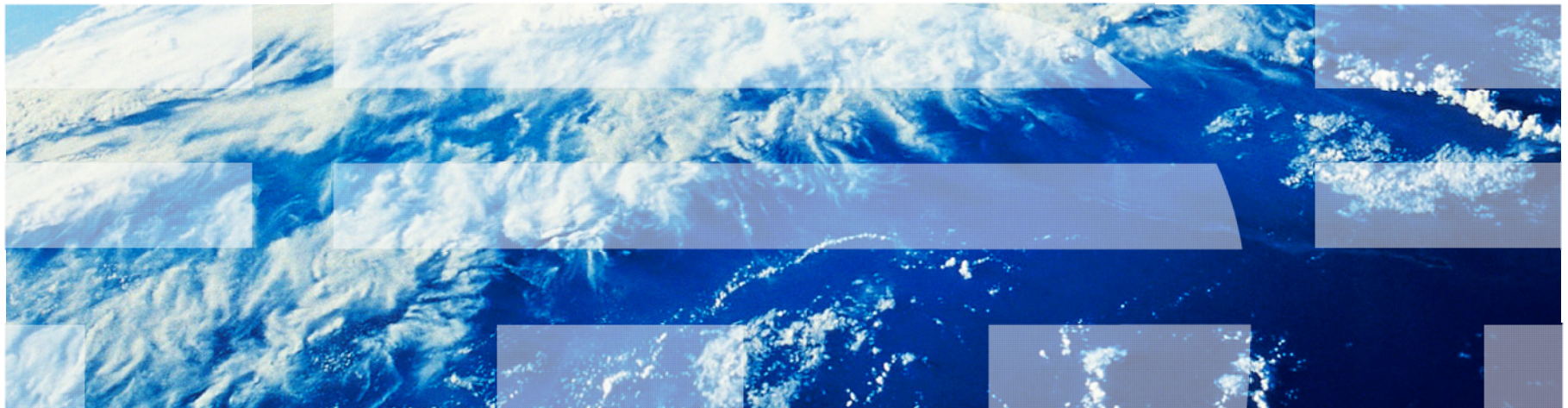


# Hidden costs revealed



## Key messages



- Data centres are energy hogs and are a significant opportunity to reduce overall operational costs and improve overall operational efficiency
- The majority of CIO's are not held accountable for data centre energy use or costs
- Simple actions can yield significant operational and capital cost savings with less than a 2 year payback
- We are deploying solutions and can help you determine how to get started

# Customers' challenges are driven by the following...



**6x** Growth in server and storage shipments this decade.

**69x**

**18%** Increase in worldwide data centre energy costs in next year.

**20x** Technology density increase in servers this decade.

**85%** Of distributed computing capacity sits idle.

**75%** Of CIO's anticipate a strongly centralized infrastructure in 5 years.

**71%** Of data centres > 7 years old. **Canada average age is 12.4 years!**<sup>1</sup>

**5-60%** Of IT workloads may be cloud-enabled.

<sup>1</sup> Source: "Toronto: Investment & Infrastructure Trends UPDATE" (DatacenterDynamics: Research & Analysis, December 2009)

## Three simple actions to improve ROI in data centres



**Extend** the life of an existing data centre infrastructure

Double IT capacity  
or  
Reduce operational expenses by 50%  
And  
Defer major capital costs



**Rationalize** the data centre infrastructure across the company

Improve operational efficiencies while reducing operational expenses by 50%.



**Design new** infrastructure to be **responsive** to change

Pay as you grow by deferring 40-50% of capital and operational costs.



