
THE
LEADERS IN
PREPAYMENT
SOLUTIONS
CONLOG
Solutions for u

COMPANY OVERVIEW: CIG

Consolidated Infrastructure Group Limited

Diversified capabilities, strength to deliver

CIG: Overview of the Group and its Subsidiaries

External Corporate Profile 2017








4 divisions focused on addressing infrastructure gap

1 Power

Market: Power sector in Sub-Saharan Africa continues to gain steam due to its impact on development

Assessment:

- SA had been the leading, most consistent market for power infrastructure until recently
- Needs for investment across the value chain across all of Africa (generation, transmission, distribution)
- CIG group companies seek to support governments in their efforts to improve the sector

2 Building Materials

Market: CIG focused on the South African market only, more specifically Gauteng

Assessment:

- Market has been sluggish over the past few years due to political uncertainty
- Building Materials has been able to outmaneuver competitors though shrewd operational decision making
- Large deficit in housing, roads across SSA

3 Oil & Gas Waste Management

Market: CIG efforts limited to Angola, despite presence of mature O&G sector in other countries across SSA

Assessment:

- Waste management standards somewhat self-policed by credible international oil companies
- Services could prove to be useful in other markets
- Low oil prices not directly impacting potential to offer services

4 Rail

Market: Rail represents under-penetrated opportunity across the continent given meager intra-Africa trade

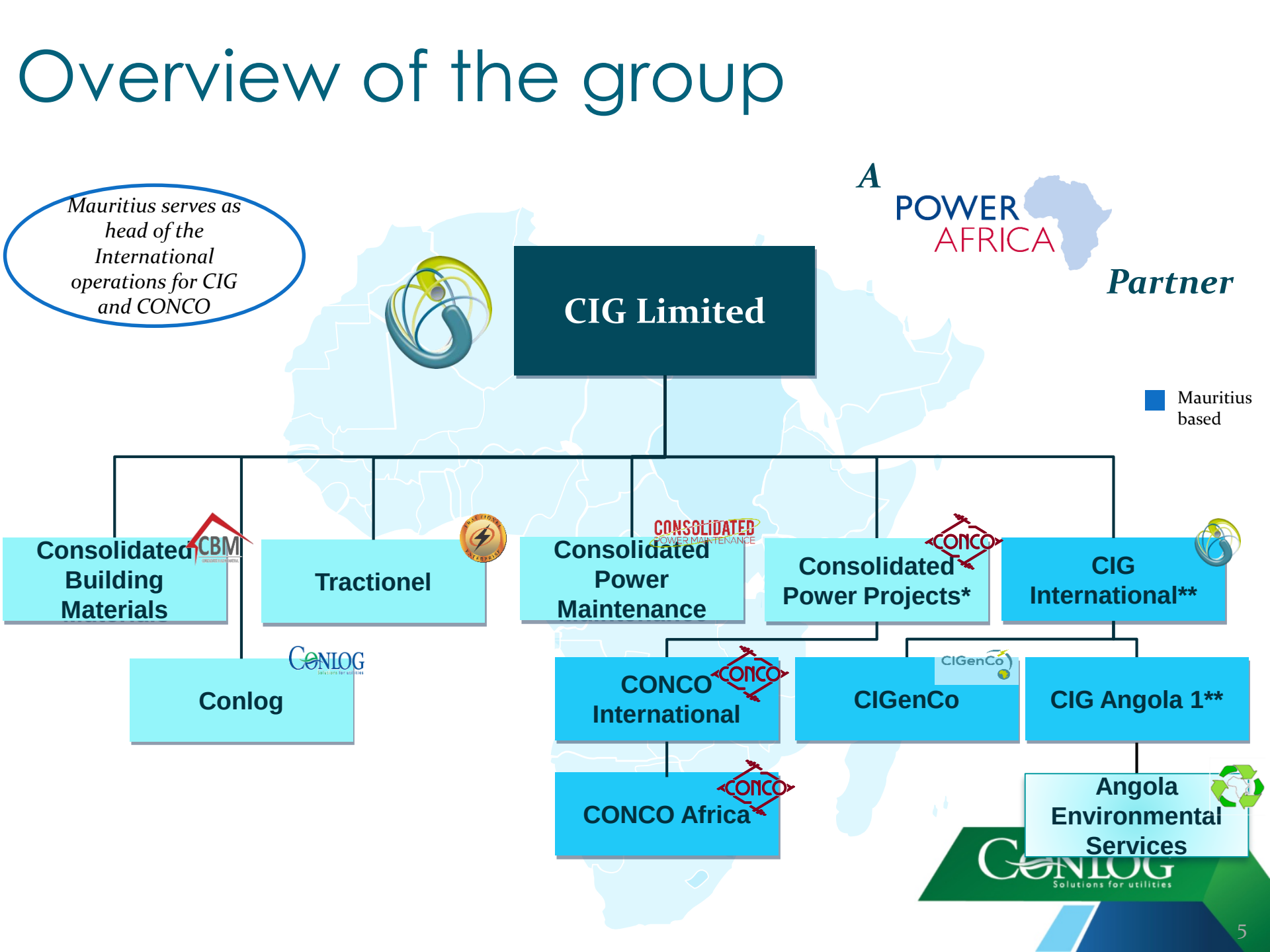
Assessment:

- Tractionel focuses on electrified rail, where there is less opportunity across SSA. However, there are signs the electrified rail sector will increase
- Working within consortiums provides additional opportunity for CIG

Overview of the group

Mauritius serves as head of the International operations for CIG and CONCO

A POWER AFRICA Partner



CIG footprint

Two main offices located in Johannesburg, South Africa and Ebene, Mauritius (International)

Looking forward…

- *Accelerate growth by applying strategic, operational and financial levers to navigate market conditions and outperform competition*
- *Seek and acquire infrastructure companies and projects which can significantly enhance the value of the group, strategically and financially*
- *Build a group support structure which extends reach, adds management capacity to subsidiaries and properly "stabilizes" new investments; making the whole greater than the sum of its parts*

COMPANY OVERVIEW: CONLOG

WHO IS "CONLOG"?

Conlog is an indigenous local manufacturer of metering solutions with a proud 50 year history

Conlog is recognised as a premium brand in the prepayment metering markets, both locally and internationally

Renowned for entrepreneurship and innovation

Holds in excess of 100 patents and trademarks - world firsts for prepayment

Vision, Mission & Values

OUR VISION

To enable our customers to manage their energy to be effective and efficient by providing holistic solutions, ultimately to improve the quality of life for All.

OUR MISSION

We are a metering company offering holistic solutions to Utilities to improve efficiencies in energy management, through quality products and services, by conducting ourselves in an open, transparent and ethical business manager.

OUR VALUES

- Passionate & Committed
- Innovative & Curious
- Trust & Openness
- Teamwork & Integrity

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Core Competencies

- Markets & Business
- Research, Development & Innovation
- Key Business Controls
- Agile Manufacturing Capability

Value Proposition

Conlog inno ent that is
unpinned l solution.

THE OFFER

Revenue Collection & Protection including Arrears & Tariff Management

Funding Models Business Enablement

Satelite Manufacturing Local added Value

Work Flow Management for Operational Efficiency

Efficient Grid Management with Load Limiting Capabilities

Access to Energy Solutions

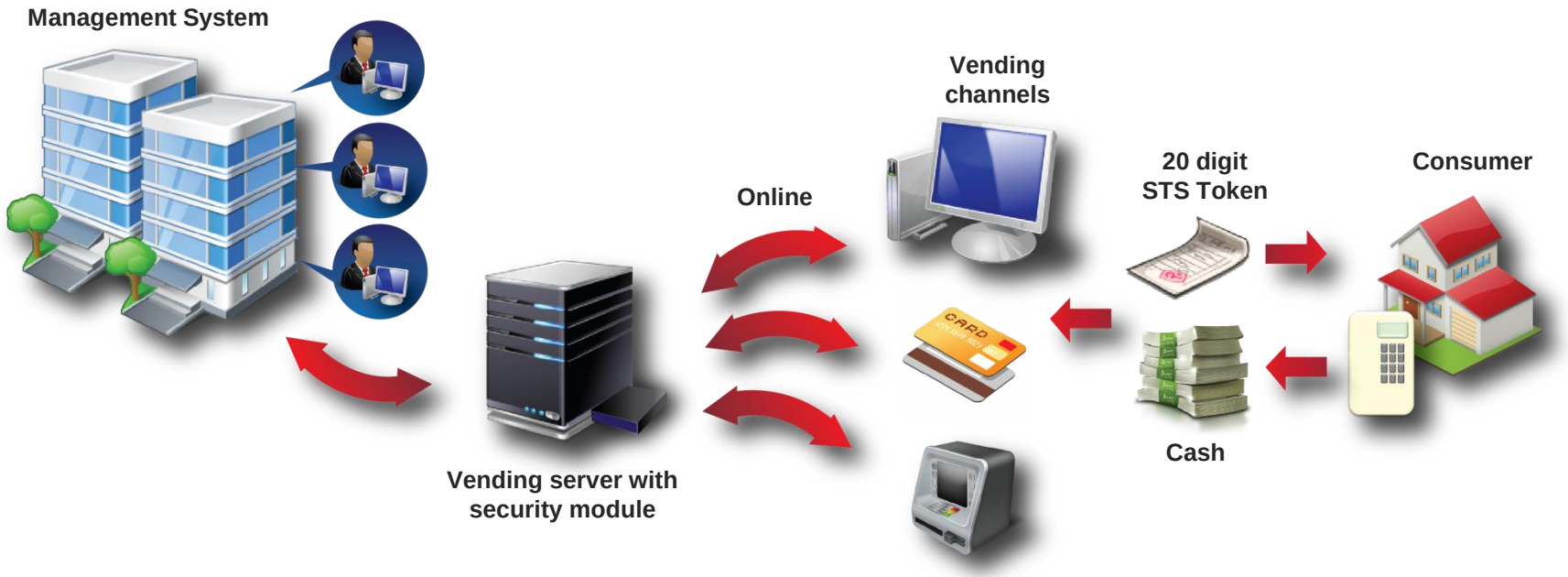
Third Party Vending and Mobile Vending

Asset Management for Monitoring

IT System Solutions

Business Intelligence supported by Analytics and Dynamic Reporting

The prepayment business in brief



BUSINESS MODEL

- Revenue Protection
- Revenue Collection
- Enable Utilities to become Cash Flush
- Self-funding means to support Electricity Rates

