Centralized Operations: Strategies for Today and Tomorrow
Higher Efficiency, Better Quality, Quicker Readiness
Managed Services White Paper
Centralization brings immediate benefits for operators seeking to improve network efficiency and quality as well as coming to grips with digital convergence transformation. The digital future will see greater virtualization of operational and business functions, increased automation, more rapid reactions to technological and operational change and a shift of focus towards customer experience management.

The Communications Service Provider (CSP) business is undergoing radical change as a result of significant shifts in market dynamics. To remain competitive or grow market share, many CSPs are determined to evolve from traditional telecoms business operations towards new business models. Enabling the evolution of Telecoms and IT convergence, new technologies such as Self Organizing Networks (SON) driven by 4G/LTE network rollouts, Cloud-based RAN, Software Defined Networks (SDN) and Network Function Virtualization (NFV) will have a tremendous impact on CSP business models and the way networks are designed, implemented and operated.

Centralization of operations is core to the transformational journey to digital convergence. Centralization is essential if CSPs are to optimize the management of business and network operations, deliver cost savings, improve time to market and deliver improved quality assurance and customer experience, and future-proof their operations. SDN/NFV will play a particularly important role in centralizing and optimizing network management, intelligence and control, although a phased approach is recommended, making use of a close strategic partner to help guide and implement the process.

Global Operations Centers (GOCs) will also be needed to facilitate system, process and organizational changes through a series of controlled and phased transformations and migrations and for maximum effect and success these should be implemented in collaboration with an experienced solutions delivery partner.

This brief white paper looks at the challenges and benefits of the Centralization model as well the phased approach required to deliver a successful centralization transformation.
Optimized management of business and network operations

Operators continually seek greater control over CAPEX and OPEX in an environment of varied business pressures. Shifts in markets and technologies, price pressures from competitors and regulators, declining traditional service ARPs and demand for more service features, quality and bandwidth combine to make this increasingly challenging.

These challenges above are driving transformation, with the most common objectives being
- Cost Optimization
- Faster Time to Market
- Assured Quality
- Effective Control
- Better Customer Experience
- Future Readiness

Centralization provides a real opportunity to meet all of an operator’s transformation objectives. In fact, according to a global survey conducted by Ovum in May-June 2014 (Figure 1), 53% of operators have already implemented or are implementing a centralized operations strategy of some kind and a further 23% are considering it. The following 5 Centralization elements can help CSPs to realize these transformation objectives:

Consolidation

Consolidation of network and IT/ OSS platforms is often a key target for centralization as it offers considerable and immediate operational savings. In a consolidated platform environment it is easier to apply automation progressively to further reduce service delivery costs. Off-shoring labor and functions to a centralized and consolidated platform location is generally more cost efficient than multiple local provision and enables synergy across functions, resources and benefit from economies of scale. In those scenarios where CSPs own multiple operating companies (OpCos) in various geographies, consolidation and centralized resources provide the ability for visibility across all OpCos’ operations and implementation of consistent and standard performance and reporting across the whole group. It is
then possible to apply streamlined and the measurable benchmarking as achievable targets for the dynamic and continuous improvement for the whole group.

**Expert resource pool for both network & IT**

As the merger of telecoms and IT networks continues, the need for available expert resources with competence and experience in both domains becomes ever more critical. Investment in the cohesive development of people capabilities, competence and professionalism are increasingly important in the new operational landscape with technical expertise, process and project management and quality assurance capabilities critical to successful operational outcomes.

Creating a pool of these resources in a central location working to standards specific to telecoms and IT operations such as ITIL and eTOM will enable faster time to market for new applications and services launches than was previously possible.

**Best practices and continuous improvement**

Centralized operations centers compliant with TL9000 Quality Management System (QMS) standards, provide a managed environment where skills may be continually developed and shared. This is achieved through Knowledge Management Sharing of best practices, to assure best possible operational performance, as well as ensuring a flexible resource pool and minimization of transformation risk.

In centralized operations centers, the exchange of technical expertise and knowledge is encouraged. Subject matter experts, engineers and technicians work closely together, utilizing the best available tools, processes and best practices. Service performance across a number of regions or operating countries may be monitored and measured by specialized teams. To ensure delivery of dynamic and continuous improvement across an operator’s companies, this team applies internal and external benchmarking to establish baseline and desired key performance metrics which can provide early warning of KPI or SQI deviation as well as performing off line root cause analysis to prevent future performance degradation.

