

## WHITE PAPER

# Creating Cost and Energy Efficiency Through Outsourcing Hosting Solutions

Sponsored by: Rackspace

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## IDC OPINION

Around 50% of companies host their Web sites and ebusiness infrastructure themselves, using their own facilities, and that figure has been quite stable in recent years. New pressures are emerging, however, that challenge the wisdom of hosting in-house. These include the rising costs of power and cooling, the growing imperative of green IT, and the gradual shift of costs such as power from facilities departments to IT organisations within companies.

In the past, many companies that considered their hosting options saw a choice between doing it themselves, using a bargain-basement Web hoster of uncertain quality or entering into a contract with a high-end IT outsourcer or integrator. The hosting industry is maturing and consolidating, however, and hosting specialists have emerged in the middle market that offer high-quality capabilities and service at realistic prices. This IDC White Paper examines this market and concludes that:

- ☒ Most organisations will see a benefit in terms of capital and operational expenditure and risk management by switching from in-house hosting to a managed hosting service. Drivers for outsourcing hosting infrastructure go beyond cost, however: regulatory pressure in areas such as corporate governance, environmental practices and national security is currently one of the biggest drivers across all industries, and will only grow in significance over the mid-term future. In all but the most specialised circumstances, IDC recommends evaluating a managed hosting service for at least non-core infrastructure.
- ☒ IDC believes that organisations of all sizes should give consideration, today, to the environmental aspect of their IT operations. Aside from being beneficial for the environment, companies will be acting in their own best interests: they will position themselves to react most effectively to future environmental legislation and regulation, and will achieve savings in operational expenditure. In all these respects, the end result will be a reduction in long-term risk to the company. Among many actions that companies can take themselves, one way to achieve this is to use a managed hosting provider with a defined environmental strategy. The economies of scale that a hosting provider can exploit, such as sharing infrastructure across customers and reducing power consumption per server, will result in reduced wastage and environmental impact.
- ☒ Concerns over energy security are likely to drive higher energy prices and price volatility, and this is directly related to the cost of powering a datacentre. The responsibility of datacentre power expense is increasingly being transferred from facilities departments to the IT manager in order to drive closer integration. In some cases, shifting the responsibility for power costs has consumed an organisation's entire annual IT budget. This additional pressure will force IT

managers to look at alternative operating models, such as outsourcing the hosting operation. In addition, a specialist hosting provider will be able to secure more favourable terms with infrastructure and energy suppliers than most companies can achieve themselves, thereby reducing cost.

## **IN THIS WHITE PAPER**

This IDC White Paper looks at the benefits of managed Web hosting services compared with in-house hosting using a company's own datacentre facilities. It discusses costs, risks, regulatory pressures, the rising importance of green IT, and power and cooling issues.

## **SITUATION OVERVIEW**

How and where companies host the infrastructure that underpins their IT, Web and ebusiness operations is a decision based on many factors. Cost is clearly an important consideration, but other factors are critical, such as risk management, service quality and reliability.

According to IDC's forthcoming *European WAN Manager, 2007* survey, around 40% of medium and large UK companies use a managed Web hosting service, with most of the remainder running their own hosting operations internally, using either their own datacentres or collocating their equipment in a third-party facility.

This proportion has remained quite stable for several years, suggesting that a natural equilibrium has been reached. But IDC believes that many companies that perform their own hosting in-house are underestimating the total costs involved of doing so, and that many companies do not appreciate the full range of services available from external service providers.

It is this last point that IDC believes has stopped many organisations from outsourcing their hosting operations. Due to low barriers to entry (hosting providers do not need their own network, and datacentre space has been plentiful and cheap in recent years), the Web hosting industry has historically been highly fragmented, with a very large number of service providers each claiming a small portion of the market. As a result, the view that many companies have developed of Web hosting is of a plethora of small providers all offering essentially the same service, and the term "Web hosting" has become associated with small, cheap and cheerless companies competing solely on price. In reality, the industry is consolidating somewhat, with a tier of leading providers (including Rackspace) emerging. This consolidation is caused by both merger/acquisition and by rapidly increasing datacentre pricing in the last two years forcing some of the low-cost hosters to change their operating model or exit the market. Today, there is enough diversity among hosting providers and their capabilities to meet the needs of most organisations.

