The Capacity to Succeed: Demand and Capacity Management
A Symantec Advisory Guide

Who should read this guide:
Functional IT management

Advice offered about:
• Analysis of the problem
• The five signs that your business needs demand and capacity management
• Practical advice on the steps needed to deliver it effectively
• Real-life example of how one large company has tackled the subject
“I don’t understand how companies survive without demand and capacity management—particularly when it comes to predicting and supporting future business developments.”

Large utility company
The Capacity to Succeed: Demand and Capacity Management
How to deliver the IT resources your business needs, when it needs them

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“For years, the attitude was ‘just throw more hardware at it.’ That simply doesn’t work anymore.”

Large utility company
IT is the lifeblood of modern business. Any organization that fails to manage this resource to ensure that sufficient capacity is available—and is being used efficiently—risks losing control of its IT costs and having its business activities seriously constrained.

For businesses in sectors such as financial services, where declining margins are leading to higher transaction volumes, the demand for IT resources is rapidly escalating. As a consequence, more and more CIOs are looking for effective demand and capacity management to justify and optimize their IT budgets. But having seen past initiatives fail and been unable to find all the answers in the ITIL handbook, they are also looking for the best techniques and tools to make sure their efforts succeed.

Many of them have asked us at Symantec for advice and guidance in this area. We have written this guide to give them an insight into effective demand and capacity management across today’s IT infrastructure. It includes:

- An analysis of what demand and capacity management offers and why it is crucial to your business
- Advice on whether demand and capacity management should be a priority for your organization
- Practical advice on the steps needed to deliver it effectively
- The experience of one large company—and what it learned along the way

Stephen Watterson
Lead Consultant
Symantec Global Services

Who should read this guide?

This guide is intended for CIOs, IT directors, heads of infrastructure/data centers, and heads of grid/shared services in organizations that need a better view of their IT assets and utilization.

Facing rising IT power and cooling costs, many businesses are asking their IT to be more proactive and business-enabling. Furthermore, failure to undertake effective demand and capacity management has blocked growth plans at many organizations. As the demand for IT resources increases, the problem will only get worse.
Effective demand and capacity management ensures the timely provisioning and efficient allocation of IT resources in three fundamental ways:

1. Forecasting business demands
2. Applying IT strategy and trends
3. Assessing utilization

At an IT component level, most organizations have tried demand and capacity management by monitoring capacity and performance from servers, storage, networks, and so on. They have also used modeling and trending tools to predict future requirements. Very few, however, have successfully shifted the emphasis from their present day-to-day needs to a more proactive, business-centric view of future requirements. Planning for effective demand and capacity management at your business, however, must factor in future developments, including step changes in demand that may arise from longer-term business initiatives or advances in technology. Delivering effective demand and capacity management requires a process that includes forecasting business demands, applying IT strategy and trends, and evaluating utilization of the current implementation. Key factors central to this process include:

- Identifying which resources are vital to the success of your business
- Ensuring that these resources are available as your business needs them
- Improving efficiency by ensuring that assets are not over-provisioned and then left lying idle

The key output of this process is a unified plan for IT resources across all technology groups that:

- Facilitates successful management of your IT assets
- Monitors and communicates key performance indicators (KPIs)
- Is able to evolve as your business demands change
Figure 1. The demand and capacity management process—the flow of information being gathered, processed, presented, and acted upon
Why is demand and capacity management critical to your business?

While demand and capacity management is not a new discipline, its importance is growing as an increasing number of businesses insist that IT maximize existing assets, support year-on-year increases in business volume, accommodate the increasing reliance of business processes on IT, and enable shorter time to market for new initiatives.

