tower Monitoring
- DG Monitoring
- UPS & Server room Monitoring
- Industrial Crane Monitoring, SCADA

Application

Languages & Framework
- ✓ Java
- ✓ Spring
- ✓ JEE, EJB
- ✓ Struts
- ✓ JSP
- ✓ JS, HTML
- ✓ Servlets
- ✓ Hibernate

Integration & network framework
- ✓ Javax.comm
- ✓ JMS
- ✓ Jamod
- ✓ REST, SOAP
- ✓ java.net
- ✓ ESB , SOA
- ✓ SNMP4J
- ✓ SMTP

Middleware
- ✓ WEB2.0:AJAX,AdobeFlex, BlazeDS
- ✓ Application servers : WAS, JBoss
- ✓ BI, Reports: BRIT, Pentaho, Jasper
- ✓ Database : MySql, DB2
- ✓ Drools, Quartz, JQuery, etc..

Embedded

Comm. Protocol
- ✓ GSM,GPRS
- ✓ TCP/IP,FTP
- ✓ MODBUS
- ✓ ZigBee
- ✓ RS232,RS485
- ✓ I2C, SPI

Platform
- ✓ Wavecom
- ✓ ARM9
- ✓ PIC24
- ✓ PIC16

IDE
- ✓ VC++
- ✓ Eclipse
- ✓ MPLAB
- ✓ Keil C

Device Driver
- ✓ RTC
- ✓ SD card
- ✓ EEPROM
- ✓ Dual SIM
- ✓ ADC
- ✓ LCD
- ✓ Keypad
- ✓ GSM, GPRS and GPS Modem

Sensor Integration

Sensors
- ✓ Fuel
- ✓ Motion
- ✓ Vibration
- ✓ Lux
- ✓ Temperature
- ✓ CO2
- ✓ Smoke
- ✓ CO
- ✓ Proximity
- ✓ Humidity
- ✓ Read Switch
- ✓ Limit Switch

RS485 Devices
- ✓ AC Energy Meter
- ✓ RFID
- ✓ DC Energy Meter
- ✓ PLC
- ✓ Free Cooling Unit
- ✓ VFD
- ✓ Glo Master
- ✓ VAV
- ✓ Battery Monitoring

Devices
- ✓ Button (One wire Communication)
- ✓ Door lock interface
- ✓ Camera interface

Engineering Services

- ✓ Solution Design and Development
  - ✓ Application Software
  - ✓ Embedded Software
- ✓ Validation and Verification
- ✓Ready to use M2M frameworks and components:
  - ✓M2M data store
  - ✓Data acquisition via Socket, SMS, MQ, SNMP, REST
  - ✓Event Processing Engine
  - ✓Rules Management
  - ✓Workflow Management
  - ✓Asset Management
  - ✓Alert Notification (SMS/Email/IVRS)
  - ✓Trouble Ticketing
  - ✓Rich and interactive dashboards

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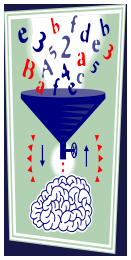
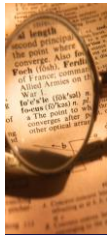
Analytics - Data Driven Decision Making

Analytics Solution – Superior Value Proposition



Extract all relevant data from equipment and systems



Validate data to ensure accuracy and completeness

Cleanse data to eliminate discrepancies

Classify data to a common taxonomy

Enhance data with related information

Analyse data to prepare relevant reports and identify trends

- Data Management
- Alerts
- Reports & Dashboards
- What if Analysis
- Trends / Patterns
- Forecasting

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ConnectM Differentiators

Why ConnectM

Commitment & Focus

- Strong investor support – Sasken, IDG Ventures
- Experienced management team.
- ConnectM is a pure-play M2M company.

People, Technology, Innovation & Scalability

- Team with 100+ ManYears of M2M technology expertise
- Innovation-led adaptive approach to changing business & technology needs.
- Innovative Application Framework to quickly build new applications
- Have a roadmap for building new applications/solutions
- Technology agnostic – open architecture, integrating best-in-class across multiple vendors.
- Can connect seamlessly with a variety of Field Devices and Gateways
- Scalable Software Platform
- Ecosystem Partnerships