ENERGY MANAGEMENT

- Efficient Grid Management
- Load Limiting Capabilities
- Reconnect protects Utility Assets
- Detection of Illegal Connections

CUSTOMER FOCUS

- Utility Back Office efficiency enhanced
- Convenience for End User
- Access to Energy for End User
- Improves Electrification Rules

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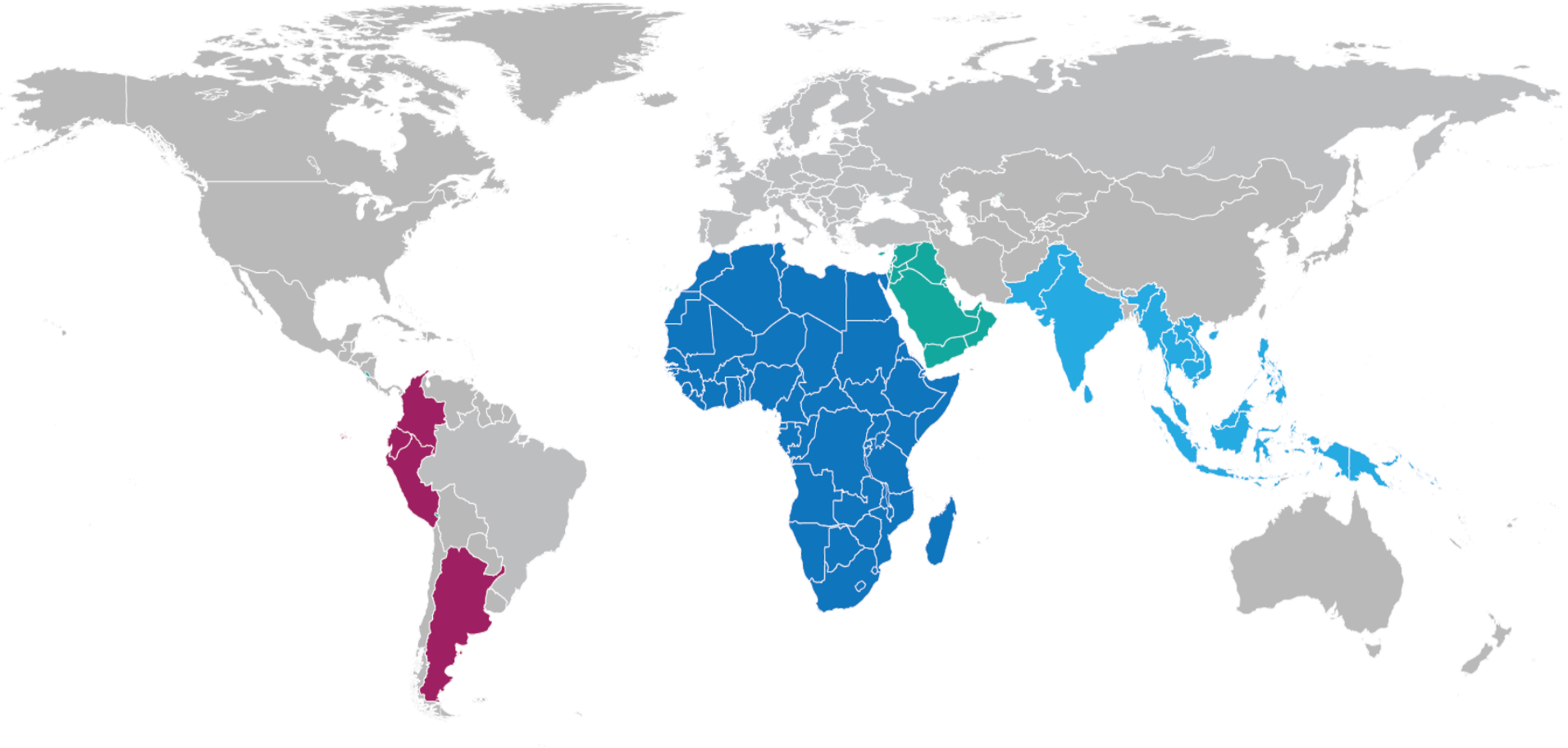
MARKET OVERVIEW

Target Markets



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Market Segments

UTILITY ELECTRICITY METERING

- Prepaid Meters
- Post-paid Meters
- Vending Solutions

PROPERTY MANAGEMENT

- Private Residential
- Complexes
- Shopping Centres

RENEWABLE SOLUTIONS

- Micro Grids
- Nano Grids

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Market Drivers for Utilities

- Avoiding bad debt
- Improving cash flow
- Reducing need to track deposits
- Reducing paperwork
- Improving customer satisfaction
- Reducing call center volumes
- Reducing theft of service and fraud
- Reducing employee risk

CURRENT PRODUCT OFFER

Product Categories

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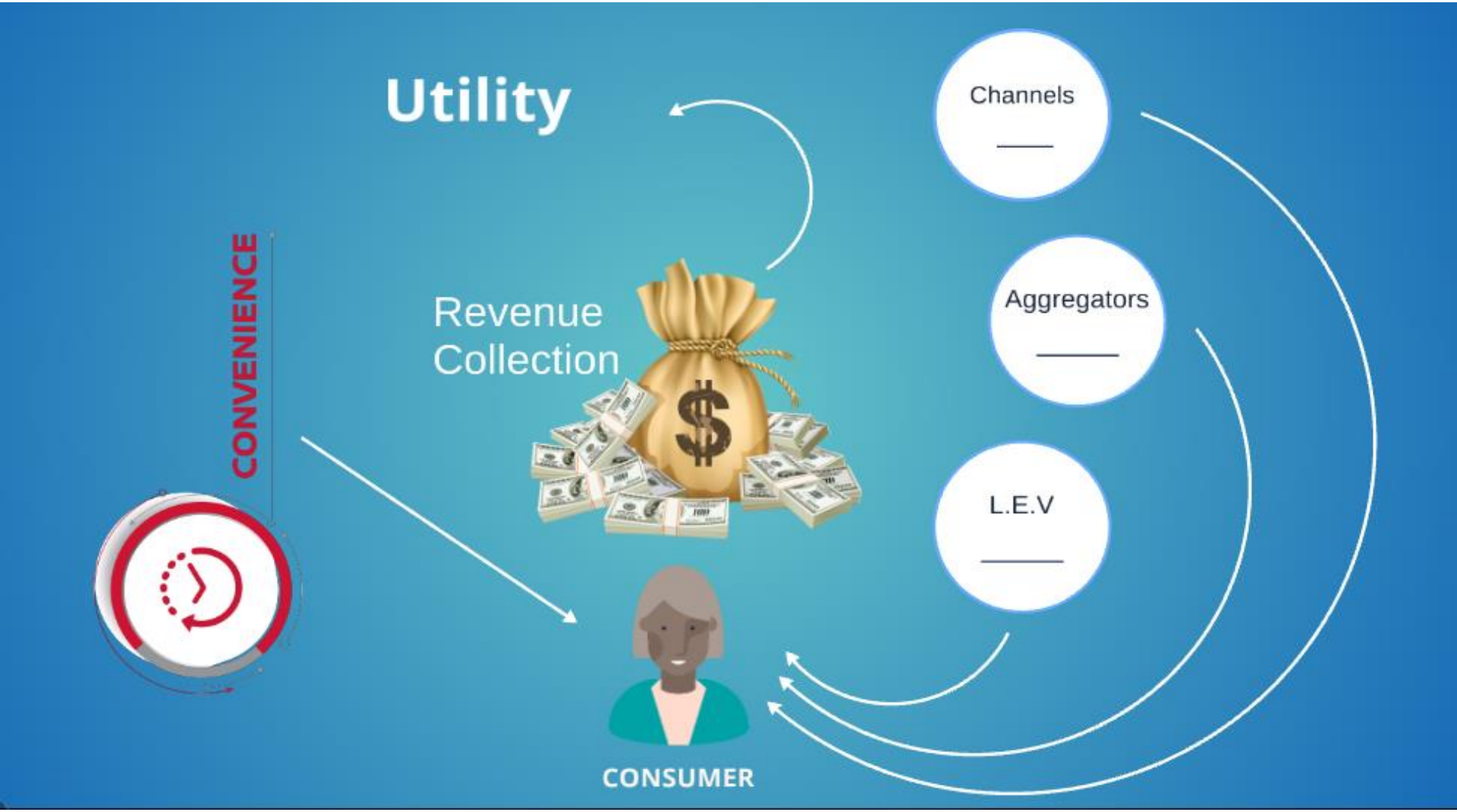
Revenue Management - Information

A Revenue Management System offers prepaid electricity vending management functions.

