

Transforming Telecom Management – facing the challenge of next generation networks

By taking a holistic view of systems, processes and organization, operators can transform their telecom management into an integrated business tool for competitive differentiation and efficient operations. This paper provides a stepwise methodology to counter growing fragmentation in telecom management.

Why transform?

As operators face growing, lower-cost competition for their core business, it is time for them to get their management systems working together and contributing to revenue and profitability, rather than acting as a revenue drain.

The key challenge of telecom management will be to support network transformation, specifically to the new set of services that “next-generation networks” will permit. Today, however, many operators find themselves far from achieving this goal.

These operators have a patchwork of systems and processes that make it difficult to launch new products cost-effectively and quickly, as well as to track and tune the performance of included services once they are delivered. This patchwork also results in increased costs, as each service often has its own “stovepipe” solution with separate billing, assurance and provisioning tools.

It is clear that any network transformation should be matched with a corresponding telecom-management transformation. Operators need to remove the “stovepipe” solutions – dedicated to network technologies such as wireline, wireless and data/IP – and adopt a business-driven framework that links

business functions with a set of common work processes and systems. The challenge is to streamline their systems in order to lower operational costs and meet future requirements without expensive new implementations, while at the same time decreasing time to market.

This won't be easy. For many operators, the key challenge is the maturity of their own organizations and the difficulty of implementing changes that significantly affect the people working with existing processes and systems. It is therefore vital that operators not only have a clear vision but also a clear method for achieving that vision. There must be a fundamental understanding of the need to change, of what to change, and of how to make it happen.

This white paper addresses these questions. It outlines the reasons for transforming current business processes, systems and organization. It provides a methodology for identifying what to change to support each operator's specific business goals. Finally it discusses how to implement these changes to achieve those business goals with the minimum of risk to the ongoing business.

The pains

Over the years, almost every new piece of technology or service that a network operator has installed has come with its own management system – purpose-designed to manage that particular resource well. These purpose-built management systems often cannot integrate with each other or do not work well with enterprise-wide management systems. A typical operator may have deployed several hundred of these support systems over the past decade, representing a costly patchwork of applications and processes that seriously limits the operator's speed and growth.

These operators lack a streamlined,

efficient management solution. They struggle with management systems and processes with inconsistencies in data, overlapping functionality, costly integrations and uncoordinated product releases. They require difficult and time-consuming preparation to support new services for provisioning, assurance and charging.

The pains that this situation causes operators are very real, including ineffective process management, excessive operation-center costs and unreasonable delays when launching new services such as IPTV. As the network and business landscape becomes more complex, with many service providers

potentially interacting with many network providers to deliver products to consumers, the need for streamlined and efficient management will grow significantly.

Operators' pains will grow if the network transformation is not synchronized with a telecom-management transformation.

The gains

In the past, management systems and processes were often the last thing to be looked at when new technology was introduced. Today, however, operators realize that management solutions can be an efficient business tool for competitive differentiation and lean operations.

The business success of any new product or technology is dependent on, among other things, efficient operations, meaning the effectiveness and efficiency with which the business is run.

Even though each operator has its own specific pains and gains, in general, the main business drivers for efficient operations are to decrease cost, ensure high-quality service delivery to customers, maximize revenues, and establish a trusted and reliable brand when moving to next-generation networks and services.

New broadband services, such as IPTV, as well as the changing network landscape as operators' shift to all-IP networks, mean even more pressure to transform telecom management.

Running a low-cost day-to-day operation that is prepared for possible changes can be not only a competitive differentiator but also a revenue generator for operators. An operator needs efficient management of its different content and media partners. This is a necessity in order to provide rich and attractive multimedia offerings to consumers. Rather than creating yet another "stovepipe," an efficient management solution will allow new services to be incorporated, integrated and evolved with the existing management systems and solutions.

What to transform?

