ORGANIZATIONS

What do we communicate through?

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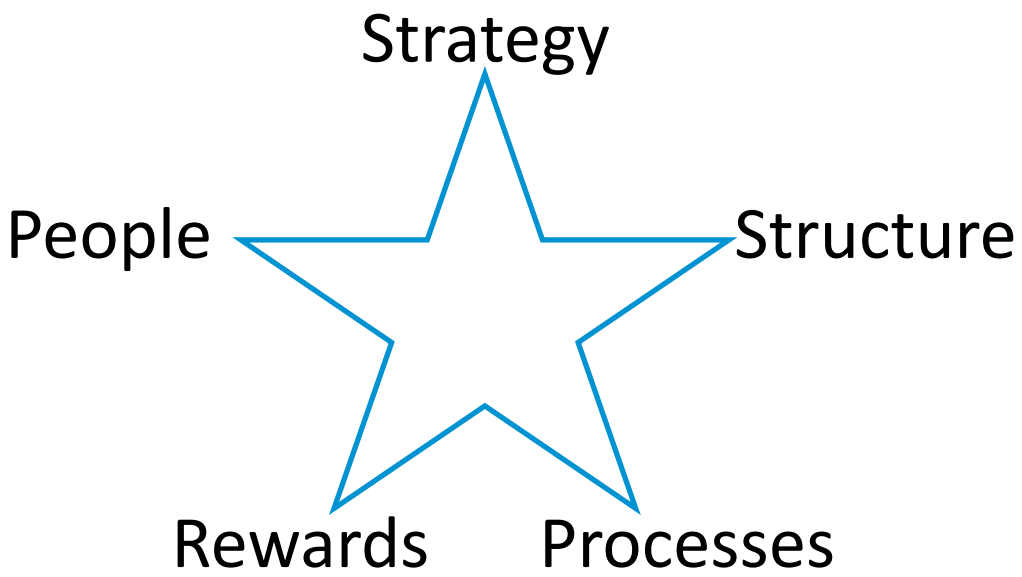
What's an Organization?

- An organization is an entity comprising multiple people, such as an institution or an association, that has a collective goal and is linked to an external environment. (*Wikipedia*)

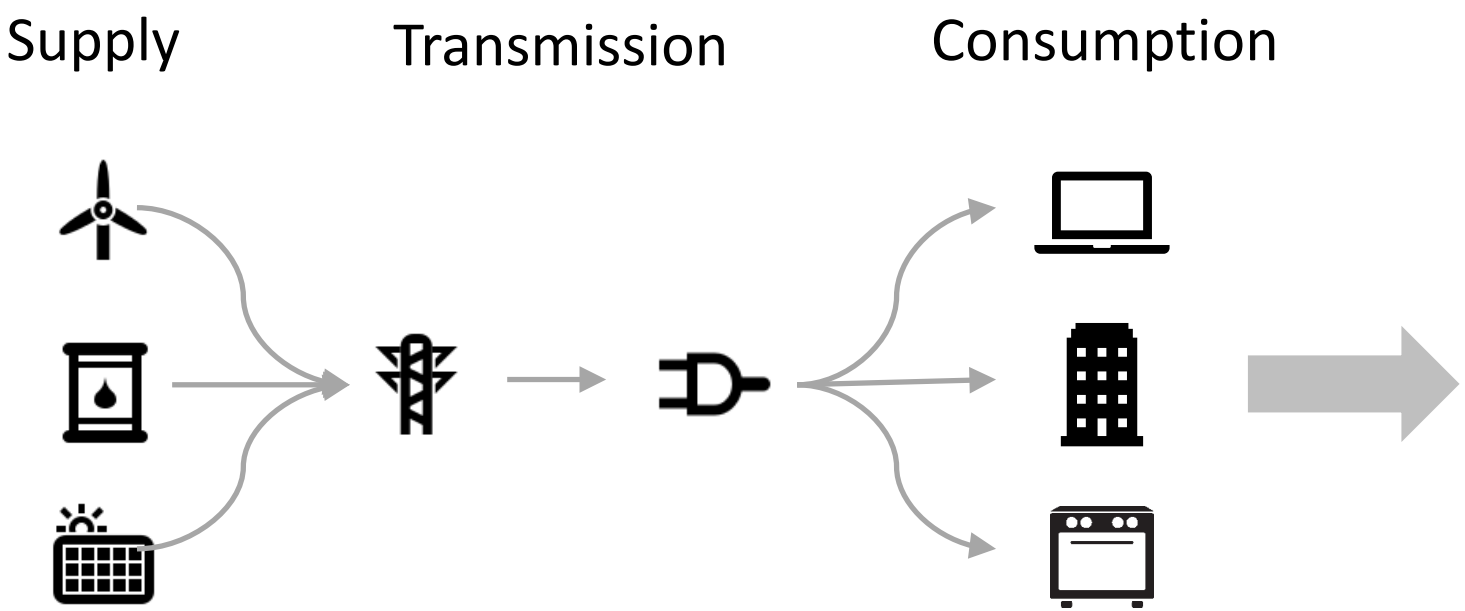
What's Organizational Structure?

- Defines how activities such as task allocation, coordination and supervision are directed toward the achievement of organizational aims. Organizations need to be efficient, flexible, innovative and caring in order to achieve a sustainable competitive advantage

