



BUSINESS TECHNOLOGY LEADERSHIP

Executive Briefing

Why your business needs capacity management

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The modern CIO needs to be ahead of the game – anticipating the business’s needs and being able to meet them as they arise. All too often, however, the IT function is caught on the back foot, reacting to events after they’ve happened.

Capacity management, one of five components in the ITIL Service Delivery area, is a way of putting yourself back in control. It enables CIOs to plan ahead, to respond to business requirements speedily and to manage resources efficiently. Adopting capacity management tools as part of a wider IT strategy makes it possible to impose order on an increasingly complex IT landscape. As John Madden, senior analyst at Ovum, puts it: “Instead of having massive amounts of capacity that may or may not be utilised, capacity management offers the ability to assign that dynamically and know that your IT infrastructure is being utilised in the way you intended it to.”

One of the biggest problems faced by IT departments is that of matching supply to demand. Too much resource results in wastage, while too little causes frustration for the business and a headache for IT. Very often, the IT department does not know how its server capacity is being used. The tendency of many IT departments to err on the side of caution by buying more server capacity than is needed means that wastage is rife at a time when purse strings are being tightened.

At the same time, some firms run critical applications that cannot be allowed to fail, so too little capacity would prove disastrous. In an ideal world, there would be little or no wastage and capacity would always be sufficient to meet demand. Implementing capacity management tools enables you to approach this ideal.

Adopting a capacity management strategy enables you to identify underused capacity and opportunities for consolidation. You can then reallocate capacity as necessary and monitor the impact. Simply doing this can save you money on previously wasted resources. But from there, it’s possible to work with the business to model the impact of a new application or business process, finding out both how much it will cost and what the IT impact will be. This enables the business to make better-informed decisions about whether to go ahead with a particular project or not.

Capacity management enables you to manage demand according to business priorities, so you can make sure that certain critical processes always have enough capacity to run effectively. You can help develop a long-term IT strategy for the business by documenting both the levels of current utilisation and forecasted requirements.

Businesses that have adopted capacity management tools have seen a fast return on investment. By pinpointing resource-hungry applications, they have been able to avoid spending money on new servers, instead using existing resource more efficiently. Good capacity management also provides businesses with the ability to make more informed decisions about which software to invest in. Because capacity management requires business and IT to work hand-in-hand, decision-making about IT becomes more closely aligned to the business’s requirements.

How to adopt capacity management in your business

To adopt capacity management successfully, organisations need to begin by creating a team that has direct responsibility for capacity planning with the processes to support it. “Where we’ve seen it work best, the company has very strong capacity management processes, supported by the CIO down,” says Tony Way, regional sales director at TeamQuest.

The first job of the capacity management team is to identify what capacity management work is already being carried out – in some large organisations, separate teams are carrying out capacity planning for servers, networks and mainframes. The capacity management team needs to document existing procedures and carry out an inventory of the capacity management and monitoring tools already being used.

It’s important to identify early on the skills required to carry out capacity management, says John Madden, senior analyst at Ovum: “It is good to get a sense of what you have in terms of ITIL skills and what capabilities and expertise you have on staff.”

A key part of capacity management is determining the service level requirements of the business. It’s essential to identify which systems do which work, and to quantify users’ expectations for how this work gets done. From there, you can analyse the current capacity of your systems and determine how well they are meeting the needs of users, and decide whether you can reduce capacity in some areas or add it in others. “You need to know your assets and your business needs,” says Madden. “Business and IT goals should be as closely aligned as possible, so you want to have good accounting of both before you start implementing any changes that may impact on that in some way.”

It’s also necessary to be able to measure the success of the capacity planning work. “It’s important to have the right kinds of metrics to measure whether it’s achieved the goals that were set, whether it’s met the business needs and whether all the SLAs have been met,” says Madden.

TeamQuest software is straightforward and quick to implement, says Way. Once in place, you need to decide which reports and information you will need on a regular basis to monitor capacity requirements. “Capacity management software works best with businesses that have got some form of process for a regular capacity planning assessment, such as quarterly or half yearly, which looks at the performance they’re concerned with,” he says.

Forecasts of future business activity can be used to determine future system requirements. “Quite often the best capacity managers say they’ll look ahead 12 or 18 months,” says Way. At this stage you can make the required changes to system capacity that will make sure in advance that those capacity requirements will be met. Trying to forecast more than 18 months ahead is usually less fruitful, he says.

Finally, says Madden, it’s important to have a remediation plan: “You may set out with a certain set of assumptions about your business resources, so make sure you have the right tools in place to correct that, or to make fixes on the fly.”