In recent years some important new market forces have come into play that are now affecting how many companies view their own datacentre facilities. Of these, one of the most significant is energy prices. In 2006 IDC conducted a survey that showed that 13% of companies' total datacentre operational expenditure went on electricity and that respondents expected that proportion to increase to 20% within a year. In most cases, these high proportions are caused by inefficient server deployments. For example, the use of industry-standard servers deployed to handle peak traffic loads, and often in pairs for redundancy, has resulted in system utilisation rates as low as

10%. This inefficiency from servers sitting idle is creating unnecessary cost, as well as avoidable power consumption and carbon emissions.

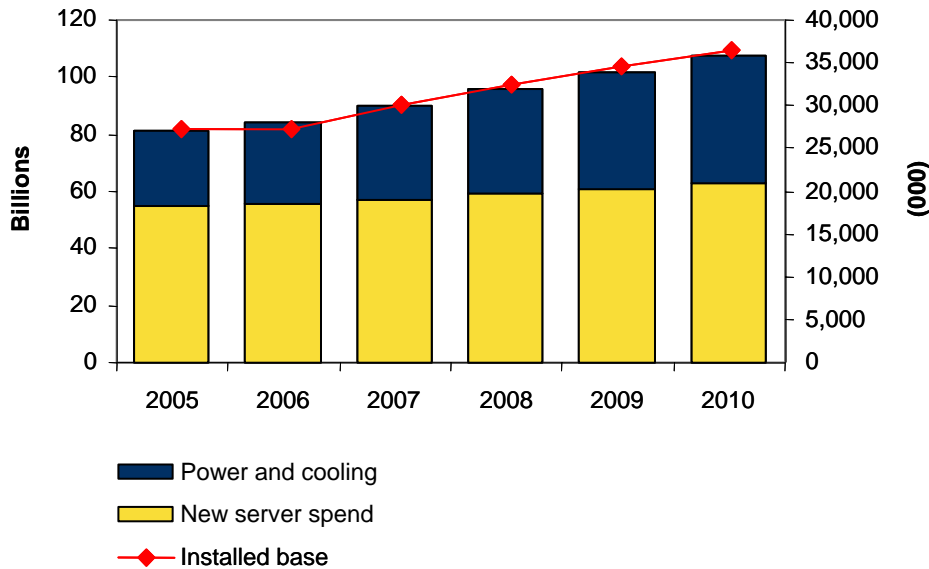
These problems can be mitigated by using a managed hosting specialist: a good managed hosting provider is able to wring economies of scale out of its facilities and infrastructure, and will apply best practice regarding datacentre and server management.

For companies that continue to operate their own facilities, however, the fact that energy costs are increasing as a proportion of datacentre expenditure is important for a number of reasons:

