

**Why Making the Road by Walking It Doesn't Work in Business
(or how & why the clean tech revolution
is further out than we can afford it to be).**

Michel Gelobter
BuildingEnergy.com
Cooler, inc.

The Theory of Change



Market Failures and Behavioral Issues

Market failures	Behavioral Issues
Externalities: Usage; R&D	Low salience of energy issues ???
Principal/Agent Problems	Principal/Agent Problems
Poor Information about Prices and Energy Use	Poor Information about Prices and Energy Use
Incomplete markets for energy efficiency	Managerial Priorities
Systems Issues (E.g. Chicken & Egg)	Lack of Energy-Related Information Systems
Distortionary regulatory and fiscal policies	Cognitive Skills

Market Failures and Behavioral Issues

Market failures	Behavioral Issues
Externalities: Usage; R&D	Low salience of energy issues ???
Principal/Agent Problems	Principal/Agent Problems
Poor Information about Prices and Energy Use	Poor Information about Prices and Energy Use
Incomplete markets for energy efficiency	Managerial Priorities
Systems Issues (E.g. Chicken & Egg)	Lack of Energy-Related Information Systems
Distortional regulatory and fiscal policies	Cognitive Skills

Cool Technology



Explosion of Data

DEFINE PEER GROUP

BUILDING CLASSIFICATION

Classification Type **1 2** >

Facility Type All >

BUILDING INFO

Floor Area **92,506 - 554,743** >

Year Built 1800 - 2013 >

Hours Occupied 0 - 168 >

Number of People 0 - 1,000 >

LOCATION

Climate Zone All >

State All >

Zip Code All >

BUILDING SYSTEMS

Lighting All >

Heating All >

Cooling All >

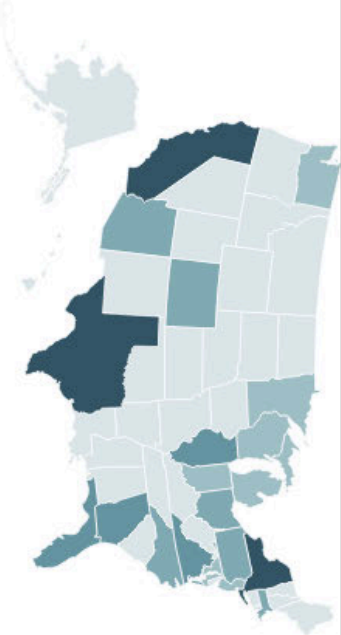
Window Glass Type All >

Window Glass Layers All >

Air Flow Control All >

Wall Insulation R-Value 0 - 80 >

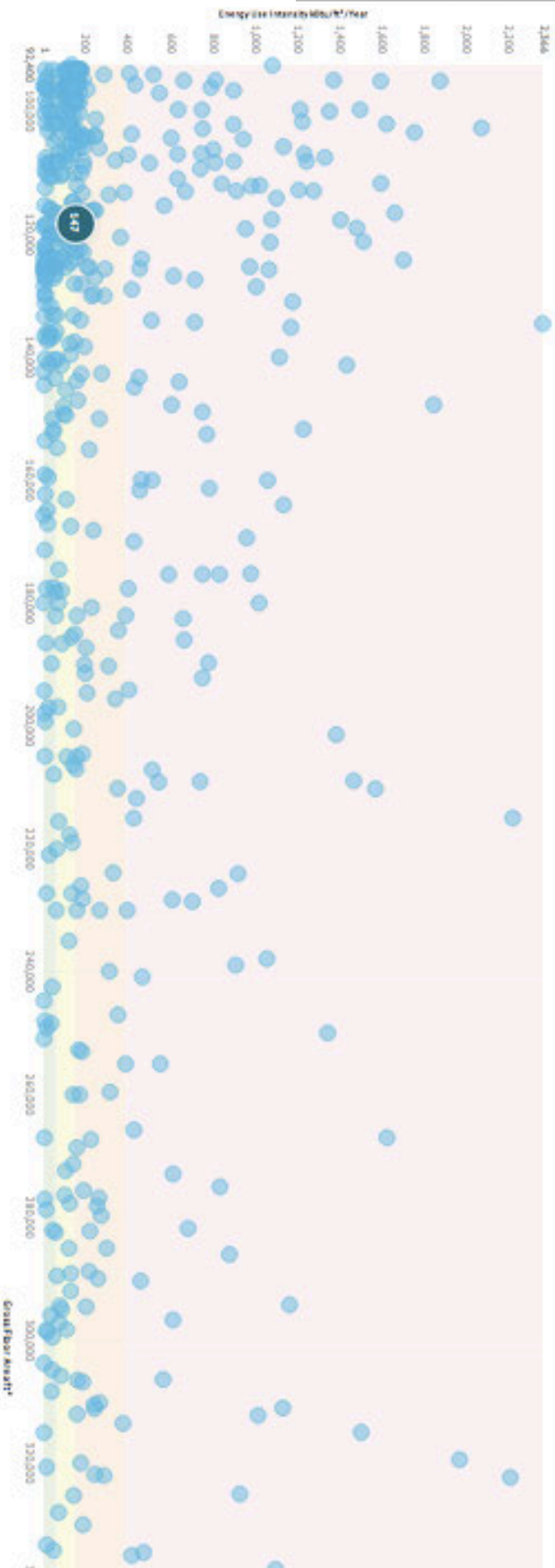
Roof/Ceiling All >



8, 1, 4, 2 / 63,196 Buildings

Peer Group

Bar Scatterplot DISPLAY: Energy Use Intensity by Source Consumption and Gross Floor Area



Retrofit Analysis

Building system compare Select one... versus Select one...

Business Process Revolution



