

# Proceedings of the Smart Grid Maturity Model Leadership Workshop

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## Abstract

The Carnegie Mellon<sup>®</sup> Software Engineering Institute (SEI) hosted a Smart Grid Maturity Model (SGMM) Leadership Workshop on January 10 and 11, 2012, on the campus of Carnegie Mellon University in Pittsburgh, Pennsylvania. The purpose of the workshop was to engage the SEI SGMM team with the SGMM Partner community and others to collect input for the strategy and direction of the SGMM product suite, including near-term corrections, improvements, and clarifications; longer term enhancements, additions, and other major changes; and strategy for expanding and accelerating the use of the model by utilities. Participants included SGMM Partners from the utility consulting domain; SGMM Navigators; a representative of the SGMM project's sponsor, the U.S. Department of Energy; APQC, the SEI's scoring partner and data manager; and SGMM developers from the SEI. This report summarizes the SGMM Leadership Workshop's activities and documents its outcomes.



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# 1 Workshop Overview

The Carnegie Mellon<sup>®</sup> Software Engineering Institute (SEI) hosted a Smart Grid Maturity Model (SGMM) Leadership Workshop on January 10 and 11, 2012, on the campus of Carnegie Mellon University in Pittsburgh, Pennsylvania. The purpose of the workshop was to engage the SEI SGMM team with the SGMM Partner community and others to collect input for the strategy and direction of the SGMM product suite. The SEI SGMM team updated the participants on the state of the SGMM. The participants then had the opportunity to share their experiences with the current version of the model, version 1.2, and suggest changes for the upcoming version 1.3. The participants also brainstormed features and objectives for SGMM version 2.0 and beyond. They discussed how the SEI and members of the SGMM Partner community could work together to promote use of the model, collaborate on innovative uses of the model, and reach underserved utility markets. The participants also had the opportunity to network with the SEI SGMM team and other SGMM stakeholders.

## 1.1 Participants

Participants included SGMM Partners from the utility consulting domain; SGMM Navigators; a representative of the SGMM project's sponsor, the U.S. Department of Energy; APQC, the SEI's scoring partner and data manager; and SGMM developers from the SEI:

- Austin Montgomery, SEI
- David White, SEI
- Julia Mullaney, SEI
- Ray Jones, SEI
- Barbara Tyson, SEI
- Stacie Blakely, SEI
- Jeff Welch, SEI
- Paul Ruggiero, SEI
- Shane McGraw, SEI
- Lizann Stelmach, SEI
- Keith Dodrill, U.S. Department of Energy
- Steve Rupp, SAIC
- Steve Brodsky, SAIC
- Lauren LaPlante, IBM
- Palak Kadakia, Wipro
- Raja Iyengar, EBiz Labs
- Ray Jones, Sustainable Reach Consulting, LLC
- Jeff Varney, APQC

## 1.2 Workshop Techniques

The SGMM Leadership Workshop tackled three broad topics:

1. Strategy for Growth in SGMM Use (day one)
2. Version 1.3 Enhancements (day two)
3. Version 2.0 and Beyond (day two)

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To set the stage for each topic, SGMM team leaders David White and Julia Mullaney gave a topic presentation before each brainstorming session. The full presentations are available in Appendix A.

White and Mullaney facilitated the brainstorming session for each topic. The workshop participants brainstormed ideas either individually or in group discussion. Participants wrote down their ideas on sticky notes and presented them to the group. Members of Tata Consultancy Services, an SGMM Partner organization, did not attend the workshop but had previously submitted their suggestions, which were captured on sticky notes and added to the brainstorming process. The facilitator collected the sticky notes, posted them at the front of the room, and categorized them with input from the group.

Some brainstorming topics generated a large number of ideas. To prioritize them, the non-SEI participants multivoted. Voters each had 11 stickers to distribute among whatever ideas, recorded on the sticky notes, they favored. They could put any number of their 11 stickers, or none, on any idea. When they were finished, the facilitator totaled the scores for each idea and each category of ideas. Some ideas, noted in this report as “not scored,” were added after scoring had been completed.

At the end of each topic session, the sticky notes were displayed at the front of the room. The facilitators invited participants to modify or add to the categorized ideas during breaks.

### **1.3 Presentation: How to Change Everything**

To prepare the participants to brainstorm the near- and long-term needs of the SGMM, Chris Labash gave a presentation on innovation and change titled “How to Change Everything.” Labash is an assistant teaching professor at Carnegie Mellon University’s Heinz College and a former advertising, branding, and marketing executive. His presentation drew out the interconnections between innovation and change, using evolutions in higher education, books, banking, communication, packaged goods, music, and lifestyle as examples. It closed with the eight essential “Transition Truths,” which stress new expectations, the importance of seeking, imagination, the subjective experience, the importance of having many ideas, a continual curiosity about underlying reasons, and the importance of timing. The full presentation is available in Appendix A.

### **1.4 About This Report**

The purpose of this report is to summarize and document the activities and outcomes of the SGMM Leadership Workshop. The ideas it presents are provisional only and do not necessarily represent changes that will be made to the SGMM product suite, its use, or its promotion.

Sections 2, 3, and 4 of this report document the brainstorming sessions and their outcomes for the workshop’s three topics, respectively, Strategy for Growth in SGMM Use, Version 1.3 Enhancements, and Version 2.0 and Beyond. Section 5 wraps up the workshop. Appendix A contains all the presentations given during the workshop, and Appendix B provides an acronym guide.

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## 2 Strategy for Growth in SGMM Use

On the first day of the SGMM Leadership Workshop, participants addressed ways to grow SGMM use and adoption. The objective of this activity was to generate ideas on the following:

- encouraging more utilities to use the SGMM in their grid modernization efforts
- making the SGMM a more useful tool to the SGMM Partner community
- making the SGMM a more useful tool for SEI-certified SGMM Navigators
- funding the SGMM in other ways
- determining how the SEI can help Partners, utilities, and Navigators be more successful, as well as what the Partners, utilities, and Navigators themselves can do
- discussing the roles of Navigators and Partners in the SGMM's future
- improving SGMM business processes
- working with Partner business points of contact (BPOCs) to enhance their role as the primary SGMM expert in their organizations
- providing tools to Partners transitioning from the pilot Partner program to the full-fledged program
- determining if enhancing model coverage and content would accelerate use and adoption of the model by utilities, and if so, what enhancements would do so
- identifying any model content that prevents utilities from using the SGMM
- enhancing the channels between the SEI and its Partners to increase the Partners' success with utilities
- identifying and prioritizing other actions that enhance the SGMM distribution channels
- determining how tightly the Partner network should be managed
- prioritizing potential new domains of the model, such as security and interoperability
- determining the model's applicability to additional utility functions, such as water and natural gas

### 2.1 SGMM State of the Union and Strategy for Growth in SGMM Use Presentations

To prepare for the discussion, and to lay the groundwork for the rest of the workshop, David White gave a presentation, "SGMM State of the Union," on the current state of the SGMM product suite and the SGMM community. See Appendix A for the full presentation.

The objectives of the presentation were to familiarize the participants with the version 1.2 product suite, including the model, Compass survey, Navigation process, training, and licensing; to provide data on the community, such as size, location, type, repeat users, average and range, and meter count; to discuss the SGMM team's recent communication strategy, including conference exhibition, social media, and webinars; and to review the plans and objectives for FY12.

In addition, the presentation was intended to explain the SGMM business strategy and the participants' role in it. Finally, the presentation was a call to action to work together to accelerate adoption and use of the SGMM.

White followed this presentation with another, "Strategy for Growth in SGMM Use." Its objectives were to lay out the topics for the upcoming brainstorming session:

1. What is the state of the SGMM's market presence?
2. What are the drivers and barriers to SGMM use and adoption?
3. How do we accelerate SGMM adoption?
4. What are the benefits of the SGMM, and how do we publicize them?
5. What should be the topic for the March 2012 webinar?

## 2.2 Brainstorming Session

### 2.2.1 What Is the State of the SGMM's Market Presence?

The brainstorming session for this topic began with the following questions: What is the state of the SGMM's market presence? Do utilities know about it? If so, what do they know about it? The facilitator asked all participants to take a few minutes to write down their top three answers to these questions. Then participants read their answers aloud in turn and discussed them with the group.

#### **Problem: Utilities Are Not Aware of or Misunderstand the SGMM**

The group generally agreed that many or most utilities do not know about the SGMM. One participant noted a bimodal distribution between utilities that are aware of the SGMM and those that are not. Government and regulatory agencies, in particular, should know about the SGMM, but they do not. Of the utilities that have heard about it, few have worked with it. Many do not understand how they could use the results of the SGMM Navigation.

This led to a discussion of what the market needs to increase its usage of the SGMM, and if the SGMM team and Partners really understood that market need. Even if market awareness of the SGMM is fair, utilities do not perceive a compelling reason to act and adopt the SGMM. There is no regulatory pressure to measure smart grid maturity, nor is there a desire for such pressure. The impacts of using the SGMM have not been widely demonstrated. Participants felt that most utilities do not understand the value of the SGMM and how to use it.

The group agreed that utilities for the most part are not convinced of the SGMM's value because often they misunderstand what the SGMM is. Its "model" label suggests that it is a mathematical model that users plug data into in order to produce a finite result, which is not the case.

Many potential users also think that the SGMM is only for large utilities, or that the model is large, technology-focused, and vertically integrated. This mistaken impression of the SGMM's audience is reinforced by there being little sense of the SGMM community's existence. Even SGMM users do not feel like part of the club. While the SGMM user group is growing more diverse, it is still limited mostly to one-time users. Because of a lack of publicity, information about the SGMM spreads through the user community mostly by word of mouth.

The SGMM may also be perceived as an external assessment, and many utilities would rather not be assessed for fear of receiving bad scores, or they would rather use their own homegrown assessments. The utilities may incorrectly think of the SGMM as only a benchmarking tool, and therefore, because it is not one of the leading benchmarking tools, they overlook it.

Utilities are also unsure of the rigor required to complete the Navigation process. Many are not even sure when to use the SGMM. The utilities that have completed the SGMM are often left wondering, “Now what?” The survey results do not necessarily leave users with concrete next steps toward smart grid maturity, nor does the survey process necessarily encourage users to repeat the SGMM periodically to show progress and guide course correction. The bottom line is that many utilities are largely unsure what the SGMM is and how it would benefit them.

### **Proposed Solutions**

The primary solution that participants discussed was to make case studies or other examples of SGMM use available to Navigators and Partners. Potential SGMM users could gain a better understanding of the SGMM and what it can do for their utility if they had concrete examples. The SEI and its Partner community could generate such case studies, starting by surveying the electric utilities that have used the SGMM to determine how they have used its output and if they would use it again. A cost-benefit template for SGMM use, if made available, would further convince potential users of its value to their particular utility.

Other suggestions involved changing the model’s branding. Some participants suggested that we abandon the “maturity model” label, reposition the product as a “pre-roadmapping tool” or “grid operations roadmap tool,” and rename the maturity levels as “waypoints.” Another proposed branding solution would be to remove the term “smart grid” from the product title. Power grid technology and terminology will constantly change, and the name of the model should not date the project. Even now, some utilities do not use the term “smart grid” internally, so they may be ignoring the “Smart Grid” Maturity Model.

### **Problem: Underserved Markets**

The brainstorming exercise on SGMM market needs spawned a discussion about underserved markets. A few participants thought that multiple markets were underserved. Smaller markets, which the SGMM team had decided were utilities with 250,000 meters or fewer, are particularly underserved. These smaller utilities tend to think of the SGMM as a tool for larger utilities, but by cooperating with organizations such as the National Rural Electric Cooperative Association (NRECA), the SGMM community has an opportunity to correct this mindset.

Some participants pointed out that the current segmentation at 250,000 meters was not useful to municipal electric power utilities, almost all of which have fewer than 250,000 meters.

Other underserved markets include consumer- or government-owned utilities, areas where smart grid adoption may not yet be economically justified, and deregulated utilities, such as those in Australia and the United Kingdom, to which SGMM is not well applied. For the most part, the primary users of the SGMM are only the most innovative and forward-thinking utilities, leaving the majority of utilities untapped.

## 2.2.2 What Are the Drivers and Barriers to SGMM Use and Adoption?

The next brainstorming session centered on drivers and barriers to SGMM use and adoption. Once the facilitator had collected a number of ideas written on sticky notes and moved them to a whiteboard, the facilitator divided the drivers and barriers into four categories:

- internal structure
- regulatory
- smart grid
- external branding

### **Drivers**

#### *Internal Structure*

Utilities have certain organizational goals or attitudes that drive SGMM use. Uncertainty often pushes utilities to reach out to a third party for an independent opinion. Some utilities use the SGMM simply because it seems like a good idea and they are willing to try it. The Navigation process is lightweight enough to encourage such casual use. But many use the SGMM for its intended use: to build their understanding of organizational smart grid deployment. A more advanced utility may want to use the SGMM to confirm its previously established smart grid benchmarks. Utilities looking outside of their own walls may want to use a common maturity model, such as the SGMM, to compare their own smart grid approach to that of their peers. They could use this group wisdom to formulate their own smart grid roadmap, or just as a sanity check to their smart grid approach.

#### *Regulatory*

Government and regulatory bodies can encourage the use and adoption of the SGMM. Public service commissions (PSCs) and public utility commissions (PUCs) could promote the use of the SGMM to help their constituent utilities gain greater insight into their smart grid plans and aspirations.