Galbraith’s 5-Star Model™ for Organizational Design



Traditionally, we managed the flow of ***Energy***

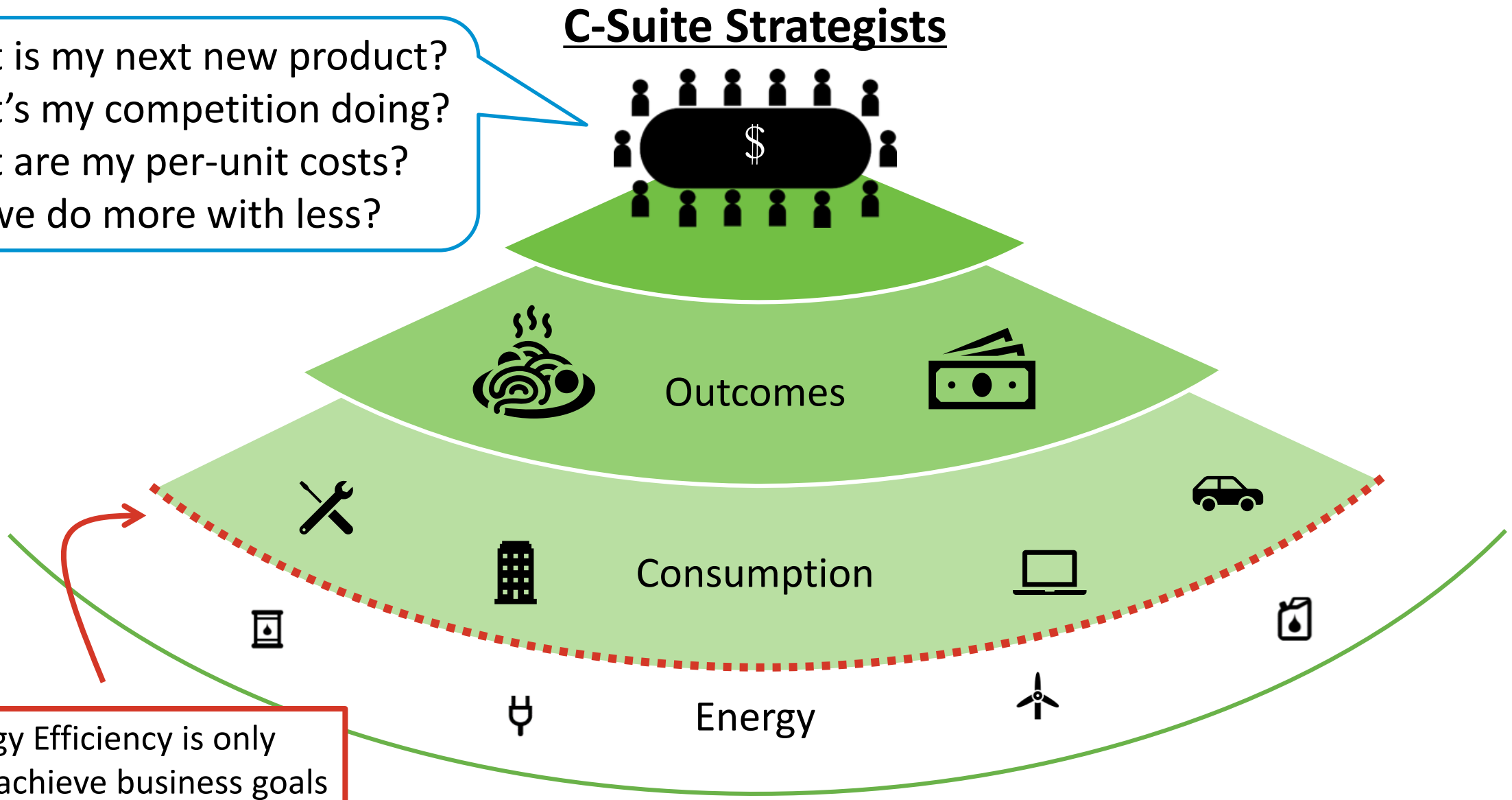


Energy efficiency as a tactic

- Saves money (lower bills)
- Equipment resiliency (New equipment)
- Off balance sheet (performance contracting)

Instead, we need to manage the flow of energy ***Decisions***

- What is my next new product?
- What's my competition doing?
- What are my per-unit costs?
- Can we do more with less?



NOTE: Energy Efficiency is only ***one tool*** to achieve business goals

Strategically, energy enables competitive advantage

USA Commercial Electricity Consumption ~$150 Billion

Wasted Utilities: 30% of electric consumption

The ***Energy Efficiency*** industry is positioned to address this problem.

How can I save money?

Productive Utilities: consumed for economic benefit.

Energy Strategy is designed to consume this wisely.

Why *do companies consume energy?*

What if *outcomes can be achieved with zero energy?*

How *can companies right-size their resources?*

Source: EPA

1st Star Strategy:

A VISION → ***Why*** do you consume energy?

A GOAL → ***What if*** you could serve clients without consuming energy?