Finance

- Integration of data sources
- Real-Time Balance Sheets
- Visibility

Sales

- Managed Process
- Accountability
- Community

Products

- Real-Time Inventory
- Just-in Time Delivery
- Manufacturing Process Management

Supply Chain

- Reduction in dedicated real-estate and costs
- Global Tracking and Visibility
- Radically reduced stocks and inventories

Human Resources

- Human Capital Management
- Global resource pool
- Investment in people

New Business Process for Energy

Cuts Across Existing Processes

Energy and



Sustainability

- Mitigating Risk in a Global Transition
- Managing Energy and Sustainability from your Suppliers to your Customers

Finance

- Integration of data sources
- Real-Time Balance Sheets
- Visibility

- Visibility to how energy used in business
- Optimized CapEx and OpEx
- Measurable and Validated ROI

Sales

- Managed Process
- Accountability
- Community

- Marketing Advantage
- Sales Advantage
- True Cost of Sale

Products

- Real-Time Inventory
- Just-in Time Delivery
- Manufacturing Process Manag

- Product Lifecycle View
- Optimized Manufacturing Processes
- Reduced manufacturing cost

Supply Chain

- Reduction in dedicated real-est
- Global Tracking and Visibility
- Radically reduced stocks and in

- Responsible Supplier Management
- Reduced supply cost

Human Resources

- Human Capital Management
- Global resource pool
- Investment in people

- Reduced energy / employee
- Energy conscious employee value

Energy Business Ranges from Supply Chain

Business Process

Vendors: shared leverage w/customers



Process Inputs

- Supplier leverage
- Stable raw inputs supply
- Leverage on utility pricing
- Control of Generation: Pricing
- Reliability

Business Core

- 10-50% higher margins
- Reduced volatility
- Premium pricing based on firm sustainability & energy attributes to customers

Customer Facing

- Rating & Reporting Leadership
- Powerful Sustainability Brand
- Customer Loyalty & New Engagement Channels.



What to Choose?

