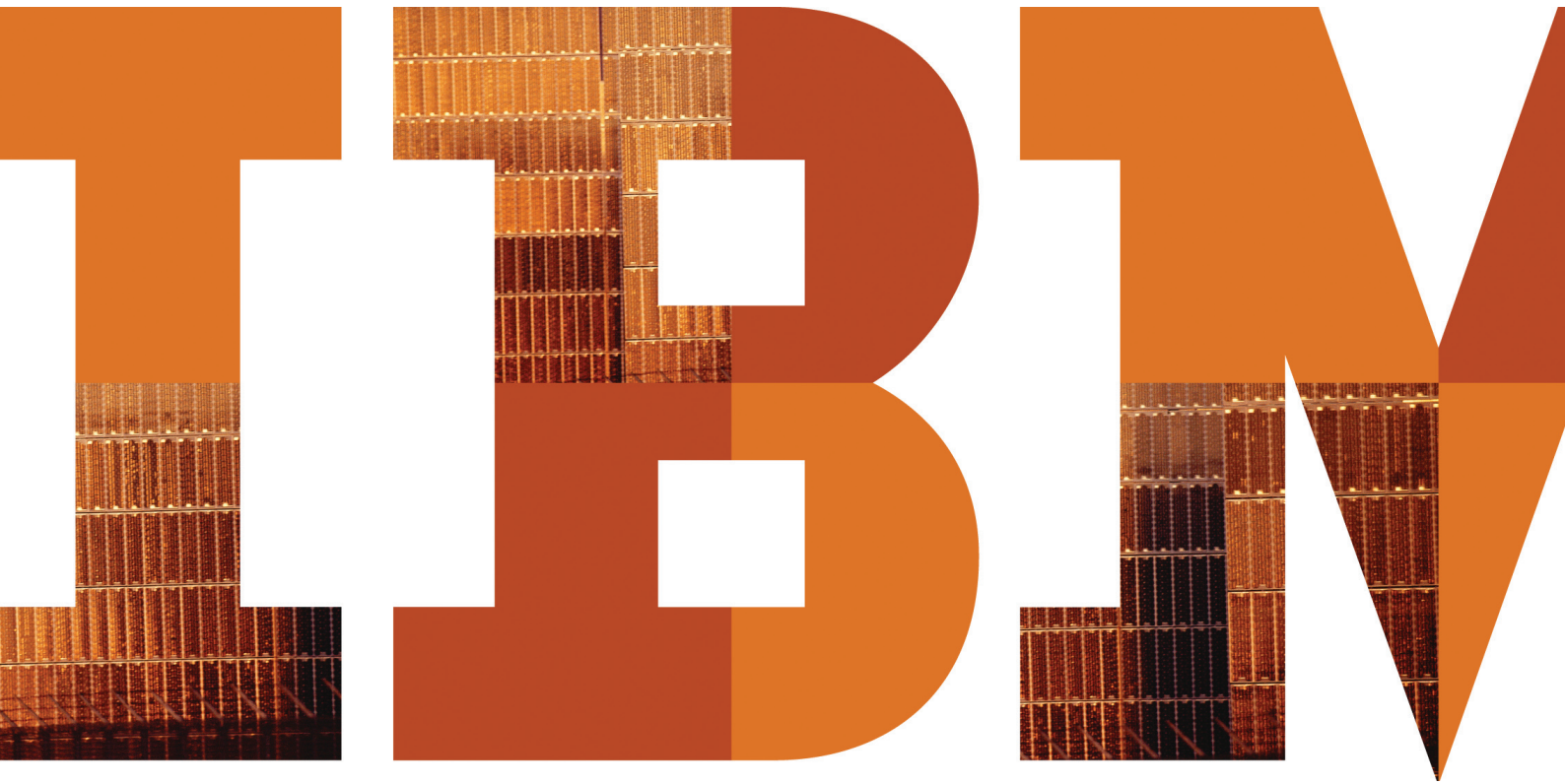


Discovering hidden costs in your data centre – a CFO perspective

by Steven L. Sams



Under a glaring spotlight, Chief Financial Officers (CFOs) and their Finance organizations have had to address urgent capital acquisition, cash flow and revenue challenges. Volatility and uncertainty have drawn them into more frequent boardroom conversations about forecasts, profitability, risk management, and strategic decisions related to supply chains, pricing and production. As a result, CFOs are emerging with far more influence at the enterprise level, as IBM determined in a recent global survey of CFOs.

