



The Network Integrator Journey

**Part 3: Network Integrator
Planning Framework**



The Network Integrator Planning Framework can guide utilities through the transformation

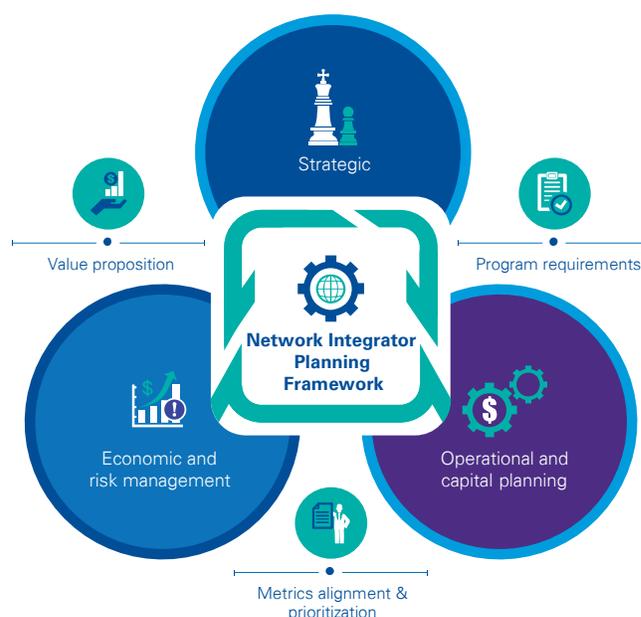
We have developed the Network Integrator Planning Framework to help utilities on their journey from a standard utility distribution company to that of a Network Integrator. This framework is designed to address key management challenges and risks and to guide the organization through a successful implementation.

This three-part series explores the journey from a traditional distribution utility to a Network Integrator. In this third part, we present a planning framework that can guide utilities through the transition.

The framework is designed to address each utility's market, challenges, and risks

The overall planning framework consists of three distinct but integrated aspects with regard to the evolution of the industry. The strategic focus begins with understanding the market, customer and system requirements. From there, the strategic intent is passed down to operations and finance in order to determine and translate the strategic objectives and goals in a realistic manner. Throughout the process, finance and operations work together to understand investment costs, benefits, and alignment.

The planning framework integrates operational advanced energy technologies with traditional energy system infrastructures and operations. This framework provides the governance principles, methodology, and tools to guide cohesive enterprise and functional planning for development and deployment of technology and operational capabilities as a system that is reflective of the enterprise's market, operating, business, and organizational context. The framework drives investment given a utility's specific needs and value projections and includes all enterprise planning areas, such as strategic, market, operational, customer, IT/OT infrastructure, capital/finance, regulatory, and risk management.



Additionally, the framework helps to operationalize technologies across multiple utility functions to strengthen investment benefits. This pragmatic approach ensures investment decisions are clearly aligned to specific needs and value, expected market and business performance improvements, and measureable corporate and functional-level metrics that provides a clear “layman’s” case for customer/ stakeholder education, support and rate recovery.

Implementing the framework helps transform from a distribution company to a Network Integrator

Most utilities have instituted strategic planning and budget processes focused on the traditional roles of the utility as an integrated provider. This includes capital investments to maintain or upgrade reliability, tactical

regulatory focus on volumetric rate recovery, grid operations and maintenance requirements, and outage response for increased customer satisfaction.

These roles are entirely appropriate for a utility operating in the 1980s. However, forward-thinking utility leadership is adopting a more holistic planning and implementation approach to focus on the adoption of new technologies, the increase in third-party relationships that provide innovative customer products and services, and the management of the grid performance and data provisioning to all value-chain stakeholders.

Regardless of where you are within this journey, we suggest following or incorporating these transformation steps in order to implement the planning framework.