These imperatives have placed huge pressures on IT, creating a situation where IT budgets have ballooned at many organizations. If your business is like many others, four specific factors are pushing you to embrace effective demand and capacity management:

1. Threat to revenues
2. Rapidly rising power and cooling costs
3. Low utilization rates
4. Declining service levels

**Threat to revenues**

If IT is unable to accommodate your company’s new business initiatives because a data center or other IT resource is already at 100 percent capacity, the results can be hugely damaging to both the business and to your IT function. Being unable to provision new equipment can have direct consequences, ranging from loss of revenue to a delayed new product launch. Obviously, these will negatively impact the bottom line—but they can damage your IT as well. At a time when most CIOs are working hard to promote IT as a proactive contributor to the business, failures of demand and capacity management can undermine the reputation of your IT, reinforcing perceptions that it is merely a reactive function.

**Rapidly rising power and cooling costs**

Modern servers demand substantially more power than previous generations using equivalent floor or rack space. And for every kilowatt you use to power the IT infrastructure, more kilowatts will be required to power the air conditioning that will cool it.

As a result, many data centers are effectively at—or rapidly approaching—capacity. In addition, they are running power-hungry equipment at a time when power costs have risen dramatically. The result is that power may soon be the single largest item on your IT budget. In fact, Gartner is predicting that energy costs could rise to more than 50 percent of IT’s overall budget in the next few years—up from about 10 percent today. Your problems are made more difficult by the abundance of green legislation on the horizon.
Even if your business could afford the financial costs and the potential negative publicity of increasing its power consumption, you would face major logistical and planning problems simply trying to buy more power—especially in major cities where businesses are already battling over limited supplies.

Effective demand and capacity management can ease these problems by helping your business reduce power costs, use assets more efficiently, and get a clearer picture of its future power needs.

**Low utilization rates**

With an increasing proportion of the business budget being spent on IT, it is no longer acceptable for you to have assets running well below capacity. Yet our experience shows that many businesses typically run with only 15 to 20 percent utilization—a situation that has too often been caused by fragmented IT provisioning. With corporate social responsibility now a board-level concern, this kind of inefficiency can not continue.

To address this issue, CIOs are increasingly turning to virtualization, consolidation, and the need to use existing assets more efficiently. Indeed, Gartner recently named virtualization as one of the top five CIO technology priorities\(^1\). However, effective demand and capacity management is an absolute prerequisite to successful virtualization.

Not only would effective demand and capacity management prevent many of the problems that have led to the need for virtualization, it also underpins any attempt to implement virtualization on a significant scale. Without it, your business will be without the tools necessary to maintain service availability and agility and to measure the overall success of virtualization initiatives.

\(^1\) Creating Enterprise Leverage: The 2007 CIO Agenda, Gartner, February 2007

“Previously we were forecasting new demand, but we weren’t able to capture the business-as-usual demand, like server and memory upgrades. The result was that all our new capacity was being swallowed up, and our new pipeline was shrinking.”

**Large investment bank**
Declining service levels

Traditionally, new business initiatives or services have led to provisioning of dedicated IT resources. This helped bring about the chronic and costly underuse of assets so common in business today. However, over-provisioning did provide a measure of safety. If a new service operating at only 30 percent utilization of server capacity took off, over-provisioning allowed plenty of room for growth. And with dedicated server and storage, there was no danger of rapid growth compromising the delivery of other services.

Now, with shared storage and virtualized server farms becoming commonplace, many departments and business units are—or soon will be—sharing IT assets. However, this can quickly eat up any excess capacity that was intended to absorb spikes in demand. With 10 or 20 applications consolidated on one server, there is a real danger that unexpected or intermittent demand could affect a wide range of your business operations. At the very least, it could trigger expensive emergency hardware acquisition and demands from your business units for their own dedicated resources.

Formal planning initiatives can give you a better understanding of demand and capacity requirements, making it more likely that you will make cost-effective buying decisions. You can use longer-term forecasting to start planning a major capacity expansion well ahead of the time it will be needed. Longer-term forecasting can also be used to justify investment in efficiency initiatives when you want to delay expansion.