Tiny Trees PRESCHOOL

PHIUS Passive House Institute US

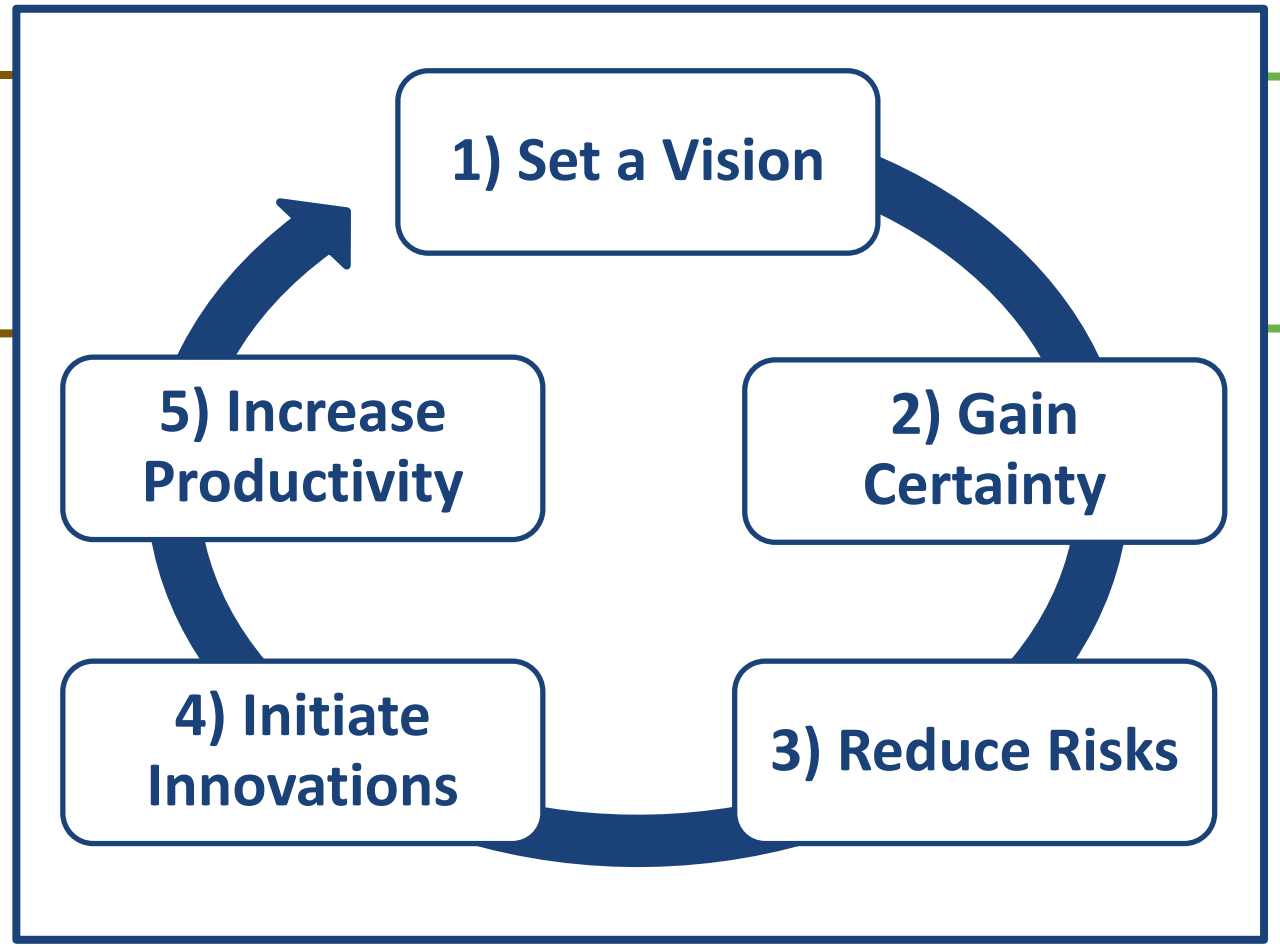
A PLAN → ***How*** can you strive to achieve that?

Energy Strategy Maturity Cycle™

Random Acts Of Greenness

- Recycling Program
- Window Retrofit
- HVAC Upgrade
- Lighting Sensors
- Carbon Footprint

- Etc.



Metrics-Driven Energy Strategy

- How “Carbon Neutral” products can emerge from your innovations.

- How carbon can be de-coupled from revenue and profits

Setting the Vision (Step 1)

	Corporate Vision	Utility Resource Vision
Food & Beverage	Make tastier and healthier choices that help consumers care for themselves and their families	*Every resource not consumed in our products can be invested back into our communities*
Student Housing	Our vision is to have resources in place to accomplish excellence in education	*Be resource efficient and cost effective without compromising student comfort while helping these young adults grow as responsible consumers*

Gain Certainty (Step 2)

Map out needs, costs, opportunities, and risks

ENERGY	WASTE	WATER
ADMIN	AUDITS	OTHERS …

Reduce Risks (Step 3)

1) Group your possible actions
2) Organize based on priorities

ADMIN

⑤ Vacation set-points
- Auto billpay
- Employee Engagement

ENERGY

- Appliances
- Gas Boiler

① Lighting
- Heating / Cooling
- Thermostat set points

AUDITS

② Plug loads

④ Maintenance schedules
- Set points
- Window
- Recurring work orders

WASTE

⑥ Reduce cardboard sourcing
- Compost
- Recycling

WATER

③ Hot Water
- Laundry
- Monitor Usage

Initiate Innovation (Step 4)

1) Deconstruct your problems
2) Reconstruct to find innovations

ADMIN

⑤ Vacation set-points
- Auto billpay

ENERGY

- Appliances
- Gas Boiler
① Lighting
- Heating / Cooling
- Thermostat set points

INNOVATION:
Information Management System as an energy solution

A

② Plug loa
④ Maintenance schedules
- Set points
- Window
- Recurring work orders

⑥ Reduce cardboard sourcing
- Compost
- Recycling

WATER

③ Hot Water
- Laundry
- Monitor Usage

Increase Productivity (Step 5)

