

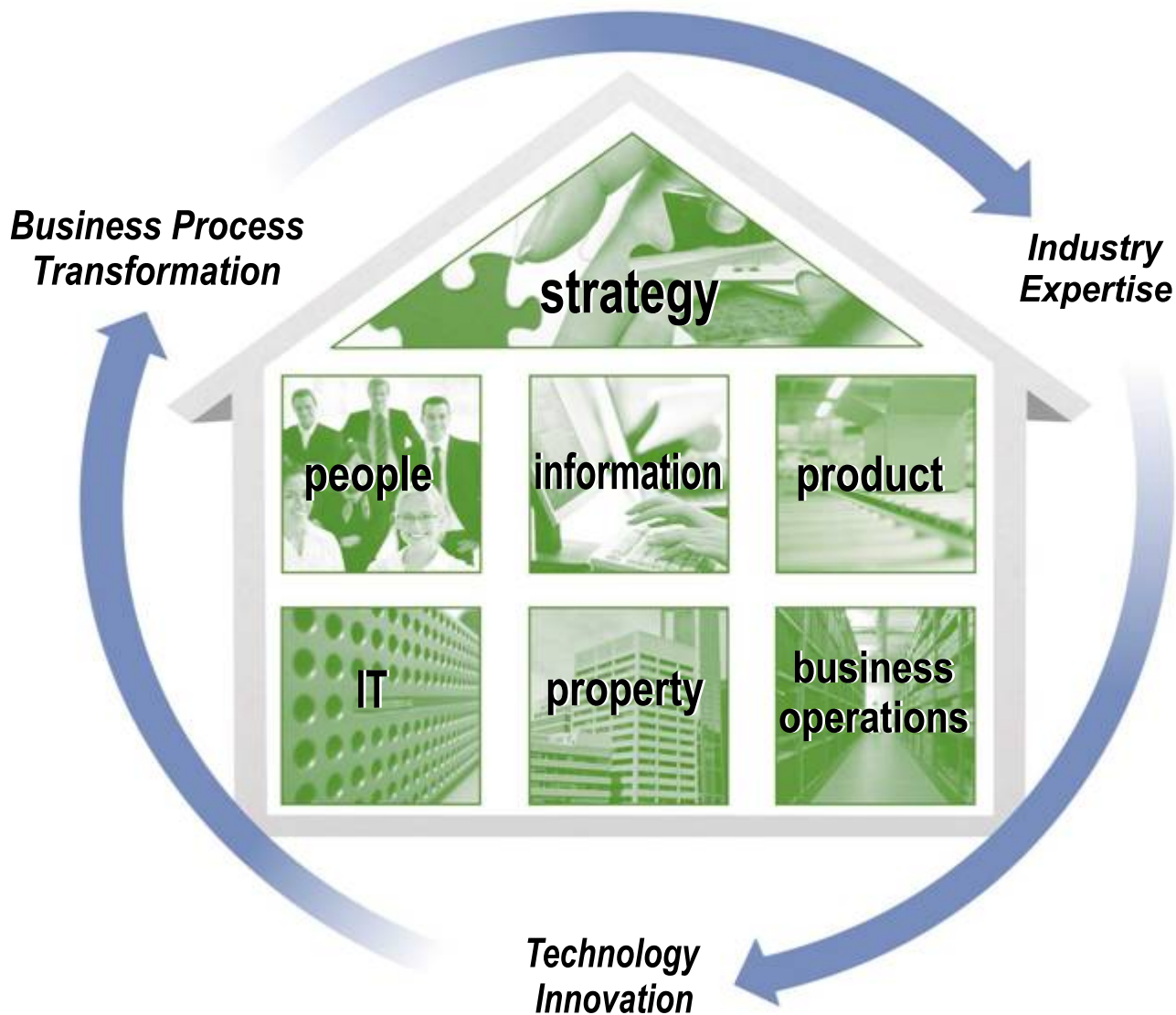


IBM Energy & Environment

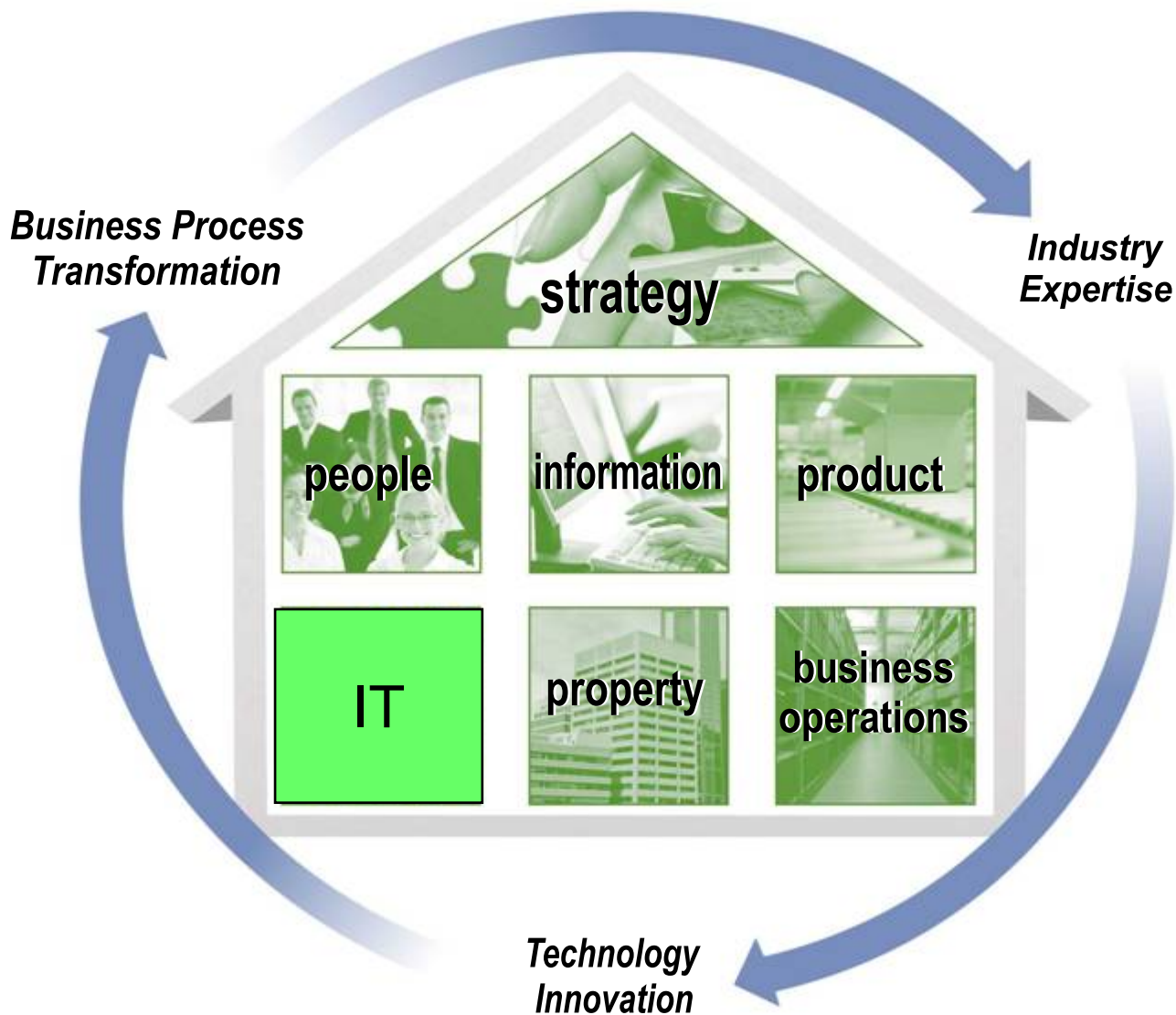
## **Energy Efficiency in the Data Centre ... and beyond**

Peter Richardson  
