

SMB: The Ideal Environment for a Blade Infrastructure

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Small and medium sized organisations have similar issues to large companies when it comes to the processing and storage of information and data, yet often have little capability to attract, retain and maintain the skills for managing their data assets compared to large organisations. Blade systems offer an effective way to address the specific challenges faced by smaller organisations in managing their IT assets, and allows them to gain greater value from them.

- SMBs are becoming increasingly sophisticated users of IT
Small and medium-sized businesses (SMBs) are responsible for a large proportion of the economic activity across Europe and the US, and often are as reliant on IT as large enterprises. IT enables them to compete in a global, 24x7 market where they are expected to provide the same level of service as larger enterprises. However, they typically lack IT expertise, and the IT resources they do have tend to be generalists, lacking in specialist knowledge.
- SMBs have particular challenges that differ from those faced by large enterprises
Although increasingly interested in advanced technology solutions, SMBs have particular challenges. IT budgets are tight, space may be limited and only standard office power and cooling may be available, making it impossible to provide an optimal environment for a computing infrastructure. Keeping down utility costs is also an issue.
- Vendors have been quick to spot the value of blade computing for this sector
Blade computing combines blade servers—very compact, high-density servers each with CPUs and memory—with enclosures that house these servers and provide the power, cooling, cables, networking, storage, and consoles required. Originally designed as an efficient modular solution to save space and reduce cabling in enterprise data centres, the potential benefits for the smaller organisations have not been lost on the vendors.
- Ideally sized for the smaller organisation
The typical SMB may only deploy a dozen or so servers. With a blade computing solution, all the computing resources the business may require—servers, storage and networking—can be deployed in the compact form factor of a single chassis. This “server room in a box” solution suits the environments found in SMBs and branch offices, where space, power and IT expertise may all be at a premium, and eliminates the need for SMBs to own and operate their own server room.
- Blade solutions specifically designed to address the needs of the SMB sector
These SMB offerings have a smaller chassis with fewer bays and therefore a lower capital cost. Their office-friendly design means they can be plugged into a standard wall outlet and operate without the need for any special cooling. With office acoustic kits available, they run quieter than comparable rack or tower servers, have integrated storage, and are easy to deploy, configure and manage.
- The integrated and compact nature of blades offer other benefits
Blade systems can help businesses achieve significant cost savings and return on investment (ROI). For example, complex IT infrastructures can be configured and tested centrally by an IT expert, and then shipped by courier to a remote location where they can just be plugged in. Some SMB blade systems offer a cloning capability to help replicate complex configurations through an automated process—great for a multi-branch environment.

REPORT NOTE:
This report has been written independently by Quocirca Ltd to address certain issues found in today's organisations. The report draws on Quocirca's extensive knowledge of the technology and business arenas, and provides advice on the approach that organisations should take to create a more effective and efficient environment for future growth.

During the preparation of this report, Quocirca has spoken to a number of suppliers and customers involved in the areas covered. We are grateful for their time and insights.

Conclusions

Widely perceived as an enterprise play, with their appeal to big companies trying to maximise expensive data centre real estate, blade servers had a reputation for being too costly and complex for most SMBs. Vendors have now addressed this by lowering price points, simplifying technical requirements and shrinking chassis size, designing systems from the ground up with the SMB in mind. Geared toward the business owner who may already be working 80 to 90 hours a week, SMB blade systems take away concerns about power, budget, and a lack of technical staff, and allow them to go back to the main issue of making money. Easy to deploy, use and manage, these are systems for companies who do not have highly specialised staff on-site.



An independent study by Quocirca Ltd.

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A paper commissioned by IBM

quocirca

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1. Introduction

Bringing advantages in price/performance, power and cooling, reduced floor space, and management and control, blades are proving themselves to be the form factor of choice for many large-scale server deployments. Blades are the fastest growing segment of the server market, with sales increasing at more than 30% a year, and are expected to account for approximately one-quarter of global server shipments by 2011.