The Network Integrator Journey

Characteristics of the Distribution Company

Characteristics of the Network Integrator

- 
Outage Management Resiliency
 - Disaster recovery planning
 - Mutual assistance programs

- 
Energy Delivery Management
 - Vertical model: generation, transmission, distribution
 - Focus on the “four walls” of the distribution company and immediate touch points
 - Manage all aspects of the customer relationship

- 
Centralized Storage Management
 - Deploy proof-of-concept projects to evaluate the impact of storage

- 
Data Management
 - Collect internal data to manage operations

- 
Security
 - Maintain physical and logical security of utility assets and networks

- 
Informed Investment
 - Consumption, demand-based rates
 - Volumetric rate recovery
 - Tactical regulatory focus

- 
Distribution Grid Maintenance & Operations
 - Preventative and proactive maintenance

Transformation Journey

 **Develop strategy and business model**
STEP 1

- Confirm or re-define business model
- Pursue alignment and proactive relationship with regulators
- Develop strategic partnerships with third-party providers
- Design more effective rate structures
- Develop strategic roadmap to future-state as Network Integrator
- Develop business case and funding alternatives

 **Build and deploy new operating model**
STEP 2

- Translate strategic roadmap to the operating model
- Define and build core business processes
- Deploy new organizational model
- Assess required skill sets and functional knowledge of resources
- Implement leading, standardized technologies

 **Execute go-to-market activities**
STEP 3

- Develop brand awareness
- Deploy brand to the market
- Establish and/or recalibrate relationships with third parties
- Change management activities (internal, external)

- System redundancies and grid resiliency
- Proactive and predictive outage management
- Critical event management

- Focused on interoperability standards and deployment
- Manages the dispatch of DG and DERs
- Adopt some ISO/RTO functions
- Manage customer connection to the grid

- Manage the dispatch of storage resources at the substation level
- Interact with storage markets that may arise

- Serve as data hub provider
- Collect, analyze, deploy distribution grid data
- Manage stakeholder engagement

- Aggregate intelligence
- Collaborate with public and private sector to help mitigate security threats

- Connection-based revenue
- Develop investment plan for the distribution grid
- Integrate emerging technologies
- Two-way strategic alignment with regulators

- Own and operate the distribution infrastructure
- Manage asset optimization across distribution network

Step 1: Develop strategy and business model options

The goal of this step is to develop a NI Target Operating Model (NI-TOM) that will be translated into a NI Implementation Roadmap. The NI-TOM is developed after validating the current state, gathering business requirements, and developing hypotheses (options) to improve performance. The operating model provides a consolidated view and a common understanding of the way the enterprise wants to run its business, and therefore provides a common language for communication. Key activities include

- 1. Enable a culture of innovation.** As utilities embark on this transformation journey, the focus on innovation is critical. Organizations that prioritize innovation and make efforts to embed it in their strategic business models and organizational culture (as opposed to executing discrete innovation projects or events) are likely to will realize greater benefits as they transition to a NI. Partnering with retail product and service providers to develop or market new services will help contribute to a culture of benefit from this innovation. Designing appropriate incentives and reward structures will also help support this new focus.
- 2. Determine system, market, and customer needs and values.** Utilities should conduct workshops with leadership of stakeholder organizations to determine the desired capabilities from each group under the NI-TOM. This exercise will help utility management better understand the objectives, desires, and challenges associated with each of these three areas. The culmination of this step is an articulation of the enterprise strategic intent, which is then typically passed down to both finance and operations in the next steps to determine and translate the enterprise value and risk) and the needed operations and capital planning in a realistic and understandable manner.

These workshops will likely identify a mix of traditional capabilities with and some newer ones, as is depicted below. The optimum mix for each utility will depend on the final chosen strategy, and will require integration into current organizational capabilities.

- 3. Assess enterprise value decisions and risk management options.** Building a NI decision and risk model is perhaps the most important aspect in the development of the NI target operating model. The importance stems from the fact that this step represents the “glue” between strategic intent (value aspirations) and operations

(value investment). Properly developed economic models are the primary source of interpretation, communication, and management of the overall NI journey for all stakeholders from inception to planning, piloting, building and implementation. Deployment of a driver-based economic model with the requisite scenario and risk analysis, such as is depicted below, provides utility executive and management leadership with insightful and realistic options for decisions.

