Asset Complexity Management

Simplifying network asset complexity for the communications industry

By Leah Goldman and Andy Kohok
Most communications service providers invest a great deal of resources in managing their core offerings of video, data and voice services. Yet cable operators and wireline telcos alike seemingly waste tens of millions of dollars each year in the purchase, upgrade and obsolescence of the network assets that deliver these offerings.

A service provider may purchase low-cost set-top boxes, only to find itself down the road with high operating expenses or high customer churn due to poorly performing assets. The same company may purchase more efficient headend equipment, only to learn from field operations that the network must be reconfigured to accommodate it. Even a company with the most well-configured and efficient hardware may discover it has long maintained obsolete network assets that should be replaced.

Yet we have found that cable and wireline operators willing to invest the time and resources to manage their service-delivery assets end-to-end can reduce 80 percent of their asset proliferation, generate 40 percent more value in asset resale and cut operating expenses by 20 percent per stock-keeping unit (SKU). One US provider concluded that obsoleting its standard-definition set-top boxes would not only reduce its SKUs by 50 percent, but facilitate much-needed bandwidth reclamation as well. Further, the obsolete assets could be auctioned in the marketplace for substantially more than the operator had realized through its previous, more casual approach to asset sales.
Making it simple

This article presents a model for managing an operator’s network assets from end to end, the goal of which is to make it simpler to reduce costs and sustain a rationalized network. This model, called Asset Complexity Management, has three key pieces: organization, process and technology (see Figure 1).

Complexity creates challenges

Arguably, the greater an operator’s asset complexity—the number of different models deployed in the network—the greater the operating costs required to maintain and support these assets. Clearly there can be tremendous value in reducing this complexity and in managing the lifecycle of all network assets. However, managing such assets can be incredibly challenging. At any given moment, most communications service providers will have millions of customers with hundreds of different models of cable modem, for example, along with multiple headends, switches, nodes and other equipment. Further, true to the Pareto rule, 80 percent of model types may make up only 20 percent of the deployed volume, unnecessarily boosting complexity. Even the best-managed operator may not have the tools and data necessary to manage this complicated and often invisible aspect of its business.

In fact, we have found that many operators make hardware decisions based primarily on “gut feel,” using past purchases as a reference. Such decisions may not be optimal, however, as they tend to focus on purchase costs, ignoring the costs to be incurred throughout the asset’s lifecycle. In addition, operators often make decisions in silos: procurement, planning, finance and network operations, each with its own budgetary pressures, may optimize costs based on the department’s own view rather than looking across functions or creating a comprehensive fact base—a “single source of truth”—to guide the organization. One communications service provider, for example, standardized the specifications for customer premises equipment (CPE), but allowed the supplier to provide two types of custom remotes—doubling the company’s supply-chain complexity. As a result, other departments must now track the inventory, demand and fulfillment of both remote types to avoid shipping errors.

Organization

The first piece is the organization: a dedicated team created solely to help address asset complexity, first on a project-by-project basis and eventually throughout the business.

Operators would begin by recruiting experts from network engineering, product management, business strategy and supply chain management. These experts must understand the technical aspects of the business well enough to communicate with engineers and appreciate the impact that changing or removing an asset will have on the rest of the company.

Figure 1. A model for Asset Complexity Management (Accenture 2013).
They should also have an understanding of the financial aspects of the business and, importantly, be capable of performing statistical analysis and data modeling. Additionally, the more senior members must be skilled in cross-functional management, as the team will provide data and analysis to support decision-making across the company.

Once configured, the team supports all aspects of the operator’s asset lifecycle, from design to obsolescence. Full-time team members act as internal consultants, called upon by the engineering or marketing functions when those functions need to make decisions that affect service-delivery assets. The team can therefore be positioned in a way that allows it to influence critical decisions—with direct links to engineering, product management, finance and marketing. A key objective for senior team members is to gain not only the ear, but the confidence, of important decision-makers if they are to win agreement on execution.

**Process**

The second piece of the model is the process: a structured, well-articulated approach to every asset-based project (see Figure 2).

**Define.** To begin, the ACM team defines the project as precisely as possible, clearly articulating the issue and objectives at hand and putting boundaries in place to avoid the project growing beyond its original scope. A key part of this effort will be the identification of the working team, including stakeholders across the company who will be involved in the final decision-making process.

**Build.** With the project defined, the ACM team would create a detailed baseline image of the state of the asset on day one of the project. This includes the creation of multiple scenarios, or mini business-cases, to test. Working through these scenarios helps the extended team understand the impact of every potential change, whether in equipment, supplier or network configuration. If there are variables that should not be considered—a purchase or a supplier has been ruled out, for example—those scenarios would be shown as exceptions.