Through miniaturisation and shared components (power, cooling, network switches), the compact form factor means that greater server densities are achievable through blades. As a result, the initial attention on blades was focused on server centralisation and consolidation. Today, however, it is recognised that the modular, pre-wired architecture of blades reduces complexity and cost and improves flexibility, availability, manageability, and maintainability.

This paper examines how these attributes are applicable in the “non data centre” environments found in branch offices, and in small to medium sized businesses (SMBs) where space, power and IT expertise may all be at a premium.

2. Small and medium-sized businesses

Main Findings:

- SMBs represent a dynamic economic segment with increasingly sophisticated IT requirements
- SMBs account for 60% of UK private sector employment and more than half of turnover

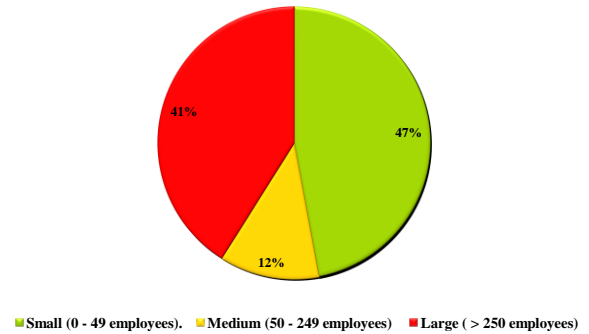
The term “small and medium-sized business” (SMB) is used to refer to a market that is larger than the small office/home office (SOHO), but smaller than large enterprises; in the European Union and international organisations, “small and medium-sized enterprise” (SME) is often used. Although there is no universal definition for SMB (every company has its own) SMBs are often defined in terms of headcount or turnover being below certain limits. For example, the EU categorises companies with fewer than 50 employees as “small”, and those with fewer than 250 as “medium”, whilst in the US “small” usually refers to businesses with less than 100 employees, and “medium” is used for those with less than 500. From an IT viewpoint, it is more useful to consider the size and complexity of a company’s IT requirements; for example, the number of “information workers”, servers or networked PCs.

Whatever the definition, SMBs constitute an important and dynamic segment of the economy, and are responsible for driving innovation and competition in many sectors. In the EU, SMBs represent approximately 99% of all firms and three-quarters of the total workforce. According to figures from the Department for Business, Enterprise and Regulatory Reform, at the start of 2006 there were an estimated 4.5 million private sector business enterprises in the UK; of these, 99.3% were small (0 to 49 employees), 0.6% were medium-sized (50 to 249 employees) and 0.1% were large (250 or more employees).

UK private sector enterprises employ an estimated 22.4 million people, and had an estimated combined annual turnover of £2,600 billion; small and medium-sized businesses together accounted for almost 60% of the employment (Figure 1) and 52% of this turnover.

Figure 1

UK Private Sector Employment 2006 (22.4 million)



3. Problems faced by SMBs

Main Findings:

- SMBs face many of the same legal and regulatory requirements as larger companies, yet often lack central support functions
- Small business owners are busy, not just with running the business, but with peripheral activities

A problem commonly faced by SMBs is that often they are too small to have the central support functions of a larger company, and yet they are often subject to the same requirements. For example, most small UK-based businesses will not have a dedicated human resources function, but still have to grapple with the finer points of UK and EU employment legislation, such as dismissal and grievance rules, redundancy, maternity/paternity leave and pay, right to request flexible working, working time regulations, discrimination regulations, national minimum wage, statutory minimum holiday entitlement, and work permits.

According to the UK’s Federation of Small Businesses (FSB), nearly 80% of small business owners have to deal with the paperwork relating to employment legislation themselves and, on average, spend more than seven hours per week filling in forms. That means time spent away from the core activities of their business; the day-to-day operating, innovating and growing of the business.

