

An Overview of the Smart Grid Maturity Model (SGMM)

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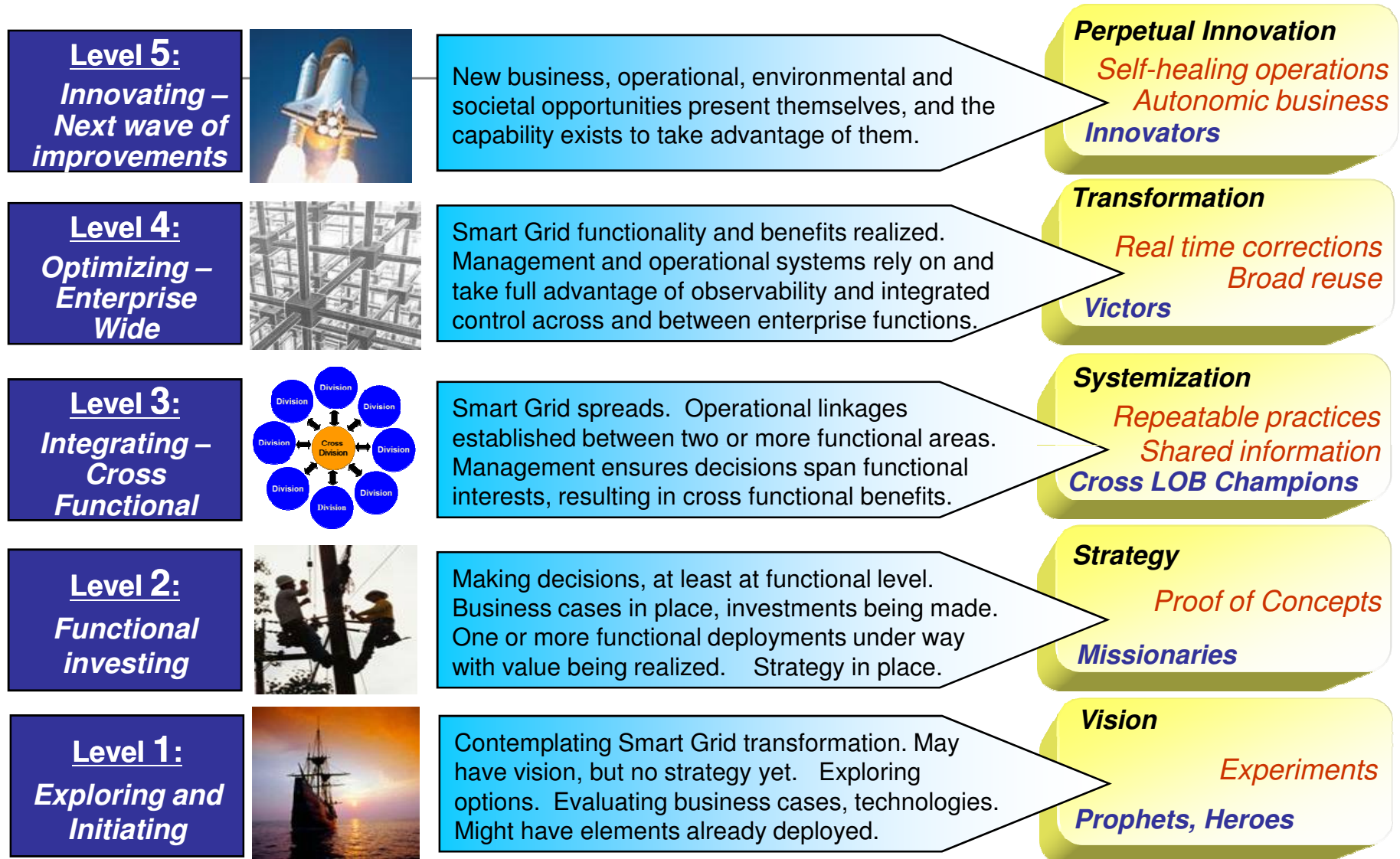
Background

IBM and a group of leading utilities, the Global Intelligent Utility Coalition, originally developed the Smart Grid Maturity Model (SGMM) and have just recently transferred the SGMM assets to the Software Engineering Institute (SEI)/Carnegie Mellon University (CMU).