Figure 2. Business volumes mapped against capacity plans over a 5-year period
The six major benefits

In business, it is often the case that an organization that greets a necessity as an opportunity to examine and improve its processes is likely to benefit the most from any new programs. In the case of demand and capacity management, the potential benefits for your organization can be enormous. Among them:

**Benefit #1. Solid projections for IT expenditure**

Your IT is likely to be under increasing pressure to provide detailed figures and bring improved accuracy to your planning and budgeting. Effective demand and capacity management helps in many ways. Most importantly, it enables both your IT and your business units to gain a better understanding of how business strategy and subsequent decisions impact end-to-end IT spending.

Indeed, integrated medium- to long-term demand and capacity management facilitates decision-making regarding the entire IT infrastructure far more effectively than looking at the parts one by one. You may even be able to project IT expenditure three to five years ahead—and map the result to your business initiatives. With collaboration from your business units, your IT can also prioritize investments in new and emerging technologies in order to support planned growth in specific business areas—for example, IT could deploy large-scale computing grids in finance to support algorithmic trading.

**Benefit #2. Improved utilization of assets**

Making more of your assets—those you have now and those you will add in the future—is the most obvious return on your investment in demand and capacity management. To see what we mean, consider a business that leases five times as much office space as it needs. Even if that business didn’t quickly go broke, it would be diverting vast sums from far more productive areas. Yet our experience shows that typical utilization rates for server farms remain below 20 percent—which translates to a server inventory five times greater than needed. With support staff, hardware, maintenance, power, cooling, and space costs added in, many businesses are wasting tens of millions of U.S. dollars every year. Demand and capacity management can help you save those dollars by delivering improved utilization. It does this by:

- Provisioning resources closer to the time they will be required
- Improving confidence that capacity can be provided when needed—without over-provisioning
- Identifying bottlenecks, particularly where critical under-capacity of one resource is keeping others from being used
- Directing new requests to use capacity within the existing infrastructure
- Providing a basis to challenge requests for resources when a business unit may be stockpiling assets elsewhere
These procedures will produce improved utilization at a component level, which in turn impacts utilization at a data-center level. Together, they eliminate the need for your business to undergo costly facility refurbishments, migrations, and expansions. Using a demand and capacity dashboard, system architects can align application deployments with available infrastructure. This means that your IT can invest where investment is needed most.

**Benefit #3. A solid business case**

Without a broad, ongoing view of the impact of business growth on IT demand, it is difficult for you to present a compelling case for major IT investments such as new data centers. These investments face detailed scrutiny and may even be put off for so long that the delay starts to have a serious impact on the business. When that happens, the urgent need to get problems solved quickly can lead to a rushed, sub-optimal, and ultimately more costly implementation.

Improved demand and capacity management helps you break this damaging cycle by producing smoother short-term IT functionality and more reliable long-term projections. In turn, these boost the credibility of your IT and give it the data to produce a solid business case for investment.

**Benefit #4. Streamlined procurement**

Better awareness of your future requirements can also pay substantial dividends in procurement. Your sourcing process can begin earlier, with better-defined requirements and more specific deadlines, so you can explore all your options and make sure you get the right solution at the right time for the right price. Your business will also gain greater confidence entering into long-term sourcing arrangements, which is likely to offer opportunities for significant savings.

**Benefit #5. Business agility**

If you can properly track the relationship between business growth and IT use, your IT is much more likely to stay in step with the business and maintain the agility to execute significant change. This increased responsiveness will be especially prized in an organization where a rapidly changing competitive landscape can make predicting demand—even for only the year ahead—a daunting task.

Demand and capacity management is also a powerful enabler of your strategies for tackling other pressing IT concerns. For example, it is a crucial component of data classification and migration, data and storage management, and data-center space creation.

“We’re already seeing cost avoidance on a considerable scale. For example, we had one request for 50 new servers. After just a day working through the actual requirements, we showed that there was already plenty of suitable capacity available on the server farm, and only 15 new servers were needed.”

