Enterprise Architecture for Communication Service Providers: Aligning Business Goals to IT
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By Pritam Dey

Continuous technology innovation, a dynamic ecosystem with new competition, and evolving market demands make it important that Communication Service Providers (CSPs) deliver better and faster voice and data services—along with innovative pricing models, consistent high quality, and new delivery models. As consumer expectations rise and technology evolves, unprepared telecoms risk stumbling and alienating the very subscribers they’ve worked so hard to attract and retain.

It is imperative that CSPs become more flexible and agile, and provide new products and services with decreased time to market. Best-in-class operators can do this because they have an enterprise-wide view of their business processes and underlying technologies at all times—that is, they have a defined understanding of their information flows, applications, and infrastructure with traceability across all business units. This traceability is clearly aligned to the organization’s core goals and strategic direction, and this is where Enterprise Architecture can help.

Transforming CSPs through Enterprise Architecture

Enterprise Architecture (EA) is a discipline that details the current and future structure and behavior of an organization’s processes, information systems, personnel, and organizational sub-units and how they are aligned with the company’s core goals and strategic direction. EA ensures that systems cooperate with each other to drive the enterprise business processes and services and thereby achieve a tight alignment between business and IT that facilitates business transformations and revenue growth. Because this alignment is unique to every organization, it is hard to imitate and even harder for others to compete with.

Since the definition of EA sounds well suited for CSPs, why has there been such slow adoption? We’ve found it’s due to three misconceptions:

- **EA is too slow.** For an industry as dynamic and demanding as telecom, EA’s traditional two- to three-year deployment timeline implies that business issues could change by the time you complete the program.

- **EA is too expensive.** From a technology standpoint, CSPs are constantly expected to simplify their IT footprint and cut capital expenditures. There is a perception that EA adds substantially to costs.
• **EA is all about IT.** Because EA tends to come under the purview of the CIO, it has been mistakenly viewed as an IT initiative rather than a business initiative.

Yet, in our experience EA can be highly beneficial to CSPs’ complex business model, offering a methodology that promotes agility, coherence, accountability, and competitiveness. It addresses the IT complexity and fragmentation issues most older CSPs are dealing with—the technology silos, the legacy baggage, and the custom applications and plethora of architectural frameworks that are the result of longevity and mergers and acquisitions. It can help a CSP streamline its IT landscape, identify gaps and weaknesses, and align itself with industry benchmarks.

But it should not be approached as a single long journey with a distant end goal. The key to unlocking EA’s value and bringing maximum value to the organization is implementing it in pieces across the enterprise.

**EA Approach for CSPs: The Three Phases**

An EA transformation is implemented in three phases to gradually and continually provide value to your larger business goals:

1. **Foundation and Initiation**, focusing on EA capability-building
   a. Value (including ROI) identification desired from the outcome of EA
   b. Reference Architecture, which provides a template architecture and a common vocabulary
2. **Elaboration and Construction**, focusing on EA services
3. **Alignment and Innovation**, focusing on providing business-IT alignment through EA governance

Within each phase, the CSP can break down the process into chunks so as to be able to build on key wins, as shown in the illustration of the incremental steps that CSPs can take to adopt EA:
CSPs tackle critical business issues in the first phase, and evaluate several frameworks available in the industry to select the best fit. Our experience suggests that a combination of The Open Group Architecture Framework (TOGAF) and new generation operations systems and software (NGOSS) can replace the previous piecemeal approach. By facilitating the rapid development of cost-effective solutions, these frameworks can go a long way toward meeting your business needs.

In the initial phase you conduct a detailed assessment of your application and data architecture to identify weaknesses as well as future applications and data architecture. Taking it step by step, you can identify quick wins that encourage progress, including:

- Eliminating redundant business processes
- Identifying opportunities to enhance application and data security
- Establishing an EA governance structure and processes that later can transition into a formal EA Review Board
- Creating a roadmap for application and infrastructure optimization to decrease the total cost of ownership

It's also important in this first phase that you identify reference architecture for the enterprise. It provides the template, common vocabulary and structure to EA, and aids governance and traceability. It provides the holistic and integrated view of the architecture. You'll need a standard language and vocabulary to ensure precise and accurate communications between the various stakeholders.

The second phase is made up of numerous incremental steps that include:

- Establishing an EA maturity model and EA Review Board reference guide to establish IT standards and guidelines
- Creating EA templates
- Creating an infrastructure roadmap, database, and license optimization
- Creating an SOA governance model.

