GLOBAL CASE STORIES

HUAWEI OSS
Evolving from Support to Enabling

HUAWEI

Key Facts

213 Systems for **112** CSPs

2 Competence Centers
Ireland and Spain

Manages **112** Multi-vendor Networks in **68** Countries

2 Global OSS Cloud Centers
India and Romania

25 Vendors Integration Experiences
400 Equipment Accumulated Probes

3500 Global OSS Experts
to provide high quality services to customers

4 Solution And Product R&D Centers
Shenzhen, Shanghai and Nanjing in China, Melbourne in Australia

5 Delivery Centers
China, India, Romania, Australia and Singapore

Performance Management Solution Unleashes Network Potential in A Leading Operator Group

> Continuously optimize for best end-user experience
> Maximize return on network investment
> Simplify network management with low OPEX
> Leverage from accumulated practice

Spain
Colombia
Uruguay
Venezuela
Argentina
Brazil
Ecuador
CA
Mexico
Chile
Peru

OSS Transformation Improves Market Share & Customer Experience

Background

> A Southeast Asian operator has a multi-vendor 2G/3G network with over 58 000 network elements, with equipment from 5 vendors. The local environment has a diverse geography and frequent severse weather, massive alarms and trouble tickets caused by power outage in lightning storm, which posed a further challenge for the operator's network operations.

> The operator operated the network from a central NOC, where all network monitoring and troubleshooting was performed, with regional offices that were used for co-ordinating the fieldwork force for corrective and preventive maintenance. Its operating support system (OSS) lacked automation and was inefficient at managing incidents, making it difficult to achieve KPI/SLA targets and expensive to operate.

> The operator needed to address these issues in order to improve its service quality at reduced operating costs. This would enable it to improve customer experience, 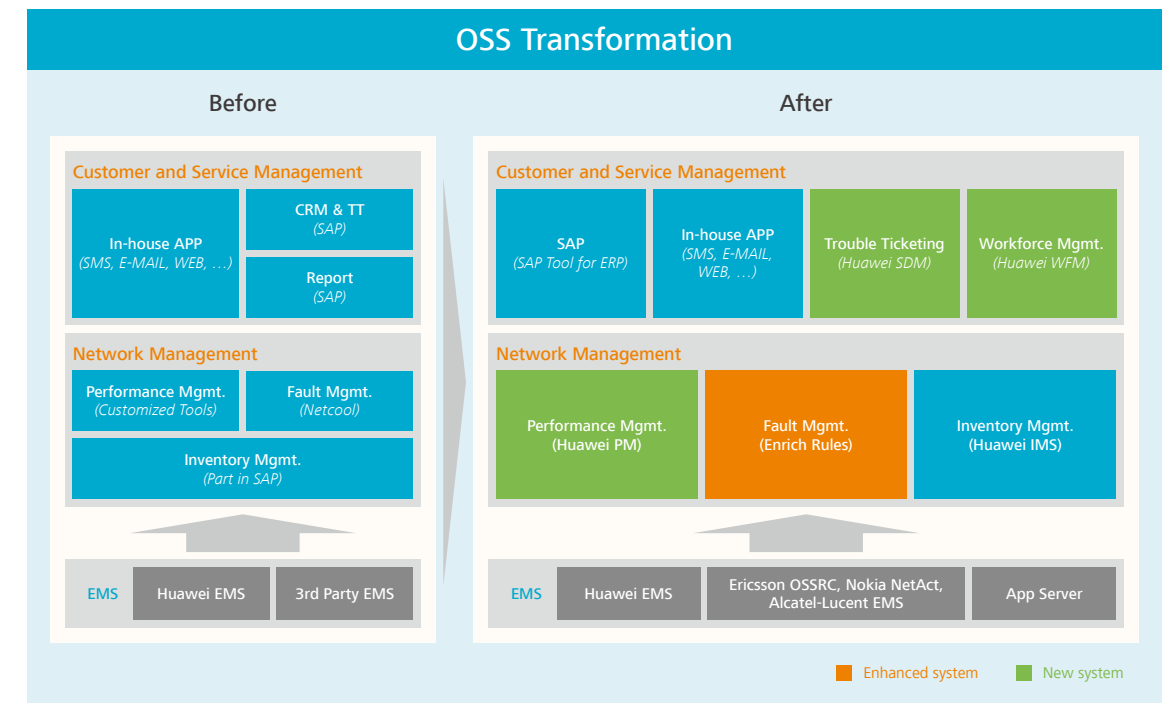reduce churn and increase revenue, while maintaining low operating expenditure (opex). The operator could then focus on new service innovations to compete more effectively in the market.

Network element type	Count
Mobile switching centre (MSS)	99
Base station controller (BSC) / Radio network controller (RNC)	297
Media gateway (MGW)	171
Base transceiver station (BTS)	29 000+
Transmission (BB/Hubs/MW)	29 000+

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Driving transformation

Huawei was chose to drive an OSS transformation program that involved replacing the legacy OSS environment of the operator with an E2E automatic service assurance solution.

OSS Transformation

Before / After diagram showing Customer and Service Management and Network Management layers.

Before:
Customer and Service Management — In-house APP (SMS, E-MAIL, WEB, …), CRM & TT (SAP), Report (SAP)
Network Management — Performance Mgmt. (Customized Tools), Fault Mgmt. (Netcool), Inventory Mgmt. (Part in SAP)
EMS — Huawei EMS, 3rd Party EMS

After:
Customer and Service Management — SAP (SAP Tool for ERP), In-house APP (SMS, E-MAIL, WEB, …), Trouble Ticketing (Huawei SDM), Workforce Mgmt. (Huawei WFM)
Network Management — Performance Mgmt. (Huawei PM), Fault Mgmt. (Enrich Rules), Inventory Mgmt. (Huawei IMS)
EMS — Huawei EMS, Ericsson OSSRC, Nokia NetAct, Alcatel-Lucent EMS, App Server

Enhanced system New system

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Benefits

The operator achieved better operational metrics, resulting in reduced operational costs and improved customer experience.

> Implementation of the multi-vendor MVOSS solution delivered the following primary benefits for the operator:
> * the reduction in unnecessary tickets enabled the relocation of employees to other tasks, leading to a 49% efficiency increase of the RAN support team
> * increased first call resolution (FCR) at NOC front office; 30% of problems are now resolved at NOC front office without escalations to back office
> * the generation of automatic performance reports enabled staff to allocate more time to core tasks
> * improved allocation of field engineers and decreased site visits, yielding a 49.5% improvement in fieldwork efficiency
>
> The MVOSS solution also led to a reduction in complaint rates by as much as 3% between 2012 and 2013. It also contributed to improve NPS from -10 in 2012 to +20 in 2013.

> The operator also saw an improvement in its EBITDA margin in 2013 due to increased revenue and reduced opex. Further, the operator recorded a 32% growth in its customer base in that year, increasing its market share to 19.4%

The MVOSS implementation provided the foundation for building the operator's service and customer-oriented operations, especially as they move to new technologies.

Performance Improvements

Automation & Process efficiency Improvements

Complexity in Technology & Network

A Middle East operator faced the challenge of managing a complex network consisting of 2G, 3.5G, and LTE network technology as their subscriber base continued to grow rapidly. Adding to this complexity was the multi-vendor multi-technology network operations that required efficiency improvements in network quality, operations, and processes while guaranteeing customer experience and reducing cost

A Visible Solution

Fault Management, Service Desk Management, Workforce Management and Performance Management solutions, from Huawei, were quickly and efficiently implemented in the operators network. Huawei also provided pre-integration solution and automated processes to improve efficiency. These solutions addressed the following key areas for the operator:

> Integrated network surveillance for multi-vendor and multi-domain
> Performance dashboard for a heterogeneous network
> Performance threshold alarm and performance KPI report
> Process standardization (Trouble Ticket, Change Request, Performance Management, Work Order, etc.), Service Level Agreement(SLA) control and measurements based on customer request and automatic SLA reporting

Achievements

By combining Huawei's solutions with our best practices we were able to achieve the following for the operator:

> SLA compliance rate improved to 93%
> SLA reporting automated and increased SLA reporting efficiency by 90%
> Reduced major alarms(reported missing) for ticket creation
> Automated generation of network performance report thereby increasing efficiency by 80% compared to manual reporting

Highly Efficient FME's

Using Workforce Management Solution

An Eastern Europe -Northern Asian operator has to cover 17,075,400 square kilometers with hundreds of field engineers to assure 16,000 sites across the country. They requested a real time visual representation and analysis of their field engineers & operations

A transformation for field maintenance

The visualization of field operations is provided by Huawei's Workforce Management solution. Huawei categorized work activities as corrective maintenance (CM), preventive maintenance (PM), and change request (CR),and established a baseline for each activity and region to benchmark improvements from implementation of the solution

Remarkable achievement

The operator can evaluate FME performance based on their output efficiencies and provide incentives to high performing FME's with bonus, competition between regions, evaluation of regional manager's performance, etc.. Following are the results achieved from implementing the Workforce Management solution:

> No. of WOs/FME/day: increased from 1.0 to 2.1;
> Average available time(%): increased from 31% to 63.8%;
> Average operation time: reduced from 112 to 85 minutes;
> No. of FMEs: optimized from 327 (in Jan.) to 280 (in June)

Driving Superior Service Through Automation

Supporting explosive growth in data services, an East Asian operator has automated Operations and Maintenance (O&M) activities to provide superior service to its end users.