Large investment bank
Benefit #6. Business confidence

As CIOs work to create an environment in which IT is known as an enabler of business success, demand and capacity management is an important step toward proactive engagement with your business. It allows your CIO to properly gauge future requirements—and then deliver the right IT infrastructure to meet those requirements. This can be a powerful tool for inspiring business confidence and winning support for new investments designed to support business growth.

With successful demand and capacity management, your IT will be increasingly able to position itself as a proactive, value-added service provider rather than a reactive bottleneck to business growth.
In its simplest terms, successful demand and capacity management depends on having a team specifically charged with gathering, analyzing, and balancing all the IT needs of your business. It takes considerable experience and organizational knowledge to make it work—and it takes a set of processes that provide incentive for more accurate capacity requests. There are several important steps you can take to get it all right:

- **Provide high-quality data.** The key to controlling demand is to develop high-quality data from trusted sources for IT management and their technical staff to use. The easiest way to get this data is to involve everyone who is affected by demand and capacity management. Once people trust your data sources, you can build on that trust with a good communication plan—one ensuring that the data analysis process and reporting are clear.

- **Prepare for growth and changes in the market.** While demand and capacity management can help you avoid significant costs, it must not compromise the ability of your business to provide a service. Therefore, any utilization targets must allow for growth and for change in the marketplace. If this is not done, departments are likely to anticipate reductions in the review process and pad their provisioning requests accordingly—completely undermining your demand and capacity management efforts.

- **Set realistic timelines.** You will also need to set separate, realistic timelines for each key resource. While large resources such as data-center capacity can and should be planned well into the future, it can be difficult to project long-term capacity for specific systems. For example, the frequent release of new chips together with fluctuations in the cost of power mean that processor choices must be revisited almost constantly—meaning that the cost-effective life of a server might be very short. It is important to make these realistic distinctions during the planning phase of your demand and capacity management program.

**A checklist for success**

- **Engage stakeholders (both in IT and throughout the business):** Many people will be impacted by the decisions you make in the course of implementing a demand and capacity management program. They need to believe that the results will benefit them, help them to do their jobs, and help the organization to reach its goals and produce significant financial benefits. Give them facts and figures to justify the changes. Get them involved and engaged early, and they are more likely to support the project through to completion.

- **Define ownership, roles, and responsibilities:** Not only do people need to be engaged, they need clear directions and a firm understanding of what they are expected to do. The more specific you can be, the more likely you are to succeed.
Engage third-party vendors and agree on responsibilities and service-level targets: Vendors and other third parties might see any change as a threat. Where appropriate, ease their fears by letting them know exactly what you’re doing and how it will impact their relationship with your organization. This is especially important in cases where you will be asking for cooperation from third parties. Make certain that they know what you expect of them—and that they are willing to give you whatever support you need.

Create a communications plan: Many people throughout your organization will be affected by the decisions you as you implement major changes to IT. To maintain their support and cooperation—and to avoid the problems that arise from rumors and misunderstandings—it is important to keep everyone informed as your demand and capacity management initiatives unfold. Therefore, schedule regular reports. Let the organization know what decisions have been made. Announce any important changes to the original plan.

Define key IT resources to measure: The goal of your demand and capacity management program is to conserve resources, not waste them. Hence, it is important to define which areas of your IT need to be reviewed and audited—and which do not. By clearly defining your job early in the process, you can focus your efforts more narrowly—and obtain results more efficiently.

Baseline current demand and capacity: By carefully documenting your IT’s current status, you accomplish two important goals: one, you make a convincing case for implementing a demand and capacity management program; two, you provide benchmarks by which to measure success.

Create a demand forum: Even after you have implemented effective, efficient demand and capacity management procedures, unexpected requests will happen. People will plead for exceptions to the rules. New products might require new levels of support and new resources. Mergers and acquisitions might change almost everything. Therefore, it is important to create a “demand forum” where these issues can be reviewed and resolved as they happen.