**Operations improvement and business insights**

Centralized operations and systems make it easier to measure and improve customer experience and delivered service quality. By combining the supervision of networks and operations into a central location, it is possible to provide a consolidated and consistent view of the customer experience, and a wide variety of service operations metrics relevant to customer experience are gathered. This allows near real time analysis within a central, dedicated location enabling both reactive and proactive resolution of customer experience issues and network and service performance degradation. Additionally a wide range of valuable customer behavior business intelligence data may be collected and analyzed in near real time for example to assess the impact and effectiveness of marketing campaigns such as: tariff changes or promotional offers; Customer behavior in specific locations; analysis of top user/top device; Roamer behavior and many more.

**Preparing for virtualization**

The continued centralization trend will see the emergence of Software Defined Network (SDN) enabled Network Function Virtualization Infrastructures (NFVI), whereby network resource pools may be dimensioned dynamically in response to network demands, to achieve maximum resource efficiency and flexibility while delivering superior customer experience. The transformational challenges to prepare for this are still being discussed and Centralization is a key step towards initiating this major change.

![Figure 2: Common objectives leading to Centralized Operations](image-url)
SDN and NFV are emerging technologies which will greatly change the future of telecom operations. These technologies will allow network management, intelligence and control to be centralized and optimized, allowing for more efficient and flexible resource allocation and the dynamic deployment of network assets.

CSPs have begun to investigate how to transform their networks into leaner, more flexible and cost-effective platforms. This requires the adoption of SDN, NFV and associated IT concepts to deliver more flexible and cost-effective traffic management and to virtualize network components, so making the transition from hardware to software. While these changes are initially occurring in the data center, both network and data center will become increasingly unified around a single network, starting initially with the core network. While it is still early days numerous NFV Proofs of Concept (PoC) are already in progress and momentum is growing.

This centralization trend will see future networks with SDN enabled Network Function Virtualization Infrastructures (NFVI), where resource pools can be orchestrated to dynamically provision and de-provision virtual network functions at any time and any place based on user and network demands, Quality of Service assignments etc. to achieve maximum network resource efficiency and flexibility as well as delivering superior customer experience. Virtualized network function infrastructures such as cloud based RAN will significantly reduce OPEX and improve network performance.

Furthermore, in future cloud based operations and virtualization, network and data security and business continuity management are mission critical issues. Having these functions delivered in a controlled standards compliant environment such as the GOC will be essential to delivery of robust secure network operations.

Readiness for SDN/NFV Operations
However, the evolution to software-centric network architecture will not be an easy transformation for CSPs. They will require strong vendor and MSP partnerships to bring expertise and competencies to the table and help to transform their operations. CSPs are likely to need to tap into MSP expertise with the assistance of professional services, including not just outsourcing of specific tasks but also consulting around NFV architecture issues, network design and systems integration of SDN, NFV and OSS elements and interworking. From a broader perspective, CSPs will require partners who can help implement changes that transform traditional OSS and BSS, make effective use of Big Data analytics and CEM and break down functional silos by supporting open digital operations and ecosystem management. Effecting all these changes will require service platform and competence improvements and assistance with operations centralization and the implementation of standardized processes.

Therefore a phased approach to transformation and centralization is recommended, making use of a close strategic partner to help guide and implement the process.

### Roads to Transformation

**Step by step approach to minimize risk**

The benefits of centralization are clearly visible, as are the challenges to change. As with most transformation projects, change resistance will be experienced across the in-scope organization, necessitating not only systems transition expertise but also enhanced people and communication skills to achieve acceptance of the centralized operations objectives.

To minimize risks of ambitious transformations, a methodology based on three phases is recommended. Each phase consists of a series of systematic steps that map the journey for successful migration from a distributed to a centralized operating model.

Through years of experience and knowledge gained from successful centralization projects around the world, the proven 3 phase systematic approach is illustrated in Figure 3.
Phase 1
It is the preparation phase, involving establishment of business objectives for centralization: “As-Is” capture; “To-be” objectives definition; and gap analysis resulting in a detailed scope of work, agreed phasing and technology road maps with detailed risk analysis and mitigation planning.

Phase 2
It involves production of a high level solution design, collaborative agreement with the customer of the solution scope and implementation of the agreed plan. During this phase the transition of personnel, tools and processes takes place to the new centralized operation center. A period of stabilization is then implemented during which adjustments and process optimization will occur.

