

CASE STUDY

Tower Management System

Site Monitoring Solution



CASESTUDY KEY STAKEHOLDERS

Customer

Apollo Towers



Solution Provider

Infozech Software Private Limited



Industry

Telecom Infrastructure

CUSTOMER PROFILE



- A leading independent telecom tower company
- Based in Yangon ,Myanmar
- Owning and Operating a growing portfolio of integrated tower and power sites
- Offer construction, leasing and management of tower and power solutions to all telecommunications service providers in Myanmar

CUSTOMER REQUIREMENT

Apollo Towers required remote monitoring, control and management system for an efficient tower operations at their sites throughout their lifecycle that would seamlessly integrate with the existing network elements and third party applications. Apollo Towers wanted a solution that manages and supports more than 3000 Sites.

A tower monitoring system with the following functionalities was required:



Single NOC System



Alarm Management System - Predictive Failure Analysis



Intuitive User Interface

SOLUTION OVERVIEW

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Telecom Infrastructure Company of Myanmar

Business Situation

Apollo Towers wanted to install a robust and comprehensive solution to manage all aspects of Telecom tower infrastructure such as monitoring, analytics, operational excellence and cost optimization for its world class customers such as wireline, wireless operators and licensed carriers.

Solution

iROC and iMaintain (Part of Infozech's Tower Product Suite) were customized to cater to all the requirements stated by the Customer and seamlessly integrated with other third party systems.

Benefits

- ✓ Advanced and consolidated Tower Operation Center (TOC) with reduced MTTR.
- ✓ Seamless integration due to modular nature
- ✓ Saving on Operational Costs
- ✓ Customized Reporting
- ✓ Improves Site Visibility

Deployed Products

- ✓ iROC (Infozech's Remote Operating Center)
- ✓ iMaintain (Infozech's Maintenance Management System)



For more information,

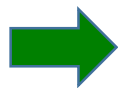
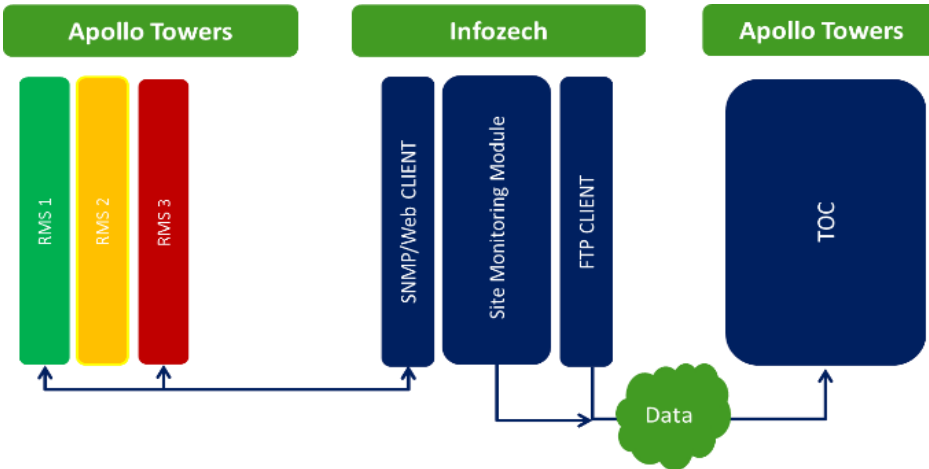
Contact:sales@infozech.com

SITE MONITORING CHALLENGES



- **Multiple (Tower Operation Center) TOC systems** from different power vendors resulting in
 - Multiple monitoring platform
 - High operational cost,
 - Minimal control on TOC activities and
 - Limited visibility
- **Site offline/online issues:** Due to absence of communication between site and server.
- **Absence of reporting mechanism:** Delay in taking actions on critical events.

SITE MONITORING SOLUTION



INFOZECH'S SITE MONITORING SOLUTION

iROC (Infozech's Remote Operating Center): Manages tower operations and reports critical issues that drives immediate actions.

iMaintain (Infozech's Maintenance Management System): Maintaining Equipment's to improve reliability and Operational performance.