1) Create organizational structures
2) Create systems for processes

New skills in green architecture

“Carbon neutral” product offerings

Resiliency and emergency preparedness

2nd **Star** People: *Who is on your team?*

Theater

Executive	Operations	Finance	Production	Building Owner	Lighting Designer

City

Head of Public Works	Dir. Finance	Financial Analyst	Operations Manager

Grocery Store

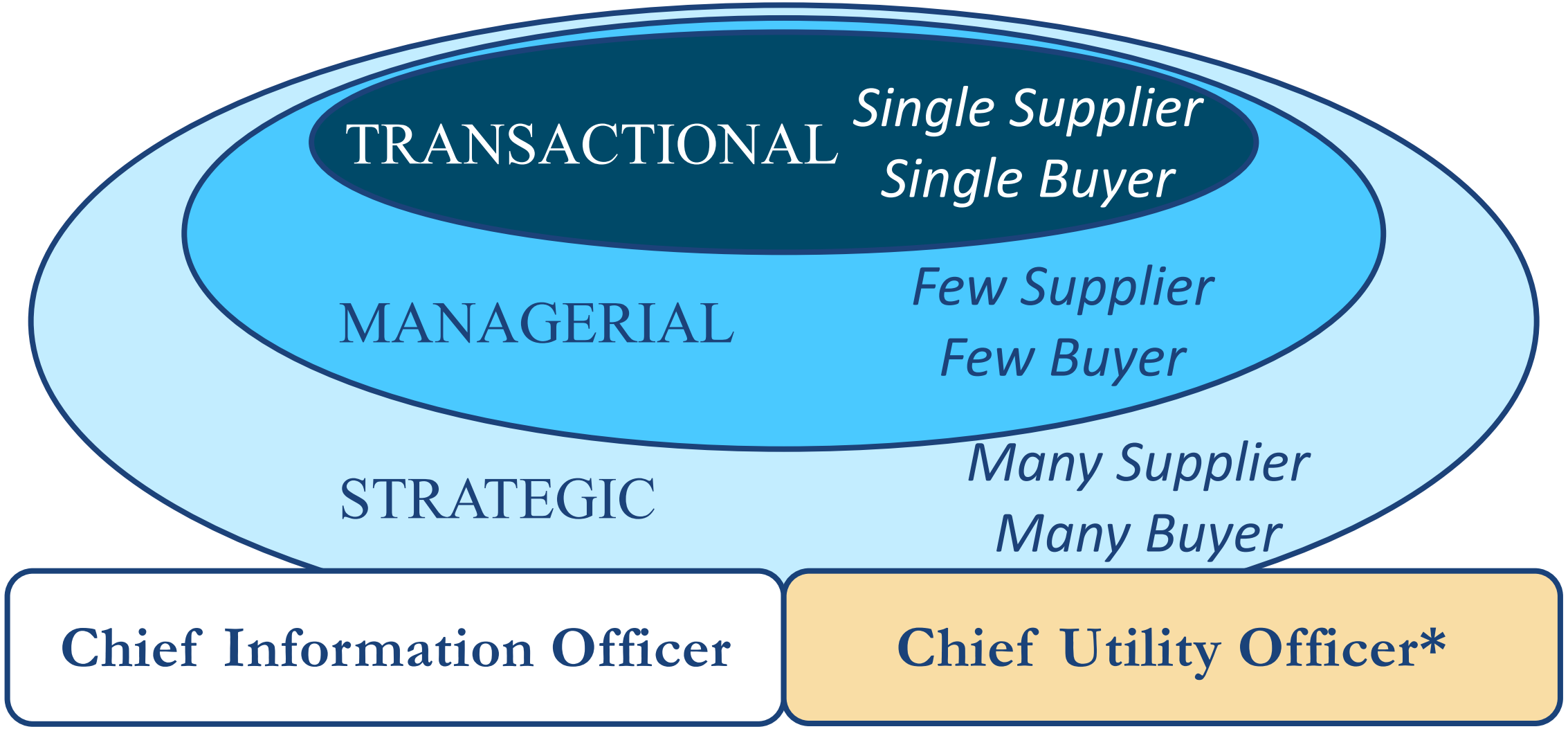
General Manager	Dir. Finance	Store Manager	Dir. Marketing	Accountant

Who is responsible?

Who gathers information and proposes a course of action?	→	**R**ecommend
Who are the people in the formal approval process?	→	**A**gree
Who implements the decision once it is made?	→	**P**erform
Who are subject matter experts who advise on the decision?	→	**I**nput
Who holds ultimate accountability for the final decision?	→	**D**ecide

RAPID®, developed and by Bain & Company

An emerging leader: The Energy Strategist



* Published in HBR 2016

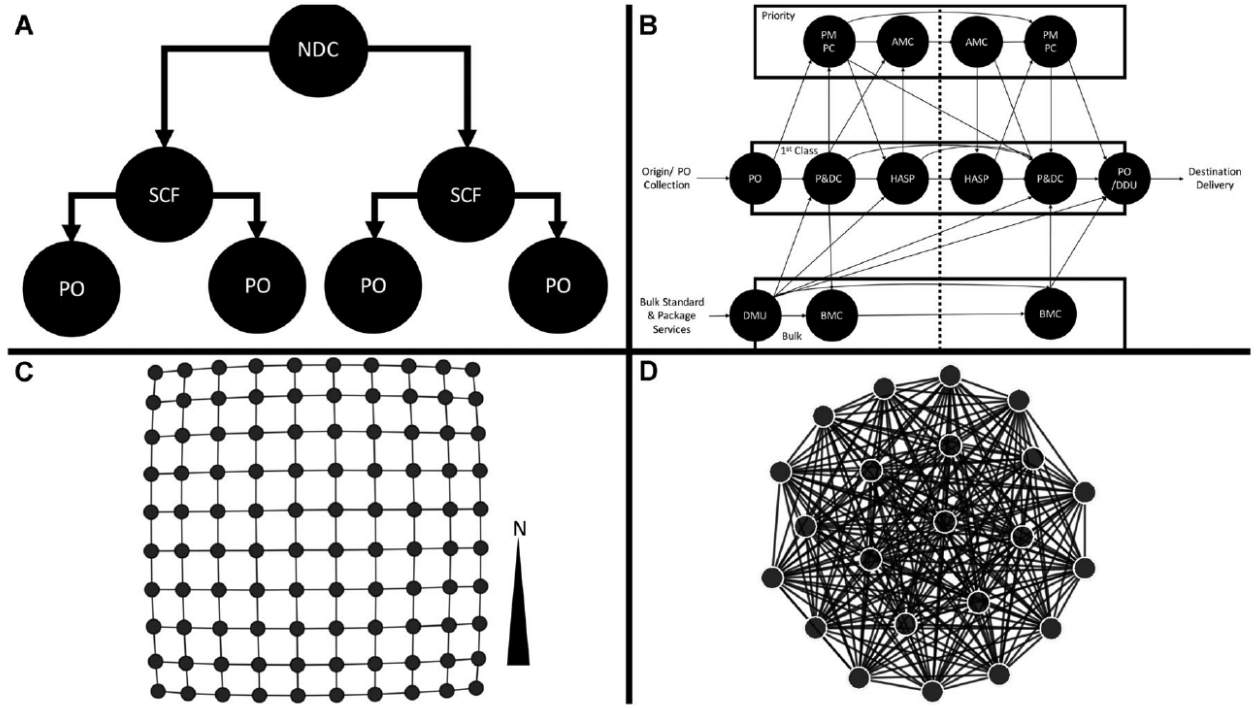
3rd Star Structure: Types of organizational structures

Hierarchy

Organization by post offices that a letter travels through

Layered Hierarchy

Organization by service (priority, bulk, first class, etc.)



Grid or Matrix

Organization by streets (edge) and addresses (dots) of your letter

Team (or project) based

Representing Network distribution centers

Properties

- **Flexibility** – How easily can the system be modified in response to external change
- **Descriptive Complexity** – difficulty to succinctly describe its internal structure to determine whether it is feasible to achieve a desired goal.
- **Rework Potential** – extent of rework and change one wants to implement

Tradeoffs

Tree hierarchies: Simple, low descriptive complexity, yet inflexible.