#### *Smart Grid*

Electric power consumers are becoming more technically savvy and demanding greater on-demand control over power pricing as well as greener power options. However, much of the electric power distribution infrastructure is many decades old. These two factors create a daunting task for utilities seeking to modernize the grid. Such a challenge requires careful and thorough guidance, for which utilities turn to the SGMM.

#### *External Branding*

Utilities that are uncertain about some aspect of their smart grid deployment often turn to a third party for an independent opinion. Whom they turn to can depend greatly on their brand awareness of trusted third parties. Endorsement of the SGMM by Partner organizations certainly enhances the model's brand. The respected position of Carnegie Mellon University, the Capability

Maturity Model Integration<sup>SM</sup> (CMMI<sup>®</sup>), and the SEI—which is considered a prestigious institution, an impartial steward of the model, and a safe choice—also drives utilities to adopt the SGMM.

## **Barriers**

### *Internal Structure*

Many internal factors restrain utilities from adopting the SGMM. One of the most significant is a lack of financial data or business cases demonstrating the benefits of using the SGMM. Without proof of the benefits, utilities may believe that the SGMM will simply tell them what they already know about themselves. They may not have a consistent SGMM champion, or any such champion at all, to change this belief.

Some utilities lack the first step of a strategic plan for smart grid, which is getting an accurate assessment of their current smart grid maturity and aspirations for future deployment. They may also lack the resources, such as time, energy, and the right personnel, needed for a high-quality SGMM experience.

### *Regulatory*

Just as government and regulatory bodies can be SGMM drivers, they can also be SGMM barriers. For the most part, such bodies have not mandated smart grid adoption. Government funding for smart grid adoption is not tied to SGMM results. Finally, PUCs and electricity cooperatives (ECs) simply may not be aware of the SGMM.

### *Smart Grid*

Despite enthusiasm for smart grid technology in many quarters, the electric power community has not fully accepted the positive business case for smart grid. Its luster has recently dimmed in the face of slow adoption rates of new and costly technology. Much of the required technology simply is not available. Compounding or perhaps underlying this slow movement is the risk-averse character of most utilities, which tend not to be innovation leaders or early adopters.

### *External Branding*

There are not enough people promoting the SGMM to utilities. The model needs more certified Navigators to spread the word, but it also needs help from the rest of the electric power community: Partners, utility consultants, users, regulatory and governmental bodies, vendors, and others. Those that do promote the SGMM today operate mostly in the United States, and the model needs more international representatives.

But even the most dedicated promoters need something to promote. The SGMM is too new for utilities to recognize its ongoing value, and while the model clearly has produced tangible benefits

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for many utilities, these benefits have not been sufficiently documented, publicized, and promoted.

The SGMM database could be a source of interest to utilities seeking smart grid maturity data. However, the current data segmentations are too broad to be useful to smaller utilities, especially municipal utilities.

Some participants mentioned that the possibly specious precision implied by the decimal averages of the integer level scores also may be diminishing the credibility of the SGMM dataset.

Participants spent a lot of time discussing the effect of SGMM self-assessments on the credibility of the dataset. Data from self-assessments has not been externally validated. Participants proposed some general solutions, including having the SEI, APQC, and/or certified Navigators monitor self-assessments; having them validate self-assessment results; or screening users before their assessment. The group debated many other ways to address this problem and prioritized them by multivoting. The results are presented below in rank order of score.

1. Control first assessment. (score: 36) One solution would be to require a customer's first assessment to be led by a certified SGMM Navigator, after which the customer could perform self-assessments. Alternatively, customers could be required to meet certain entry criteria, such as completing a one-day training session, before conducting their first assessment. Repeat assessments may or may not require different entry criteria.
2. Have all assessments flow through Navigators. (score: 33) The Navigator would vouch for the data's validity. Requiring Navigators in the data chain would also consolidate the model's sales channel through knowledgeable, trusted SGMM experts.
3. Validate assessment data. (score: 30) The data of any suspect self-assessments could be validated before being entered into the dataset. Higher scores would receive a more thorough audit than lower scores. Results from Navigations and self-assessments already in the dataset could be separately validated and compared. The validation process itself could be enhanced to address utilities that assess themselves too positively.
4. Modify the survey. (score: 26) The assessment survey could ask more detailed questions about how it was completed. For self-assessments, the user could indicate what method was used to complete the survey: by a single user, by a group, or by compilation (e.g., via email). Surveys submitted by Navigators would have a field indicating whether the survey was Navigated or self-assessed.
5. Modify the dataset. (score: 24) The dataset managers could either segregate self-assessment data from Navigated data, or they could simply exclude self-assessment data from the dataset entirely.
6. Communication from Partners. (score: 22) Self-assessments received from a Partner would be recorded accordingly.
7. Discontinue self-assessments. (score: 19) Self-assessments would no longer be an option. All assessments would be Navigated.

### 2.2.3 How Do We Accelerate SGMM Adoption?

Having identified the market presence of the SGMM as well as its drivers and barriers, the participants had a long brainstorming session about ways to accelerate adoption of the model. At this point, the participants abandoned the individual brainstorming approach in favor of a group discussion. As they talked, participants wrote down their ideas on sticky notes, which were passed to the facilitator. Once again, the facilitator collected and posted all the ideas on a whiteboard, and the group helped divide them into categories. The non-SEI participants multivoted on the ideas, and the facilitator totaled the scores for each category, which are presented below in rank order of score:

1. encourage all Partners to make SGMM assessments a standard practice or process for all utility customers (unanimous endorsement; no score)
2. communications (score: 28)
3. endorsement (score: 21)
4. branding and positioning (score: 17)
5. lead sharing (score: 11)
6. community (score: 11)

#### **SGMM as Standard Practice or Process**

All participants agreed that the BPOC at SGMM Partners should encourage their organizations to make the SGMM assessment part of their standard practice or process with all their utility customers.

#### **Communications**

The group produced the following suggestions for enhancing adoption of the SGMM, presented here in rank order of score.

1. Demonstrate and advertise success stories and case studies. (score: 11)
2. Sponsor, organize, or host an SGMM roadmap track at a conference. (score: 11)
3. Give presentations and conduct seminars at individual PUC/PSCs and the National Association of Regulatory Utility Commissioners (NARUC). (score: 6)
4. Promote participation in the SGMM as a benefit for the whole industry. (score: 1)
5. Get involved in regulatory programs. (score: 0)
6. Utilize Partner network. (score: 0)
7. Package SGMM for Partner use. (score: 0)
8. Talk more about being part of the SGMM community. (score: 0)

#### **Endorsement**

Getting endorsements for the SGMM was a topic of lively discussion. The participants developed and multivoted on the following ideas, presented here in rank order of score.

1. Seek validation from recognized industry sources, such as the Institute of Electrical and Electronics Engineers (IEEE), NRECA, the American Public Power Association (APPA),

the U.S. Department of Energy (DOE), Electric Power Research Institute (EPRI), and from Partners. (score: 18)

2. Convince one or more partners to offer SGMM Navigation as a pro forma part of every utility engagement. The participants felt this would be a powerful tacit endorsement. (score: 3)
3. Reach out to smart grid equipment vendors and provide equipment certification such as an “SEI Approved” seal of approval. Promote the premise that all utilities will have to modernize or apply new technology, so they will inevitably be involved with smart grid. However, we would have to account for Carnegie Mellon’s policy forbidding explicit endorsements. (score: 0)

The group also discussed how to get tacit endorsements from Partner and utility organizations. One suggestion was to have domain experts write portions of the version 2.0 model definition document. Their names and affiliations on the document would constitute tacit endorsements from their organizations. Another method would be to include the branding of other organizations on conference materials.

Also, the group agreed that there is no reason not to pursue an endorsement from the EPRI.

### **Branding and Positioning**

The participants suggested the following branding and positioning ideas, presented here in rank order of score.

1. Make it more obvious that the results of the SGMM are input into a long-term strategic plan. (score: 10)
2. Impress upon Partners that utilities are paying them for help with the utilities’ roadmaps. The connections between the model and the roadmap should be tightened. (score: 4)
3. Change the name of the project to eliminate “Smart Grid” and/or “Maturity Model.” (score: 3)

### **Lead Sharing**

The participants suggested two ways, presented here in rank order of score, that the SEI and Partners could share the contact information of potential SGMM users.

1. Find ways for the SEI and Partners to support each other in generating leads, such as joint marketing of the SGMM by the SEI and Partners. Partners have been asking for more leads to be sent to them. (score: 7)
2. Share with Partners the list of utilities that attended the SEI webinar or visited the SGMM booth at DistribuTECH and that were interested in the SGMM. (score: 4)

### **Community**

The group discussed what efforts could be made to accelerate model adoption within the current SGMM community. They recommended the following.

1. Workshop with utility participants. The SEI could follow up directly with them. (score: 11)

#### **2.2.4 What Are the Benefits of the SGMM, and How Do We Publicize Them?**

The goal of this portion of the workshop was to identify and capture the benefits of the SGMM that the SEI and the SGMM Partner community should highlight in their communications about the model. Subjects included the primary benefits of the SGMM, the value provided by the product suite, and what utilities are willing to pay for and put other resources toward. The participants generated many responses, but they did not score or categorize them.

Before the SEI and its SGMM Partners can publicize the SGMM's benefits, the benefits must be agreed upon. Participants agreed that it was important to understand the value of the SGMM process as part of a formal smart grid strategy and vision. The SGMM Navigation allows utility leaders and managers to share their views on these vital topics with each other.

The SGMM also helps utilities discover any lagging domains, or any that are highly advanced. The assessment identifies the gaps between such domains, allowing the utility the opportunity to balance them.

The new, complex technology of the smart grid requires a structure and design for operation and deployment, which the SGMM maps at a high level. It also provides a framework for utilities to gauge their progress across domains and gain a better understanding of their interconnections, which are often difficult to see and a source of risk. Overall, the SGMM provides utilities a solid foundation on which to build more detailed plans.

SGMM customers receive additional value beyond the assessment, including the education gained from going through the process and support after the assessment. Customers will also learn about best practices of leading smart grid organizations.

The SEI and the SGMM Partner community should publicize the model through briefings at industry conferences. The SEI should release publications and podcasts about the SGMM that include input from utility partners and focus on the SGMM's value and real-world use. Sharing the experiences of SGMM users promotes the efficient evolution and deployment of a utility's smart grid roadmap.

SGMM Navigators and Partners should emphasize to users that setting higher aspirations for smart grid deployment and positioning benefits the environment. Utilities could tout these benefits to promote internal and customer awareness of the SGMM, which would in turn motivate others to use it.

#### **2.2.5 March Webinar Topics**

As part of the SGMM team's outreach effort, the SEI will conduct an SGMM webinar in March 2012. The workshop participants discussed potential topics for the webinar, including roadmapping for success, the long-term plans for the model, and the DOE's view of the model. Webinar participants could receive a listen-ahead audio file on "Working on Your Smart Grid Roadmap." The webinar would also present SGMM case studies and success stories from customers such as the Sacramento Municipal Utility District (SMUD), Alameda Municipal Power, Pasadena Water & Power, Snohomish County Public Utility District (SNOPUD), and DONG Energy.

---

## 3 SGMM Product Suite Version 1.3 Enhancements

On the second day of the SGMM Leadership Workshop, the facilitators focused on brainstorming ways to enhance the upcoming version 1.3 of the SGMM product suite. The two main topics to be addressed were accelerating model uptake and use and improving data quality. The primary purpose of the session was to generate change requests for version 1.3.

### 3.1 Version 1.3 Enhancements Presentation

To get participants thinking about changes to version 1.3, Julia Mullaney gave a presentation, “Version 1.3 Enhancements,” that reviewed changes made from version 1.1 of the model to version 1.2, the Compass survey, Navigation process, training, Partner program, branding, and graphics; presented the goals, constraints, and timing of the version 1.3 release; and outlined previously received change requests for version 1.3 as well as further topics to brainstorm. It also focused on changes to the Compass survey to encourage Navigators to go back to previous SGMM users and collect information on the recently updated sections. The full presentation appears in Appendix A.

### 3.2 Brainstorming Session

The group brainstormed many ideas for enhancing version 1.3. Once the facilitator had collected all the ideas, the group and the facilitator divided them into four major topics: (1) enriching version 1.3 content, (2) enriching the Navigator report and experience, (3) modifying the model’s architecture, and (4) modifying the aspirations process. Then non-SEI participants scored the individual ideas using the same multivoting method used earlier in the workshop. The individual idea scores within each category were summed to produce category scores. The results appear below, presented in rank score order.