- 4. Assess enterprise operations and capital planning.** Based on the high-level value statements, operational planning and infrastructure design provides the investment metrics needed for economic assessment, and thus is performed concurrently with the building of the enterprise economic and valuation models noted above. To design the NI solution, utilities must address a variety of areas (such as grid capability, network and communications infrastructure, operational and process changes, and data analytic requirements) in terms of gaps, end-to-end enterprise process integration, dependencies, and incremental investment. The overall NI-TOM can be developed with this information, representing the enterprise-level strategic intent and associated value recognition of the transformation, and used as the input for Step 2.



Step 2: Build and deploy the new operating model

The goal of this step is to build the essential elements of the NI-TOM and prepare the organization for its deployment. Key activities include:

- 1. Translate NI target operating model to NI implementation roadmap.** The documented NI-TOM serves as the foundation for developing the NI implementation roadmap. The NI implementation roadmap serves as a high-level plan to show how to implement a program comprised of multiple NI initiatives to build and deploy the desired NI-TOM. The NI implementation roadmap, as shown in the example below, provides a graphic depiction of all key phases, activities, milestones, and timelines.
- 2. Establish and implement governance model to manage change.** As described above, the NI program will be comprised of multiple NI initiatives that share common strategic objectives. When managed in a coordinated way, these initiatives can realize benefits otherwise unavailable when managing them as separate endeavors. Establishing and implementing a program management office helps ensure the achievement of these benefits by centralizing and standardizing program planning, governance, management, administration, and delivery processes.
- 3. Establish behavioral change management and communications.** Even with the best of intentions, large, complex, and ambitious attempts to change organizations can fail to deliver the promised benefits. Change fails when programs are exclusively focused on the technical excellence of the team and its ability to provide a solution, as the future tools and processes are only as effective as the people using them. A large-scale transformation program is inherently high-risk, and the probability of failure increases if individual and organizational resistance to change is not proactively handled. Failure to manage people well during the change programs is one of the major reasons companies fall short of original goals. Paying attention to people issues and communication during transformation dramatically improves the chances of overall program success. Getting change management right increases value by facilitating earlier attainment of optimal productivity with fully captured people, process, and technology benefits.

4. Define new business processes and organization.

Building on the high-level business requirements that were used to develop the NI-TOM, companies should develop and validate a set of detailed business requirements for those operations and back-office business processes requiring re-definition. These detailed business requirements will serve as the baseline for future state core process design work. Facilitated sessions with key business process owners serve three main functions:

- a. To verify that the future state business processes satisfy all detailed business requirements;
- b. To document all key process attributes, including interfacing business processes, roles and responsibilities, availability, timing/turnaround/frequencies, dependencies, processing volumes, statutory/regulatory requirements, and supporting technologies; and
- c. To define a balanced set of key performance measures for each process that includes cost, quality, cycle time, and volume metrics.

Additionally, the design and implementation of an updated organization structure will enable, sustain, and ultimately further the NI strategy and vision. The focus is on defining an organization that can eliminate activities that do not add value; achieve and sustain increase performance levels; and integrate structures, processes, systems, and capabilities to support operational and business objectives and metrics.

- 5. Assess skill requirements and gaps.** The first step toward assessing skill requirements and gaps is to define the requirements for key critical roles, which includes both determining the total numbers of roles that need to be filled along with specific competency requirements. This is accomplished by reviewing existing job profiles and descriptions and updating them or creating new profiles and descriptions to reflect the specific competencies that are needed. For specific gaps in competencies, a plan and time-line is created to ensure these competencies can be acquired and/or developed within the organization. This plan should define retention strategies, recruitment and training needs, and any potential redeployment requirements. Lastly, the development of a communications strategy for workforce-related expectations and implications is key, particularly for impacted employees and other key stakeholders.

¹ For more information on how these partnerships could occur in the retail energy product and service space, please read the article *Disrupting Partners*, also published through the KPMG Global Energy Institute.