Each operator is different. Whereas one operator may simply be an ISP, another may own and maintain all or large sections of its network. Deciding what to transform will depend largely on where the operator is in the value chain and its own specific business model.

Operators must first identify the parts of their current systems that need transforming. For each operator the result of this process will be different. However there are general objectives that will be true in most cases. To achieve the goal of leaner and efficient

operations, they must remove the business “stovepipes” and move towards a business architecture approach. Each step of the transformation must embrace an organizational perspective, a process perspective and a system perspective.

The process of identifying what to change involves first identifying the areas that need transforming and then prioritizing those areas from a business-case perspective. Finally, one must define the target architecture to visualize the gap that projects must close to deliver the desired benefits.

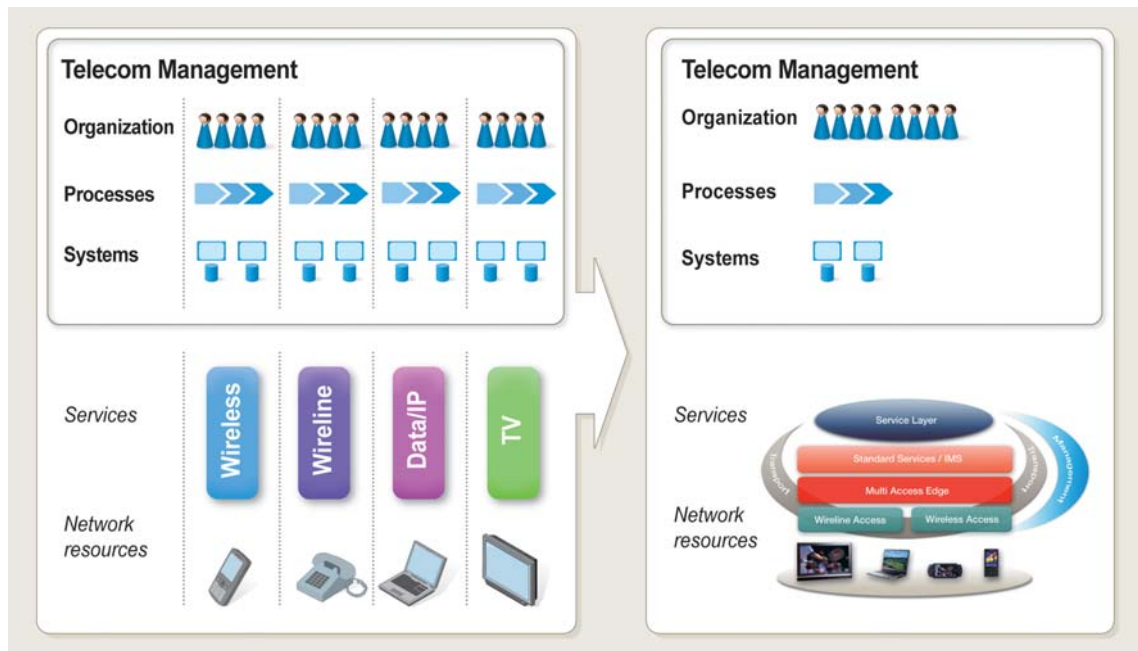


Figure 1: There are clear benefits to taking a holistic view of BSS/OSS, moving from stovepipe solutions to common processes and systems

Identifying strategic transformation areas

All operators have different starting positions, and each needs to take a different path in their telecom-management transformation.

However one can define a common methodology for determining that path.

By examining each operator's overall business priorities, one can identify the strategic transformation areas that are critical for business success. These areas contain the vast majority of drivers for system changes. Drivers can be new technologies added to the network, new products launched, or the ever-increasing need for operational effectiveness and efficiency. Examples of potential areas are:

- System consolidation
- Incident management
- Problem and change management
- Revenue-assurance practice
- Service-centric monitoring based on service models
- Service agility
- Customer product/customer experience management.