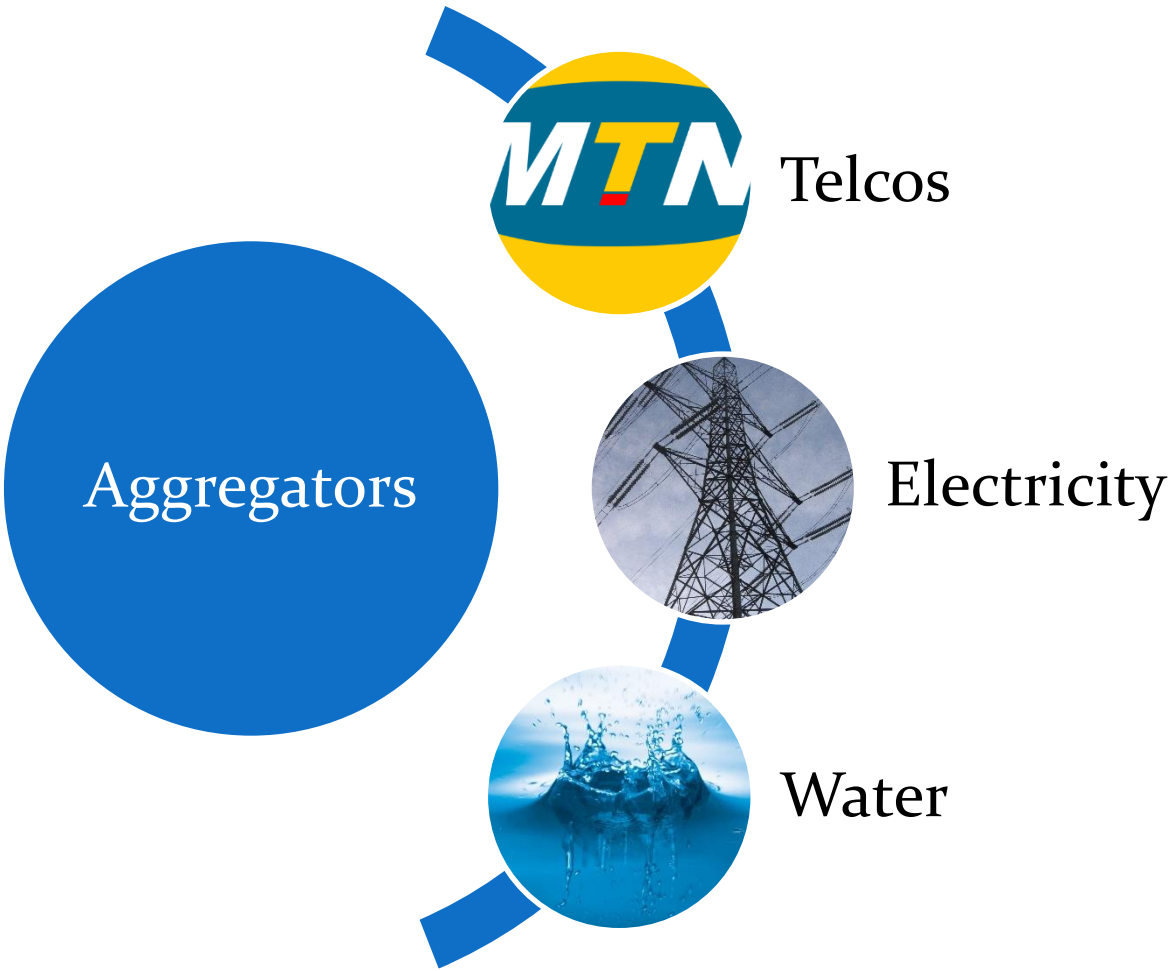
Revenue Management – System View

Revenue Collection



Revenue Collection - Channels

Revenue Collection - Aggregators



Revenue Collection - LEV

Local Economic Value

Merchants

Revenue Protection

- Tamper Detection
- Predictive Analytics
- Metering

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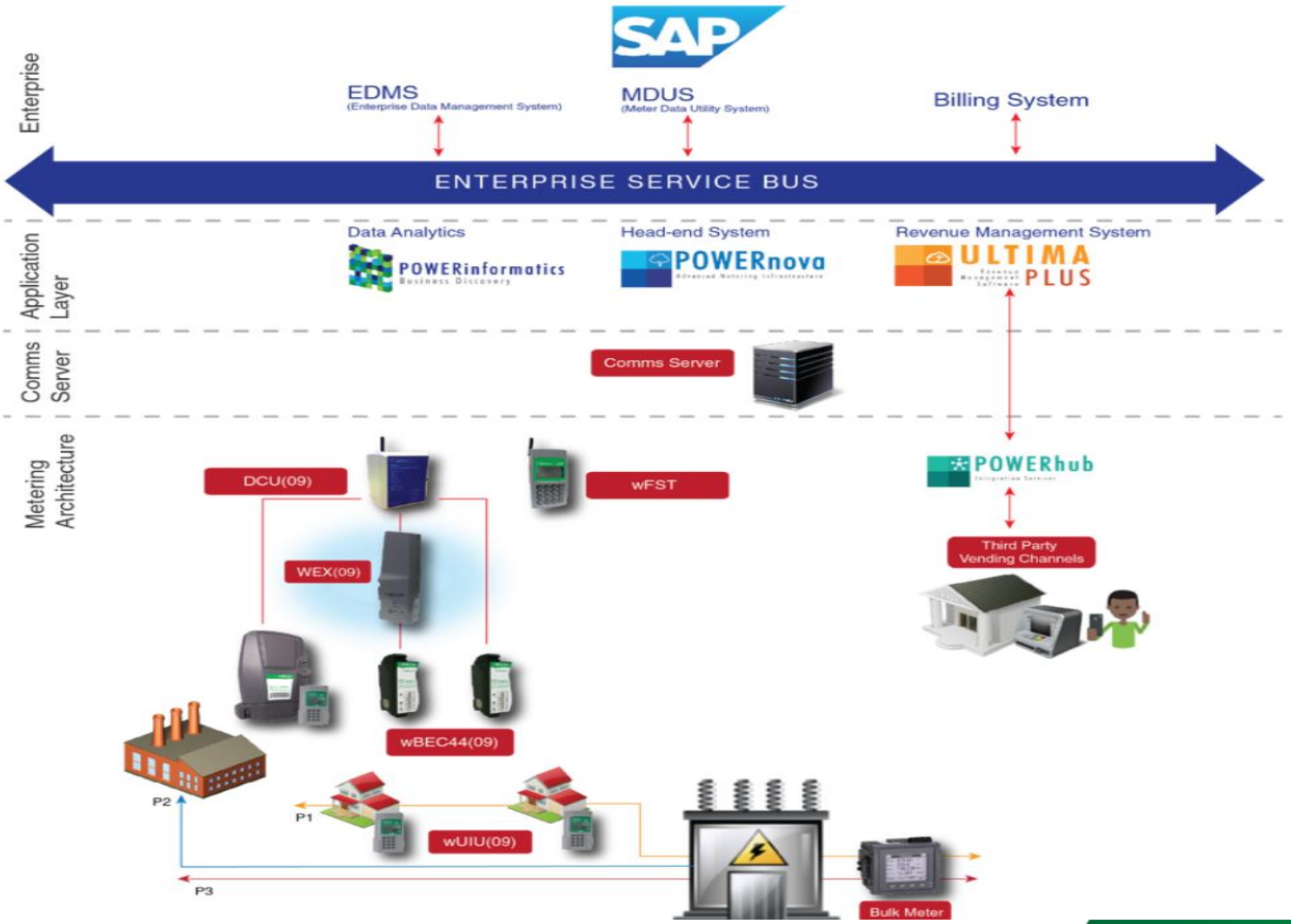
Revenue Protection - Metering



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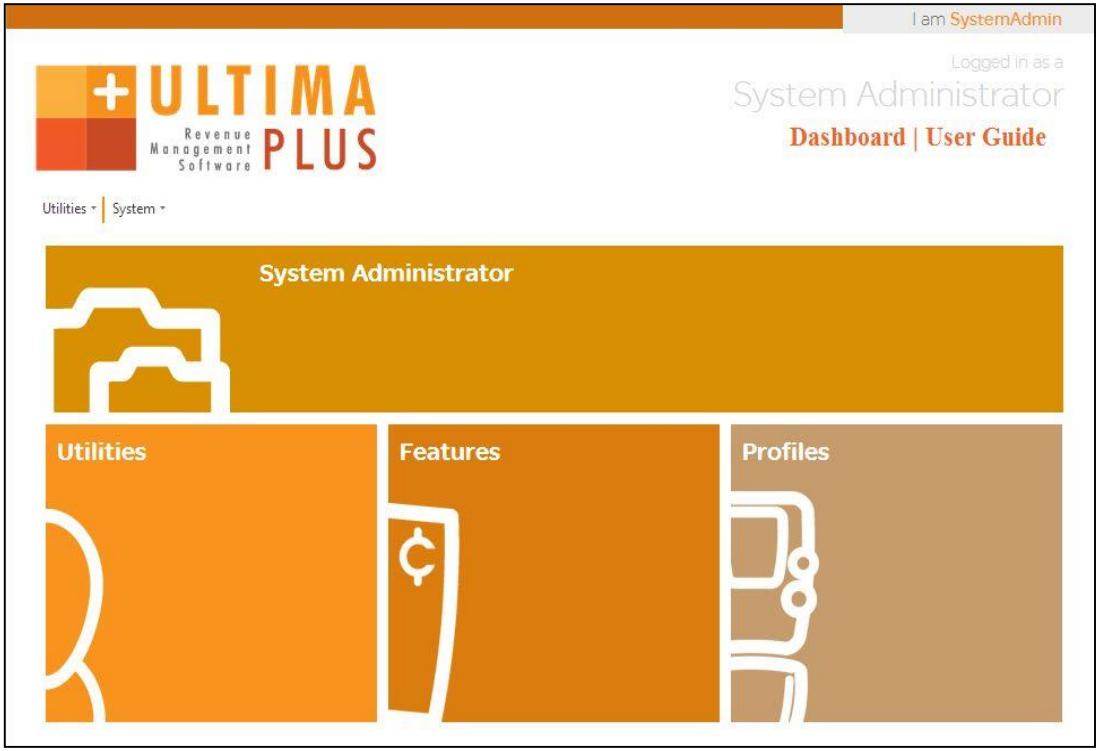
Our Product Suite



- Web based Client
- Advanced user experience
- Role based user experience
- Multi-threaded performance
- Scalable server side architecture
- Efficient transaction and reporting databases
- Remote access for remote meter management

POWERpin PIN Engine

POWERhub

POWERsale

POWERpin PIN Management

POWERhub Credit Management

POWERsale PLUS

ULTIMA Revenue Management Software PLUS

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Executive Decision Management Systems

POWERinformatics
Business Discovery

- Data analytics
- Business Intelligence
- Predictive Analytics
- Energy Balancing
- Reporting
- Meter data
  - Consumption
  - Prepaid Credit
  - Tamper Status
  - Latch status

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POWERinformatics: Data Discovery

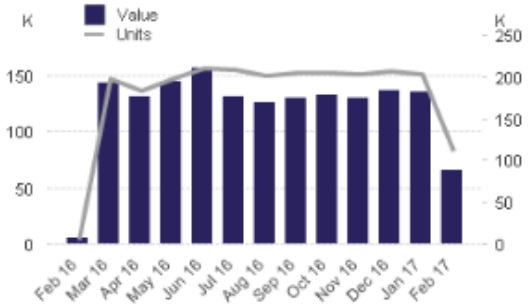
Welcome | Dashboard | Meters | Finance | Audit | Customers | Data Quality | Reports