6. Evaluate and partner with third-party providers. A key role of the NI will be to incorporate third-party providers and other market participants into the network. Utilities should reevaluate their partnership programs and networks to help ensure a renewed focus on innovation, customer service, and resilience.¹ Examples of how value will be created through third-party partnerships include:

- Standardized connections for microgrids or DG assets to the broader distribution network, thus enabling speed to market of DER technologies
- Partnerships with technology and product firms to develop and market the next generation of consumer-focused energy devices (e.g. home automation, energy storage, EV technology, energy analytics apps, etc.)
- Partnerships with service providers to develop and market energy solutions and services (e.g. advanced energy audits, DG-as-a-service, demand management services, customized retail power products)
- Partnerships with the government, defense industry, and private sector to enhance distribution network security and technology, in order to improve resiliency to protect against increasingly more sophisticated cyber-security threats

7. Build and deploy the operating model. For large scale program solutions, a PMO will be needed to execute a complete build-out and deployment of all organizational, process, and enabling technology components of the NI-TOM, including both IT/OT/ grid and new data and analytics capabilities. In addition, key build-out and deployment activities include system testing, migration, third-party interface design, and deployment to the production environment. To help facilitate the execution of these tasks, the program needs to incorporate a system test plan and associated test script templates, a user acceptance test (UAT) plan and associated script templates, administration and end-user guide templates, roll-out and transition plan templates, and go-live communication packages. These include necessary calendars and checklists coupled with appropriate application configuration templates.



Expand on Part 3: Network Integrator Planning Framework by viewing this video.

Step 3: Execute new operating model

The goal of this step is to monitor the deployment to help ensure the operating model meets the utility's objectives. Key activities include:

1. Monitor and refine technology attainment.

Technology attainment monitoring and refinement activities focus on building a post-go-live enabling technology performance measurement schema that correlates with the NI business; provides consistent, timely performance reporting; continuously monitors performance; and identifies opportunities to continually monitor, refine and improve the enabling technology architecture and supporting operational processes.

2. Establish new customer and brand awareness programs.

We have learned from experience that new customer and brand awareness programs are key enablers for acquiring new customers and building competitive advantage. While traditional operators have been primarily sales oriented, adapting and managing to the NI business model invariably requires a customer-centric focus.

3. Monitor and refine customer satisfaction.

Customer satisfaction monitoring and refinement activities focus on customer-related performance reporting measurements and refinement. The purpose of these activities is to monitor post go-live customer satisfaction and provide a basis for refining and improving customer satisfaction levels. This step involves defining and applying standards for measuring and monitoring customer satisfaction, including internal and external customer surveys, management and staff feedback, and change recommendations from end users and external customers.

4. Perform ongoing behavioral change management.

Short-to-intermediate term behavioral change management activities focus on three key aspects of transformational change:

- Enabling observation and recognition of actual benefits of change.
- Providing the opportunity to refine and adjust if any aspect of NI program change does not prove sustainable.
- Demonstrating that the organization is positively receptive to change as well as ready and willing to act and therefore be more receptive to future change programs.

Longer-term behavioral change management activities focus on the development of new capabilities, which naturally take longer to define and embed. These typically include:

- Altering the change delivery model and reshaping organization-wide governance and program management, recognizing that the difficult parts of these typically include managing behavioral issues rather than creating models that work.
- Maximizing "people capability" by embedding a change career path and offering training to managers and staff in "softer" skills (e.g., personal impact, presence, self-awareness).

5. Monitor and communicate benefits. The purpose of these activities is to monitor and communicate the alignment between NI program outcomes and program benefits, both tangible and intangible, as stated in the program business case. Typical activities include:

- Establishing a process that identifies, values, and documents program benefits prior to program launch
- Assigning clear ownership to each program benefit, along with specific roles and responsibilities related to program benefit delivery
- Defining a timeline for the realization of each program benefit
- Continuously monitoring and reporting on program benefit achievement
- Regularly communicating program benefit achievement to all key program stakeholders

6. Continuously monitor and adjust external stakeholder programs. External stakeholders are a valuable source of knowledge and problem solving, and their ongoing participation and involvement in the NI program is to be welcomed and expected. Accordingly, this focuses on the continuous monitoring, management and adjustment of all NI program initiatives that are centered on external stakeholders.

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