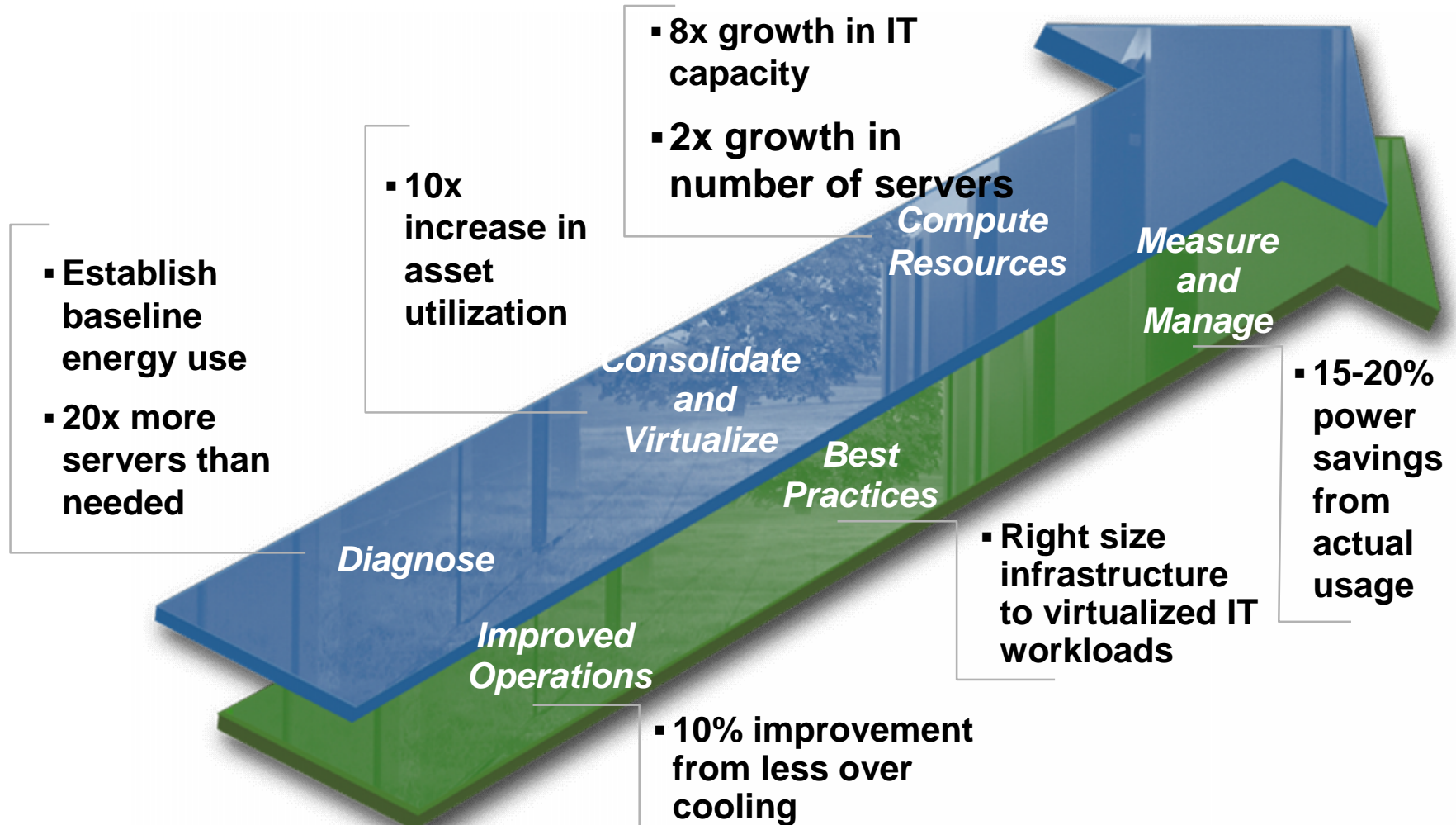
## *How energy efficient is your data centre?*



***Maximize your ROI by using energy for the productive use of IT with a simple “MPG” equivalent for data centre energy efficiency***

