

IT optimization allows mid-size businesses to respond rapidly to changing business priorities and align their IT infrastructure with the strategic goals of their company

June 2008



Do More for Less: Build a Cost-Effective, Optimized IT Infrastructure



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Today's key IT business challenge is to do more for less, to find ways to reallocate resources and budget from routine operating expenses to investments that more directly support strategic company objectives. For example, IT departments spend 80% of their budgets just to keep their networks up and running. You might be facing an IT environment with one workload per server, labor-intensive provisioning and disparate management tools that are spread over multiple sites. Mid-sized companies are looking for ways to improve resource utilization and performance, lower infrastructure complexity and free IT resources to focus on business priorities. In fact, improving utilization and management of IT resources is a top priority for 51% of executives, according to an IBM survey.

Many chief executives view growth as a key focus area. Growth is attained with planned strategies and by responding quickly to new opportunities. In addition, a survey of 1,130 CEOs around the world, conducted by IBM and published in May 2008, revealed that concern about environmental issues has doubled over the past four years. The CEOs surveyed said they would increase investments in better understanding socially minded customers, considered the fastest-growing trend by the chief executives, by 25% over the next three years.

The challenge to IT

In contrast to the increasing need for long-term IT planning, many companies typically make IT purchase decisions based on short-term business requirements and timetables. Although this strategy may meet the current and near-term needs of the business, over time it results in disparate systems that are running on many individual servers and that require multiple support teams. Problem identification is complex, data accessibility is generally limited and integrating new applications into existing systems seems impossible. The end result is an IT infrastructure that has met yesterday's business needs but today is inflexible with high operational and maintenance costs.

An increased focus on environmental issues by consumers and shareholders means that businesses cannot afford to overlook environmental concerns in their efforts to generate increases in operational efficiency. Furthermore, businesses must continually stay abreast of and adhere to new and changing government and industry compliance standards. It is important that IT infrastructure respond rapidly to changing business priorities so that it can handle business growth while meeting the new imperative of environmental responsibility.

As demands on your existing IT infrastructure grow each year, more resources are required to maintain your current levels of performance. Meanwhile, the Internet and online businesses have driven up the complexity of today's IT environment. This complexity challenges the ability of companies to stretch their IT budgets, manage their existing IT infrastructures and continue to grow.

“Every IBM System x™ server now can assist IT executives in not only reducing power consumption, but also verifying and documenting the savings to qualify for Energy Efficiency Certificates.”

– Press Release, “IBM Launches World's First Corporate-Led Energy Efficiency Certificate Program,” November 2007

What can you do?

As your business grows, the number and complexity of your data processing systems and the workload on your server room increases, placing greater demands on your IT infrastructure. Increased demand means increased power consumption, and with rising energy costs, mid-sized businesses are faced with the imperative to do more with their IT infrastructure for less. Optimizing your IT environment can bridge the differences between the disparate inflexible infrastructures of the past and the current need for IT to facilitate business growth.

By optimizing your IT infrastructure and building a dynamic “green” environment, your business can be the recipient of many benefits, including:

- *Energy cost savings*
- *Reduced energy consumption*
- *Improved efficiency*
- *Maximized power consumption*
- *Managed capacity*
- *Shared resources*
- *Reduced complexity*
- *Lower unit cost*
- *Easy administration*
- *Fast response rate*

Optimizing your IT infrastructure

IT optimization is the process of modifying your IT infrastructure so that it is more consolidated, flexible and automated. An optimized IT infrastructure facilitates the integration of new business applications. It fuels growth by managing costs with enhanced IT asset utilization, reduces operating expenses and makes it easier to keep your entire IT infrastructure in line with the growth objectives of your company. All businesses, regardless of size, can enjoy the benefits gained from IT optimization.

Optimization also helps you lessen your company’s negative impact on the environment by “greening” your IT infrastructure. It helps you reduce your energy consumption and increase the per-watt performance of your IT assets.