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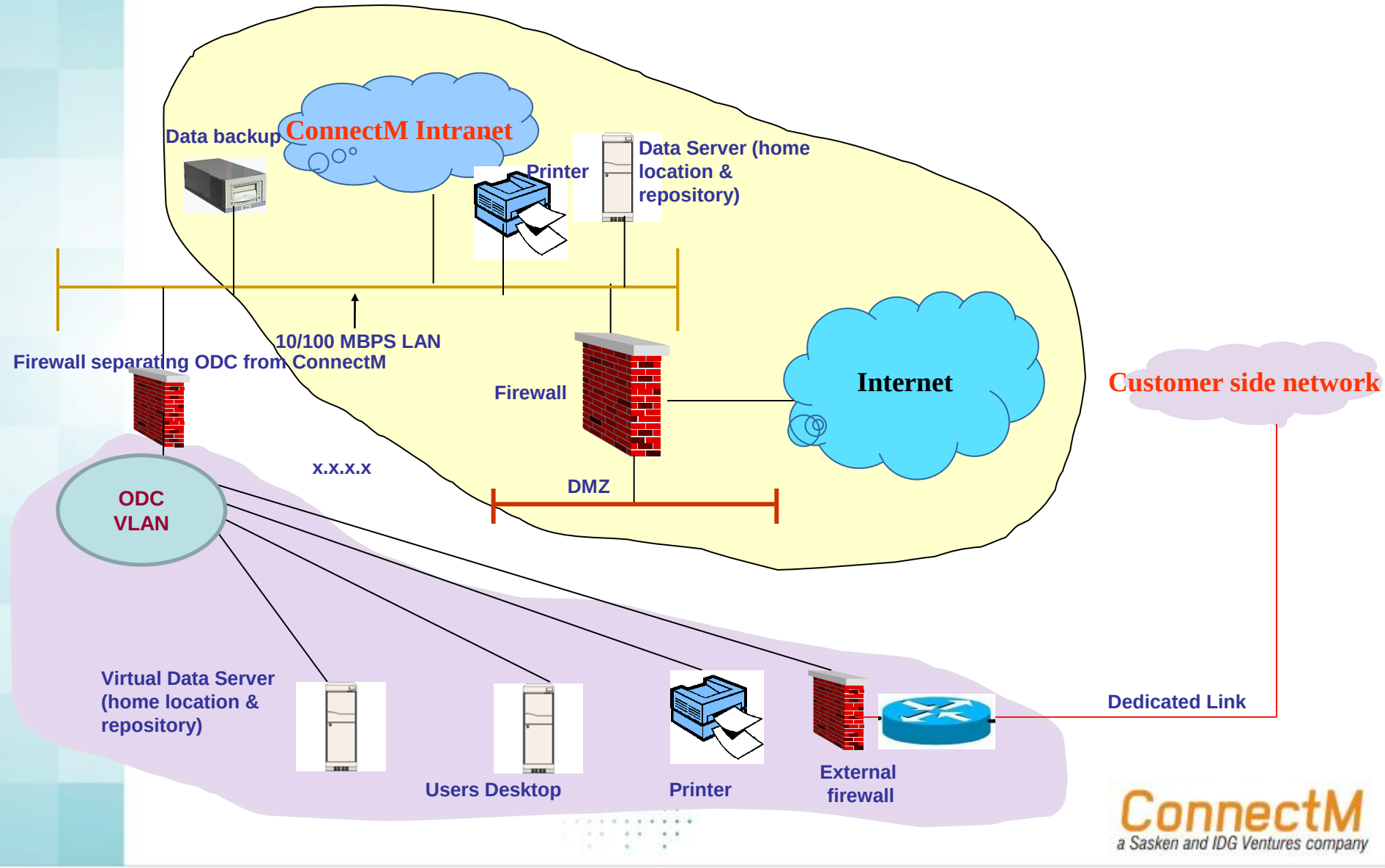
Offshore Development Centre (ODC) - Operating Models

