Arthur D Little

Viewpoint

Beyond the best network operations!

How telecom operators can enhance network operations efficiency and customer experience

Current international industry trends predict mid-term reductions of profitability margins for telecom operators, in particular for mature markets. This is a result of huge investments (GSMA estimates that telecom operators will invest $1.7 trillion on capex during 2014–2020) that are required to build next-generation networks in order to satisfy the data- demand explosion and revenue reduction caused by mobile price wars and competition from OTT. Arthur D. Little considers network-operations efficiency, optimizing existing operating and sourcing models, simplifying processes and organizations, and improving and automating tools some of the main levers necessary to face these challenges. In this viewpoint, we address the following questions: Which optimization opportunities in network operations can be implemented without compromising service performance and customer experience? How should telco operators change their operating models and sourcing strategies in order to fully exploit optimization potential?

Introduction

In addition to top-line measures, telecom operators across markets are launching bottom-line initiatives to improve efficiency and reduce costs in response to increased EBITDA pressure.

One of the key levers operators increasingly pursue is to rethink their make-or-buy strategies; many are already engaged in outsourcing, and others are considering and willing to do so, mainly due to the achievement of cost-savings and the desire to "eliminate the overhead" of managing complex infrastructure on a 24x7 basis. Today operators need to bring greater value and transform their operations from just opex saving centers to operational excellence, shifting the focus from "network-centric" to "service-centric" models.

Arthur D. Little has conducted a global benchmarking study covering most leading telco players in European and Middle Eastern countries to understand how operators are addressing new challenges and achieving better performance in their network operations.

Key insight from the study

The Arthur D. Little benchmark study compared telecom operators with regards to their relative efficiency in the different functions of network operations, and identified best practices in the industry. The first key area we focused on was resources and costs of the services assurance process . We analyzed and compared the cost and number of resources used to perform activities in first-level (NOC/front office) and second-level support

Benchmark study methodology:

As a part of the research, we assessed and compared their operating models, sourcing strategies, resources and costs. In addition, we derived insight from best practices in achieving efficiency and effectiveness in network operations. This included the right balance between in-house and outsourcing, off-shoring models, the competitive landscape of vendors and processes automation.

Comparability of data is ensured through a data normalization process.

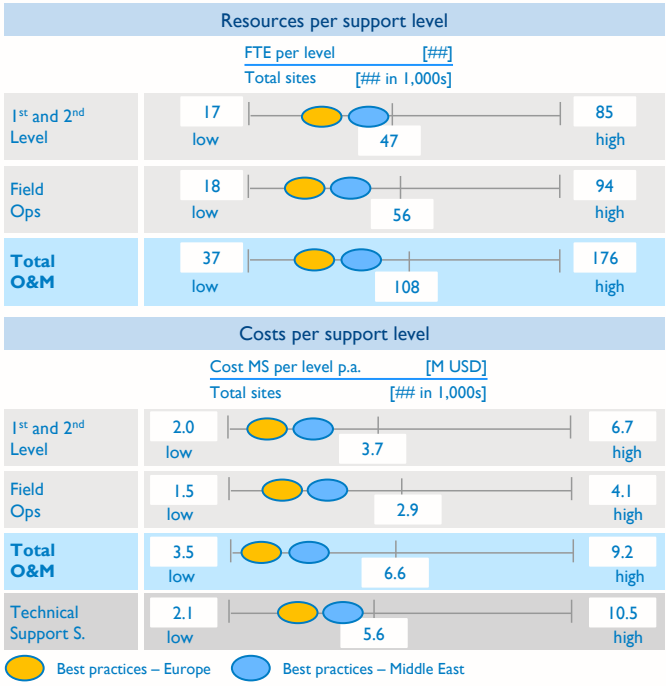
Some limitations must be considered for the comparison of the data assessed in this benchmarking study due to differences in network size, number of customers and services offered; geographic landscape and climate conditions (especially for field operations), extent of technological consolidation, market structure and competition, and cost of living.

(back office) and field operations (telecom and electromechanical equipment), as well as the cost of third-level support (technical vendor support).

The key insight from our benchmark is (see figure):

- European telco players have already been implementing efficiency programs in their network operations and show better performances than Middle Eastern operators. They are also inching towards greater efficiency levels due to their historic positioning from the growth phase and increasingly working to bridge the efficiency gap vis-a-vis European operators.