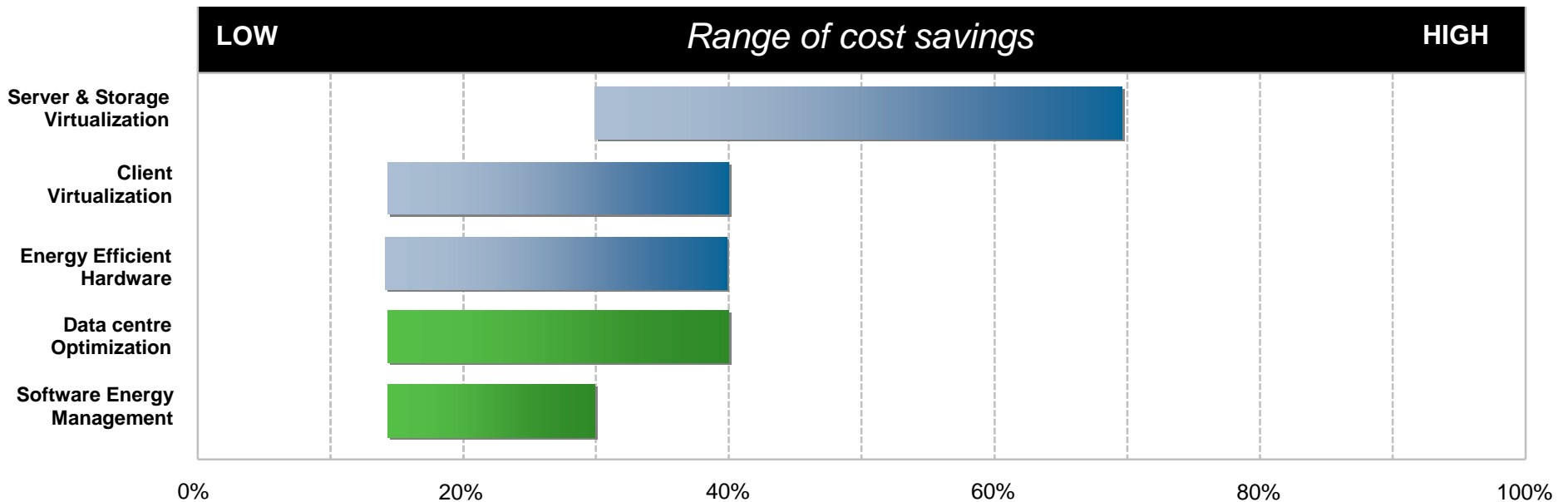
# Extend the life of existing data centres to defer capital costs

*Deferred \$50 M capital with an 8x increase in IT capacity in the same energy footprint*



[White paper: Extend the life of an existing data centre  
http://www-935.ibm.com/services/us/cio/outsourcing/case\\_studies.html](http://www-935.ibm.com/services/us/cio/outsourcing/case_studies.html)

# Extend the life actions with immediate payback



### Optimize IT Infrastructure

**Virtualization provides TCO savings.**

*Reduce costs and complexity with 30-40% TCO.*

**Leverage energy efficient IT technology.**

*Reduce on-going IT energy costs over 30%.*

### Optimize data centre infrastructure

**Get the facts with an energy assessment.**  
*Reduce costs 15-40% with < 2 year payback.*

**Add cooling capacity with High Density Zone.**

*Cost effectively adopt new technology at up to 35% less than site retrofit.*

### Optimize IT and data centre infrastructure

**Monitor and manage energy use.**

*Integrate IT, data centre, and buildings energy consumption to save 15-30% a year.*