An effective approach to IT optimization involves three stages:

1. Simplifies IT infrastructure and manages assets for a positive financial impact on your corporate strategy.
2. Increases operational efficiency to enhance flexibility and maximize power consumption.
3. Retains and grows IT infrastructure to align with company business goals, without costly renovations.

Simplification consolidates and virtualizes your IT environment, including servers, storage and network assets, into logical asset pools to improve IT resource utilization and lower infrastructure complexity. This provides you with a more complete view of data, which can minimize costs. Increasing operational efficiency is essentially automating capacity and workload management for increased flexibility. Ultimately, you achieve policy-based computing, which results in better IT and business alignment. Retain and grow is a strategy of realigning the IT budget by using savings in maintenance and operational costs to invest in growth initiatives.

The sections that follow describe these stages in more detail.

Simplify your IT infrastructure

Simplification includes consolidating and virtualizing your IT infrastructure to:

- *Reduce IT operating costs and complexity.*
- *Maximize the performance of resources.*
- *Manage your IT environment more easily and effectively.*
- *Dispose of and recycle unused IT assets safely.*

Some typical cost reductions associated with IT asset simplification include:

- *Server consolidation (4 to 1)*
- *Storage consolidation (25%)*
- *Support automation (30%)*

Simplification of IT assets provides a consolidated view of data, regardless of where it is housed, freeing up your valuable resources so that they can focus on exploring innovative ways to gain competitive advantage. You can also reuse your assets more easily, which reduces the cost of change in your IT environment. Simplification provides an architecture and platform that centrally supports and manages applications that are currently maintained at different sites. It also uses automated provisioning, which lowers costs by removing labor-intensive tasks. This can dramatically improve your decision-making, increase productivity, improve relationships with customers, partners and suppliers and create more uniform customer service.

Virtualization is a significant component of asset simplification. When you establish multiple virtual servers per physical server, you are likely to enjoy noticeable cost savings. With a broad set of virtualization capabilities, including cross-platform virtualization, automation and systems management solutions, mid-sized businesses like yours can simply and dynamically access and manage resources for better asset utilization and reduced operating costs. You can incorporate an intranet and extranet portal to share information to further facilitate productivity improvements and cost savings. When your physical server utilization rates increase, your virtual servers are provisioned quickly and automatically. Such automation lowers your provisioning costs while letting your IT environment respond quickly to changing business needs.

Typical approaches to expanding and improving the performance of a company's IT infrastructure can be harmful to the environment because the energy required to cool the server room increases with each new server added. Not only can you reduce complexity in your server room, consolidate servers and save on reduced power consumption through virtualization, but you can also make your server room more energy-efficient, or "green," thereby experiencing a host of benefits, including:

- *Lower operating costs and greater performance per watt.*
- *Reduced energy consumption during times of reduced workload utilization.*
- *Reduced number of servers in the server room.*
- *Cost-effective management of unused IT assets, while helping you to comply with new electronic waste disposal and information privacy laws.*

RackForce, a Web-hosting provider in Canada, experienced a 300% performance and reliability increase and a 30% power-consumption reduction after implementing 320 IBM System x3550 servers with Intel Quad Core central processing units.

Also, when you use virtualization and other options to reduce the energy needed to run your server room, you can earn cash-redeeming Energy Efficiency Certificates (EECs). Participation in an Energy Efficiency Certificate program can enable you to document and verify the energy—and cost—savings achieved through the implementation of energy efficiency projects. Certificates earned—based on energy use reductions verified by a third party—provide a way for your business to attain a certified measurement of its energy use reduction, a key emerging business metric. EECs can be traded for cash on the growing Energy Efficiency Certificate market, or otherwise retained to demonstrate reductions in energy use and associated CO₂ emissions.

