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# Top Down, Bottom Up? Strategies to Motivate Individuals, Teams, and Organizations to Save Energy

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# Background

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- California Manufacturing Technology Consulting (CMTC) is part of the Manufacturing Extension Partnership partially funded by the U.S. Commerce Dept.
- Designed Value and Energy Stream Mapping Program 2004-2010 to deliver energy savings through process improvement (50 projects and 100 Kaizen events)
- Currently delivering Continuous Energy Improvement (CEI) program for So Cal Edison and So Cal Gas Co.
- CEI is similar to DOE's Superior Energy Performance program, a pathway to the new ISO 50001 standard
- CMTC is certified in Strategic Management, Change Management, Lean Manufacturing, Six Sigma, Theory of Constraints among others.

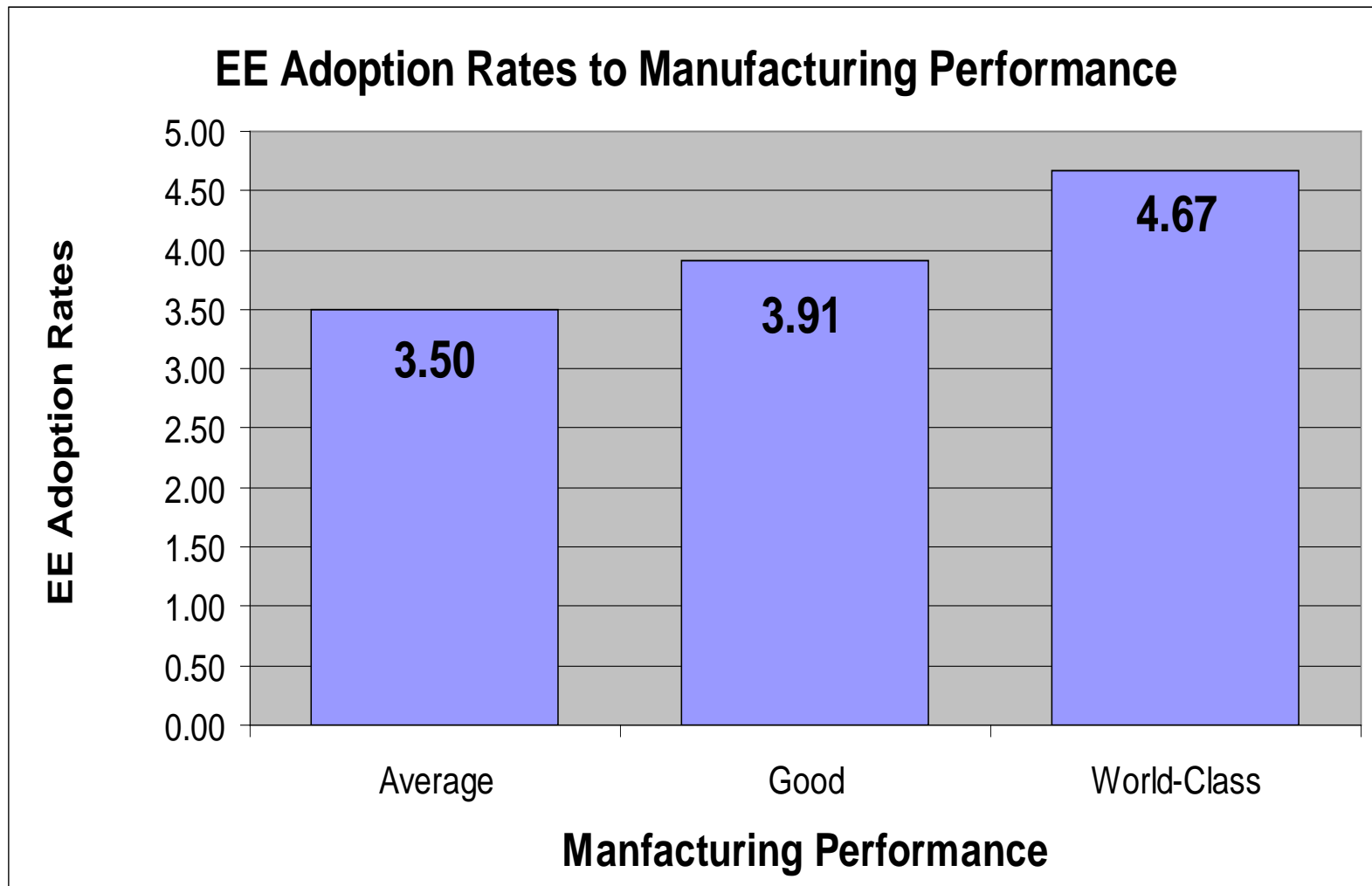


# Organizational Perspectives Cloud Opportunities to Optimize Energy Use

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- Organizations deal with many principal-agent issues
- Span-of-Control varies within departments, projects, management, and individuals
- Lack of information limits decision-making
- Individuals “satisfice” rather than optimize and are constrained in “Bounded rationality”
- Individuals balance organizational efficiency vs. allocative efficiency
- Performance metrics are difficult to translate into something meaningful and therefore employees are not always “mindful” about them

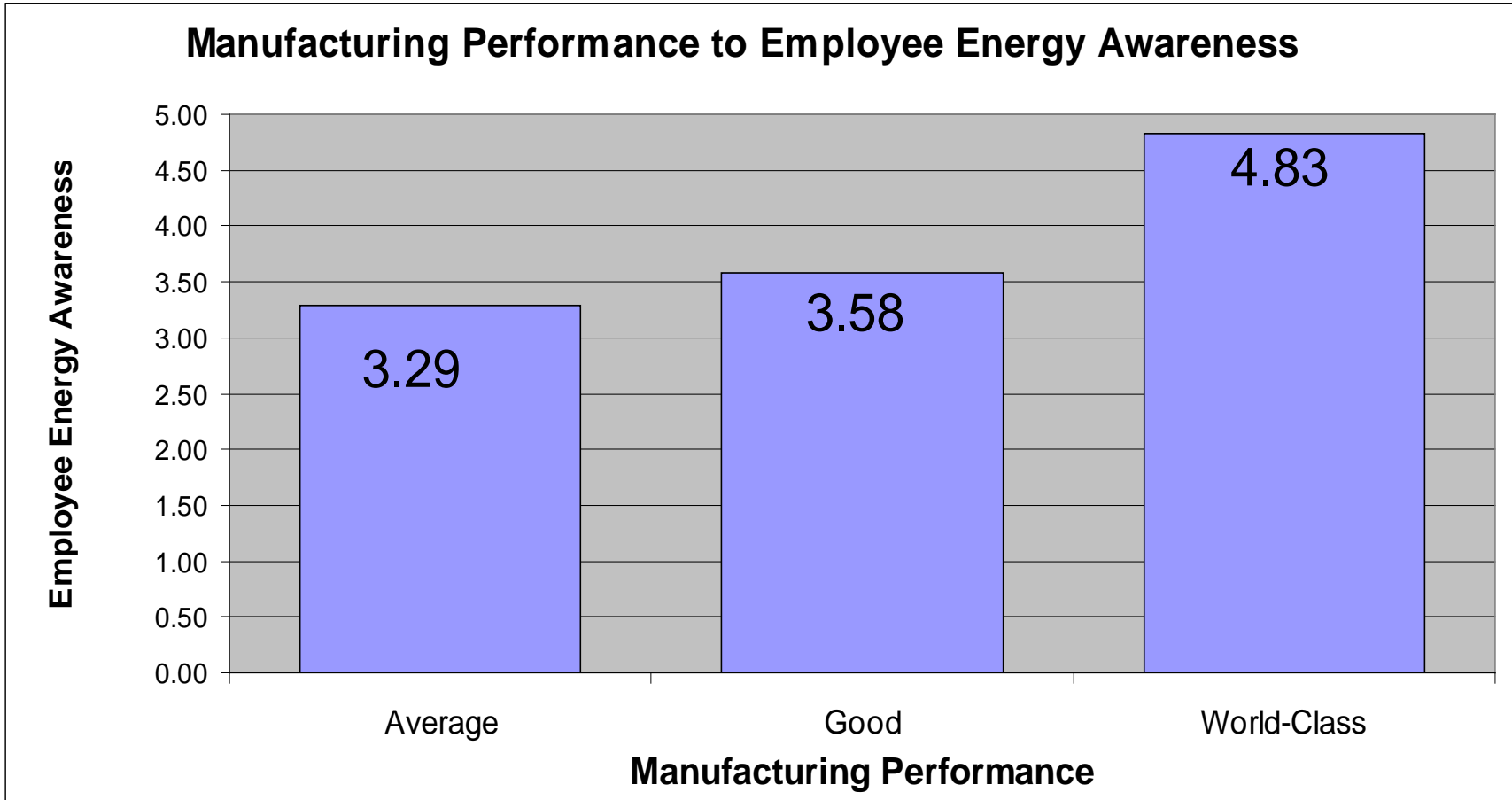
We learned there is a strong relationship between business performance and EE adoption rates