- ☒ **Power and cooling** — Advances in technology have placed existing datacentre facilities under significant strain from a power and cooling perspective. In many cases power capacity now represents the largest inhibitor to deploying new applications in the datacentre and hence having a significant impact on an organisation's ability to drive growth and productivity gains. From this respect business continuity is also a significant concern as the inability to provision sufficient power and cooling will result in system downtime. The cost of powering datacentre infrastructure, with a particular emphasis on server infrastructure, also plays a role here, as outlined below.
- ☒ **Electricity pricing** — Doubts over future energy security continue to drive up the cost of electricity, to the point where companies can spend as much on powering a server over a three-and-a-half-year life cycle as on purchasing the server in the first place. To date, this cost of power has been owned by facilities departments and, as such, hidden from IT budgets. However, this is changing rapidly and in an increasing number of cases the cost of power is being transitioned to the IT manager. The impact of this should not be underestimated, as the cost of power will consume a significant proportion of the annual IT budget. In some cases it could equal, or even exceed, an organisation's IT budget.
- ☒ **Green IT** — The current drive towards "green IT" places further pressure on IT managers from a datacentre efficiency perspective. CEOs are driving organisations to give consideration to the environmental impact of operations at all levels but with a particular emphasis on IT. Here this inefficiency in the datacentre, which is discussed above, represents a major pain point. Today this is driven very much by the economics of being green, with many projects around consolidation and virtualisation playing into this area. Today, the EU as a regulatory body would prefer that the IT industry and its consumers self-regulate. The operational economics mentioned in this document suggest there is merit in this position. Groups such as the Green Grid Consortium provide a good example specific to IT. The Green Grid is proposing metrics such as power usage effectiveness (PUE), developed by HP, which gives a holistic view of datacentre efficiency. That said, there are ongoing discussions within the EU in terms of setting a timeline to monitor this trend and to determine if and when legislation should be implemented. At a product level, governments are starting to look at this, with labels such as Energy Star a prerequisite for public sector RFPs. Non-governmental bodies such as the WWF and Greenpeace are taking a lead in this area. For example, the WWF's Climate Savers programme sets out ambitious targets for the reduction of greenhouse gas emissions. This will result in both industry standard metrics for measuring datacentre efficiency and potential heavy legislation to meter efficiency at both the server and datacentre level. This holistic approach will require IT and facilities managers to work more closely and in doing so to take greater responsibility for the power consumption of IT.

**FIGURE 1**

Growth in Server Shipments and Relationship to Maintenance Cost



Source: IDC, 2007

IDC believes that these points, among others, should make IT managers look at ways of increasing the efficiency of their operations. In the short term these are highly complex issues that need to be addressed and may well accelerate the move towards a service-centric IT organisation. Following on the value proposition of the outsourced model should present itself as one of the viable options to reduce much of the risk associated with this inefficiency, especially for non-core applications such as Web hosting. With regards to the future legislative landscape it is extremely important that IT managers begin planning and implementing a methodology to better understand their own carbon footprint and efficiency today to ensure that operations are ready once legislation is approved by the EU and country governments.

It is true to say that despite some recent consolidation, Web hosting has been a highly fragmented market for many years. This may be good for companies seeking the cheapest deal, but makes it extremely difficult to compare a basket of offerings on a like-for-like basis in order to find a high-quality hosting provider. The perception among many organisations is that Web hosting providers fall into three camps — bottom-end providers selling exclusively on price; blue-chip IT service firms aiming at big IT outsourcing and integration contracts; and telcos focused on bandwidth and connectivity services. For many companies, none of these options is convincing enough to trigger a switch away from the in-house operation, despite the potential advantages in doing so.

Hosting providers certainly exist in that middle ground, and they can often be the best option for companies — they tend to specialise in hosting, whether infrastructure or applications, and they typically do not compete on headline price alone, and so provide a high-quality, corporate-class service.

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## Next-Generation Datacentres

It is clear that in the majority of cases current datacentres have not been designed with today's technologies in mind. In reality, it is extremely difficult to design a facility for a 25-year life cycle when the expected life cycle of the infrastructure it houses is three to five years. The advent of server blades has served to bring this issue to the fore as a result of the increased pressure in power and cooling requirements per square foot. This is symptomatic of the trend towards industry-standard x86 servers that are deployed in line with a scale-out methodology that has caused major inefficiencies within the datacentre. In many cases the lack of available power is inhibiting an organisation's ability to drive productivity and growth.