The Right Partner

Huawei with its global experience of delivering leading edge automated O&M systems was seen as the perfect partner. The solution was to automate field maintenance with the introduction of an end- to- end Work Force Management system. The solution is called T.I.M.E. and supports the operator's drive for efficiencies in scheduling, resource allocation, reporting and forecasting of field engineers. The fully automated system helps the operator achieve fast resolution of faults through:

Timely Scheduling – Based on Huawei's patented algorithms, the system will dynamically and intelligently allocate each trouble ticket to the most cost efficient resource based on variables such as travel time, location, priority, skills, and experience.

Intelligent PDA – The engineer receives all necessary information concerning the trouble ticket to his PDA. With the necessary information to hand he is enabled to take the required action in both corrective and preventive maintenance situations. This enables faster fault resolution which supports the achievement of agreed SLAs/KPIs.

Measurable Reporting – Analysis of reports by customer's team allows for better operation and continuous improvement

Effective Forecasting – Forecasting for growth in terms of engineers, tools, parts etc. drives cost optimization

Highlights

> 20.8% decrease in network faults
> 23% decrease in the number of distant
> work orders dispatched
> Steady improvement in the network maintenance quality

Field Service Efficiency Improvements

A Central European operator wanted to increase the number of daily jobs its field technicians could complete in response to maintenance and/or repair requests. Additionally, they required an efficient way to respond to priorities along with pinpointing the location of the faults through improved utilization of its Trouble Ticketing system

Seamless Solution

Huawei was able to provide a Work Force Management solution that integrated with existing systems and platforms to provide the following benefits:

> Standardized FSM IT processes and integration with work order process systems to improve work efficiency
> Standardized electronic preventive maintenance tasks
> Ability for the FME to perform preventive maintenance tasks via mobile app checklist thereby creating greater efficiencies to improve network quality

Accomplishments

The new system enables the operator to focus on priority work helping to ensure a superior customer experience. The solution has reduced response and travel times, aided by the integration of the Huawei dispatch solution with the existing trouble ticket application
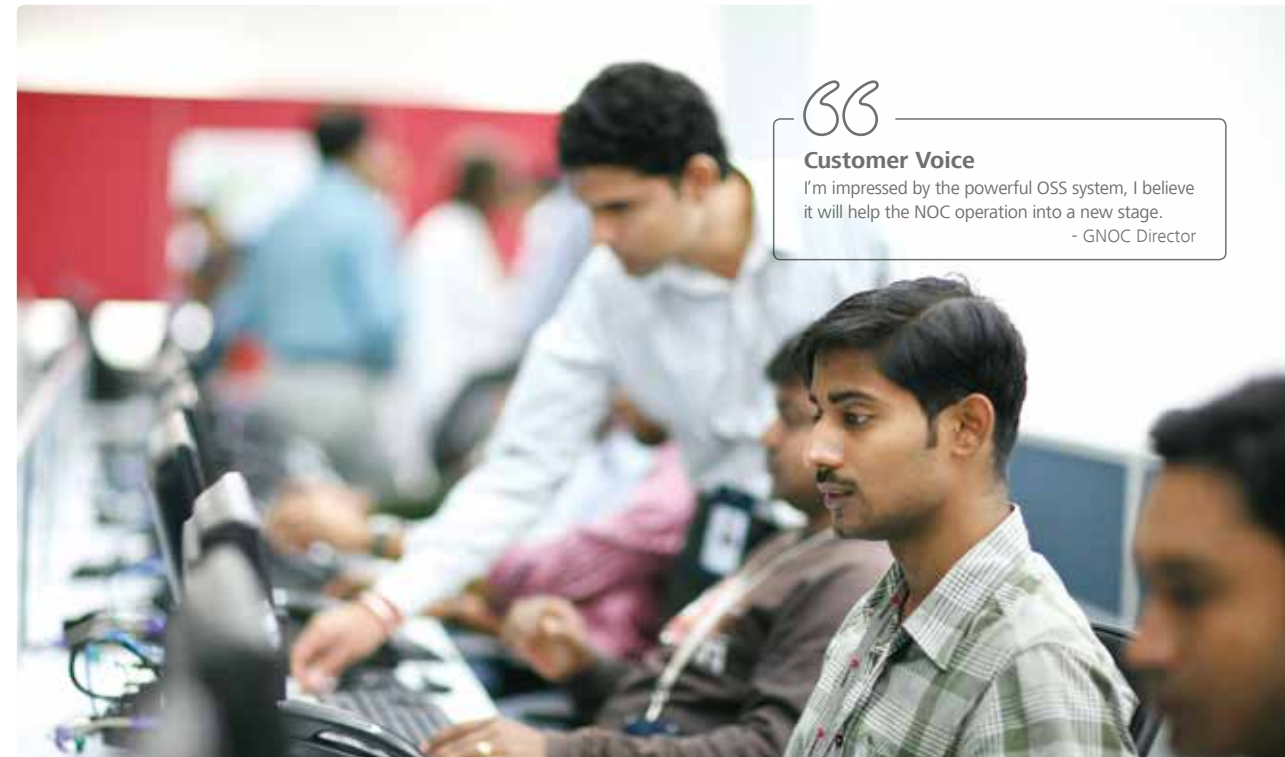
> Efficiency improvements of 15%
> Reduction in TroubleTickets by an average of 8.8% per month
> Per site upgrade from 120 to 178
> Resource Utilization improved from 40% to 74%

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Customer Voice

We see Huawei as a strong company with a strong localization in our country. This is essential for this kind of business. We think that for the future, it would be strong linkage between Huawei and us as a basis for more businesses.
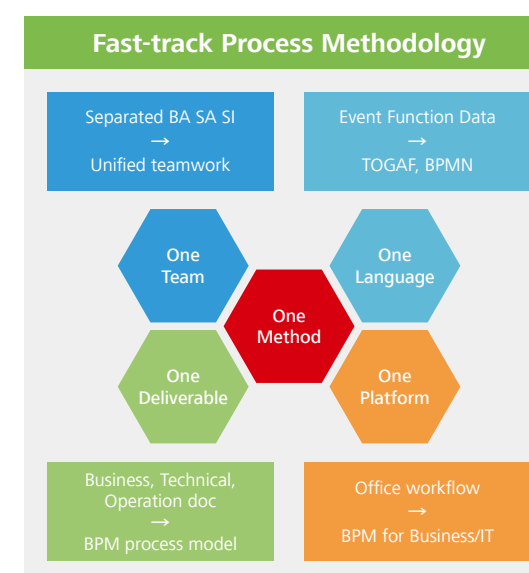
— CTIO

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Fast Operational Transformation

Highlights

Fast-track Process Methodology

Separated BA SA SI → Unified teamwork	Event Function Data → TOGAF, BPMN

One Team · One Language · One Method · One Deliverable · One Platform

Business, Technical, Operation doc → BPM process model	Office workflow → BPM for Business/IT

Background

A South Asian mobile network operator which offers voice and data services aims to achieve higher operational efficiency and quality with an OSS solution from Huawei

Solution

Huawei provides OSS Ghub in South Asia, which helped in the operational optimization over a short time period

Benefit

> With the Fast Track Delivery methodology, the process optimization efficiency increased 50%
> After the process transformation, the overall operational efficiency increased by 19%

Improves First Call Resolution & Customer Experience in Mature Market

Award-winning Test & Diagnosis Service

Highlights

Pre-implementation	Post-implementation
Customer Care First call resolution	FCR improved from 50% to 80%
NOC Trouble ticket handling time	Reduced by 4 minutes per call 40% reduction
Unnecessary field visits	Reduced by 40%
Operations Expenses	Reduced by USD2.7 million per year

Background

As an East Asian operator's customer base increased, repeated issues, that took long times to fix, caused extremely high loads at the contact centre and NOC and increased the field visits, resulting in high OPEX and impaired customer satisfaction.

Solution

The operator put in a comprehensive Test and Diagnostics system that enabled it to move technical expertise forward and to make use of each customer touchpoint more effectively.

Benefit

> This enabled the operator to deal with problems more effectively at the earlier touch point, resulting in reduced time and costs and a better customer experience.
> Given the saturated market and the aggressive pricing from competition, the operator has done well to increase its market share, which reached 61% as of 2013.

Operational Excellence

Huawei OSS Solutions enables Excellence in Service

Zero touch NOC

In order to become the preferred service provider in Middle East, the operator had an immediate need to improve its competitive position by enhancing its operations while increasing subscriber acquisitions and performing seamless network expansion.

This called for tighter control on OPEX through standardization, automation, and streamlining of processes, tools, and systems. However, operator had multiple challenges with multi-vendor network, hard to handle massive alarms and trouble tickets, complex network environment, and lack of effective way to reduce OPEX.

An Integrated Solution

The solution centered around implementation of Service Assurance for Fault Management, Service Desk Management, and Workforce Management. Deployment support was provided for centralized and automatic alarm monitoring, process standardization, and automatic dispatching for field maintenance.

