Network Operations for Non-Telco and Telco. Similarities and Important Differences

Whitepaper
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1. Introduction

On the surface, it is easy to perceive that Network Operations is the same regardless of the type of customer the network belongs to. To a certain extent, that is true. A key component of Network Operations is the Network Operation Center or (NOC). The NOC is a centralized location where engineers remotely monitor and manage a network. These engineers use Operations Support Systems (OSS), Element Management Systems (EMS), etc. to remotely provide network support. They create tickets that identify and categorize the issues based on severity level, ticket type, as well as several other criteria. These technical teams work together to resolve the problem and identify its root cause to prevent future issues. These activities must be performed regardless of the type of customer. However, it is not that simple.

2. The challenge

For purposes of this discussion, the actual network elements that make up the customer network could be the same or substantially so. Take for example a mobile LTE (Long Term Evolution) network. Commercial mobile carriers such as AT&T, Sprint, STC, Orange, etc. all utilize LTE networks to serve their end-users and earn profits for their shareholders. However, there are also entities that are increasingly making use of this same technology to support their unique missions. Some examples include:

- Public Safety customers
- Mining – Private LTE networks
- Railways – LTE-R, Ground to Train, Broadband on Train
- Aviation (Air to Ground)
- Smart Cities

While the functions necessary to be performed by the engineers in the Network Operations Center might be the same, there are some very important differences in terms of customer requirements that cannot be taken for granted. For starters, consider network availability. The importance of a defined level of network availability can mean the difference between life and death on the one hand for a first responder using a Public Safety network or certain types of Transportation networks like LTE-R, to being business critical like those of commercial telecommunication providers or even an important convenience, for lack of a better term, for smart lighting and parking sensors in a Smart City network.

3. The solution

Take specifically the example of a Public Safety LTE network. Network operations of a Public Safety network is similar but not equal to network operations of a commercial network. In a Public Safety Network, security is one element that must be managed to the absolute highest degree and be perceived as such even more so than for a commercial network. As mentioned earlier, in the worst case, life threatening situations require a service availability that is only obtained by special proper handling of necessary security issues. Security can be “realized” by operating a secure environment with secure processes and tools and by having controls in place to ensure that staff does not bring additional security risk to the environment. The secure operation of the network ensures all possible proactive or corrective actions are addressed to guarantee the required service availability.
Service levels are also an important variable when addressing commercial telecommunication networks vs telecommunications networks of “non-telco’s” such as Public Safety providers. This is truly a case where desired Quality of Service (QoS) levels drive everything. What is the desired network availability targets? How quickly do Network Operations Center engineers need to respond to issues and resolve them? There have been cases where response times are required to be less than a minute to where a Commercial operator may be satisfied with 15-minute response times and perhaps a day could be sufficient for a parking sensor in a Smart City network.

Particularly in the case of “non-telco” entities, where complex next generation networks and network operations is critical to the mission they provide but where Network Operations may not typically be a core competency of the organization, working with a Managed Services Provider (MSP) should be a path worth further consideration. Some points for you to think about before making this important decision include:

- **Focus**: Your focus should be on your mission, not on technical problems. A top Managed Services provider handles the myriad issues that must be addressed to keep systems quiet and problem free.

- **Expert Assistance**: Recurring technical problems can become mind-numbingly frustrating and irritating. The key is to tap appropriate experts who can ferret out root causes, eliminating problems, and smoothing operations. Smaller organizations typically cannot afford to staff this set of experts.

- **Risk transfer**: Mitigating technology risk requires planning, sound best practices, excellent monitoring tools, and reliable execution.

- **Smooth operation**: When expert engineers, sound monitoring tools, best practices and processes are blended correctly, all end user services and supporting networks should operate virtually problem free.

- **Strategic guidance**: A good MSP works to understand your mission – its goals and what functions are most critical to effectively achieving those goals. A good partnership has bi-directional idea flow resulting in beneficial innovations and advancements that generate value, critical to achieving your mission.

4. **Business benefits**

Working with a Managed Service Provider may enable your organization to realize significant benefits in support of the delivery of your mission. Whether it is about quality, speed, security or cost, you should look for a Managed Services Provider that has a broad background and experience operating networks that is applicable and strongly related to your mission. Some benefits that you can expect as well as key questions to consider when evaluating a Managed Service Provider are as follows:

4.1. **Improve operations efficiency and quality of service to end users**

Does the provider have?

- Decades of experience operating carrier-grade networks?
- Operational processes established through thousands of customer network engagements?
- Third-party-vendor-certified technicians with extensive network operations and management expertise, including hundreds of multi-vendor certifications?
4.2. Secure Network Operations

Does the provider have?
- Experience managing highly sensitive and secure environments
- Knowledge of and history of adherence to applicable standards

4.3. Network Operations KPIs linked to meet your mission

Does the provider have?
- A demonstrated track record of satisfied clients
- Flexibility in approach to service levels

4.4. Accelerate network deployment with extensive ready-to-use know-how

Does the provider have?
- All required network operations center tools fully established, extensively field-tested and provided as a part of the service
- Fully field-tested capabilities and processes and highly experienced resources from network surveillance and monitoring to trouble resolution
- Established tool infrastructure with experience based pre-configured filtering and correlation rules

5. Conclusion

Network Operations for Non-Telco’s and Telco’s is similar. However, it is also important to be aware of the critical differences such as network availability, service levels, and a secure environment that is appropriate to the unique requirements of the entity. For a Non-Telco, Network Operations is typically not a core aspect of their mission, yet it is often very important to the success of the Non-Telco. Working with an experienced Managed Service Provider might allow the entity to focus on their core mission while at the same time reap substantial benefits. Given these similarities, an experienced Managed Service Provider such as Nokia, with 200+ contracts signed, is a partner worth speaking with to determine if a relationship can work for you.
6. Acronyms

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<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>A2G</td>
<td>Air to Ground</td>
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<tr>
<td>BBOT</td>
<td>Broadband on Train</td>
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<td>EME</td>
<td>Element Management System</td>
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<td>KPI</td>
<td>Key Performance Indicators</td>
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<td>LTE</td>
<td>Long Term Evolution</td>
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<td>LTE-R</td>
<td>Long Term Evolution - Railways</td>
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<td>MSP</td>
<td>Managed Service Provider</td>
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<td>NOC</td>
<td>Network Operation Center</td>
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<td>OSS</td>
<td>Operations Support System</td>
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<td>QoS</td>
<td>Quality of Services</td>
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<td>SLA</td>
<td>Service Level Agreements</td>
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<td>TCO</td>
<td>Total Cost of Ownership</td>
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