In fact the issue of power and cooling in the datacentre is in essence one of datacentre efficiency. Scale-out has resulted in significant wastage of power in the datacentre that places added pressure on cooling infrastructure and does not take into account the variable traffic flow of data across the day, quarter or year. Coupled with this, it is questionable how many datacentres really conform to industry best practices for deployment (hot-aisle/cold-aisle, blanking plates, correct positioning of air vents, removal of subfloor cabling that restricts airflow, etc.). Inefficiency at the system level translates into over-provisioning of cooling infrastructure. Addressing this through right-sizing cooling infrastructure can offer some gains in terms of power capacity. This may include innovations such as free-air cooling whereby water is piped outside the building and, for around 70% of the year, is cooled by the lower outdoor temperature.

The cost of upgrading existing facilities often exceeds the cost of building a new datacenter. However, the time required to do so also represents a pain point for IT managers. An alternative approach, suggested by some IT vendors, could be to completely upgrade existing (older) technologies with new systems designed with power efficiency in mind. However, while this would work for the few greenfield opportunities that exist this approach does not take into account the majority of datacentres that are brownfield or the need to maintain operations. IDC believes that most enterprises will need to consider fitting out new datacentre facilities in the near future in order to address this problem. In all cases, thought must be given to deployment scenarios, in terms of scale-out versus scale-up versus dynamic IT.

Of course a new, more efficient datacentre consuming less power is a greener datacentre. However, this can be extended if further consideration is given to sourcing renewable power, geographical location or reuse of the generated heat as examples. The source of power generation remains important as it is possible to reduce a datacentre's power consumption but still see an increase in carbon footprint if the power source is switched from, say, nuclear to coal.

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## Drivers for Outsourcing Hosting

Companies are driven to outsource their hosting for many reasons, but some themes are common across most industry sectors:

- ☒ Regulation
- ☒ Cost control and optimisation
- ☒ Risk management
- ☒ Reliability and uptime

### ***Regulation***

Some industries, notably finance and manufacturing, have faced a steep hike in their regulatory burden in recent years, driven by reasons as diverse as corporate corruption and fraud, terrorism, environmental issues and consumer protection. Examples include Sarbanes-Oxley, Basel II, IFRS, WEEE and RoHS. Each new directive brings its own challenge for IT departments and infrastructure, typically centred around storage, redundancy, supply chain and, in the case of the environment, IT efficiency. For example, the lack of facilities and resources to manage the extra IT required to meet increasing regulatory requirements is the number 1 reason for finance organisations, widely known for their desire to keep IT in-house, to have sought external datacentre space and increase their take-up of managed services in the last few years. This trend is likely to spread to other industry sectors over time. For example, the EU is currently discussing regulating power consumption of a number of equipment categories, initially power supplies, cooling equipment and PCs. The precise form of the regulation will be seen in the next few years, but it will affect all industry sectors equally.

### ***Cost Control and Optimization***

There are many arguments and counter-arguments surrounding the total cost of ownership (TCO) of hosting in-house compared with using a managed service. Each organisation has its own capital and operational cost structures and its own breakeven point, but IDC believes that most companies, with relatively standard IT and Web deployments, will achieve lower TCO by using a managed hosting service than by hosting in self-owned and managed facilities. However, a simple comparison of costs for in-house versus managed service is typically not possible, even for small companies, due to the large number of hidden costs affecting in-house operations that are often not taken into account. In-house costs include the following:

- ☒ Physical datacentre facilities — Leasehold or freehold costs, rent and other landlord fees, building maintenance and upkeep, fit-out costs, technical space maintenance and refurbishment, two or more fibre ducts and fibre services to the building, power plant, backup power generators, fuel storage, chillers, physical security systems (access control, CCTV, security presence, etc.), fire suppression, racks, cabling, and so on; redundancy for most of these components, and insurance for all of them; business continuity facilities.

- ☒ Servers — Capital or lease cost, depreciation, planned life-cycle replacement, unplanned replacement, backup/hot swap, spare parts inventory (onsite or with supplier), power and cooling costs, software licenses, system monitoring, system security (IDS, email security, DDoS mitigation, etc.).
- ☒ Staff — Salaries and related overheads of facilities and security staff to operate the physical datacentre as well as of IT staff to manage the technical environment; cover for staff absence; attrition costs; training; staff facilities.

