

# The Future Fit NOC

How can Network Operations remain relevant in a changing Telco ecosystem?



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# Abstract

Traditionally, the Network Operations Center or NOC has played the role of a Curator ensuring smooth functioning of the network with minimal disruptions and downtime. It is typically seen as a support function by business entrusted with the responsibility to avoid critical outages resulting in revenue loss. But with changing market dynamics the role of NOC is poised to evolve towards the fore-front from being a trouble shooter to an enabler for business transformation. Increasing investment by Telcos in new technologies such as 5G roll outs, changing customer needs, development of innovative services, mergers & acquisitions are some of the key drivers that will shape future roles. The NOC must therefore re-determine its priorities to meet the changing demands and remain relevant.

So how will a Future Fit NOC look like? In our point of view, an interesting analogy to draw would be that of an Autonomous car – self driving, self-learning, highly automated, predicts possible obstructions and navigates through the best possible route. Few years back when the idea of autonomous car started to pick up, it seemed quite distant and ambitious but with technological advancement has become a reality. As most NOC organizations still operate with legacy tools trying their best to reduce network downtime, the shift towards a future autonomous with the right choice of future vision the transformation can be an organization will don multiple a skilled Accelerator and a wise explained in Figure 1). The ideal three facets and will depend on the need for transformation. Realizing operations would entail a change operations is structured and cultivate skill sets that can make this shift possible. Network operations will need to become more agile and customer centric, embrace new capabilities & technologies and deliver clear outcomes.



model might seem daunting. But and adoption of new tools & skills, achieved. The future fit NOC as hats – that of an efficient Curator, Strategist (these roles are role will be a mix of the above organization’s maturity level and such a vision for network in mind-set, re-thinking of how

This Point of View (POV) illustrates the blueprint for a Future Ready NOC including key capabilities and steps required for the transformation. It can be used as a guide on best practices by management and leaders of network operations to define their own vision statement and plan an improvement roadmap. The POV is based on TechM’s own experience from consulting and helping large Telco’s in transforming network operations and also highlights practical issues faced on the ground. Achieving the desired goals can take time and NOC leadership should be fully prepared to commit and back such programs.

# Embracing the Future

The telecom industry is evolving faster than ever. Traditional revenue streams are declining forcing Telcos to innovate and come up with new ways of monetization. Improving and optimizing the network is the focal point for driving new revenue streams and investment in network upgradation & enhancement ranks high on CXO priorities. Many telcos globally for example, have already successfully conducted 5G pilots and are planning full roll outs resulting in dense network structures. At the same time, 5G will support a huge range of applications with widely varying service requirements. These kind of complex network environments and sophisticated services will also demand a matching advanced, agile and customer centric operational set up. The NOC therefore should step up, re-organize and adapt around changing business

The NOC must evolve into an enabler of business transformation

priorities. It must evolve from a support function to a strategic one. This implies carrying out multiple roles with clear KPIs to position NOC as an enabler of business transformation. The roles include:

