Technology Transformation with Managed and Professional Services

A Framework for Success

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Welcome to Lumen®

Many enterprises increasingly find that their IT infrastructure must support growing demands requiring greater computing power, lower latency for applications and workloads, increased storage, more bandwidth, and higher availability. Scaling within your in-house data center or server room is no longer viable, and not all workloads are ideal for a centralized cloud.

The preferred modernization model for digital workloads is a hybrid approach – neither purely on-premises nor cloud, nor totally edge or centralized. Instead, enterprises choose the right venue for the job and increasingly orchestrate digital workloads across a multi-tier architecture.

Lumen Managed & Professional Services enables customers to elastically scale compute demands seamlessly in current, new and expanding geographies around the globe. Leveraging our infrastructure, platform, Edge and Container services empowers IT teams to focus on their business-driven critical priorities instead of spending this valuable time on infrastructure maintenance, support, operational tooling and disaster recovery functionality far from digital interactions where data is acquired, analyzed and acted upon. Customers save time and resources, as well as gain increased cost-effectiveness by eliminating deployment expenses, and can transition into an OpEx model to platforms with constantly evolving and improving capabilities.

Updating and transforming IT infrastructure can be challenging for customers who do not have robust global staffing or vast experience in modernizing complex, hybrid environments. Lumen recommends seeking advisory and project experts to help you easily plan and implement next-gen technology without disrupting your business.

Using proven processes and solutions designed for seamless migration and transformation of workloads and technology, Lumen believes you can reduce risk with little to no IT resources of your own—even in complex and heterogeneous environments.

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Taking your business to the next level requires an experienced partner like Lumen, who can help define a strategy and execution aligned to achieve your business outcomes. Our services professionals can provide advisory, project, and ongoing management for your cloud workloads and our cloud experts can consistently deliver the infrastructure you need.

Lumen has one of the largest network and edge infrastructure footprint, especially in emerging, metro and hard-to-reach places. For example, an edge private cloud, combining the key attributes of both on-premises computing and managed cloud infrastructure, offers a strong choice in digital workload executions. Such an approach provides the dynamic, operating expense characteristics of cloud computing coupled with secure, low-latency and high-performance workloads of an edge venue – key requirements for enterprises supporting critical industry edge use cases.

Enterprises typically consider a range of IT venue execution requirements when thinking about modernizing and supporting their industry workloads – baseline capabilities like the cost and availability of supporting technologies, application transformation, data security, and sovereignty considerations. Beyond that, many digital workloads won't run optimally (and fail to deliver mission-critical business outcomes) without high-performance, low-latency connectivity and compute infrastructure that can support real-time transactions and insights.

While the majority of cloud platforms can run enterprise workloads, there may be better-optimized locations for specific workloads, use cases, or business processes. When determining the best execution venue, organizations need to account for a wide range of variables. Some of these include latency tolerance, data volume, high-speed networking

availability, security requirements, regulatory compliance, data sovereignty/ locality considerations, agility to market, and requirements around operational control. With this in mind, there are emerging options that bridge the gap between the as-a-service functionality of the public cloud and the operational control and single-tenancy of the private cloud. Lumen and its Technology Transformation offer value to the enterprise. This service has been tested and validated by Lumen customers for over a decade resulting in faster time to market, with fewer workarounds and optimal run states.

Why Technology Transformation with Managed & Professional Services?

LumenTechnology Transformation with Managed & Professional Services assesses and conducts the migration of a business's entire data center to a new computing environment. These data center migrations can consist of everything from basic applications and storage systems to servers, complex network infrastructure, and various information security elements. Migrations that include network infrastructure can often entail technology transformation to SD-WAN with uCPE in many locations with connectivity support to hyperscalers. [1]

Lumen can migrate customers from any source(s) to any target(s). Database migrations usually require a combination of export/import or database replication configurations depending upon the application uptime requirements which are incorporated into the migration methodology.

Lumen's standard migration velocity averages 30 servers per week, and our teams can scale up to meet any velocity/servers per week but are entirely dependent upon what velocity the customer can sustain – as well as what the infrastructure can support – usually limited by available migration network bandwidth and replication requirements.

Each migration event follows a Technical Implementation Plan that includes a properly orchestrated accounting of all tasks required for success. This includes agreed-upon communication events, all technical execution steps, success rollback criteria, and detailed rollback steps. These Technical Implementation Plans are reviewed several times prior to execution to ensure that all stakeholders are in agreement and ready to proceed.