2007 Full Mix Marketing Energy Survey, Sample Size N=285



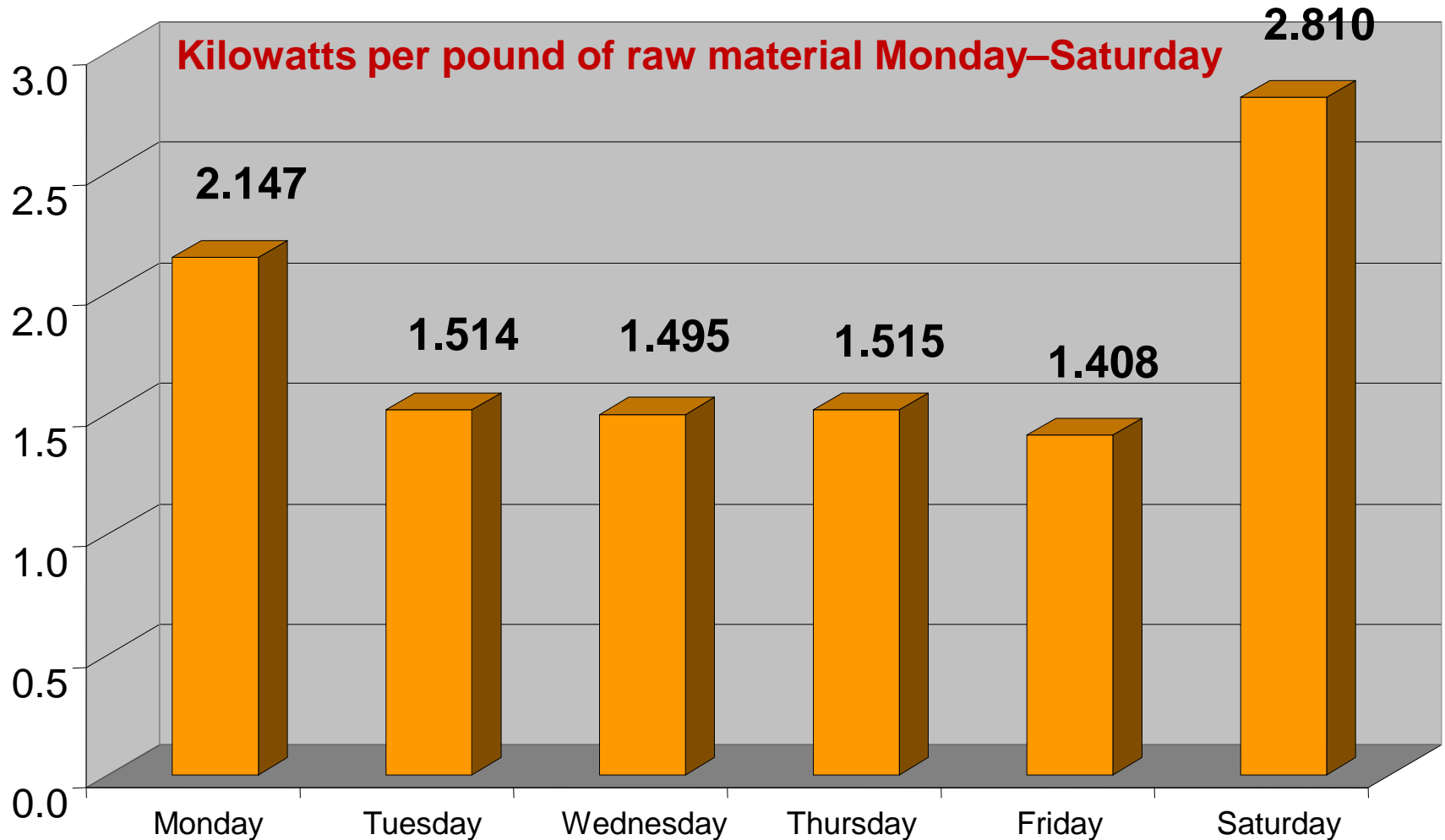
# Energy awareness is prevalent in world-class organizations