For each of the identified strategic transformation areas, the total cost of ownership (TCO), operational expenditure (opex) and time-to-market (TTM) all need to be addressed. The business objectives for each area are:

- System consolidation, through reducing the number of tools and replacing them with fewer and more generic and flexible systems.
- Operational efficiency, by implementing common ways of working, as well as increasing the levels of automation and simplification in business-process implementation.
- Operational readiness, when introducing new technologies such as IMS and launching new products such as mobile TV, through implementation of flexible and multi-vendor/multi-technology processes and systems, easily adaptable to changing market requirements.

Approving and prioritizing projects

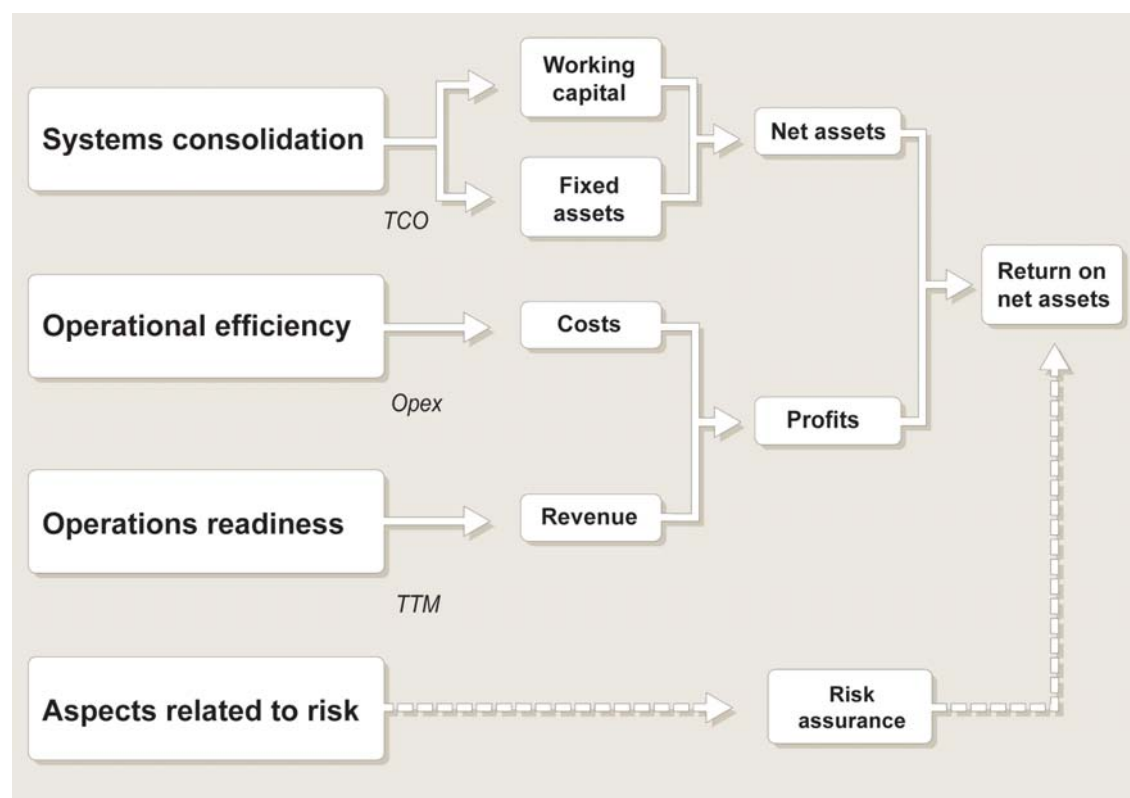


Figure 2: Simplified model for the "return on net asset" calculation

Once the strategic transformation areas have been defined, the next step is to establish a program comprising projects that implement the transformation. Each project must be justified as part of the overall strategic plan and the business case for the relevant strategic transformation area.