2015 2016 2017

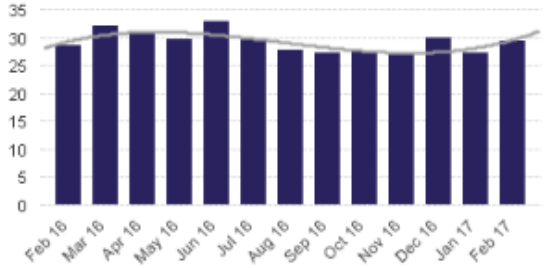
Jan Feb | Mar Apr | May Jun | Jul Aug | Sep Oct | Nov Dec

Active Accounts	Blocked Accounts	Current Month Usage (kWh)	YTD Usage (kWh)	Current Month (HTG)	YTD (HTG)
1,296	0	82,651	233,081	88,227	269,637

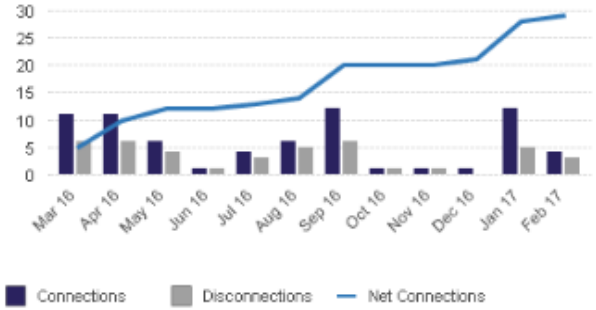
Transaction Trend



Average Transaction Value Trend



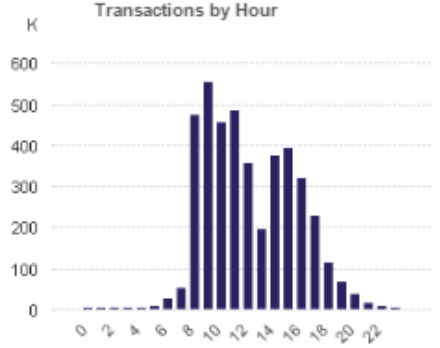
Connection Trend



Top 10 Customers

Customer No.	Customer Name	Value	#	Average Value	% of Total	Transaction Trend (HTG)	Transactions by Hour (HTG)
10110500014	STANLEY DOVALELE	69 191.00	600	115.15	100.0%		
10102200014	JOHN KERSPAY	51 140.00	211	241.50	100.0%		
10116600011	JACKSON HLOYI	43 989.00	148	301.59	100.0%		
10156200014	HENRY JAGGERS	36 610.00	339	107.95	100.0%		
10050700014	CHORIS NDEVU	35 850.00	594	60.43	100.0%		
10133700017	ROBIN RICHARD	32 780.00	287	114.54	100.0%		
10108300013	ANTHONIE PINZI	30 800.00	184	167.39	100.0%		
10130600016	JOHN GOEDA	28 830.00	448	64.50	100.0%		
10137800011	WILSON KOYO	25 588.00	240	106.56	100.0%		
Others		3 800 328.34	137 557	27.65	100.0%		
Total		4 155 106.34	140 608	29.58	100.0%	2 107 184.42	2 107 184.42

Transactions by Hour



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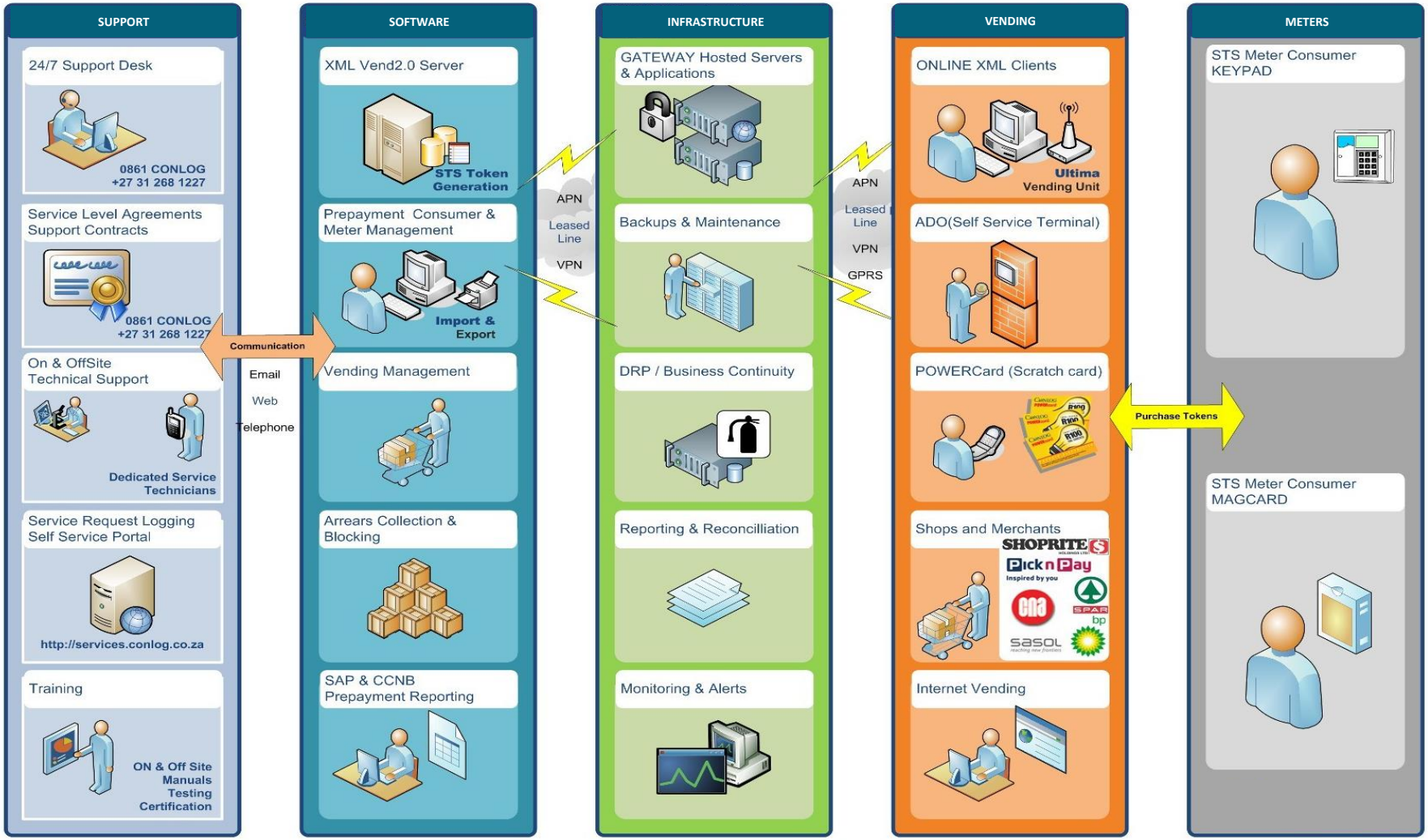
Solutions Platform – Software as a service model



The Prepayment Meters

TYPES OF AREAS

Residential areas in peri-urban environment, low-income households and urban slums

Residential, commercial and "light" industrial, urbanised areas, medium to upper income households

MOST COMMON METER CONFIGURATION

Broadest range of prepaid meters in the industry – each meter has many variants, easy to configure.

Up to 55000 Components placed per hour

Offer split (meter outside premises) or combo (meter and keypad inside premises)

Single phase range from 20A to 100A, three phase up to 250A per phase

Meters uniquely coded per customer (STS model for revenue protection and security)

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Typical Configurations

One Way BEC44(09)

Two Way BEC44(09)

Four Way BEC44(09)

Eight Way BEC44(09)

DISCO MAP OFFER

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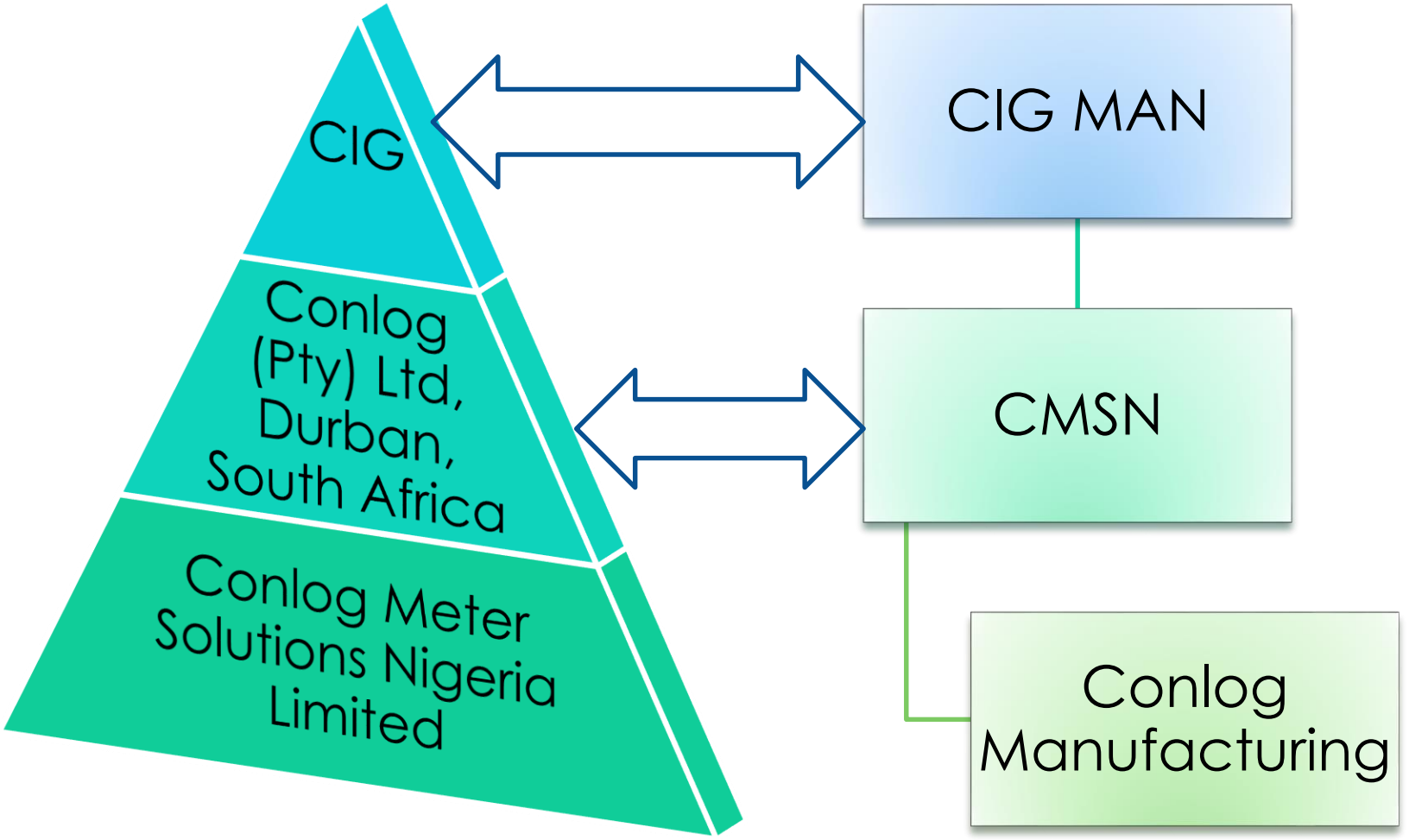
Overview of the Nigeria Structure