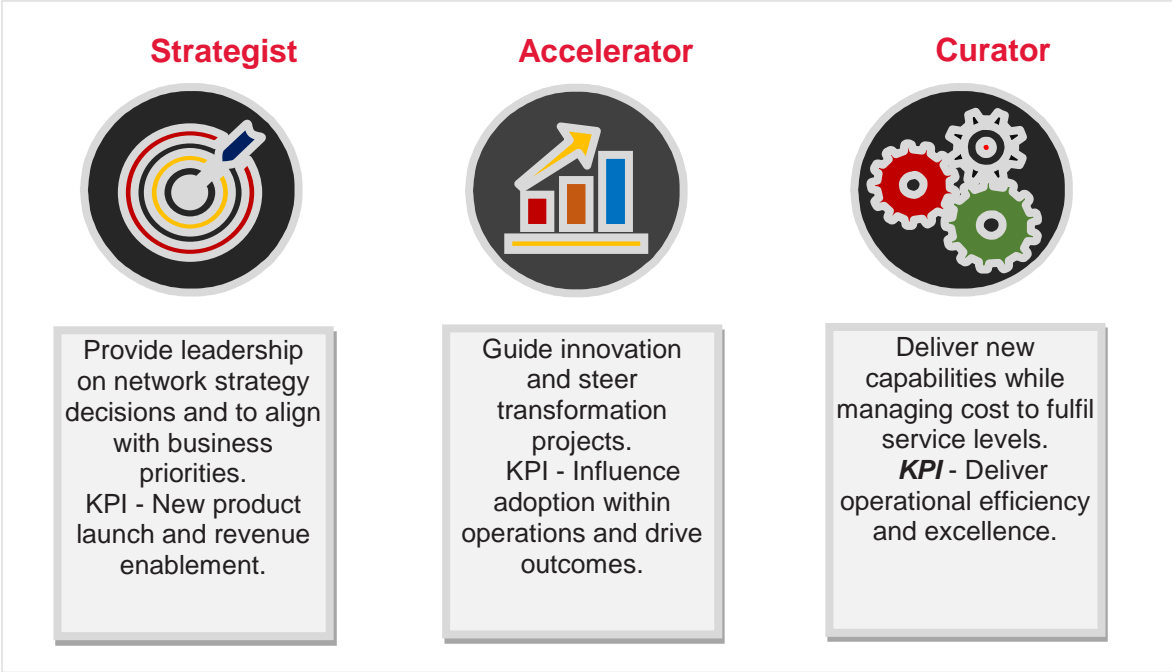


Figure 1: Three Key Roles for Future Fit NOC

The Future Fit NOC represents an advanced and matured organization that exhibits all the above 3 roles. Achieving the target state requires choosing an organization vision & attributes based on best in class digital capabilities. Figure 2 below illustrates a vision blueprint of the Future Fit NOC which can be used as best practice guidelines. The capabilities are building blocks that will enable NOC to reach the desired vision. While all the attributes and capabilities may be desirable, all may not be applicable. NOC leadership

should examine the business needs, understand the implementation effort but still be ambitious in defining their organization vision.