UK Green Marketing Leader

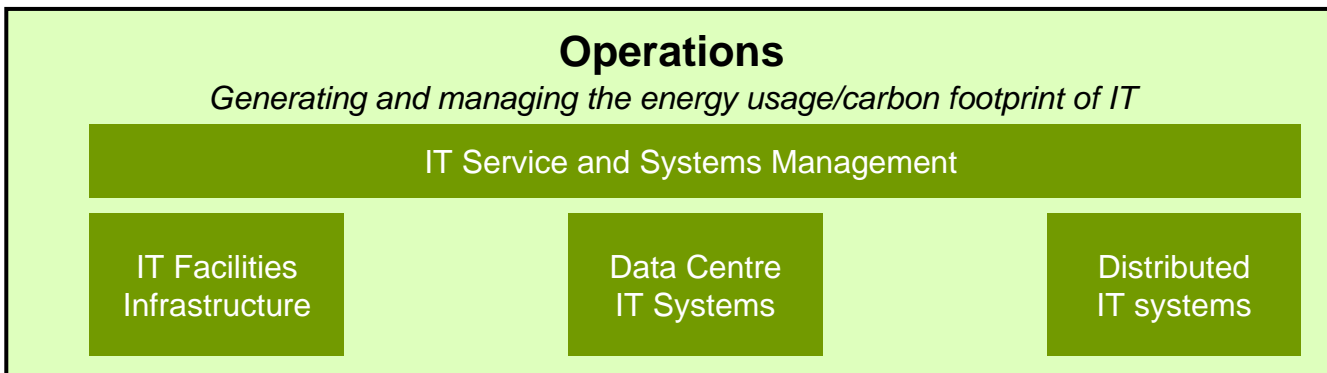
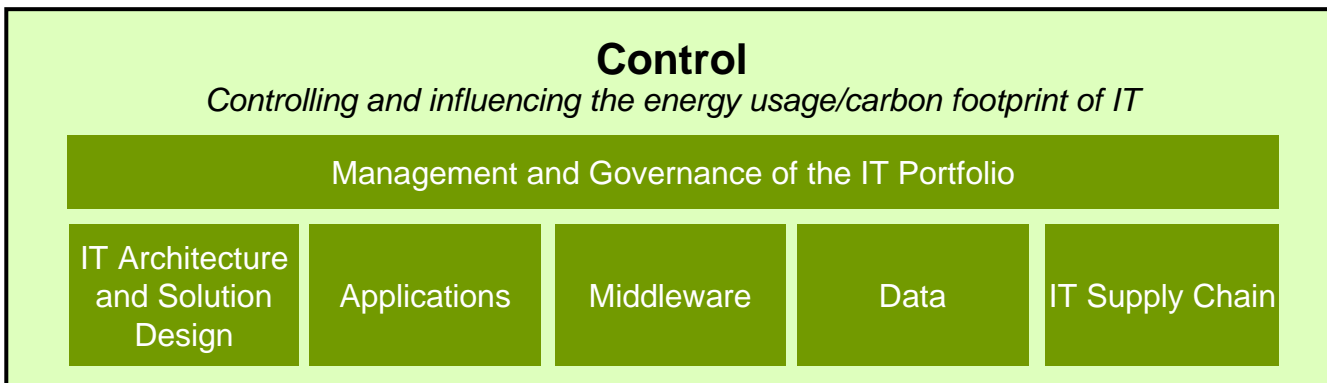
# IBM Energy and Environment Framework