In addition, safely disposing of and recycling unused IT assets through a buy-back program can allow you to expand and upgrade your IT infrastructure while being an environmentally responsible corporate citizen. The refurbishing and resale of old IT assets as used equipment or the recycling of unsalvageable systems for raw components are options that mid-sized businesses are looking for to make a positive impact on the environment while simplifying their IT assets.

With automatic workload management, your IT infrastructure utilization rates can be high without the burden of costly labor-intensive manual system configurations. Utilizing multiple virtual servers per physical server will also dramatically reduce licensing costs in many configurations and facilitate administration.

Increase operational efficiency

A National Institute of Standards and Technology study states that 60% of availability and performance issues are caused by IT changes such as integrating new applications and upgrading hardware and software. For many companies today, provisioning a new business solution means provisioning one or more new applications. In the past, this also required a new server to be provisioned along with networking and an operating system. These labor-intensive provisioning tasks are the first areas of possible failure when a performance or availability problem is found with the new business solution.

When your technical resources are consumed with problem determination and resolution, it can adversely affect efficiency and productivity. This is because identifying the root cause of problems and rectifying them can be extremely time-consuming and very costly. The same National Institute of Standards and Technology study showed that 80% of development funds are spent identifying and fixing problems. Why does problem determination and resolution claim so much time and money? Because many companies rely on manual processes to identify and solve problems—manual processes that can impair a company’s competitiveness. By reducing the time that your staff spends on problem determination and resolution and by increasing the productivity of all technical resources, your IT infrastructure and staff can promote rather than inhibit your on-demand business.

The benefits of increased operational efficiency include:

- *Better server and storage use*
- *Less server redundancy*
- *The cost savings of automated provisioning*
- *IT assets that are aligned with business requirements through orchestration*

Retain and grow

IT budgets have two components: spending on new initiatives and spending to operate and maintain IT organizations, systems and equipment. As stated earlier, companies typically spend approximately 80% of their budgets on maintenance and operations, leaving very little for new projects, such as integrating business processes with key partners, suppliers and clients. IT managers are seeking help to align IT resources and budget to focus on supporting the strategic objectives of the company.

As you reduce the complexity and improve how your IT assets are used, the maintenance and licensing cost savings can be reallocated from routine operating expenses to strategic investments, such as innovative technologies, services, techniques and strategic opportunities. By integrating existing systems into a flexible IT infrastructure, you are giving IT the tools to respond to changing business priorities rapidly.

If integrating systems is your priority, you will look at many aspects, including data integration. By integrating your data, you can send a unified view of information to the right people at the right time, helping them to make informed business decisions based on the best and most comprehensive data.

Another IT asset that you may wish to optimize is your Web site. It is not only a communication and support tool for customers, but it is also a communication tool for investors and suppliers, so it must be fast, reliable and fully functioning 24x7.

Why IBM?

Only IBM and its vast network of Business Partners® provide a wide range of solutions to help mid-sized companies simplify their IT infrastructures, thereby improving resource utilization and performance, lowering infrastructure complexity and freeing IT resources to focus on critical business priorities. IBM offers expertise in every industry, extensive local presence and the support and backing to deliver simple, affordable custom solutions.

IBM's 30-plus-year track record of innovation in designing, supporting and operating efficient server rooms is well-known in the industry. In the FSS, Healthcare and Life Sciences fields, we have been creating working strategies for improving energy efficiency, reducing operating costs and keeping up with industry and government regulations and demands. Our willingness to invest millions of dollars in developing solution offerings and campaigns to become the leader in green IT and energy efficiency is illustrative of our commitment and values. We practice what we preach: between 1990 and 2006, IBM's global energy conservation actions reduced or avoided CO₂ emissions by an amount equal to 44% of its 1990 emissions.

IBM solutions simplify your IT infrastructure

IBM offers the industry's broadest set of virtualization capabilities. With IBM's cross-platform virtualization, automation and systems management solutions, you can simply and dynamically access and manage resources for better asset utilization and reduced operating costs. To help you get started, IBM and our Business Partners offer consulting in the form of the IBM Express IT Strategy Assessment to help you put together a strategy that will enable your IT environment to maximize the performance of current and future assets.