Once a project is identified, its measurable business objectives must be analyzed. This analysis can be made based on a “return on

net assets” model before any decision to move forward is taken.

The figure above shows one method of analyzing the business case for each project. One advantage of this method is that it factors in the aspect of risk, including the risk of missing the market window due to project delay or failure, as well as the risk of impacting the ongoing business during the project.

Defining the target architecture

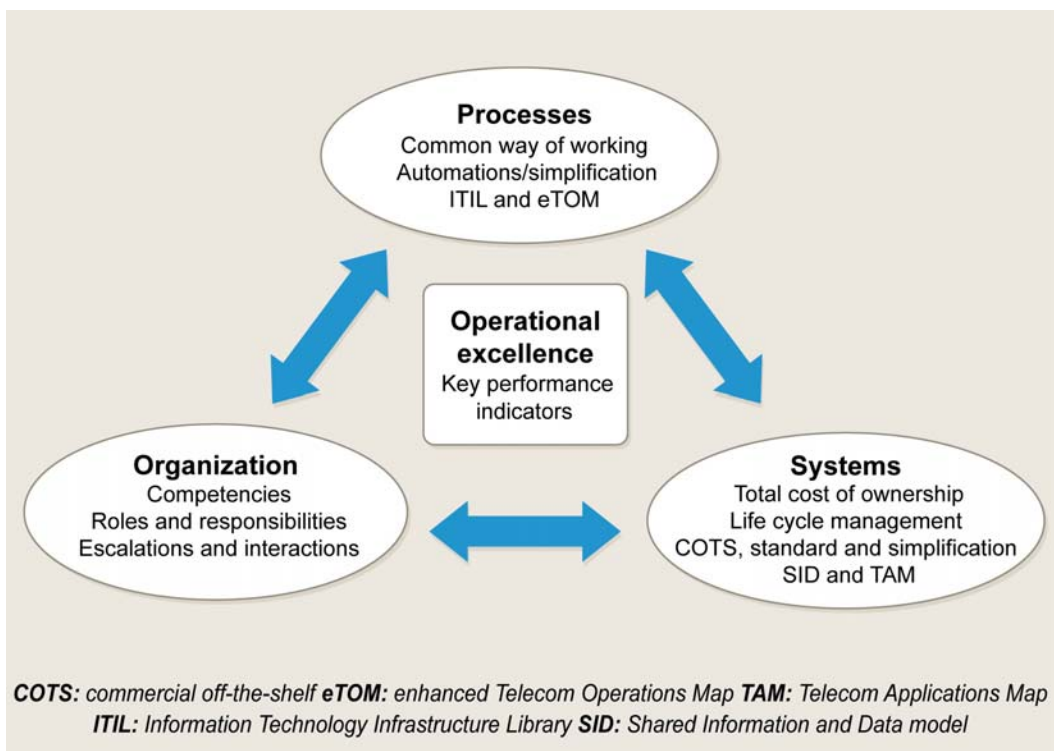


Figure 3: The three aspects of change for improving operational excellence

The foundation for an operator's management transformation program must be an approved and well-documented target architecture. The process of defining the target architecture forces operators to decide what they need to focus on, from both the business and technology perspectives.

The target architecture must cover the following three aspects:

- ❖ **Processes** – implementation of effective and efficient business processes based on industry-standard business-process frameworks such as eTOM from TM Forum or the ITIL model from itSMF.
- ❖ **Systems** – integration of industry-leading product suites into a complete management-systems landscape, with clearly defined roles and responsibilities for each product suite.

- ❖ **Organization** – an effective and efficient organizational setup with defined responsibilities and interfaces, as well as defined and assigned key performance indicators to measure and follow up operational efficiency.

A transformation's success depends on each of these three elements changing in a coordinated way. A change to systems or processes may well affect the organization. On the other hand, changes to the organization may require changes to the systems and processes. It is essential that all the pieces change in a synchronized way to minimize risk to the ongoing business.

How to transform?