# Rationalize IBM's data centre infrastructure

*Smart transformation has delivered cost savings and operational efficiency*

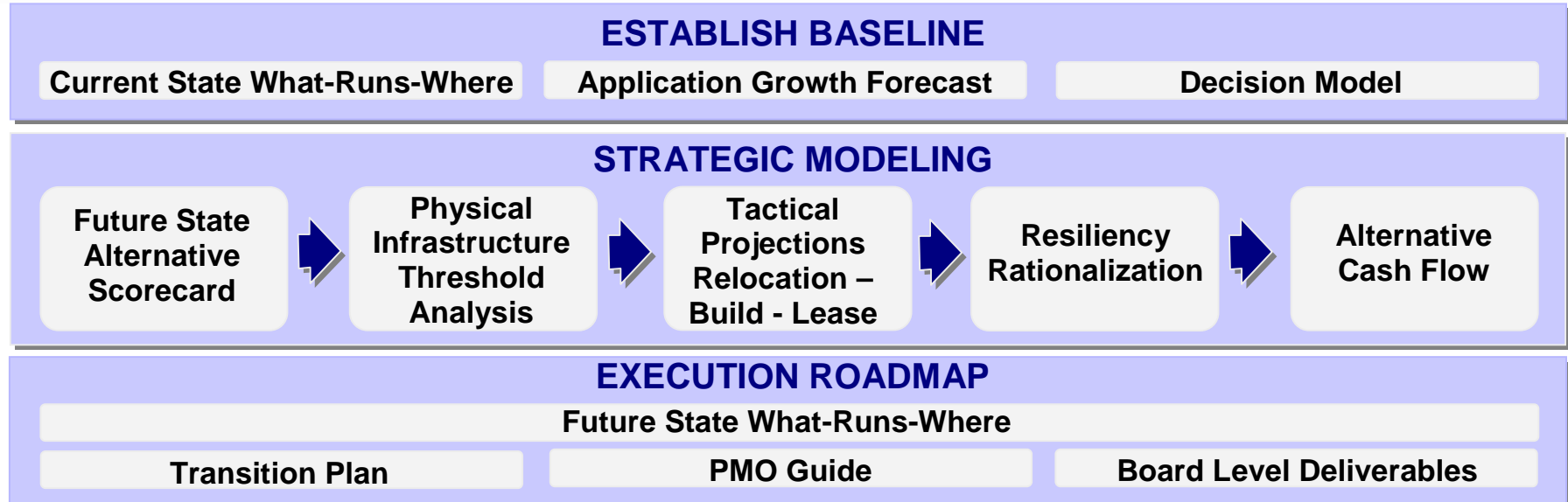
<b>Data centre infrastructure consolidation</b>	<ul style="list-style-type: none"> <li>▪ Cumulative benefit yield of \$4.1B over the past 5 years</li> </ul>		
	<ul style="list-style-type: none"> <li>▪ 80% less energy, 85% less floor space</li> <li>▪ Substantial TCO savings</li> <li>▪ Consolidate and virtualize thousands of servers onto approximately 30 IBM System z™ mainframes</li> </ul>		
<b>IT consolidation and virtualization</b>		<b>1997</b>	<b>2007</b>
		<b>CIOs</b>	<b>128</b> <b>1</b>
		<b>Host data centres</b>	<b>155</b> <b>7</b>
		<b>Web hosting centres</b>	<b>80</b> <b>5</b>
		<b>Network</b>	<b>31</b> <b>1</b>
		<b>Applications</b>	<b>15,000</b> <b>4,700</b>



# Rationalize your data centre infrastructure

*Optimize to adapt to market pressures and changing business requirements*

- Reduce *operating costs* by up to 50 percent.
- Reduce *operational complexity* and improve adoption of new virtualization technologies.
- Meet *business continuity* requirements through reduction of outages and data loss.
- Design for flexibility to meet *dynamic business requirements*.
- Reduce *time to deploy* new technology from months to weeks.



## With our Standardized Financial Analysis, IBM helps determine which alternatives cost-effectively meet your business goals

