Reducing infrastructure and operations "run" expenses is IT's most effective option to free up funds for growth and transform initiatives such as digital business. We provide a systematic approach to I&O cost reduction.

Key Challenges

- Given relatively flat IT budgets, IT leaders can best make available more funds for digital business by lowering the costs to "keep the lights on" — collectively known as "run" costs.
- Since infrastructure and operations (I&O) comprises two-thirds of overall IT run costs, I&O is the primary area for reducing expenses.
- Finding new I&O cost reduction opportunities is very difficult because most enterprises have already implemented major reduction projects throughout I&O.
- IT leaders need a systematic approach to scrutinize direct and indirect costs of I&O assets, to recognize the impacts of reducing these costs, and to choose which projects to implement.

Recommendations

IT leaders should:

- "Follow the money"; that is, begin the search for new cost reduction opportunities on those assets and resources that account for the largest part of "run" expenses, then move to the second-largest, and so on. In this search, utilize Gartner's total cost of infrastructure and operations (TCIO) model to ensure all costs are accounted for.
- Apply these three fundamental economic principles to identify potential cost-saving actions: economies of scale, modernization and staff productivity. (These three principles drive nearly all I&O cost reduction opportunities.)
- Prioritize and select cost reduction projects by assessing each project’s impact on customers, organization, technical risk, investment level and payback. Perform this assessment at a level sufficient to differentiate project impacts; don’t overanalyze.
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Strategic Planning Assumption

Through 2018, at least 75% of enterprises can reduce annual I&O "run" costs by 25% or more.

Introduction

The turbulence in the world economy is driving enterprise leaders to direct IT to find ways to optimize costs — within both IT and the enterprise at large. At the same time, digital business is expanding as a powerful, multifaceted approach to transform and grow. Asked to pursue these seemingly divergent ends — savings and growth — IT leaders are well-positioned to base cost reduction decisions on extensive assessments while committing to long-term transformation.

(This research is part of a series of reports on "Cost Optimization in the Age of Digital Business"; please see Figure 1 and Note 1 for more information.)
Typically accounting for more than half of IT budgets, I&O is a crucial area of focus for IT leaders who aim to bring down costs — especially in vertical industry sectors and geographic regions under high economic stress. Though few near-term opportunities for savings may be apparent, I&O provides plenty of longer-term room to leaders willing to address cost optimization with careful scrutiny of every asset.

Gartner’s total cost of I&O, or TCIO, model presents a way for IT leaders to properly assess and reduce a range of direct and indirect I&O costs, especially including run-the-business expenses (see "Using Gartner’s TCIO Model to Optimize Costs, 2016"). The approach involves modeling the TCIO for each I&O functional area, evaluating the most impactful methods for reducing costs and then prioritizing cost reduction initiatives.

I&O comprises four major technology domains: data center, networking, client computing and service desk. TCIO can be estimated by considering a range of factors, but to get started, only six readily available inputs — such as the number of employees — are required.

Three key principles — economies of scale, modernization and staff productivity — drive most cost reduction opportunities. Hence, applying them is extremely useful in searching for potential cost savings (see "Apply Three Economic Principles to Help Win Approval of Major I&O Business Cases"): 

- **Economies of scale**: The cost per unit decreases as the number of units increase.
- **Modernization**: The cost of a given capability (such as CPU speed) decreases over time.
- **Staff productivity**: The number of devices a staff member can handle increases with the number of personnel, number of units and time.
Once cost-saving projects are identified, those projects must be prioritized to determine which to initiate and which might be pursued in the future, if at all. Such an assessment has several dimensions:

- Cost savings benefit
- Payback time
- Customer impact
- Organizational impact
- Technical risk
- Investment level

Except in dire situations, cost reductions should only be taken when adequate service levels can be maintained. Additionally, the adage "spend money to save money" is quite relevant to I&O optimization.