Figure 2. A structured, well-articulated approach (Accenture 2013).
Analyze. The most essential piece of the process—the core of the ACM model—would be gathering the relevant data and analyzing it. The team begins by helping the company develop a comprehensive fact base—a single source of truth—that ensures it has the most current information with which to make a decision.

The team would then analyze each scenario to determine its potential value. In the process, it can help uncover the optimal decision for the business as a whole. A variety of tools and models are available to help in these analyses, including one in particular that should be mentioned here: Total Value Impact (TVI). TVI is a performance metric that looks at the entire potential value of an asset from purchase to disposition and attempts to quantify that value. Total cost of ownership (TCO), a more traditional metric calculated by many procurement groups, also looks at the entire asset lifecycle. However, TVI goes one step further, quantifying operational impact and efficiencies as well as more direct costs. In this way, TVI can help an operator estimate the total impact of an asset over its lifetime.

Recommend. Once it has completed the analysis, the core team can reach out to the extended working group to recommend a course of action, presenting its entire data-centric, cross-functional approach, including the TVI and cost models for each scenario. As a part of this process, the team fully briefs all stakeholders, including the owners of the product launch, allowing it to counter any “gut feel” decision-making. We note that technologies are changing and converging rapidly and even the most stringent decision-making can involve risk. As a result, stakeholders must be able to understand and weigh the consequences throughout the organization as part of the effort to minimize the risk inherent in each potential choice.

The team then further reduces risk by developing an execution plan or roadmap for the project, one that identifies the right owner to manage the project, along with the sequence of tasks to be completed in order to achieve the identified value of each scenario.

Sustain. The ACM process would be sustained over the asset’s lifetime through clear, ongoing communication between related departments. TVI can be recalculated whenever a change in the network affects it—whether a new supplier, a new price or a network refinement—and the database would be continually updated with new information about the asset’s performance.

When determining whether to repair or replace an asset, for example, the team can use TVI to help understand if the cost of continually repairing the asset has climbed to the point at which the asset should simply be replaced. In fact, one cable company’s decision to replace a single model type instead of repairing it resulted in an increase in cash flow of US $17 million over the remaining four years of the asset’s lifecycle.

Technology

The third essential piece of the ACM puzzle is the technology available to aid in the decision-making process, from an enterprise-wide asset database to a set of reusable cost models. First and foremost would be the asset database that serves as the single point of truth for the entire organization. This comprehensive database and reporting tool would contain functional and performance attributes for every asset, on demand and in real-time, which can better position the ACM team to answer questions and support decision-making with fact-based analysis. It can also allow the organization to monitor performance trends proactively and to help mitigate risks in the existing asset base, from purchase through complete disposition.

The team would build this database over time and should be prepared for a number of challenges, including dispersed, inconsistent information sources and the need to normalize the data. At the end of the day, however, a consistent and reliable database can make all the different properties of the asset—purchase data, supplier name, cost, quantity, maintenance dates, repairs—readily available for analysis.

The database would be connected to dynamic information sources that update it on a weekly or monthly basis with operational information such as the number of repairs performed and the number of service calls.

In addition to this database, a number of cost models would be required across all three project types—whether asset launch, asset upgrade or asset obsolescence. These cost models, such as cost-benefit analysis and decision analysis, would be able to analyze CapEx and OpEx to help determine optimal spending choices. One operator, for example, recently completed a cost-benefit analysis associated with the launch of a new asset and decided to launch the asset only for certain customers, optimizing its return on investment.

Real Value

With a full ACM organization and process in place, the team can ideally take on one project after another, defining the issues at hand, building the appropriate scenarios, analyzing the options, making fact-based proposals to stakeholders and following up to see that the relevant network assets add value to the organization throughout their lifetime. The ultimate value they add can be substantial, whether through increased revenues, cost avoidance or better organizational efficiency.

For example, one operator had already made a decision to launch an asset based primarily on gut feelings when the project leader decided to apply the ACM process to confirm the decision. Nine scenarios were analyzed to understand the varying cost impact on OpEx and CapEx throughout the lifecycle of the asset. The leader soon realized that the new fact-based scenario recommended by the analysis could save more than US $300 million over the lifecycle of the asset as compared to the initial scenario.
A Final Note

Asset Complexity Management should not be viewed as a one-time effort. The ACM methodology should become part of an operator’s everyday strategic decision-making process, with scorecards developed for ongoing measurement and continuous improvement. Developing a single source of truth—one that takes into account the information and needs of functions all across the business—can help provide decision makers with a more comprehensive view of the issues along with the support of fact-based analysis. And using iterative processes and tools to make decisions based on the full asset lifecycle will provide a framework for the most important capital and operational decisions, translating into significant near-term savings and benefits. Finally, ACM can become a core function within the enterprise, designed to be responsible for updating the database, keeping watch on asset trends and contributing fact-based, objective recommendations whenever a significant asset decision must be made.

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