Phase 3
It is the completion of the transformation to steady state operations, after completion of the stabilization period. During this phase, evaluation will take place of the established centralized people, tools and processes against the objectives agreed in Phase 1 and necessary corrections made. This phase also involves benchmarking of the centralized performance and establishment of baseline metrics. A continuous improvement process will be implemented from this point onwards.

Figure 3: Phased systematic approach to Centralization
We have discussed the relevance of centralization, the emergence of new technologies and the need for a phased approach to Transformation. Whether transforming to accommodate the introduction of the new technologies, or simple cost reduction, it is unlikely that the changes discussed will occur as a single “big bang” event, but rather as a series of controlled and phased transformations and migrations.

To facilitate this approach, an effective centralized operation approach will address system, process and organizational alignment, operational governance and ongoing improvement strategies incrementally supported by high quality, flexible secure platforms, within a customer-centric service culture – Global Operations Centers (GOC).

**GOC - resources, future readiness and global expertise**

People and organization excellence are the stable foundations for GOC. As the core assets of the GOC, best-in-class resources are gathered together employing global best practices compliant with internationally recognized standards, ensuring the best possible operational outcomes. Continuous recruitment and development training programs based on experience and knowledge sharing ensure competence readiness and resource availability.
GOC enables OSS as a service

We mentioned earlier that one of the key objectives of centralization is consolidation and rationalization of Operational Support Services (OSS). In the GOC model, this can be taken a stage further with centralized OSS services offered to multiple operations from a single location by provision of a Centralized data collection platform and consolidated automated OSS systems supporting customer support, B2B, network and service operations, front and back office and field maintenance functions. This GOC approach to OSS is of course, multi-vendor, multi-technology and multi-language ready and allows for the management of multiple SLA across different operators.

GOC is multidimensional in capabilities

Another advantage of the GOC operational model is that in addition to delivery of the standard operations capabilities of process, platforms, tools and people; a systematic program management capability can be imposed centrally to assure consistent service delivery in terms of multi country transformations, performance management initiatives etc. and move the organization towards a more service and experience focused culture. Some global operators have partially implemented this concept with establishment of centralized but non OSS integrated service assurance functions serving many countries.

An example of how the GOC centralized functions may be extended is illustrated in Figure 4.

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**Centralized Functions**

- Network Perform Management
- IT Operation
- Service Quality Management
- Managed Planning & Engineering
- NOC Operation
- Spare Parts Mgmt

**Operation Model**

- Migration & Consolidation
- Organization & Governance
- IT & Connectivity
- Baseline & Benchmarking
- Security Management
- BCP & DR

**Enabler**

- MSUP (Unified Process Framework, Operation model)
- MAI (Continuous Improvement)
- OSS GHub (Cloud-based OSS)

Figure 4: Functional areas of GOC Centralized Operations
CSPs have wrestled for some time with the multiple conflicting challenges of how to introduce new network technologies and services, remove barriers between network services and infrastructure, reduce CAPEX and OPEX, and achieve network elasticity and scalability to meet demand, all without degradation of service and indeed with significant improvements to the customer experience.

Centralization is the key for CSPs to make the transformation to become digital service providers and prepare for future technology introductions.

Choosing the right partner to share responsibility for centralization transformation to achieve the desired measurable business outcomes is crucial. A partner with a track record of delivery excellence in Centralization projects is recommended, with a culture of best practice knowledge sharing and demonstrated expertise.

As a leading Managed Services Provider, Huawei has achieved global best practice recognition in the delivery of cost-effective, transparent and secure operations for multi-network, multi-vendor and multi-technology centralization projects around the world for a diverse range of operators. 🇨🇳
- Multi-Network, Multi-Technology, Multi-Vendor
- Multi-Language
- Platform Consolidation for faster technical solution
- R&D Experts for technical support
- Innovation for ICT solution
- Dedicated Security Operation Center

Standards
- TMF Certified MSUP Process Framework
- Certified Security Framework

Migration
- Migration Activity Standards
- Practical Shadowing & Reverse Shadowing

Best Practices
- Flexible Integration to OSS-GHub
- Automation in ITR Process Multi-vendor management

System
- Flexible Integration to OSS-GHub
- Automation in ITR Process Multi-vendor management

Competency
- MAI Library Operation Metrics
- Operation Baseline & Global Benchmarking
- MS Competence Center

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