**2007 Full Mix Marketing Energy Survey, Sample Size N=285**

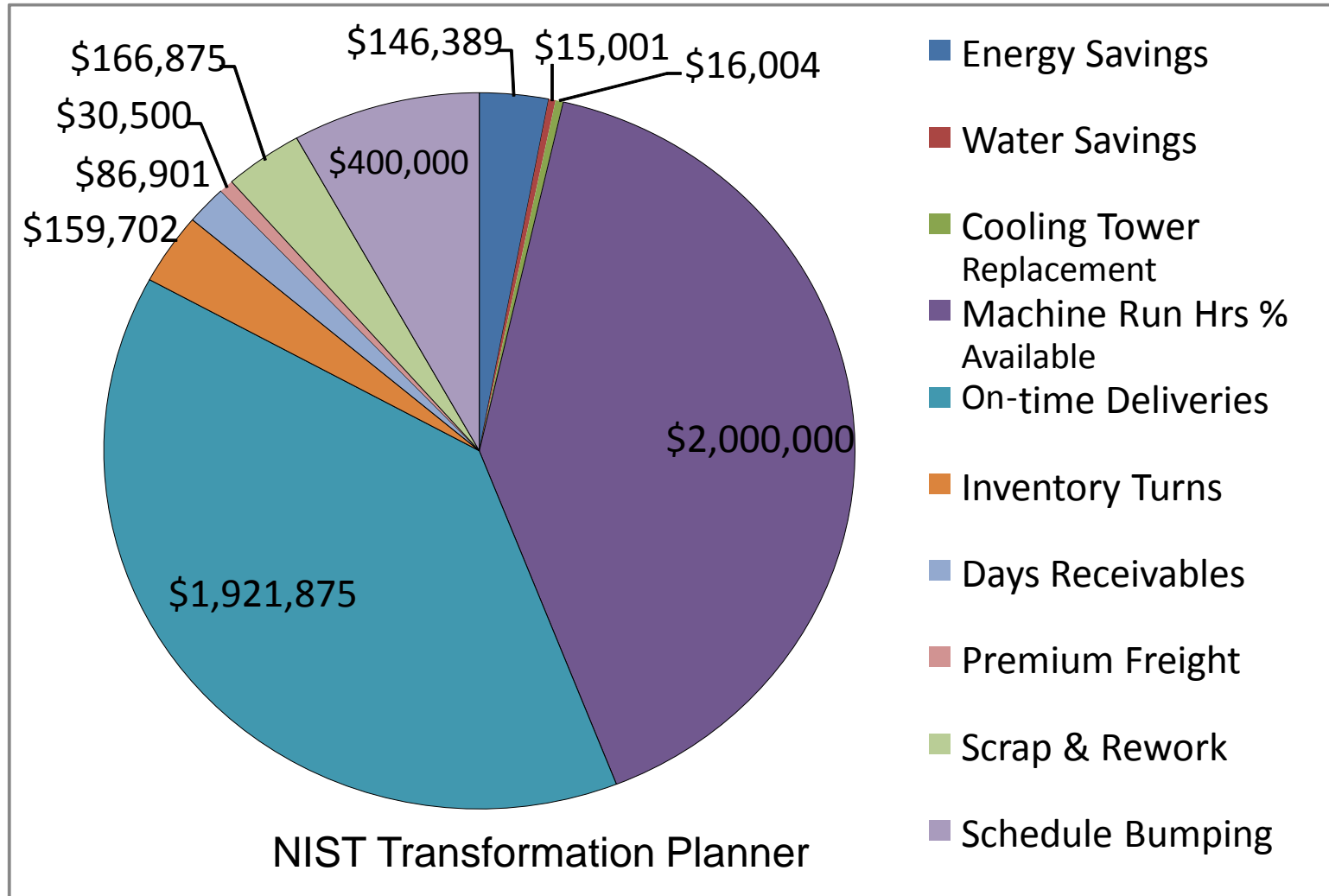


# Case Studies show that Operational Root Cause for