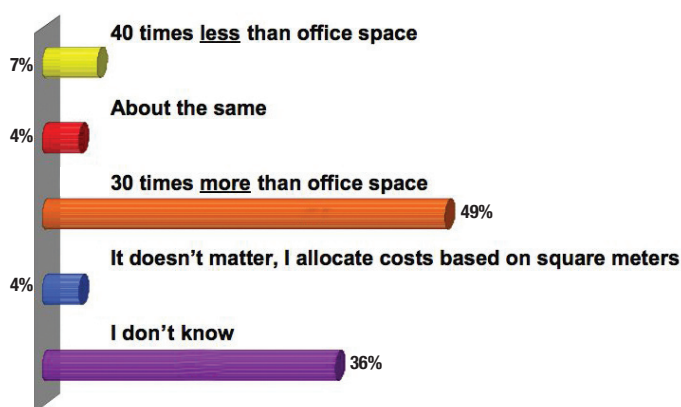
One key area sets top performers apart. When Finance transforms today's wealth of financial and operational information into business insights, they contribute to significant enterprise value creation. At the June 2010 meeting of top CFOs at the Financial Executives International (FEI) Canada annual conference, IBM had the opportunity to talk with more than 60 CFOs to determine how much business insight they have on their data centre costs, as an indication of the general state of knowledge of CFOs on the topic. The good news? CFOs can take proactive steps today to ensure a healthier bottom line.

When traditional sources of cost reduction have been exhausted, it's time to weed out budget-draining hidden costs. Government environmental regulations and increased public scrutiny have put energy cost management squarely in the hands of the finance department. Forward-thinking CFOs are finding new ways to save money through proper accounting for energy costs and more efficient management of company data centres. Yet, in our polling results we found that a significant number of CFOs are not aware of their hidden data centre costs.

When we asked CFOs at the FEI Canada conference the percentage of their total energy costs which are attributable to the data centre (Figure 1), a significant number – 36 percent - indicated they did not know off-hand the breakdown. Also, because they allocate based on cost per square meter, they can not ensure accounting for energy costs to the right organizations.

According to Gartner Research, data centres consume 30 to 80 times more energy per square meter than traditional office space. The Environmental Information Agency predicts that energy costs will continue to rise by 10 to 25 percent in the next few years, so data centres and the energy they consume should be a primary area of concern for CFOs.

Figure 1: Polling Question: Compared to your office buildings, what percentage of your total energy costs are attributable to your data centre?



A few years ago, IBM's CFO saw escalating energy costs and initiated a project to understand who the main users of energy were within our own corporation. We discovered that data centres accounted for only 6 percent of our total space but represented over 35 percent of both the energy consumption and energy costs. As more employees move to a mobile workforce allowing us to reduce our office space and as IBM's Strategic Outsourcing business grows, the total space distribution has remained the same. However, data centre energy use and costs have grown to 45 percent of the total, as Figure 2 demonstrates.