Managers of SMBs are busy people; the last thing they want is to have their lives further complicated by activities, however necessary, which are peripheral to their main purpose of driving the business forward. Even as IT is becoming more integral to the way many SMBs run their businesses, it is important that, in addition to IT being dependable, it is simple to implement, use and support.

4. SMB usage of IT

Main Findings:

- SMBs are often as reliant on IT as enterprises and their businesses are underpinned by IT
- 90% of small businesses do not have an IT manager and, even when one is in place, often it is only in a part-time capacity

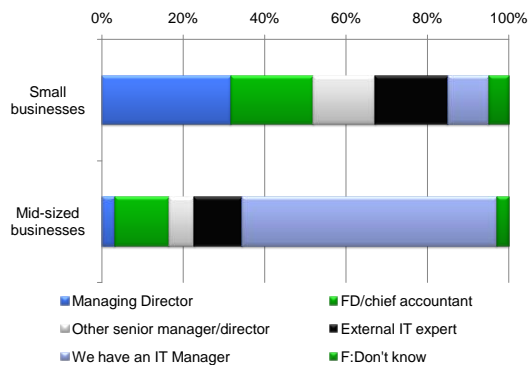
In research¹ carried out among some 1,200 SMBs in Europe and North America in 2006, Quocirca found that they operate surprisingly sophisticated IT environments. They are as reliant on IT as enterprises are, and their ability to provide continuously available services is often underpinned by IT applications that are critical to many businesses operations.

Unsurprisingly, PC and internet usage among companies surveyed was high, but 70% of small businesses and some 90% of mid-sized businesses also use servers and internal networks, and around 40% of mid-sized businesses are using advanced network storage options. The use of diverse operating systems on their servers complicates their IT infrastructure, with many using a mix of old and new versions of Microsoft operating systems alongside UNIX, Linux and other operating systems.

One in three mid-sized businesses and 90% of small businesses do not have an IT manager (Figure 2). Having limited resources to deploy and manage their IT infrastructure often leads to shortfalls in the way they protect their IT and data assets and means that once systems are in place they do not receive regular scrutiny. For example, it was found that 50% of SMBs have not reviewed their internet security or checked their ability to recover a backup in the last 12 months.

Figure 2

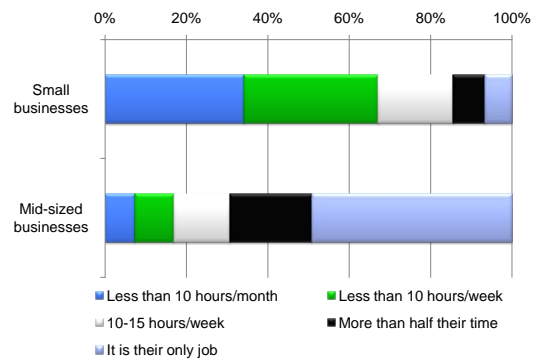
Who manages the computers and associated infrastructure?



Even when a company has an IT manager in place, often it is only in a part-time capacity (Figure 3). Despite using semi-skilled in-house resources that see IT management as peripheral to their main job function, and lacking the IT management rigour that is generally found in larger organisations, SMBs still manage most of their applications themselves. Apart from email, which is quite often outsourced, most have no plans to move to external management by a third party, preferring to keep things in-house.

Figure 3

How much of their time is spent managing IT?



5. Information Technology—an SMB perspective

Main Findings:

- IT staff in SMBs tend to be generalists rather than IT specialists
- SMBs often need enterprise class capability, yet without enterprise class complexity

This research highlighted a fundamental difference between SMBs and large enterprises, which is that many SMBs do not have the luxury of a dedicated IT manager and team. Often the IT manager is either the owner or the accountant. Even when they do have dedicated IT staff, they tend to be generalists focusing on all aspects of IT—from hardware to operating systems through to applications and networks—and consequently they lack specialist skills.

Not only this, but their IT budgets are constrained, and they are looking for a quick return from any investment in IT, in contrast to larger enterprises who may be more inclined to invest in longer term, multi-year IT transformation efforts.