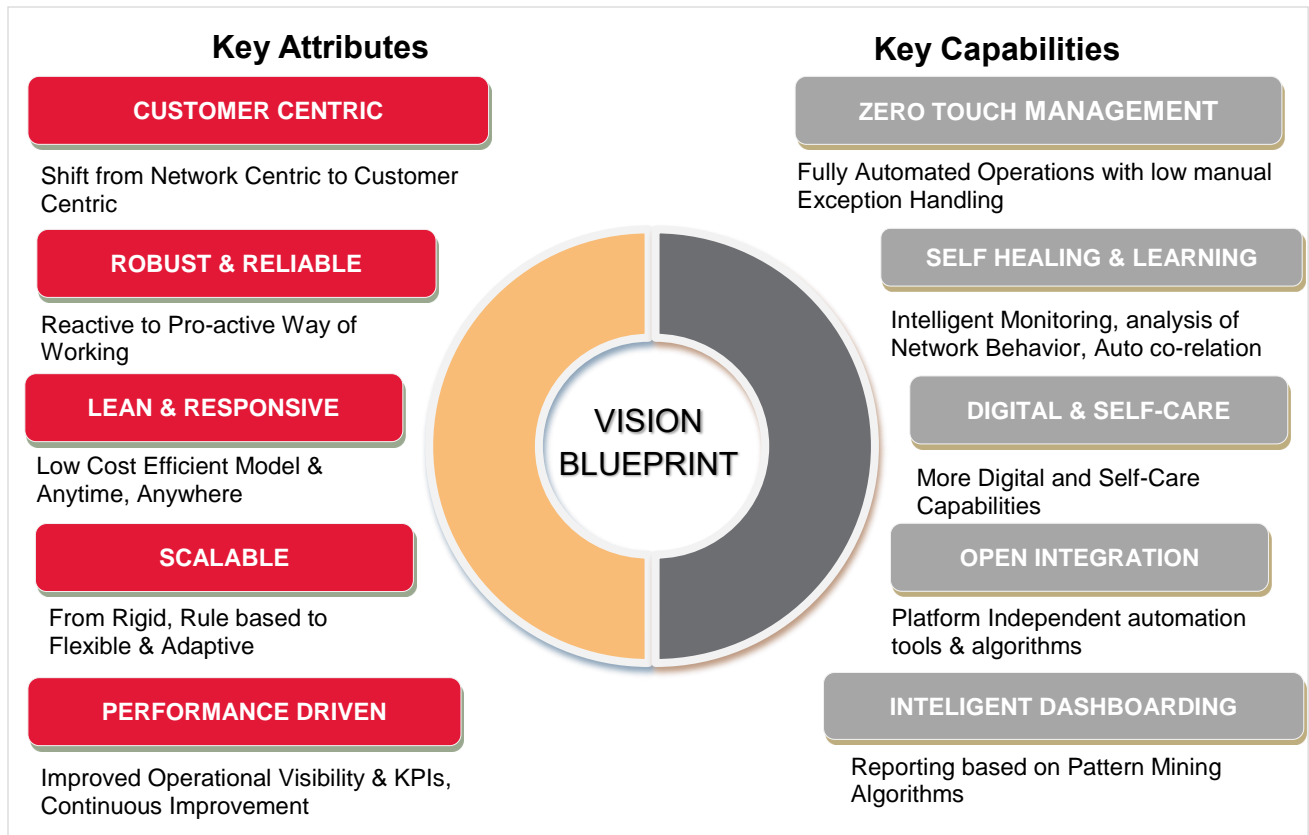


Figure 2: Vision Blueprint for Future NOCs

Some practical examples where organizations have transformed the NOC include:

- **Zero-Person Network Operations Centre – Finland Mobile Operator (Elisa Corp.)**  
**What** - End to end automation of alarm monitoring & ticket creation, simple resolution steps e.g. reset equipment performed by Robot; for complex scenarios Robot calls an operator  
**Result** – 15% reduction in customer complaints; 50% reduction in certain incidents
- **SENITO - AI Driven Networking (COLT)**  
**What** – Enhancement of network monitoring capabilities by utilizing non-traditional data (signal strength, power, temperature etc.) from network elements (cards, links etc.) to predict potential faults  
**Result** – Proactive fault detection and resolution in the network

# Making the Shift

Once the future vision for NOC is established, it is important to set the ball in motion. An important starting step involves defining and translating the vision into concrete transformation initiatives with clear ownership, timeframe and business benefits. This will help the management decide that the right initiatives are identified and proper resources are allocated to drive the transformation.

Transformation initiatives should cover 3 key focus areas – Organization Structure, Technology and the People skill sets. All 3 areas should be addressed hand in hand to take the NOC up the maturity curve. For example, transforming the Tier 1 NOC towards an automated thin layer mandates successful deployment of new tools to realize zero touch processes which in turn requires technical knowledge and change management experience within the NOC team.

# Re-organize to Organize

Telecom organizations typically have a tier based structure in the NOC comprising of a large agent workforce. Each layer focuses hard on increasing network availability and minimizing customer impact. However for future success, the NOC must be organized differently with thin boundaries, working more horizontally and with high automation & digital capabilities. Figure 3 provides a comparison of Traditional Vs Future Fit model and lists down some practical transformation initiatives that can be undertaken to make the shift.

Future fit NOC must be organized differently with thin boundaries and high digital capabilities

	Traditional NOC	Future Fit NOC	Transformation Initiatives
Tier 1	1st line support for customers, manual monitoring of screens for alarms, ticket creation, root cause analysis; organized in multiple shifts	Thin layer, highly automated processes, remote monitoring, pro-active customer communication, real time data and dashboards	<ul style="list-style-type: none"> <li>Data cleaning &amp; analysis</li> <li>Mapping of alarms – technical vs. operational</li> <li>NOC process &amp; activity mapping</li> <li>Setting-up of shared services model</li> <li>Automation of alarm monitoring</li> </ul>
Tier 2	More expertise, in-depth trouble shooting, strong knowledge of network	Automated root cause analysis & decision making, data enrichment & co-relation, shared services based tier- 2 across business units	