# IBM Energy and Environment Framework



# IT Room



# IT Room - Strategy



## Carbon Strategy Study

### Report Outline:

- Introduction, Background and Method
- Management Summary
- Assessment Feedback

- Energy usage
- Infrastructure utilisation
- Level of Green maturity

### Green IT Guiding Principles

### Green Action Plan

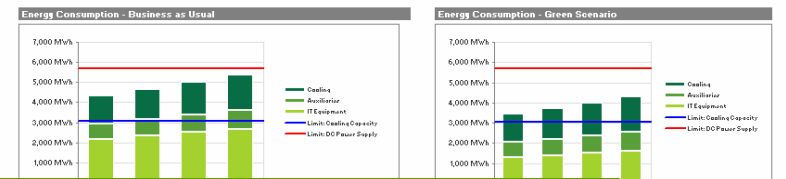
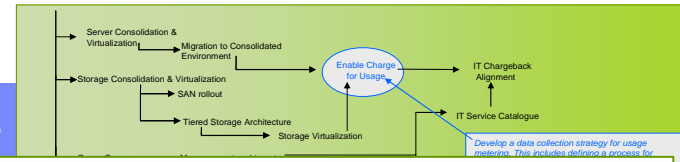
- Quick win improvement projects
- Project roadmap

Can green IT

How can we include

How

W



**S4 - Strategy**

The IT organisation will initially focus on improving electrical efficiency in order to reduce the carbon footprint of IT

	Year 1	Year 2	Year 3
1492,091	1505,949	1509,809	
1518,931	1631,445	1743,958	
817,886	876,470	929,054	
	-20%	-20%	-20%
1606	1725	1844	
-20%	-20%	-20%	
8,829	9,824	9,219	

		Rationale			Implications			
		IT Customer Relationship Management	IT Business Management	Business Resilience	Information and Knowledge Management	Service and Solution Development	Service and Solution Deployment	Service Delivery and Support
Strategy	Directing	2 3	1 2	2 4		2 4	2 5	1 2
	Controlling	1 2	3 3	2 3		2 4	3 3	
Operations	Execution	3 3	2 3	1 2		3 4	1 2	2 4