This is only a subset of the costs a company necessarily incurs in operating its own hosting operations. While many companies, depending on the scale of their operations, make do without some of these components, they are typically incurring risk in return for the cost saving (for example by cutting back on redundancy, or not deploying a DDoS capability, or under-resourcing the operation in staff terms). A company that uses a managed hosting service will still pay these costs, but shared across all the customers of the service provider, and through the economies of scale the hosting provider can achieve, will pay a fraction of the amount for the equivalent in-house operation.

### ***Risk Management***

For most organisations, outsourcing hosting reduces risk. The cost elements outlined above all present risk as well as cost to an organisation in terms of potential downtime, lost orders, service disruption, etc. Many companies operate internal IT service level agreements (SLAs) but in the face of a significant event affecting hosting operations, internal SLAs are effectively worthless. An SLA from an external service provider typically does not cover the cost of lost business or customer dissatisfaction, but can go some way to mitigating the financial impact. More significantly, if stringent enough, it acts as a major incentive to the service provider to fix problems quickly, and well. A strong SLA does not nullify risk, but will reduce it by ensuring quick problem resolution and a level of financial buffering.

### ***Reliability and Uptime***

Alongside cost, the biggest issue that IDC repeatedly sees from its surveys, focus groups and conversations with end-user organisations is reliability and uptime of network and hosting services. Companies often report surprisingly low levels of reliability for both self-managed, in-house services and services that they buy from a managed provider. The level of service experienced is partly down to cost: organisations that run their own operation on a shoestring budget or that buy a service from the cheapest provider (with the cheapest infrastructure and fewest resources) are usually those that experience reliability problems, but not in all cases. Some large, well-funded providers have surprisingly poor reliability records, too, reflecting the need to choose a service provider carefully. The level of personnel skills available to an in-house operation or a service provider is critical to ensuring reliability as well, as are the ways in which those skills are deployed, developed, motivated and rewarded. Despite these polarised offerings, the emerging middle market breed of specialist hosting provider could provide the necessary service levels to improve reliability and uptime. Prospective customers of hosting services need to verify the quality of shortlisted providers by, for example, understanding the level of redundancy deployed, talking to existing customers, checking published statistics or consulting reliability or customer satisfaction surveys.

## CHALLENGES/OPPORTUNITIES

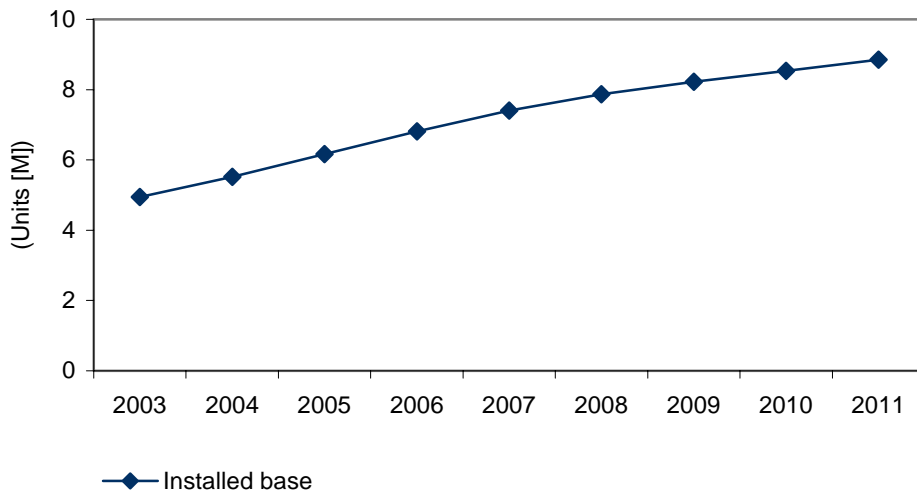
This section highlights some of the questions that are at the front of IT managers' minds today. It outlines some of the common industry approaches to addressing the problem and then demonstrates how the outsourced model can provide additional value add.