Summary of the offer

- Meter Financing
- Procurement
- Supply and Installation
- Maintenance
- Replacement; and
- Technology backend systems and related infrastructure

Key concerns addressed

- Unmetered consumers
- Electricity theft
- Poor collection of revenue
- Technical and technology limitations
- Stranded capacity
- Technical, non-technical and commercial losses

Offer Components

Components	Products	Description
Hardware: Meters (including user interfaces)	wBEC44(09)	Single phase prepaid meter
	wBEC62(09)	Three phase prepaid meter
Hardware: Accessories	wFST	Wireless Field Service Terminal (WFST), hand held field service tool
	Meter Enclosures	Meter boxes providing secure housing of the meter (with wiring and breakers)
	WEX	Wireless extenders (RF range extenders)
	DCU	Data Concentrator Units
Infrastructure	POWERnova	AMI Head End System
Professional Services	Detailed in scope	

Technical Capabilities - Single Phase Meter

Energy measurement

- Accuracy class 1.0 as per relevant IEC 62053-21 standards
- Class 1 accuracy for life cycle of product
- Active energy measurement
- Reverse energy detection
- Forward energy recording irrespective of current direction
- Direct connection
- 4 programmable credit regions with power limits

Security

- STS compliant
- Anti-tamper feature set
- Over & under voltage protection
- Line Load reversal protection

Communication

- Radio Frequency ISM licence free band 433Mhz
- AMI ready with no need for additional plugin modem
- Radio frequency to wireless customer interface unit
- MC171 direct port

Testing & Certification

- South African Bureau of Standards - SANS1524-1 & 1799
- Nigerian Electricity Management Services Agency - NEMSA
- Uganda National Bureau of Standards - UNBS
- Standard Transfer Specification - STS

Technical Capabilities - Three Phase Meter

Energy measurement

- Accuracy class 1.0 as per relevant IEC 62053-21 standards
- Class 1 accuracy for life cycle of product
- Active energy measurement
- Reverse energy detection
- Forward energy recording irrespective of current direction
- Direct connection
- 4 programmable credit regions with power limits

Security

- STS compliant
- Anti-tamper feature set
- Over & under voltage protection
- Line Load reversal protection

Communication

- Radio Frequency ISM licence free band 433Mhz
- AMI ready with no need for additional plugin modem
- Radio frequency to wireless customer interface unit
- MC171 direct port, USB & Optical port

Testing & Certification

- South African Bureau of Standards - SANS1524-1 & 1799
- Nigerian Electricity Management Services Agency - NEMSA
- Uganda National Bureau of Standards - UNBS
- Standard Transfer Specification - STS

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DCU(09)

- Built-in wireless meter modem
- External wireless remote unit via RS485 interface (optional)
- Ethernet:
  - 10/100 Full-duplex with auto-negotiation
  - IPv4
  - DHCP, DNS, or static IP configurations
- Plug-in GSM module:
  - GSM850, EGSM900, DCS1800, PCS 1900
  - Integrated antenna
- USB for local configuration and interrogation
- Security: 128-bit encryption with CBC
- Firmware remotely upgradeable

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wFST(09)

- Performs remote meter readings and interrogation
- Meter discovery with walk or drive by
- Stores up to 3000 records
- Tokens can be automatically pushed to the meter
- Maintains a log of all activities
- Works in conjunction with local client application software via micro USB
- Rechargeable battery – Lithium polymer

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WEX(09)

- Only used in poor range installations
- Improves the RF range between wireless enabled products in developed areas
- Connects via RF pairing to the WMI or wBEC
- One WEX unit can communicate to twenty four meters at a time (1 ➔ 24)
- Stand alone solution power by AC mains, street lights or solar power
- IP 65 (protected against dust and water jets)

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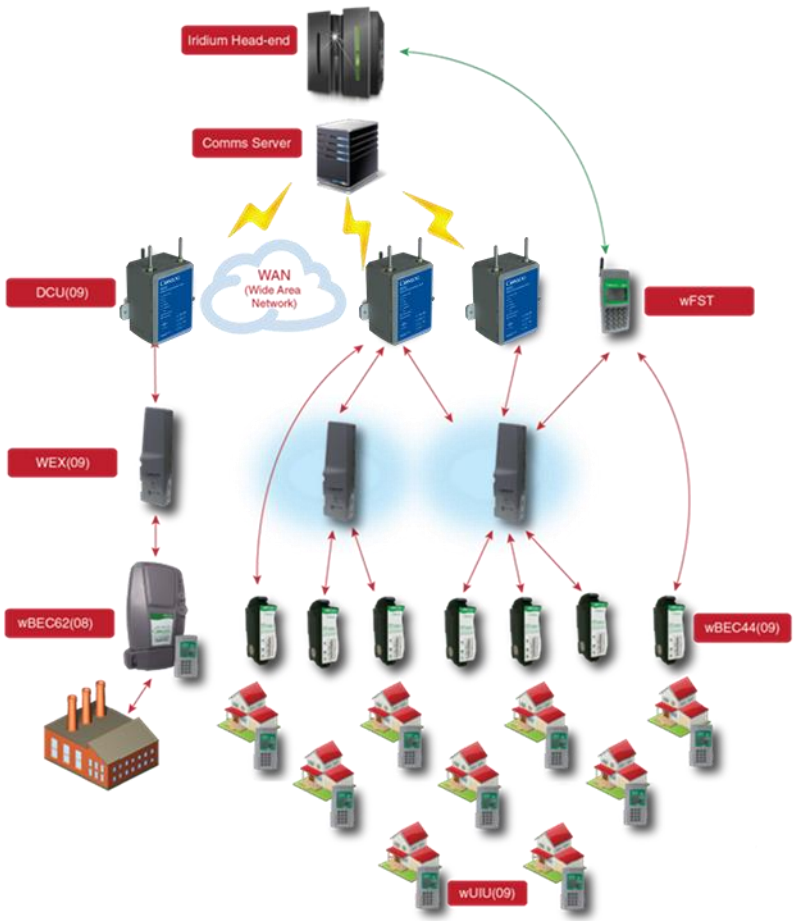
POWERnova

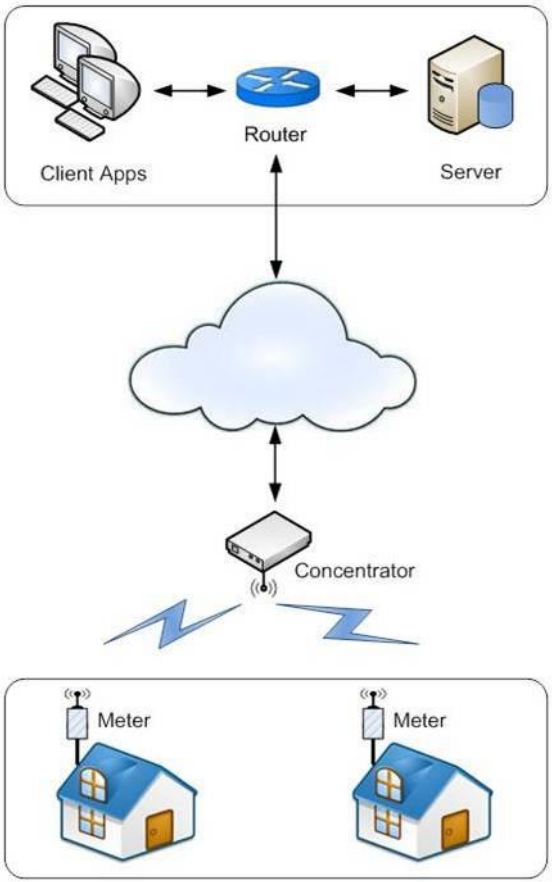
- Meter management with automatic discovery of electricity meters
- Integration to billing and other third party applications e.g. SAP
- Cloud based technology
- Remote meter interrogation (scheduled and on demand)
- Tamper detection (internal and external)
- STS token routing and delivery



What Is Smart Metering ?