# IT Room - Operations

**Strategy**  
*Directing energy usage/carbon footprint of IT - driven by business strategy*

IT Strategy

**Control**  
*Controlling and influencing the energy usage/carbon footprint of IT*

Management and Governance of the IT Portfolio

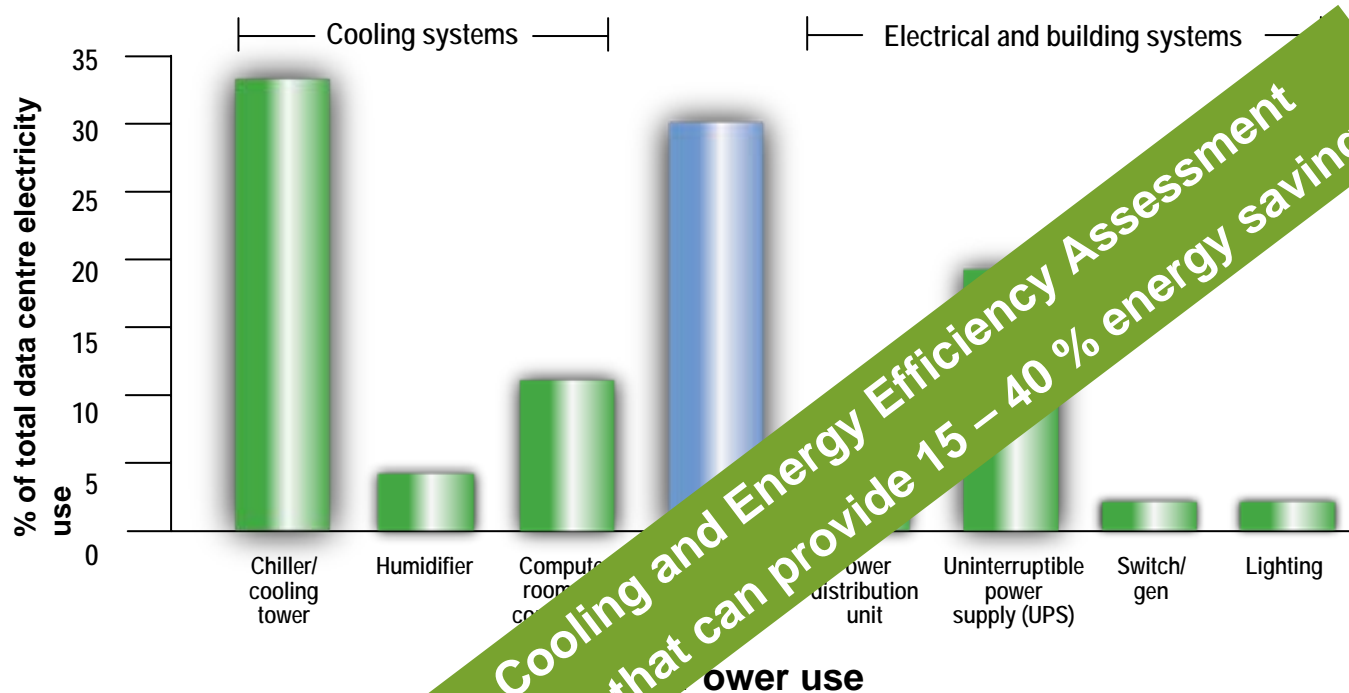
IT Architecture and Solution Design	Applications	Middleware	Data	IT Supply Chain
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**Operations**  
*Generating and managing the energy usage/carbon footprint of IT*

