Scaling Industrial SEM with Technology and Data—the past, present, and future

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Integrated workflow to scale-up Strategic Energy Management.
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**SEM**

**Definition**

"Strategic Energy Management can be defined simply as taking a holistic approach to managing energy use in order to continuously improve energy performance, by achieving persistent energy and cost savings over the long term."
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Lasting & purposeful plans for system-wide efficiencies.
An SEM Program Administrator develops a program...
recruits a site to join the program...
identifies an energy team...
hires or manages a team of SEM Implementers to work with the site's energy team...
1. ENERGY MODEL

SEM Program Administrator
SEM Implementers
Participating Site
Energy Team

2. OPPORTUNITY REGISTER
SHAMSI
SEM Program Administrator
- Manages people
- Manages energy teams
- Monitors performance

Source: "Zoo Portraits" by Yago Patal
BARNEY
SEM Program Implementer
- Gathers data
- Populates models
- Engages participants
- Writes reports

Source: "Zoo Portraits" by Yago Patal
"If everything is going well, it's really easy."

— SEM Program Administrator
Things are going well when...

Energy Team is identifying opportunities at the site.

SEM Implementers are receiving data.

SEM Implementers delivering reports on time.
1 Site
The early days of delivery

SEM Program Administrator
SEM Implementers
Participating Site
Energy Team
3-Site Cohort
Interval data coming in
8-Site Cohort
Comparing actual energy to model
13-Site Cohort
Crying in the bathroom
What can EMIS do to integrate the workflow of Strategic Energy Management?
Goal:

Strategy: Reduce Administrative Load

Tactic: Deliver Knowledge Flexibly
Goal:

Deliver Knowledge Flexibly

Strategy:
Reduce Administrative Load

Tactic:
Deliver Knowledge Flexibly
The Past
The Present
The Future
• **Granular data**: Time- and space-granular enough to attribute changes to improved energy performance.

• **Performance Normalization**: See baseline models and compare them to current energy performance.

• **Goals & Actions**: Track and overlay participant actions on performance.

**EMIS for SEM**

Three features supporting strategic energy management
What's your favorite part of your job?
"Connecting a customer with a program that really fits."

— SEM Program Administrator
"Helping strained customers. Sawmills. They close all the time. If I can help them stay open and keep their jobs, it's really rewarding."

— SEM Implementer
"Seeing customers engaged, identifying new opportunities for savings."

— SEM Implementer
"The people."

— SEM Implementer
"I love logging into my EMIS every morning."

— Nobody at all said that
What's the most challenging part of your job?
"When customers are not engaged."

— SEM Program Administrator
"When customers go dark."

— SEM Program Administrator
"When customers crash and burn."

— SEM Implementer
Make meaningful connections that contribute to organizational change
Use EMIS to streamline administrative tasks and support smoother engagements.
So that:

Make meaningful connections that contribute to organizational change
SEM:
Manage people
Manage energy teams
Gather data
Populate models
Engage participants
Write reports
Monitor performance

Source: "Zoo Portraits" by Yago Patal
The Past
The Present
The Future
EMIS for SEM

Five features to support scaling strategic energy management

- Granular Data
- Performance Normalization
- Project Management
- Analytics
- Alarms
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- Granular Data
- Performance Normalization
- Project Management
- Analytics
- Alarms

Reduce Administrative Load

Deliver Knowledge Flexibly
1.1 Are my people overloaded?

I want to search and list all of my engagements sorted by deadline, Energy Savings, and SEM Coach.
Which ten sites should I visit?

I want to see a summary of all participating sites, their savings, and their recent action items.

Manage people
Manage energy teams
Gather data
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Write reports
Monitor performance
Is this EMIS worth the money?

I want to know the last time the participants in my cohorts have logged into the EMIS and how much content they have contributed.
3.1

How can I collect the data?

I want to offer many channels for data uploads so that my participants can choose that which is least cumbersome.
Is all the data coming in?

I want to know the statuses of the 100+ data sources of all of the participants in all my cohorts.
3.3

How can I clean the data?

I want zero, spike and outlier data to be addressed and tracked in an automatic or semi-automatic fashion.
How can I populate the model?

I want to populate the model in the EMIS in a convenient format that is not cumbersome or time-consuming.

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Engage participants
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Monitor performance
5.1

Are they relevantly engaged?

I want for participants the ability to look at auto-generated graphs of the KPIs they care about in the units that make the most sense to them.

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Monitor performance
Can they see their priorities?

I want for participants the ability to see the top three opportunities that I want them to be making progress on.

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Engage participants
Write reports
Monitor performance
Are they being notified?

I want for participants to receive convenient notifications when performance is oddly low or high.

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Write reports
Monitor performance

Alarms
Can I get a template?

I want to extract a well-populated template for the many reports I need to write for my multiple participants and programs.

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Manage energy teams
Gather data
Populate models
Engage participants
Write reports
Monitor performance
Where is the model?

My evaluators and I want to know the model that corresponds to the particular expected energy graph.

Manage people
Manage energy teams
Gather data
Populate models
Engage participants
Write reports

Monitor performance
| Granular Data | • Simple multi-channel data collection, data cleaning and quality control. |
| Performance Normalization | • Easy-to-use model upload and download. |
| Project Management | • Sortable engagements for people management. |
| | • Prioritized, summarized, and attributable action items. |
| | • Rich report template creation. |
| Analytics | • Filterable, at-a-glance summaries of participating sites. |
| | • Default dashboards in easy-to-customize KPIs. |
| Alarms | • Convenient notifications for unexpected performance. |
Integrated workflow to scale-up Strategic Energy Management.
Thanks!

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