Improved Performance

The successful implementation of the solution resulted in marked improvements for the following areas:

> TT creation was fully automated
> Alarm compression ratio: 60%
> Fulfilled 100% auto dispatch and 100% auto TT/SMS update for performance alarms
> Fault management efficiency improved by 48%

Fast Order to Service

Customer experience & 3i strategy

A Southeast Asian operator wanted to continuously focus on customer experience and released its 3i (- innovation, investment, incubation)strategy, which was about responsible for new forms of service consumption, new markets and new platforms in order to effectively compete against disruptive entrants into the market.

Challenges

> Service provisioning is too complex and long lead time
> Manual service design process
> Lack of E2E Fulfillment System

Benefit

Presales
Enable easy presales enquiry
> Enquiry capacity increased by 23 times(5,760 enquiry per month)
> Enquiry lead time reduced by 7 times

Network Planning
Enable accurate planning
> Better capacity utilization and planning with accurate information

Enable report generation in easy way
> Generate Capacity, Finance, and Asset Report with 1 click from NIT

Service Design & Planning
Increase order handling efficiency
> Order handing efficiency increased by 15 times per month
Reduce design fallout
> Design fallout reduced by 75%

Inventory Management Solution
Support Multi-vendor, Multi-technology, Multi-layer network

Inventory Mgmt System Architecture

Dashboard

Order Manager Service Order	Designer Task Manager Product Catalog Auto Service Design	Reporter Business Intelligent Reporting

Resource Manager
Customers, Orders, Physical / Logical Network & Service Inventory

Active Service Activation	Active Audit Network Audit

Transmission	IP	NGNBN	ATM	ADSL	Voice	Carrier Ethernet

Adapter Web Services

Remedy
Siebel
Small Word
NFM

Latin America
Issue to Resolve

> Workforce Efficiency increased by 14.3% in 2013 and 29.6% in 2014
> The number of FME and vehicles reduced by 10%
> The number of WOs/FME/Day improved by 30%
> Resource Utilization improved by 72.6%

Southwest Asia
Issue to Resolve

> Appointment success rate increased from 60% to 85%
> Efficiency increased by 25%

Central Europe
Efficient Filed Service Management

> Efficiency increased by 17.4%
> FME number reduced by 17%
> Sites per FMEs for maintenance increased by 33.3%
> Resource Utilization improved from 64.2% to 84.3%

West Asia
Issue to Resolve

> WOs per day per person increased from 3.0 to 3.3
> O&M efficiency increased by 10%
> The number of technicians reduced from 75 to 65

Kicking up with Service Assurance

Highlights

> OPEX decreased by 12%
> NOC efficiency improved by 26%
> SLA compliance rate increased by 5%
> MTTR decreased by 23%

Ensuring Service

A Global Operator with its Middle East Opco provides IP Core Services covering global enterprise customers across 32 countries. They are facing challenges with complex assurance and fulfillment processes and low automation. Also, their enterprise customer requirements are stringent on network stability, service quality, and SLA compliance

Service Consistency

DevOps Service Model with fast response to customer problems and requirements was implemented with the following capabilities:

> IaaS cloud platform & on demand resources
> Out-of-the-Box OSS platform in cloud
> Rapid introduction of new services for alarm correlation, operation processes, and SLA/KPI dashboard
> Centralized assets library with global best practices

Impactful Performance

> DevOps supports CAPEX to OPEX transfer
> Improvement in customer satisfaction
> Efficiency improvements of 26%

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Efficiency Improvements Through Process Automation

Background

A South Asian state-owned telecommunications company, largest provider of fixed telephony and broadband services needed to automate their processes to improve efficiency and engaged Huawei to support them in this process

Solution

With integrated solution of Huawei Fault Management System, Service Desk Management System, and Workforce Management System, most of manual processes were automated

Benefit

> The process automation increased the operational efficiency and quality
> After the process transformation, overall operational efficiency increased by 38%

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Optimizing Resources to Streamline Operations

In order to become the preferred service provider in Asia-Europe, the operator had an immediate need to improve its competitive position by attracting new subscribers while coping with the challenges of network expansion. This called for a tighter and more efficient control of costs associated with resolving network faults. Optimizing field resources across a vast geography and large urban populations of Asia-Europe was a major problem for the operator.

Automated Operations

The solution was to focus on standardization, automation, the use of common tools and the streamlining of processes across its large field maintenance organization. Huawei's experts first assessed the operator's current dispatch processes and business rules. Next they integrated Huawei's Workforce Management system with the operators existing trouble ticketing solution to dynamically optimize the allocation of field resources to trouble tickets.

Impactful Improvements

The new system as already helped the operator achieve the following results:

> Work Orders (WO) per day per person: 2.2—>2.6
> Maintenance efficiency: increase 15.2%
> Field engineer: reduced 2 field engineer teams

Customer Voice
Through this partnership, Huawei strategically enabled our business excellence in Middle East's telecom market..

- CTO

A Top Quality Network

A Middle East operator was able to capitalize on their ability to quickly deploy network infrastructure with high quality and performance. The introduction of new commercial applications which incorporate the latest technology are complicated and costly. In an effort to further improve network performance, reduce O&M costs, and enhance end user satisfaction, the operator made a corporate commitment to build the best quality network that provides unparalleled services to their customers

Quality and Efficiency Improvements

Quality and efficiency delivered through Huawei OSS solutions include Fault Management, Service Desk Management, Workforce Management and Performance Management. These solutions enabled the operator to rapidly generate dashboards, perform real-time monitoring and top down analysis of various network issues and problems

> Fault handling capability of the FO improved dramatically to 55%
> Fault handling MTTR was below SLA Compliance.

Since the implementation of the above solution, the operator has secured its dominate position in Middle East's MBB market by consistently ranking top in MBB user experience for 2G & 3G network quality!

Support Fixed + Mobile Network Converged Operations

Operator H runs a very large fixed and 3G network in East Asia and soon will be launching a 4G network. With fixed and mobile networks converging and to maintain competitiveness in telecom market, Operator is committed to sustaining an efficient cost structure and hence are partnering with Huawei to help them achieve this goal

Solution

Huawei's solution was based on Fault Mgmt System, Service Desk Mgmt System and Workforce Mgmt System. By using Huawei's solution, operator gets a standardized platform that provides the flexibility to adapt to different technologies and operational excellence in managing their network. It also helps Huawei achieve and maintain all major SLA and KPI's that were committed to the customer.

Benefit

> OPEX reduction
> Efficiency improvement in complex fix and mobile network operation

Less is More

A South African operator faced the following challenges:

> Increase in site alarms and work orders necessitated greater FO work efficiencies or adding more manpower (costly option)
> Unnecessary site visits
> Difficulty in localizing and troubleshooting faults resulting in repeated site visits and long restoration times

Automatic Fault Analysis

Implemented business rules analysis and definition of alarm management and work order management on OSS IT platforms. This resulted in automatic fault diagnosis, alarm process automation, and work order process automation for troubleshooting, diagnostics, and dispatch.

Remarkable Results

> Site monitoring(per person) improved on an average by ~17%
> Alarm compression rate reached 71%
> Auto TT dispatching rate reached ~87%
> Work efficiency improved by 48%
> Auto diagnosis and troubleshooting ratio reached 64% thereby saving 3 site visits per day

End to End ITR(Issue To Resolve) Solution

Highlights

> Alarm compression ratio: 60%
> Auto create TT ratio: 65%
> Auto dispatch and escalation: 100%
> Efficiency increased by 18%

Background

A South Asian provider of managed communications services to multi-national enterprises and service providers globally, needed an E2E ITR solution to improve the operational efficiency

Solution

E2E assurance solution from Huawei covered monitoring, ticket handling, and field task execution with seamless integration between Huawei Fault Management System, Service Desk Management System, and Workforce Management System

Benefit

> With E2E integrated solution, 43% of manual tasks were handled by the system

Seamless Integration

Highlights

> Alarm compression ratio: 60%
> Auto create TT ratio: 65%
> Auto dispatch and escalation through Performance alarm monitoring 100%
> FO Fault management efficiency increased by 28%

Background

A South Asian telecommunications company with over 1.7 million active subscribers needed an E2E ITR(Issue To Resolve) solution to improve the operational efficiency

Solution

E2E assurance solution from Huawei covered monitoring, ticket handling, and field task execution with seamless integration between Huawei Fault Management System, Service Desk Management System, and Workforce Management System

Benefit

> With the Fast Track Delivery methodology, the process optimization efficiency increased 50%
> After process transformation, the operation efficiency increased by 17%