**As an IT manager I am being asked to drive increased productivity within my organisation and IT department. How can I deliver on these demands while having to manage a highly complex infrastructure and work within a stable or shrinking IT budget?**

The rapid growth of the server installed base required to support application growth within organisations has resulted in highly complex and difficult to manage datacentres. IDC's power and cooling research study in 2006 highlighted how the cost of simple maintenance and administration now represents 67% of total datacentre operational expenditure and this is directly related to the physical number of servers housed. Figure 2 shows IDC's Western Europe installed base forecast (March 2007) and demonstrates how IDC expects the installed base to increase through to 2011. This is despite the consolidation and virtualisation activities that are discussed below. As the installed base of servers increases, the proportion of IT budget consumed by simply keeping systems up and running will continue to increase, hampering an IT department's ability to innovate and deliver real business value to the organisation as a whole.

**FIGURE 2**

Western Europe Server Installed Base — All Servers —  
2003–2011



Source: IDC, 2007

Considering the direct relationship between installed base and cost of administration, the obvious answer here is to look at reducing the physical number of systems in the datacentre. With this in mind we see IT managers going through a process of consolidation that can take one of two forms:

- ☒ Physical consolidation — Multiple servers running the same application being consolidated onto a single, larger platform.
- ☒ Application consolidation — Multiple servers running different applications being consolidated onto a single platform.

In both cases the advent of virtualisation technologies has increased the ability to gain the maximum value from your physical infrastructure both in terms of utilisation and resilience.

There is an alternative approach to reducing operational expenditure through an outsourced model. IDC fully expects that core back-end applications will continue to be managed internally as this represents the intellectual property or other type of proprietary differentiator of an organisation. That said, there are a number of critical, but non-core, areas where outsourcing to a managed service provider can allow IT managers to offload some of the management burden. At the same time, this approach can provide a much more stable cost model for that application, and Web hosting is one application where this applies.

**How can I address pressures of power and cooling capacity within my existing datacentre while maintaining the application growth that my organisation is demanding?**

We know that today's datacentres were not designed to accommodate the advances in technology that we have seen recently. Server blades are a great example to demonstrate how compute density has increased significantly over the past five years and this has placed significant pressure on datacentre power and cooling infrastructure together with the utility companies in terms of being able to provision enough power to the datacentre.

As mentioned above, the ability to provision power to your infrastructure is the biggest inhibitor to application growth in the datacentre today. Coupled with this, the cost of modernising and refitting existing facilities is extremely high and will have a major impact on overall IT budgets. Vendors of datacentre infrastructure would suggest that you could extend the life cycle of your datacentre by replacing your entire infrastructure with new, more efficient technologies, but this does not take into account the fact that most datacentres present themselves as brownfield opportunities and operations need to be maintained. Vendors of power and cooling infrastructure would suggest a long-term strategy with regards to dynamic power and cooling, but this could be extremely costly and beyond the reach of most organisations, particularly SMBs.

With this in mind, one approach IT managers can take is to offload non-core applications to outsourced hosting specialists. This could be done either to reduce the current pressures on facilities or to offload certain applications while the datacentre is taken offline during a period of modernisation and refitting.

## **What will the impact of green IT be on my operations and how do I accommodate a green mandate within an existing IT strategy?**

Questions remain over whether green IT actually exists. In reality, it is the economics of green IT that are driving the enterprise sector to give consideration to the environment. At this level, green IT is linked directly to power consumption. Looking forward, legislation will be put in place by governmental bodies that will enforce C-level executives and IT managers to consider the total carbon footprint of the organisation into which IT makes a significant contribution. Front of mind should be that technology in itself is inherently efficient, but it is the usage scenarios, such as scale-out, that are the source of inefficiency. As such, while power efficiencies at the system level can provide a degree of benefit, the real leap forward can only be achieved by looking at different operating models, which plays well with the outsourcing model.