Energy Waste was Behavior





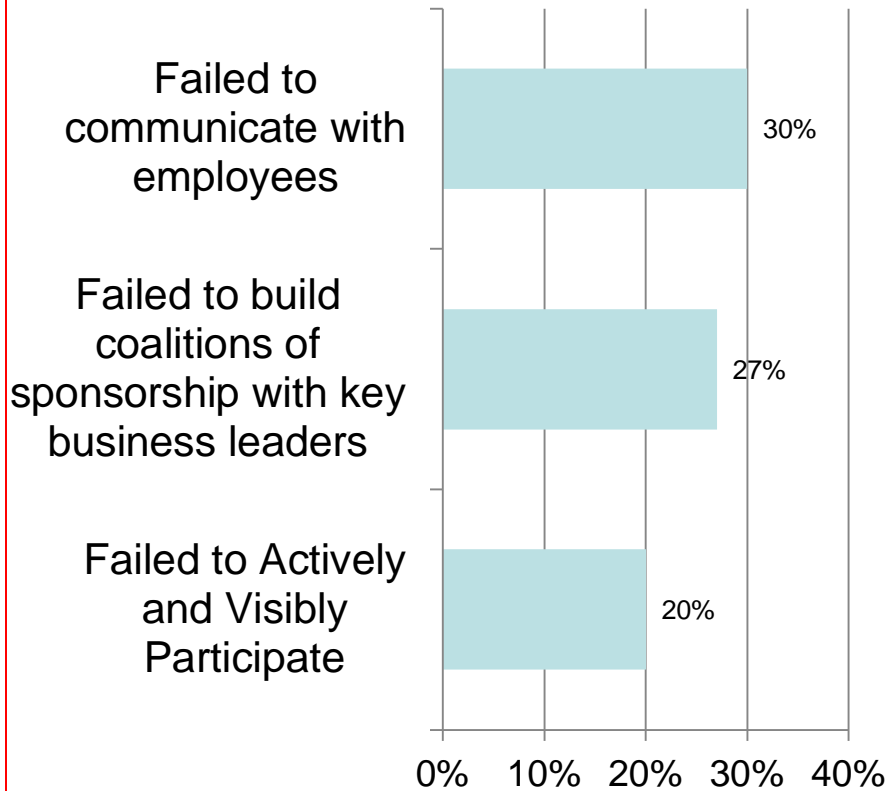
# Identifying Non-Energy Benefits are Critical to Motivate Higher EE Adoption Rates