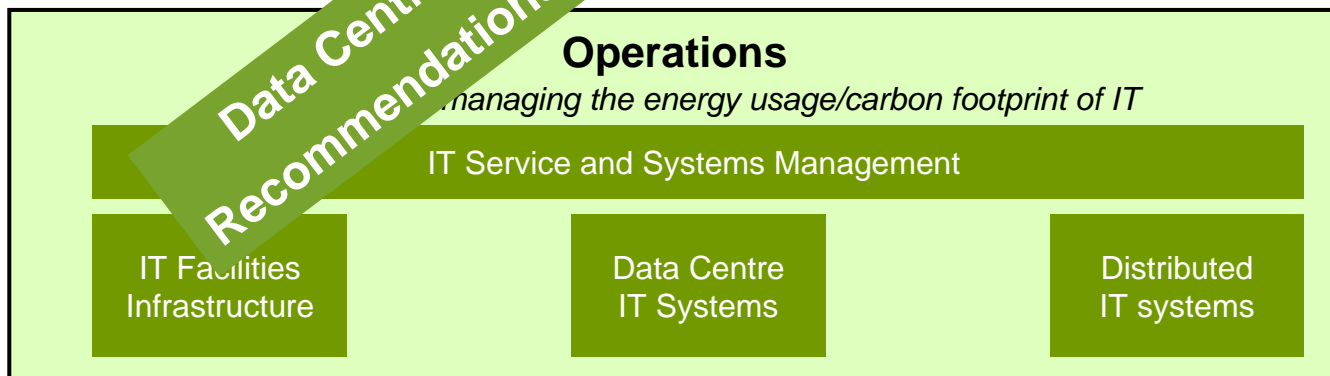
IT Service and Systems Management

IT Facilities Infrastructure	Data Centre IT Systems	Distributed IT systems
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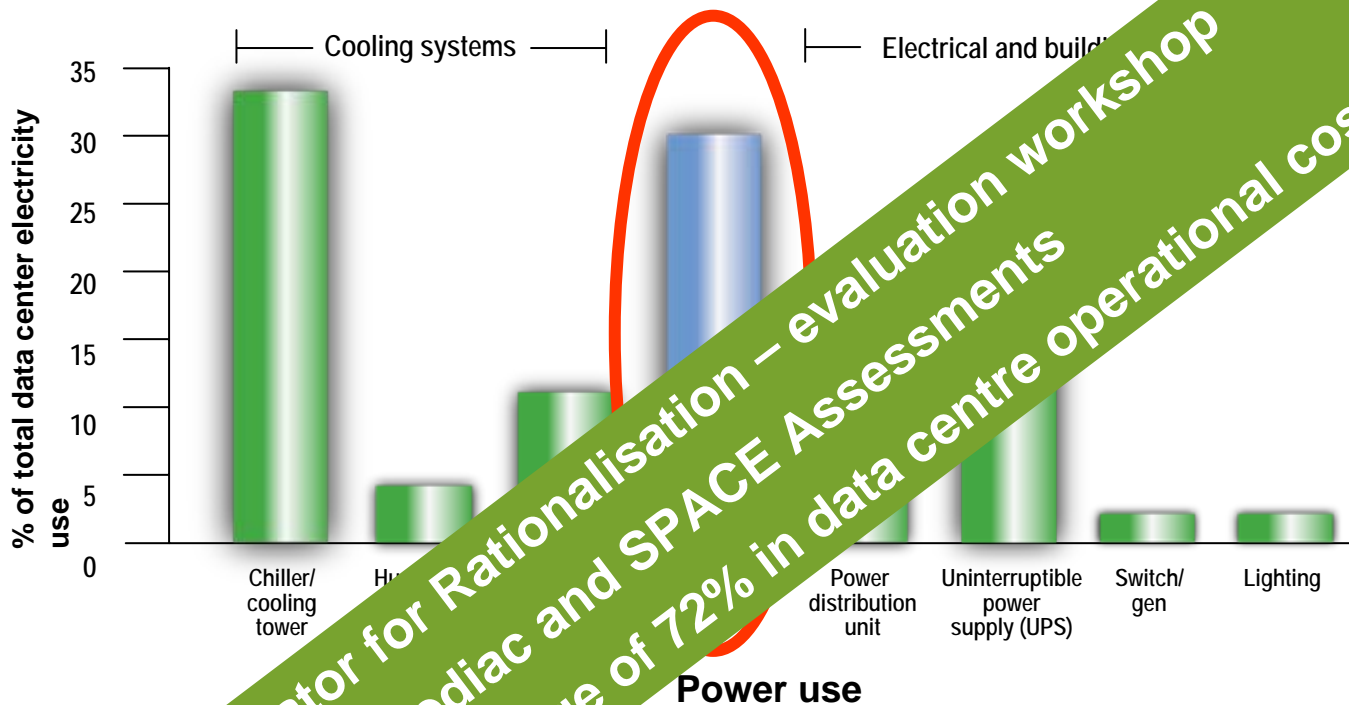
# IT Room - Operations



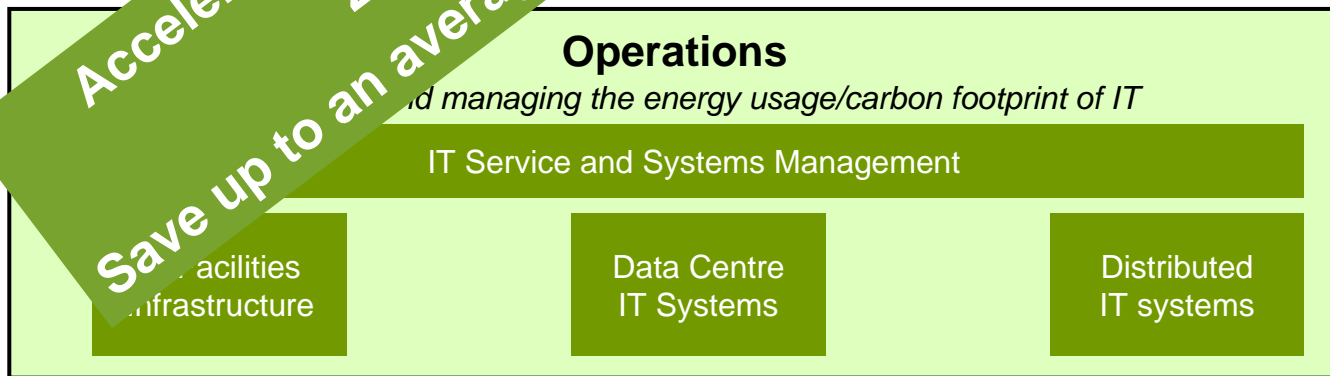
**Data Centre Cooling and Energy Efficiency Assessment Recommendations that can provide 15 – 40 % energy savings**



# IT Room - Operations



**Accelerator for Rationalisation – evaluation workshop**  
**Save up to an average of 72% in data centre operational costs**  
**Zodiac and SPACE Assessments**



