



# True **ECONOMICS**

IBM helps clients make better decisions based on actual IT costs

**T** rue IT costs are often difficult to determine, but they can quickly add up and impact the bottom line. Companies purchase inexpensive hardware to save money; however, over time the software licensing and labor required to manage an environment increases. And as sprawl happens, more networking, power, space and cooling are needed.

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Enterprise servers may come with one bill with a lot of zeros, but if clients add up all of their distributed IT cost items, they'll realize enterprise systems are actually more efficient and cost-effective. Cloud solutions also offer savings and provisioning agility over x86 on-premises data center solutions.

## Quantify and Reduce IT Costs

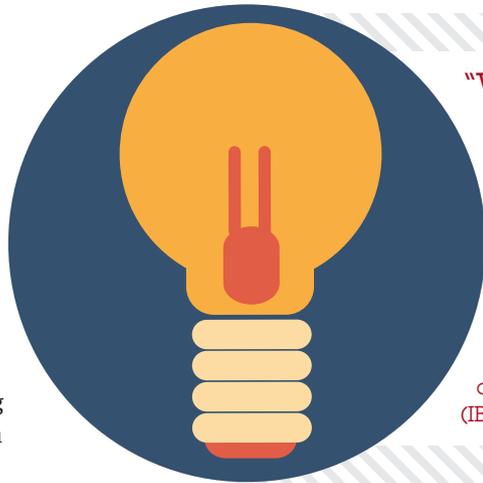
Total cost of ownership (TCO) analyses, such as those conducted by the IBM Eagle Team, are becoming increasingly important. The Eagle Team looks agnostically across all server platforms—IBM z Systems\*, IBM Power Systems\*, other UNIX\* systems, cloud

implementations and any x86 platform environments—to give clients a clearer picture of where IT dollars are being spent and to what effect.

## Objective Measures

Since Eagle TCO studies were established in 2007, more than 525 have been completed. Many

of the participants are larger companies straining under the weight of ever-growing IT costs—although increasingly, smaller companies are experiencing the same growing pains, whether because of sprawling server farms, swelling energy costs or the all-too-alluring total cost of acquisition (TCA). To get a complete view of total costs, it's necessary to look at the following four factors to suggest changes in client IT environments that can remedy IT roadblocks:



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1. IT cost line items—hardware software, networking, storage, labor and power consumption
2. All environments associated with one or more workloads—development and testing, quality assurance, production, high availability and disaster recovery
3. Time and events—potential growth factors such as new market entries, mergers and acquisitions, product refresh rates and migration effort
4. Nonfunctional requirements—less quantifiable, but significant factors, such as performance; reliability, security and availability (RAS); and service-level agreements (SLAs)

These add up to “IT economics, or the financial facts of doing nothing or acting on one or more choices the client is considering,” says Christopher von Koschembahr, management consultant, Strategic IT Optimization Services (IBM Eagle Team), Americas practice executive. “We want our clients to consider what will ultimately save them money by lowering their costs.”

This isn't merely a sales pitch. IBM genuinely and objectively wants its clients to improve

services and reduce or optimize their IT expenditures, whether on new acquisitions, software licensing, consolidation or right-sizing. All companies, regardless of industry, can benefit.

“We look at their numbers and an agreed-upon set of assumptions and run these through a transparent model. This can result in a very engaging conversation, because we're laying out everything our clients would like to include in the study and expanding that out over a five-year period,” von Koschembahr notes. “If they don't agree with the figures, we'll adjust the study accordingly, depending on what they'd like to change. This type of iteration and active involvement is important because it makes the study their study—and not ours.”

A study might indicate, for example, that a company could benefit from consolidating and virtualizing many Linux\* instances to a single high-end server, using either z/VM\*, PowerVM\* or PowerKVM\* virtualization. In a case such as this, well-defined numbers may assert that reducing the breadth of a server farm by moving thousands of one-offs to a z Systems or Power Systems server to reduce energy consumption and

software-licensing fees, and improve ease of management.

Another study might find that moving workloads to a hybrid cloud solution will reduce CAPEX and facilities costs and improve time to provisioning. An analysis of the workload types, size and attributes will indicate which workloads are best suited for public or private cloud.

It doesn't take many distributed servers to make a compelling business case. Von Koschembahr cites an example when a CIO requested a study to justify to other managers that consolidating some workloads to a higher-end system might be more cost-effective than maintaining the servers they'd been running on in a distributed environment. The client provided server information for only 25 of its distributed servers, and the study results showed a savings of around \$4 million over the five-year TCO objective. This wasn't a huge savings for them, but the client had well over 3,000 distributed servers. And if only 10 percent of those servers fit the profile of workloads that could easily move between platforms (low risk and within a year), the company would experience a strong ROI—and the overall savings would greatly increase.