Central Europe
Issue to Resolve

> Efficiency increased by 23.6% in 2013 and in 2014 by 19.1%
> The number of FMEs reduced by 25.5%
> Sites per FMEs for maintenance increased from 70 to 105
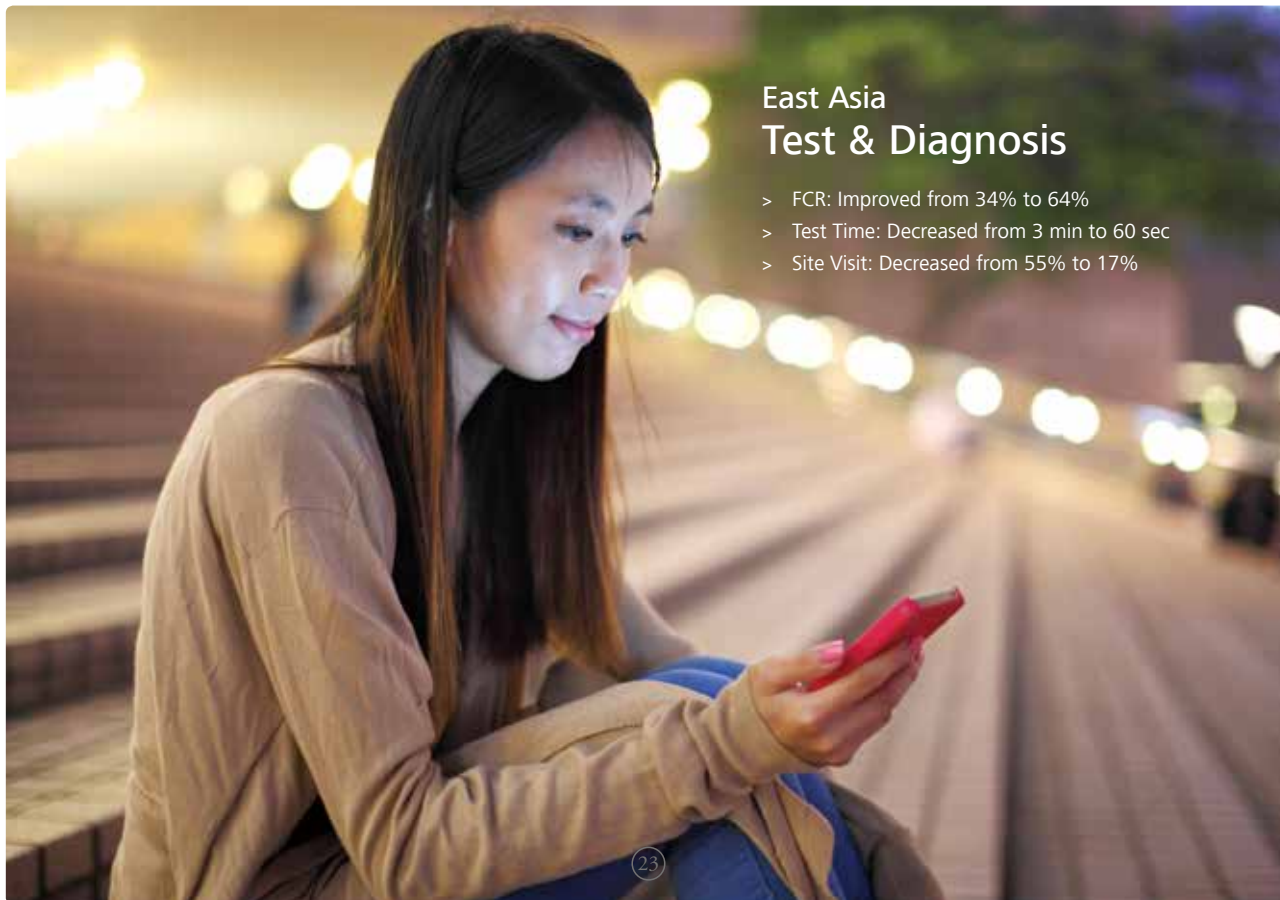> Resource Utilization improved from 60.5% to 84.3

Asia-Europe
Issue to Resolve

> WOs per day per person increased from 2.2 to 2.6
> O&M efficiency increased by 15.2%
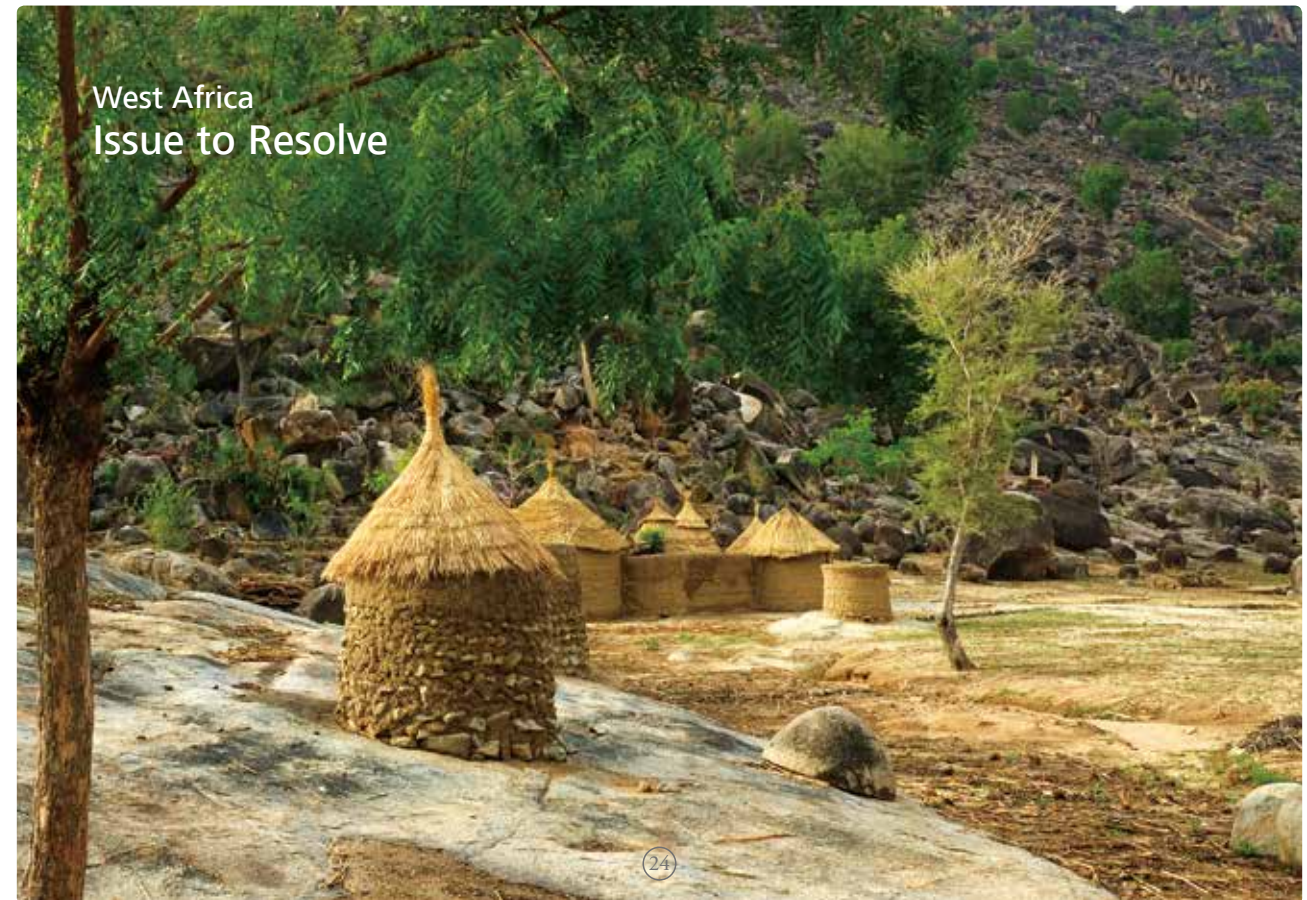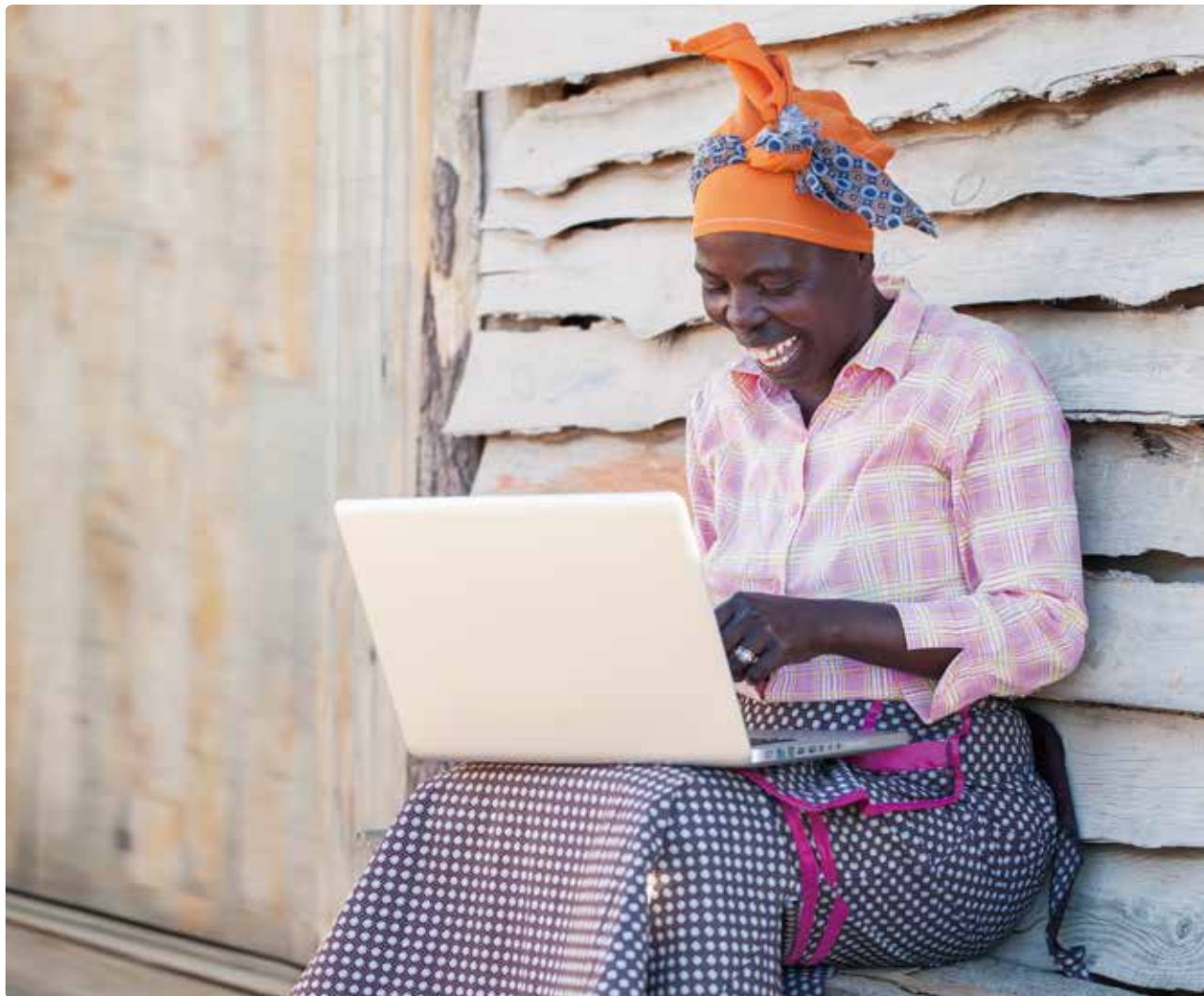> FME reduced to 2 teams