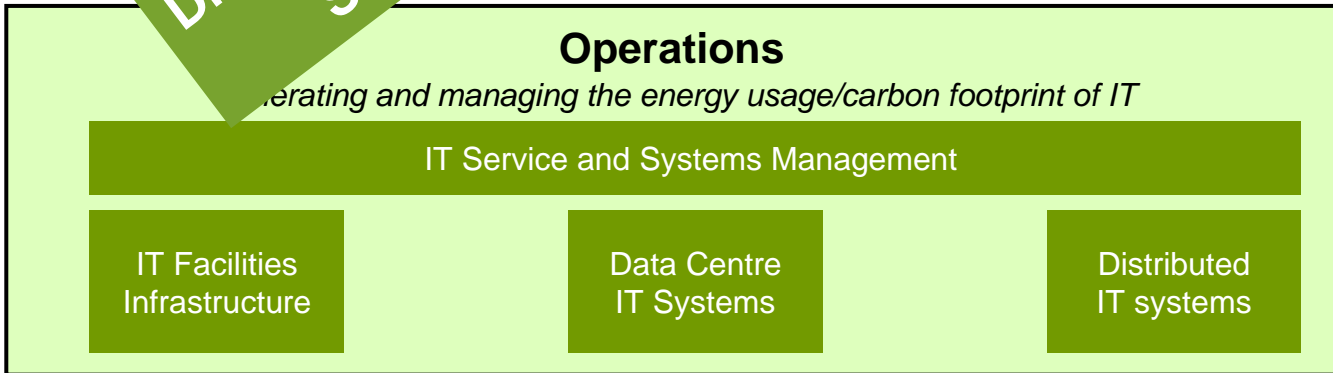


## IT Room - Operations

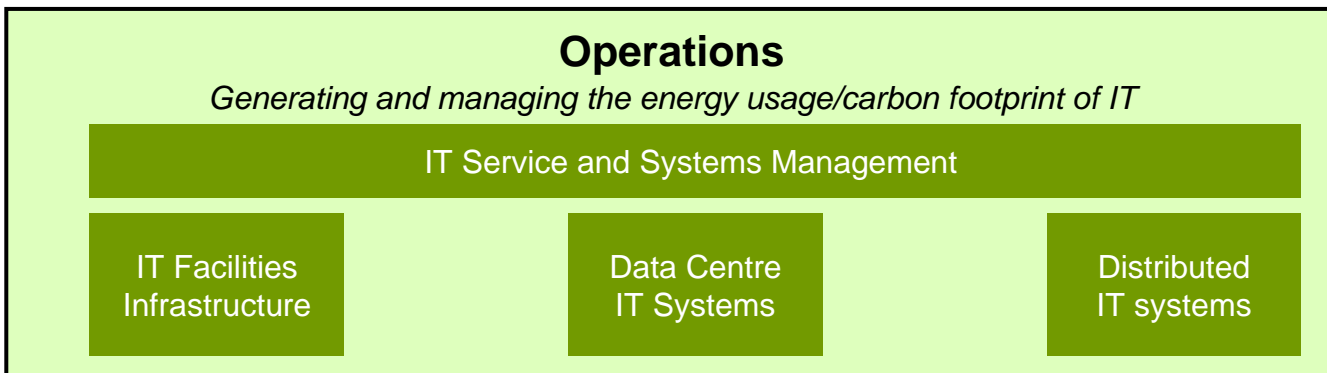
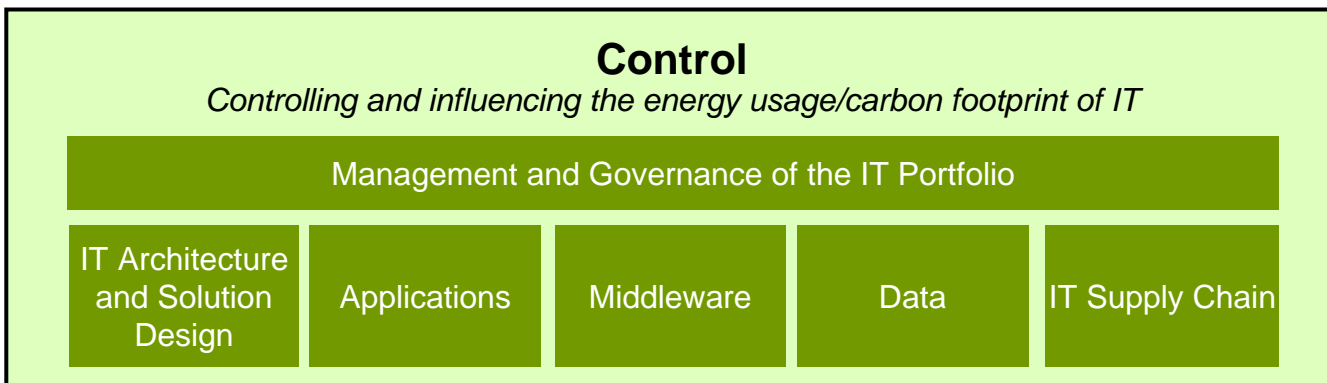


- Servers
- Desktops
- Displays
- Printers
- Copiers
- Network equipment
- Office
- Hotel