#### 3.2.1 Enriching Version 1.3 Content (total score: 42)

1. Expand informative materials about the SGMM, especially to include examples of its usage. (score: 12)
2. Add and improve “public power speak” in the product suite. Realign its language to better address the needs of public power, including deregulated markets. (score: 8)
3. Provide a smart grid diagram that maps to the model definition and Compass survey. The diagram should show the difference between distribution and transmission portions of the grid. Enrich the model definition document with this and other graphics. (score: 7)
4. Map dependencies across characteristics. (score: 7)
5. Create companion presentation materials to the Compass survey: value chain integration (VCI), a matrix or overlay, and triple bottom line. (score: 5)
6. Make the following specific changes to the model definition document: (score: 4)
  - a. CUST-2.3, WAM (work and asset management) (modeling reliability of grid equipment)

- b. CUST-3.5 substations equipped with outage management
  - c. CUST-4.2 circuits equipped with outage management
  - d. VCI-5.2, LMP (local marginal pricing) (not “pioneering”)
  - e. SMR-1.1 “operational improvement”
  - f. OS-2.1 “end-to-end processes”
  - g. OS-2.5 linking performance and compensation
  - h. OS-3.5 “matrix or overlay structure”
  - i. GO-1.4 “beyond SCADA” (supervisory control and data acquisition)
  - j. GO-2.3 “aside from SCADA”
  - k. GO-3.2 “new control analytics” (not just “control analytics”)
  - l. TECH-1.2 “quality attributes”
  - m. TECH-5.1 automatic computing using machine learning
7. Move the section on using the SGMM to the beginning of the model definition document. (score: 0)
  8. Change lucky charms to non-emotional icons. (not scored; added after voting)
  9. Be able to document process exceptions, deviations, and tailoring. (not scored; added after voting)
  10. Explicitly define “customer.” (not scored; added after voting)

### **3.2.2 Enriching the Navigator Report and Experience (total score: 20)**

1. Add breakpoints for investor-owned utilities (IOUs) versus municipalities versus cooperatives. (score: 9)
2. Change presentation of results to be more “roadmappy.” (score: 6)
3. Hyperlink survey and model definition documents. (score: 3)
4. Make survey and model definition documents web based. (score: 2)
5. Have Navigator report support all steps of the Navigation process, and ensure that all the data is in one file. (score: 0)
6. Stop giving decimal point number scores. Instead, give only integer scores. (score: 0)
7. Discontinue automatic 250,000-meter breakpoint. Instead, immediately start using variable segmentation on different numbers of meters. (score: 0)
8. Provide the ability to document process exceptions, deviations, and tailoring. (not scored; added after voting)

### **3.2.3 Modify Architecture (total score: 11)**

1. Identify questions that do not apply to certain utility segments, perhaps through defined criteria, and include guidance in the survey on how users should address those questions. (e.g., OS-3.5, OS-1.2). (score: 8)
2. Provide the ability to record evidence in survey. (score: 3)

3. Add water/wastewater, storm water, and natural gas utilities to the types of utilities eligible for the SGMM. (not scored; added after voting)
4. Consider having alternative solutions beyond AMI for future versions of the model. (not scored; added after voting).

**3.2.4 Modify Aspirations Process (total score: 5)**

1. Create a tool for capturing aspirations. Include aspirations workshop results in the dataset to enable analysis, reporting, and other activities. (score: 5)

**3.2.5 Other Input**

The discussion of enhancements to version 1.3 generated several ideas outside of the brainstorming session proper.

The workshop group expressed a desire for a Navigator-only list of participating utilities, broken down by utility name, location, type, and size (number of meters).

Participants were asked what criteria static peer groups should be based on. The group consensus was size and utility type. Table 1 shows an example of such information. Geographic location is another potential criterion.

*Table 1: Method of Recording Static Peer Groups by Geographic Region*

<b>Size (no. of meters)</b>	<b>Question 3.11 (IOU, Co-op, municipal)</b>		
Small			
Medium			
Large			

---

## 4 SGMM Product Suite Version 2.0 and Beyond

The goal of the workshop's last interactive session was to generate ideas about structural changes to the SGMM that would be included in version 2.0. The group was to prioritize the list of suggested changes to channel enhancements, product enhancements, and new customers. Ideas about the development approach, including funding strategies, were also encouraged.

### 4.1 Version 2.0 Presentation

To prepare the group for the brainstorming session, David White gave a brief "Version 2.0" presentation on version 2.0 of the product suite. The presentation reviewed version 1.2, the constraints on version 2.0, and preliminary ideas for version 2.0. The full presentation appears in Appendix A.

### 4.2 Brainstorming Session

The brainstorming session began with a broad discussion on version 2.0. It would be developed in FY 2013, piloted and released in FY 2014, and used from 2014 to about 2018. The real value of version 2.0 would be as a management tool for accomplishing change. Its focus would shift from planning and roadmapping to operations. What is now known as the "smart grid" may no longer be known as such when version 2.0 is ready for release, so the team may need to consider re-titling the product suite. The team should also consider that the enhanced Telecom Operations Map (eTOM) might provide a model process for a future SGMM. Version 2.0 might benefit from being divided into core domains applicable to all utilities and individual domains specific to grid operations, water, and natural gas.

The questions guiding this brainstorming session addressed what the utility customer will look like in 2014 to 2020 and whether the SGMM should target service-providing utilities, including water, natural gas, electricity, communications, and any new players such as demand dispatch entities. A few participants debated whether water was more important than natural gas in the short term.

Participants discussed that aside from asset management, there is a lack of intellectual content on the application of advanced technology to utility operations. Some potential changes to version 2.0 of the SGMM could fill that gap by leveraging the interdependencies among the model's characteristics and making the model or the survey dynamic, perhaps including the ability to tailor the survey to one's own utility. The group generally agreed that the model should have a flexible, extensible architecture.

The group discussed the broad goals for version 2.0. First, the model should cover or at least enable electricity, water, and natural gas utilities to make use of it. Second, version 2.0 should clarify the mission of the SGMM. At its heart, the mission is to contribute to the public good. The participants representing SAIC, Wipro, and IBM discussed their own organizations' missions and how the mission of version 2.0 might fit. Another proposed part of the mission was to support the National Energy Technology Laboratory's (NETL's) seven principal characteristics of a smart

grid or analogues that apply to water and natural gas utilities. Keep in mind the SGMM's original mission: To advance the adoption of smart grid around the world.

Previous change requests to version 2.0 included the following:

- Rename and refocus the Technology (TECH) domain to Information Technology (IT).
- Add a new domain: Operations Technology (OT).
- Delete Automated Meter Reading (AMR) from the model or at least position it correctly, for example, as not being a “smart grid” application of technology that contributes to smart grid maturity.
- Add gas to the model.
- Add water to the model.
- Consider that “National Critical Infrastructure” may be too oriented to the North American grid.
- Consider that Society and Environmental (SE) 1.2 would more appropriately be a level 5 characteristic. In general, ensure SE characteristics are at the correct level.
- Consider that Grid Operations (GO) has characteristics that are very specific to distribution. Consider altering these characteristics to make them applicable for transmission and distribution. Also consider expanding the characteristics of GO to make it more applicable to transmission.
- Include a characteristic in Organization and Structure (OS) level 1 to address the establishment of an environment for training the workforce on smart grid technologies.
- Make the Customer (CUST) domain cover both domestic (residential) and commercial customer connections.
- Include deployment of forecast tools for demand forecasting and nonconventional energy forecasting.
- Extend the model to power generating utilities (some characteristics don't apply, and others need to be added).
- Consider collecting supporting evidence of implementation.
- Allow for regional differences, such as in Mexico, the United States, and India.
- Explicitly define “customer.”

The brainstorming session proceeded as before, with the group generating ideas and dividing them into categories, and the non-SEI participants multivoting on the ideas. The categories and ideas appear below in rank order of score.

1. Architectural Evolution (total score: 42)
  - a. Realign domain emphasis. For example, the current version focuses too much on IT and too little on financial and economic attributes. (score: 8)
  - b. Expand domains to better address characteristics of not-for-profit entities and multi-service utilities; linking pay to performance is required to achieve maturity level 4 in the OS domain and can be problematic in these types of utilities. (score: 6)

- c. Add new domain: Operations Technology (OT). (score: 6)
  - d. Add other utility domains to the model: natural gas, water, and waste. (score: 6)
  - e. Segment the survey questions for industry segments, differentiate transmission from distribution, and expand GO to apply to distribution and transmission. (score: 3)
  - f. Make the model more usable for generation-only or transmission-only utilities. (score: 3)
  - g. Allow for regional differences (e.g., Mexico, U.S., and India). (score: 3)
  - h. Rename and refocus TECH to IT. (score: 2)
  - i. Add coverage for process change needed to accompany SG efforts. Consider making this a new domain. (score: 2)
  - j. Add a ninth domain to address cybersecurity. (score: 2)
  - k. Construct a dynamic model. (score: 1)
  - l. Incorporate context-based (e.g., type of utility, municipal/not) questions and/or scoring. (score: 0)
  - m. Monitor or measure the efficiency of accomplishing intended goals as use shifts from planning to operations. (score: 0)
2. Best Practices and Recommendations (total score: 13)
    - a. Create a repository of best practices and lessons learned that is aligned to the SGMM. (score: 9)
    - b. Include the ability to map out a concrete set of actionable steps with cost estimates (and perhaps quantified benefits) and a predefined set of goals. (score: 4)
  3. Real-Time Validation (total score: 8)
    - a. Include internal error checking in the survey to flag inconsistencies in real time. (score: 8)
  4. Dynamic Peer Groups (total score: 5)
    - a. Include dynamic peer groups. (score: 5)
  5. Crosscutting Themes (total score: 3)
    - a. Include a way to assess network communications and other such characteristics across the domains. (score: 3)
  6. Data and Data Sources (total score: 3)
    - a. Partner with other data sources. (score: 3)
    - b. Extract domain scores from utility public data for utilities that did not take the survey. (score: 0)
    - c. Correlate analysis of performance to SGMM maturity results. (score: 0)
  7. Capability Model (total score: 2)
    - a. Expand beyond smart grid (refer to Section 2.2.3, “How Do We Accelerate SGMM Adoption?”). (score: 2)

- b. Transition the model into an industry best-practice definition (operating model), such as eTOM, or a capability model for utilities. (score: 0)
8. Scoring (total score: 0)
- a. Revise the Navigation method so that the utility sets a target level and answers only up to that level. For example, if the target level for SMR is 3, the utility would answer SMR questions only through level 3. (score: 0)
  - b. Base the score on objective maturity levels. (score: 0)
    - For example, if the target level is 0, an achieved level 0 = 100%.
    - For example, if the target level is 3, an achieved level 2 = 67%.

---

## 5 Workshop Wrap-Up

After the last brainstorming session, David White conducted a workshop wrap-up to review the workshop's purpose; review action items, decisions, and next steps; forecast planned Navigations, conference attendance, publications, and certifications; ask the participants if the SEI could do anything to make them more successful; and evaluate the workshop. The SGMM encourages Partners to submit any comments or suggestions to [info@sei.cmu.edu](mailto:info@sei.cmu.edu). The associated "Wrap Up" presentation appears in Appendix A.

### 5.1 What Worked Well

Several participants agreed that the SGMM Leadership Workshop had been well planned and organized, with good facilitation, good food, an enjoyable off-site event, an achievable agenda, and good brainstorming techniques that allowed participants to capture their ideas without rushing or forgetting them. Many participants said that having Chris Labash present at the beginning of the workshop primed them for more innovative thinking.

The group enthusiastically agreed on the high quality of participation and of the information collected. The workshop produced solid, actionable results and identified needed improvements, such as better marketing communications. One participant said that the SGMM has reached a milestone: The product has transitioned from development into a useful tool.

### 5.2 Changes to Consider for Future Workshops

The participants suggested logistical or procedural ways to produce even better results in future workshops, such as scheduling the workshop farther in advance or at a different time of the month, using a pseudo-structured brainstorming technique, using even less-structured brainstorming techniques, and using facilitation methods such as Ishikawa or affinity mapping. Many participants felt that the brainstorming session on accelerating SGMM adoption might have been more productive if it had followed the sessions on versions 1.3 and 2.0.

A common desire was for more input from utilities and more Partners. Participants suggested getting input from Partners who were not able to attend the workshop, including utilities in future workshops, and having a utility host the workshop. To maintain conversational intimacy with more participants, the group could be divided into subgroups assigned to virtually design parts of the model, as was done during the original model's design.

### 5.3 Next Steps

The SGMM team intends to use the output of the SGMM Leadership Workshop to inform its development plans and goals for version 1.3 of the SGMM product suite. Based on the success of this workshop, the SGMM team plans to conduct targeted workshops with the SGMM community to elicit input specific to version 1.3.

The SEI made a last request of the participating Partners: to provide information about their planned Navigations, conference presentations and attendance, publications, and Navigator certification plans. Knowing about Navigations helps the SEI understand its scoring needs and piloting opportunities. The SEI can also help Partners prepare and publicize conference presentations, journal articles, and marketing materials. Understanding Partners' Navigator certification plans helps to ensure that training is made available in a timely manner. Contact the SEI with any of your needs or updated forecasts at [info@sei.cmu.edu](mailto:info@sei.cmu.edu).

## Appendix A: Workshop Presentations

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### Workshop Opening Loop

**Welcome**

SGMM | Smart Grid Maturity Model | Software Engineering Institute | Carnegie Mellon

Leadership Workshop  
January 10-11, 2012

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**Smart Grid Maturity Model**

- Management tool for the utility industry Smart Grid transformation



Software Engineering Institute  
Carnegie Mellon

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**A major power grid transformation is underway**

Utilities need to use the SGMM to:

- Develop effective roadmaps
- Track progress
- Understand their posture in comparison to peers



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**Use the SGMM**

Utilities are using the SGMM to:

- Identify where they are on the smart grid landscape
- Develop a shared smart grid vision and roadmap
- Communicate using a common language
- Prioritize options and support decision making
- Compare to themselves and the community
- Measure their progress
- Prepare for and facilitate change

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## Tools for Your Transformation



<b>Model</b>	<ul style="list-style-type: none"> <li>• Model Definition document</li> <li>• Matrix</li> </ul>
<b>The SGMM Compass</b>	<ul style="list-style-type: none"> <li>• Compass survey yields maturity ratings and performance comparisons</li> </ul>
<b>SGMM Navigation</b>	<ul style="list-style-type: none"> <li>• Facilitated completion and interpretation of Compass, led by an SEI-certified SGMM Navigator</li> </ul>

## Value of Becoming an SGMM Navigator

Sponsored SEI-Certified SGMM Navigators deliver official, licensed SEI SGMM Navigation process services on behalf of SEI Partner organizations. SGMM Navigators gain the prestige of the SEI Certification, make connections with utilities seeking help, and enrich their knowledge of the smart grid landscape. The Navigation process is an effective tool that Navigators can use to either initiate a smart grid related engagement with a utility or enhance an existing engagement. A listing of SEI Partner organizations associated with SGMM is available at <http://www.sei.cmu.edu/partners/sgmm/>.