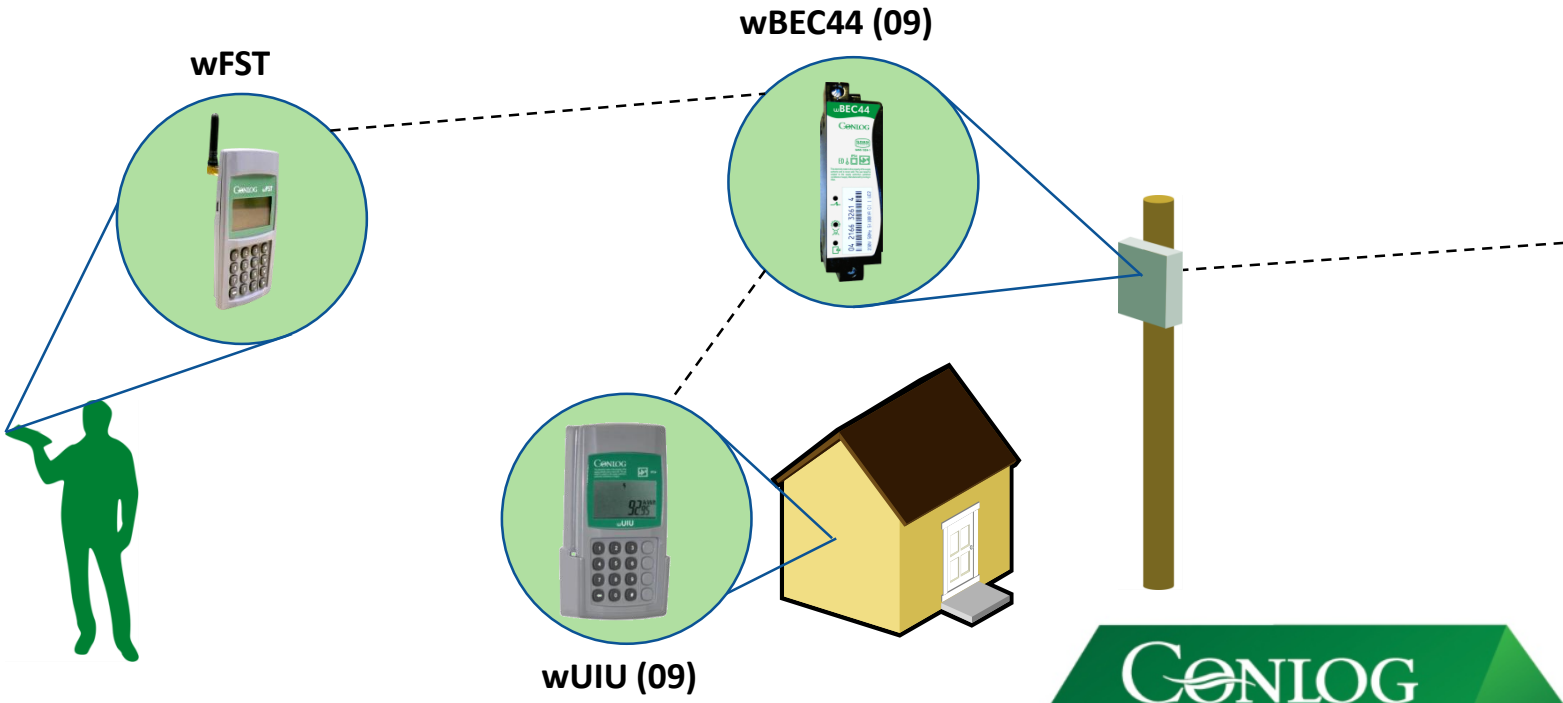
- A **smart meter** is an electronic device that records consumption of electric energy in intervals of an hour or less and communicates that information at least daily back to the utility for monitoring and billing.

- Smart meters enable two-way communication between the meter and the meter data management system. Smart meters gather data for data discovery and remote reporting.



What Is Smart Metering ?

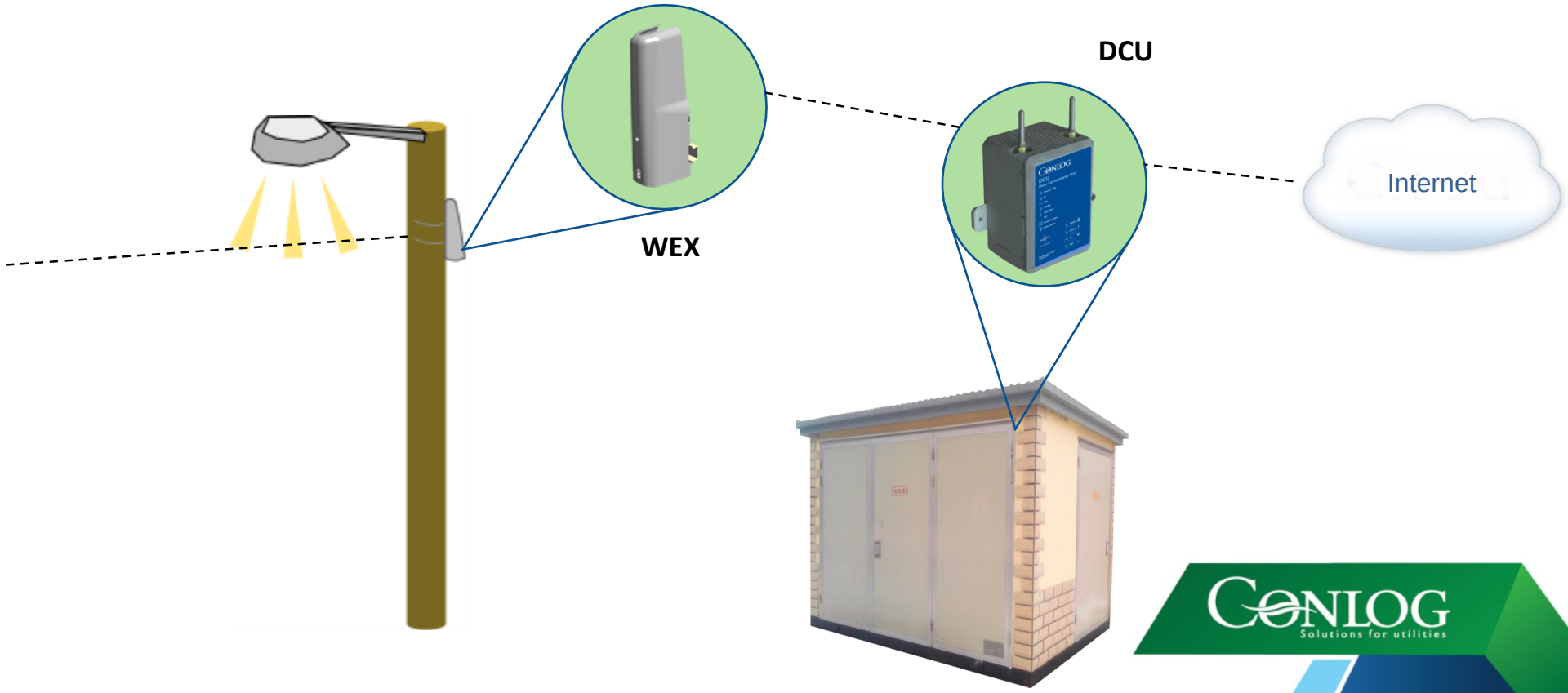
Measurement and Control ⟷ Communication Network ⟷ Head-End Software

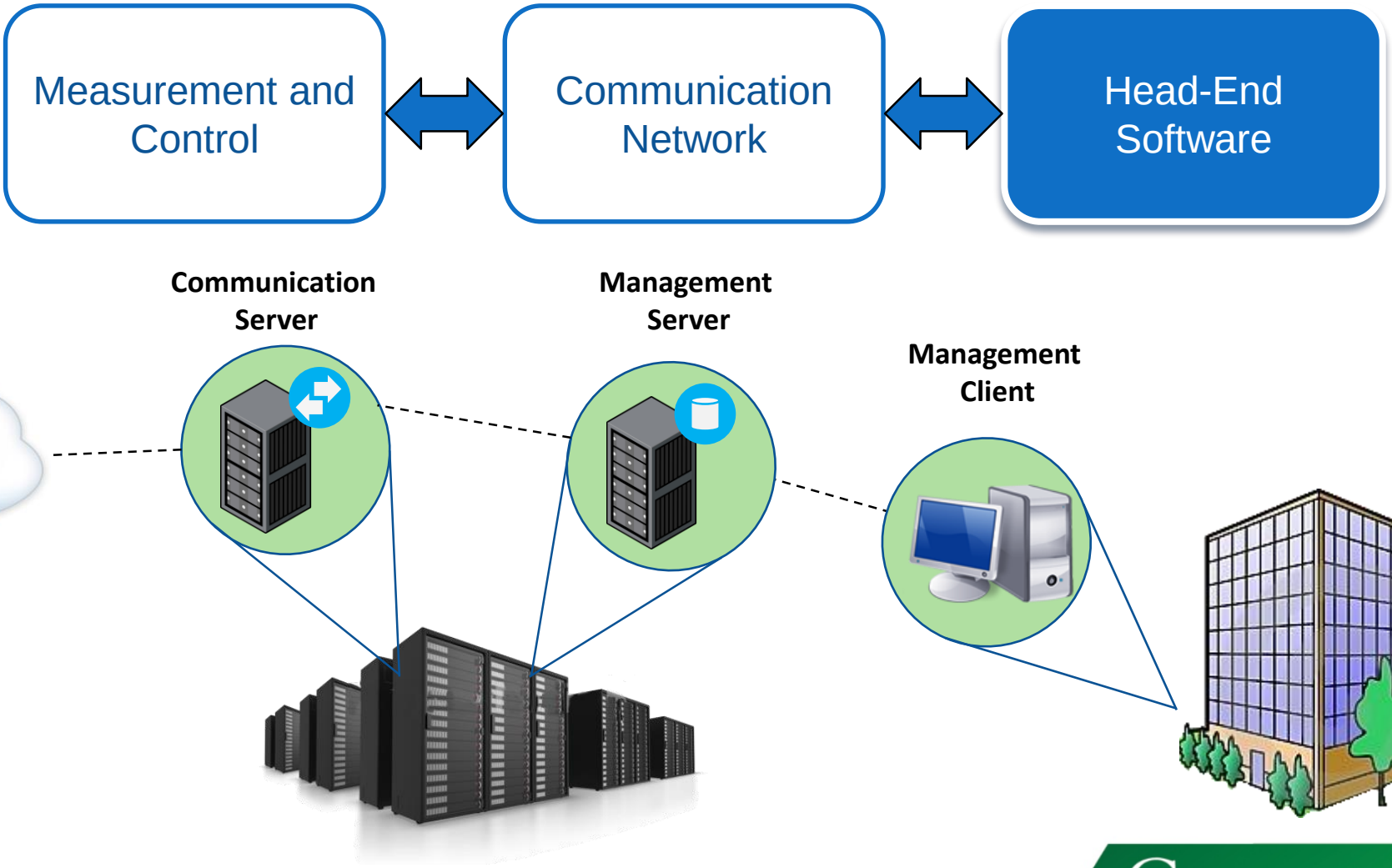


Measurement and Control

Communication Network

Head-End Software




Measurement and Control
Communication Network
Head-End Software
Communication Server
Management Server
Management Client
ternet