Our Process

Transformation cycle
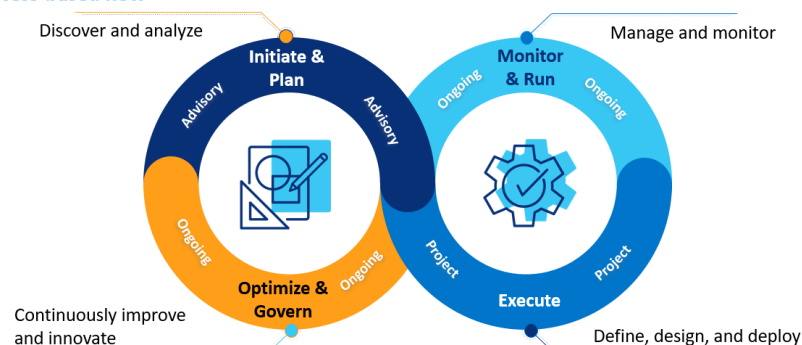
[1] Source: SD-WAN, Software-defined Wide Area Network with a universal customer premises equipment for virtualized functions and services.
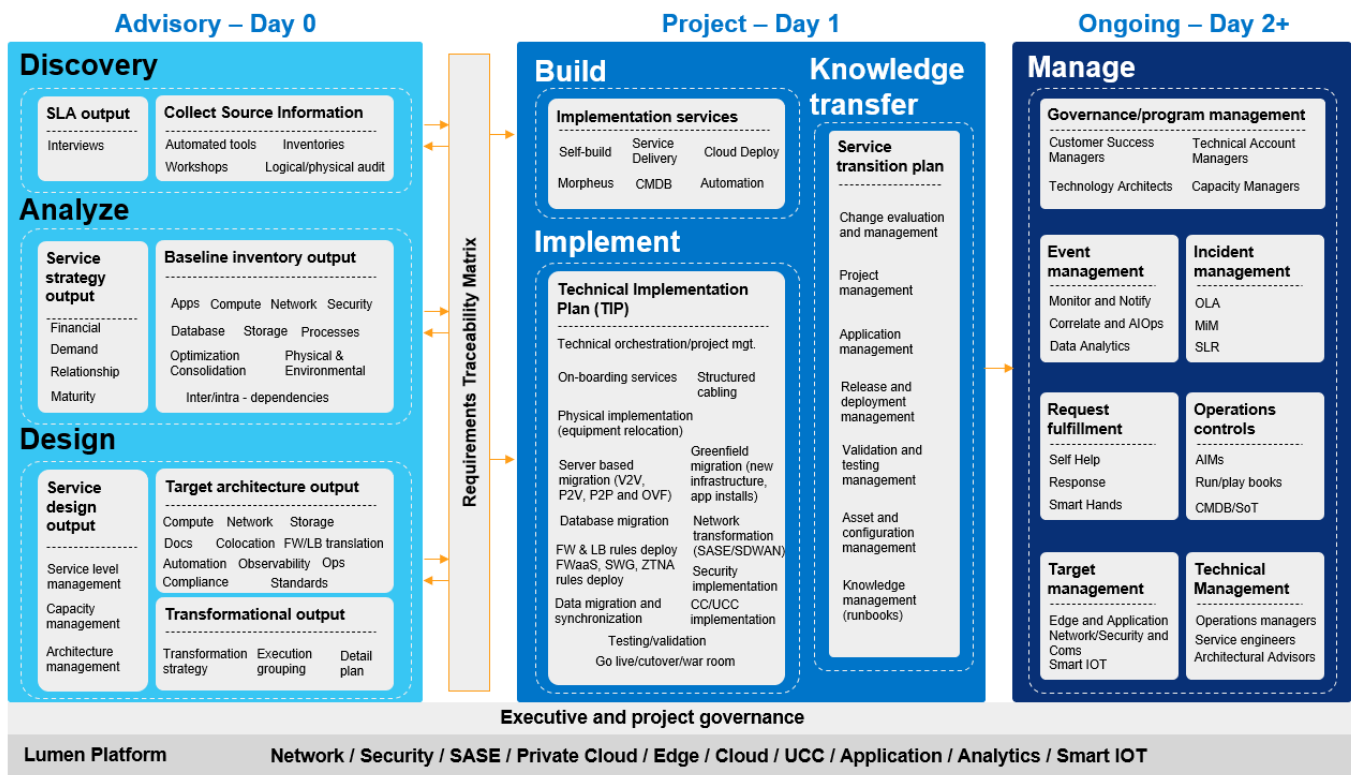
The Framework for Success

Lumen Technology Transformation follows a strictly tested methodology that delivers value-added services across our different technologies and can be identified by advisory, project, and ongoing management.

The Framework for Success consists of three core pillars that serve as the foundation of Technology Transformation with Managed & Professional services.

1. Advisory services
2. Project services
3. Ongoing management.

These three components outline an effective and proven process for technology transformation.