## Value of Becoming an SGMM Navigator



"The SGMM helped to define and clarify a roadmap for smart grid implementation. We were able to assess our existing plan and make changes to it; the tool shows that there is more than one way to construct a smart grid plan. We feel that the SGMM tool really shows the breadth of the smart grid."  
 —American Municipal Power member after participating in a pilot study

## Deliver Smart Grid Services

### SGMM Navigator

- Leads utility stakeholders through a defined process including two consensus-building workshops
- Helps utility stakeholders interpret and answer survey questions
- Analyzes and presents findings to help utility stakeholders reach consensus on SGMM aspirations
- Documents results and provides follow-on support



## Empower Enterprise-Wide Involvement



<b>Training</b>	<ul style="list-style-type: none"> <li>• Overview Seminar</li> <li>• SGMM Navigator Course</li> </ul>
<b>Licensing</b>	<ul style="list-style-type: none"> <li>• License organizations and certify individuals to deliver Navigation process</li> </ul>

## Join Us SEI Partners for SGMM



### SGMM in the News

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### SGMM User Community

<ul style="list-style-type: none"> <li>AED Electrabo</li> <li>Alabama Municipal Power</li> <li>Alghary Power</li> <li>Alkazar</li> <li>Amanah Binco</li> <li>Amanah Missouri</li> <li>American Electric Power</li> <li>ARGDOL</li> <li>ATCO Electric</li> <li>ATCO Gas</li> <li>Austral</li> <li>Austin Energy</li> <li>AZUSA Light and Water</li> <li>BC Hydro</li> <li>BESCO</li> <li>Bombardier Power Admin.</li> <li>BSES</li> <li>Burbank Water and Power</li> <li>CELPE</li> <li>CalPlex Energy</li> <li>CFE (Mexico) Coahuila</li> <li>CFE (Mexico) Guadalupe</li> <li>CFE (Mexico) Jalisco</li> </ul>	<ul style="list-style-type: none"> <li>City of Anaheim</li> <li>City of Columbia</li> <li>City of Danville</li> <li>City of Dover</li> <li>City of Hamilton</li> <li>City of Hudson</li> <li>City of Jackson</li> <li>City of Naples</li> <li>City of Pensacola</li> <li>City of Park Falls</li> <li>City of Pope Power System</li> <li>City of Riverside Public Works</li> <li>City of Westford</li> <li>City of Westville</li> <li>CLP Power</li> <li>Colorado Board of Public Utilities</li> <li>Country Energy</li> <li>CPFL Paulista</li> <li>Dominion Virginia Power</li> <li>SONR Energy Sales &amp; Distribution AG</li> <li>DRSC Limited</li> <li>DTE Energy</li> <li>Edisys</li> </ul>	<ul style="list-style-type: none"> <li>East Miss EPA</li> <li>EDF Energy Networks</li> <li>EDF - Energias do Brasil</li> <li>EnergysAustralia</li> <li>Enersis</li> <li>Energy</li> <li>EPICOR Distribution &amp; Transmission</li> <li>Eprata Osmoth</li> <li>ERDF</li> <li>ESB Networks</li> <li>EvatonCorona</li> <li>EvatonPSCO Energy</li> <li>FirstEnergy</li> <li>Fohm</li> <li>Glenvale Water &amp; Power</li> <li>Guangdong Power Co.</li> <li>Hydro One</li> <li>Hydro One - Distribution</li> <li>Hydro Ottawa Limited</li> <li>IEC</li> <li>Imperial Irrigation District</li> <li>Integral Energy</li> <li>Integrat</li> <li>Los Angeles Department of Water and Power</li> <li>EDS&amp;C</li> </ul>	<ul style="list-style-type: none"> <li>Metals Electric Company</li> <li>Metrolis Hydro - TGD</li> <li>Metrolis Board of Lights and Water</li> <li>MISCOL</li> <li>NB Power</li> <li>NDPL</li> <li>NOVA Power Company Ltd.</li> <li>Ontario Municipal Light &amp; Power System</li> <li>Pasadena Water and Power</li> <li>Pepco Holdings/PHI</li> <li>PG&amp;E</li> <li>POH Progress Energy</li> <li>POH Carolina</li> <li>POH Florida</li> <li>PNM</li> <li>Portland General Electric</li> <li>Powercor</li> <li>PPL Electric Utilities</li> <li>Princeton Electric Play Board</li> <li>Royal Domet</li> <li>Banking</li> <li>Sacramento Municipal Utility District</li> <li>S&amp;P Power Project</li> <li>EDS&amp;C</li> </ul>	<ul style="list-style-type: none"> <li>SCANA</li> <li>SDG Genesis</li> <li>Silicon Valley Power</li> <li>SMEPC - International Cooperative Dept. Southwath</li> <li>Southern Company</li> <li>Talis Power</li> <li>Taiyo Electric Power Co.</li> <li>Texas Hydro Electric System</li> <li>Town of Front Royal</li> <li>Tucson Electric Power</li> <li>UGVCL</li> <li>Union Fenosa Distribucion</li> <li>Valderriv Distribution</li> <li>VELCO</li> <li>Village of Cary</li> <li>Village of Olathe</li> <li>Village of Oak Harbor</li> <li>Village of Yellow Springs</li> <li>Wadsworth Electric</li> <li>Windsor Municipal</li> <li>Wind Energy</li> <li>Zhejiang Jiangsu Electric Power Domain</li> </ul>
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### SGMM User Community

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### Plug In and Get Connected

[@SGMM\\_Navigator](#)  
[SEI|CMU](#)  
[SGMM User Forum](#)

<http://www.sei.cmu.edu/smartgrid/>

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## Workshop Overview



**SGMM**  
Smart Grid Maturity Model

**SGMM Leadership Workshop**  
January 10 -11, 2012

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### Workshop purpose

#### Share

- your experience with the current model
- collect your ideas and requested changes for version 1.3 of the SGMM product suite

#### Brainstorm

- features and objectives for version 2.0
- ideas for getting to v2.0 and beyond

#### Plan and discuss how we can work together to

- promote use of the model
- collaborate on innovative uses of the model
- reach underserved markets

SGMM V1.3

SGMM V2.0

promote SGMM Use

Opportunity to network with the SGMM team and other SGMM stakeholders

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2

### Workshop structure

#### Focused brainstorming sessions

- Generate ideas
- Evaluate and group
- Categorize and prioritize

#### Generating agenda items and topics

#### Continuous brainstorming

- SGMM v1.3
- SGMM v2.0 and beyond
- Accelerating SGMM use

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3

### Logistics



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4

### Introductions

Steve Brodsky, SAIC	Austin Montgomery, SEI
Steve Rupp, SAIC	David White, SEI
Keith Dodrill, NETL	Julia Mullaney, SEI
Lauren LaPlante, IBM	Barbara Tyson, SEI
Palak Kadakia, Wipro	Stacie Blakely, SEI
Raja Iyengar, EBiz Labs	Jeff Welch, SEI
Ray Jones, Sustainable Reach	Paul Ruggiero, SEI
Jeff Varney, APQC	Shane McGraw, SEI

Please introduce yourself and share your Smart Grid and SGMM experiences

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### Workshop agenda – day 1

8:00	Continental breakfast
8:30	Workshop overview
9:00	Technology and innovation
10:00	Break
10:15	SGMM state of the union
11:00	Strategy for growth in SGMM use
12:00	Lunch
1:00	Strategy for growth in SGMM use, continued
3:00	Break
3:15	SGMM V1.3 enhancements
4:30	Adjourn; shuttle from CIC to hotel
5:30	Shuttle from hotel to Penguins game

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## Workshop agenda – day 2

- 8:00 Continental breakfast
- 8:30 Workshop overview
- 8:45 SGMM V1.3 enhancements, continued
- 10:00 Break
- 10:15 SGMM V1.3 enhancements, continued
- 12:00 Lunch
- 1:00 SGMM V2.0 enhancements
- 2:30 Break
- 2:45 SGMM V2.0 enhancements, continued
- 3:30 Wrap up
- 4:30 Adjourn

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Transition Truths.



# Chris Labash.

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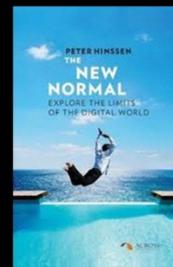
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**Innovation is at the  
core  
of change.**

**Change is at the  
core  
of innovation.**

**INNOVATION<sup>LN</sup>**

**INNOVATION<sup>LN</sup>**

**TRANSITION<sup>AVE</sup>**

**DISCUSSION GUIDE:**

**DISCUSSION GUIDE:**

**1. What's changed?**

**DISCUSSION GUIDE:**

1. What's changed?
2. What's the big innovation?

**DISCUSSION GUIDE:**

1. What's changed?
2. What's the big innovation?
3. Why?

**DISCUSSION GUIDE:**

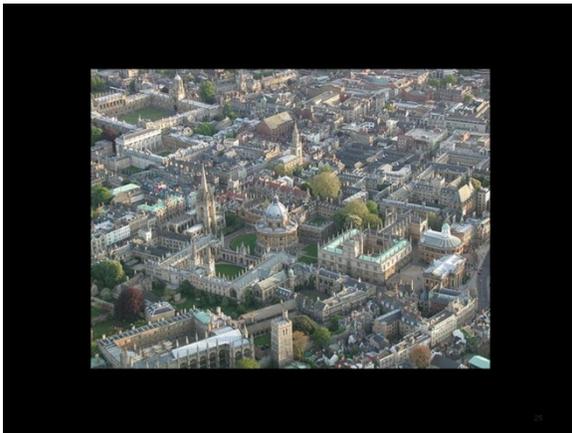
1. What's changed?
2. What's the big innovation?
3. Why?
4. How can this be used?

**DISCUSSION GUIDE:**

1. What's changed?
2. What's the big innovation?
3. Why?
4. How can this be used?
5. How can this be marketed?

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Information Security Policy & Management (MISIPM)  
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CIO Institute

**Carnegie Mellon Heinz College CIO INSTITUTE**

**CIO Institute**  
Carnegie Mellon University's CIO Institute delivers excellence in executive education for today's leaders in business, technology. The CIO Institute is specifically focused on helping IT leaders better align people, processes, and technology for organizational effectiveness through our flagship program, the Chief Information Officer Certificate. The CIO Institute can also develop customized programs to fit your organization's specific training needs.

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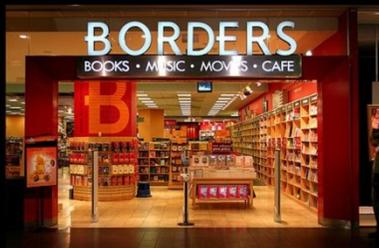
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# DISCUSSION GUIDE:

1. What's changed?
2. What's the big innovation?
3. Why?
4. How can this be used?
5. How can this be marketed?

# Books.



Screenshot of the Amazon.com website. The main banner features "The All-New Kindle Family" with three models: Kindle \$79, Kindle Touch \$99, and Kindle Fire \$99. There are also links for "Accessories for Kindle" and "Textbooks". The page includes a navigation menu on the left and various promotional banners.



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**Description**

iBooks is an amazing way to download and read books. iBooks includes the iBookstore, where you can download the latest best-selling books or your favorite classics - day or night. Browse your library on a beautiful bookshelf, tap a book to open it, flip through pages with a swipe or a tap, and bookmark or add notes to your favorite passages.

[Apple Web Site](#) • [iBooks Support](#) • [Application License Agreement](#) • [...More](#)

**What's New in Version 1.5**

iBooks 1.5 adds the following new features as well as some stability and performance improvements:

- Nighttime reading theme makes reading books in the dark easier.

[View in iTunes](#)

This app is designed for both iPhone and iPad

Free

## DISCUSSION GUIDE:

1. What's changed?
2. What's the big innovation?
3. Why?
4. How can this be used?
5. How can this be marketed?

## Banking.





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**Why Simple?**  
We started Simple because retail banks have forgotten who their customers are.

[This is who we are](#)

**Are we a bank?**  
No. We're something new in finance, a well-designed everyday experience.

[This is what we're making](#)

---

**Are we a bank?**  
No. We're not a better bank, we're more than a bank.

**This is what we've built**  
While your money is FDIC-insured and held with our bank partner, we provide the tools and customer support you need to manage, understand, and automate your everyday spending and saving. We take care of you, our bank partners take care of your money, and jointly, we promise a superior financial experience.

**We're more than your bank**  
We've not just into finance, we've an eclectic group...

**Are we a bank?**  
Spend with your Simple Visa® card, track your finances with our exquisitely crafted mobile and web applications, deposit a check with your smartphone, make a fee-free withdrawal from over 40,000 ATMs, and more. Simple makes it all so easy.

**We're better than your bank**  
While your bank cashes in when you make mistakes, we impose no surprise fees — nor monthly maintenance fees, overdraft fees, low balance fees, and absolutely no hidden fees.

**We're both safe and sensible**  
We positioned our customer relations center between our product and engineering teams, set a high bar to match customer service that is...