East Asia
Test & Diagnosis

> FCR: Improved from 34% to 64%
> Test Time: Decreased from 3 min to 60 sec
> Site Visit: Decreased from 55% to 17%

West Africa
Issue to Resolve

O&M Efficiency

Highlights

> Number of sites served per field engineer improved by 20%
> Travel time reduced by 15%
> SLA compliance rate improved by 10%

Background

An operator from West Africa has 11 million wireless users and more than 60 percent market share. The target for the operator is to remain competitive & reduce O&M costs

Solution

Unified field management platform that supports resources across multi field service and multi projects was implemented. The system is also integrated with trouble ticketing systems for automatic ticket dispatching to field engineers.

Benefit

> With the integrated unified field management solution, the travel time and number of site visits decrease
> Manager has full access to field engineer's real time status and workload for improved SLA compliance and cost savings

Seeing is Believing

Highlights

> MTTR improve by 7%
> FO Efficiency improved by 18%

Visibility in Operations

An operator in North Europe has deployed TT/WO/CR/HD/PT/PM systems but is facing challenges due to lack of operations visibility from their existing systems

Dashboard for the Drive

Integrated fault management and workforce management to operations visibility, SLA dashboard, and SLA compliance. Also, automated trouble tickets

Performance

> Ensured SLA fulfilment and compliance
> Improved network quality
> Provided operations visibility

WFM Solution

Highlights

> Yearly cost savings $800K USD
> Operational efficiency improved 20%
> MTTR reduced 15%

Background

An European Operator that has five Opcos in Latin America, needed to share their network and operations team, for site maintenance, to improve operational efficiencies and reduce cost

Solution

Huawei implemented its unified field management system for centralized resource scheduling and integrated with different network ticketing systems for automatically dispatching ticket to the field engineer

Benefit

> With the WFM solution and the ability to do data analysis and assessment the outsourcing costs reduced significantly
> Integrating the Trouble Ticketing system helped in expediting fault resolution and reducing MTTR

Efficiency in FMC Networks

Highlights

> Baseline operational costs improved by 29%
> Overall cost reduced by 11%

Background

An operator in West Africa with integrated fixed-mobile operations, currently serves 2.8 million mobile subscribers and 280,000 fixed users. The operator's goal is to become the best provider of broadband voice services in the country within the first year and than focus on network evolution and operational efficiency

Solution

WFM system was integrated with alarms system to improve the efficiency of Field Maintenance teams. Use WFM to manage multi-project and multi-service scenarios for resource operations in an FMC network

Benefit

> Managers can evaluate FME performance based on the standardized processes and visual reports
> Ability to establish a baseline database with quarterly output on baseline costs

Customization is Key

Highlights

> Process delivery cycle short by 70%
> SLA compliance rate increased by 5%

Customization for Performance

An operator in East Europe has deployed TT /WO /CR/ HD/ PM platforms but is facing challenges in long cycle time for customizing processes and lack of an effective solution to enhance their current SLA compliance rate. They are facing pressures on increasing efficiency and reducing cost

TTM for Leadership

Huawei provided process design and configuration of the platforms and implemented BPM standards. Also provided SLA dashboard for easy verification of SLA compliance and automatic trouble ticket generation

Impact

> Ability to configure process on SDM on the fly and enable rapid process customization
> SLA Compliance verification
> Improved network quality

TTM & Efficiency Improvement

Highlights

> Operational efficiency improved 26%
> Efficiency increased 20%
> Cost reduction of 15%
> No major customer complaints

Background

A West African operator that provides 2G and 3G services with some WiMax and LTE coverage has about 45% of the market share. The operator wants to reduce OPEX and improve TTM

Solution

Workforce Management platform has the capability to manage all telecom field operations activity and enable the scheduling of resources by type of service, process, SLA, and leverage the same field team

Benefit

> While the network grew by 3000 sites in one year the field engineers to support the network remained the same
> Ability to upgrade sites from WiMax to LTE for added coverage and capacity

Tackling Troubles for Excellence in Experience

A operator in East Asia provides High Speed Internet and VoIP to 3 million customers. Every month there were 20,000 Trouble Tickets(TT) opened and 200 of them were escalated to head office by customers due to SLA non-compliance

Auto Diagnosis & Dispatch

Based on Huawei's Test & Diagnosis solution integrated with EMS, TT system, and inventory management system the auto diagnosis of TT diagnosis to filter home network issues and return to CC for resolution. Provide Auto-dispatch of TTs to the exact department(based on fault localization) for resolution.

Impactful Experience

> This enabled the operator to deal with customer complaints more effectively, resulting in reduced time and costs and a better customer experience.
> This allowed the operator to focus on complex issues rather than the mundane and trivial
> Some of the impact the solution had on the network include:
  - FCR increased by 40%
  - TT handling time in NOC reduced by 4 minutes
  - Unnecessary field visits reduced by 30%

Seamless Migration and Transformation

A North European operator, which serves 70% enterprise users, was facing low operation efficiency and lack of effective solution to enhance the FTR, shorten MTTR, reduce human error, and improve service quality.

Higher Operational Efficiency

Huawei was responsible for migrating the operator's legacy OSS system successfully, and improved fault handling efficiency by transformation. E2E fault handling automation, unifying and regulating TT handling, avoiding duplicated, non-effective TT was also provided. Power and environment fault handling with zero touch was delivered

Impactful Performance

> Alarm compression ratio: 95%
> Auto/semi-auto TT creation: 70%
> Auto TT acceptance: 98%
> WO auto creation: 90%
> TT synchronize with WO: 100%
> Auto TT closure: 70%
> FO operation efficiency improved by 44%
> SDE operation efficiency improved by 54%

Best of Suite Inventory Management

A Oceanian operator has various legacy inventory systems in its OSS environment. It faced the challenge to serve its enterprise customers with more efficiency to retain customers.