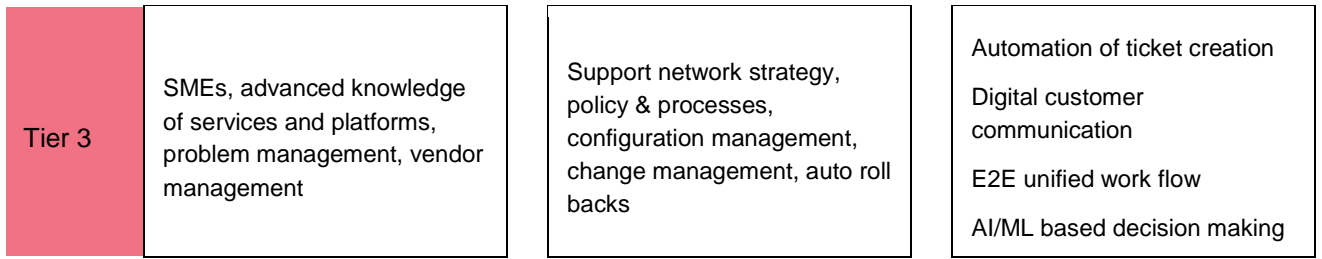


Figure 3: Organization Structure - Traditional Vs Future Fit Model

## Adopt New Technologies

The limitations of the NOC today are predominantly imposed by the legacy network management tools being used including - lack of network visibility, huge volume of alerts with too little information, inability to correlate network alerts with help desk calls etc. Most legacy tools focus on availability monitoring, locating outages but provide no insights into the types of network fault that cause applications to fail and make it difficult to assess the business impact. The problem is compounded with large organization having multiple legacy tools running in silos with no integration.

Adoption of new technologies demonstrates the commitment to transform and promote the teams to change

It is therefore imperative for NOC to invest and adopt the new age technologies & processes to cultivate a digital culture and implement a modern way of running operations. Some of the technologies relevant for network operations include Robotic Solutions, Artificial Intelligence/Machine Learning (AI/ML), and Work-flow Orchestration & Automation solutions. AI/ML based solutions for example are maturing fast and witnessing industry wide adoption. Gartner predicts 'Hyper-automation' and 'Human Augmentation' using AI/ML as the top trends in the near future.

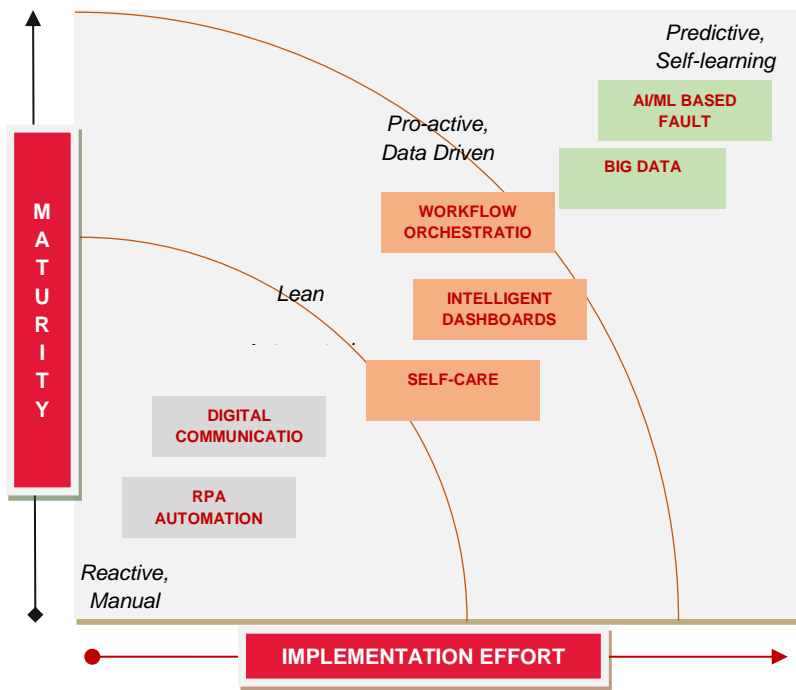


Figure 4: NOC Automation Maturity Roadmap

Adoption of new technologies will help NOC leadership demonstrate the commitment to transform and promote the teams to change. Implementation of the modern tools can result in significant benefits including zero-touch data driven processes, pro-active and predictive analysis, intelligent reporting and free up resources to focus more on strategic initiatives.