Secure ODC Model with Shared Infrastructure



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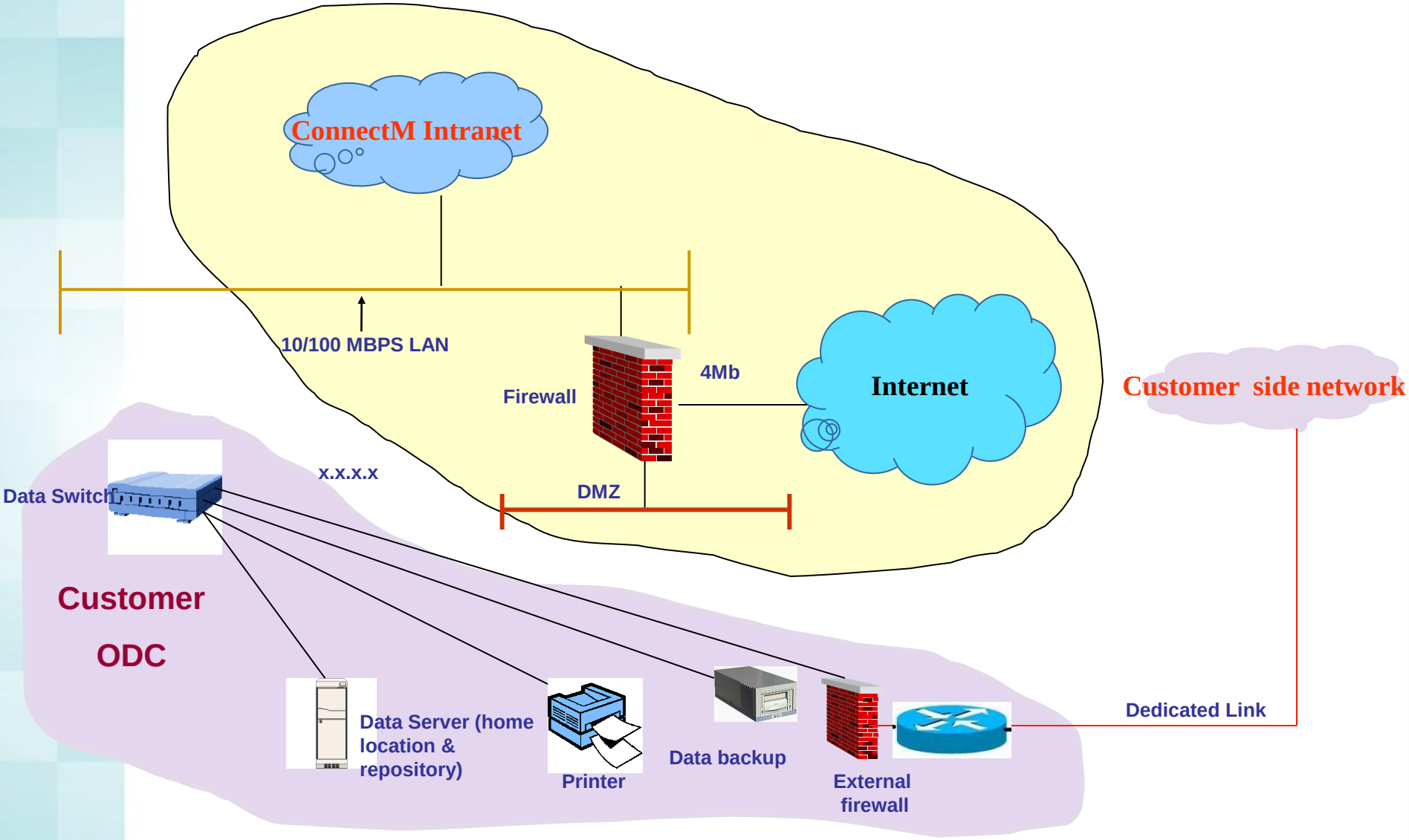
Features – Shared Infrastructure

- ODC will have virtualized infrastructure with the security features of that of Isolated ODC.
- The developers in the ODC can connect to ConnectM network for accessing email, MIS, HR systems, and internet.
- ConnectM team cannot log on /access the ODC network logically

Secure ODC with dedicated Infrastructure



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Features – Dedicated Infrastructure

- ODC will have Dedicated infrastructure within the Isolated ODC.

- The developers in the ODC can connect to ConnectM network for accessing email, MIS, HR systems only through external VPN link (If Internet is provided by Customer)

- ConnectM team cannot log on /access the ODC network logically /physically

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ODC features

- Infrastructure
  - Gigabit LAN
  - 1 data and 1 voice per desktop
  - Layer 3 /Layer 2 Managed Switches
  - Intel Desktops
  - Operating System: License To be supplied by Client as applicable
  - One telephone connection per 4 seats

Secured IT environment

- Antivirus at the gateway and each desktops
- Firewall protection
- Multiple level of security for ODC and Corporate network
- Zoned access controlled project area for the size more than 25 developers
- Surveillance camera for the work zone for the size more than 25 developers

IP protection

- Controlled IT environment
- Data protection at end-user level (disabled USB/ CD writer/Removable media)
- File level ACL's for data repository
- Data Encryption if applicable
- Encryption for Note books

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ODC features

Services

SLA based IT services
8x5 monitored infrastructure
Fortnightly reviews of SLA's

Business Continuity

- Data backup (weekly, monthly)
- Offsite data vaulting - Optional
- Project archrivals
- High Availability for Critical services (servers, links if applicable)
- High Availability for Power
- Disk redundancy on the servers, with RAID levels
- Synchronization to client site (if applicable)