### Activities

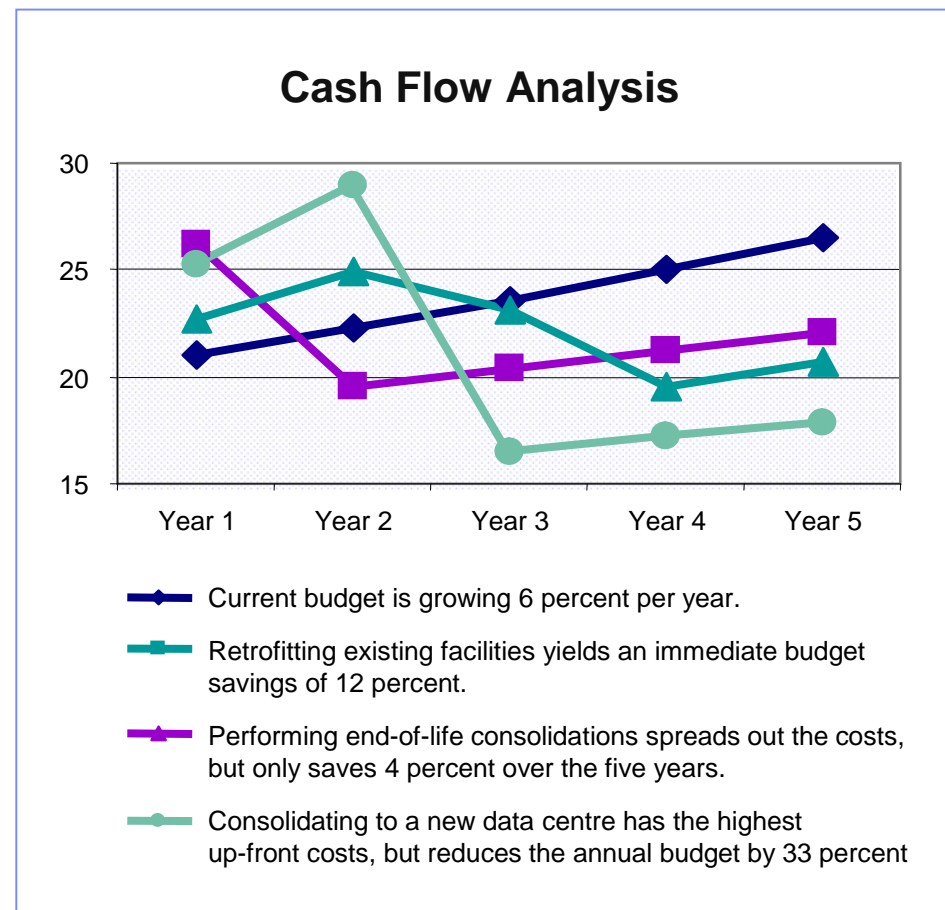
- Projects current state and potential alternatives
- Based on standardized cost projection tools for various strategic alternatives
- Include all one time and recurring costs
- Computes financial metrics (ROI, NPV, etc...)

### Benefits

- Demonstrates financial comparison between strategic initiatives
- Validates financial projections
- Analyzes short and long term financial trade-offs

### IBM experience

- Provides technology insight and operational excellence to ensure comprehensive and accurate cost models



# Bryant University rationalized to fewer server rooms to improve operational efficiency & is in the top 25 wired campuses



## Scalable Modular Data centre

**26%** | reduction in capital spend

**21%** | reduction in operational spend

## Servers & Virtualization

**30%** | time savings in operational overhead

**12-15%** | improvement in service delivery

## Energy Management Software

**15%** | annual energy savings

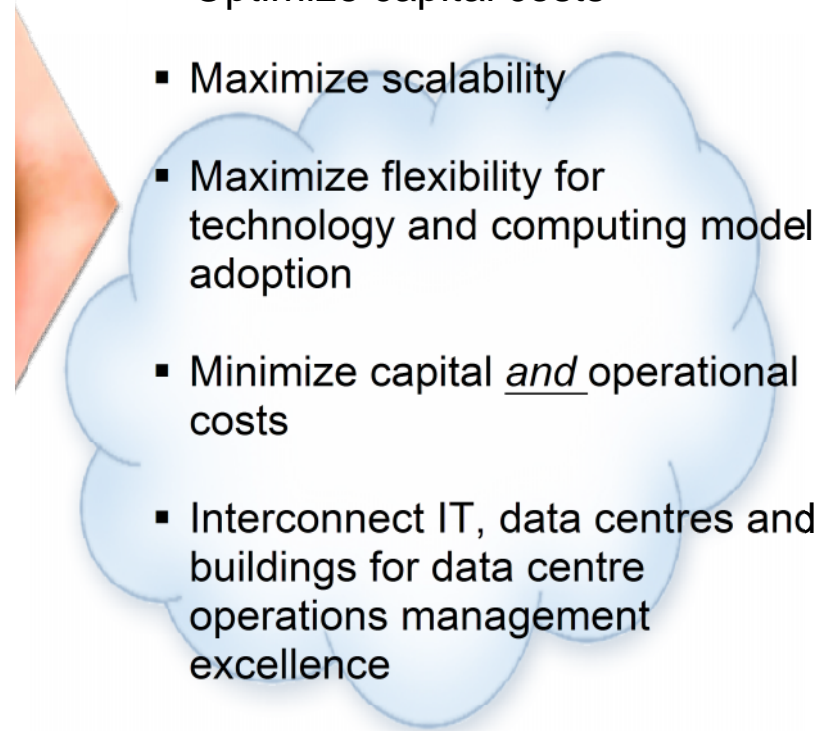
## IT and data centre professionals need to manage requirements over a 15-20 year life – cloud computing adds a new variable