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**1 Features**

With Simple, you can easily [Spend](#) [Save](#) [Pay](#) [Learn](#)

**\$458.79** Safe-to-Spend™  
507.44 total balance - 48.65 in upcoming payments

TRANSACTION HISTORY

Date	Merchant	Amount	Category
NOV 04	Pearl Bakery	9.75	Coffee & Tea
NOV 03	Gift Club		Drink or Beer Algn Amy
NOV 03	Barista		esp and Cheese bevs
NOV 02	Little Big Burger	21.00	Team Burgers
NOV 02	Courier Coffee	25.00	Jar-brabbar, best coffee in PDX

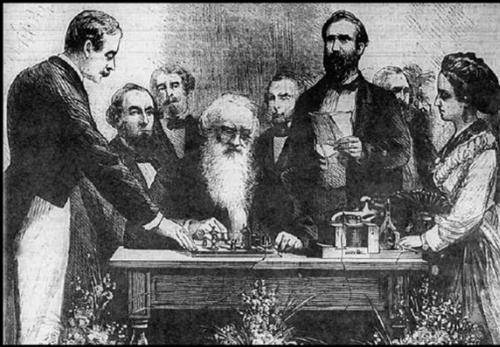
Wednesday Nov 02 at 2:51 PM  
**Courier Coffee**  
- \$4.00  
Jar-brabbar, best coffee in PDX  
Coffee & Tea

923 SW Oak St.  
Portland, OR 97205-2804

## DISCUSSION GUIDE:

1. What's changed?
2. What's the big innovation?
3. Why?
4. How can this be used?
5. How can this be marketed?

## Communication.





FaceTime for Mac

### Say hello to FaceTime for Mac.

It's remarkable. It's fun. And it's not just for iPhone and iPod touch anymore. Now you can make video calls to iPad 2, iPhone 4, the new iPod touch, or another Mac. Right from your Mac.

**Now your smile goes even further.**

FaceTime for Mac makes it possible to talk, smile, and laugh with anyone on an iPad 2, iPhone 4, iPod touch, or Mac from your Mac. So you can catch up, hang out, joke around, and stay in touch with just a click. Sure, it's great to hear a voice. But it's even better to see the face that goes with it.

umi  
telepresence



### Location Aware Home Automation

Track Your Location  
With Google Latitude

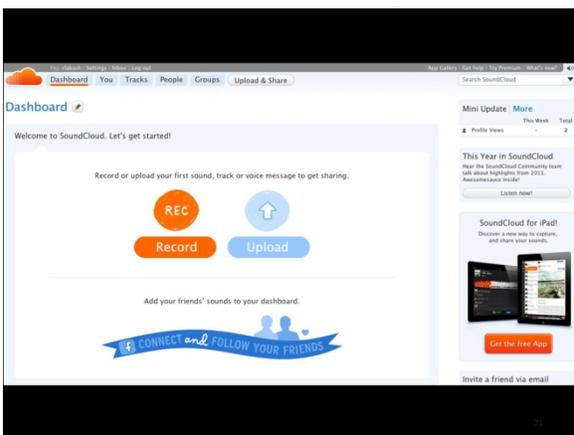
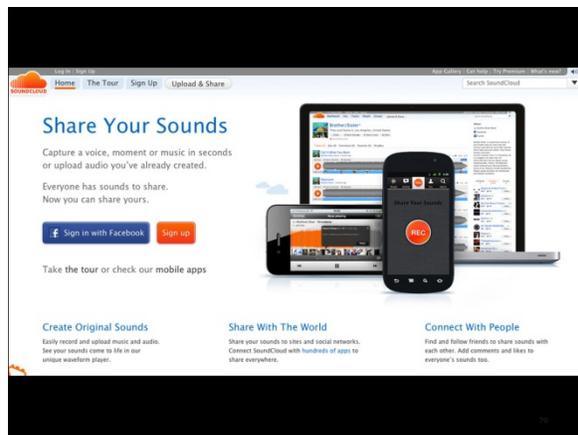
Control Heating/Cooling  
Based on Current Location and Weather

## DISCUSSION GUIDE:

1. What's changed?
2. What's the big innovation?
3. Why?
4. How can this be used?
5. How can this be marketed?

## Music.





**DISCUSSION GUIDE:**

1. What's changed?
2. What's the big innovation?
3. Why?
4. How can this be used?
5. How can this be marketed?

Life.

Life:  
The new  
agrarianism.

Life:  
The new normal.

Life:  
The new focus on  
me.

Life:  
The new social.

**Transition Truths:**

**1. New expectations lead to new innovations.**

**2. When you change your expectations you change your business.**

**3. Seek & you will find (something).**

**4. Imagination is more important than knowledge.**

**5. It's all about the experience.**

**6. If you want to have good ideas, have a lot of them.**

**7. Keep asking: what's behind this?**

**8. Timing isn't everything, but it's close.**

**9. Look for the Second Right Answer.**

**10. Don't be so negative.**

**"A calm survey of natural phenomena leads the engineer to pronounce all confident prophecies for future success as wholly unwarranted, if not absurd."**

(Admiral George Melville on the idea of manned flight.  
*North American Review*, December, 1901)

“This ‘telephone’ has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us.”

(A memo at Western Union, 1878.)

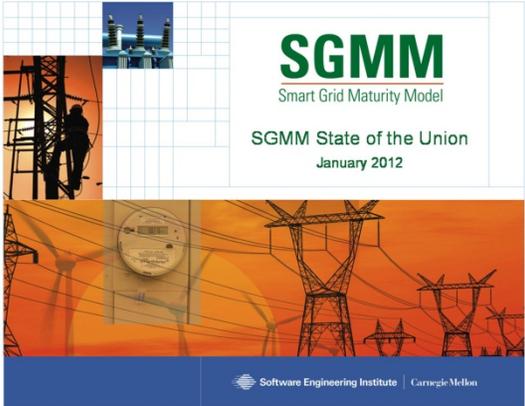
“The Americans have need of the telephone, but we do not. We have plenty of messenger boys.”

(Sir William Preece, Chief Engineer, British Post Office, 1878.)

**11. See what  
might be.**

**Thanks.**

## SGMM State of the Union



**SGMM**  
Smart Grid Maturity Model

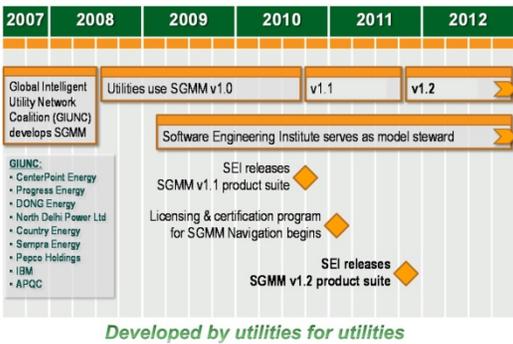
SGMM State of the Union  
January 2012

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### Agenda

- ▶ **Report on last year's progress**
  - Version 1.2 release
  - Building a community of SGMM Navigators
  - SGMM outreach and community
- FY12 activities and plans
- Discussion of strategy going forward
- Wrap up and next steps

### SGMM timeline



## SGMM

Smart Grid Maturity Model  
V 1.2 Product Suite

<b>Model</b>	Fully described in the Model Definition document
<b>Compass Survey</b>	Questionnaire-based assessment yields maturity ratings and comparisons
<b>Navigation Process</b>	Expert-led workshops to complete Compass and use results to develop consensus aspirations
<b>Training</b>	Overview Seminar and SGMM Navigator Course
<b>Partner Program</b>	License organizations and certify individuals to deliver Navigation process

[www.sei.cmu.edu/smartgrid](http://www.sei.cmu.edu/smartgrid)

### SGMM version 1.2

Released in September 2011

Changes:

- New and revised Compass questions about utility attributes and performance
- End of pilot licensing period — licensing now open to all qualified applicants
- Many improvements to Navigation process, training, and templates
- Improved usability of Compass survey and report
- Updates to all other product elements based on community feedback

Will review changes in detail later in the workshop

### Agenda

- Welcome, introductions, and agenda
- Report on last year's progress**
  - Version 1.2 release
  - ▶ **Building a community of SGMM Navigators**
  - SGMM outreach and community
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## SGMM licensing & certification

Licensing and certification are core elements of our strategy to promote and enable broad adoption and use of the SGMM.

Licensed organizations (SGMM Partners) are able to

- Offer SGMM Navigation as a service, which must be delivered by SEI-Certified SGMM Navigators
- Sponsor individuals to become SEI-Certified SGMM Navigators
- Participate in the ongoing evolution of the SGMM product suite

## Licensing & certification program structure



## Current SGMM Partners: nine total



## SGMM Navigator population



## Agenda

Welcome, introductions, and agenda

### Report on last year's progress

- Version 1.2 release
- Building a community of SGMM Navigators
- ▶ • SGMM outreach and community

FY12 activities and plans

Discussion of strategy going forward

Wrap up and next steps

## 2011 update

As in 2009 & 2010, we published an update for release at GridWeek 2011

Highlights include:

- V1.2 description
- Community data summaries
- California publicly-owned utilities project
- India project
- Profiles on initial seven SGMM Partners
- SGMM Navigator certification program



<http://www.sei.cmu.edu/library/abstracts/brochures/sgmm-2011.cfm>

### SGMM media coverage FY2011

- EFTimes
- Smart Grid Today
- PowerGrid International
- Electroindustry
- PennEnergy
- SmartGridNews.com
- The Times of India
- TMCnet.com
- Utility Products Magazine
- InfoQ
- Pittsburgh Business Times



### SGMM Social Media

Plug in and Get Connected to the SGMM



**Twitter**  
@SGMM\_Navigator  
Your Tweets: 69  
Following: 253  
Followers: 60

**LinkedIn**  
Smart Grid Maturity Model User Forum  
Members: 110

**YouTube**  
SEI | CMU  
Subscribers: 185

### SGMM webinars

Empower Your Smart Grid Transformation

**SGMM**

SEI Webinar Series  
March 10, 2011

Solutions. Experts. Insights.

SEI Technologies Forum  
October 20, 2011 | 8:00 a.m. - 5:30 p.m. ET

**Smart Grid Maturity Model: A Vision for the Future of Smart Grid**

October 20, 2011 | 1:30 p.m. - 3:00 p.m. | Room 202B

### GRIDWEEK The Way Forward Washington, DC September 12-15, 2011

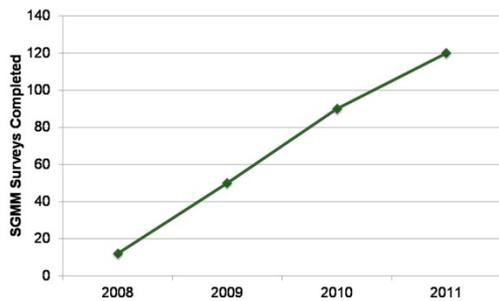
**Panel Session**

Francisco Acosta Arredondo, CPE  
Lee Krewal, SDG&E  
Steven Rupp, SAIC  
Keith Dredell, US DOE