In this phase you also map existing business processes to the industry-standard Enhanced Telecom Operations Map (eTOM) model, the most widely used and accepted standard for business process in the telecom industry. Incrementally, you can create a single repository of all enterprise artifacts to deliver a single view of enterprise assets and architectural decisions. Each of these achievements can further the quest for IT accountability and visibility across the organization to enhance the underlying business strategy and energize SOA adoption across the telecom.

The third phase focuses on setting up an EA Review Board to ensure that the identified IT transformation initiatives were implemented, technology options were evaluated, and RFPs were managed well. Data quality and consistency, infrastructure optimization, and established metrics ground this approach. You can standardize the architecture processes, compliance, and standards; and with a new standardized vendor/product evaluation framework, you can confidently and successfully select the right technology and vendor.

**EA in Action**

The experience of one of the fastest-growing CSPs in the Middle East illustrates EA's usefulness. The company's strategy focused on growth, efficiency, and differentiation, using their IT department for support. There was success—lots
of it—but also a host of problems resulting from diverse customized IT solutions and a lack of unified architecture. Instead of looking forward, much of management’s time was spent addressing customer issues in the organization’s back-end operations.

The company evaluated several frameworks and selected TOGAF and NGOSS frameworks for their maturity levels, and adopted eTOM, the industry-standard Enhanced Telecom Operations Map, as its target business architecture, saving the company considerable time and effort. They focused on defining target application architecture and a reference architecture using best of the breed COTS products for seamless integration. During the next phase the company evaluated eTOM processes to fit into its target architecture so development teams could deploy solutions. They established an EA maturity model and an EA Review Board reference guide to establish IT standards and guidelines; EA templates; an infrastructure roadmap, database, and license optimization; and SOA governance model to provide visibility to the entire organization on architectural decisions and smooth implementation of transformation projects.

During the third phase, the company focused on implementing architectural decisions already made, among them data quality and consistency, and infrastructure optimization.

The bigger business benefits became apparent as they worked their way through each phase. System availability improved 50 percent and was more predictable, and capital expenses for technology architecture decreased by close to 8 percent. With a consolidated IT portfolio, operational costs and time also decreased. Call center handling time decreased by 25 percent while customer satisfaction improved by 50 percent. Systems migration cut down custom development by 50 percent and improved the performance of individual systems. Reduced revenue leakage of 75 percent, improved operational efficiency, and improved growth rate, thanks to accelerated time to market within 60 percent of previous time, all delivered business value.

The successes have been so profound that more EA projects are planned. The company intends to establish an EA dashboard and closed-loop feedback mechanism for continuous improvement by increasing targeted goals, and expects to fix some loose ends in EA processes. With all this, they believe they will have the ability to introduce new products and services in minimal time—an estimated 60 percent reduction from where they were. They also expect to improve customer service across the board and reduce the number of complaints by 50 percent. They foresee increased visibility and efficiency in managing capital-intensive resources and a further reduction in revenue leakage by at least 75 percent.

**Starting the EA Process**

Where should a company start the EA process? First, your C-suite must own the project and be fully supportive of the CIO and the IT team’s project execution. Together they’ll need to build a detailed business case and a definition of anticipated outcomes. Begin by asking some key questions:

- Is the value and promise of EA propagated across the organization?
- Are different business functions motivated and ready to make the transformation successful?
• Is the organization mature enough to embark on an EA transformation?

• Does the organization have the skill sets needed to execute the program?

Then you’ll establish an EA governance board comprised of stakeholders from all groups involved in the transformation. Develop an agreed-upon strategy for gradually implementing and deploying targeted EA. Develop a robust EA process that includes best practices, standards, policies, and guiding principles, and define an EA roadmap with near-term steps to capture immediate wins that lead to achieving your goals.

Finally, measure, monitor, and control the EA process with identified metrics, and at each step always ensure alignment of IT with business objectives. Examples of metrics typically used to measure EA include percentage of time-to-market for new products needed to grow the business, percentage of reduction in support or maintenance costs, and percentage of reduction in development and deployment cycle.

A Smart Transformation for CSPs

Enterprise Architecture isn’t only for next-generation operators. It can be a boon to legacy operators who need to simplify. EA can give these legacy operators the agility and speed that has eluded them and kept them from quickly rolling out large technology investments. With EA they can become lean and cost-effective—and most importantly, competitive.

Rapid technology improvements and elevated customer expectations are a given for the telecom industry. If you expect to grow and lead the competition, you must have a thorough understanding of your entire business from all angles and ensure that your technology is in sync with your business aspirations—all while keeping costs down. The way to achieve this is through Enterprise Architecture. It will take you down a path of innovation that will make you the leader in your market.

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