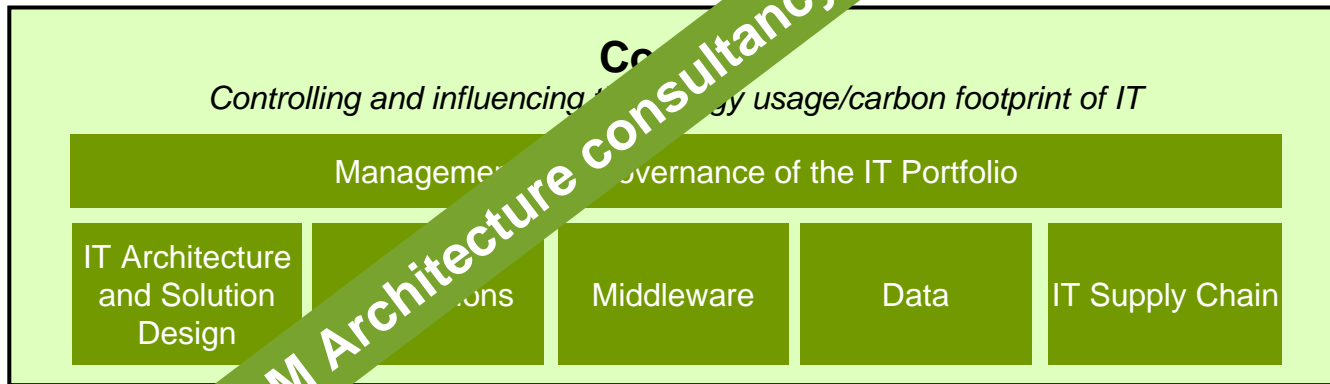
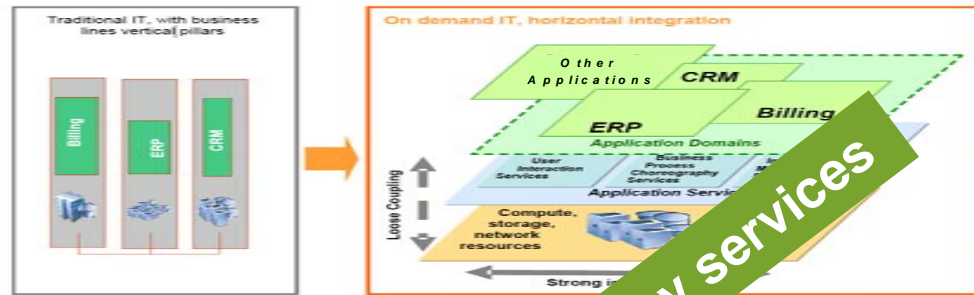
**Distributed IT Energy Efficiency Assessment**  
**Savings of 20-30% of energy costs**



# IT Room

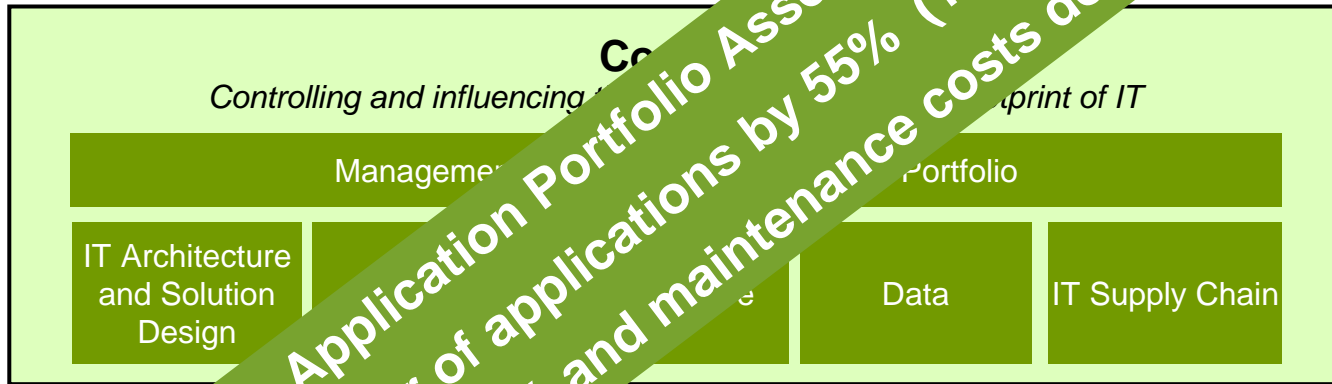


# IT Room - Control



- Integrate the carbon elements of the IT strategy into the overall Architecture framework
- Adapt the IT Solution Design process to ensure that energy efficiency is considered in each IT project