Understanding the carbon footprint of operations is extremely complex, with no direct methodology for achieving this in place yet. With that in mind, datacentres are beginning to be built along environmental lines. For example, Rackspace is building a datacentre on Slough Estates that will run on renewable energy and will use low-power equipment such as AMD's Opteron processor and HP's c-Class blade servers. The company has also partnered with organisations such as NativeEnergy and the International Tree Foundation in the UK to enable carbon-neutral operations through offset programmes.

By addressing the issue in this way, Web hosting providers can simplify a complex equation. By working with hosting providers that have a credible green agenda, companies can ensure that their carbon footprint with respect to Web hosting is either minimised or neutralised if offset programmes are taken advantage of. Customers can leverage this to demonstrate green credentials in their respective marketplace and anticipate future legislation from the EU.

## **CONCLUSION**

- ☒ Availability of supply — The proportion of companies that use a managed hosting service as opposed to hosting in-house using their own facilities has remained quite stable for several years. IDC believes that this is, in part, due to the common perception of Web hosting services as being polarised between low-end, low-quality providers that sell on price alone, and high-end, blue-chip IT service firms out of reach of most organisations. In reality, there are several providers occupying the middle ground that provide high-quality service, priced at realistic levels. IDC expects the proportion of companies that use managed hosting to increase over time (the managed Web hosting market in Europe grew by 13.3%, with several hosting providers growing at an even more rapid pace, in 2006, compared with 4.1% for the overall IT market), although entrenched preferences to keep hosting operations in-house will persist in many organisations.
- ☒ Hidden costs of in-house hosting operations — Too many companies inappropriately compare the headline costs of in-house operations and managed services when they evaluate the two side by side, such as capital cost of server versus monthly recurring fee. The range of costs necessary to run a decent-quality hosting operation in-house is wider than many companies appreciate, and in-house cost cutting can be illusory, creating more in risk than it saves in cost.

- ☒ Power efficiency — The inefficiency of today's datacentres is severely limiting their ability to support increasing power and cooling requirements. This in turn will inhibit the ability of an organisation to deploy new applications, and hence to drive productivity growth. This, in combination with the increasing cost of power and the shift in responsibility of IT power expense towards the IT manager, is creating serious incentives for companies to look at alternative ways of hosting and managing their IT infrastructure.
- ☒ Green IT — Green IT operates as much at an operational level as at a product specification level. Products can certainly be designed with environmental aspects in mind, such as power efficiency and removal of hazardous materials, but the biggest benefits come from the ways products are used and managed, such as how scale-out architectures are deployed. IDC expects that green considerations in the enterprise will be driven by legislation. Today, legislation is limited to materials (ROHS) and recycling (WEEE) with little specific in place regarding the operational aspect of IT. That said, discussions are ongoing both within the EU and NGOs, and companies should give consideration to this today to minimise the future impact.

## CASE STUDY

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### Introduction

The British Army's Web Exploitation Group provides technical and development support for the Army's Internet and intranet operations, including the flagship ArmyNET project. Four years ago the group took what was to prove to be a significant step in expanding and improving the Army's Internet presence and internal communications within the serving army community. Rackspace played a pivotal role in that step, and this case study outlines Rackspace's contribution to the Army's ongoing Internet operations.

### Problem

The Army's Internet infrastructure was historically housed and managed by the DSTL (Defence Science and Technology Laboratory), a unit that hosted much of the Ministry of Defence's (MoD) Internet infrastructure. However, as the Internet became more critical to the Army's operations, the Army looked to evaluate options that would improve its operations and take it to a higher level of effectiveness.

In order to improve the Army's Web operations, it needed:

- ☒ Improved service level agreements
- ☒ Increased server availability
- ☒ Improved reliability and uptime
- ☒ Improved upload times to make changes to Web site content
- ☒ Increased access to servers
- ☒ Understanding of costs involved with running the necessary infrastructure

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## Solution

The Army, seeking better quality and timeliness in its Web hosting, looked to the civilian world to evaluate alternatives and, after a study of best practice outside the armed forces, made the decision to outsource housing and hosting to a third-party service provider.