Resources and costs of service assurance



Notes: 2nd L. figures include SOC-CEM, NW ops. mng., NW performance, NW optimization; Field ops does not include spare parts and power generation operations; Values are normalized; Outlier values have been excluded from analysis
Source: Arthur D. Little analysis

- As well as the new entrants that have driven best practices, which are benefiting as expected from lean cost-structure approaches, we have also identified a cluster of incumbents that are actively working on cost-saving initiatives.
- Process automation and technological capabilities enable top performers to generate superior performance. With regard to front office- and back office-level support, the best operator in our benchmarking study is 38% superior on almost all cost driver averages and 18% on resources (staff). It is also noteworthy that the best-performing operators are not necessarily the ones with the highest levels of outsourcing or offshoring; best-practice ranges for both resources and costs are lower than the benchmarking average.
- With regard to field operations, the best performer in our benchmarking study is 56% superior on almost all cost driver averages and 35% for resources, mainly due to automation of processes and tools. The key elements to achieve efficiency are automated trouble-ticketing (TT) tools, real-time updated network inventory systems and configuration management systems.
- For third-level support service (technical vendor support), the best performer in our benchmarking study is 27% superior on almost all cost driver averages. Best-practice cost efficiency for technical-support service is driven by internal-demand optimization and effective competition among the vendors that supply the resources.

Sourcing strategy models

Operators increasingly implement their network operations managed services (MS) to improve their network operations. The key objective for telco operators is to focus on technology growth and customer experience enhancement, and avoid building overheads in operations and maintenance activities. *New market entrants typically enjoy lean organizations and maintain focus on governance and management of outsourced services.*

Telco operators considering altering their sourcing models typically expect more than 20–25% opex reduction; alternatively, it does not justify the effort, given the high complexity and risk of such a transition.

Typically, operators focus on cost reduction as a strategic objective for adopting a MS sourcing model; however, our study indicates that other significant objectives, such as higher service quality and customer experience, could be achieved through such models.

Network and service quality are one of the main reasons that customers do not churn, so operators should focus on capturing the added benefits (both efficiency and superior customer experience) associated with the range of outsourcing models offered by MS providers, since they specialize in these services.

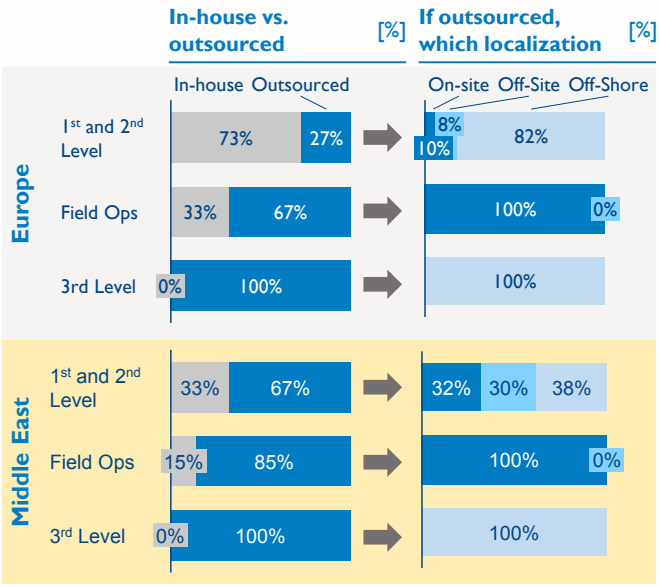
Furthermore, our study reveals that telco players prefer to outsource processes or functional teams to big telco equipment manufacturers (TEMs), mainly for confidence in on-site troubleshooting that requires experts in knowledge matter specific to vendor equipment.

However, for activities not requiring highly skilled competencies (such as field maintenance), TEMs usually partner with local subcontractors in order to leverage their experience with local conditions, proximity to assets and contract flexibility.

Regarding the NW functions that are usually in the scope of the managed service, according to Arthur D. Little's benchmark study results (see exhibit 2), companies in Europe prefer to retain first- and second-level support in-house (73% of companies), while outsourcing labor-intensive support such as field operations (67%). They also accept substantial offshore outsourcing support (82%).

Companies in the Middle East (see exhibit 2) show a high level of outsourcing regarding both first- and second-level support (67%) and field operations (85%), but have not yet fully exploited offshoring cost-saving opportunities (only 38%).

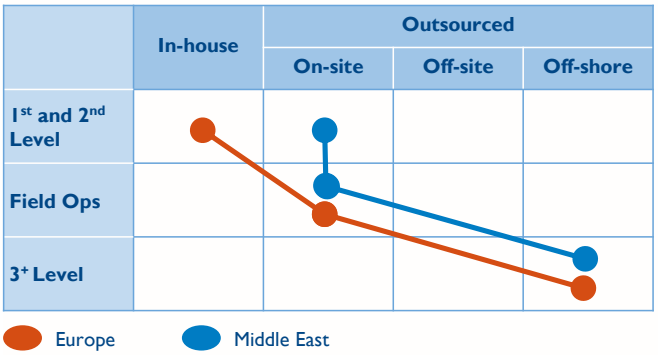
Sourcing and localization of support level



While field operations are commonly outsourced (see exhibit 3), functions such as network planning, capacity management and performance management are still considered core functions, mainly due to their impact on capex investment decisions and QoS levels.

Operators also prefer to have in-house resources for these functions in order to avoid conflicts of interest in cases in which the vendor is also supplying services to competitors.