Knowing what to transform is only half the process. An organization must know how to make that transformation happen. The transformation program must set a clear vision for the entire organization as it improves operational excellence and moves towards the defined target architecture.

Transforming telecom management is a continuous improvement for an operator, one that is best accomplished within a defined program setup. As described earlier, the process begins with examining an operator’s “strategic transformation areas” and then

identifying and prioritizing projects that can deliver business and organizational benefits.

For the practical implementation, there is a need to analyze the current position and then do a gap analysis in terms of the defined target architecture.

That gap analysis will identify the change that needs to be implemented within the strategic transformation area. Each area needs to be structured with a defined strategy to secure the success of the transformation.

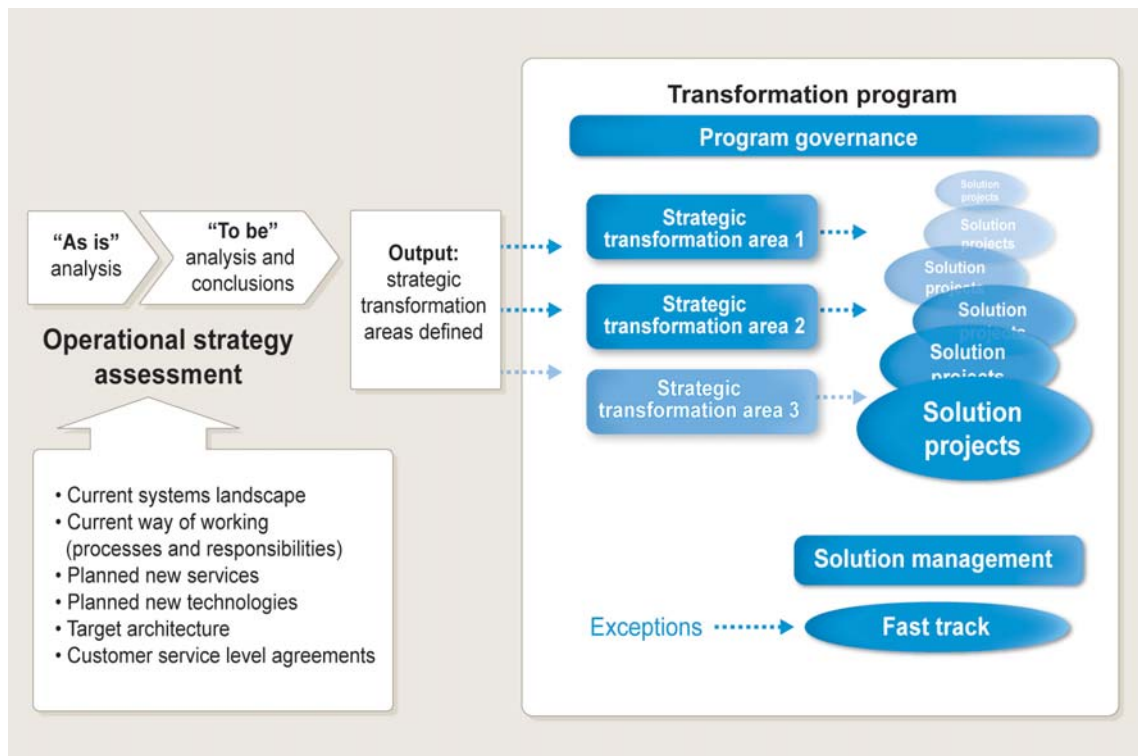


Figure 4: Identifying and analyzing areas that need to be transformed

The transformation strategy

Based on the operator’s specific business strategy, the transformation strategy for each strategic transformation area should provide:

- Task definition and goals
Analysis of the operator’s current situation, including the technical environment, organizational issues and working

procedures. Bottlenecks and problems in the current environment are identified and clearly described.

- Solution proposal
Based on the opportunity/problem description, recommend a conceptual solution for reaching the business target.