### ***Business objectives***

- Meet business and IT growth
- Align capital and operating costs
- Flexible to support new technology
- Faster time to deploy
- Reduce risk
- Security

### ***Data centre requirements***

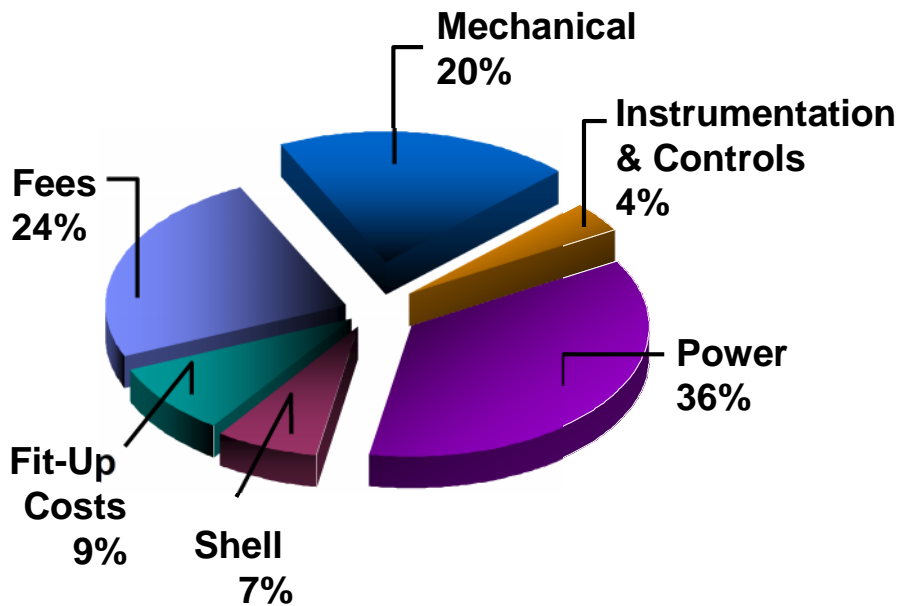
- High availability
- Provide required capacity
- Optimize capital costs
- Maximize scalability
- Maximize flexibility for technology and computing model adoption
- Minimize capital *and* operational costs
- Interconnect IT, data centres and buildings for data centre operations management excellence



# Defer 40-50% of the lifecycle costs by implementing modular data centres to align business and IT requirements

## Data centre capital costs

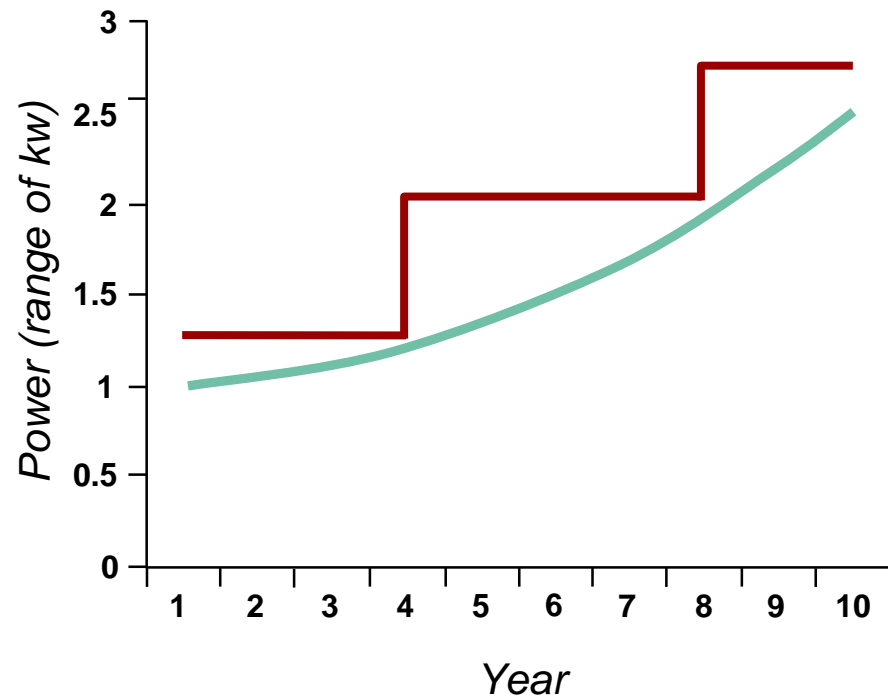
*60% costs from mechanical / electrical systems*