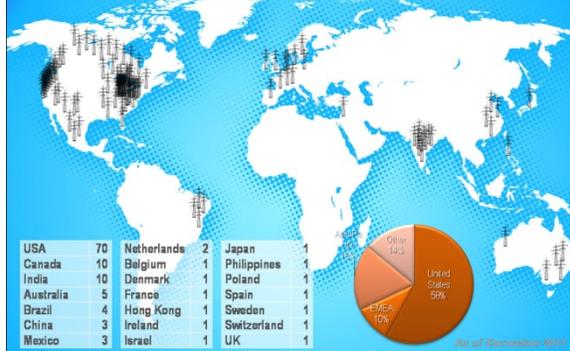
Moderated by:  
Austin Montgomery, SEI

Thursday, September 15, 2011  
1:30 p.m. - 3:00 p.m. | Room 202B

### Cumulative SGMM survey completions



### SGMM community: 120 utilities in 21 countries



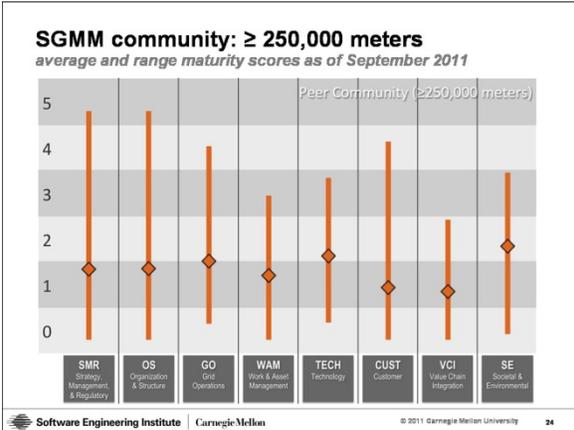
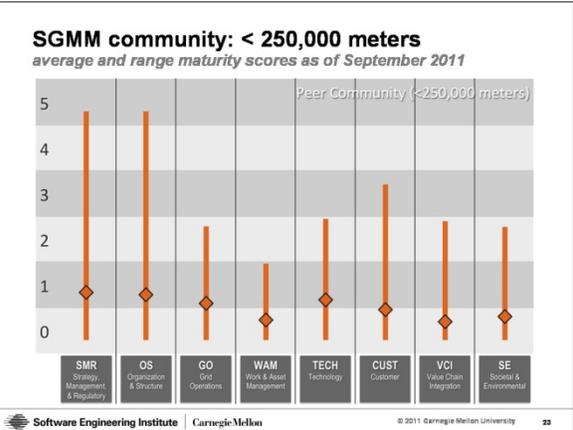
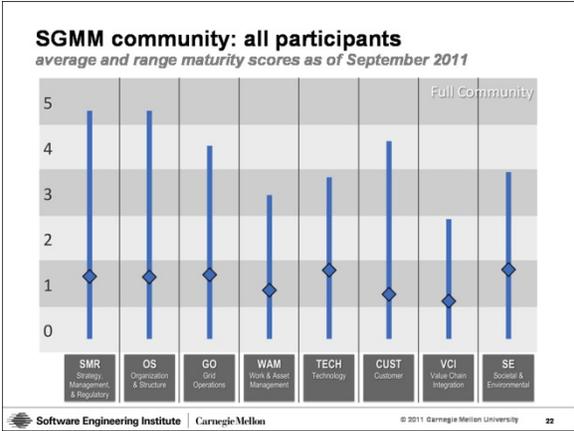
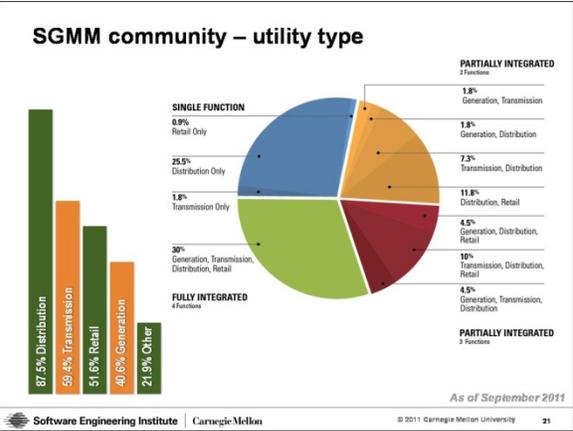
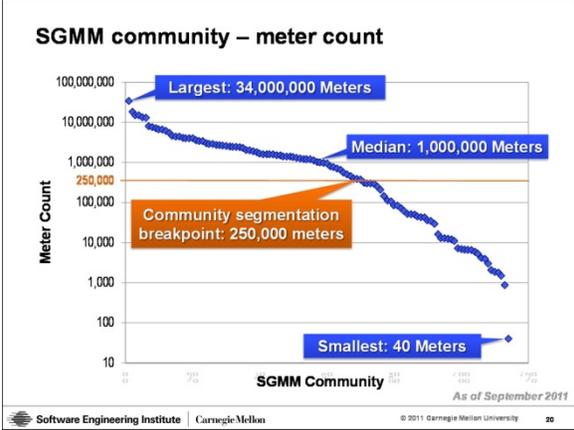
### SGMM community – 120 utilities as of December 2011

<ul style="list-style-type: none"> <li>AES Endorsables</li> <li>Alameda Municipal Power</li> <li>Allegheny Power</li> <li>Altitude</li> <li>American Illinois</li> <li>American Missouri</li> <li>American Electric Power</li> <li>APOR/DCL</li> <li>ATCO Electric</li> <li>ATCO Gas</li> <li>Auznet</li> <li>Austin Energy</li> <li>AZUSA Light and Water</li> <li>BC Hydro</li> <li>BESCO/AM</li> <li>Bonneville Power Admin</li> <li>BSES</li> <li>Burbank Water and Power</li> <li>CELEPE</li> <li>Cascade/Fort Energy</li> <li>CEISO, Mexico</li> <li>CFE (Mexico) Corporative</li> <li>CFE (Mexico) Quilicura</li> <li>CFE (Mexico) Jalisco</li> <li>CFE (Mexico) Peninsular</li> <li>City of Anaheim</li> <li>City of Columbus</li> <li>City of Canada</li> <li>City of Dover</li> <li>City of Hamilton</li> <li>City of Hudson</li> <li>City of Jackson</li> <li>City of Naperville</li> <li>City of Pensacola</li> </ul>	<ul style="list-style-type: none"> <li>City Of Palo Alto</li> <li>City of Piquette Public Utilities</li> <li>City of Riverside Public Utilities</li> <li>City of Wapakoneta</li> <li>City Of Westville</li> <li>CLP Power</li> <li>Coalukatar Board Of Public Utilities</li> <li>Country Energy</li> <li>OPFL Pasadena</li> <li>Dover/Virginia Power</li> <li>DOING Energy Sales &amp; Distribution/AVS</li> <li>DPSC Limited</li> <li>DTE Energy</li> <li>Duke Energy</li> <li>Eau Claire</li> <li>East Mesa EPA</li> <li>EDF Energy Networks</li> <li>EDP - Energia do Brasil</li> <li>EnergyAustralia</li> </ul>	<ul style="list-style-type: none"> <li>Enxite</li> <li>Entergy</li> <li>EPCOR Distribution &amp; Transmission</li> <li>Ephrata Borough</li> <li>ERDF</li> <li>ESS Networks</li> <li>Evaton/ComEd</li> <li>Enxite/EPCO Energy</li> <li>FirstEnergy</li> <li>Fortum</li> <li>Glendale Water &amp; Power</li> <li>Guandong Power Co.</li> <li>Hydrex One</li> <li>Hydro One - Distribution</li> <li>Hydro Ottawa Limited</li> <li>IEC</li> <li>Impresal Impregel District</li> <li>Integral Energy</li> <li>Intelligis</li> <li>Los Angeles Department of Water and Power</li> </ul>	<ul style="list-style-type: none"> <li>Manitla Electric Company</li> <li>Manitoba Hydro - T&amp;D</li> <li>Manitoba Board of Lights and Water</li> <li>MSEDCL</li> <li>NB Power</li> <li>NCPCL</li> <li>NIGIDA Power Company Ltd</li> <li>Oberlin Municipal Light &amp; Power System</li> <li>Pasadena Water and Power</li> <li>Pepco Holdings/PH</li> <li>PG&amp;E</li> <li>PQIN Progress Energy</li> <li>PQIN Carolina</li> <li>PQIN Florida</li> <li>PFM</li> <li>Portland General Electric</li> <li>Powercor</li> <li>PPL Electric Utilities</li> <li>Pinalonit Electric Play Board</li> <li>Puget Sound</li> </ul>	<ul style="list-style-type: none"> <li>Reading</li> <li>Sacramento Municipal Utility District</li> <li>Salt River Project</li> <li>SDG&amp;L</li> <li>SG&amp;A</li> <li>SIG Geneva</li> <li>Silicon Valley Power</li> <li>SMPC - International Cooperation Dept.</li> <li>Strohman</li> <li>Southern Company</li> <li>Tata Power</li> <li>Tokyo Electric Power Co</li> <li>Toronto Hydro Electric System</li> <li>Town Of Front Royal</li> <li>Tucson Electric Power</li> <li>UGVCL</li> <li>United Fenssa Distribution</li> <li>Vanderfal Distribution</li> <li>VELOO</li> <li>Village Of Cary</li> <li>Village Of Clark</li> <li>Village Of Oak Harbor</li> <li>Village Of Water Springs</li> <li>Wabash Electric</li> <li>Washburn Municipal Service</li> <li>West Energy</li> <li>Zhejiang Jiaxing Electric Power Bureau</li> </ul>
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22 US States  
5 Canadian Provinces

21 Countries

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## Agenda

- Welcome, introductions, and agenda
- Report on last year's progress
- ▶ **FY12 activities and plans**
- Discussion of strategy going forward
- Wrap up and next steps

## FY12 plans -1

### Version 1.3

- January 10-11, 2012, Pittsburgh: Workshop to collect feedback from Navigators, Partners, and other stakeholders
- January 12, 2012, SGMM Team FY12 planning meeting
- Plan to pilot test and release v1.3 mid 2012
  - Improvements to characteristics and questions based on feedback
  - Navigator report template improvements
  - Other incremental improvements

### SGMM database

- Master data set currently in Excel
- Implementing database for improved storage, reporting, and use of the data
- Will improve report customization and analysis abilities

## FY12 plans -2

### Expanded licensing and certification program

- Pilot period has ended, now open to all qualified applicants
- Already experiencing increase in interest and applications
- Navigator courses:
  - Apr 17-19, 2012 in DC
  - Additional courses as needed to meet demand
  - Upgrade courses (likely webinar-based): v1.2 to v1.3

## FY12 plans -3

### International work

- Continue support of growing international community of users and partners
- Perform projects directly in support of US government initiatives
  - Mexico FY10
  - India FY11
  - Planning FY12 project as part of US–Russia Energy Working Group collaborative activities (Kaliningrad, Russia)



### Conference participation planned

- Distributech, San Antonio, January 24-26, 2012
- GridWeek, DC, October 2-4, 2012

## Agenda

- Welcome, introductions, and agenda
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## FY12 strategic questions

### Imagining Version 2.0 and beyond, ideas include:

- 9<sup>th</sup> Domain: explicit treatment of security, privacy, and resilience
- Additional rigor in levels 4 and 5
- Enable use in water and gas utilities

### Funding model

- Continued work to grow licensing and navigation program as source of sustainment funding
- Also in search of additional potential sources of funding –
  - where is the value in the product suite?
  - increase demand from utilities?

## Summary

Last year was successfully focused on community development and modest model improvements.

The community of SGMM users and practitioners is global and growing.

Version 1.3, additional outreach, and community growth are primary FY12 objectives.

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## Agenda

Welcome, introductions, and agenda

### Report on FY11 progress

- Version 1.2 release
- Building a community of SGMM Navigators
- SGMM usage highlights
  - ▶ California Energy Commission project
  - SDG&E Deployment Plan
  - India project
- SGMM outreach and community

FY12 activities and plans

Discussion of strategy going forward

Wrap up and next steps

## 2020 Roadmap

### CA public utilities 2020 roadmap project

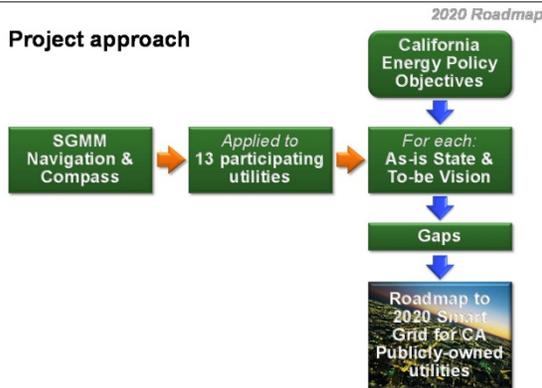
**Project objective:** develop a roadmap to smart grid implementation in 2020 for California's publicly-owned utilities (POUs) that helps to achieve state energy policy objectives

#### Project details:

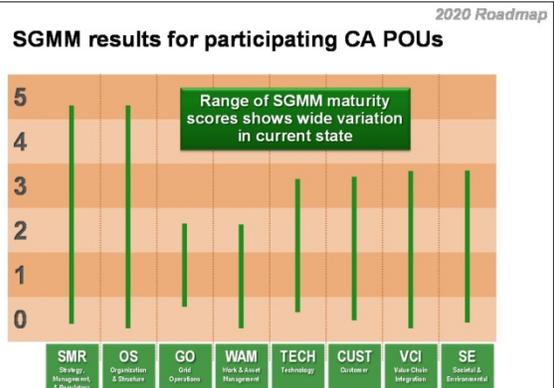
- Commissioned by California Energy Commission
- Performed by SAIC, an SGMM Partner
- Led by Steven Rupp, an SGMM Navigator
- Focused on 13 publicly-owned utilities
- Using SGMM to support roadmap development



## Project approach



## SGMM results for participating CA POUs



2020 Roadmap

### Visions for 2020

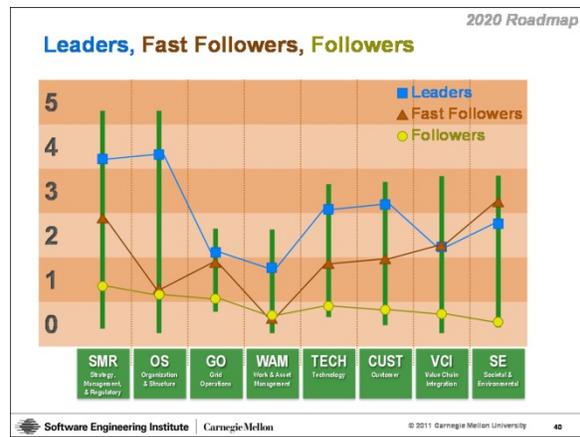
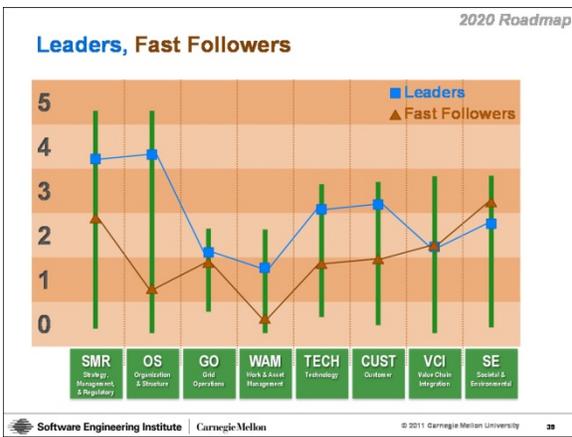
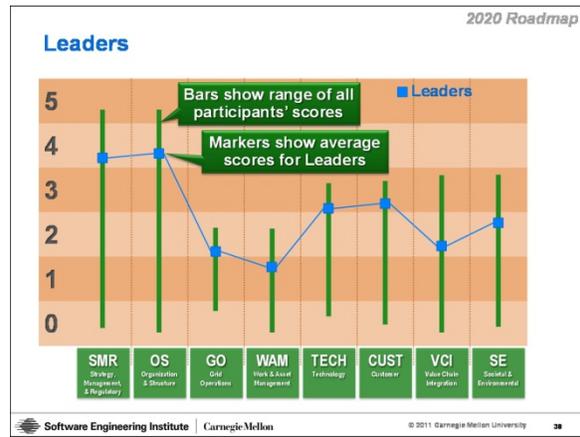
Three distinct visions emerged for the participating utilities:

- Leaders
- Fast Followers
- Followers

The visions are characterized by

- Differences in planned pace and scope of smart grid deployment
- Varying financial, environmental and social priorities of the communities that govern and are served by local POUs

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2020 Roadmap

### Reported benefits

**Planning**

- In several instances, SGMM Navigation provided the first opportunity for utilities to have a comprehensive discussion about smart grid among regulators, managers and staff.
- Utilities are aligning smart grid initiatives into their strategic plans using SGMM language.