IBM introduced the industry's first corporate-led initiative to enable businesses to earn cash-redeeming Energy Efficiency Certificates (EECs) for reducing the energy needed to run their data centers. Now IBM is expanding its energy trail-blazing to make the EECs available for multiple server product platforms.

In addition to the cost-effective and energy-efficient product purchases available to you through IBM, we help you simplify your IT environment by offering IT asset recovery solutions in 57 countries through our refurbishment and recycling unit, IBM Global Asset Recovery Services. IBM has long focused on environmental responsibility as a core value, and today we process about 40,000 used and discarded machines per week in our centers around the world. This can include the inspection, repair and data scrubbing of newer units, which are then refurbished for resale through IBM's sales force and partner network, or the recycling of older systems for raw components. All unusable waste is properly disposed of following environmentally compliant processes perfected over 20 years of leading environmental best practices in the area of IT asset disposition.

IBM offers a comprehensive approach that helps businesses develop energy-efficient and environmentally responsible server rooms that lessen your negative impact on the environment and provide enhanced power consumption per server. IBM virtualization and simplification lets you consolidate work onto fewer servers, reducing your energy and maintenance bills. We help you seize control and manage your power consumption with active power management software that can reduce or eliminate outages and conserve energy by eliminating hot spots. IBM power management software delivers operational efficiency to reduce server heat output and reduces up to 30% of power consumption on servers automatically.

IBM solutions increase operational efficiency

IBM solutions for operational efficiency help mid-sized companies improve the efficiency, performance and flexibility of their infrastructures by creating a scalable, dynamic environment that supports the availability and service level objectives of their businesses. These solutions automate configuration, maintenance and problem determination and resolution tasks. They also integrate with existing IT environments to help mid-sized companies improve the performance and flexibility of their infrastructures. In turn, your solutions become more effective and less costly. The virtual-server provisioning process is efficient and repeatable and errors are rare. Not only is the new business solution able to run with an improved operational efficiency, but it was also created in an efficient operation with less system intervention and less disruption to your business. You gain better visibility and control of your increasingly complex IT infrastructure and applications—and faster problem determination and resolution.

IBM solutions help you retain and grow

IBM and our Business Partners provide a comprehensive portfolio of services and solutions that are easy to implement, use and manage to help mid-sized companies position themselves for growth. These solutions enable you—by building on current IT investments—to respond rapidly to shifting business priorities, integrate your data resources in existing systems while providing seamless access, integrate new applications more quickly and easily and improve your customers' experience overall.

The IBM portfolio of optimization solutions includes offerings developed with mid-sized companies in mind to help you integrate or migrate existing systems. If you are not sure which direction is best for your company, we offer an assessment tool that will help you determine which strategy is best today and in the future. IBM also offers a simple solution for integrating scattered data resources into a scalable data warehouse that you can use to create, manage and deliver reports over the Web or embedded in applications. In addition, IBM offers a Web effectiveness assessment tool that evaluates and provides recommendations to improve the effectiveness of this critical communication channel.

IBM offers rewarding financing options

IBM's financing arm, IBM Global Finance, is the world's largest financier. It offers one-stop financing and asset management services for mid-sized businesses. IBM Global Finance offers complete single-source financing at competitive rates, featuring easy access to leases and loans for IBM and non-IBM hardware, software and services, used equipment and a full range of buyback and recycling services. It is an end-to-end approach with easy access to leases and loans for funding IT and related capital investments; certified used equipment; and secure, environmentally compliant asset management and disposal designed to fit a mid-sized company's business strategy.