Professional Services

- Project Management
- Site scoping
- Installation and commissioning of DCU's and WEX by trained professionals
- Integration of meters to the existing POWERnova head end system
- Installation and commissioning of meter hardware by trained professionals
- Post-installation Support:
  - Maintenance and replacement of the meters for the contract duration.
  - In-country 24/7/365 support of the backend system
- Training and advisory

Project Rollout Plan – Assumptions

- All households where meters are to be installed are electrified (connected to the grid).
- Additional fuses are not included as the meter (single phase and three phase) has an internal disconnection device and an upstream breaker is included in the supplied Conlog enclosure.
- Capturing of customer details on the DISCO vending system will be managed by the DISCO
- Access to customer households will be managed by the DISCO personnel
- DISCO technical personnel shall be on standby to assist installers disconnect power to a specific area during the installation and connection of meters to the grid.
- Prepayment Awareness for end users will be managed by DISCO
- Maintenance/management of meters will be provided for the contract duration only
- DISCO will manage the communication network and data bandwidth requirements for the deployed Data Concentrator Units
- DISCO will route a minimum amount of power to the customers included in the ring-fenced account mechanism in line with the final commercial agreement
- DISCO will provide a team and access needed to ensure the project is a success
- Detailed diligence will be allowed prior to finalizing all commercial agreements
- DISCO, CIG and Conlog set up the appropriate management and governance structures to ensure transparency, clear communication, oversight and effectiveness of deployment

Network Clean-Up: This is optional and costed separately. **To** be executed by a team that would have to go ahead of the meter installers. This will be kick-started during mobilisation period to prepare for meter rollouts.

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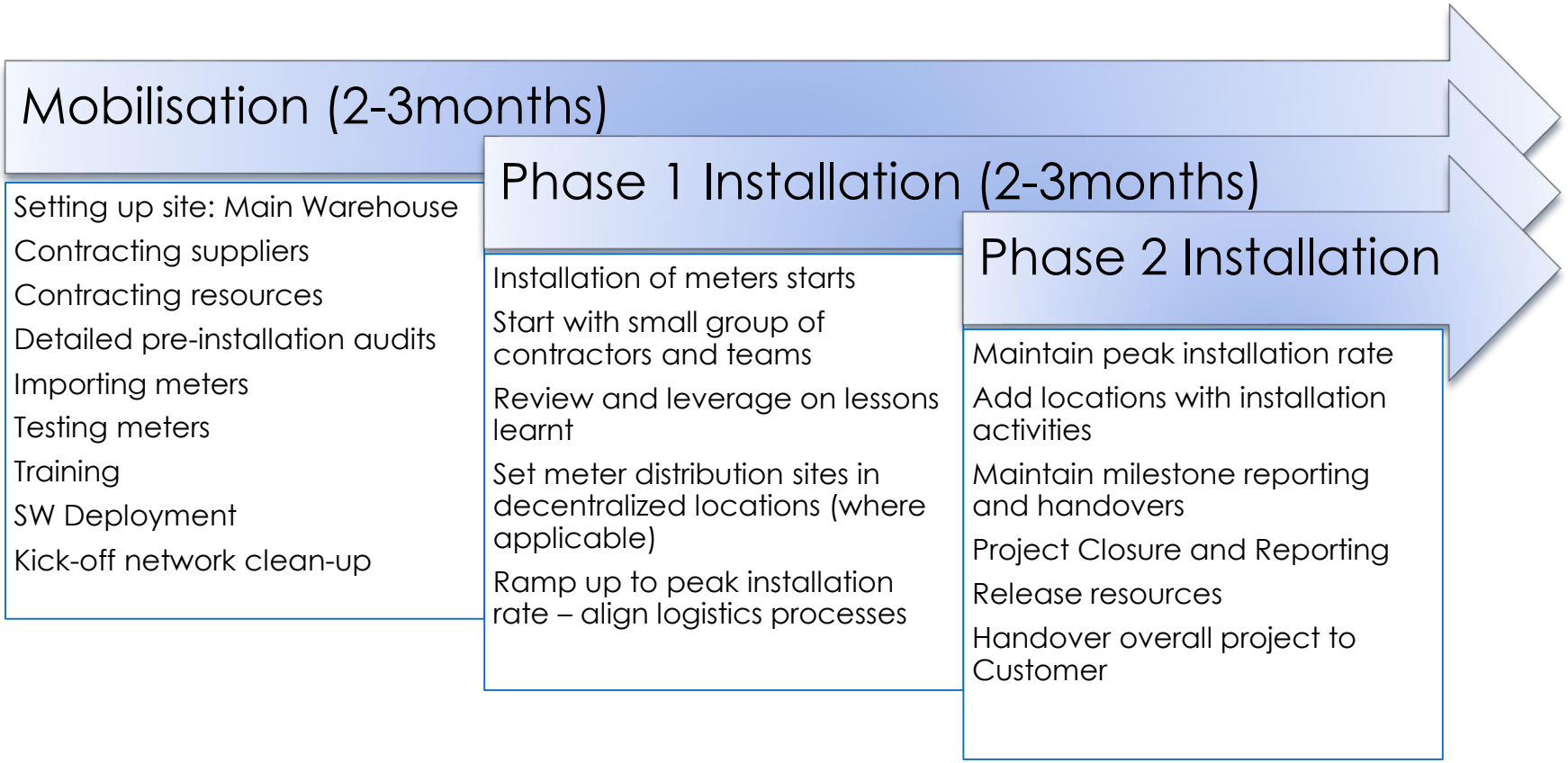
Project Rollout Pan

Refer Excel Spreadsheet for Typical Project Rollout Plan



Meter Maintenance

- Periodic checks to ensure continuous functionality and accuracy
- Monitoring of meter tampering and bypass
- Replacement/repairs of faulty meters or faulty meter parts
- Tamper Alerts and Monitoring via POWERnova AMI service
- Diagnosing faulty hardware
- Replacement of faulty hardware
- Periodic spot checks (define sample size)

Exclusions

- Customer/accident damaged hardware
- Replacement of customer/accident damaged hardware
- Replacement at installation cost value
- Monitoring via non POWERnova AMI services
- Clearing of tamper conditions
- Water damage to meters in tampered enclosures
- Replacement of old wiring / cable before the feeder box.
- Replacement or repairing of feeder box, kiosks and enclosures.
- Installation, repairing or replacement of wood or concrete poles
- Replacement of fuses at the feeder box.
- Scope of work does not include MV & LV network rehabilitation.

Project Organisational Structure – Key Stakeholders

Electricity Distribution Company (DISCO)

- DisCo
- Customer
- Represent Enduser

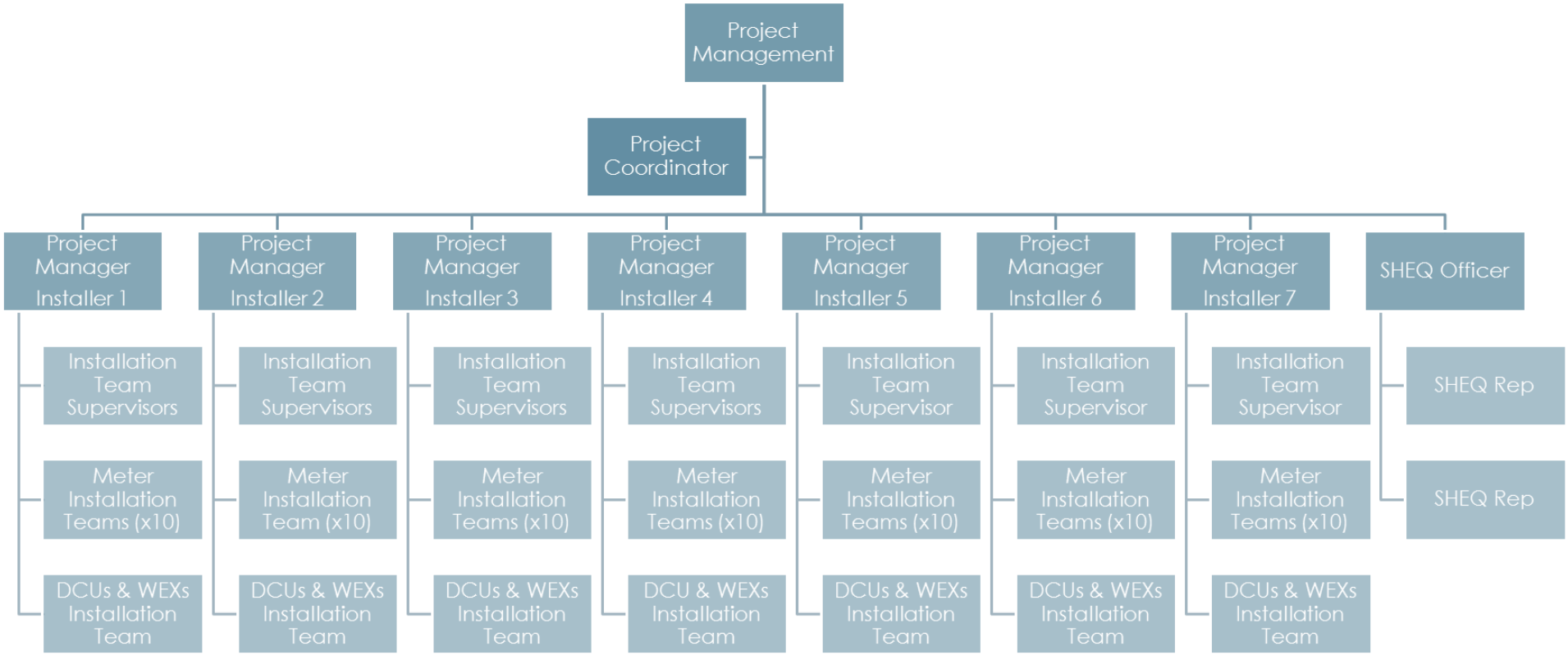
Consolidated Infrastructure (CIG)