While identifying technology based transformation initiatives, it is important to consider the effort required vs. the business benefits in return as shown in Figure 4 above. The ideal transformation roadmap should include both short term – to prove value immediately and long term – game changer initiatives. Realization of such technology work streams can help NOC departments move up the maturity curve (e.g. reactive to pro-active) in a phased manner.

## Transform the Workforce

Delivering successful transformation implies that leadership must prepare its employees for tomorrow and accept new challenges. As per Gartner study, '64% of managers don't think their employees are able to keep pace with future skill needs'. Digital evolution is increasingly widening the skill gap. Addressing this challenge is crucial and requires re-skilling of existing resources and hiring of new talent. It is advisable to benchmark against the market to assess the real skill gap and also collect feedback bottom-up from employees to understand learning requirements. Most importantly, a change in mind-set towards transformation and willingness to take new roles within the teams must be established. A 'Digital Way of Doing Things' based culture must be encouraged and be made part of the employee performance evaluation.

Team members within the NOC should be formally mapped to the identified transformation initiatives and made responsible for delivering them. Employees should

A 'Digital Way of Doing Things' based culture must be encouraged and be made part of the employee performance evaluation



also be encouraged to take cross-functional roles and work more horizontally in order to learn new skills. In case of niche initiatives such as AI/ML, it is best to add new talent with AI skills and build connected teams. Such resources may not be dedicated to the NOC but can be shared across projects within the organization and can mentor other team members.

## Avoiding the Pitfalls

How do you ensure a smooth but secure transition from a traditional to a future fit NOC?

This transition goes far beyond a technical IT implementation and can result in impact at the core of the organization itself. This can be explained by the fact that the current NOC transforms into a strategic asset – one with enhanced autonomous capabilities. This high performing and intelligent NOC is more abstract and complex in nature compared to a traditional set-up, and that places different demands in the process of changing the organization. In addition, opportunities arise for horizontal integration, such as merging different NOC operations into an aggregated & organization-wide model that will provide economy of scale, and vertical integration by changing the Way-of-Working, where first line support functions merge into a DevOps operating model.

In practice, different set of roles and competencies may be required, team compositions might change and the operating model would be adjusted to the new strategic positioning of the NOC. All these changes should be seen as challenges in transforming the organization and to open up new the business opportunities.

But they may also be perceived as threats for staff concerned, such as fear of the unknown, loss of status or job, uncertainty due to lack of competence, pressure to deliver results, low trust or confidence in the future vision. Management plays a major role in this and its involvement in implementation is a critical success factor. In order to meet the aforementioned challenges, an integrated approach is highly recommended, where change management should be given special attention. A solid stakeholder analysis is a good starting point. It will help in identifying roles and interest of those involved and also in building the transformation teams, responsible for implementing the change. It should be very clear and communicated why change is required and why now, supported by a clear and shared vision. Finally, correct and timely communication is also a determining factor for success: Say what you do and do what you say.

## Closing

Setting up a Future Fit NOC requires a firm and clear vision which reflects the business needs and enables the NOC to transform towards a strategic role. However, the leadership must prepare well before taking the leap and commit firmly to drive the transformation all the way through.

The scale of transformation needed would vary for each organization as there is no 'One Size Fit All' approach, but the NOC must not be wary of setting ambitious goals. The transformation roadmap should include multiple concrete initiatives linked to the overall goals and planned in a phased manner. The value delivered at each phase should be measurable and result in moving the NOC up the maturity curve at every stage.

In the end, NOC transformation should be viewed as a journey and not a destination, which can constantly evolve on the way. The defined vision should be evaluated regularly and adjusted to remain relevant with changing technology and business needs.

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- ❖ We help our clients transform their operations and processes in line with this strategy
- ❖ We also help them build a key enabler for achieving these objectives: agility and automation in the technology function
- ❖ Our program and change management services ensure on-track implementation of the various transformation initiatives

All of these services are underpinned by proven methodologies, frameworks and tools. These are based on design thinking approaches that ensure stakeholder buy-in at each stage. Our clients find our global experience, collaborative approach, and the ownership we bring to ensure outcomes in every one of our engagements, as a key differentiator.

Contact us at [befutureready@techmahindra.com](mailto:befutureready@techmahindra.com)

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