- Use when there is not expectation of external changes.

Grids and matrixes: Flexible, simple but decisions may need to be revisited.

- Use when social norms, protocols or standards reduce the amount of coordination.

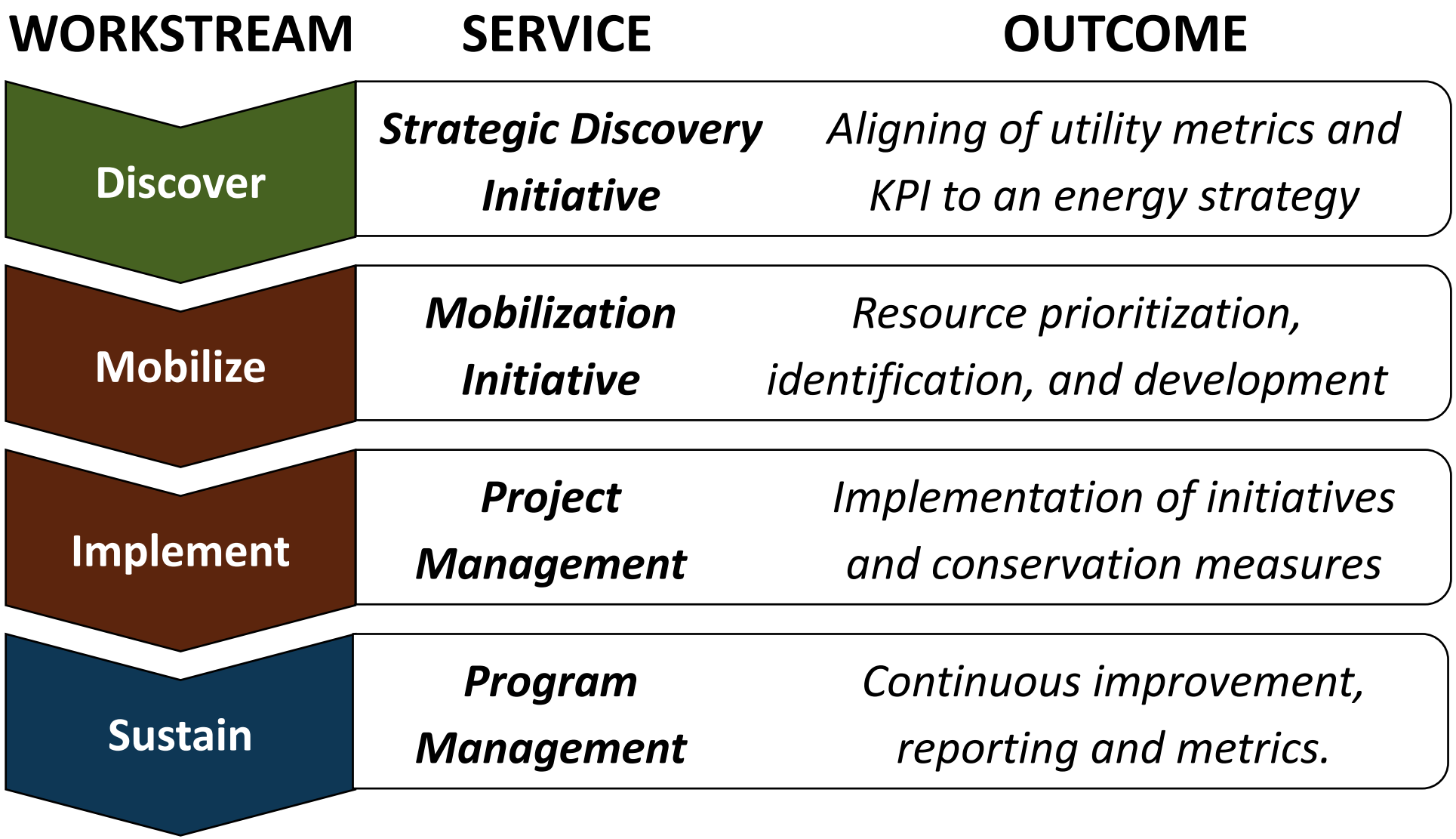
Teams: are extremely flexible, simple, but needs to be limited in size.

- Lowest descriptive complexity but large amount of time forming and reforming. Use when ~9 or less to reduce decision-making time.

Layered hierarchies: Versatile, but requires enforcements of layers.