**Executing**

- Utilities are using SGMM to evaluate progress and success of current initiatives.

**Publicizing**

- Utilities are using results to broadcast impact of smart grid programs.
- Project is garnering national interest and attention by public power.

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2020 Roadmap

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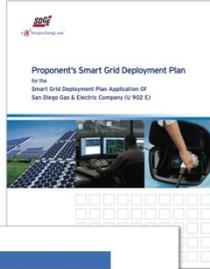
Discussion of strategy going forward

Wrap up and next steps

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## SDG&E Deployment Plan

Filed with California PUC on 6 June 2011 in response to a requirement for smart grid deployment plans from each of the investor-owned utilities in California (CA Senate Bill 17).



### EXECUTIVE SUMMARY

The San Diego Gas & Electric Company (SDG&E) Smart Grid Deployment Plan advances the utility's vision for a smart energy future while delivering new value to its customers, meeting its public policy requirements and delivering societal and economic benefits that exceed project costs.

<http://www.sdge.com/documents/smartergrid/deploymentplan.pdf>, p 2.

## SGMM Reference in SDG&E Deployment Plan -1

In order to ensure that SDG&E has a robust understanding of the universe of potential Smart Grid investments and applications and the potential effects on SDG&E, the utility considers a number of outside sources. These sources are summarized below and discussed in greater detail in the sections that follow.

- The U.S. Department of Energy-funded Smart Grid Maturity Model (SGMM) – The SGMM has assisted SDG&E in setting strategic priorities and allowed it to drive to a common internal understanding of industry tenets. This model helps SDG&E understand the stage of its current technology investments and its aspirations.

<http://www.sdge.com/documents/smartergrid/deploymentplan.pdf>, p 93.

## SGMM Reference in SDG&E Deployment Plan -2

SDG&E plans to further develop its SGMM program by working with IEEE to build their technical capabilities to participate in Smart Grid projects.

**5.1. SMART GRID MATURITY MODEL ALIGNMENT**

SDG&E was one of the original co-developers of the Smart Grid Maturity Model as part of an IEEE Smart Grid Consortium Utility Network Evaluation (SGNUE). The IEEE is now leading Carnegie Mellon University to expand and maintain this tool. The tool allows eight companies within the consortium to compare against each other in the categories of utility in order to work to Smart Grid activities and provide areas for future relations. The work items that are listed below with working business as usual and Smart Grid activities to be with Smart Grid deployed in the categories. SDG&E's working items and aspirations are shown below.

Figure 4-3 Smart Grid Maturity Model Results

SDG&E 2 year SGMM aspirations

SDG&E Smart Grid Deployment Plan 2009 – 2011 Page 118

As a maturity model, the SGMM assists in applying the organization through the journey of implementation. This model was developed to encompass many aspects of strategy and operations and was used for the "Smart Grid" awards. The scope of an SGMM assessment includes reviewing the state of smart grid technology that exists within the utility such as assets, and user services, business processes and customer satisfaction.

SDG&E has found this tool to be very useful in assessing its Smart Grid strategy since many individuals are present in the same room debating the tool in each category. The integration that SDG&E has established as a guide to its future planning process.

**5.2. NEXT MODEL ALIGNMENT**

SDG&E plan development leveraged a framework based on the IEEE Smart Grid operational model combined with their additional "next stage" strategy as shown in Figure 4-2. The advantage of this model is that it is representative of the electric energy ecosystem and it includes an accountable future-oriented mission. There are examples provided for each of the six domains and they developed strategies that address the implications for technology, assets, and business processes.

Figure 4-6 IEEE Conceptual Model and Additional Next-Stage Planning Elements

SDG&E Smart Grid Deployment Plan 2009 – 2011 Page 119

<http://www.sdge.com/documents/smartergrid/deploymentplan.pdf>, pp 118-119.

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## India Project Summary

### Background

- Project conducted under Distribution Reforms, Upgrades and Management (DRUM) initiative of USAID and India Ministry of Power
- Original focus of DRUM on
  - centers of excellence to showcase best practices in distribution
  - workforce training and development
  - links between Indian and US organizations
- This project in keeping with a recent effort to incorporate smart grid

### Outcome

- Active participation from 90 individuals representing seven utilities
- Positive feedback that the project helped utilities frame their smart grid discussions and guide ongoing planning and implementation
- Lessons learned for applying the SGMM in India and other markets

**Delhi**

- Survey Workshop week of 4 Apr 2011
- Aspirations Workshop week of 25 Apr 2011

**Hyderabad**

- Aspirations Workshop week of 25 Apr 2011

**Bangalore**

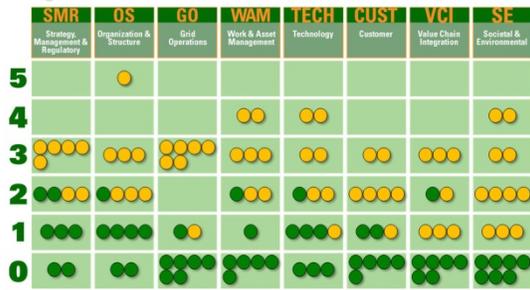
- Survey Workshop week of 4 Apr 2011
- Aspirations Workshop week of 25 Apr 2011

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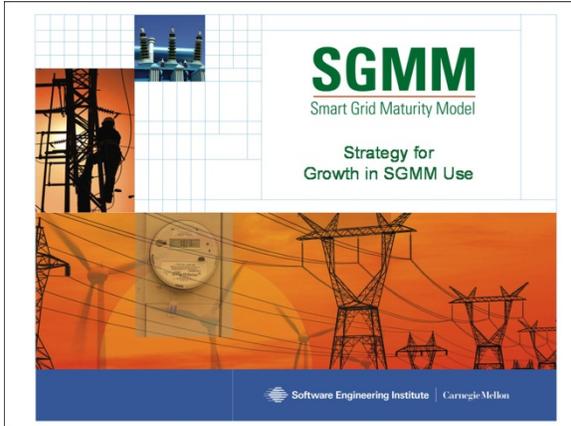
### India results: current and aspired levels

● April 2011 levels

● Aspired levels for 2014 - 2016



## Strategy for Growth in SGMM Use



### Topics – increasing the use of SGMM

1. What is the state of market presence for SGMM?
2. What are drivers and barriers to SGMM use and adoption?
3. How do we accelerate SGMM adoption?
4. What are the benefits of the SGMM and how do we publicize them?
5. What are additional funding sources for SGMM stewardship?
- 6.
- 7.
- 8.
9. What should be the topic for the March 2012 Webinar?

### Brainstorming – generating ideas

#### Purpose

- Encourage open thinking
- Get everyone involved and enthusiastic
- Builds on creativity of others

#### Approach

1. Start with an agreed-upon written topic  
(Note: Feel free to propose additional topic areas or jot items as needed)
2. The group is given five minutes to write three items
3. In a round-robin fashion, each person shares their ideas (no criticisms, only clarification questions)
4. Continue until all people "pass" on their turn
5. Review written ideas for clarity and to discard any duplicates

### Topic 1

#### What is the state of market presence for SGMM?

- Do utilities know about it?
- What do utilities know about it?
- Are there underserved markets? Why?

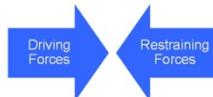
### Force field analysis – generating ideas

#### Purpose

- Highlights positives and negatives
- Get everyone involved and enthusiastic
- Builds on creativity of others

#### Approach

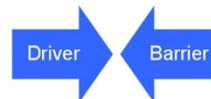
1. Start with an agreed-upon written topic
2. Brainstorm the forces that are driving you towards the ideal situation
3. Brainstorm the forces that are restraining movement toward the ideal state
4. Prioritize driving forces that can be strengthened and restraining forces to be removed



### Topic 2

#### What are drivers and barriers to SGMM use and adoption?

- Business practices and processes
  - Training
- Role of the Business Point of Contact (BPOC)
- Licensing terms
- Additional support needed
- Other



## Nominal Group Technique (NGT) – ranking for consensus

### Purpose

- Free, independent ranking by individuals
- Involves all participants
- Highlights lack of consensus

### Approach

1. Eliminate duplicates and/or clarify meanings of all ideas
2. Each item is "ranked," 1- $n$  with  $n$  being the most important
3. Rankings are summed

Item	Tom	Joe	Jill	Total
A	2	1	1	4
B	1	2	3	6
C	3	3	2	8

## Multivoting – ranking for consensus

### Purpose

- Free, independent ranking by individuals
- Involves all participants
- Highlights lack of consensus

### Approach

1. Eliminate duplicates and/or clarify meanings of all ideas
2. Each person is given  $n$  dots and can distribute their dots in anyway they see fit e.g. put all dots on one idea or distribute dots evenly
3. Dots are totaled for each item

## Topics 3 & 4

How do we accelerate SGMM adoption?

What are the benefits of the SGMM and how do we publicize them?

- Where is the value in the product suite?
- What are people willing to pay for?
- What are people willing to dedicate resources towards?

## Topic 4

What are the benefits of the SGMM and how do we publicize them?

- Where is the value in the product suite?
- What are people willing to pay for?
- What are people willing to dedicate resources towards?

## Topic 5

What are additional funding sources for SGMM stewardship?

## Topic n

What should be the topic for the March 2012 Webinar?

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## Backup Slides

## Business Point of Contact (BPOC)

- Ensure all SEI invoices are paid in a timely manner
- Sign the Code of Professional Conduct Form for Partner Organizations
- Ensure the Partner organization's SGMM Navigators maintain certification currency.
  - Send the SEI sponsorship notification when the Partner organization wants to sponsor a new SGMM Navigator or SGMM Navigator applicant.
  - Send the SEI notification when an SGMM Navigator is no longer sponsored by the Partner organization.
- Be the Partner organization's primary contact with the SEI.
  - Forward notices to the Partner organization's SGMM Navigators.
  - Changes to the SGMM
  - Updates to the PRC
  - SGMM Navigator Meetings or Workshops

## SGMM license agreements

### Pilot License Agreement

- Allowed use of "draft" materials
- Time limited -Must convert to the ULA by end of March 2012
- SGMM technology only

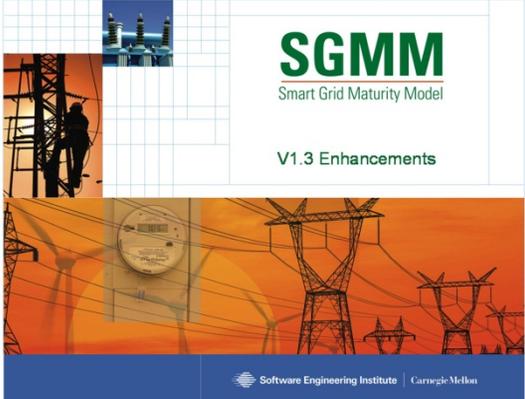
Developed to enable access to early SGMM materials

### Universal License Agreement (ULA)

- Allows use of V1.2 materials and all future updates
- Automatically renews
- Easily extended to other SEI technologies

Long-term license agreement

## Version 1.3 Enhancements



The slide features a background image of a power grid with a person on a tower. The text reads: **SGMM** Smart Grid Maturity Model, V1.3 Enhancements. Logos for Software Engineering Institute and Carnegie Mellon are at the bottom.

### Agenda

- Review V1.2 update to the SGMM product suite

#### V1.3 goals, constraints, and timing

#### Brainstorm V1.3 Change Requests (CRs)

- General
- Navigator report template
- Navigation process and presentation template
- Characteristics and questions
- SGMM Compass Survey
- Model Definition Document
- Other materials (SGMM Overview, SGMM marketing materials, SGMM outreach and community, etc.)

### SGMM V1.2 overview

<b>Model</b>	Updated expected characteristics and explanatory material to improve understanding and enable application of the model
<b>Compass Survey</b>	Updated organizational attribute questions to <ul style="list-style-type: none"> <li>• facilitate peer comparisons</li> <li>• collect data to test effectiveness of the model</li> <li>• help scope aspirations setting</li> </ul>
<b>Navigation Process</b>	Enhanced to provide better guidance on analysis and improve usability of the licensed templates
<b>Training</b>	Improved to enable more efficient and effective class participation and to provide clearer instructions and improved materials
<b>Partner Program</b>	<ul style="list-style-type: none"> <li>• Concluded pilot licensing program, opening licensing opportunity to all</li> <li>• Transitioned to Universal License Agreements for easier long-term agreement maintenance and to make SGMM more available to existing SEI Partners</li> </ul>

### SGMM V1.2 global changes

Basic data model was un-changed so organizations can compare their V1.2 results to previous versions of the model

Changed PHV to EV.

Changed "Nonspecific Characteristics" to "Organizational Attributes"

#### Branding

- Standard cover pages for all products
- Standard color palette

#### Standard graphics

- Maturity score data
- Navigation process

### Model Definition Document (MDD) V1.2

Area	Change
Section 3, paragraph 1	Updated text
OS-2.5	Changed to "and/or"
GO-2.1	Changed to Distribution substations are automated and linked to some form of remote distribution automation, (e.g., smart switching in the field).
GO-1.4	Added information about "beyond SCADA."
WAM-4.2	Updated italicized to indicate total life cycle cost.
SE-3.4	Deleted "the sustainability."
SE-4.5	Change resiliency to resilience
Section 12	Updated text.