SMBs increasingly recognise the importance of IT not only as a means to improve their operations but also as a means to gain an edge over their competition. They are relying more and more on IT to help decrease their time-to-market and increase business revenues. By exploiting the internet to promote themselves, introduce products and promotions, and to capture additional revenues from customers that they may not have been able to reach traditionally, it is possible for a small company to have a global presence in a way that would have been unthinkable ten years ago.

SMBs tend to focus on IT products that fall within their budget and, due to limited IT expertise, they tend to use products and solutions that are simple to use and that don't require specialist knowledge. Although SMBs often need enterprise class capability, they want it without enterprise class complexity. Above all, this means simplicity in the management interface; simplicity and advanced functionality are not necessarily mutually exclusive.

In summary, SMBs need IT that is simple, that will mitigate risks, lower IT costs, provide a fast return on investment and help with business growth. As they aim to grow quickly, they need IT systems that will grow with them.

¹ See Quocirca report "IT management for SMBs"

6. A shift in IT vendor focus

Main Findings:

- Vendors recognise the potential for IT spending growth in the SMB sector
- There has been a concerted effort to bring to market solutions that address the specific needs of this sector

“I think there is a world market for maybe five computers.” Although it is highly doubtful that Thomas Watson ever did say these words that are famously attributed to him, what is indisputable is that, initially, computing was the preserve of those large organisations that could afford it. Even when IT became more widely available, the focus of IT vendors has historically been on the high dollar, high end, and high touch enterprises that were traditionally most sophisticated in their infrastructures and were also the most “beefed up” with expertise and staff to handle these very complex environments.

What then the rest of the world? What about the small doctors’ surgeries, legal practices, graphic design companies, consultancy firms, retail stores? They generate lots of data and the need for a reliable IT infrastructure is just as important to the small business owner as it is for the largest of enterprises. With more than 53% of total IT spending worldwide driven by SMBs, and growing at 10% a year, this segment has caught the attention of vendors.

Lacking technical skills and with a focus on keeping the business running smoothly, how can small companies move forward with the business of innovation without worrying about technology? How can a small business have the IT systems it needs with the protection it needs without breaking the bank? The solutions need to be simple—that’s a given. They also need to be able to serve multiple purposes, to cover all the needs of a small business—a small email server, some industry-specific databases and general file sharing needs—and all those needs have to be met without causing an unacceptable amount of maintenance and monitoring.

This is an area that some of the vendors have been attempting to address with specialised SMB offerings, realising that a different way of deploying hardware is needed. Just repackaging enterprise solutions, but with some features removed, will not cut it. This is perhaps best shown by the adaptation of blades servers and systems to the SMB market.

7. What is blade computing?

Main Findings:

- A very efficient, modular solution in which compute resources are disaggregated, yet integrated and shareable
- Originally designed to save space and reduce cabling in enterprise data centres, it is finding new uses in smaller companies

Blade servers (or blades) were designed primarily as a solution to the problems of space requirements and cabling

complexity caused by the runaway server deployments that were taking place in the data centre during the heady days of the dot-com era.

The launch of the IBM Personal Computer in 1981 spawned the PC industry that we know today, with the host of “clone” manufacturers producing compatible machines making it the de facto standard. Although some early PCs came in a tower configuration, the first true PC-based system, specifically designed as a network server, did not appear until 1989.

One of the attractions of servers based on PC technology was their purchase price, but companies that adopted them wholesale quickly found there was a downside to that, as the “throw another server at it” philosophy took hold. Soon these tower systems could be found on wall shelves, in industrial shelving units or stacked on top of each other as they spread around the data centre and beyond. The first rack server, introduced in 1998, brought temporary respite, as 14 of these 3U (rack unit) servers could be loaded into a standard rack occupying less than 5.5 square feet of space. The 1U “pizza-box” server—the high-density server solution of the dot-com era—increased the density to 42 servers to a rack, but soon even that was not enough.