Lumen Framework for Success

Advisory – Day 0

Discovery

SLA output
Interviews

Collect Source Information
Automated tools   Inventories
Workshops   Logical/physical audit

Analyze

Service strategy output
Financial
Demand
Relationship
Maturity

Baseline inventory output
Apps Compute Network Security
Database   Storage   Processes
Optimization   Physical &
Consolidation   Environmental
Inter/intra - dependencies

Design

Service design output
Service level management
Capacity management
Architecture management

Target architecture output
Compute   Network   Storage
Docs   Colocation   FW/LB translation
Automation Observability Ops
Compliance   Standards

Transformational output
Transformation   Execution   Detail
strategy   grouping   plan

Project – Day 1

Build

Implementation services
Self-build   Service Delivery   Cloud Deploy
Morpheus   CMDB   Automation

Implement

Technical Implementation Plan (TIP)
Technical orchestration/project mgt.
On-boarding services   Structured cabling
Physical implementation (equipment relocation)
Server based migration (V2V, P2V, P2P and OVF)   Greenfield migration (new infrastructure, app installs)
Database migration   Network transformation (SASE/SDWAN)
FW & LB rules deploy FWaaS, SWG, ZTNA rules deploy   Security implementation
Data migration and synchronization   CC/UCC implementation
Testing/validation
Go live/cutover/war room

Knowledge transfer

Service transition plan
Change evaluation and management
Project management
Application management
Release and deployment management
Validation and testing management
Asset and configuration management
Knowledge management (runbooks)

Requirements Traceability Matrix

Ongoing – Day 2+

Manage

Governance/program management
Customer Success Managers   Technical Account Managers
Technology Architects   Capacity Managers

Event management
Monitor and Notify
Correlate and AIOps
Data Analytics

Incident management
OLA
MiM
SLR

Request fulfillment
Self Help
Response
Smart Hands

Operations controls
AIMs
Run/play books
CMDB/SoT

Target management
Edge and Application Network/Security and Coms
Smart IOT

Technical Management
Operations managers
Service engineers
Architectural Advisors

Executive and project governance

Lumen Platform   Network / Security / SASE / Private Cloud / Edge / Cloud / UCC / Application / Analytics / Smart IOT

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Why choose Lumen?

Lumen is the global-scale operator that empowers your data and applications, providing consistent service delivery worldwide on the Lumen Platform edge to cloud data center. Our core purpose is to further human progress through technology by digitally connecting people, data and applications — quickly, securely and effortlessly.

Lumen Technology Transformation offers a unique feature, the Requirements Traceability Matrix (RTM), an instrumental artifact in reaching the desired end state. Every requirement that is identified, uncovered and agreed upon is documented in the RTM. It begins with expected outputs and requirements that are defined in the Statement of Work (SOW) and gradually expands to include key decisions. The RTM defines why the decisions have been made and their purpose to help ensure a mutual understanding of the intended plan between the customer and Lumen teams.

Since 2008, Lumen has successfully transformed countless customer landscapes. In some cases, customer's leadership didn't realize the activities were completed as they occurred seamlessly due to our diligent execution. Every step and detail are accounted for resulting in delivery of a solution that is reliable, scalable, resilient, and in many cases, transparent.

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Advisory

Discovery

The success of the project is driven by the Lumen engagement management team. The engagement management team owns all aspects of the project — from kickoff through closure at all levels of leadership. Lumen's executive sponsors remain available throughout the project.

The technology transformation process kicks off with discovery and assessment of your requirements. A collaborative schedule and project plan are created upon project commencement. These are living and breathing documents that guide the execution of the engagement. The Lumen team conducts thorough assessment interviews and workshops to collect data on everything from your internal SLAs to business rules and requirements. Automated discovery tools are installed to gather data-driven details of the source infrastructure, while workshops and interviews gather your innate knowledge. If needed, logical and physical audits may be undertaken as well to document your landscape. The workshops continue throughout the discovery phase to ensure the project team is well informed.

Lumen uses various discovery data capture tools to gather information from the source environment for a reasonable timeframe, typically 30 days. These tools are instrumental in collecting individual server usage and connectivity data; most critically, the interconnectivity data documents which servers communicate to one another — in some cases down to the database level. This data is then used to properly define the application groupings and wave plans to be scheduled. During the analysis workshops, this data is used to create the Wave Plan and Technical Implementation Plans (TIPs) per wave.

Analysis

In the analysis phase, the acquired and collected information from discovery is compiled into service strategy and baseline inventory outputs. During this step, your requirements are analyzed and documented. The analysis and design output are the collection of detailed plans — migration and target state architecture — that are needed to deliver the expected outcomes and services.

A thorough and detailed analysis is conducted covering all of your technical details such as compute and storage, applications, network and security, optimization consolidation, and physical and environmental aspects. The inter/intra-dependencies between all the physical and technical assets are identified. Simultaneously, all project requirements are documented in the Requirements Traceability Matrix (RTM). Examples of these requirements include recovery point objectives (RPOs) and recovery time objectives (RTOs) of data recovery solutions, capacity, throughput, resilience, security, backup, and manageability requirements. Everything that is identified as a requirement is documented to ensure success.