•❖ Implementation plan

Recommend how to implement the solution, as well as setting prioritized phases and projects.

•❖ Proposal of strategy

Help the operator make the right decision on which strategy will best help it reach its goals.

Measuring delivered business value

For each project identified in the implementation plan of the transformation program, it is important to measure how each project fulfills its business objective. The business objectives are identified from any stakeholders' business requirements and translated into concrete project steps. For all business improvements addressed, critical success factors as well as key performance indicators need to be identified and defined. These will then be used to measure each project in the transformation program and evaluate whether it is delivering the expected business benefits.

Use cases should also be created to make

sure that any proposed change will improve operational excellence and fit into the overall solution before any implementation starts.

After each project is finished, it is essential to follow up and measure its performance in terms of the expected improvements and business objectives. By reviewing the key performance indicators, the performance of each single changed element can be evaluated and measured. The changed element could be a replaced system that is re-embedded back into a workflow but it could also be a minor change to a specific tool or process.

Governance

A governance model and a program steering board are essential for the success of a management-transformation program. If the program is implemented by an outside vendor, formal relations need to be established on several levels between the operator and the implementation team to define their respective authority and responsibility.

The keys to a successful program are clearly defined phases, a strong steering mechanism and a clear view of the operator's expectations. Various types of steering boards can be created to oversee these phases. Examples include:

•❖ Executive Steering Group – provides

executive scrutiny, approval, direction and support for the overall plans and goals of the management-transformation program.

•❖ Solution Management Board – keeps track of ongoing studies and all change requests under analysis; it also decides whether change requests are within the scope of the project. Can also decide whether a fast-track change should be approved.

•❖ Operational Readiness Group – provides a forum for implementation planning, communication and progress as well as making “ready to go” decisions before solutions are handed over to operations.

Conclusion

Operators face a changing telecom landscape. The latest advances in telecommunications technology allow operators to make their networks more reliable and secure as well as to deliver higher quality services.

Most operators realize that this network transformation should be matched with a telecom-management transformation that improves their systems, processes and organizations. They know where their management systems need to be but are not sure how to get there while still maintaining their ongoing business.

This document shows that telecom-management transformation can help these operators turn their management systems and processes into an efficient business tool for competitive differentiation and lean operations.

Effective management systems and processes enable operators to attract and retain customers and increase operational readiness for a short time-to-market for new products and technologies. Effective systems can also reduce operational expenditures by, for example:

- Automating and simplifying end-to-end processes.
- Tracking and tuning service performance to ensure customers have a quality experience and perceive the value of the products offered.

- Automating and simplifying end-to-end processes.
- Simplifying telecom management by incorporating capabilities within each network domain. This involves utilizing a network domain manager to hide the network complexity and make the capabilities and features of each network domain available to all other management domains.
- Reducing dependency on stand-alone vertical systems.
- Moving to cost-efficient, integrated management based on an architecture with clear roles, responsibilities and interfaces between management domains.

Finally, operators should maximize their chances of success by taking a step-by-step approach to evolving their management systems and processes, and by working closely with a business partner that has a thorough knowledge of end-to-end communication solutions.

Glossary

BSS/OSS	business support systems/operations support systems
COTS	commercial off-the-shelf
eTOM	enhanced Telecom Operations Map – the most widely used and accepted guidebook for business processes in the telecommunications industry
IMS	IP Multimedia Subsystem – an architectural framework for delivering internet protocol (IP) multimedia to mobile users
IPTV	Internet Protocol Television
ISP	internet service provider
ITIL	Information Technology Infrastructure Library – a set of concepts and policies for managing IT infrastructure, development and operations
itSMF	IT Service Management Forum
opex	operational expenditure
SID	Shared Information and Data model
SLA	service level agreement
TAM	Telecom Applications Map
TMF	TeleManagement Forum
TCO	total cost of ownership
TTM	time to market