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Additional Services offered

- ✓Technical Consultancy
- ✓ Information Security Management
- ✓ Storage Management
- ✓ Backup Services
- ✓ Vendor Management Services
- ✓ Configuration Management
- ✓ Server Management
- ✓ OS Admin
- ✓ Help Desk Services
- ✓ Desktop Support
- ✓ Linux Support
- ✓Third Party Security Audits

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Solution Case Studies

Remote Monitoring of Telecom Towers

Base Transceiver Station

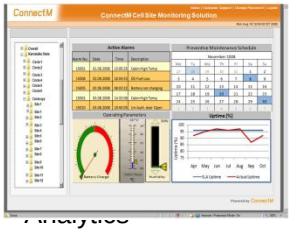
Air Conditioner

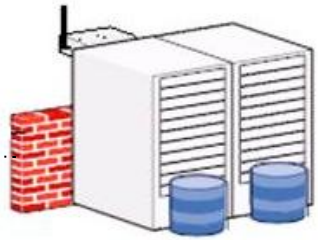
DG Set

Battery

Communication Module

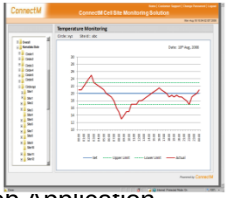
TCP/IP, GSM/GPRS



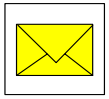


Solution Engine
Analytics Engine

Integration to ERP



Web Application



SMS & E-mail Alert Service

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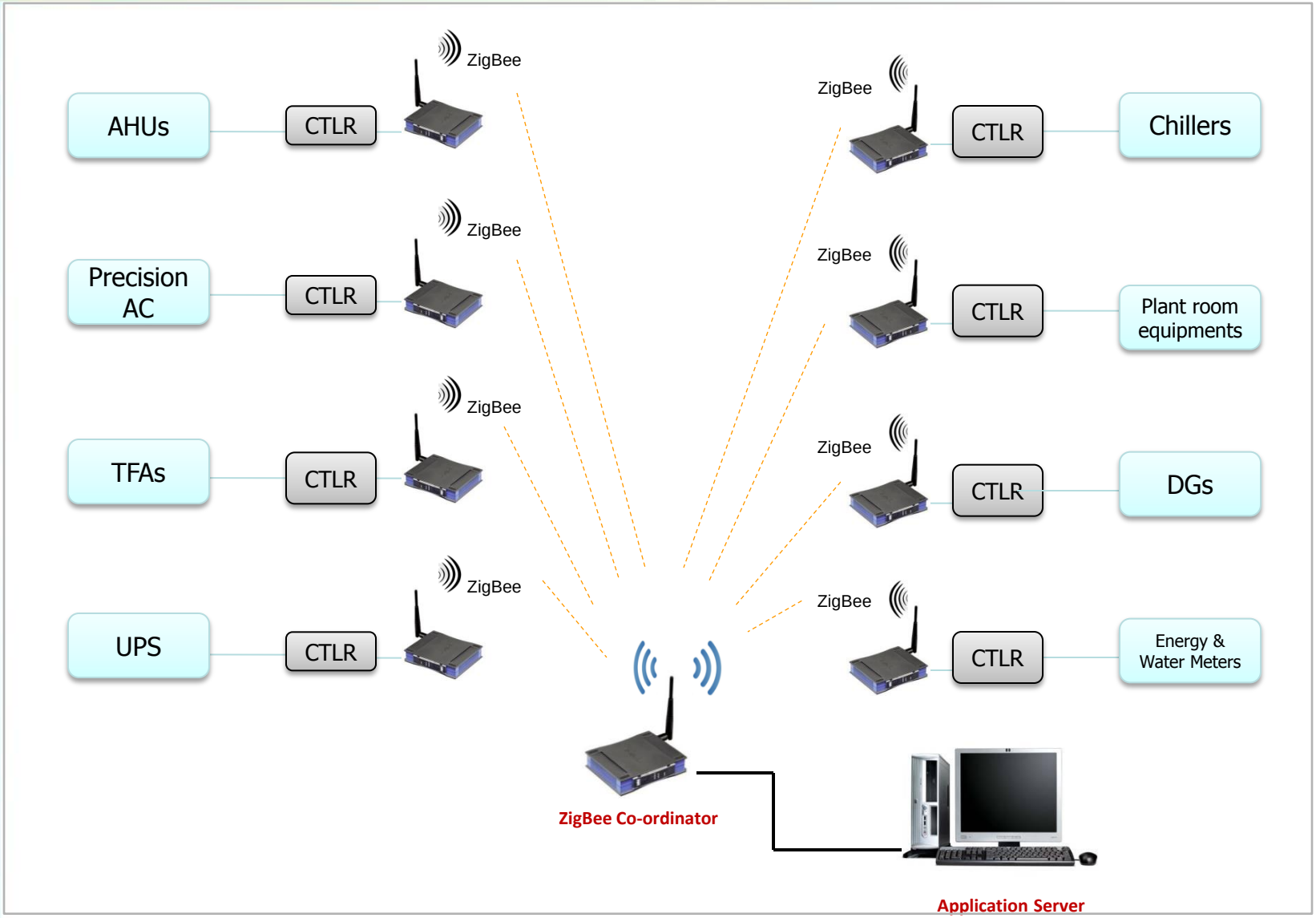
Wireless EMS System Architecture