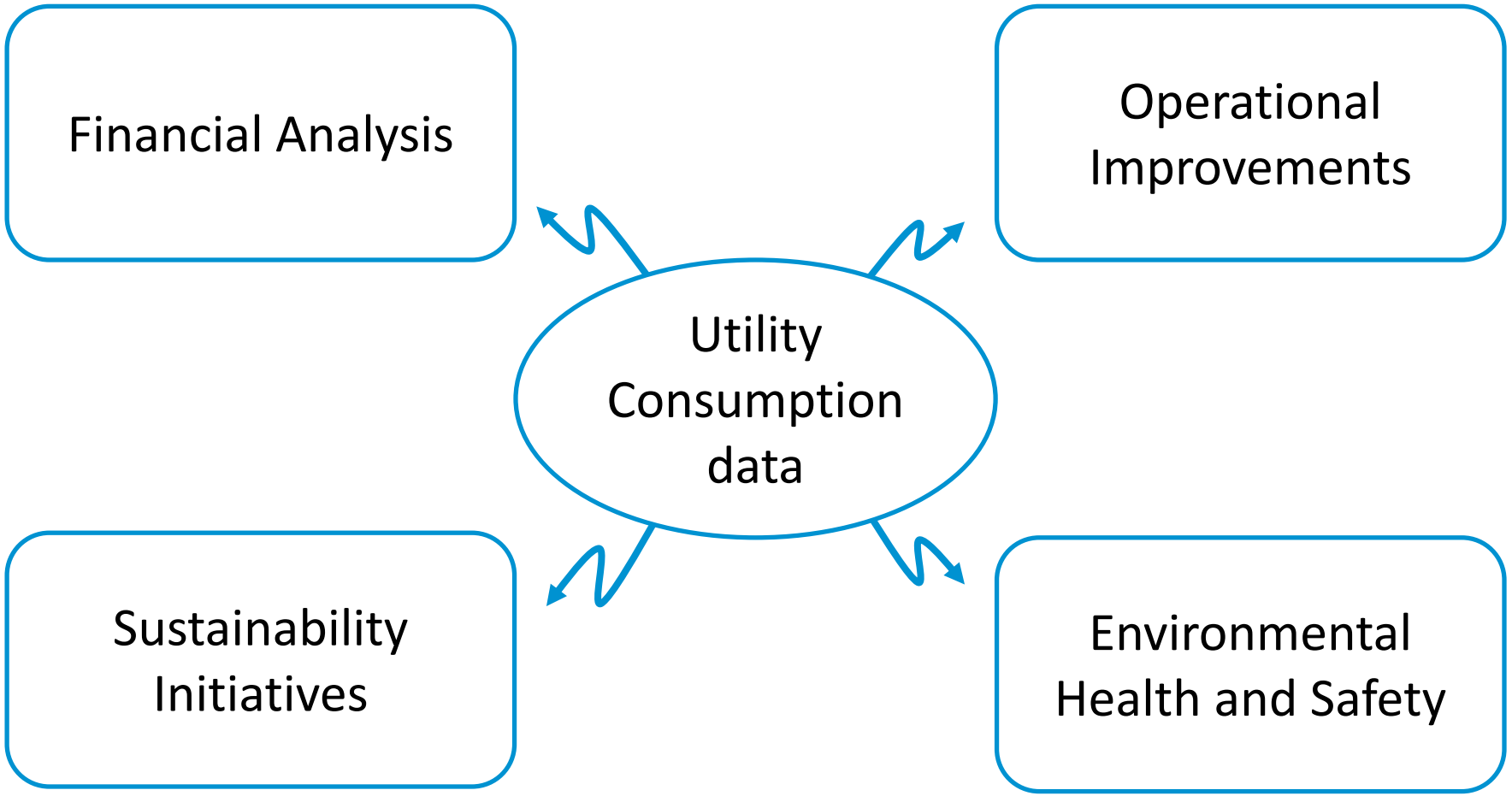
- Can combine the best of all worlds as local “teams” relate to each other via global “Tree Hierarchies”

4th Star Processes: How do tasks get done?



Processes: Where is this information stored?

Here are 4 activities that require access to utility bills



Process: How does communication flow?

What decisions in your company affect energy?

Horizontal:

Cross-functional teams
(marketing, operations, facilities, finance, purchasing, etc.)

Operational
Coordination,
real-time, daily, weekly
KPI Driven

Vertical:

Decisions and budget authority
(CFO, COO, accountants, engineers, electricians, directors)

Strategic
Roll-up Summary Reports
Monthly, Quarterly, Annually
Setting of KPI

5th Star Rewards:

- Alignment of incentives and rewards.
- Supports the distribution of responsibility

Financial Reward

Awards and Recognition

"Cookies as the most cost-effective investment for energy efficiency."

GRCF - Results

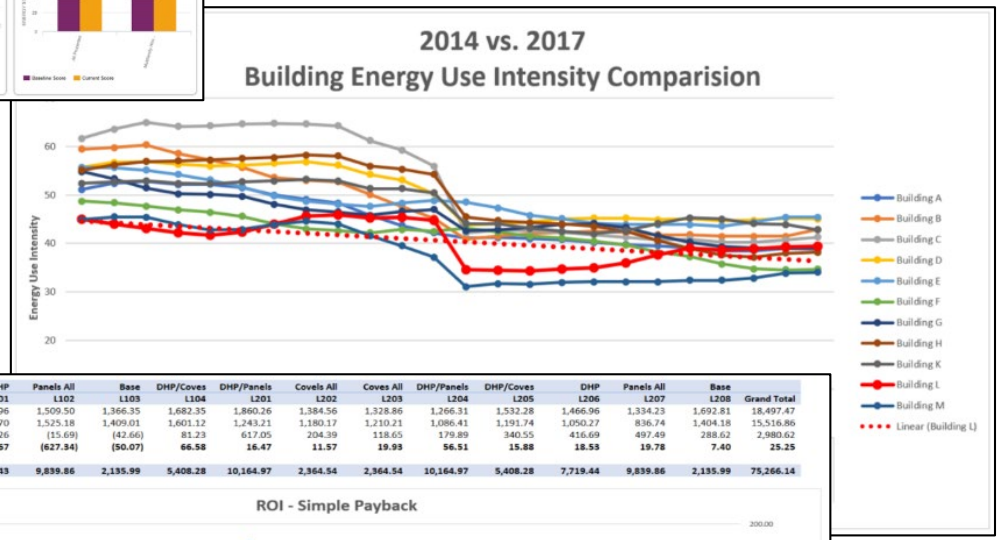
Phase 1

- Electricity Waste Cut by ~30%
- Energy Star Rating 48 → 78
- No Need to Increase Utility Budget Each Year
- Resources Directed to Improved Student Programs

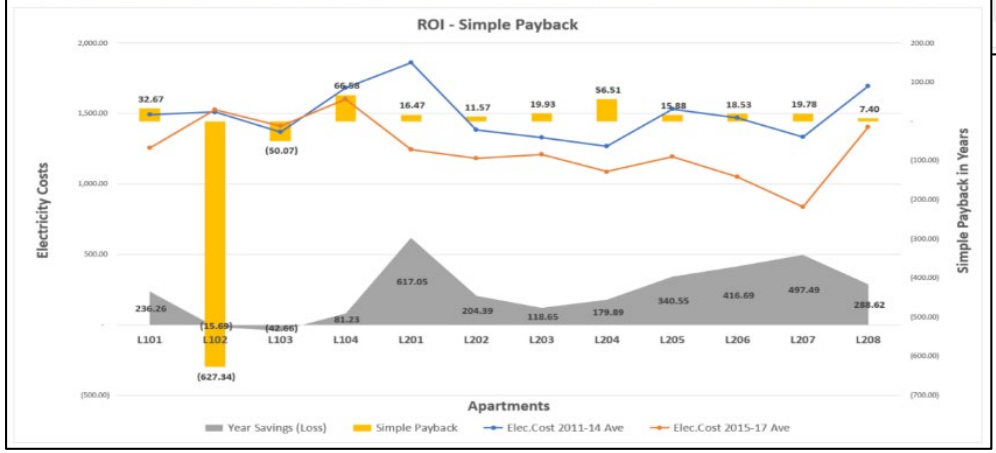
Phase 2

- Expect 30% Further Reduction
- Combination of LED Lighting and Lowered Maintenance