Source: IBM Estimates

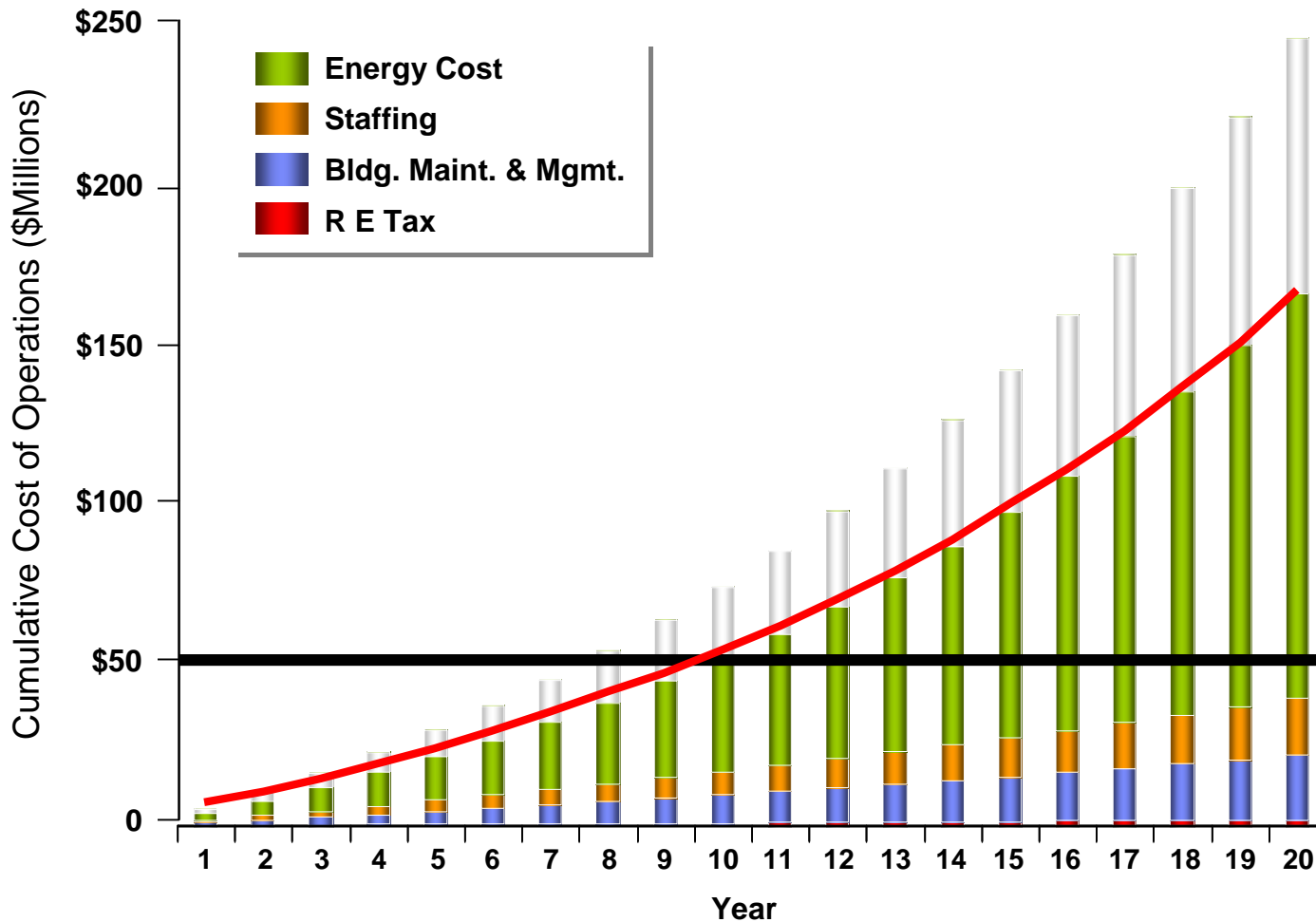
## Pay as you grow

*Modular approach aligns capacity to business need*





# Optimize lifecycle costs and reduce operational costs by up to 50%



## Example: One 2,000 square meter data centre

- Cumulative cost to run a data centre.
- 10% annual energy increase.
- Data centre operational costs are 3-5 times the capital costs.
- 75% of operation costs is for energy.

# Design new infrastructure for flexibility with modularity

*IBM's data centre family™ solutions align to your business and cost objectives.*

## Scalable modular data centre



**Up to 20% less than traditional designs**

- Turnkey centre for 500-2,500 sq ft.
- Implement in 8-12 weeks.

## Enterprise modular data centre



**Defer 40-50% of capex and opex cost**

- Standardized design starting with modules as small as 5,000 sq ft.
- Save up to 50% operational costs.

## Portable modular data centre



**Fully functional data centre**

- Rapidly deploy in 12-14 weeks.

## High density zone



**35% lower cost than site retrofit**

- Without impacting operations.

Watch a video at : <http://www-03.ibm.com/systems/data/flash/dynamicinfrastructure/datacentredesignsolutions/>

## Energy efficiency provides College with growth capacity, higher availability and flexibility

*Scalable Modular Data Centre allows St Lawrence College to meet growing capacity requirements while saving money on energy costs.*