**Analysis**

**First, Focus IT Cost Reduction on I&O Run Costs**

The IT budget has two major components: grow/transform allocations and run allocation (see Note 2). Typically, one-third of the IT budget supports growing or transforming business capabilities and two-thirds support run capabilities. Given a constrained IT budget, more funds can be invested in grow/transform — supporting initiatives like digital business — if by reducing the proportion spent on run. I&O is about 55% of the entire IT budget; I&O itself includes roughly 80% run expenses. Clearly, reducing I&O run expenses provides clients with the largest and most likely area to increase how much is spent on growth and transformation initiatives. This research focuses on how to identify new opportunities to reduce run costs while maintaining performance levels.

**Follow the Money: Determine Where the Most Funds Are Being Spent on I&O**

In Figure 2, the IT budget is segmented into seven key functional areas or domains. I&O includes four of those domains: data center, networking, client computing and service desk.

The relative contributions of the four I&O domains represent a logical order to look for cost reduction opportunities.
Similarly, each domain can be broken down into components to search for cost reductions; Figure 3 presents two typical cost breakdown structures for a data center.
Further cost breakdowns can also be done within a given component. For example, there are four main types of compute: Windows server, Linux server, Unix server and mainframe. Each of these compute assets can be broken down further into resource types, such as hardware, software, staff and facility/power. Knowing how costs are apportioned among asset and resource types can enable clients to “follow the money” and investigate the largest contributions first, the next-largest second and so forth.

Utilize Gartner's TCIO Model

Of the various costing models that could be utilized, Gartner strongly urges clients to implement TCIO, a variation of the more familiar total cost of ownership (TCO) model. TCIO is simply TCO as seen through the eyes of an I&O leader. TCIO accounts for all costs associated with each I&O asset. Some of those costs are direct — say, the purchase price of the server — and some costs are indirect, such as the cost of physical space associated with a server.

One-time costs are amortized over the expected economic life of the asset, and operating expenditure (opex) costs are, of course, ongoing. TCIO merges these numbers and presents a single annual number that captures all costs. Clients adhering to TCIO avoid the difficulty of dealing separately with capex and opex. As an example, the TCIO of a Windows server per OS instance is, on average, $5,662 per year (see "IT Key Metrics Data 2016: Key Infrastructure Measures: Windows Server Analysis: Current Year").
Figure 4 illustrates a common issue that can mislead clients: The lowest purchase price does not necessarily lead to the lowest TCO and, by association, the best opportunity for cost reduction. In this example, Server B had a lower purchase price tag, but its TCO is considerably more than the TCO of Server A. Server B represents a one-time purchase that is not included in the current server portfolio, leading to higher staff, maintenance and other ongoing costs.

**Figure 4. TCO at Work: Which Server Costs Less?**

To Determine Cost Savings Opportunities, Apply These Three Fundamental Economic Principles

In our cost savings research, we have found that one or more of three fundamental economic principles lead to nearly all I&O cost savings ideas (see Figure 5):

- **Economies of scale** originate from manufacturing and apply to I&O as well. This concept asserts that as more units of a product are manufactured, the cost to make a single unit decreases. In the I&O case, the per-square-foot cost of a data center decreases as the number of square feet increases.

- **Modernization** is based on the idea that subsequent generations of a high-tech product offer cost/performance improvement over earlier versions. This is often due to Moore’s Law.

- **Staff productivity** asserts that the number of work units that can be effectively accomplished by a single full-time equivalent (FTE) staff member increases with the number of work units, number of FTEs doing similar work and time.
For each major cost component, assess which, if any, of the principles apply.

Select and Prioritize Cost reduction Projects by Assessing Each Project’s Impact on Customers, Organization, Technical Risk, Investment Level and Payback

Once TCIO assessments have been completed, IT leaders must identify which cost reduction projects should begin and which can be scheduled in the future — no easy task, considering that several resources can appear as likely and immediate targets for reduction. The organization faces a moment of complex potential, as the timing of a project can not only save money, but also drive the business forward. It is important to maintain performance levels as costs are reduced. It is equally important to regard the age of digital business as a time of opportunity for growth and transformation.