Capacity management delivers results

These are tough times for CIOs. A double-dip recession could be just around the corner, but even if the country does pull itself into recovery, the days of extravagant spending are over. Businesses are looking to cut costs, and IT will, in many firms, suffer the brunt. So this is a good time to identify the areas where money is being wasted and to tackle needless spend.

Datacentres represent one of the biggest costs for corporates, both in terms of capital outlay and operational costs: as far back as 2006, a study found that the average energy cost of running a corporate UK datacentre was £5.3m a year.

In many cases, a substantial chunk of that spend is unnecessary. Servers rarely run at capacity, but the temptation, historically, has always been to purchase more capacity than is necessary, just to be on the safe side. This is particularly true in the financial services sector, where the effects of downtime are potentially disastrous. The consequence of this caution is that corporates are paying money for server capacity they do not use. Tony Way, regional sales director of TeamQuest, cites a bank that has 20,000 servers in three datacentres. Even assuming, generously, that the servers are operating at 75 per cent capacity, the bank is still paying unnecessarily for the running costs of 5,000 servers. There is also external regulatory pressure to reduce electricity consumption – the Carbon Reduction Commitment (CRC) requires organisations to measure and report on their carbon emissions, and encourages them to find ways of reducing them.

Firms have begun to address this issue through virtualisation, which can bring dramatic efficiency savings. Virtualisation, however, has its risks: a 2008 survey for TeamQuest found that nearly 40 per cent of enterprises cited bottlenecks that impact performance as one of the top three challenges in deploying virtual systems. Without careful management, virtualisation can make it difficult to handle heavy workloads. “The problem some customers are running into is that they’ve got rid of the physical server sprawl, but now they’re worried about virtual server sprawl,” says John Madden, senior analyst at Ovum.

Way agrees: “We’re seeing more and more customers who are very concerned about the capacity side, because of the tendency for the business or development to set up new instances and then three months later forget about them.”

When businesses have too little capacity to handle extra demands on their systems, it is the IT function that has to act quickly and attempt to resolve the problem in as short a time as possible.

It’s not surprising, then, that corporates are turning to capacity management tools as a way of reducing wastage while minimising risk. The tools enable customers to pinpoint the amount of resources being used by different applications, and to model what would happen if, for example, the number of transactions were to double or triple, or if new applications were introduced. As well as reducing costs by using capacity more efficiently, and reducing risk by providing the ability to cope with periods of peak demand, capacity management provides the IT function and the business with much more control over how resources are being used, offering a more consistent view of performance and capacity across the entire IT estate.

By using capacity management software, TeamQuest customers have been able to avoid spending money on new hardware. One customer, whose systems were struggling under a heavy workload, found that the problem was caused by a single resource-intensive application. The development team was able to resolve this problem quickly by making

changes to the application, without any need to purchase extra hardware. Another customer found it was able to address its capacity problems by rearranging disks instead of buying a new server.

Like many financial services organisations, one customer, a major European financial services provider, experiences heavy additional demand on its systems during public holidays. Historically, it coped with this by carrying out upgrades before holidays to make sure it had the capacity to cope with extra demand. This short-term approach was inefficient and stressful.

The firm decided to move from a reactive approach to a proactive one. It created a capacity planning team that was able to measure the capacity used by different applications and to assess the impact of future demands on their systems. Using TeamQuest Model, the team is able to pre-test applications, hardware configurations and varying workload demands. The TeamQuest software enables the company to model live data from its own AIX and Sun systems, instead of relying on theoretical models. The models it has developed using the software are 98 per cent accurate.

The capacity planning team is now able to assess the impact of additional services very quickly. Instead of having to spend a week crunching numbers in Excel, the team can run a simulation in a couple of minutes and provide a near-instant answer, which gives the business much more confidence in making decisions about investing in new applications. The use of capacity management tools also gave the company the information it needed to carry out a server consolidation project in 2008, reducing 64 standalone servers to four consolidated frames, knowing that it could do so without creating extra risk. It saved not just on the hardware and running costs, but also on the costs of application licences. It no longer worries about performance issues, because it knows that it has the capacity to cope with peaks in demand: on Christmas Eve, 2008, the company processed more than 730 transactions per second without a disruption.

The firm has found this ability to model the impact of new applications or an increase in the number of transactions particularly beneficial in times of mergers or acquisitions. As Madden says: "If you're merging systems or departments, you don't need as much capacity any more. Instead of having these huge provisioned systems where only 20 per cent or 30 per cent are utilised, you can assign capacity based on end user need."

The introduction of capacity management results in a long-term beneficial change in the way the business and IT relate to each other, because capacity management requires the business to be clear about its requirements. The result is that business decisions are much better-informed than previously, says Way: "Some customers have found that they start to get much more credible and easy-to-generate reports about where they are with performance. That then puts the pressure back on the business to tell IT what they need to do so that IT can plan for it."

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