One client with  
**3,000+**  
 distributed  
 servers found  
**\$4 million**  
 in savings after  
 evaluating only  
**25**  
 of its  
 servers

## The Pitfall of TCA

TCA is alluring. The upfront costs of purchasing blades mounted in racks, for example, can seem like a less expensive alternative than buying an enterprise system to host Linux. The problem arises after those purchases have been made—when the bills for the software, labor and power come in. That’s when costs begin to increase. Rarely do senior executives circle back a year later to ask for a view of every invoice associated with the project and compare it to the initial business case—and to the overall cost they were paying for the high-end server environment where it began.

The other classic mistake is when someone successfully moves a development/test environment of an overall workload—or moves a small, simple workload off a high-end server—and then linearly extrapolates that success for the rest of the environments or the rest of the workloads. “That is categorically never the case,” von Koschembahr says. “Often, the first things off save nothing. Those workloads sit in what’s called ‘whitespace’—or free cycles—and the harder ones involve many more entanglements with other workloads and batch. We can estimate the effort to migrate off high-end servers and allow the client to determine if that effort is worth the investment or if that same money is better spent on innovation and growth, which adds new value to their clients.”

Although software costs are often the biggest differentiator, the cost of labor is another significant factor, as it expands to tracking patches and change management as the number of physical servers increases. Issues related to power and space are very interesting to CIOs, he adds. “One CIO realized that the next



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inexpensive x86 Intel\* server was going to cost them \$5 million, which was their cost to build an entire new data center to house the additional distributed server.”

IBM IT Economic studies will also examine the impact of core-based software across architectures. Many software-licensing fees are based on the number of cores used to support applications. In the case of highly distributed computing environments, more cores will be used to support an application—thus incurring higher licensing costs to achieve the same levels of performance and to meet committed SLAs.

“Some clients want to run Linux on a z Systems or Power Systems server but may be having a hard time financially justifying it because of the TCA. So we’ll look at their entire inventory, find the low-hanging fruit—or what can most easily be migrated—and run the numbers to compare running new x86 purchases against a Power Systems purchase, include all other IT costs for environments for that workload and provide them a detailed TCO report, looking out five years,” von Koschembahr says. “Because we include both the migration effort—time and cost—as well as

the one-time-charge investments required, our studies become much more than just a study—but rather a business case, grounded with the client’s data, that they can use to make their IT decisions based on financial facts.”

IBM IT Economics studies also evaluate potential future growth, which can impact all of the other issues companies may be facing, including server farms, development efforts and availability. Although some companies might be wary of discussing what might be proprietary information with IBM, the numbers can remain somewhat vague—and aren’t shared outside the confines of client-specific studies.

“The one thing we always know is that the number isn’t zero,” he says. “So we’ll simply ask for ballpark figures, or agree together to use industry averages. Once we get close, we’ll run with those numbers. Also, based on our past studies in various industries, we can estimate growth numbers on our own. This is important because we have to look at the lifecycle of the equipment the clients have in place. For example, if a company is going to grow at such-and-such pace over five years, they’re going to have to



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replace some of their equipment at some point. That works into our five-year study projections.”

### IT Chargeback

An emerging area of concern for many organizations is the use of effective chargeback policies to manage IT costs in an efficient and predictable manner. A good chargeback system aligns IT chargebacks and IT costs, allocates shared resources fairly, is easy to administer and, above all, drives good insight and decision making for IT operations. All too often organizations experience budget overruns and poor IT behaviors resulting from ineffective chargeback policies. An analysis of your organization’s chargeback policies combined with the aforementioned TCO dimensions can identify actions to align policies and costs so that IT costs are manageable.

### Getting Started

While many may think that an IBM IT Economics study consumes a great deal of time, von Koschembahr insists the process is largely unobtrusive. The client’s time commitment for this no-charge service equates to only a few hours for a few people.

“All we ask for are a couple hours at the beginning, a couple hours at the end and few hours during the process. The overall time for our engagements is four to five weeks,” von Koschembahr says.

But the IBM senior IT consultants who perform the studies aren’t just number crunchers, as von Koschembahr points out. “A lot of clients will be happy to hear we don’t do PowerPoint presentations. Instead, we talk about the model, listen a lot, share good and bad practices, help identify what the study should focus on and then present the results,” he says. “We help our clients make

the point they themselves have been trying to make by building a business case for them to use with their senior IT management.”

If your organization has more than three hardware platforms or data centers, needs to simplify IT

operations, or is looking for ways to reduce IT costs, the IBM Eagle team would be happy to meet with you to examine options to improve your IT economics.

To learn more, contact the Eagle team at [eagletco@us.ibm.com](mailto:eagletco@us.ibm.com). 