2012 ENERGY STAR CERTIFIED FACILITY
ENERGY STAR
www.energystar.gov



SIMPLE PAYBACK Apartment	DHP L101	Panels All L102	Base L103	DHP/Coves L104	DHP/Panels L201	Covels All L202	Coves All L203	DHP/Panels L204	DHP/Coves L205	DHP L206	Panels All L207	Base L208	Grand Total
Elec.Cost 2011-14 Av	1,492.96	1,509.50	1,366.35	1,682.35	1,860.26	1,384.56	1,328.86	1,266.31	1,532.28	1,466.96	1,334.23	1,692.81	18,497.47
Elec.Cost 2015-17 Av	1,256.70	1,525.18	1,409.01	1,601.12	1,243.21	1,180.17	1,210.21	1,086.41	1,191.74	1,050.27	836.74	1,404.18	15,516.86
Year Savings (Loss)	236.26	(15.69)	(42.66)	81.23	617.05	204.39	118.65	179.89	340.55	416.69	497.49	288.62	2,980.62
Simple Payback	32.67	(627.34)	(50.07)	66.58	16.47	11.57	19.93	56.51	15.88	18.53	19.78	7.40	25.25
Total Equip. Cost	7,719.43	9,839.86	2,135.99	5,408.28	10,164.97	2,364.54	2,364.54	10,164.97	5,408.28	7,719.44	9,839.86	2,135.99	75,266.14



Outcomes

- 3-11% reduction in utility expenses on an annual basis.
- Clients on the program for over 4 years.
- Process works from coffeeshop to Fortune 500.
- Energy Management shifts from efficiency as the goal to waste reduction as a goal.
- Energy Management embedded into corporate strategy

Case Study: Developing Carbon Neutral Products

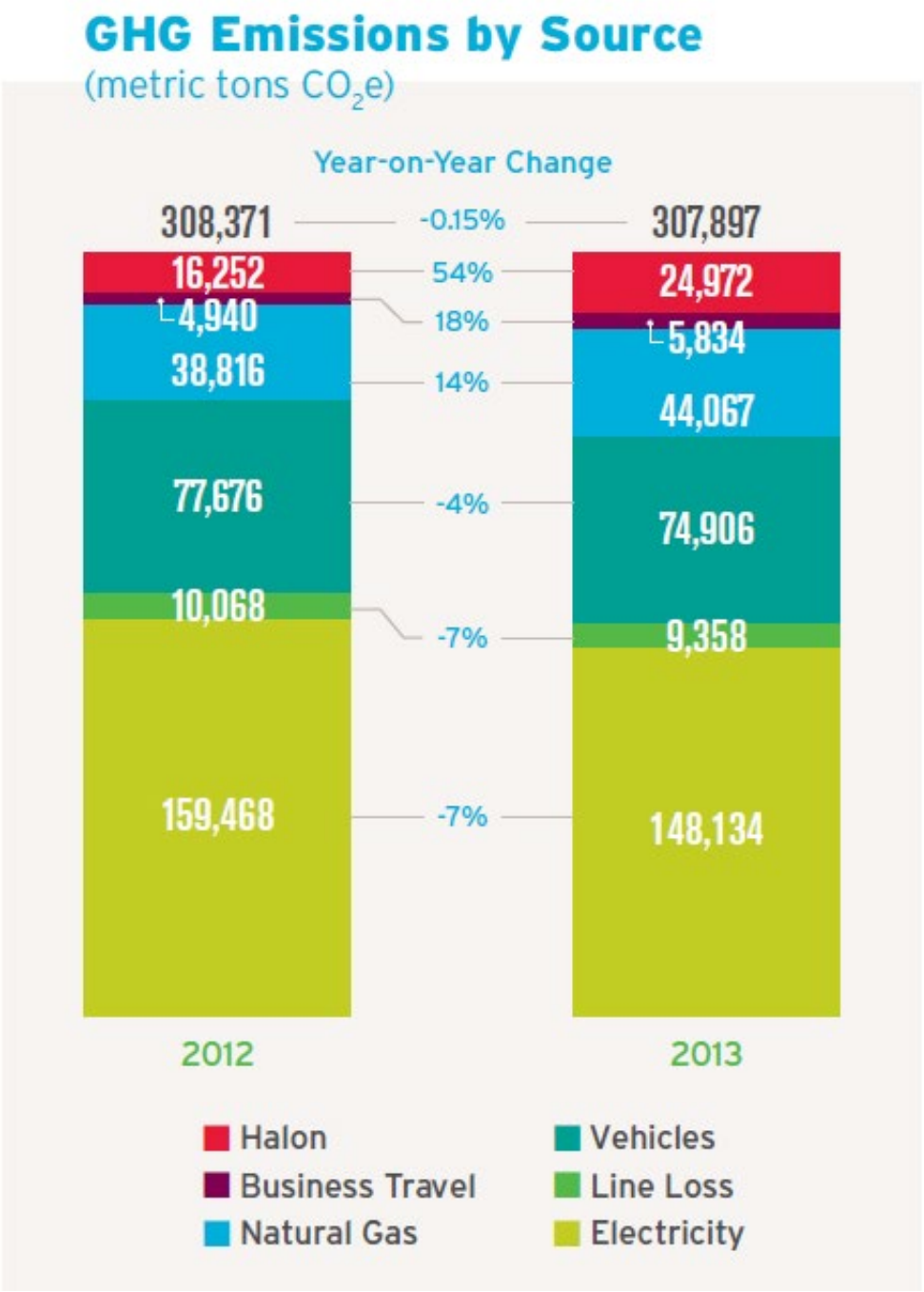
- NYSE: IRM
- Revenue: $3.5 Billion (2016)
- Employees: 24,000
- Clients in 45 countries
- 94% of the FORTUNE 1000 rely on Iron Mountain for storage and information management services

Q1: Why? A top-down mandate

CEO and SVP Corporate Sustainability knew how much we ***spent*** but didn't know how much we ***used.***

Investigated the Greenhouse Gas footprint across the organization.