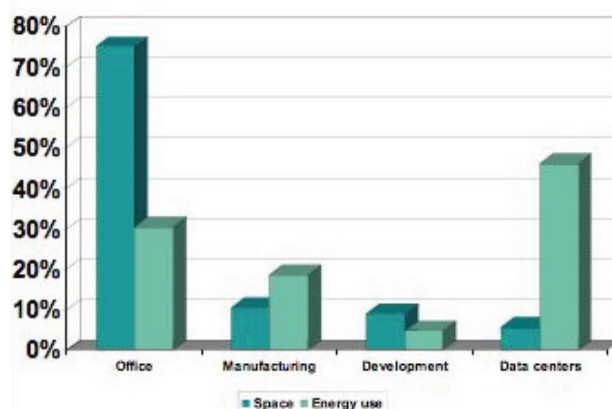


Figure 2: Comparison of percentage of space usage and energy costs at IBM

This is not just a concern for companies the size of IBM or with large data centre outsourcing businesses. Industry analysts suggest that most non-smoke stack industries such as banking, healthcare, retail and government agencies have data centres comprising 15 to 25 percent of their total energy costs. In a recent article in Wall Street and Technology entitled “The Data Center of the Future” Citigroup’s director of data center planning, Jack Glass, reported that “Citigroup’s data centers account for just 1 percent of the company’s physical infrastructure space but consume about 25 percent of the power.”

We have found that simple actions result in one- to five-year paybacks, including:

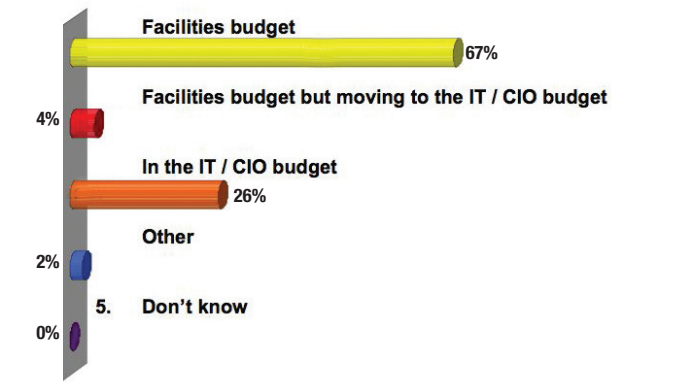
- server and storage virtualization
- implementation of energy management software and
- designing new data centres to be energy efficient and instrumented to manage ongoing costs

Successful CFOs have always been those who can provide hard data about the business that reflects the reality of the enterprise’s performance. With data turned into information and then insight, Finance moves beyond ‘taillights’ — historical reporting — to a keener sense of ‘headlights’ with which to illuminate the future direction of the enterprise. As truth owner, the CFO can help shape operational decisions and strategic directions. The first place you should turn your headlights toward is in the allocation of energy costs.

The CFOs were polled on what organization has the accountability for data centre energy consumption in their company (Figure 3). Consistent with other industry surveys of c-suite executives, the CFOs indicated that the majority of the bills – or 67 percent – resides within the facilities or real estate divisions. Only 30 percent indicated the data centre energy costs either reside in, or are moving to, the CIO budget.

CFOs can have a tremendous impact on changing the behaviour in their organizations by establishing the proper accounting for energy costs and use – and placing the responsibility in the hands of the CIOs who drive the use of IT to support the business. The CFO at St. Lawrence College in Ontario, Canada realized the need for change – specifically, to put ownership into the hands of the CIO. He ensured such allocation occurred when the college implemented a green data centre solution at the end of 2009.

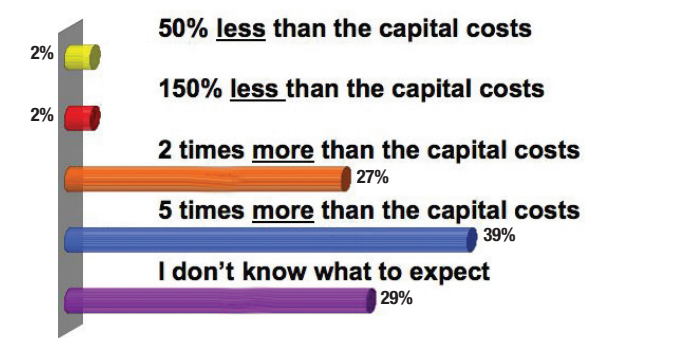
Figure 3: Polling Question: In which budget does the cost for the data centre energy consumption reside?