Solution

Huawei provided an end-to-end inventory management system to manage Logical and physical Inventory, generate asset report and automate service design

Benefit

> Service design time reduced from hours to minutes
> 400% improvement in design efficiency
> Rework reduced by factor of 3-4 times
> Complete service order provisioning cycle reduced by up to 2 days per service
> Lead time on service design reduced by up to 20%
> Design once automation improved data accuracy to 99%

East Asia
Issue to Resolve

> Optical cable line maintenance quality increased by 20%
> Resource management cost per month reduced by 15%
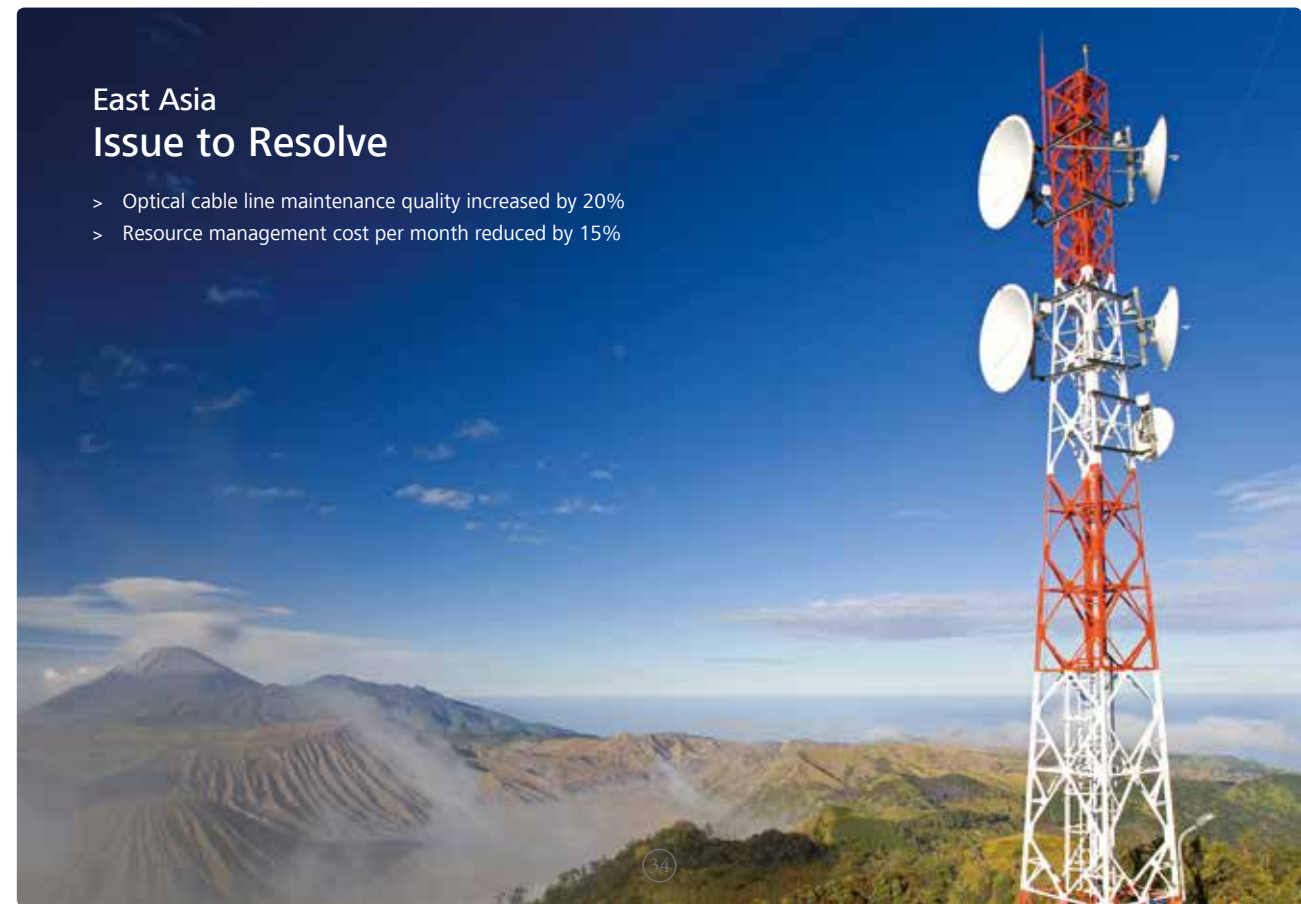
Improve Customer Satisfaction and Experience

A Northern South American Operator with 3 millions customers was facing high levels of customer complaints. Repeated Customer Premises Equipment (CPE) issues and network problems were taking a long time to resolve, resulting in a high level of calls to the customer care centre and the NOC. The operator was suffering with increasing OPEX and growing levels of customer dissatisfaction.

Fast resolution of CPE Faults

With the introduction of Huawei's Test & Diagnosis solution, the operator was able to remotely support home network services more effectively. Network engineers where able to quickly identify root cause, reduce downtime and optimize the utilisation of field staff.

Enhanced Experience

> Improved customer satisfaction and experience.
> Reduced OPEX.
> Enhanced utilisation of NOC & field service engineers.

Maintaining Leadership in the Marketplace

A North American operator with 2.6M customers provides both Mobile & Fixed Network Services. Since privatization of the Telecom Service in North America, competition has increased and with that the need to improve efficiency, customer satisfaction, and reduce cost

Visible Operations

Huawei's solution was based on SDM/WFM platforms to centralize ticket management and standardize processes with e2e visibility on operations thereby improving FO/FME efficiency

Excellence in Operations

The solution from Huawei enabled the operator to deal with customer problems more effectively and provide a better customer experience. The operator also was able to increase their market share and excel in operations and quality. Below are few key KPI's that improved significantly:

> MTTR decreased by 13%
> WO auto create rate improved by 63%
> TT dispatching SLA improved by 5%
> Work efficiency improved by 19%

Field Maintenance Improvements

Highlights

> Site maintenance cost reduced 30%
> Travel time reduced 10%
> MTTR reduced 13%

Background

The mainstream CDMA network operator in West Africa has to meet the challenge of cost savings and field engineer utilization efficiency improvement

Solution

Huawei provided the WFM solution in which field teams could be shared across operators in a RAN sharing scenario. WFM also provided security management to keep network information secure and accessed by authorized users only

Benefit

> Field engineer can do active and passive device maintenance in the same region
> Field engineer travel time reduced and recovery time of site faults improved

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Customer Voice
It's pretty valuable to find out where fault happens firstly and transmit to exact departments for solution.
- NOC manager

Speedy Fault Isolation & Demarcation

An operator in East Asia lacked the tool to diagnose, isolate, and demarcate the problem as result CC delivered almost all customer complains to NOC. TTs were transferred among several Bus, resulting in very inefficient TT handling, high OPEX, and poor customer satisfaction.

One Click Fault Location

Test & Diagnostic solution provided one-click quick fault location to help reduce incorrect TT delivery, integrated T&D with service probes to help NOC monitor service quality

Speedy TT Resolutions

> Improved efficiency in TT handling and fault recovery
> Support O&M process optimization and improve customer satisfaction
> Enable the operator to expand broadband market share under fierce competition
>   • FCR increased by 50%
>   • TT handling time in NOC reduced by 7 minutes
>   • Unnecessary field visits reduced by 45%

Improved Efficiency for Impactful Experience

Complex multi-vendor network with stand-alone fault management systems and lack of standard processes in Southern-East Asia

E2E Visibility

> Enhance end-to end processes across multi-vendor environment.
> Integrate multi-vendor equipment alarms to provide unified surveillance, alarm compression and auto-dispatching of trouble tickets.

Excellent Experience

> Improved network quality
> 30% of NOC engineers' time was saved, allowing them to focus on network analysis & optimization.

Highlights

Team Efficiency

Optimize and streamline systems & processes
Team Efficiency improved > 30%

Auto-dispatching of trouble tickets
Shorter fault resolved duration
Faster customer response

Improved Customer Satisfaction

Excellence in Network Quality

An operator in Southern-East Asia with Multi-Vendor network has a need to Increase the efficiency and reduce the cost of performance management

Efficiency Improvements

> Implement E2E fault, performance, change and complaint management system.
> Clearly defined SLAs between Huawei & subcontractors.

Impacts

> Helped operator increase team performance by 30%, and reduce manpower by 10%

Highlights

Network Quality

Improve Network Performance

Network Call Setup Success Ratio > 95%

High level Performance
Real-time Dashboard
Performance Thresholds

Real-Time Network Performance

Excellence for Converged Networks

An operator in South Asia has gone through 2G&3G network convergence but has caused the efficiency to degrade and network quality suffered

Monitoring Faults

> Integrated monitoring via Fault Management system
> Alarm compression in Fault Management system

Efficiency Improvements

> Reduced Capex
> Increased efficiency and centralization of O&M resources.

Highlights

Network Availability

Speed up response and shorten
Service outage
**Wireless Network Availability
99.99%**

Analysis (Alarm Compression)
Dispatch (By rules)
Notice (SMS Email)

Improved Network Quality

Proactive Performance Measures

Multi vendor network operator in Northern-West Africa is faced with re-active decision making due to manually generated performance reports

Automatic Reports

> User-defined performance report template developed.
> Trend, comparison and drill down analysis helped locate system failure in real time

Impact

> Helped operator increase team performance by 100%, and reduce manpower by 50%

Highlights

Multi Vendor Support

Automation of performance
management system
**Increase team 100% Efficiency
Reduce 50% manpower**

Auto Report Generation
Unified Model & KPI

Enhanced Network Decision Making

East Asia
Issue to Resolve

> WOs per day per person increased from 1.8 to 2.2
> O&M efficiency increased by 22%

Middle East
Issue to Resolve

Middle East
Issue to Resolve

Southwestern South America
Issue to Resolve

Fault Isolation in Complex Network

An operator in East Asia built fixed broadband network and provides FTTX High Speed Internet service, PTN Internet line and SDH data line. Multi-Services, Multi-Technology, Multi-Vendor equipment makes fault locating challenging resulting in high OPEX and poor customer satisfaction.

Proactive Test & Diagnosis

Huawei's E2E, multi-service, multi-network-technology Test & Diagnosis (T&D) system that can deliver:

> One-key automatic testing and periodically proactive testing for NOC engineer
> Mobile APP test solution for field engineer

Impactful Improvements

> Improve operator efficiency in locating residential and enterprise services
> Enable operator to expand broadband market share under fierce competition.