The problem of server-sprawl, and the complexity of cabling a fully configured rack of servers, led directly to the introduction of the first blade server in 2001.

The concept was simple. Strip the server down to the bare essentials needed to supply raw processing horsepower—basically CPU and memory—by removing services such as power, cooling, networking, storage interconnects and even management. What you have now is no longer a standalone server; it has to be plugged into a matching chassis that supplies the required services through a backplane into which the blade sever slots. This backplane (or a midplane, into which other components such as power supplies, fans and switches can be plugged in from the back) handles the interconnects, so you no longer have the spaghetti-like mess of external cabling to connect everything together. The enclosure also provides the network switching and storage interconnects. This means that the compute resources—processing, storage and networking—are disaggregated, yet shareable, in an integrated, modular compute solution, which turns out to be a very efficient way of doing things.

The servers themselves can be shrunk down to little more than the size of the board, while the most efficient power supplies and fans can be used in the chassis, now that they are freed from the physical constraint of having to fit into a 1.73” 1U casing. About 44% of the power draw of a typical 1U rack mounted server is consumed by the power and cooling components; in a blade system this is reduced to 10% because of sharing these components between blades. This means that extreme densities can be reached (typically double the maximum achievable with rack servers) whilst at the same time saving on power (approximately 25–33%) and money when compared to identically configured rack servers. Scaling is easy—you just snap extra blades into the existing chassis. Management costs are reduced by the ease of deployment as well as integrated systems management software that can make a chassis or a collection of chassis look like a single standalone system that has been virtualised into partitions.

With the promise of saving on valuable floor space, reducing the amount of cabling, efficiencies in power and cooling, greater management flexibility, ease of scaling and reducing total cost of ownership, it is no surprises that blade systems have been widely adopted in data centres to control and

consolidate their large scale-out compute complexes. They now represent the fastest growing segment of the server market, and are expected to account for between a fifth and a quarter of all server shipments by 2011.

Whilst blades have, up to now, primarily served a need in the data centre, a number of blade vendors have turned their attention to the SMB customer, and have brought out systems specifically to address this market. Why is this so, and what synergies are at play to cause this?

8. Typical SMB IT needs

Main Findings:

- SMBs are increasingly competing in a global market
- Applications, with what were formerly enterprise-specific abilities, are needed by SMBs in order to compete successfully

Whether they like it or not, SMBs now often find themselves competing on enterprise terms. For example, even small supply chain providers must frequently meet enterprise-class security and regulatory requirements in order to compete and gain access to retail distribution markets. Unlike a few years ago, when small companies were not expected to operate around the clock or have call centre staff available all day, today's small companies frequently need to have at least a 24x7 internet customer portal.

Simply put, customer expectations have changed. The market expects even the smallest companies to deliver and provide the same types and quality of services as larger enterprises. Small companies need to be able to deliver on many of the same metrics and capabilities that larger companies have been developing for years. The implications for the IT infrastructure of smaller companies are direct: they need to be able to embrace a variety of new technologies and what had been, until recently, enterprise-specific abilities, such as reliability and availability.

Even small organisations are being forced to think about things like security, regulatory requirements, and providing web services-based access to business partners or key customers. Ensuring the reliability and availability of even occasionally used individual applications can be of critical importance to some customers.

Gone are the days when small businesses were just competing with other local companies; nowadays they may be head-to-head with a wide range of businesses from around the world. With the competitive changes in product and service delivery, the advent of the internet, the drive to continually seek out the lowest cost provider, and the death of customer loyalty, even small organisations are being forced to compete more aggressively across the country or around the world. It's a different world, and the IT platforms and systems of SMBs need to change to reflect that.