The U.S. Department of Energy Office of Electricity Delivery and Energy Reliability has entered into a work plan with the SEI for the SEI to serve as independent steward of the SGMM with primary responsibility for the ongoing governance, growth, and management of the SGMM.



Smart Grid Maturity Model – Levels, Descriptions and Results



SGMM Process Domains

Grid Operations

Includes: Advanced grid observability & advanced grid control, quality and reliability



A solid core foundation of intelligent grid components and operational design, using technology and automation fused with enterprise processes becomes a holistic Smart Grid.

Work and Asset Management

Includes: Optimizing the assets and resources (people and equipment)



Operating and maintaining assets based on up to date, fact based performance data, enabling the evolution from preventative and reactive to predictive and self healing for more efficient use of resources.

Value Chain Integration

Includes: Enabling demand and supply management, distributed generation, load management, leveraging market opportunities



Extending automation beyond traditional boundaries, and across the entire value chain, opens opportunities for innovation and efficiencies.

Customer Management and Experience

Includes: Retail, customer care, pricing options and control, advanced services and visibility into utilization quality, and performance



Through Smart Grid, the customer becomes empowered to make their own choices regarding their use and cost of energy.



SGMM People and Technology Domains

Strategy, Management & Regulatory



Includes: Vision, strategic planning, decision making, strategy execution and discipline, regulatory, investment process

The mission, vision, strategy, and how it is managed must be fully integrated in order to guide the way through a successful Smart Grid transformation.

Organization



Includes: Communications, culture, structure

For Smart Grid to be successful, the organizational structure must promote and reward cross functional planning and design and operations, but still allow for empowered decision making.

Technology



Includes: Information, engineering, integration of information and operational technology, standards, and business analytics tools

A cohesive technology strategy must connect and support the innumerable data sources and users, that make up a Smart Grid, today and into the future.

Societal and Environmental



Includes: Conservation and green initiatives, sustainability, economics and ability to integrate alternative and distributed energy

Smart Grid can provide the ability for a utility, and society, to make choices and take advantage of energy alternatives and efficiencies, regarding both production and consumption.



SGMM Survey Instrument

Maturity Assessment

- Utility self-assesses
- Describes current state of utility against the SGMM
- Scores are generated for each domain and each level
- Assessment report compares utility to all survey participants
- Enables roadmap for improvements

3. Level 3 Integrating – Cross Functional

3.1. Strategy and Management

A. Has your smart grid vision, strategy and business case been incorporated into your corporate vision and strategy?

a. no	
b. limited	
c. extensive	
d. complete	

B. Do you have a smart grid governance model in place (roles, processes, tools, etc.)

a. not at all	
b. partial	
c. extensive	
d. integrated into existing organization	

C. Do you have one or more smart grid leaders with explicit authority across functions and lines of business to ensure application of smart grid?