Highlights

> FCR increased by 50%
> 75% of TTs diagnosed for RCA by T&D in one click
> Unnecessary field visits reduced by 35%

Enhance Problem Handling

An East Asian operator is committed to increasing customer satisfaction, improving operation and maintenance efficiency and enhancing brand competitiveness. However, lack of tools to effectively diagnose and understand Customer Premises Equipment (CPE) problems was impacting its ability to meet its objectives.

Enhanced Service Quality

With Huawei's Test & Diagnosis system the operator was able to remotely diagnose customer CPE problems, restore service online or quickly dispatch an engineer to site armed with the necessary information to resolve the problem.

Impactful Performance

> Improved customer satisfaction through fast resolution of CPE faults.
> Efficient utilization of NOC and field maintenance staff.
> Enhanced competiveness through superior service.
>   • FCR improved by 70%
>   • Field visits reduced by 60%

Simplified Operations

Solution

Huawei's OSS solution with built-in eTOM compliant processes as applied to NOC operations, helped the operator achieve seamless transformation

Background

A joint venture of East Asia telecommunications operator was facing increased competition and in house built tools were unable to meet the business requirements. Hence, the operator looked for provider with advanced OSS systems to simplify their operations

Benefit

> The standardized incident management increased SLA compliance and reduced outages
> The risk analysis and post review of change management process decreased the risk of network changes and made monitoring and tracking of network changes easy

ITIL Based Application Management

Solution

Huawei's OSS solution supports the OCS operation and maintenance which is managed as part of the ITIL process. Incidentally, the OCS application is also provided by Huawei

Background

A leading CSP in South Asia that provides mobile, broadband, and Digital TV services is rapidly increasing their subscriber base and the stability of their billing system is of a key concern to them

Benefit

> The incident, change, and problem management along with fulfillment processes made the OCS operation seamless
> The downtime of application and infrastructure of OCS decreased significantly

Exceeding Customer Expectations

Highlights

> SLA compliance rate increased by 5%
> MTTR decreased by 16%
> Process delivery cycle reduced by 52%

Need for Operational Excellence

As the leading integrated telecommunications operator in Southern-East Asia with over 2M customers had the objective of achieving higher operational efficiency & network quality with an OSS solution

Exceeding Excellence

Huawei's OSS solution with built-in eTOM compliant processes helped the operator with seamless operations transformation. Provided process design and configuration of the platform with standard BPM processes along with SLA dashboard

Impactful Experience

> Fast Track Delivery methodology increased process optimization efficiency dramatically
> SLA compliance rate was over 99%
> Network quality was enhanced

Simple Systems, Seamless Service

Highlights

> SLA compliance rate increased by 8%
> Process delivery cycle reduced by 61%

Simplicity in Operations

An Afican operator with operations in Africa wanted to outsource their network O&M to Managed Service Provider to achieve higher operational efficiency and network quality with high quality OSS solution

Seamless Operatoins

Huawei's OSS solution with built-in eTOM compliant processes helped the operator with seamless integration between Fault Management System, Service Desk Management System, and Workforce Management System. Provided process design and configuration of the platform with standard BPM processes along with SLA dashboard

Impactful Service

> Time to Market decreased from months to weeks
> Fast-track delivery methodology increased process optimization efficiency dramatically
> Network quality was enhanced

Performance You Can Count On

Tracking Troubles

A Global Operator based in Middle East with total subscribers of over 44M is facing challenges to improve their KPI's, TT SLA's, overall operational efficiency

Value Creation

Huawei's solution included alarm correlation, fault management automation, and service transformation to reduce frequency of alarms, improving of TT SLA compliance, improvement in operational efficiency and network quality while reducing operations cost in NOC

Increased Performance

> Improved quality of network
> Efficiency improvement in NOC to enable NOC engineer's to focus on network analysis & optimization

Kicking up a Notch with O&M

Operational Improvements

A network operator in South Asia with Multi-Vendor network O&M has faced challenges with poor network quality, low efficiency, and lack of skilled staff

Automation for Efficiency

Huawei integrated alarms from Multi-vendor equipment with alarm compression, provided unified surveillance, auto-dispatching of TT, process configuration, SLA dashboard, and TT automation

Impact on Service Delivery

> With the Fast Track Delivery methodology, the process optimization efficiency increased dramatically
> SLA compliance rate over 99%
> Network quality would be enhanced

East Asia
Issue to Resolve

> Resource requirements reduced to 40 staff per month
> Sites per FMEs for maintenance increased by 17.8%
> WOs per day increased by 45.5%
> O&M efficiency increased by 17%

Northwestern Europe
Service Desk Management
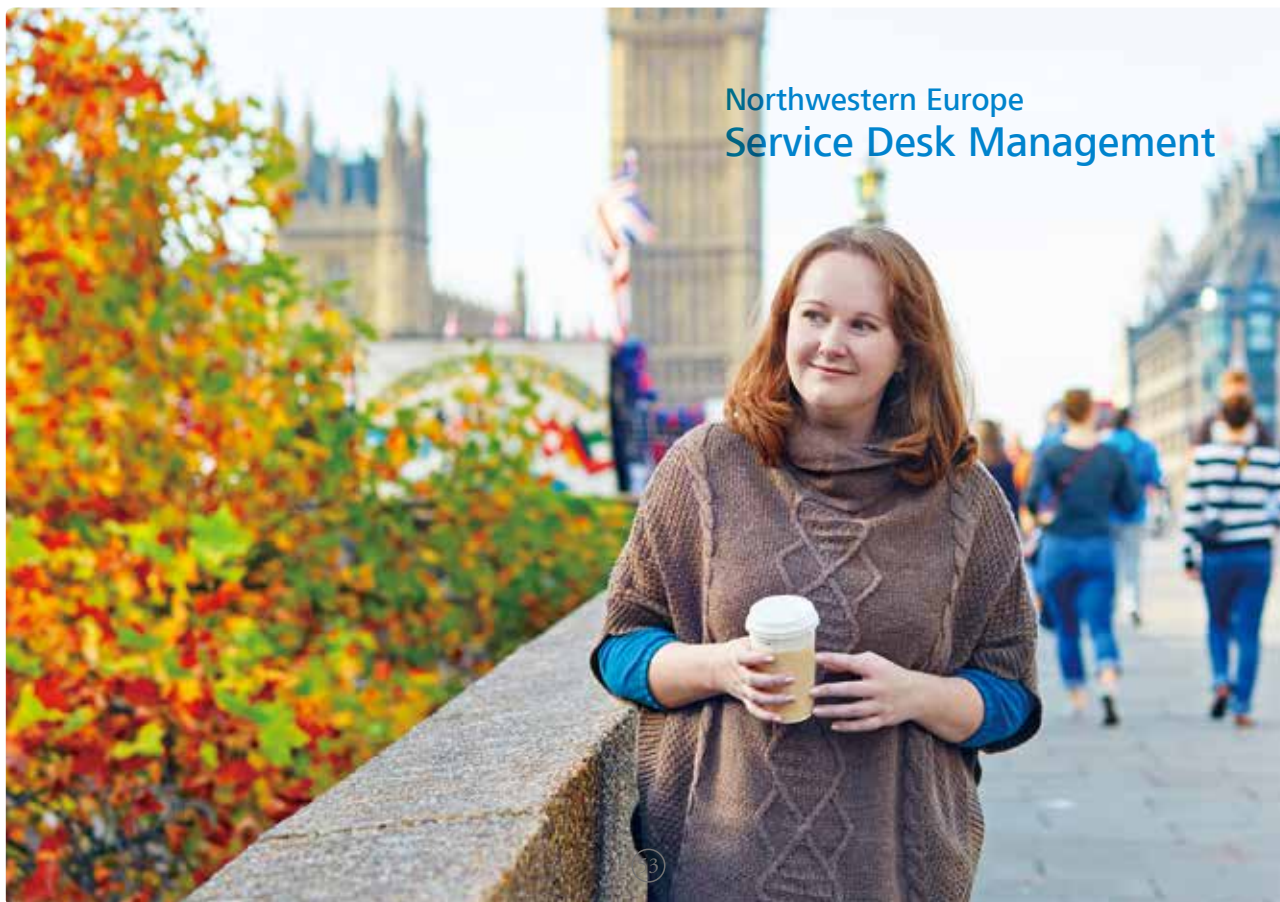
Efficiency in First Call Resolution

A Middle East operator's home network is increasingly becoming complex and customers are demanding better service experience. Traditional way of handling customer complaints is not fast enough and fault isolation, localization, and troubleshooting is taking too long thereby causing serious impact on customer satisfaction.

Fast Fault Resolutions

Huawei's Test & Diagnosis(T&D) solution provides one key diagnostics to complete the end to end fault diagnosis, fault location, isolation and resolution, and to ability to do multi-failure analysis for RCA

Satisfied Customers

> FCR increased by 60%
> Reduced by 12 minutes per TT in NOC
> Field visits Reduced by 70%

Speedy First Call Resolution

A fixed network operator in East Asia was struggling to identify and resolve Customer Premises Equipment (CPE) problems. The Customer Care and Network Operation centers were inundated with customer complaints, in addition inefficient utilization of engineers was impacting staff morale and customer satisfaction.