### **Challenge**

- Power consumption was constantly increasing, and hot spots a daily issue
- Needed a high capacity and efficient solution to continue growth and demonstrate the Green Technology principles taught in the curriculum.

### **Solution**

The fully functional scalable modular data centre (SMDC) fit in an existing office next to the previous data centre, allowing IT to continue to operate during construction and switch over easily during the Christmas holidays

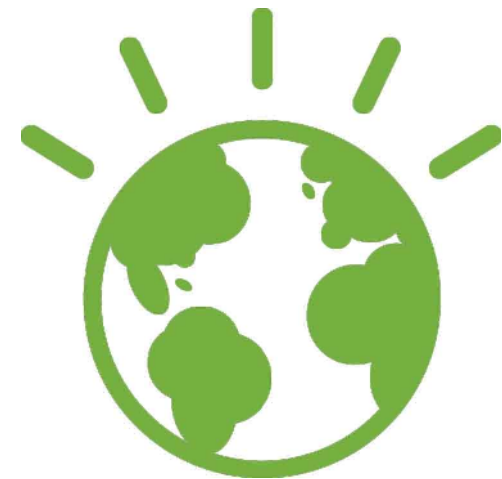
### **Benefits**

- **Consolidated** 3 data centres and reduced the number of servers from 70 to 12 through virtualization
- **Much more efficient** than the previous solution SLC had in place, delivering **almost 7x the power in a similar size space.**
- **Funded through operating budget** with a 3-5 year payback
- **Modular configuration** helps the company easily expand the data centre as future needs demand



## How can data centre business insight help CFOs?

- Establish accountability for data centre energy costs and savings
- Get the facts - include capital and operating costs in your data centre decisions
- Implement the low hanging fruit for immediate savings
- Leverage outside experience for faster execution



**For more information:** [www.ibm.com/cfo/ca](http://www.ibm.com/cfo/ca)

**For your CIOs:** [www.ibm.com/cio/ca](http://www.ibm.com/cio/ca)