IBM Global Finance offers rewarding financing options to assist midmarket businesses with their IT capital investments, including:

- *IBM Financing Advantage*
- *Rapid Online Financing*
- *IBM Global Asset Recovery Services*

IBM Financing Advantage addresses the financing requirements of the midmarket, unlocks working capital and provides smart ways to fund IT investments, including:

- *Competitive rates*
- *Simplified contracts*
- *Asset recovery solutions*
- *Certified used equipment*
- *Enhanced software and services financing and customized transactions for IT acquisitions worldwide, including IBM and non-IBM hardware, software and services*

Rapid Online Financing is the IBM Global Finance online financing portal. The Rapid Online Financing tool meets the financing requirements of midmarket businesses through our IBM Business Partners or Financing Associates. Rapid Online Financing simplifies and accelerates the process for obtaining leasing and financing for IT equipment, software and services by providing a single standard format for all financing requests and a common entry point for all requestors. Financing. About 80% of the time, IBM partners can deliver a contract for a mid-sized business within an hour.

IBM Global Asset Recovery Services entitles you to receive our IBM Flexible Credit™ on the disposition of your unused IT assets, which can be used toward new system or product purchases. Use our automated online IT asset buy-back process—IBM Express Asset Recovery Solution—to request a quote for your old hardware resources.

Summary

A simplified IT infrastructure can increase operational efficiency by reducing the time spent solving problems, freeing your staff to focus on growth initiatives. When you have access to a greater portion of your IT budget and staff, you can retain and grow your IT infrastructure, aligning it with the business goals of your company. This increased IT infrastructure flexibility can help your company rapidly respond to new opportunities and challenges.

The IBM Express Advantage IT Optimization portfolio offers solutions to help mid-sized companies simplify their IT infrastructures to achieve exceptional performance. These IBM solutions are easy to install, use and manage. Further, the IBM Express Advantage program provides superior financing options, including leasing and loans, as well as a full range of buyback and recycling services, so that you can free up cash for core investments and lower your total cost of ownership.

The IBM Express Advantage IT Optimization solution portfolio includes:

- *IT strategy assessment tools to help you determine where you can gain the most from improved efficiencies.*
- *IBM Power™ 520 and 550 Express with IBM POWER6™ processing and IBM EnergyScale™ technology capabilities. Both of these solutions customize power consumption, cut costs and consolidate workloads with IBM PowerVM™ virtualization and support IBM AIX®, IBM System i™ and Linux® operating systems.*
- *IBM BladeCenter® S Express, which uses significantly less floor space and less energy than competitor rack servers. Unlike a stand-alone server that needs multiple power supplies and fans, individual systems management, numerous cables and abundant space, IBM BladeCenter is compact and easy to use. The blade contains all the necessities for running an application—processors, memory, I/O and storage. Components that are duplicated in rack servers—such as redundant power, hot-swap cooling, DVD and consolidated management—are placed in the BladeCenter chassis and shared.*
- *IBM System Storage™ N3300 and N3600 Express solutions, which set up in 15 minutes with minimum IT intervention. IBM storage management solutions are designed to help improve the efficiency of IT administration by eliminating manual sources of error and time-consuming, repetitive tasks. These solutions support Fibre Channel, iSCSI, NFS, CIFS, HTTP and FTP protocols; and can unify SAN and NAS storage needs onto a single system supporting primary, secondary, near-line, archive and data retention applications. With their application-aware software, data protection, replication, backup, recovery and management technologies, they provide a compelling value over competitive products.*

By implementing IBM's IT optimization solutions with built-in virtualization and consolidation technologies, you are reducing costs, building an energy-efficient, environmentally friendly IT environment and making positive investments that will save you money as you continue to sustain and grow your IT infrastructure under increasing energy and budget demands.

Optimize your IT infrastructure with IBM and do more for less.

For more information

To learn more about the IBM Express Advantage solution portfolio for mid-sized businesses, please contact your IBM marketing representative or IBM Business Partner, or visit the following Web site:

<http://www-304.ibm.com/jct03004c/businesscenter/smb/us/en/solutionareas/>



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May 2008
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