Enhanced Network Visibility

With Huawei's Test & Diagnosis solution the operator was able to integrate with other internal support systems to provide an enhanced end-to end network visibility for both Customer Care and NOC teams.

Improved Experience

> Improved network resource utilization and effectiveness.
> Fast resolution of customer problems.
> Increased customer satisfaction and brand image.
>   • FCR Increased by 58%
>   • TT Handling time reduced by 5 minutes.
>   • Unnecessary field visits reduced by 30%

> **Customer Voice**
> The great achievement you have made so far and we really appreciate the work you are doing on a daily basis.
> - Director of network operation

Quality You Can Count On

A North European network operator, owned by a joint network sharing partners, has the goal of providing the best service the market can offer and is always looking for ways to enhance operational efficiency to create a competitive advantage in the market place. Key goals for the operator are to ensure continuous availability of the network, high network quality, and superior customer experience.

E2E Visibility

Based on Huawei's centralized OSS solution in Romania, following support functions of operations were provided:

> Service Desk (Tech Support)
> Network Surveillance
> Fault management
> Problem and Incident Mgmt
> Performance Management
> Change & Configuration management

Simplified Operations

> OPEX reduction by centralized solution
> Simplify, unify vendor management
> SLA fulfillment

Remote Delivery

Background

An Opco in Africa belonging to a global provider of managed communications services needed E2E ITR (Issue to Resolve) solution for which they engaged Huawei

Solution

Based on the OSS systems deployed in India Ghub, Huawei provided remote access service to their African Opco

Benefit

> TCO decreased more than 50
> Time to Market decreased from months to weeks

Secure Network

Highlights

> 10% less field engineers needed
> 26% increase in operational efficiency
> 82% Process Standardization rate
> "Zero accident, Zero down-time" with excellent KPIs in World Cup

Background

A Southeastern South American operator with a 30% market share that provided services for the World Cup in Southeastern South America seeks to further increase its network security and create highly efficient operations team

Solution

Huawei implemented its Assurance solution to manage 5 states and 300+ field engineers. The solution helped the operation team with process improvement, skills and competency enhancements, and efficient utilization of field engineers

Benefit

> Regional teams improved standardization process thereby increasing efficiency in handling customer complaints
> While network continues to expand the number of maintenance teams required to support the network dropped and overall network quality stabilized

Running Seamless Network

A Northeastern African operator faced the challenges of running a complex multi-vendor network with disparate systems that made issue management and resolution very difficult

Operational Enhancements

Huawei's solution was based on Service Desk Mgmt System and Workforce Mgmt System. Huawei worked with the operator to develop a step-by-step approach to implement business enabling systems with minimal impact on operations

Impact

Efficiency improvement by 30% through automatic tools implementation

Excellence in Converged Services

A Southwestern Asian operator wanted to establish the best quality network and provide innovative & advanced ICT services

Solution

Huawei's solution was based on Fault Management, Service Desk Management, and Performance Management to realize E2E SLA/KPI compliance across network & IT and provide E2E Service Assurance

Benefit

> Efficiency improvement
> Improved SLA/KPIs
> Quick fault demarcation
> Faster new service launch time

Sustain Growth and Maintain Leadership

A Southwestern European operator is growing rapidly and it needs to differentiate itself from its competitors. The operator aims to improve performance and efficiency in operation and maintenance of the network so it can gain competitive advantage in the market

Solution

The operator chose Huawei as their long time partner. Huawei is committed to transforming the current OSS platform and IT systems in order to efficiently manage NOC and Field Maintenance teams. Huawei solutions include a complete suite of KPIs with a clear focus on measuring and improving quality in key areas.

Benefit

> OPEX reduction
> Simplify and standardize vendor management process
> Pre-defined and predictable high network performance
> Focus on customer growth, business development, and value-added services

Quality Service Assurance

A Southern North American wireless operator uses EMS for its network operations but is facing challenges with having to support Multi-vendor network, Silo's in operations and issue resolution taking longer time, on an average 178 minutes for critical issues

Trustworthy Monitoring

Huawei's solution was based on E2E Assurance providing Fault Management, Service Desk Management, Performance Management, and Workforce Management. The solution included:

> Unified monitoring of fault & performance management to improve monitoring efficiency
> Auto root cause correlation analysis to realize fast root cause identification and resolution in a multi-vendor network
> Auto TT creation

Impactful Assurance

> MTTR reduced from 178 mins to 85 mins
> SLA compliance increased from 86% to 98%

Staying at the Top of The Game

A Southern-East Asian operator was looking to improve their efficiency, reduce cost, and have more visibility on field operations had asked Huawei for help to meet their goals

OSS Solution

Huawei provided its OSS solution(Performance Management + Fault Management + Service Desk Management + Workforce Management) for proactive performance management, Fault Management for alarm compression, Service Desk Management to standardize NOC operations, and finally Workforce Management for visibility into field operations. This solution improved FO/FME efficiency

Marked Improvements

> Performance monitor team decreased from 40 to 8 person
> Alarm compression rate in RAN 83%

Top Notch Service

A Latin American operator is focused on providing excellent service, ensure SLA compliance and keep network availability at 99,955% in each site (19.44 minute with service affecting)

Network Availability

Based on Workforce Management system, Huawei provided the solution which allowed full visibility into field operations, and reduced field engineers required for site maintenance thereby reducing field maintenance cost and improving SLA compliance along with network availability

Impact

> Improved field operation efficiency
> Achieved SLA compliance & network availability targets
  • Network availability keep on 99.955%
  • UR increased by 23%

Staying Ahead of Competition

A service provider in Southern-East Asia was determined to stay competitive by improving O&M efficiency through transformation and optimize their cost structure

Seamless Operations

Huawei's solution was based on Service Desk Mgmt System. Huawei worked with the operator to develop a step-by-step approach to implement business enabling systems with minimal impact on operations

Simplified Processes

> OPEX reduction
> Simplified O&M (fixed & mobile network)
> O&M efficiency improvement by unified system

Swift and Successful

An Oceanian operator was struggling with customer complaints due to inadequate network design & lack of technical expertise

Operations Excellecne

Solution involved automatic alarm compression and centralized alarm monitoring. Defined SLA & standardized processes for customer complaint handling, centralized ticket dispatch and monitoring

Impact

> Reduced Alarms & FO monitor/troubleshooting workload.
> Accelerate the problem resolution(SLA) from customer complain, improved customer satisfaction.
> Improve the network availability
   • Alarm compression rate in RAN 89%
   • Complaint resolving time
   • decreased by 30%
   • Work efficiency increased by 21%

Quick Turnaround

An operator in Eastern South America faced the challenge of reducing problem resolution time for remote areas, keeping high network availability, and improving staff utilization rate at remote areas

High Efficiency

Based on Workforce Management system, provided visibility to field operation and increased work loads of idle engineers. Increased field engineer efficiency and improve SLA compliance rate along with network availability

Benefit

> Improve network availability for remote areas.
> Improve customer satisfaction for remote area.
> Improved field operation efficiency.
  • MTTR decreased by 9%
  • Travel Time decreased by 10%
  • UR increased by 10%
  • Work efficiency improved by 11%

Trouble Free Network

An fixed operator in Northwestern South America wanted to increase efficiency in field maintenance and reduce cost

Solution

Huawei implemented its Workforce Management solution for FLM and NOC in their multi-vendor optical networks

Benefit

> Decreased 9 FME & 15 assistant
> Vehicle decreased by 5%

Coping with Competition

A Southern-East Asian operator with multi-Vendor network O&M needs to increase the efficiency and reduce the cost of performance management.

Solution

E2E fault, performance, change and complaint management.

Benefit

> Helped operator increase team performance by 30%, and reduce manpower by 10%.

> Network quality assurance: call Setup Success Ratio at 95%

Moving on Up

A South Asian operator with 2G&3G network convergence, thousands of sites was facing challenges with low efficiency and poor network quality

Excellence in Service

Huawei solution was based on Fault Management, Service Desk Management, and Performance Management to increase efficiency and provide high network availability

Impact

> Network quality assurance: wireless network Availability at 99.99%

> Increased efficiency of 10% and centralized O&M

Speedy Success

A Northern-West African operator with multi-vendor network wanted increase efficiency and generate the performance report manually.

Speedy Solutions

Huawei solution was based on Fault Management and Service Desk Management. Provided User-defined report templates that met customer demands while trend comparison and drill down analysis helped locating system failure in real time

Benefit

> Helped operator increase team performance by 90%

Performance Under Pressure

A North African 3G operator with 30M subscribers and a Multi vendor network was facing challenges with power outages two to three times a day. This generated massive alarms, especially power & OOS alarms caused by frequent power outages leading to repeated TT resulting in TT delays and SLA non compliance

Speedy Automation

Huawei Fault Management system was integrated with multi-vendors EMS. Through alarm correlation, fault management automation, and service transformation we were able to reduce total alarms, promote TT SLA compliance, and improve operation efficiency, quality while reducing NOC operation cost

Excellence in Performance

> Alarm correlation rate per day improved by 55%
> TT per week reduced by 30%
> TT dispatching SLA improved by 8%
> Work efficiency improved by 44%