Note:

1. Each Controller (CTLR) has its own in-built I/Os and necessary communication ports

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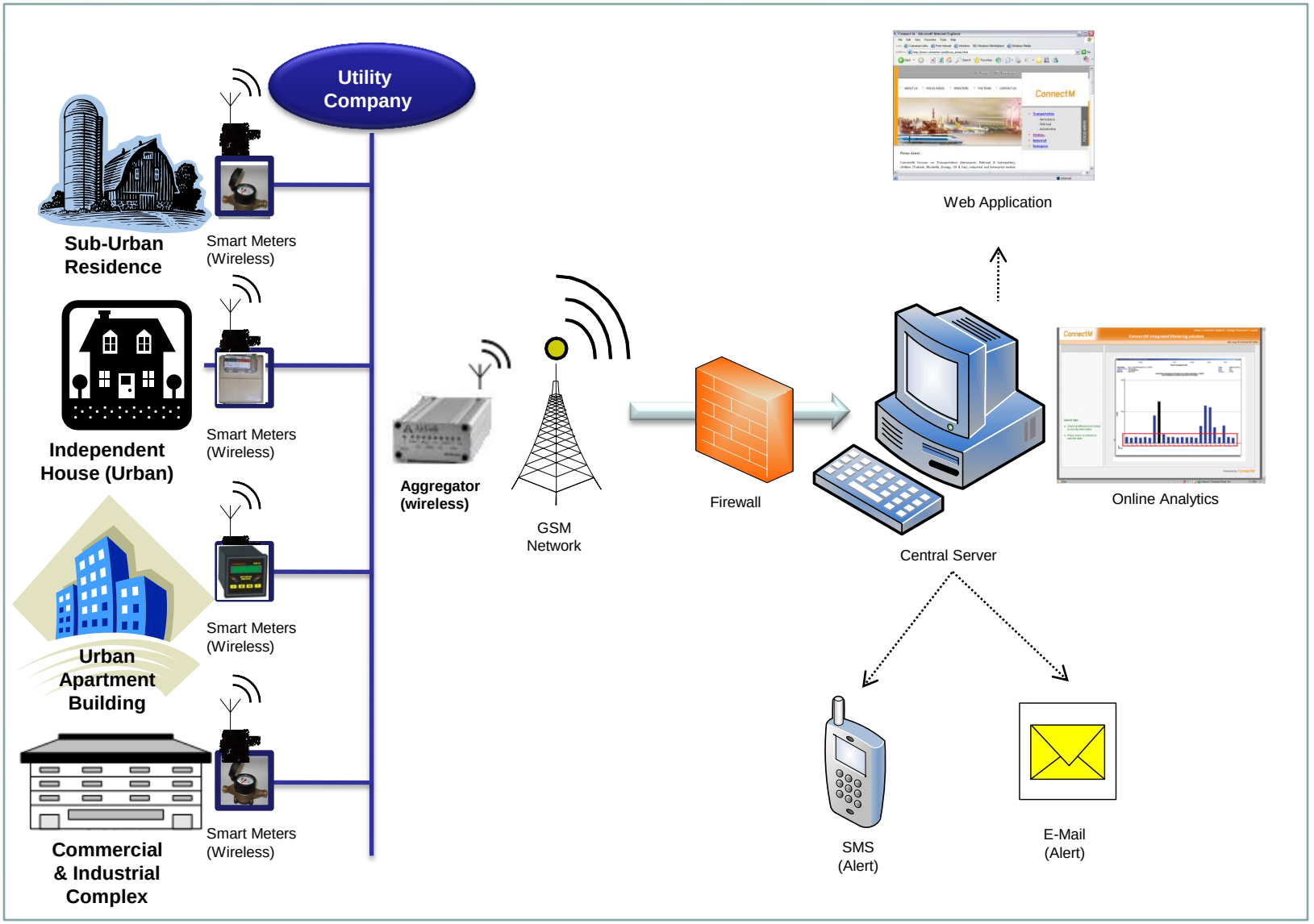
Automated Meter Reading for Water, Energy and Gas meters



