Around the world, it’s clear that a paradigm shift is taking place – electric power grids are transforming into grids that are more transparent, more interactive, and more environmentally friendly. The change is being driven by intense pressure to improve performance (reliability, security, etc.) while minimizing costs and reducing the generation of CO₂ emissions. Smart Grid application offers the opportunity to break the 100+ year old paradigm of "Generation Following Load", transitioning to "Load Following Generation" by embracing grid planning, asset management, analytics, distributed resource management, grid operations management, and market management.

The high level attributes of a smart grid are increased transparency, flexibility, decentralization of generation, cleaner/greener operation and interactive controls contributing to enhanced customer engagement. Utilities face many challenges in designing and implementing smart grid initiatives with increased pressure from stakeholders to deliver a return on investment and from regulators to justify the rate increase of Smart Grid Implementation.

How will you execute your company’s smart grid strategy step-by-step? What actions should be taken with the available resources, in what time frame, and with what benefits? With the Smart Grid Compass, Siemens helps you find and implement the right answers. The Smart Grid Compass is a consulting and evaluation approach that has proven its value in practice. Based on this proven approach, Siemens can help you define the optimal path for building, expanding, and improving your smart grid.

The complexities and unknowns associated with Smart Grid roadmaps have often resulted in failure. Roadmaps often lacked clearly defined integrated strategies. In recognizing this problem, Siemens developed the Smart Grid Compass.
Contents

3 The core objective
4 The framework
5 Responding to market challenges
6 Why choose Siemens
The core objective

The core objective of the Compass is to redefine the approach to smart grid planning to ensure successful deployment of technology and maximize the utility’s operational efficiencies. Siemens developed the Compass to help utilities successfully navigate their smart grid roadmap in alignment with their vision, strategy, and market. The framework created by the Compass is predicated on assessing the key challenges of smart grid planning and the root causes of failure associated with implementation.

Due to the complex and changing market environment, utilities face a myriad of business planning challenges. Typical planning challenges include:

- Utilities, municipalities, policy makers and regulators are planning on different levels; often the interfaces between these plans are vaguely defined at best
- Objectives, directions, strategic considerations and even the language are vastly different among the stakeholders as well as the different departments of the stakeholders
- Utilities are often challenged to plan across silos
- General perception of the “energy future” is diverse across stakeholders
- Vertical technology focused Smart Grid business cases (e.g. Smart Metering) are generally difficult to achieve

- Effectively enabling technology systems optimized across the whole organizational landscape to capture interdependencies and business impact

As a result of the challenges in planning it is not surprising that project delivery often results in missed targets or failures.

The market continually demands utilities do more with less and leaves little room for failure; making these challenges important to resolve. Important reasons to resolve planning challenges are:

- Consumers are experiencing rate increases, but do not perceive value changes or improvements
- Municipalities are integrating Utilities into their value proposition for residents
- Trends like renewable generation and grid independency are creating significant technical challenges
- Politicians are leveraging Energy as a topic to engage voters
- Classical planning procedures are targeted at optimizing individual objectives often at the cost of optimization across the business and program objectives; balancing is difficult
- Utilities sector is one of the last to undergo a disruptive change, so this challenge will not be solved by business as usual
The framework

Understanding the market challenges around strategy, operations, planning, technology, and business process capability led Siemens on a journey to navigate the challenges; the outcome was the Smart Grid Compass. The Compass was developed by our global Smart Grid thought leaders, using a proven Siemens method to help utilities navigate the notoriously challenging Smart Grid journey.

The Business Model framework is a globally tried and tested approach for building and expanding your Smart Grid. It provides a 360-degree-view across all the core service domains of a utility:

- Smart network operation
- Smart customer service
- Smart asset and work management
- Smart energy, and
- The Smart organization...as driver and “controller” of the necessary changes.

Using these Smart Grid domains ensures consistency in language and collaboration across the whole organization. This is effective at breaking down the silos both internally and externally.
Responding to market challenges

The Smart Grid Compass model is organized around four different quadrants that represent the different areas of impact of smart grid technologies on a utility’s business. The four quadrants are tied together by the Smart Organization which describes core competencies that a utility must have to make a smart grid implementation successful. These include such areas as the ability to manage information and operational technologies, manage stakeholders and manage the regulator. Smart Grid Compass enables utilities to analyze their “as-is” state, define their “to-be” state and define the path to becoming the “Utility of the Future”.

Integration and leveraging of your current strategy, objectives, capabilities and technology investments is one of the primary goals of the Compass. There are three phases of the Compass deployment,

The first phase; “Orientation” brings the business together to define a holistic vision, to define an aligned strategy and to define the program plan on how to navigate the journey to becoming the “Utility of the Future”.

The second phase; “Destination” defines and documents where the utility wants to go. Destination leverages the existing business and technology capabilities and utilizes a detailed value improvement program to implement and measure the corporate vision as well as develop an optimal business case.

The third stage of the Compass journey is “Routing”. Routing defines the detailed parameters and actions required to reach the destination. The detailed value improvement program ensures that utilities obtain their respective capabilities as well as the defined success metrics. It generates a quantitative business case to facilitate decision making throughout the long journey.

Designing a holistic plan with a clear and consistent vision and strategy, that is executable as well as measurable, ensures that the traditional challenges of planning are mitigated. The output of Compass enables that the utility, the municipality, the politicians and the regulators are all on a journey towards the same destination.

Smart Grid Compass is designed to enable business transformation, in particular business models that have not been implemented by utilities. The program defines and aligns the business, technical and operational changes needed to become the “Utility of the Future”.

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Why choose Siemens

Siemens to help you navigate your journey in becoming the “Utility of the Future”

• Global expertise and local presence with over 100 years leading the energy industry

• Experts in holistic smart grid planning. Siemens Smart Grid Compass is the framework and toolset to help you succeed

• Expertise across all domains of the energy conversion chain; the Smart Grid Compass applies this to join and optimize across strategy, operations, planning, technology, and business process capability through to stakeholder management

• Compass integrates with your business to align strategies, objectives, business and technology capabilities

• Compass is a proven method; it has a proven track record in delivery excellence. It delivers a comprehensive, well defined, measurable Smart Grid plan that is actionable

• Siemens has the tools to ensure that the Value Improvement Program for your Smart Grid vision manages cost and value.


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