Fossil Fuel ***volatility*** was buried in their electricity

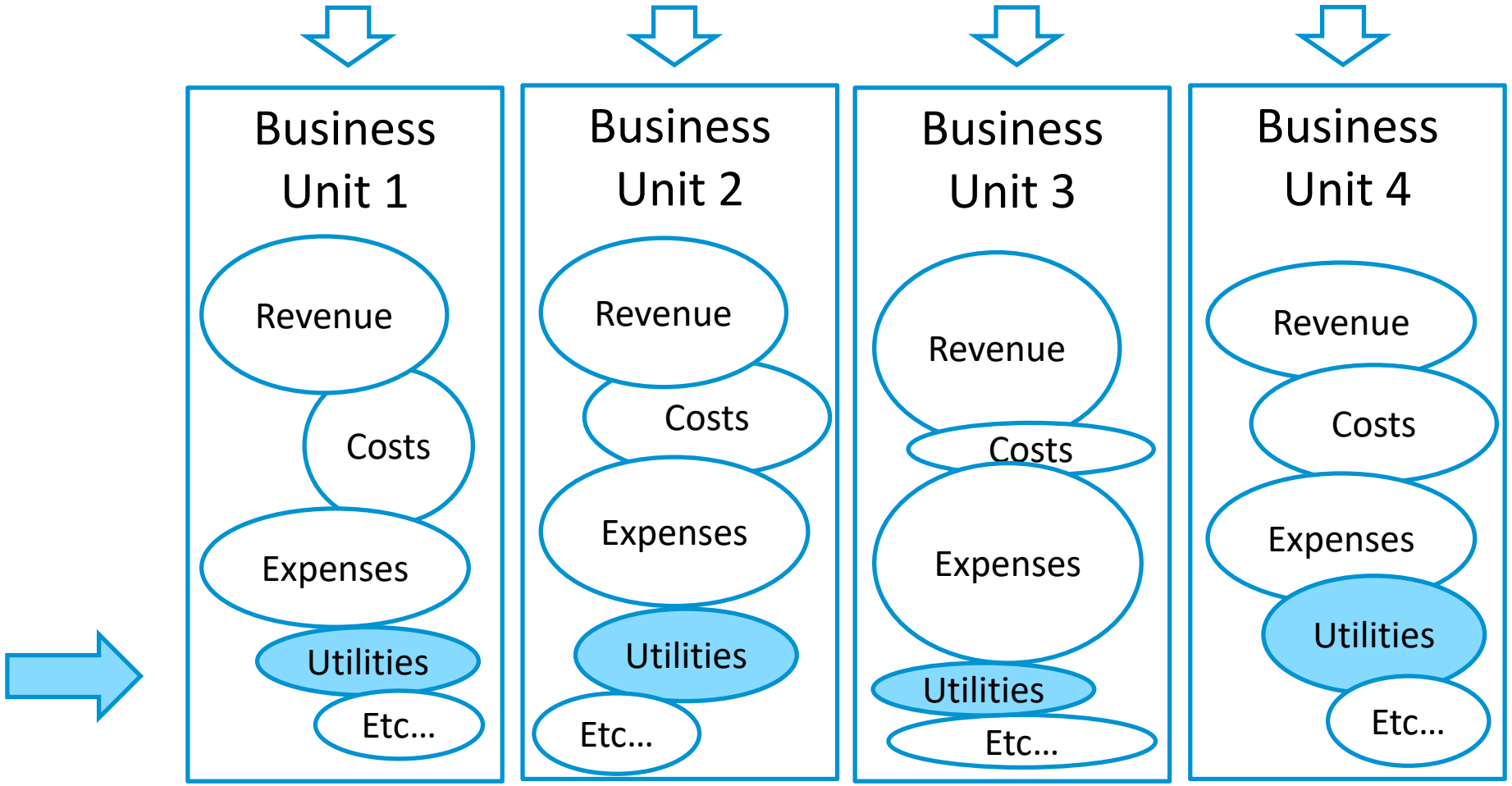


Source: 2013 CSR

Q2: Who's responsible to make decisions?

Utility were a small cost of doing business, managed by each business unit. **(~1%)**

When aggregated, utilities were a meaningful expense for the corporation **($30-40 million)**



Q3: How much energy do we use?

- Hired an intern from the Energy Defense Fund Climate Corps Fellow to create a roadmap for energy efficiency projects.
- Targeted the biggest impacts and best returns
- Data was available for CDP and Sustainability Reporting
- Recommendations were straightforward – LEDs, energy efficiency projects, etc.

EDF CLIMATE CORPS

IRON MOUNTAIN®

2013 Corporate Responsibility Report

Q4: What do we pay for it?

Started investigating Solar

Lots of options!

- Own?
- Lease?
- Sign a Power Purchase Agreement (PPA)?

Eventually, installed a 2MW power plant in Ontario.

Little corporate interest to scale until…

Q5: Can we stabilize future costs?

Challenge #1: Data Center Business
Small, yet fast growing business unit in the business.
Clients would sign contracts to store data for **15-20 years**.
All gains from Energy Efficiency were wiped out with growth in Data Center business

Challenge #2: Electricity from the grid is a pass-through for fossil fuel volatility

Challenge #3: If purchasing electricity directly, The longest fossil fuel PPA contract was **3 years**.

IDEA: Solar and wind power can be purchased in **15-20 year** contracts.

End Result: Developed innovative products

April 5, 2017

- 30% of all operations
- 100% of all data centers are powered by renewable electricity.

Additional Benefit:

- Can now offer a new product: *carbon neutral services*

In Summary

- Organizational design gives you a structure and framework on how teams function.

- Key among them is how the teams set goals and communicate.

- Once your idea is in an organizational structure, it is easier to optimize.

Questions?