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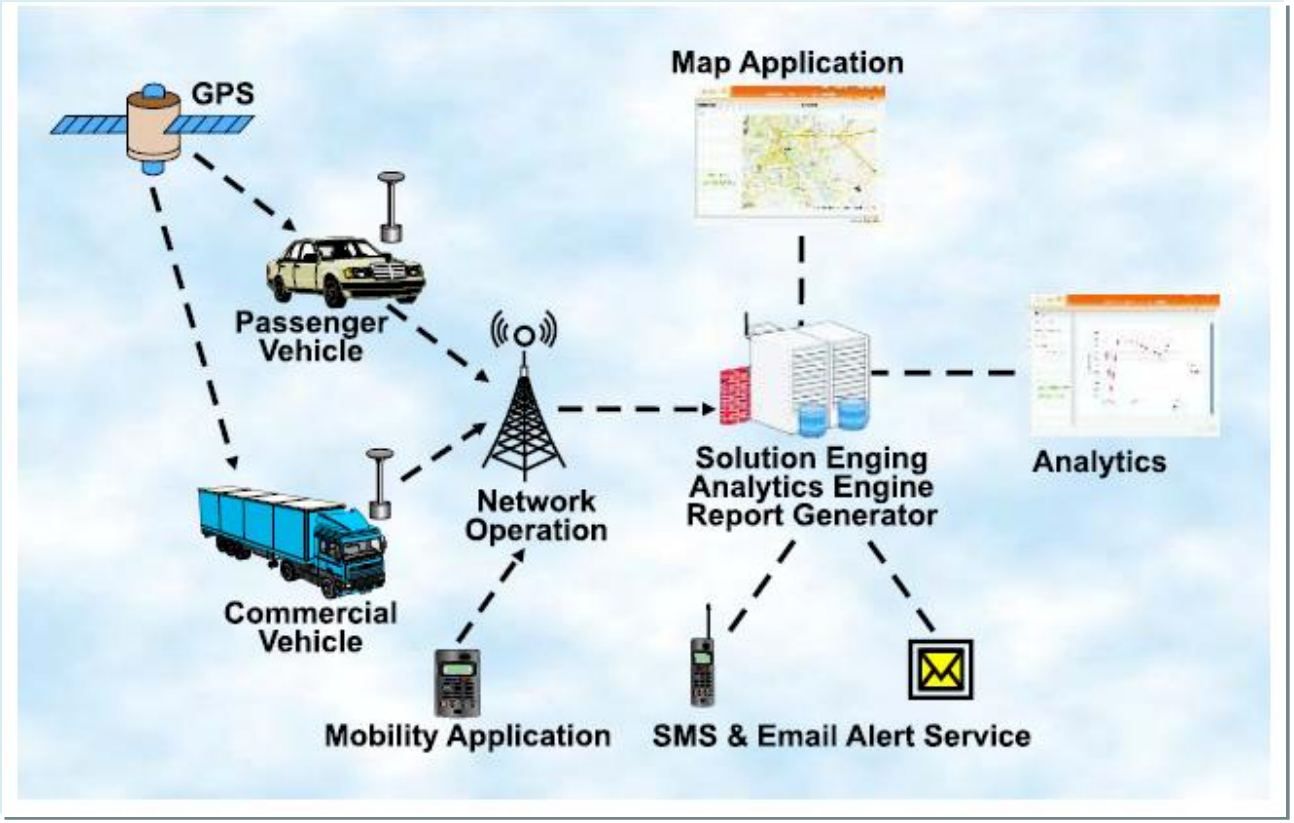
Customized Fleet Management Solution



Transport Vertical:

1. Fleet in Mining Industry
2. Public Road Transport
3. Fleet of Refrigerated Trucks with condition monitoring of goods in transit

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Remote Monitoring of DG Set Energy Management

- DG sets operate on expensive fuel, the cost of power generated out of DG set is more than double the cost of EB power. Hence DG set efficiency has a significant impact on monthly energy bills even if they are operating for a very small period of time.