- MAP
- Responsible for funding of the project
- Oversee MSP deliverables

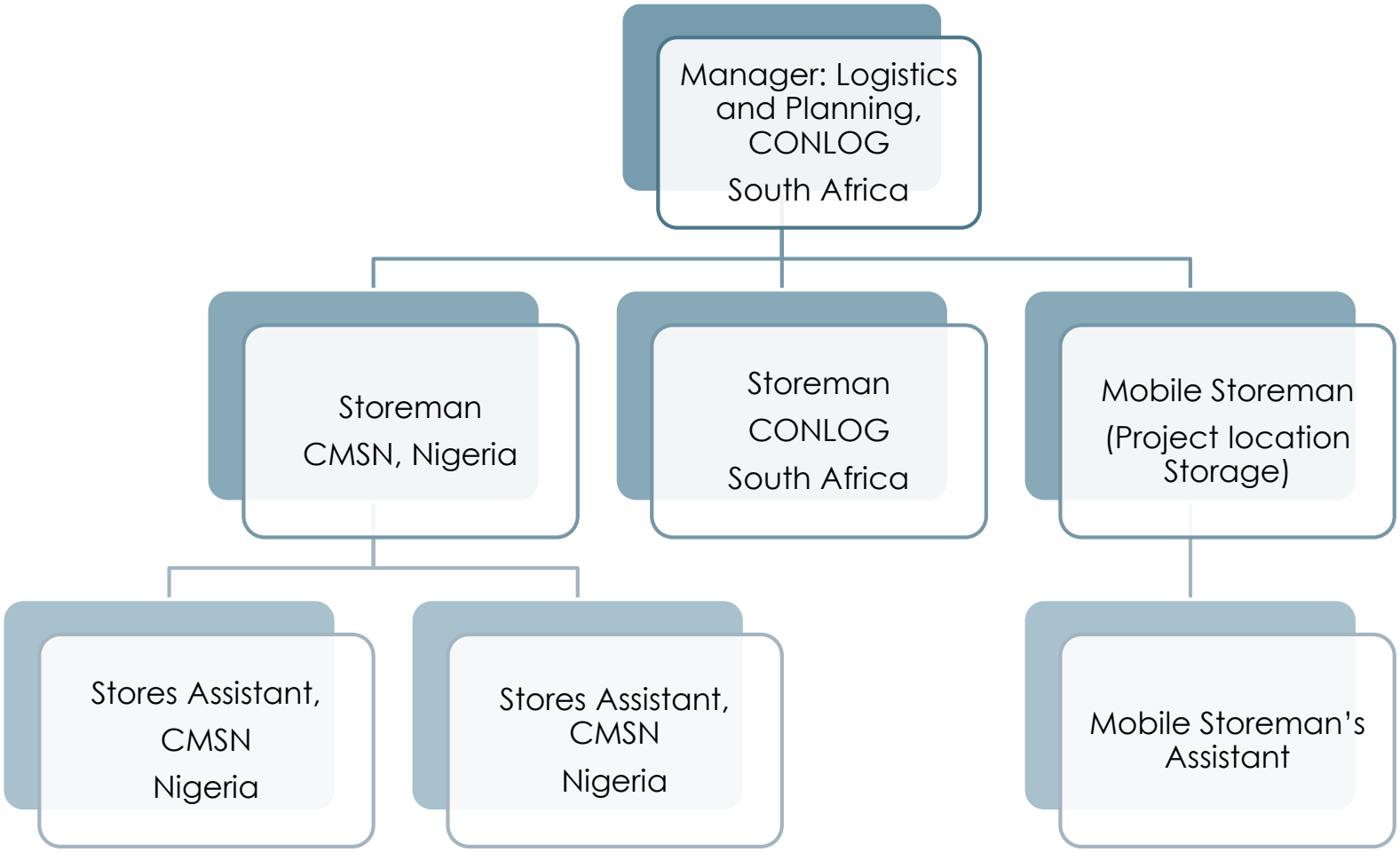
CONLOG Meter Solutions Nigeria (CMSN)

- MSP
- On-time supply and warehousing of project equipment
- Project Management of meter installations
- Management of installers
- Post-delivery maintenance and support

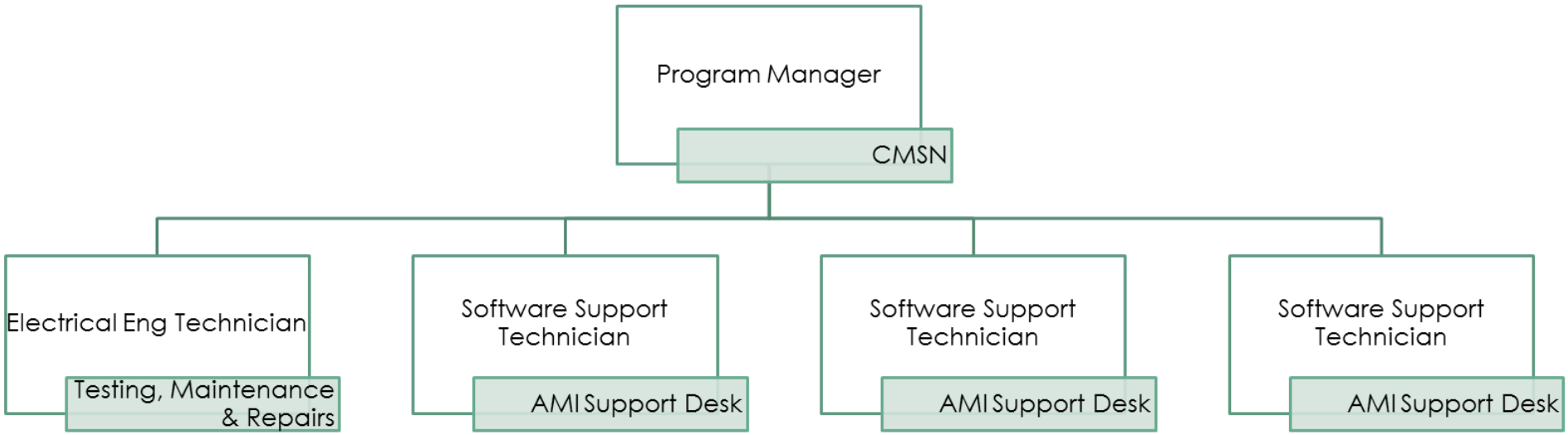
Project Organisational Structure – Project Teams



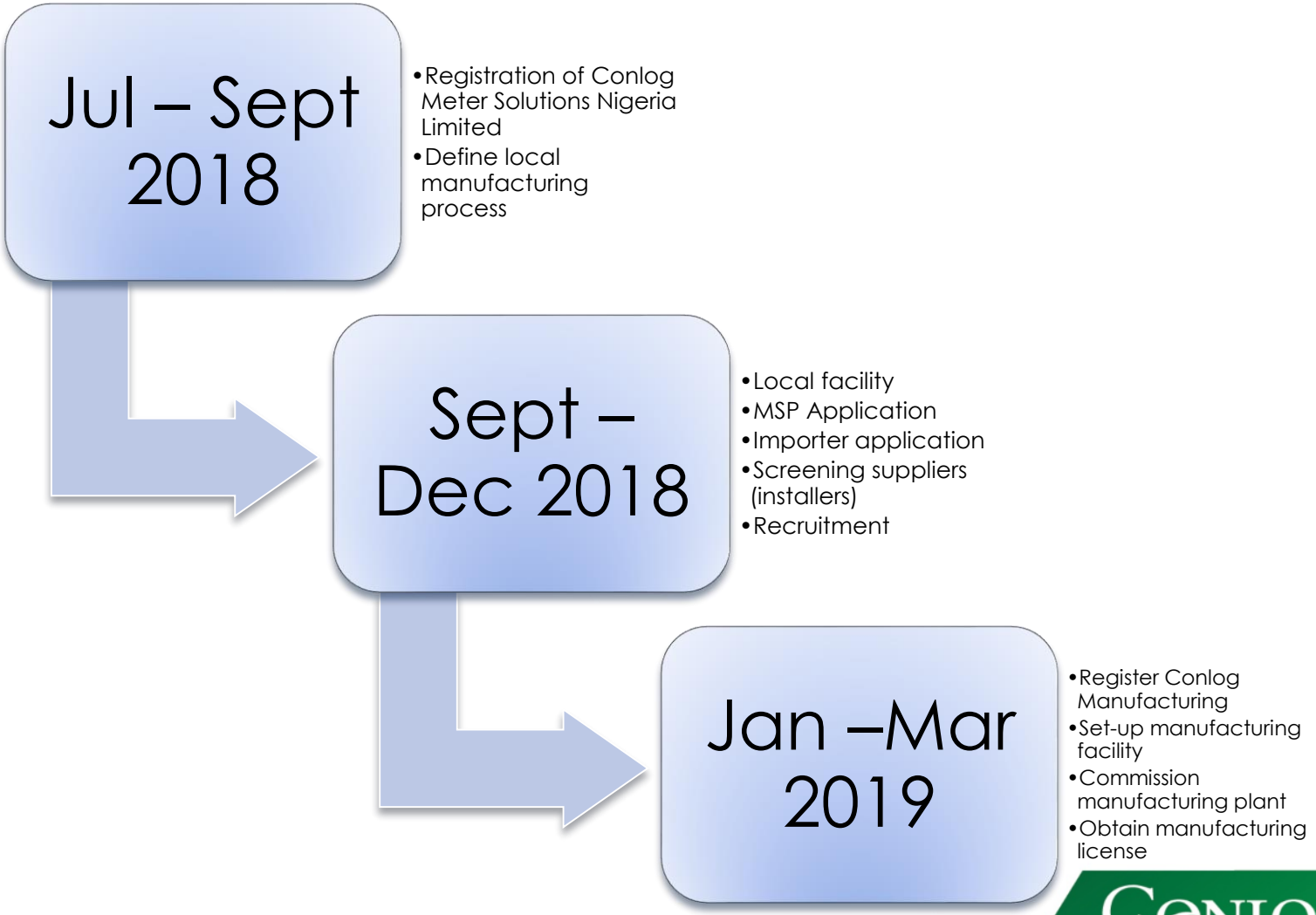
Project Organisational Structure – Logistics



Project Organisational Structure – Technical Support Team



Localisation into Nigeria



Questions
&
Answers