SMB IT systems

With SMBs competing for custom internationally, they need to 'up their game' as regards the services that they offer to increasingly discerning customers. Apart from email—one of the first applications SMBs deploy—here are some systems that may be worth considering:

- **Reliable backup of data.** Data is the life-blood of any organisation, whether it is about customers, orders, or suppliers. Just having a tape drive and backup software is not enough. You need a reliable backup system and you should test your backups on a monthly basis; at least pick out a few files and see if you can restore them.
- **A decent website.** It really does not matter what kind of business you are in—from steel fabrication to selling flowers—every small business needs a reliable website.
- **A customer self-service portal.** Not even the most customer-focussed companies can be on call 24x7 for their global customers. Allow your dedicated support staff to get some sleep by enabling customers to help themselves.
- **Accounting software.** This is pretty much a no-brainer for medium-sized businesses, but even really small businesses will benefit greatly from having an accounting package.
- **A document management system.** Not necessarily a software application that costs thousands, but you do need a way of keeping track of critical or often-used company documents on your file server. Not having to spend time searching for an old proposal to use as a template is one of the easiest ways there is to boost productivity and the bottom line.
- **Sales automation software.** Not only does it allow your sales people to stay on top of potential leads, it helps you to stay on top of your sales people. For the SMB market there are dozens of applications that you can run locally on your network, or you can use one of the online providers.
- **Customer relationship management software.** Depending on your business model, and the number and geographic spread of your customers, you may need some software to help you keep track of all the interactions you have with each customer.
- **Voice over IP (VoIP).** A number of vendors have developed integrated, VoIP-in-a-box solutions that are easy to deploy and maintain. Such solutions can be valuable for businesses with high phone usage (especially long distance and overseas calls) and those looking to expand their branch network.

SMBs tend to use information technology for what they perceive as being absolute necessities. Quocirca recommends extending this to look at applications that provide opportunities to grow your business and save money. This could be an excellent investment, and help differentiate your company in a crowded global market.

9. Why blades and SMBs?

Main Findings:

- New blade systems have been designed to meet the specific requirements of SMBs
- These solutions were created as a deploy-anywhere infrastructure that is easy to manage and architected for growth

Although initially designed for large-scale deployments in enterprise data centres, it soon becomes obvious that one of these enclosures is equivalent to a miniature data centre in its own right. A fully loaded blade chassis contains more than enough compute power to meet the needs of the average SMB, which may typically only deploy a handful of servers.

Although increasingly interested in the kinds of advanced technology solutions available to enterprises, customers in this sector have particular challenges that differ from those faced by large enterprises in their data centre. Even if the proportion of annual revenue they spend on information technology is high, smaller revenues mean that IT budgets are relatively austere. As a result, they are unlikely to adopt new technology solutions that require major replacement of hardware ahead of schedule. Space may also be limited—not all smaller companies have a dedicated IT closet or server room, often placing servers under a desk in an office. This means providing an optimal environment for a computing infrastructure is impossible; getting anything beyond standard office power may be difficult and advanced cooling equipment may be non-existent. Keeping down utility costs can also be an issue.

When the cost of the chassis is factored in, the cost of a single server blade deployment is typically greater than that of a single rack mounted server; however, as more servers are added, the cost per blade comes down, until a crossover point is reached at which the capital cost of implementing a blade infrastructure is less than a comparable number of rack mounted servers.

Vendors have addressed the issues that restrict SMB adoption of blades by designing systems from the ground up with the needs of the smaller company in mind.

- **Low capital cost.** The SMB offerings have a smaller chassis with fewer bays and therefore a lower price. This means that the crossover at which it is more economical for customers to deploy blades than rack mounted or standalone servers occurs at fewer servers.
- **Small form factor.** Consolidating numerous rack and tower servers to fewer blade platforms not only reduces space, but can save energy and reduces cooling requirements.
- **Office friendly.** Their design means they can be plugged into a standard wall outlet or uninterruptible power supply and operate without the need for any special cooling. With office acoustic kits available from some vendors, they run quieter than comparable rack or tower servers, improving the office environment, and air filters ensure healthy operation even in a dusty backroom or warehouse.
- **Simplification.** The integrated nature of blade technology solves many of the problems of complexity. With up to 86% fewer cables than an equivalent rack

deployment, cabling complexity, and with it the risk of outages, is reduced. Large amounts of storage capacity built into the chassis means there is no need to purchase and manage external storage enclosures. Advanced management tools simplify server and storage management, reducing operational expenses compared to rack mounted systems. Some systems allow backup to both tape and disk from a single server, eliminating the need to purchase, service, license, and manage separate disk backup and tape backup servers.