- DG Set Energy Management Modules monitors,

✓ DG Set energy generation monitoring
✓ DG set fuel consumption
✓ Specific fuel consumption of DG Sets to know Power generated per lit of fuel used. DG Set efficiency monitoring
✓ DG Set fuel tank level indicator

Benefit to User :

1. Monitoring of DG set efficiency on real time. Minimize minimize monetary impact of inefficiency of DG Sets

2. AMCs of the equipment can be performance based that just being a functional AMC

3. On availability of third party integration card other parameters can also be remotely integrated

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UPS Remote Monitoring

- Uninterrupted power supply system play a very important role to provide uninterrupted back-up power for critical areas in buildings.

- Their monitoring for operation and performance parameters is important to ensure maximum availability and low O&M costs.

- The UPS monitoring module includes monitoring of operating parameters like,

✓ Voltage and frequency
✓ % Loading
✓ Temperature in the area
✓ Health monitoring & Predictive Diagnostics
✓A third party integration card is required for this purpose

Benefit to User :

1. Monitoring operating parameters and alarms for UPS using Modbus or SNMP communication hardware.

2. Predictive Diagnostics on UPS helps avoid major break-downs

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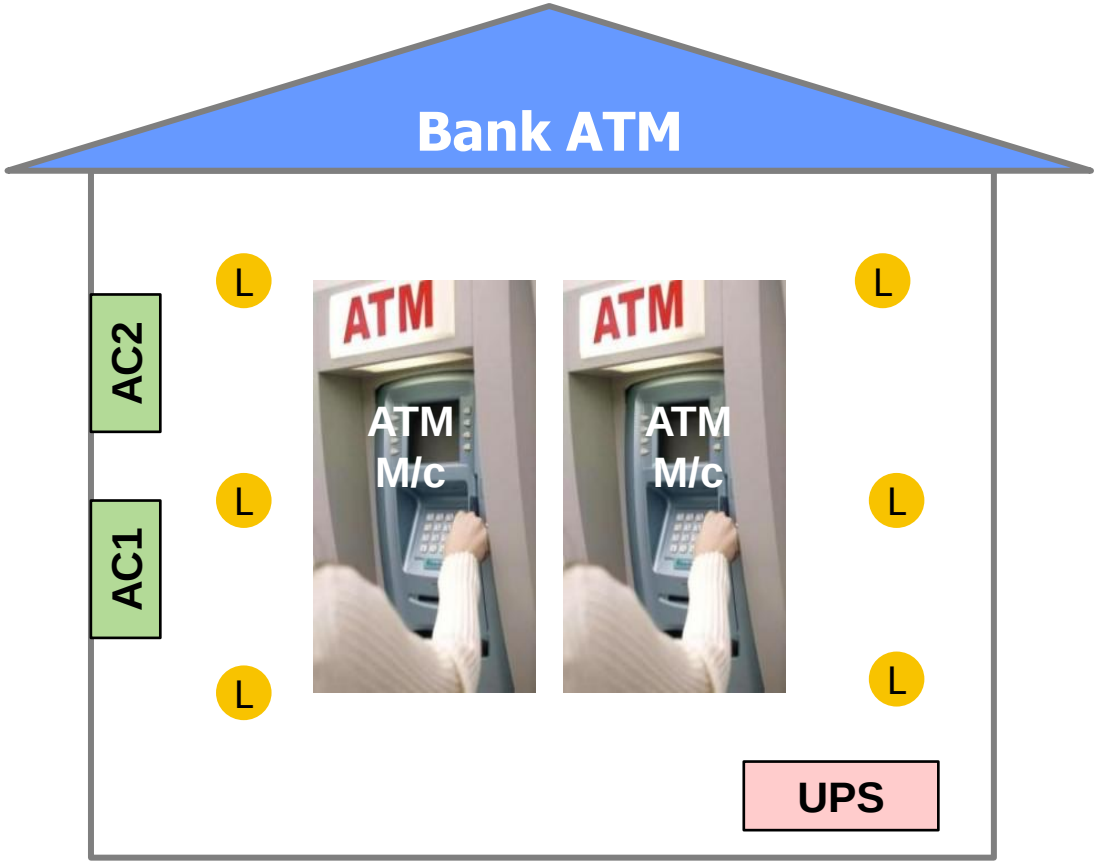
Remote Monitoring and Energy Management for Bank ATMs



- UPS & UPS Battery Bank Monitoring for ATM uptime
- Do all AC's need to run 24 x7 ?
- Do all Lights need to run 24 x 7 ?