A common requirement is whether or not IP address retention is needed. IP address retention is dependent upon the networking capabilities of the source and target infrastructure that is included in the design; however, the retention of IP addresses usually adds substantial complexity to a solution.

Design

Lumen creates and validates all documentation and actions required to build the target state architecture, including high and low-level storage and network designs, colocation, firewall, load balancing translation, automation, compliance, and detailed build requirements. The Framework for Success is followed throughout and detailed design documents are created.
After the technical build documents are completed and approved, an extensive migration strategy plan is crafted, outlining how to arrive at the end state. A migration strategy is then established and key decisions are made for data synchronizations, server-based migration, export/import strategies, and storage to storage migration. Migration methods are documented and included in the RTM.

It is crucial for the entire project team — Lumen and you —to understand what is being planned and the reasons for key strategic decisions. The assessment concludes with a defined set of requirements. You then approve the target state architecture, migration strategy, and wave planning from the analysis and design phases. The design plan incorporates all requirements for a successful transformation; nothing is left behind. Orphaned applications or database servers result in applications that are likely straddling the source and target infrastructure and may malfunction to the point of an outage. Application groupings must be properly agreed to and clearly understood to move forward successfully.

Project

Build

In this phase, the various global delivery teams are engaged to successfully build the target state architecture, in the order required. This process depends upon the complexity of the solution sold and the parties involved — Lumen, you and third party.
Migration planning varies with the size and complexity of the infrastructure and applications involved. Migrations require full participation from you in close orchestration with all delivery teams — Lumen, you and any third parties. This orchestration is critical to the success of any transformation project. Lumen has been performing technology transformations since 2008. Our global-scale network provider roots, combined with the depth and breadth of our experience, affords us the ability to exceed any migration velocity that you require.

Migration velocity depends on your ability to participate as required while Lumen does the bulk of the heavy lifting. Lumen's deep migration expertise allows the project team to focus on the right priorities throughout the engagement leading to delivery success. Lumen succeeds where other migration providers have failed.

Implement

The Technical Implementation Plan (TIP) is constructed for every execution wave, detailing all steps required minute by minute. Application remediation due to IP address changes (internal, external, public-facing, load balancer VIP, etc.) is your Application SME's responsibility but is included in Lumen's technical implementation planning. We can virtualize servers (physical to virtual) during the migration window to transform a physical source server into a virtual machine in the target architecture. Documented application testing of each migration wave is critical to the success of each migration event.

The TIP can include:

- Technical orchestration and project management aspects.
- Any on-boarding services.
- Equipment relocations.
- Cabling changes.
- Server-based migration (V2V, P2V, P2P, OVF).
- SAN to SAN data migrations.
- Large scale imports or exports of already virtualized infrastructure.
- Database migrations.
- Firewall & load balancing rules deploy.
- Testing and validation.
  Detailed go live and rollback plans.

Clear roles are agreed to for each step of the TIP along with the integration of your required test plans, which define the success criteria. All of this is tracked and followed minute-by-minute throughout implementation.

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Knowledge Transfer

During the creation of the TIP, all resources are ensuring that ongoing management services teams are ready to support the transformed services. This activity ensures that the ongoing management team is ready to support transformed solution.

The service transform plan can include:

- Application management.
- Release and deployment management.
- Asset and configuration details.
- Validation testing that was done during migration waves.
- Knowledge management (runbooks).

All of this information is transferred into ongoing, managed services.

Ongoing

Management and Steady-State Operations

The knowledge transfer process is a part of implementation so that the ongoing management team is ready to support the newly transformed service upon completion of the related migration wave. Ongoing support teams rely on Lumen and your knowledge of the environment for the functionality, longevity and success of these operations. The Lumen team oversees program management for your success. Lumen resources could include customer success managers, technology architects and technical account managers.

Ongoing customer success support includes, but is not limited to, the following major areas:

- **Event management** - We monitor, correlate and notify about routine operations and any abnormalities.
- **Incident management** - We provide a root cause analysis and propose resolutions.
- **Request fulfillment** - Help desk, network operations center (NOC) and Smart Hands are available to assist.
- **Operational controls** - Change management, run/play books, and configuration management database (CMDB)/Source of Truth (SoT).
- **Target management** (in some cases) - Application, network and security.
- **Technical management of the platform as delivered** - Security managers, service engineers and network managers can be readily available on-site for maintenance and repair.

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Make your technology transformation seamless when you rely on Lumen's world-class design and transformation team. Our experts help you easily plan and implement next-gen technology without disrupting your business.

Questions? Let's talk.

Contact our team to get the assistance and answers you're looking for.

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