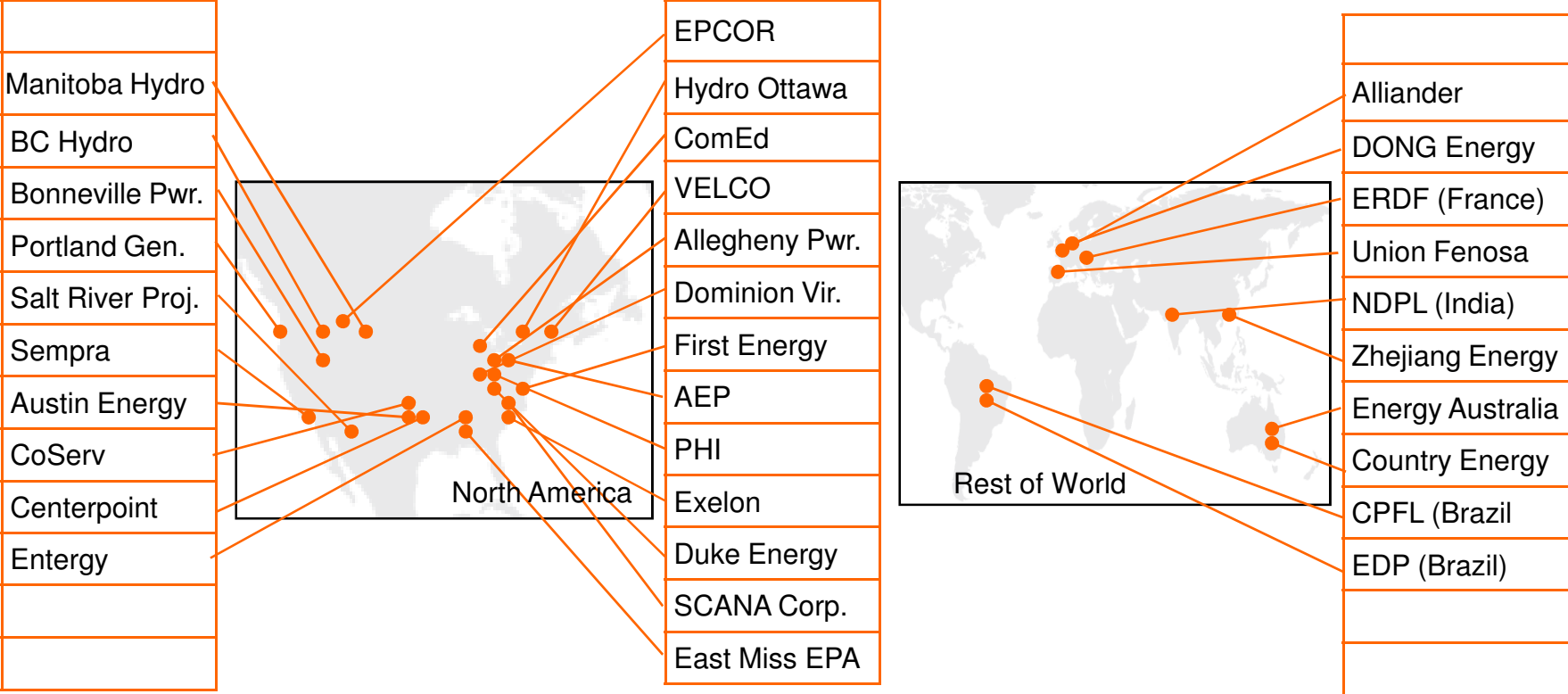
a. no	
b. a single leader	
c. multiple leaders	

D. Have regulators authorized your smart grid investments (e.g. via mandate or other technique)?

a. no	
b. indirectly	
c. partially	
d. explicit and complete	



SGMM Participation To Date



Leveraging SEI Experience for the Smart Grid

SEI is recognized as a global leader in best practices for improving software and systems engineering, with a track record of success in providing frameworks that enhance business and technical processes, security, resiliency, architecture and interoperability—all critical elements in successful implementation of the Smart Grid

SEI has developed worldwide de facto standards, like the Capability Maturity Model Integration (CMMI) and led international efforts to improve network security through its world-recognized CERT program

In recent years SEI has worked closely with industry and government stakeholders on architecture and cyber security aspects of the Smart Grid

By assuming stewardship of the SGMM, SEI expands its involvement to apply the full range of its support capabilities



SEI's Role As Steward of the SGMM

SEI will provide technical advice and support SGMM stakeholders as steward of the SGMM including:

- Assuming responsibility for overall governance of the SGMM
- Supporting the widespread availability, adoption, and use of SGMM
- Maintaining and evolving the SGMM
- Ensuring a reliable, valid, consistent set of supporting products and services for the SGMM user community
- Administering quality control of the SGMM and its usage
- Analyzing and providing feedback on SGMM usage



How Stakeholders Participate and Benefit

SEI will maintain and enhance the SGMM based on stakeholder needs.

SEI will be reaching out to the user community to solicit feedback on the SGMM, its application and its value.

Going forward, SEI will be developing user education, training products and other supporting materials, and will enroll business partners to expand the available support services.

SEI is planning a webinar on Monday March 30, 2009 at 11 am EDT to announce the transfer of the SGMM assets from IBM to SEI. Please go the SEI web page (www.sei.cmu.edu) for more details.



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