### MDD glossary V1.2

Specified not drive by in AMI

Added an entry for Stakeholders

Added definition for Distribution Substation

Added definition for Protection Scheme

## Compass Survey V1.2 - goals

Update the nonspecific characteristics (sections 1-4) to enable better usage (more meaningful analyzes) of data collected

- enable more sophisticated peer-to-peer comparison
- facilitate evaluation of the effectiveness of the model
- inform Aspirations during a Navigated assessment

Organizational attribute questions should be

- clear and unambiguous
- useful
- easy for the utility to provide
- correct

Organizational attribute questions should enable meaningful peer group comparisons

## Compass Survey V1.2 - approach

1. Mapped the *value measures* associated with the NETL smart grid characteristics to the SGMM domains to ensure coverage
2. For each *value measure*, we identified the data needed to evaluate the measure. Alternatively, we identified existing nonspecific questions to delete.
3. External review – proof of concept
4. Working session with SGMM Partner community to finalize measures and data views
5. Incorporated measures into the V1.2 product suite

## V1.2 organizational attributes *Compass Section 3*

New organizational attribute questions include:

- Meter count for AMR-only and AMI meters
- Market conditions: regulated, deregulated, combination, or other
- Ownership structure: investor-owned, government-owned, cooperative
- Details on service territory – location and characteristics (urban vs. rural)
- Financial and smart grid investment questions
- Smart grid drivers
- Improved questions on line miles and transformer count

## V1.2 performance questions *Compass Section 4*

New performance questions include:

- Information on energy sources
- Capacity information on
  - Demand response
  - Distributed generation
  - Storage
- Energy loss data
- Environmental impact data
- Improved outage questions

## Compass Survey V1.2

Added buttons for printing, importing data, submission, and system requirements

Propagated changes from characteristics to questions and responses

Defect fixes

Fixed tab order

## Navigator report template V1.2

- Improved cover sheet
- Submission date is used for currency conversion
- Included more community and peer profile charts and resized to print nicely.
- Updated to simplify copy/paste
- Included responses to ALL questions in the report
- Improved the performance summary table(s)
- Defect fixes

## SGMM Navigation process V1.2

Main process phases and sequence were not changed.

- agenda PREP – added a schedule and fixed name
- checklist PREP1 and PREP2 – updated materials and supply lists
- added a "Wrap Up" step to scripts SURVEY and ASPIRATIONS
- script ANA
  - reorganized into four major steps (data validation and scoring, analysis, customer review and logistics.)
  - added a link to the Partner Resources Center (PRC) for data submission guidelines
  - added a step to analysis to review scoring against the model
  - updated the analysis steps to be consistent with the improvements to the ASPIRATIONS WORKSHOP presentation template
- script WRAP UP – added a step to include a legend
- forms EVAL and CR – added improved submission information

## Presentation templates V1.2

Updated the SGMM Overview sections with latest slides in the SGMM Overview.

Removed "Community Data" from the Survey workshop presentation and made "Community Data" a separate section in the Aspirations workshop presentation.

Made "Findings" slides consistent with steps in script ANA.

Made Aspirations workshop template consistent with all improvements to the Navigator report template.

## Other V1.2 improvements

SGMM Overview

Provide all materials on the PRC

Updated SGMM Navigator training

Tri-fold SGMM Navigator Program pamphlet

Tri-fold SGMM overview pamphlet

2011 SGMM update report

Universal license agreements

## SGMM V1.2 - summary

Released in September 2011

Changes:

- New and revised Compass questions about utility attributes and performance
  - Enable better segmentation and analysis
  - Inform Aspirations workshop
- End of pilot licensing period — licensing now open to all qualified applicants
- Many improvements to Navigation process, training, and templates
- Improved usability of Compass Survey and report
- Updates to all other product elements based on community feedback

## Agenda

Review V1.2 update to the SGMM product suite

### ▶ V1.3 goals, constraints, and timing

Brainstorm V1.3 Change Requests (CRs)

- General
- Navigator report template
- Navigation process and presentation template
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- Model Definition Document
- Other materials (SGMM Overview, SGMM marketing materials, SGMM outreach and community, etc.)

## SGMM V1.3

Interim release

Goals

- clarify characteristics and questions
- better distinguish Navigated and Self assessments
- instrument the Aspirations process and results

Constraints

- preserve structure and scoring
- changes to levels 4 and 5 are acceptable since there is not much data at those levels

Adding materials for pilot testing prior to V2.0 is acceptable so long as the existing scoring algorithm is preserved.

## SGMM V1.3 milestones

Date - tentative	Milestone
	Draft V1.3 MDD and Compass survey
	Review draft
	Draft updates to product suite
	Pilot test
	Final update
	Final review - baseline MDD and Compass survey
	Update product suite
	Final review
< October 2012	Release V1.3

## Agenda

Review V1.2 update to the SGMM product suite

V1.3 goals, constraints, and timing

- ▶ Brainstorm V1.3 Change Requests (CRs)
  - General
  - Navigator report template
  - Navigation process and presentation templates
  - Characteristics and questions
  - SGMM Compass Survey
  - Model Definition Document
  - Other materials (SGMM Overview, SGMM marketing materials, SGMM outreach and community, etc.)

## V1.3 general

### Topics

- Should there be more of a distinction between Navigated and Self assessments? if so, what should those distinctions be?

### CRs

- Provide more explanation about VCI in a municipal utility.
- Create a tool to collect aspirations setting data for inclusion into the data base including desired maturity profile, motivations, actions, and obstacles.
- Have a way to document process exceptions/tailoring/deviations.
- Improve the CR form to allow for multiple CRs and make on-line form consistent with paper form.

## V1.3 Navigator report template

### Topics

- Categorize list of participants? Delete this list? Replace with map?
- Peer Groups – static based on what criteria?
- Consider adding tabs so that the report can support all steps in the process e.g. Overall Observations tab, etc.

### CRs

- Cover page – put "Navigator Report" or "Participant Report" dynamically
- Add a table of contents
- Add mapping capability
- Include currency conversation date and rate on the report.
- Have ability to easily copy/paste specific questions
- Have ability to highlight percentages
- Review all colors and figure out color coding for historical data and "lucky charms"

## V1.3 Navigation process

### Topics

- 
- 

### CRs

- Presentation Templates
  - Put the slides that explain aspirations setting back
  - Add systems requirements (e.g. need Arial Narrow font, etc.)
  - Use a better example of a detailed finding
  - Aspirations setting slides – consider adding scores to table

## V1.3 characteristics and questions

We have feedback on the following characteristics

- |            |          |
|------------|----------|
| • CUST-5.2 | • GO-1.3 |
| • TECH-3.5 | • GO-1.4 |
| • SMR-3.2  | • GO-2.1 |
| • SMR-3.4  | • GO-2.3 |
| • SMR-5.3  | • GO-3.2 |
| • OS-2.2   | • GO-3.3 |
| • OS-3.2   | • GO-3.5 |
| • OS-4.1   | • GO-3.6 |
| • OS-4.2   | • GO-4.1 |
| • OS-5.1   | • GO-4.2 |
| • WAM-1.2  | • GO-4.5 |
| • WAM-3.3  |          |

## V1.3 Compass Survey

### Topics

- 
- 

### CRs

- GO-3.2: isn't B the same as a "no" answer?
- Section 2: get name of sponsoring organization, if applicable
- Get both long and short organization name for list of participants and as column header
- Question 3.8: make explicit this is residential meters only.
- In sections 3 and 4, check against totals.
- Question 3.25: Can choose 1 for more than 1 option – defect
- Question 4.14: Add ton as a unit?
- Question 4.14: Change Sox to SOx.
- GO-2.1: Delete comma
- Add a comment field for questions, domains, and overall.

## V1.3 MDD

### Topics

- 
- 

### CRs

- Page 5: add Partner Program to the product suite
- Page 61, figure 5 and page 65, figure 6: change nonspecific question to organization attributes question.

## V1.3 other SGMM products

### Topics

- 
- 

### CRs

- Improve labeling on PRC

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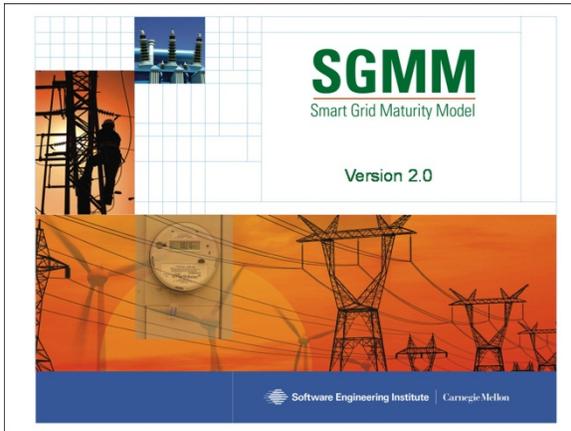
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## Version 2.0



	<b>Model</b>	Fully described in the Model Definition document
	<b>Compass Survey</b>	Questionnaire-based assessment yields maturity ratings and comparisons
	<b>Navigation Process</b>	Expert-led workshops to complete Compass and use results to develop consensus aspirations
	<b>Training</b>	Overview Seminar and SGMM Navigator Course
	<b>Partner Program</b>	License organizations and certify individuals to deliver Navigation process

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### SGMM V2.0 goals

#### Constraints

- Timing/funding
- Ability to perform enough pilots to generate initial data set
- Changes could include
  - Adding domains
  - Substantial changes in characteristics and scoring algorithm
  - Architectural changes
  - Changing the number of levels

#### Goals - brainstorming

### V2.0 ideas

- Is TECH misnamed? Should it be IT?
- Consider deleting AMR.
- Add gas and water
- Is "National Critical Infrastructure" too North American grid oriented?
- SE-1.2: isn't this more of a level 5 characteristic? In general, ensure SE characteristics are at the correct level.
- GO: There are characteristics very specific to Distribution. Alter to make applicable for transmission and distribution.
- OS-level 1: Include a characteristic to address the establishment of an environment for training workforce on smart grid technologies.
- CUST: Should cover both domestic and commercial customer connections.
- Include deployment of forecast tools for demand forecast and non-conventional energy forecast.
- Extend to power generating utilities (some characteristics don't apply and others need to be added)
- Consider collecting supporting evidence of implementation

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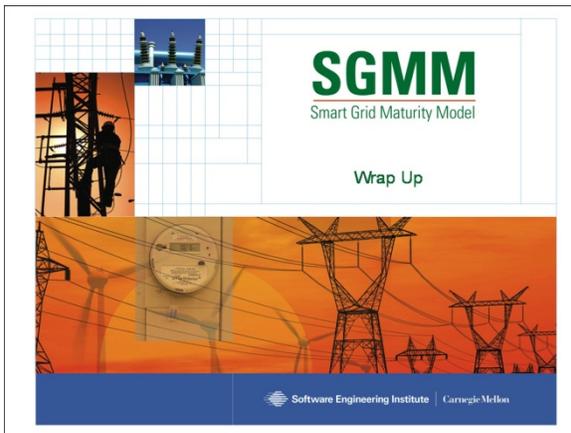
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## Wrap Up



The slide features a collage of images including a power line tower, a smart meter, and a person working on a structure. The text 'SGMM Smart Grid Maturity Model' is prominently displayed in green and black. Below it, 'Wrap Up' is written in green. The footer includes the Software Engineering Institute and Carnegie Mellon logos.

### Agenda

Review workshop purpose

Review action items, decisions, and next steps

Forecasting

Is there anything else the SEI can do to make you more successful?

Meeting Evaluation

### Workshop purpose

#### Share

- your experience with the current model
- collect your ideas and requested changes for version 1.3 of the SGMM product suite

#### Brainstorm

- features and objectives for version 2.0
- ideas for getting to v2.0 and beyond

#### Plan and discuss how we can work together to

- promote use of the model
- collaborate on innovative uses of the model
- reach underserved markets

SGMM V1.3

SGMM V2.0

promote SGMM Use

Opportunity to network with the SGMM team and other SGMM stakeholders

### Action items, decision, and next steps

### Forecasting

Planned Navigations (individual and group)

Conferences (presentations, attendance, etc.)

Publications (articles, technical reports, etc.)

Certification

### How can SEI help?

Is there anything else the SEI can do to make you more successful?

## Meeting Evaluation

What went well?

What would you change?

Thank You

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## Appendix B: Acronyms

American Public Power Association	APPA
Automated Meter Reading	AMR
business point of contact	BPOC
Capability Maturity Model Integration	CMMI
Customer	CUST
Department of Energy	DOE
Electric Power Research Institute	EPRI
electricity cooperative	EC
enhanced Telecom Operations Map	eTOM
Grid Operations	GO
Information Technology	IT
investor-owned utility	IOU
National Association of Regulatory Utility Commissioners	NARUC
National Energy Technology Laboratory	NETL
National Rural Electric Cooperative Association	NRECA
Operations Technology	OT
Organization and Structure	OS
public service commission	PSC
public utility commission	PUC
Sacramento Municipal Utility District	SMUD
Smart Grid Maturity Model	SGMM
Snohomish County Public Utility District	SNOPUD
Societal and Environmental	SE
Software Engineering Institute	SEI
Strategy, Management, and Regulatory	SMR

supervisory control and data acquisition	SCADA
Technology	TECH
Value Chain Integration	VCI
Work and Asset Management	WAM

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