- **Flexibility.** Aggregation into a single resource pool enables quick and easy provisioning (and re-provisioning) of servers and storage; blades provide the flexibility to meet the changing demands of the business.
- **Easy deployment and configuration.** Deploying extra storage can be done by just sliding in the disks and switches and going through pre-defined configurations. In as little as three mouse clicks the storage can be ready, without the need for adapters, cables, connectors, or for an expert storage administrator to configure it.

There are additional benefits that arise from the integrated and compact nature of a blade deployment. Say your small business is expanding operations, and has decided to open a new branch in another city. Instead of sending your scarce and expensive “IT expert” to the new location for a few days or weeks to setup and configure the required IT infrastructure there, he can setup the servers, storage, and networking in a chassis at the head office and then ship it to the newly opening location.

In another scenario, a medium-sized organisation with a number of branches may require a complex IT setup at each branch that could take days to configure. Some SMB solutions offer a cloning capability to help replicate complex configurations as many times as you want through an automated process, shortening time-to-profit.

10.SMB customer example

Semiconductor Research Corporation

Semiconductor Research Corporation (SRC) is a consortium of multiple companies from the semiconductor industry established to support university-based research in the field of semiconductors. SRC doesn't perform any research itself but directs and sponsors it. While SRC is a small company of only forty-four employees, it coordinates research around the world that, to date, has exceeded \$1 billion in total value.

Customer business issues

IT is critical for SRC. In addition to the usual office automation activities, it operates a complex and highly integrated research management information system that entails the collection, management and, ultimately, deployment of information on the multiple websites that it supports for member companies and for the university researchers. SRC's server room had run out of space and, at the same time, there was considerable pressure from management to do more with less.

The solution

SRC deployed an IBM BladeCenter S to run a variety of systems including domain controllers, accounting, antivirus, web development and database servers, whilst at the same time employing server virtualisation. Installation was quick and easy; the six blade servers slot into the midplane and the

IBM Deployment Wizard automates Microsoft Windows installation, saving time and ensuring that the right drivers are installed. Because it uses standard office power, there was no need for an electrician to run special higher voltage circuits or to buy an expensive higher capacity UPS.

The benefits

SRC used the new BladeCenter S to regain floor space by replacing rack mount and tower servers. With the BladeCenter software, servers can be patched remotely and even rebooted or power-cycled remotely. The chassis holds up to 12 terabytes of storage, which all the blades can share, giving the flexibility to assign storage to different servers dynamically as needed.

SRC now plans to consolidate its three existing server racks into a single rack with multiple BladeCenters. This will use less space, less power, produces less noise, and be easier to administrate. Not only does blade technology solve SRC's immediate needs, but also it gives it a technology growth path, enabling it to adapt to ongoing change.

11. Recommendations and conclusions

Quocirca recommends that SMBs should:

- Assess the needs of your company and decide whether blade servers are the right choice.
- Analyse the approaches and architectures of various alternatives, examining their specific features and components, paying particular attention to the management tool set.
- Compare and contrast different vendor solutions in order to make the best selection.
- Depending on the needs of your business, a consideration may be whether the vendor has opened up its blade specifications to let an ecosystem of partners quickly bring additional functionality to the environment.