Set targets and develop a feedback process: How much capacity does your IT need now? How much will it need in the future? How are future demands likely to vary from today’s? Before implementing any demand and capacity management program, you will need to answer these questions as precisely as possible. Once that program is in place, you will need to establish an ongoing feedback process both IT and business units can use to let you know how it is working for them. Your plan should allow feedback to continue well into the future.
Case example

With business’ insatiable demand for IT, CIOs now recognize the need for effective demand and capacity management—and they are responding. Here is an example of how Symantec helped one organization approach the subject proactively.

A major global investment bank

Requests for additional storage capacity would require a 100 percent increase over the previous year’s spending—which caused the bank to ask IT to confirm that the added investment was needed. An initial analysis concluded that it was not. In fact, there was an estimated storage utilization of only five percent across the bank’s US$80 million infrastructure.

The demand and capacity management solution

Symantec helped the bank to:

• Establish a new demand and capacity management function for storage (later expanded to other technologies)
• Establish effective relationships with business infrastructure managers based on measurable data
• Introduce processes and controls around demand, allocation, capacity, and procurement
• Introduce processes to identify and reclaim unused or decommissioned storage
• Introduce a system to report on utilization and established KPIs

Key business benefits achieved

After implementing the solution, the bank was able to:

• Increase utilization three times over in the first year
• Improve visibility of demand and capacity
• Improve financial forecasting
• Reduce provisioning times
Can it work for you?

Symantec Global Services offers a broad range of services to help you achieve a successful transition to effective demand and capacity management, including consulting and advisory services, implementation leadership, and ongoing management services. Our long experience has enabled us to develop specific methodologies that can accelerate your implementation of a demand and capacity management initiative. They begin with a pragmatic approach that overlays your existing processes and toolsets, allowing you to realize benefits quickly and without a major investment in new hardware or software.

Demand and capacity rapid assessment

Our consulting and advisory team will assess the current state of demand and capacity management within your organization, comparing it to our best practices model. Usually within two to three weeks, Symantec will be able to deliver:

- A maturity assessment—detailing where current processes are working and where they need to be improved
- An action plan—detailing the key steps to achieve effective demand and capacity management
- An initial capacity assessment—identifying any critical assets that require special focus

The five signs that your business needs demand and capacity management

1. Disparate control of IT elements with separate responsibility for various functions such as IT services, real estate, power, etc. With each function in its separate silo and no assigned capacity manager or communication plan to break down the walls, monitoring and provisioning are managed separately for each. In short, there is no overall holistic view—or demand plan—beyond the immediate provisioning pipeline.

2. Poor visibility of current situation arising from the absence of appropriate tools—or the use of unsophisticated ones—and leaving the business with little more than a short-term view of demand

3. Fragmented budgeting causing uncoordinated, short-term IT provisioning

4. Stockpiled hardware, over-provisioning, and unnecessary equipment spending caused by the same failings that lead to demand problems

5. Business operations impacted by lack of capacity causing delay or cancellation of projects

“I would always try and bring in external help, particularly with experience of other organizations. You don’t necessarily want to put someone in charge of demand management who’s trying to make a career in an organization! You’ve got to make some tough calls and, sometimes, you have to push back.”

Large investment bank
About Symantec Consulting Services

Symantec Consulting Services offers deep technical knowledge and proven expertise to help clients manage IT risk, performance, and cost. Our consultants have helped IT teams from over 95 percent of Fortune 500 companies enhance and maintain the security, availability, performance, and compliance of their information and infrastructures. With more than 1,000 consultants worldwide, we provide consulting services to clients in more than 60 countries and participate in more than 4,000 engagements per year. Our consultants average 15 years of experience across all major operating systems, storage hardware, and application environments.

About Symantec

Symantec is a global leader in providing security, storage, and systems management solutions to help businesses and consumers secure and manage their information. Headquartered in Cupertino, Calif., Symantec has operations in more than 40 countries. More information is available at www.symantec.com.