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SITE MONITORING CAPABILITIES

- Single/Central Tower Operation Center (TOC):** Provides Central monitoring platform, capable of integrating heterogeneous RMS/Power Systems (Eltek, Flex, Lineage, and Delta). The system has the capability to map different alarms coming from heterogeneous systems into a single alarm. **For instance:** DG fail to start/DG not starting has same meaning. System maps different power vendor alarms into a single alarm and provides a unified view of sites. A system measures the most important parameters and display them to the operator “in a meaningful way”. **For instance,** Alarms received on our platform showcase the value of all power source like battery, genset and grid. (Genset Power:2KW, Fuel Remaining:400 litres, Grid Voltage:200 V)
- Alarm Management:** The alarm is categorized as Critical/Major/Minor /informational based on the alarm configuration. Such identification of alarm enables right decision making for tower operations on time.
- Predictive Failure Analysis:** An effective alarm management system can generate automatic tickets and provides early warnings through preventative maintenance reminders to a concerned person/site engineer. Real time remote monitoring system provides critical information and alarms at every interface (Mobile Application/Web Portal/Email).For Instance: Fuel level monitoring so that fuel can be added or leaks repaired, rather than waiting for the generator to start and shut down due to low pressure. The concerned person can send acknowledgement to TOC team after performing maintenance activity at site.

Ticket Id	Site Id	Opco Site Id	Alarm Description	Alarm Since	Assigned To	Assigned Date	Remarks	Ack
TT00863010	ANSG_0399	SG0371#Pace	Battery Fuse Failure	0:31	Camuset-SPOC	29-Nov-2016 19:00:31		
TT00863007	ANMC_0027	MC0350#Delta	Fuel Level Very Low Critical	29-Nov-2016 18:28:02	Camuset-SPOC	29-Nov-2016 18:58:02		<input checked="" type="checkbox"/>
TT00863006	ANMG_0073	MG0104#Flex	Fuel Level Very Low Alarm	29-Nov-2016 18:57:37	Camuset-SPOC	29-Nov-2016 18:57:37		<input checked="" type="checkbox"/>
TT00863008	ANMC_0018	MC0311#Delta	Rectifier System Multiple Rect	29-Nov-2016 18:50:08	Camuset-SPOC	29-Nov-2016 18:50:08		<input checked="" type="checkbox"/>
TT00862004	ANWP_0325	WP0082#Flex	Fuel Level Very Low Critical	29-Nov-2016 18:50:05	Camuset-SPOC	29-Nov-2016 18:50:05		<input checked="" type="checkbox"/>
TT00863003	AYYN_0517	YN0625#Flex	Fuel Level Very Low Critical	29-Nov-2016 18:50:05	I-eng Technician	29-Nov-2016 18:50:05		<input checked="" type="checkbox"/>
TT00863001	ANMG_0177	MG0472#Delta	Rectifier System Multiple Rect	29-Nov-2016 18:48:56	Camuset-SPOC	29-Nov-2016 18:48:56		<input checked="" type="checkbox"/>
TT00862991	ACXV_0054	XV0965#Delta	Smoke Fire Detected	29-Nov-2016 18:39:22	I-eng Technician	29-Nov-2016 18:39:22		<input checked="" type="checkbox"/>
TT00862990	ANSH_0030	SH0505#Delta	Rectifier System Multiple Rect	29-Nov-2016 18:39:19	Camuset-SPOC	29-Nov-2016 18:39:19		<input checked="" type="checkbox"/>
TT00862984	ANSH_0032	SH0513#Etek	Fuel Level Very Low Critical	29-Nov-2016 18:30:02	Camuset-SPOC	29-Nov-2016 18:30:02		<input checked="" type="checkbox"/>
TT00862983	ASND_0231	MD0437#Etek	Fuel Level Very Low Critical	29-Nov-2016 18:30:02	I-eng Technician	29-Nov-2016 18:30:02		<input checked="" type="checkbox"/>