The key benefits of an SMB blade computing infrastructure include:

- Simplified server and storage management
- Simple set up and maintenance
- Savings on power and cooling
- Compatibility to grow with your business
- Integrated data protection

Sized for a small office or wiring closet, SMB blade systems plug into standard office power outlets and manage storage and a handful of blade servers at a time. They are designed to integrate the compute resources needed for the applications most commonly used for business functions, such as:

- file and print services
- email
- antivirus and firewall
- back-up and recovery
- business applications or collaboration software
- voice over IP (VoIP)
- media streaming for CCTV security.

With an office acoustic kit and air filter to remove airborne dust and contaminants, these systems are intended to run in environments typically found in warehouses, retail stores, and large medical, accounting or legal practices. These "server rooms in a box" eliminate the need for SMBs to own and operate a data centre and employ IT specialists, and could help them achieve significant cost savings and ROI.

About IBM

At IBM, we strive to lead in the invention, development and manufacture of the industry's most advanced information technologies, including computer systems, software, storage systems and microelectronics. We translate these advanced technologies into value for our customers through our professional solutions, services and consulting businesses worldwide.

IBM BladeCenter leads the market with the largest installed base of blade servers. BladeCenter also has the premier ecosystem providing solutions to businesses, small and large. BladeCenter offerings are designed to grow with your business. Now IBM brings the power of BladeCenter to small and midsized businesses. IBM BladeCenter S is the industry's first blade chassis uniquely designed for small and midsized offices and distributed environments. Building-in simplicity and economy, BladeCenter S is designed to get big IT results from the smallest IT staff.

IBM UK

IBM UK has a long-standing business, technological and social heritage in the UK. We are committed to innovation and helping clients to seize competitive advantage by transforming themselves into on demand enterprises. In addition, we are proud to be a progressive employer.

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About Quocirca

Quocirca is a primary research and analysis company specialising in the business impact of information technology and communications (ITC). With world-wide, native language reach, Quocirca provides in-depth insights into the views of buyers and influencers in large, mid-sized and small organisations. Its analyst team is made up of real-world practitioners with first hand experience of ITC delivery who continuously research and track the industry in the following key areas:

- Business process evolution and enablement
- Enterprise solutions and integration
- Business intelligence and reporting
- Communications, collaboration and mobility
- Infrastructure and IT systems management
- Systems security and end-point management
- Utility computing and delivery of IT as a service
- IT delivery channels and practices
- IT investment activity, behaviour and planning
- Public sector technology adoption and issues
- Integrated print management

Through researching perceptions, Quocirca uncovers the real hurdles to technology adoption—the personal and political aspects of an organisation’s environment and the pressures of the need for demonstrable business value in any implementation. This capability to uncover and report back on the end-user perceptions in the market enables Quocirca to advise on the realities of technology adoption, not the promises.

Quocirca research is always pragmatic, business orientated and conducted in the context of the bigger picture. ITC has the ability to transform businesses and the processes that drive them, but often fails to do so. Quocirca’s mission is to help organisations improve their success rate in process enablement through better levels of understanding and the adoption of the correct technologies at the correct time.

Quocirca has a pro-active primary research programme, regularly surveying users, purchasers and resellers of ITC products and services on emerging, evolving and maturing technologies. Over time, Quocirca has built a picture of long term investment trends, providing invaluable information for the whole of the ITC community.

Quocirca works with global and local providers of ITC products and services to help them deliver on the promise that ITC holds for business. Quocirca’s clients include Oracle, Microsoft, IBM, Dell, T-Mobile, Vodafone, EMC, Symantec and Cisco, along with other large and medium sized vendors, service providers and more specialist firms.

Sponsorship of specific studies by such organisations allows much of Quocirca’s research to be placed into the public domain at no cost. Quocirca’s reach is great—through a network of media partners, Quocirca publishes its research to a possible audience measured in the millions.

Quocirca’s independent culture and the real-world experience of Quocirca’s analysts ensure that our research and analysis is always objective, accurate, actionable and challenging.

Quocirca reports are freely available to everyone and may be requested via www.quocirca.com.

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