To choose a service provider, the Army drew up a list of criteria, centred around reliability, uptime and security. Reflecting the critical nature of its Web operations it set the bar high, and of the hosting providers it invited to bid, found that only Rackspace met its criteria.

In 2004 the Army moved its servers to Rackspace. Two and a half years on, the Army has not experienced any downtime at all with Rackspace.

At the time that the Army gained control of its servers, it did not even know what they contained, and had to analyse them to identify the software environment and content structure it was taking charge of.

The Army moved 10 servers into Rackspace. These servers provide the foundation for its public Web sites (including the British Army's main Web site, [army.mod.uk](http://army.mod.uk), with 17,000 pages, and its recruiting site, [armyjobs.mod.uk](http://armyjobs.mod.uk)), as well as its internal ArmyNET system.

ArmyNET is a hub site that lets soldiers communicate securely with their families and colleagues via email and instant messaging, view pay statements and senior Army statements, and access Army libraries, among other facilities. In designing ArmyNET, the Web Exploitation Group carefully analysed the types of communication that soldiers need, and its success has continued to the point where it now has 125,000 users.

ArmyNET is built largely on open source technologies. Across the different systems in operation, the Army runs the following technologies:

- For static Web sites such as [army.mod.uk](http://army.mod.uk), it uses the in-house Army content management system, based on .NET2
- For dynamic sites such as ArmyNET, it uses PHP with a MySQL backend running on Linux
- JWChat, a Jabber client, for instant messaging
- SquirrelMail client and Courier Email backend for email, with SpamAssassin antispam and ClamAV antivirus
- WebTrends for usage statistics and analytics
- Verity Ultraseek for search
- IBM Watchfire WebXM for Web site compliance validation and auditing
- Other backend systems located on the Army's intranet to provide applications such as soldiers' pay statements

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## **Benefits**

The Army's move to Rackspace has ensured access to a 24 x 7 telephone and online support system, which allows remote changes to be made in real time.

One of the many benefits the Army cites of working with Rackspace is its level of technical and commercial know-how. Rackspace has made its costings and process transparent to the Army. The relationship with Rackspace provides the Army with a platform to discuss the implementation of new designs and the sharing of ideas and experiences in running a high-volume operation. For example, the Army requested changes to the customer service portal that all Rackspace customers see, and Rackspace incorporated many of the suggestions.

The Army considers Rackspace's technical staff as experts in their field who are responsive, can multitask and have interpersonal skills. In addition, they work at the customer's pace, not their own, and respect the customer's choices in situations that require decision making. The Army sums up Rackspace's employees by saying, "They just do what it takes."

As a result of learning through its experience with Rackspace, the Army can now make many changes to its servers itself, without resorting to helpdesk support, a process it describes as symbiotically beneficial. In addition, Rackspace has built up considerable trust over the last two and a half years.

Since the Army switched from MoD-controlled infrastructure to Rackspace, the RAF and Navy have started to follow suit, having seen the improved service and support the Army has received. Both services have deployed servers at Rackspace, and Rackspace treats them as one joint account. This simplifies account management and customer support, and secures a favourable price for each unit.

An additional result is that, between them, the forces are able to consolidate some of their underlying infrastructure, by sharing firewalls, switches, backup servers and other services, and this has had a further beneficial impact on cost and total power consumption.

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## **Future**

The armed forces now have a total of around 45 servers at Rackspace. The Army's Web Exploitation Group accounts for 10, the Army's recruiting Web site for nine, and other services such as the RAF, Navy, army cadets and air cadets account for the remainder.

The Army expects the scale of operations with Rackspace to grow, both within the existing units that use Rackspace now but also across new areas of the MoD.

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