

# Executive Summary

## A Service Assurance Architecture Pattern

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For at least the past 10 years, we've witnessed an evolution in IT, from being a supportive function for business to becoming a business in itself. Customers are willing to pay for information processing, and they value the results, but they require *quality*. The IT industry struggles to deliver quality, and the majority of effort related to quality improvement is directed toward *internal* IT processes, rather than the *results* (i.e., the services) seen by customers.

### COSTS OF QUALITY

I have spent most of my career working for mobile telecommunications operators — companies with products more technology-based than IT-based. The difference, however, is that telecommunications is a “grown-up” business, while IT — as an autonomous business — is not, just yet. The telecommunications industry develops systems to provide services, while in the IT space, the services are designed and developed. However, after deployment in IT, the focus of operations and maintenance is on systems, not services. If the Japanese manufacturing aphorism that “highest quality is lowest cost” is valid, then the “IT way” is fundamentally wrong.

The latest trends, including DevOps, prove that we must extend quality assurance (QA) efforts to the operations and maintenance period, and we must focus them on the services provided by IT. QA work also involves the amount of time and money spent, right?

Not necessarily. Perhaps we could alter the QA work done during service development and integration, so we could gain service assurance for free. That is the idea behind a service assurance architecture pattern, which we explore in the accompanying *Executive Report*. In the report, we examine how to validate an IT service throughout its entire lifecycle, using the same architecture in virtually every effort of QA.

### THE COMPLEXITY FACTOR

There is another reason to build technology management practices in the IT space based on the telecommunications service assurance experience: complexity. When complexity grows, quantitative problems arise. To a certain magnitude, we can deal with such problems by scaling up the means of dealing with them, something we already do. When complexity grows on a large scale, however, the problems become not only quantitative, but qualitative as well. In such circumstances, scaling up old practices will not do the job; we simply must acquire other practices.

Complexity growth in the IT space resembles the level of complexity permanently dealt with in the telecommunications world. Despite the exponential complexity growth in the IT space, the practices for technology management in IT have not changed. Trying to monitor each and every IT system in order to derive IT service performance is not possible; the IT environment is too complex.

The report proposes extending the set of IT management practices with service assurance — a technology management area that has been practiced and mastered by telecommunications companies. The report also presents an architecture for dealing with IT systems complexity while staying focused on IT services.

### A COMMON MAINTAINABILITY VIEW

Service assurance is a practice that goes beyond the scope of technology platforms, but it is hardly possible to reduce QA costs without changing the technology itself. The service assurance view is primarily the



operations and maintenance view; it is rooted in the customer or user perception of the service. Such a point of view should be rolled back toward IT systems development processes and alter the way we design and build IT systems. We should build the processes on the same common and unified view of the service quality, and the systems need to be capable of being much more manageable during runtime.

A service assurance architecture pattern offers a solution that fulfills such requirements. It is adaptable enough to handle various aspects of QA — from debugging, to tests and rollout, to operations and maintenance. For the same reasons, the pattern provides a means for the optimization of quality costs built around the common maintainability view strictly related to service assurance. The architecture pattern takes on the role of a framework, integrating and enforcing the maintainability view on various aspects of services QA.

### APPLYING A SERVICE ASSURANCE PATTERN

During my career, I've built a deep understanding of what it means to assure services in the mobile telecommunications world. I have translated this experience to the IT space by casting the practices of a telecommunications management network and

operations systems support onto the IT services area, particularly in the architecture for service assurance.

In particular, the report explores the following areas:

- **A set of concepts that define service and assurance in the IT space.** We discuss what exists and what is missing in technology management practices for a service assurance job.
- **A set of rules for transforming IT systems into architecture components capable of being managed in terms of service assurance requirements,** as well as a template for an adaptable and flexible platform, which we need for the pattern application.
- **Directions on how to change various QA tasks in order to integrate them in the service assurance pattern.** We also offer examples on the pattern application for an even broader view on assurance, focusing especially on the users and customers of services.

Much effort has been spent on various aspects of processes, which should drive the quality of services delivered in the scope of IT endeavors, but, in my opinion, not enough work has been done in terms of the architecture of service assurance. The report strives to close that gap.



## Agile Product & Project Management Practice

### FOR MORE INFORMATION

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