A prioritization process can enable users to understand the impacts that will occur should the business commit to reducing the cost of a particular asset. The intention is to make every anticipation and consideration before committing to a project. Every consequence and benefit
should be recognized. No business will want to proceed without thinking through, for example, what consolidation might mean. Does the business have the knowledge to manage new technologies? Is the business prepared for large investments?

Clients can rate several areas of benefits, using a simplified rating scheme that assesses each benefit as "excellent," "good" or "fair."

The assessment areas and relevant actions are:

- **Cost savings benefit:** Consider the size of the cost savings relative to the I&O budget.
- **Payback time:** Determine if the estimated payback period fits enterprise goals and guidelines.
- **Customer impact:** Anticipate how adopting a project will change internal and external behaviors and capabilities and ultimately impact consumer experiences.
- **Organization impact:** Determine how the plan will impact the enterprise organization in terms of staff, operations and structure.
- **Technical risk:** Ascertain whether risk is at an acceptable level and can be addressed with available skill sets.
- **Investment level:** Determine whether the expected upfront investment can realistically be made.

Figure 6 illustrates the comparison of several sample cost reduction projects. Consolidation of computer rooms earns an "excellent" rating in terms of cost benefit, but is rated only "fair" for payback time and investment level. By this matrix, such a project would not be as beneficial as a re-examination of network costs or an increase in facility and power efficiencies. Between those two projects, a team may make its own judgment as to the significance of "excellent" ratings in four of the six categories, or the significance of a similar rating in one category above all others: customer impact. This is the virtue of the prioritization method. A business can apply its own value to the impacts and outcomes of a reduction project, a key capability that enables an organization to follow its own terms as it moves forward, grows and transforms.
Note that this three-level assessment could be refined to, say, a 1 to 10 scale. The importance of each category could be weighted as well. The point is that although a category like "customer impact" seems complex, a detailed analysis usually isn’t required to prioritize projects. After all, you are assessing the significance of each project relative to the rest. Once the number of projects has been narrowed, a more detailed assessment may be required for business case approval.

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Using Gartner’s TCIO Model to Optimize Costs, 2016"

"Apply Three Economic Principles to Help Win Approval of Major I&O Business Cases"

"IT Key Metrics Data 2016: Key Infrastructure Measures: Windows Server Analysis: Current Year"

Evidence

IT Key Metrics Data (see Note 3)
Note 1 Cost Optimization in the Age of Digital Business
Cost optimization in the age of digital business means organizations must use a mix of IT and business cost optimization for increased business performance, while preparing for digital futures.

Note 2 Run and Grow/Transform Cost Components Defined

Run the business: The basic function and associated expenses are essential to staying in business, and the need for the function is not at issue. Price/performance is the real issue.

Grow/transform the business: "Grow-the-business" actions increase revenue/market share. "Transform-the-business" initiatives change the business model to adapt or drive major market changes.

(For more information, please see "A Simple Framework to Translate IT Benefits Into Business Value Impact.")

Note 3 What Is IT Key Metrics Data (ITKMD)?

ITKMD is part of the Gartner Benchmark Analytics range of solutions, and offers macrolevel and platform-level looks at Gartner's global database of comprehensive cost and performance measures. The annually published ITKMD reports contain relevant database averages and other statistics from a subset of metrics and prescriptive engagements available through Gartner Benchmark Analytics. ITKMD consists of more than 2,000 IT cost and performance statistics. In 2015, Gartner collected ITKMD from over 2,000 enterprises worldwide. The data collected through 2015 formed the basis of the 2016 ITKMD series of reports.

ITKMD provides immediate access to authoritative data on IT staffing and investment levels, as well as key technology cost and performance metrics. ITKMD is multilevel: from macrostatistics (such as IT expenditures/employee) to platform-level statistics (e.g., mainframe cost/MIPS). These metrics support improved budget and investment decisions with regard to the changing environments of business and IT. ITKMD is collected year-round through direct fact finding in our benchmarking and consulting engagements, and through surveys of the Gartner community and at Gartner events, in addition to surveys of non-Gartner-based communities.

For more information, please see "IT Key Metrics Data 2016: Executive Summary."
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