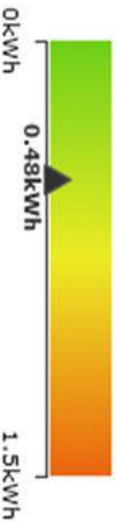
End Use Consumption

Daily Load Profile

Annual End Use per SqFt



Cooling



Lighting



Plug Load



Electric Heating



Ventilation



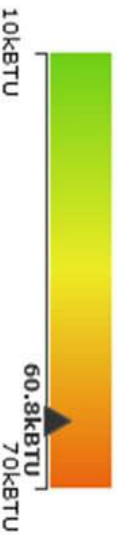
Pumps



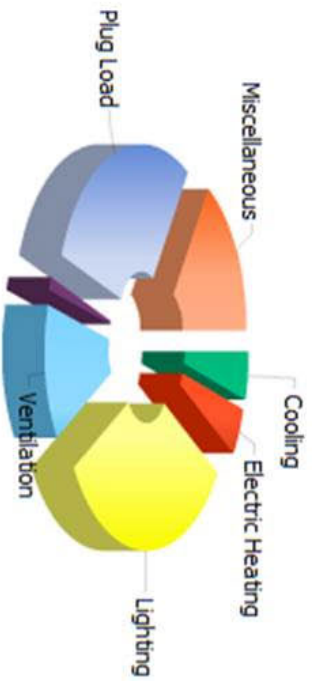
Miscellaneous - Electric



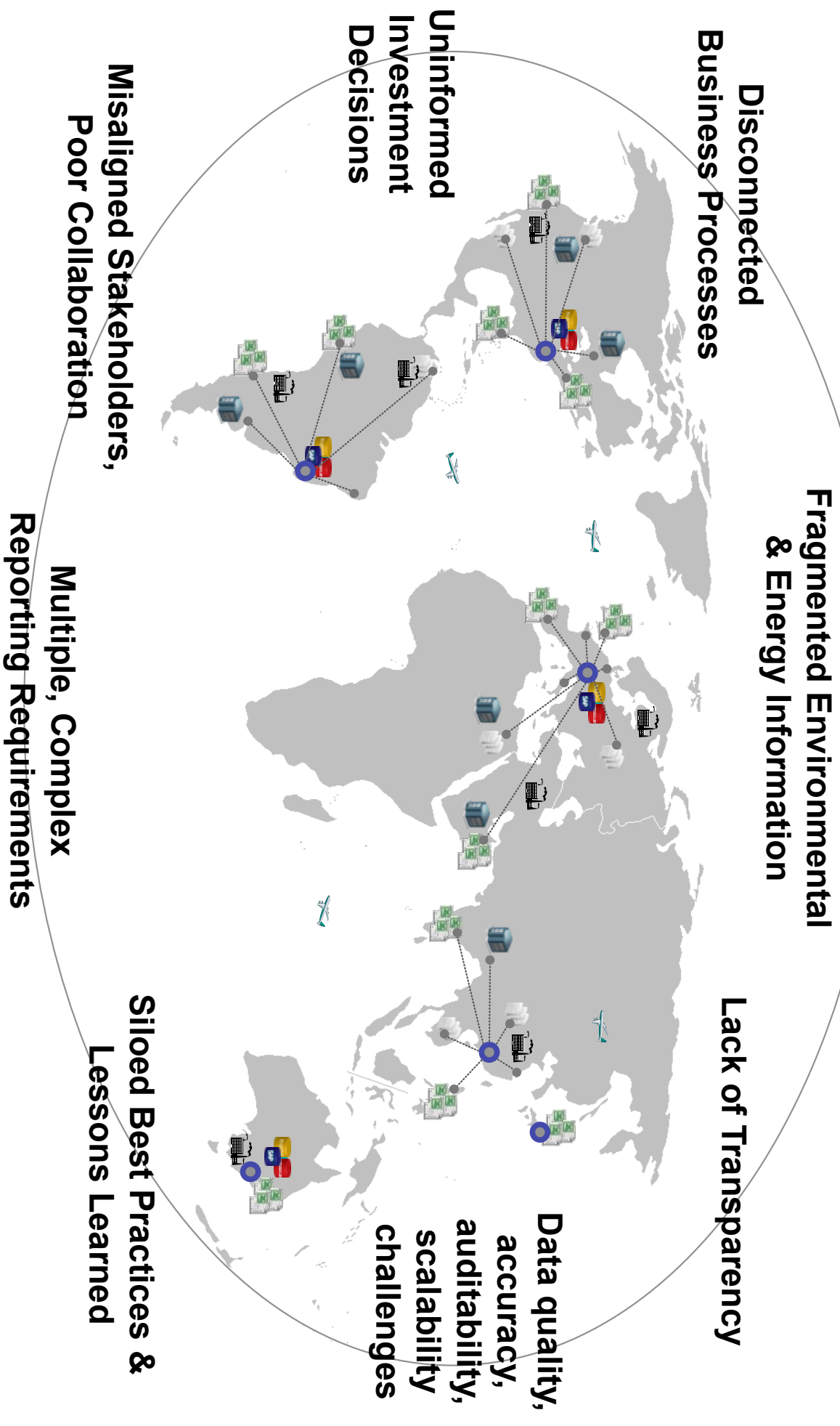
Gas - Heating



Gas - Other



Behavioral Challenges





Before

- Energy costs uncontrolled
- No or low-granularity financial models of energy dependencies (on costs of inputs, transportation costs, impact on customer behaviors (store trips, product preferences, etc...))
- No visibility on supply, conservation, renewables, and dsm rebates & revenue options



Chief Financial Officer

After

- Full visibility on Energy expenditures
- Modeled dependencies
- Full suite of options on supply and utility negotiations



Before

- Disparate Control & Accountability Processes
- No or low-connection to organizational priorities
- Hard to demonstrate ROI/ performance
- ESCO=black box

Facilities Manager



After

- “Unified Command”
- Integration of energy w/core business goals
- Ability to clarify and incent KPIs
- Equal footing with energy service providers in negotiating terms



Before

- One-off sustainability marketing efforts
- No or low-connection of energy/sustainability performance to core marketing KPIs
- Diverse standards and marketing targets



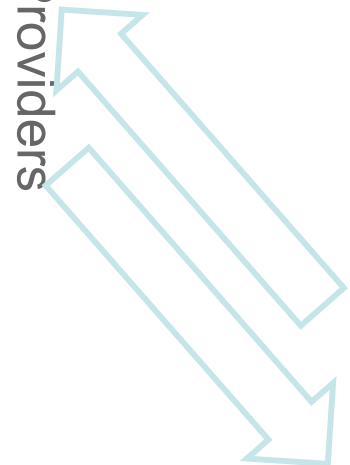
After

- Programmatic sustainability marketing (driven by scheduled milestones)