Sourcing – Most common archetypes



During the last years we observed managed-service provider (MSP) offshoring and consolidating some processes or functional teams (typically front- and back office-level support) to exploit common synergies and lower the cost of labor.

In Europe, many offshoring programs have already been implemented, bringing further cost-savings for operators. The Middle East this is starting to become a common practice.

We have identified alternative and innovative outsourcing services offered by MSPs:

- **Network transformation services:** Along with outsourcing of operations, MSPs, as part of the network transformation service, assess the current state of the telco network, benchmark it against best practices and roll out transformation initiatives for network improvement.
- **Regional support centers:** In addition to global centers, for effective and timely delivery.
- **Specialist support:** Advanced tools and leveraging of benchmarks from global research centers and labs.
- **Network-function virtualization (NFV):** Promises to, using IT virtualization technology, move network functions from dedicated equipment to generic servers, consolidating many NW infrastructure appliance types to the industry standard and making the infrastructure more cost-effective, agile and efficient.

Main challenges of network operations

Network structure is getting more and more complex due to traffic increases and the rollout of heterogeneous access technologies (from 2G to LTE, xSDL to FTTH, etc.), in a multi-vendor environment and with multiple deployment scenarios. Our experience in supporting clients in this area, combined with the results of this study, suggests that substantial benefits and changes can be achieved by implementing a portfolio of solutions.

From a siloes approach to E2E service assurance monitoring: Shift from technology domain to an end-to-end view of services that aggregates the different domains to monitor service quality based on key quality indicators (KQIs).

Keep evolving from network monitoring to service monitoring: Proactively implement effective preventive measures across network operations. Investing in preventive measures (such as acceptance, preventive maintenance, performance monitoring and predictive analysis) enables operators to improve network quality and reduce churn and the number of calls being made to call centers.

Arthur D. Little's experience is that by adopting a structured, proactive "service management model" approach, typical telecom operators could increase their network availability by up to 30% and reduce the escalation of customer claims by up to 10% of related network faults.

Increase the level of automation of tools in their ability to identify alarms and detect and address problems: Increases in service assurance performance can be achieved by improving the level of automation of fault management tools. Implementation of more powerful tools (such as predictive fault management) results in higher levels of automation for alarm detection, analysis and TT generation. Operations can quickly

and accurately find the causes of the problems with root-cause analysis. This avoids bouncing between network-domain teams in front office- and back office-level support and field operations.

Improving this lever could bring up to 20% efficiencies. In addition, tools focusing on predictive analysis and automation for performance management and complaints lead to better efficiency for operators and a superior customer experience for end users.

Adopt a periodic and structured fault management-analysis approach: The objectives of TT analysis are to identify root causes (especially for recurrent TTs) and understand the performance of front- and back office-level support in terms of resolution time and frequency of occurrence.

In order to optimize costs and align with best practices, operators should aim at restricting the number of TTs forwarded to third-level support to within a 1% range.

Integrated tools and dashboard across network functions: Implementation of fully integrated tools and customized multi- functional dashboards enables operators to improve process efficiency and end-to-end monitoring and performance management capabilities for network operations.

Access to real-time network inventory database and configuration management: With rapid growth in technology and increasing network complexity, it is critical for operators to have real-time updated network-element inventory systems and visibility of parameters for configuration management.

Knowledge transfer from back office to front office: One of the levers for enhancing front-office capabilities is to develop a platform for regular knowledge sharing from back office to front office through internal training. This will increase the first-call resolution rate and reduce external training expenses.

Network function virtualization: In the short/mid-term this is a key additional lever that operators are expected to increasingly implement as part of their strategies to improve their network operations.

Insight for the Executive

Arthur D. Little has successfully managed the process of network operations optimization with many operators in Europe and the Middle East. We have identified strategies and solutions to improve network operations performance from a cost as well as quality perspective, most importantly striking the right balance between these objectives.

Our experience in supporting clients in this area, combined with the results of this study, suggest that substantial benefits and changes can be achieved by implementing a portfolio of solutions that includes a review of the operating model, finding best-fit sourcing strategies, optimizing the internal organization and improving process automation through advanced and integrated tools.

With specific regard to sourcing strategies, we expect an increasing trend towards network operations outsourcing, which, in the future, will be also driven by rationale other than opex reduction – in particular, service quality.

A competitive vendor landscape and rapid innovation across functions enables vendors, using their tools and applications, to offer higher-level services in some specialized functions, such as CEX and NW Performance, then they can achieve in-house with huge investments.

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Arthur D. Little

Arthur D. Little has been at the forefront of innovation since 1886. We are an acknowledged thought leader in linking strategy, innovation and transformation in technology-intensive and converging industries. We navigate our clients through changing business ecosystems to uncover new growth opportunities. We enable our clients to build innovation capabilities and transform their organizations.

Our consultants have strong practical industry experience combined with excellent knowledge of key trends and dynamics. Arthur D. Little is present in the most important business centers around the world. We are proud to serve most of the Fortune 1000 companies, in addition to other leading firms and public sector organizations.

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