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d) **Site Visibility:** Alarm monitoring system helps in maintaining site visibility. Site is not available, when there is no communication between site and server due to hardware configuration and network issues. When the deployment was started, more than 40% sites were offline. After 6 months, system helped in resolving the site offline issues in collaboration with power vendors and maintain online status of site.(90% sites+ were online)

Site Visibility Status: Online/Offline

Site Id	Opco Site Id	Operator	Site Class	Site Type	Site On	Consumed Power (W)	GenSet Power (W)	Grid Power (W)	SOC (%)	Battery Voltage (V)	Fuel Level (TU/TZ)	DG Run Time	Critical Alarms	Non Critical	Age
ACAY_0001	AY03474F	T-17 (2DG)	B	Hub	DG2	1888.030	9211.52	0	24	54.15	450.00 / 4...	2,071.00 / ..	0	0	00:01:55
ACAY_0002	AY03744F	T-11 (2DG)	B	Access	DG1	1896.400	9386.86	0	33	53.72	380.00 / 0...	6,164.00 / ..	1	4	00:02:23
ACAY_0003	AY03934F	T-5 (PG-1..)	B	Access	Grid	1781.650	0	1838.86	98	53.88	530.00 / NA	3,001.00 / ..	0	0	00:01:53
ACAY_0004	AY04084F	T-4 (1DG)	C	Access	Battery	1993.610	0	0	45	49.74	70.00 / NA	7,166.00 / ..	1	4	00:01:51
ACAY_0005	AY03184F	T-13 (PG+..)	A	Hub	Grid	1998.800	0	3386.18	90	52.60	0.00 / NA	491.00 / NA	0	4	00:01:57
ACAY_0006	AY03234F	T-4 (1DG)	C	Access	Grid	1673.200	0	0	34	37.60	0.00 / NA	6,714.60 / ..	3	5	3 Day(s) 15:33:16
ACAY_0007	AY03264F	T-10.0 (2..)	A	Hub	Battery	3957.130	0	0	93	49.00	0.00 / 0.00	6,995.00 / ..	0	2	00:01:55
ACAY_0008	AY03424F	T-13 (PG+..)	A	Hub	Grid	3485.790	0	3473.34	97	53.69	160.00 / NA	5,779.00 / ..	3	6	00:02:36
ACAY_0009	AY03584F	T-3,M (1DG)	C	Access	DG1	3460.800	4304.88	0	97	55.09	130.00 / 0...	1,839.00 / ..	1	2	00:02:38
ACAY_0010	AY03614F	T-12 (PG+..)	B	Hub	Grid	2920.410	0	3024.38	100	53.57	1,000.00 / ..	3,249.00 / ..	0	2	00:02:37
ACAY_0011	AY03704F	T-7 (1DG)	B	Hub	DG2	2515.880	2608.94	0	97	54.06	0.00 / 620...	763.00 / 4...	3	2	00:01:50
ACAY_0012	AY03784F	T-10 (1DG)	B	Access	DG1	2496.410	2727.89	0	65	55.40	1,000.00 / ..	6,783.00 / ..	1	2	00:02:22
ACAY_0013	AY03924F	T-5 (PG-1..)	C	Access	Grid	2005.510	0	2014.03	98	53.71	190.00 / NA	4,449.00 / ..	1	2	00:01:50
ACAY_0014	AY03504F	T-5 (PG-1..)	B	Access	Grid	1903.640	0	2013.69	97	53.66	320.00 / NA	159.00 / NA	1	1	00:01:58

e) **Customized Reporting:** Infozech’s reporting module will help management teams to measure, monitor, and manage the overall performance of the sites. Following reports are available in site monitoring module:

- Alarm Report
- Energy Consumption Detail
- Load Consumption
- Site Down / Site Availability
- Battery Backup Time
- Battery Discharge Cycle

“CUSTOMER SPEAK.”

Philippe Luxcey, CEO, Apollo Towers

Photo

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