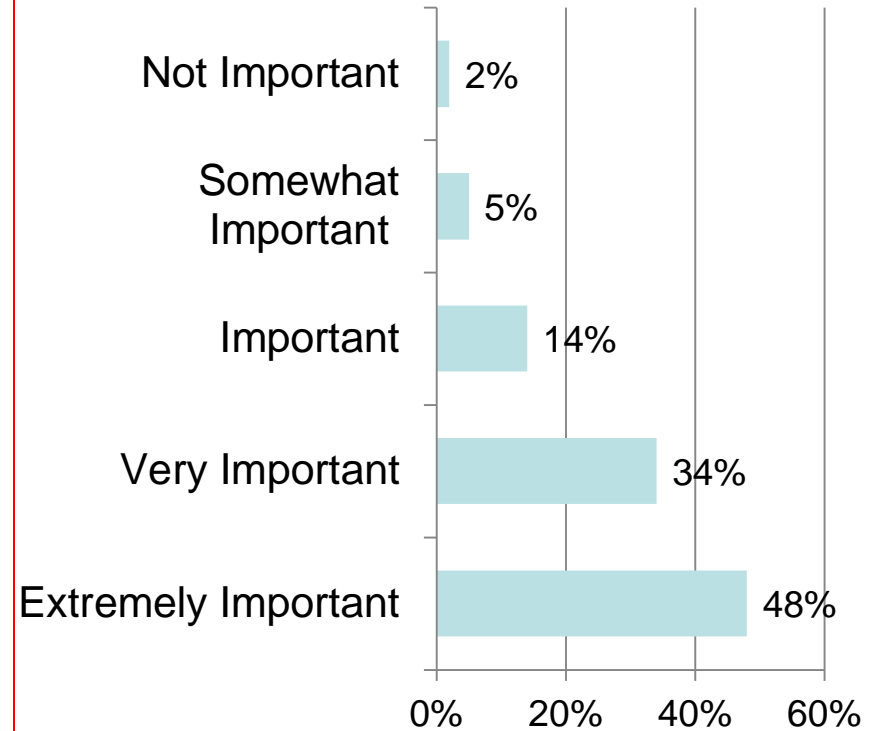


# Manager/Supervisor Participation will Drive Team Performance to Save Energy

## Ineffective Manager/Sponsor Role



## Importance of Manager and Supervisor Involvement



Adapted from Prosci 2009 Benchmarking Report





# Developing High Performing Teams Requires Training and Practice

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- Team environment: social loafing phenomena
- Individuals often adapt their modus operandi in group settings creating group dynamic unpredictability
- “Fairness” is a strong motivator in team dynamics
- Team members often state they did not have the training or skills to undertake the work
- Early projects are selected for potential impact without considering risks of failure
- Organizations need training and practice in running high performance teams, especially energy.



# Understanding Human Behavior will Improve Management of Individuals and Teams

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- Theory of Moral Sentiments: People tend to adopt attitudes towards themselves as others do to them
- “What matters” varies widely with each individual
- Social Comparison Theory – what happens is more important than what could have happened
- Uncertainty frames personal choices
- Experiments prove immediate gratification can dominate long term rationality invalidating energy economic models
- Humans balance options, e.g. economic vs. ethical trade-offs complicating rationale decision making



# Motivating Individuals is Success Based “What’s In It For Me”

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- Motivation is defined as ...”the process whereby goal-directed activity is instigated and sustained”
- Active choice, persistence, and effort gives rise to models such as the (choice, and necessary effort model)
- Prior research indicate three primary factors influence motivation: goal value, emotions, personal agency – the relationships are multiplicative
- Individual incentives increased performance 19% but team incentives were 48%.
- Motivation rests in our beliefs about what makes us successful

# Proposed Ecosystem Energy Model

**Sr. Management:** Push Leadership, Vision, Power, Approve Skill Develop. Examples: John Kotter's "Cry wolf but not often"; Raytheon's Burning Platform

Why is this important?

**Middle Management:** Push-Pull Model, Pull from above and push to lower levels

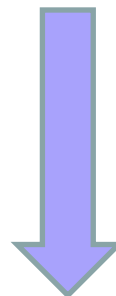
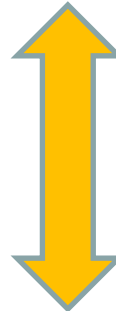
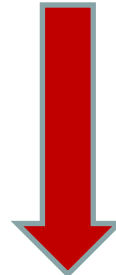
Why should I believe you?

**Line Personnel:** Pull Model, Structured teams, Energy Kaizens, Energy Awareness Events, A3 Sensei/Trainee Roles

Why should I care?

Teams/Internal Collaboration

What's in it for me?





# Middle Management and a New Business Language are Keys to Success

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- Middle management is the optimum place to push and pull change management initiatives
- It is also the weakest link in the transformation process but has the greatest upside
- We need a new language for the business sector “energy waste” or using more energy than is required to perform desired work
- We need to quantify what inefficient use of resources means to financial performance, which includes energy
- Waste is definable and presents a common term that can be a rallying concept for employees.



# Q&A

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- Thank You!
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