- Clarity about company-specific market & brand differentiators
- Ability to tailor messages to all relevant constituencies over time.

Chief Marketing Officer

Change the World...

Content Providers



Data Centers



End User Devices



Efficient Devices + New Service Models = A Radically Smaller Footprint

High Leverage Points

- Policy!
- Koomey's Law
- Disruptions like Transportation

The screenshot displays the Getaround mobile application interface. At the top, there is a navigation bar with the Getaround logo and buttons for 'JOIN', 'TOUR', 'SIGN IN', and 'LIST YOUR CAR'. Below the navigation bar, a large banner features the text 'Rent a car from someone nearby. Convenient hourly rentals. Full insurance included.' and a 'Join for free' button. A social media widget for Facebook shows a post from 'Michel Gelobter, Alan Wells and 18 other friends use Getaround.' Below the banner, four car rental cards are displayed, each with a profile picture, car name, model, location, and hourly rate:

Profile	Car Name	Model	Location	Rate
midnightmarina	Porsche Cayenne	San Francisco, CA	\$9.50 / hour	
SneakyParker	smart fortwo	San Francisco, CA	\$5.50 / hour	
zeus	MINI Cooper	San Francisco, CA	\$8.50 / hour	
apex	BMW 3	San Francisco, CA	\$9.50 / hour	

The Argument?

- Energy & Sustainability is the new business imperative
- Energy at the Heart of the Sustainability problem
- Software and globalization has driven radical change into every business process