# IT Room - Control



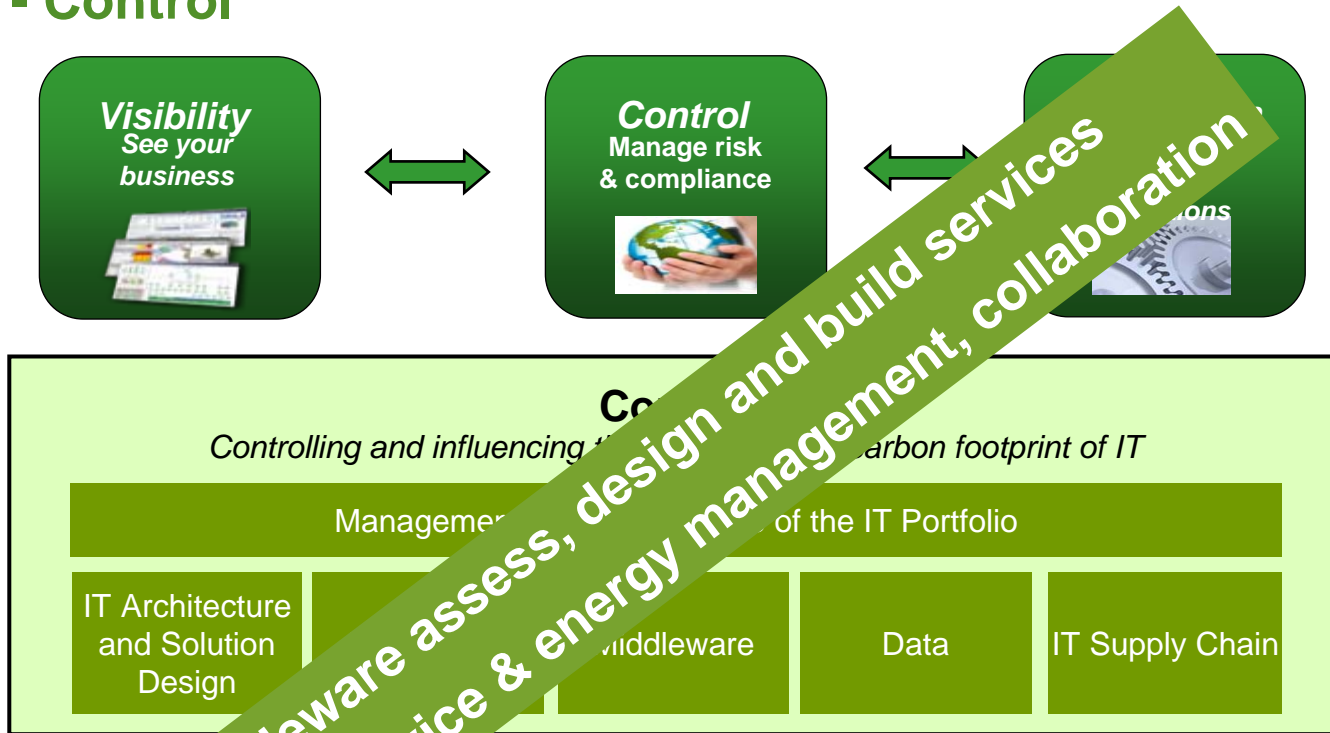
Applications ?

?

Analisation ?

SOA – one, efficient application for one service

# IT Room - Control



- Middleware design with consideration of the carbon impact
- Middleware design and deployment with consideration of the carbon impact
- Configure and tune the middleware to be energy efficient?
- Prepare the infrastructure to optimise the effectiveness of the middleware

# IT Room - Control

Data we use everyday



Data we don't use



**Storage Priority Assessment Consulting Engagement (SPACE)**

Storage Priority Assessment Consulting Engagement (SPACE)

Energy saving of 65% (£1.5m)

Space saving of 70%

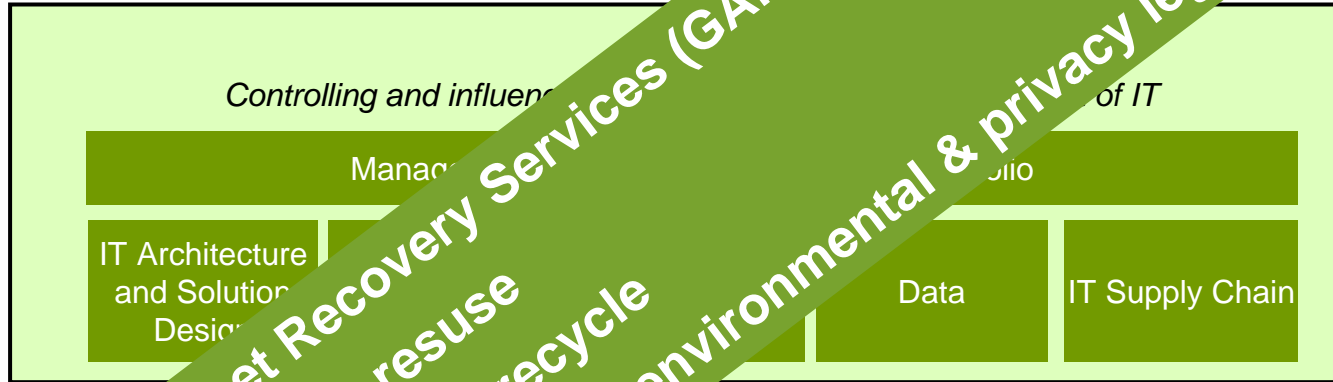
Reduction in heat output of 75%

Data Mobility Services

cases in storage requirements resulting in

- ...ent costs
- ...requirements

# IT Room - Control



**Global Asset Recovery Services (GARS)**

- refurbish & resuse
- disassemble & recycle
- dispose of meeting environmental & privacy legislation

- Is there consideration of carbon impacts over the full lifecycle?
- Are management processes include consideration of carbon impacts over the full lifecycle?
- Is there any IT hardware actioned to minimise wastage and landfill
- Is capital funding an issue

# IT Room