“We just made a substantial investment from a facilities perspective into reducing our annual energy costs. From an accounting perspective, we need to allocate our costs to our programs. The two largest components of a program’s cost are space and IT technology. Unless you put ownership in the hands of the folks that are running those programs you can’t make it a true, college-wide endeavour.” *Glenn Vollebregt, Senior Vice President of Finance and Administration for St. Lawrence College*

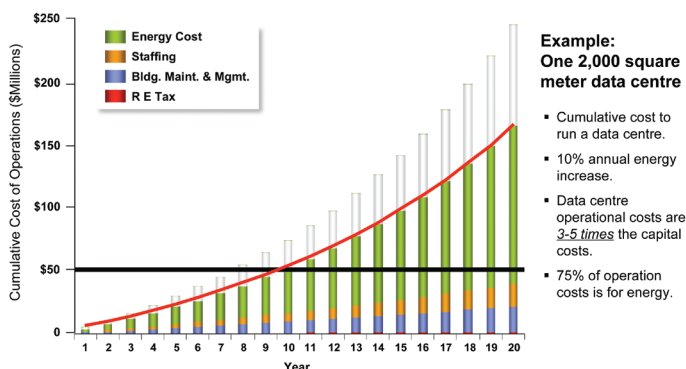
Since data centres are long-term and somewhat static investments – often needing to last 10 to 20 years for good return on investment – many CFOs focus on the upfront capital costs when looking at a new data centre proposal. When asked their expectations of the operating to capital cost ratio over the life of a new data centre, almost 30 percent of the CFOs didn’t know what to expect for a data centre’s operating costs (Figure 4).

Figure 4: Polling Question: Your CIO brought a capital request to build a new centre to you. Based on the capital costs she shows you, what do you expect the 20 year operational costs for the new facility to be?



Based on the hundreds of data centre implementations performed for our clients, IBM estimates that the data centre facilities operating costs are 3 to 5 times the capital costs over a 20-year period. This is shown in the graph in Figure 5, where the black line represents the initial capital costs and the graph shows the cumulative operating costs of the facility. The largest operating cost is energy – which can account for up to 75 percent of the operating costs. Designing for energy efficiency can reduce the facility operating costs by over 50 percent. In the example below of a \$50 M USD capital cost to build a new data centre, over \$100 M USD would be saved on energy costs over the 20-year life, thus recovering two times the capital costs.

Figure 5: Optimize lifecycle costs and reduce operational costs by up to 50%



IBM has implemented hundreds of modular data centres for our clients in the past three years because they provide a cost-effective and flexible approach to meet unpredictable capacity requirements. One implementation was the Scalable Modular Data Centre which was implemented at St. Lawrence College.

“The data centre project for us, first and foremost, became an issue of knowing the total cost of the project and how it fit into the cost structure of the college as a whole. Without extra capital, the college was able to use operating funds by positioning the Scalable Modular Data Centre as an investment opportunity for the college.”

Glenn Vollebregt, Senior Vice President of Finance and Administration for St. Lawrence College

“IT is a large user in consumption of energy, so they need to participate in the sustainability of a college.” With an expected ROI of 3 to 5 years, Vollebregt believes the green aspect makes the data centre an even stronger investment.

IBM has found that using a modular design approach to build in smaller increments – or modules – allows savings of an additional 40 to 50 percent in capital and operating costs. This is because you pay only for what you need – allowing you to reduce your risk as you better align the data centre capacity to the needs of the business.

To improve your insight on your hidden data centre costs, take a few simple steps.

1. Establish accountability for data centre energy costs and savings.
2. Get the facts. Be sure you ask your CIO to include capital and operating costs in your data centre decisions.
3. Implement the “low-hanging” fruit for immediate savings.

By taking these proactive steps today, CFOs can help ensure a healthier bottom line. Leveraging outside experience allows you to achieve your goals quickly and efficiently. Our IBM team is always available to help your organization improve business insight into budget-draining hidden data centre costs – and to help you design your data centre for maximum energy efficiency.



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