AC – Split AC in ATMs
L – CFL Lamps in ATMs

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Wireless Energy – Building Management System (EBMS)

Office Buildings & BFSI segment :

1. DG Sets
2. UPS in Critical Applications
3. Chillers
4. Lighting
5. HVAC Assets

(Management of all energy consuming assets in buildings)

Remote Branch office Infrastructure Management for Banks & Insurance companies

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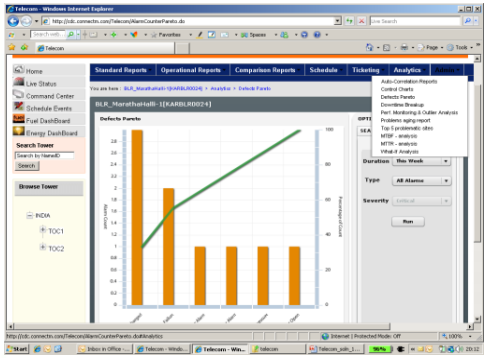
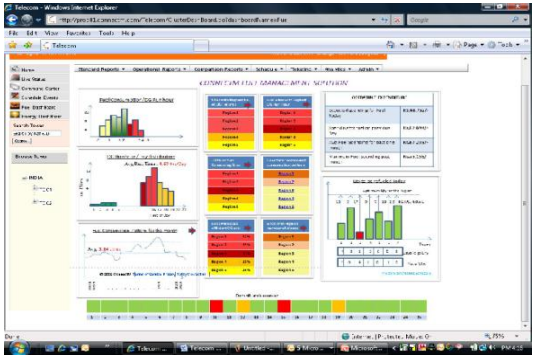
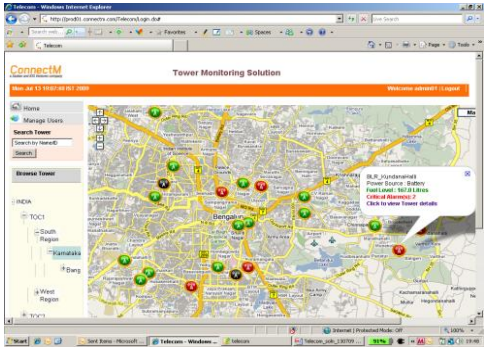
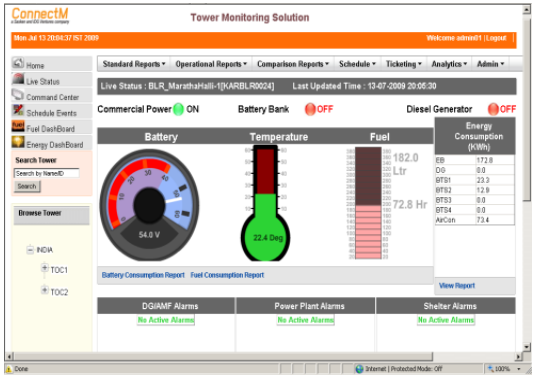
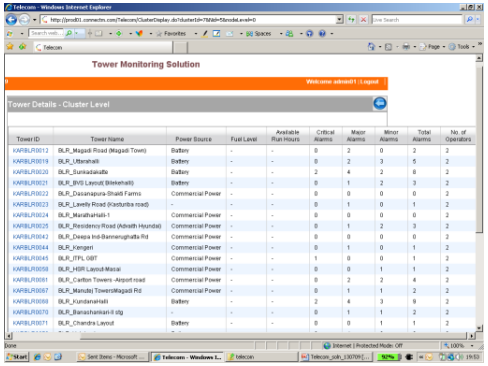
M2M Sample Reports/Dashboards

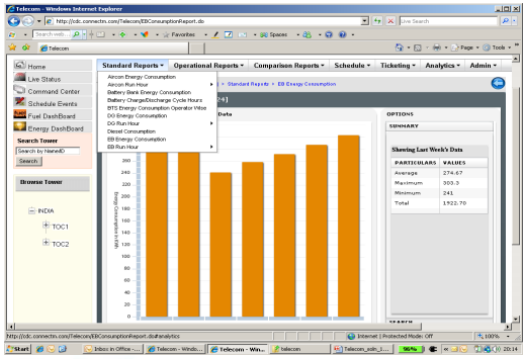


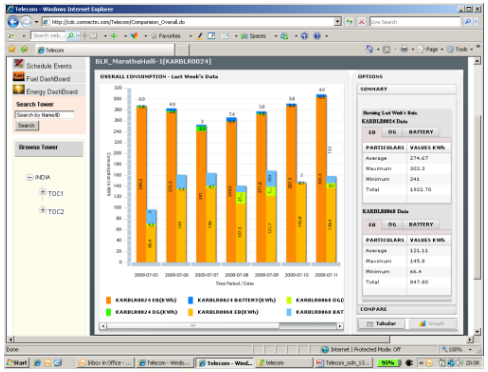












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Thank You

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